COST AND BENEFIT OF TRANSPORTATION SPECIFIC MS4 AND CONSTRUCTION PERMITTING

Prepared for:

American Association of State Highway and Transportation Officials
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Disclaimer

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Key Terms

ADOT	Arizona Department of Transportation
CGP	Construction General Permit
DEP	Maine Department of Environmental Protection
DOE	Washington State Department of Ecology
DOT	Department of Transportation
DWQ	North Carolina Department of Environment and Natural Resource, Division of Water Quality
IDDE	Illicit Discharge Detection and Elimination
MCM	Minimum Control Measure
MDOT	Maine Department of Transportation
Mn/DOT	Minnesota Department of Transportation
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer Systems
MTA	Maine Turnpike Authority
NCDOT	North Carolina Department of Transportation
NPDES	National Pollution Detection and Elimination System
TCEQ	Texas Commission on Environmental Quality
TMDL	Total Maximum Daily Load
TxDOT	Texas Department of Transportation
USEPA	United States Environmental Protection Agency
WSDOT	Washington State Department of Transportation

1. INTRODUCTION

1.1 Project Description

Municipal Separate Storm Sewer Systems (MS4) National Pollutant Discharge Elimination System (NPDES) permits and NPDES Construction General Permits (CGPs) are usually written in broad terms with a general bias towards municipalities and site-based construction activities. The requirements of these stormwater permits typically do not recognize the unique linear nature of highway projects, the administrative organization of state Departments of Transportation (DOTs), and other challenges that DOTs face in implementing stormwater programs. Given these challenges, different permitting approaches for DOTs, such as MS4 permits and CGPs that are developed specifically for DOTs, would likely be more cost effective overall than one-size-fits-all permits, both in meeting water quality goals and reducing permitting conflicts. This project investigated alternative DOT NPDES permitting approaches and evaluated the costs and benefits of the alternatives. The goal of this study was to assist DOTs in developing practical and defensible NPDES permitting strategies for highway environments.

The specific research objectives of this study include:

1. Characterize current DOT NPDES permit types and conditions for MS4 and GCP permits (see Sections 2 and 3_MS4_Permit_Results);
2. Assess the costs and benefits associated with alternative DOT NPDES permitting strategies (see Section 4);
3. Recommend strategies for obtaining NPDES permits specific to DOTs (see Section 5); and
4. Recommend strategies for DOTs to promote communication with regulatory agencies (see Section 6).

1.2 NPDES Permit Types

A NPDES permit is required for a discharge of waste to waters of the U.S (navigable surface waters). The NPDES permit program is largely administered by delegated states. The U.S. Environmental Protection Agency (USEPA) is responsible for NPDES permitting in the non-delegated states of Alaska, Idaho, Massachusetts, New Hampshire, and New Mexico, as well as in U.S. territories, Tribal lands, and the District of Columbia. In many states, NPDES permits are actually combined NPDES/State permits issued under dual Federal and state authorities.

There are two types of NPDES permits: individual and general. An individual NPDES permit is unique to each facility and/or permittee. The limitations and requirements contained in an individual permit are based on the permittee's operations, the type and amount of discharge, the receiving water bodies, and other factors. Individual permits often cover both stormwater and process water discharges. When multiple individual permits contain very similar or identical

effluent limitations and requirements, their contents may be compiled into a general permit that can be applied to certain categories of discharges within a stated geographic area (often a state or a specific watershed).

NPDES stormwater permits regulate ongoing stormwater discharges from a MS4 (MS4 permits), stormwater discharges during construction of a project (CGPs), other stormwater discharges, such as those originating from an industrial site, or some combination of these sources (combined permits). A MS4 is defined by the federal regulations as a conveyance or system of conveyances that is:

- Owned by a state, city, town, village, or other public entity that discharges to waters of the U.S.;
- Designed or used to collect or convey stormwater (including storm drains, pipes, ditches, etc.);
- Not a combined sewer; and
- Not part of a Publicly Owned Treatment Works (sewage treatment plant).

The term MS4 can apply to "traditional" and "non-traditional" MS4s. Traditional MS4s typically refer to municipalities, while non-traditional MS4s may include DOTs and other non-municipal agencies such as educational institutions and Port Districts.

MS4 permits have been issued in two phases since 1990:

- Phase I, which applies to MS4s that serve populations of 100,000 or more.
- Phase II, which regulates small MS4s in urbanized areas, as well as small MS4s outside urbanized areas designated by the permitting authority.

Generally, Phase I MS4s are covered by individual permits and Phase II MS4s and construction sites are covered by a general permit.

2. NATIONWIDE PERMIT RECONNAISSANCE AND PERMITS SELECTED FOR DETAILED REVIEW

The first task of the Project was to obtain and review existing NPDES MS4 Permits and CGPs issued to DOTs. Following this review, six representative state or regional DOT permit strategies were selected for detailed evaluation.

2.1 Methodology

A multi-step approach was taken in selecting the representative DOTs for detailed evaluation. The goal was to effectively represent the range of permit attributes while selecting those permits with the most demonstrative or relevant permit features. The Project Team conducted the following steps to efficiently and effectively select representative DOTs:

1. *Information Gathering:* Permits and supporting information were collected via web searches and direct calls to DOTs and regulatory authorities, as needed, to obtain information from as many of the DOTs as reasonably possible.
2. *Preliminary Permit Review:* Permits were preliminarily reviewed to identify permit type, jurisdiction/region, and permit term.
3. *Short List Review*: A subset of permits was selected for further review based on a diverse representation of geographic permit coverage area, permit type, regulating authority, and adoption/expiration date.
4. *Selection of Permits for Detailed Evaluation:* Based on the more detailed examination of the short list, six DOTs and three alternatives were selected as representing the range of different permit types, geographic areas, permit conditions, and coverage for both MS4 and CGP review. Following review and discussion with the Advisory Panel, six states were selected for detailed evaluation. Two additional state DOTs were selected for CGP review only.

2.2 MS4 Permit Results

2.2.1 Results of Nationwide Reconnaissance

The MS4 Permit nationwide review addressed the following basic features of each permit:

- Permit ID [General, Individual, or Notice of Intent (NOI) #]
- Permit type (MS4 or MS4 + Construction)
- Phase (I or II)
- General or Individual
- Jurisdiction

- Regulatory Authority (State or USEPA)
- Permit term (start, expiration dates)

The results of this national review are provided in Appendix A, Table A-1 and Figure A-1, and indicate that:

- Twenty-seven state DOTs are covered by a statewide MS4 Phase II general permit (permittees may include the entire DOT, DOT districts, or the DOT within a specific region)
- Eleven state DOTs have DOT-specific individual permits (including combination MS4-CGP permits)
- Five state DOTs are not covered by a NPDES permit.

The remaining seven state DOTs are either permitted by DOT district (FL and TX) under various permit types; co-permitted with surrounding Phase I and/or II areas (AL, AK, SD); or have a combination of permit types (AR, DE).

A group of 16 DOTs was selected for more detailed evaluation based on the following criteria:

- The MS4 permit is current (i.e., those selected generally were not expired);
- The MS4 permits represent a range of permit types and jurisdictions;
- The states are distributed geographically across the country; and
- Information sources (permits, contacts, supporting information) are readily available.

MS4 permits selected for further evaluation following the national reconnaissance included Arizona, California, Delaware, Florida, Maine, Maryland, Minnesota, Montana, Nebraska, New York, North Carolina, Tennessee, Texas, Virginia, Wisconsin, and Washington. These states' MS4 permits were reviewed in depth to assess the variability in special conditions that address the following minimum stormwater program components:

1. Public Education/ Outreach
5. Public Involvement/ Participation
6. Illicit Discharge Detection and Elimination (IDDE)
7. Construction Runoff Control
8. Post-Construction Controls
9. Pollution Prevention and Good Housekeeping
10. Total Maximum Daily Load (TMDL) Compliance
11. Monitoring Requirements

The results of this evaluation are provided in Appendix A, Table A-2. Table A-2 briefly summarizes the permit requirements for the eight categories listed above, as well as other unique permit conditions. All of the 16 permits that were reviewed in more detail contain provisions that address the six Phase 2 minimum measures (items 1 through 6 above), except for Wisconsin. The Wisconsin DOT, whose stormwater discharges are allowed under the provisions of a Memorandum of Understanding (MOU) with the Wisconsin Department of Natural Resources as opposed to a NPDES permit, does not appear to have a Public Education/Outreach or Public Involvement/ Participation program component. Almost all of the permits include a requirement to comply with applicable TMDLs, with the exception of the Wisconsin DOT MOU, the Delaware permit, and the California, Florida and Texas individual permits that were reviewed. (The general permits for Florida and Texas do contain TMDL requirements). Eleven of the 16 states appear to explicitly require monitoring (California, Arizona, Florida, Maryland, Montana, North Carolina, Tennessee, Texas, Virginia, Washington, and Wisconsin) to various degrees. The five other permits mention monitoring but do not appear to require it.

Though states with recent permits are desirable from the perspective of illustrating current permit requirements, states with recently issued permits lack annual implementation cost data for new permit requirements. For those states that have been included in the study, the focus of the cost evaluation is limited to the permit development costs, such as the costs of permit negotiation and management plan preparation.

2.2.2 DOTs Selected for MS4 Permit Evaluation

Following review and discussion with the Advisory Panel, six representative permit programs were selected for detailed review and evaluation. The following describes the recommended states, their distinguishing feature(s), and a brief explanation as to why they were selected.

Arizona

The Arizona DOT (ADOT) has an individual permit, issued in 2008, that applies statewide. The permit is a joint MS4, industrial, and construction permit, which is a distinguishing feature. Only two other states have joint MS4/Construction DOT permits - California and North Carolina. The ADOT permit was selected as representative of the combined permit approach because it is the most current; the permit was approved in 2008. The current California and North Carolina DOT permits were approved in 1999 and 2005, respectively. Additionally, the ADOT permit is comprehensive in nature and introduces interesting DOT-specific permit conditions. For example, the ADOT permit lists separate requirements for the storm sewer system and maintenance yards, acknowledging a difference in pollutants of concern and geographic treatment areas. Additionally, the permit contains comprehensive post-construction controls, including a manual requirement, monitoring requirements, and data quality control. Downsides include Arizona's uniquely arid environment and that only permit development costs may be available, due to the recent adoption of the permit.

Maine

The Maine DOT (MDOT) has a joint DOT-specific Phase II general permit with the Maine Turnpike Authority (MTA), issued in 2008. This general permit applies to all DOT and MTA roadways and facilities within the Phase II areas in the state. Maine also has separate Phase II general permits for small MS4s and for state or federally-owned small MS4s within the state, allowing for direct comparison of the three general permits. Consequently, Maine provides an example DOT permitting strategy for Phase II states that is an alternative to obtaining coverage under an individual permit, yet allows for DOT-specific permit conditions.

Minnesota

The Minnesota DOT (Mn/DOT) is regulated by a general Phase II MS4 permit that was issued in 2009. The Minnesota Phase II MS4 permit addresses all of the eight conditions listed above; however, the permit conditions are non-prescriptive. The general permit requires each Phase II permittee to develop a Stormwater Pollution Prevention Program that addresses the six minimum control measures, but allows the permittee to decide which BMPs to include. The Mn/DOT general permit approach was selected for assessment because the permit's less prescriptive nature may allow for the development of a DOT-specific stormwater program despite coverage under a general Phase II MS4 permit.

North Carolina

The North Carolina Department of Transportation (NCDOT) is covered under a combined MS4 and construction individual permit, issued in 2005, that permits borrow pit wastewater discharges and stormwater discharges from construction activities, industrial activities, roadways, and all NCDOT-owned facilities statewide. The NCDOT individual permit contains extensive stormwater program implementation requirements, including a "BMP toolbox" that focuses on BMPs for linear applicability, a research program for both stormwater monitoring and innovative structural management controls, and a requirement to assess and monitor all discharges to impaired waterbodies subject to an EPA-approved TMDL. Its comprehensive, DOT-specific approach offers a good test case of the efficiencies that may be achieved through an individual permit approach.

Texas

Within Texas, each DOT district applies and is permitted separately, as opposed to the state DOT obtaining coverage under a statewide permit. Additionally, some Texas DOT (TxDOT) districts have joint coverage under Phase I and Phase II permits, which is unique. Each district submits a separate NOI for coverage under the statewide Phase II general permit for the Phase II designated area of the district. Additionally, the districts are listed as co-permittees on the Phase I MS4 permits within their district. Although this permitting approach appears to be cumbersome and segmented, the TxDOT districts may be able to develop more tailored programs in cooperation with the local municipalities. On the other hand, this approach could result in unequal interpretation or implementation of permit requirements from district to district.

Washington
Washington State DOT (WSDOT) is also covered by an individual MS4 permit, which was issued in 2009. However, the WSDOT permit coverage area is limited to the Phase I/II designated areas within the state, in a contrast to the statewide TDOT and ADOT permits. WSDOT is also an interesting case study of a DOT that was previously included as a copermittee in three Phase I watershed-based general permits, issued in 1995, prior to recently obtaining coverage under a DOT-specific individual permit. WSDOT has tended to collect more environmental mitigation cost information than other DOTs, the state has a well-funded stormwater research program, and the state's construction compliance program collects information on effectiveness.

2.3 Construction Permits

2.3.1 Results of Nationwide Reconnaissance

A similar approach to the MS4 permit review process was undertaken to evaluate the construction permitting approach undertaken by all fifty state DOTs. DOT construction permitting information was gathered through one of the following methods:

1. Review of DOT new development/redevelopment standards and associated guidance documentation, which often included a section on the construction permitting process;
2. Review of state construction permit databases, where available, for DOT listings and details of permit applications;
3. Review of DOT Erosion and Sediment Control Manuals;
4. Review of NPDES construction permit issuing agency website for information relating to DOTs or DOT-specific permits; and/or
5. Inquiries to NPDES construction permit issuing agencies regarding the DOT permit process.

The following five categories summarize the variation in construction permitting across the states (see Appendix A, Table A-1 and Figure A-2):

1. Each individual construction project applies under the Construction General Permit for site-specific permit coverage. Thirty-nine out of 50 state DOTs fall under this category.
2. DOT construction projects are covered under a statewide permit (both individual and general permits). Kentucky, Missouri, and Oregon are regulated under a DOT-specific construction permit.
3. DOT construction projects are covered under a statewide combined MS4 and Construction Permit. Arizona, California, and North Carolina are regulated by a combined permit.

4. The DOT is a delegated agency for NPDES construction approvals/permit issuance for its own construction projects. This category applies to two states - Delaware and Hawaii.
5. DOT construction projects operate under agreements that exempt the DOT for permitting purposes (however, state regulations and/or general permit conditions must still be met). Maine, Michigan, and Wisconsin are technically exempt from construction permits.

2.3.2 DOTs Selected for Construction Permit Evaluation

Since the majority of state DOTs apply for coverage under the Construction General Permit in their respective state, the states recommended for the MS4 permit approach comparison, except for Maine, were also recommended for the CGP analysis, with two proposed additions. Since four out of the six selected states apply for coverage under their state's Construction General Permit, two additional states, Delaware and Georgia, were selected for construction permitting approach analysis only. Delaware is unique in that it has delegated authority from the state for a DOT construction program. Georgia has a state-specific general permit that applies to infrastructure projects only. Thus, the states selected for construction permit evaluation include:

1. Arizona
2. Delaware
3. Georgia
4. Minnesota
5. North Carolina
6. Washington
7. Texas

The following describes the selected states, their distinguishing feature(s) related to construction permitting, and a brief explanation as to why they were selected.

Arizona
ADOT construction activities are permitted under a joint MS4/Construction individual permit. ADOT was selected to be consistent with the MS4 permit review.

Delaware
Delaware DOT (DelDOT) has delegated authority from the Delaware Department of Natural Resources and Environmental Control to implement its own NPDES program. DelDOT reviews plans and submittals for sufficiency with the state's general permit requirements.

Texas
TxDOT applies for coverage under the state's construction general permit. TxDOT was selected to be consistent with the MS4 permit review.

Georgia
The Georgia DOT applies for coverage under a state general construction permit; however, Georgia is unique in that the state has a specific general construction permit for infrastructure projects.

Minnesota
Mn/DOT applies for coverage under the state's construction general permit. Mn/DOT was selected to be consistent with the MS4 permit review.

North Carolina
NCDOT stormwater discharges from construction related activities are covered under a joint MS4/ Construction individual permit. NCDOT was selected to be consistent with the MS4 permit review.

Washington
WSDOT applies for coverage for each project under the state's construction general permit. Washington is one of the few states with effluent monitoring requirements and benchmark water quality standards for construction sites. WSDOT was also selected to be consistent with the MS4 permit review.

3. DETAILED EVALUATION OF REPRESENTATIVE PERMITS

Following selection of the representative DOTs, a detailed evaluation of their permits was conducted. The goal for this work was to identify the potential conflicts, challenges, and benefits resulting from the alternative NPDES permitting strategies for highway facilities. This goal was addressed in two steps: 1) information gathering, and 2) comparison and evaluation. Information gathering entailed a combination of: 1) review and evaluation of the DOT permits; 2) compilation of quantifiable data such as cost information and program operations; and 3) interviews with DOT staff. In addition to the detailed evaluation, cost implications of the various NPDES permitting approaches were compared to the extent that cost data was available.

3.1 MS4 Permit Evaluation

3.1.1 Methodology

The detailed permit evaluation included the following:

1. *Detailed Permit Review and Summary*: The permits for the selected state DOTs were reviewed and summarized in a concise tabular format that was generally consistent for all states in order to facilitate inter-state comparisons.
2. *Preparation of Interview Questionnaire*: Based on the permit review, a questionnaire was prepared for each state DOT, focusing on identifying how the type of permit and permit provisions were conducive to, or detracted from, "efficiencies" in terms of cost and compliance.
3. *Conduct Interviews and Follow Up*: The Project Team conducted approximately one hour phone interviews with DOT staff from each selected state and documented the responses in writing. The documented responses were then sent back to the DOT staff for review. Follow up was also conducted for certain questions that arose following the interviews.
4. *Cost Analysis:* Based on responses from the interviewees, the Project Team conducted a cost or level of effort analysis based on indicators regarding the number of FTE's involved in the program and DOT size.
5. *Synthesize Results:* The Project Team then synthesized the results of the information obtained from the interviews, focusing on how different permit types affect the efficiency of DOT activities subject to the NPDES requirements

3.1.2 Results of Detailed Evaluation

Detailed MS4 permit summaries are provided in Appendix B and questions and answers from the phone interviews are provided in Appendix C. The following summary is not intended to duplicate the information contained in the appendices, but rather to identify and summarize the distinguishing features of each DOT program, with special emphasis on those features that might be of interest to other DOTs.

Overview of Permit Types

A summary of permit types and requirements is provided in Table 3-1 below. As indicated in Table 3-1, there is a broad range of permit types, coverage, and requirements among the six selected state DOT programs. Permits that are issued only to the DOT are referred to as an individual permit and generally are managed by the state DOT Headquarters (HQ). These permits tend to be tailored to DOT activities and facilities. Permit coverage ranges from statewide (ADOT, NCDOT) to only those urban areas designated under Phase I/II (Washington). These permits also tend to be more comprehensive, such as the ADOT and NCDOT individual permits which regulate discharges from the MS4, construction activities, and industrial activities.

A variant on the individual DOT permit is the DOT-specific Phase II general permit. MDOT (and the Maine Turnpike Authority (MTA)) is subject to this general permit, which applies to all DOT and MTA facilities in the Phase II areas of the state. In this case, the regulatory agency adapted the Phase II MS4 general permit provisions based on the six minimum measures for the MDOT and MTA. As a rule, because Phase II general permits were originally intended to address municipal programs, most Phase II general permits tend to be less DOT-specific than individual permits.

In contrast to single entity individual permits, group permits are written for a group of entities called co-permittees. For DOTs, some of these permits are written for the DOT, and perhaps one or two similar agencies, and are essentially individual permits in terms of being DOT-specific (e.g., MDOT). Many such permits (e.g., Fort Worth) group the DOT with municipalities and special districts. These permits are generally written for the municipalities and lack specific applicability to the DOT.

In the State of Texas, the DOT MS4 permits are held by each of the 25 districts and the type of permit varies by district. The Dallas district is covered under an individual permit, the Fort Worth District is a co-permittee under a group permit that includes two other agencies, and some districts are subject to a general Phase II permit.

Overview of Permit Requirements

In order to conduct the permit review, a summary template was created based on categories of permit requirements. These categories include, for example, legal authority, program assessment, special provisions, monitoring, and reporting. Special focus was placed on permit requirements for TMDLs, structural treatment control retrofitting[1] requirements, and requirements related to compliance with the maximum extent practicable (MEP) performance standard and water quality objectives. The detailed permit review findings are provided in Appendix B, Table B-1 through Table B-9.

[1] Retrofitting means the construction of treatment control measures for existing developed area without a new development or redevelopment project trigger.

The specific requirements for each DOT vary substantially and may reflect differences in the states' size and land uses, regulatory climate, maturity of the permitting program, organizational structures, and sensitive ecological issues. For example, Washington State has more stringent requirements and a larger program that reflects Endangered Species Act concerns regarding salmonid habitat. Comparison of special permit provisions in each of the DOT permits is provided in Appendix B, Table B-10 through Table B-21.

Most programs have common elements that derive from the Phase I/II required minimum measures, such as public education and outreach, illicit discharge tracking and elimination, new development and redevelopment, inventory and mapping of storm drain facilities, maintenance, inspections, and reporting. All permits generally require program development including development of a program plan and program evaluation. Program requirements tend to differ in the extent of monitoring required, the extent to which mapping and other supporting database development is required, the extent to which supporting technical guidance and manuals are required, the scope and sophistication of monitoring requirements, the requirement to adopt a retrofit program, and special conditions associated with impaired waters and TMDL allocations.

Table 3-1: Permit Types and Requirements

Permit Condition		Arizona	Maine	Minnesota	North Carolina	Texas (Dallas)	Texas (Fort Worth)	Texas (General Phase II)	Washington
MS4 Permit	Permit type	Individual (combined with Const. and Ind.)	DOT Specific Phase II General Permit	Phase II General Permit	Individual (combined with Const. and Ind.)	Individual	Joint Phase I with Municipal Permittees	Phase II General Permit	Individual
	Coverage area	Statewide (All DOT districts)	Statewide (Phase II)	Phase II areas in DOT districts	Statewide (All DOT districts)	City of Dallas with noted exemptions	All areas in the City except Ag lands	Phase II areas in DOT districts	Phase I and Phase II areas**
Stormwater Management Facilities	Program to control pollutants from new development/redevelopment	X	X	X	X	X	X	X	X
	BMP retrofits to address pollutant loadings from existing DOT facilities				X				X*
	Retrofit and impervious area tracking								X*
	Field verification of as-builts								X
	Develop BMP manual	X			X				X
	Conduct BMP evaluations				X				X
	Develop and evaluate a BMP inspection program				X				X
	Vegetation Management Program	X			X				X
	Design and retrofit flood control basins for WQ benefits					X			
	Inspection program	X	X	X	X				X
	Iterative improvement of discharges (review, evaluation, correction)	X							
TMDLs	Comply with TMDL load limits	X	X	X	X			X	X
	Planning & reporting of TMDL implementation measures				X				X
Low Impact Development	Use LID approaches to reduce creation impervious surfaces								X

Permit Condition		Arizona	Maine	Minnesota	North Carolina	Texas (Dallas)	Texas (Fort Worth)	Texas (General Phase II)	Washington
Cost Reporting	Estimate and report stormwater management program costs	X							X
Mapping	MS4 inventory and mapping	X	urban areas	X	X	X		X	X
Illicit Detection & Elimination	Outfall inspection, illicit discharge elimination & tracking	X	X	X	X	X	X	X	X
	Controls for SSOs and infiltration					X	X		
	Limit floatables					X	X		
	Household hazardous waste and motor oil collection					X	X		
Research & Monitoring	Highway runoff monitoring	X			X	X	X		X
	Baseline monitoring of other DOT facilities (e.g., rest areas, maintenance yards, and industrial facilities)	X			X				X
	Toxicity testing of highway runoff				X				X*
	Rapid Bioassessment					X	X		
	Floatables monitoring					X			
	BMP effectiveness monitoring/ evaluation				X				X*
Education, Training & Public Involvement	Adopt a highway litter program	X			X				X
	Commute trip reduction								X
	Public education/involvement program	X	X	X	X	X	X	X	X
	Website	X			X				X
	Pollution awareness training for DOT personnel and contractors	X			X				X
Reporting	Annual Report	X	X	X	X	X	X	X	X
	Stormwater Monitoring Report	X							X
	Record Keeping	X			X	X			X

* Endangered Species Act requirements may influence permit conditions.

** The permit also covers “stormwater discharges to any water body in the state for which there is an EPA-approved TMDL with load allocations and a Detailed Implementation Plan specifying actions for WSDOT stormwater discharges.”

3.1.3 Summary of Key MS4 Permit Features

The following summarizes key features of permits that were obtained through the permit review and interview process. For more detail, see Appendix B, which contains the permit review results, and Appendix C, which contains the results of the interviews.

Arizona DOT MS4 Permit
ADOT has one of the more comprehensive and inclusive permits in that it combines MS4, construction, and industrial elements and applies to DOT facilities and operations throughout the state. The permit was a condition of a consent order ADOT received on a construction project. The interviewee was of the opinion that having one permit was more efficient in that all the requirements were in one document and thereby avoided multiple permits with potentially conflicting requirements. The interviewee also felt that there would be efficiencies in terms of long term compliance because there is one NPDES permit manager that can provide uniform policy direction to the Districts. Senior support from the State Engineer and Director has also been critical.

A major difficulty with this permit has been the lack of phasing of requirements, especially with respect to coverage. The coverage of the current permit is much more comprehensive than the previous permit (a Phase I permit covering only the area within Phoenix and Tucson) and ideally the requirements for statewide coverage at this level of detail would have been phased in over multiple permit cycles. As there is no designated funding source (the $1M budget comes from other programs), and because of limited staffing, the budget is used primarily for consultants, which is not always the most efficient mechanism for program implementation.

Click here to read the ADOT interview results in Appendix C.

Maine DOT MS4 Permit
MDOT is regulated under a general permit that also applies to the MTA. The permit includes provisions corresponding to the USEPA's six minimum control measures (MCMs), but the permit language allows the DOT and MTA to only implement those MCMs to the "extent the measures will have an impact on the MS4."

A key feature of the MDOT experience has been the collaborative relationship between the MDOT and the Maine Department of Environmental Protection (DEP). This relationship has yielded, in the opinion of the interviewee, a permit that for the most part is practical and reasonable. A concrete example of the benefits of this collaboration is that, although the MDOT is subject to the Maine CGP, the MDOT was able to continue to manage construction sites under an MOA with the DEP that was developed with the DEP prior to the MS4 permit issuance. Under the MOA, MDOT submits an annual list of the construction projects begun and ended, and it was agreed that the "bundling of projects" would suffice in lieu of submitting notices of intent (NOIs) and notices of termination (NOTs) separately for each project.

As the predominant land use in Maine is agriculture, the permit coverage is limited to identified Urban Areas (UAs), primarily centered around Portland and south to the border with New Hampshire, and Bangor. Another interesting aspect of the Maine DOT operations is that the DOT has Urban Compacts with municipalities whereby the municipalities are responsible for the maintenance of those portions of the DOT system located within the municipality's jurisdiction. The Urban Compacts cover 44 of the total of 77 DOT miles. Maine DOT feels that their general permit is an advantage as it allows the DOT more flexibility and allows the DOT and DEP to essentially work in a collaborative, adaptive manner.

Click here to read the MDOT interview results in Appendix C.

Minnesota DOT MS4 Permit

The Minnesota MS4 permit is a general permit developed by the Minnesota Pollution Control Agency (PCA) that applies to all of the small MS4s in the state of Minnesota. The permit covers municipal as well as DOT facilities and operations. Thus the permit provisions are not specific to DOT facilities. The Minnesota DOT districts are autonomous, so DOT Central (i.e., DOT HQ) plays an advisory role to the Districts by providing guidance (e.g., BMP summary sheets that have timelines and goals) and assistance, and not prescription. The interviewee was not sure if this decentralized model was efficient or not, but the cooperative partnership between DOT Central and the Districts appears to be working well. One disadvantage to this decentralized model is that policies and design guidance are not necessarily consistent across the Districts. The interviewee pointed out that BMP sizing criteria, for example, varies depending on watershed district (there are 31 such districts in Minnesota) and municipalities located within each watershed district.

In permits of this nature, the question of coordination between the districts and the municipalities is of interest. The interviewee indicated that the level of coordination varied depending on the district and municipalities. For example, the Duluth MS4 and District cooperate on funding outreach and public education, and in the Rochester MS4, the District attends monthly MS4 meetings. Mn/DOT revisits coordination issues annually to identify current and possible future areas of coordination.

The interviewee felt that having a non-DOT-specific permit at this time was acceptable given that the current level of enforcement by the PCA is relatively modest. However, in the future, the interviewee felt that a more DOT-specific permit may be preferable.

Click here to read the Minnesota DOT interview results in Appendix C.

North Carolina DOT MS4 Permit

NCDOT has an individual permit from the North Carolina Department of Environment and Natural Resource, Division of Water Quality (DWQ) that is DOT-specific and addresses MS4, construction, and industrial activities conducted by the DOT statewide. NCDOT maintains a very large number of roadway miles - over 79,000 miles or 76% of the state's entire system - all of

which are covered by the DOT's MS4 permit in a fashion NCDOT finds efficient, effective, and useful.

NCDOT's comprehensive approach goes back to the state's delegated erosion and sediment control (ESC) program. NCDOT's MS4 permit and water quality program is characterized by very robust ESC quality assurance and control that distinguishes it among DOTs and arguably places it among the top few in the nation, in terms of effectiveness. A team of 16 FTEs conduct statewide oversight of ESC, including audits once or twice a month at each site. Evaluation of DOT construction staff includes ESC performance and attainment of standards of adequacy, an indication of the level of seriousness NCDOT gives water quality and compliance, and their commitment to making the whole endeavor a functional and useful enterprise for the agency. The process is organized to generate learning and continuous improvement.

NCDOT has developed a number of interpretations of permit requirements that they feel makes this individual permit approach very efficient. NCDOT was able to get support from the regulatory agency (the Division of Water Quality) due to the agency's understanding of DOT-specific water quality issues and the unique aspects of a DOT as compared to municipalities. NCDOT and the Division of Water Quality have worked out efficient approaches to NCDOT's Illicit Discharge Detection and Elimination program, including outfall mapping. NCDOT has also developed online systems to help monitor over 200 maintenance facilities across the state and to help with automated ESC monitoring after wet weather events. This comprehensive, statewide approach also allows the DOT to direct resources where they will be most effective and to leverage efficiencies with consistent statewide application.

NCDOT developed (and Division of Water Quality agreed to) a prioritized outfall mapping effort that started with a large scale GIS analysis and included on-site survey work where additional detail might be needed; for instance, cases where the watershed was subject to a TMDL. NCDOT also developed an environmental maintenance status tracking system that allows staff to quickly evaluate facility maintenance status and needs, and a website that tracks facility stormwater pollution prevention plan (SWPPP) reviews and wet weather observations with the ultimate goal of using the website to manage and document preparation and completion of SWPPPs. The website can then be reviewed by NCDOT Headquarters to evaluate the status of SWPPP completion at each yard. Having such a transparent system also assists in addressing turnover and educating new staff. For smooth implementation and cost containment, NCDOT recommends that any tools be piloted prior to full implementation to determine efficacy.

With regards to advantages or disadvantages of an individual DOT-specific permitting approach, the interviewees indicated that the individual permit allows for more direct access to the regulators and less vulnerability to municipal whims and meeting schedules, which can save time and lead to improved communication and ultimately a good partnership with the regulatory agency. This interagency understanding and cooperation has also assisted other regulatory permit programs like Section 401 Water Quality Certifications. The NCDOT interviewees also indicated

that proper consideration of minimization and avoidance measures during the National Environmental Policy Act (NEPA) permitting phase of new construction projects is important.

Access to the regulators and the development of a good working relationship requires continuity of staff in the DOT and DWQ. In order to support continuity, NCDOT funds a transportation permitting unit within DWQ to help ensure a more permanent staff and to reduce the need for re-training. The interagency understanding has gone far to promote consideration for transportation, that transportation services are a public good and should not be evaluated in same manner perhaps as a for-profit commercial development. Other efficiencies have arisen with respect to coordination with municipalities. NCDOT indicated that with TMDLs, for example, NCDOT can work directly with the DWQ rather than coordinating with all the municipalities in the watershed. NCDOT does look for opportunities to work with the municipalities, when it is seen by the DOT to be beneficial and where agreements can be negotiated on satisfactory terms.

NCDOT is one of few interviewed DOTs to have an active retrofit program; NCDOT invests in 14 retrofits per year, but some of these have been as simple as dog waste pick up signs at rest areas. Other retrofits have been more involved, addressing opportunities to reduce pollutant loadings at streams with TMDLs. NCDOT has been able to develop their own toolbox and tailor it to their facilities, and have been able to work out design considerations that are especially needed in the retrofit environment. Also, experience with past retrofit projects is allowing NCDOT to determine what works and what does not work, as well as to find out who are good contractors.

The annual budget for the program is approximately $4.8M (exclusive of ESC, which is estimated at 7 percent to 8 percent of construction costs).

Looking to the future, the interviewee is concerned about effluent limit requirements and associated monitoring and the concept of an impervious cover TMDL.

Click here to read the NCDOT interview results in Appendix C.

Texas DOT District Permits

In Texas, the 25 DOT districts each hold NPDES permits, which may be an individual permit (e.g., Dallas District), a permit for which TxDOT is a co-permittee with other entities (e.g., Fort Worth District), or coverage under the general Phase II permit. The districts in Texas are fairly autonomous, but the Division (TxDOT central office) has the primary responsibility in preparing stormwater management plans and permit applications, which the districts modify slightly to fit their local situation. These are examples of efficiencies that can be realized in a more decentralized permitting atmosphere.

Roles and responsibilities are clear with this permitting arrangement. TxDOT has sole responsibility for compliance with the Phase II General Permit and the districts are responsible for their permits. The Division also serves as a technical resource and provides guidance on

request from the districts. For example, the Houston District requested and receives assistance with bacteria TMDLs that they are subject to. The Districts also generally use the same procedures and BMPs statewide for compliance, based on the TxDOT-approved product list and guidance from the Division, so there is a general uniformity of approach by the various districts, with resulting efficiencies.

According to the interviewee, the costs of compliance differ depending on the permit type. Where districts are co-permittees with other municipalities, costs are lower compared to districts that have individual permits for which the DOT must address all of the six MCMs and permit responsibilities within the MS4.

Regarding future permit types, the Division proposed a statewide general permit within the urban areas to the Texas Commission on Environmental Quality (TCEQ) during the Phase II discussions, but TCEQ wanted the permit to apply to the entire state. TxDOT plans to revisit this request when the permits come up for renewal in 2013.

Click here to read the TXDOT interview results in Appendix C.

Washington State DOT Permit

WSDOT has a comprehensive individual permit that covers the Phase I and Phase II portions of the state and addresses specific DOT activities and facilities. The decision to have this type of permit was a joint decision with the Department of Ecology (DOE) and included the development of a White Paper on the pros and cons of various types of permits. Originally the DOT was interested in pursuing a statewide permit, but the DOT's expanded liability (by being able to be challenged and/or sued over a wider area, in a highly litigious environment) led the agencies to agree to limit coverage to Phase I and Phase II areas only.

The DOT interviewee felt that there were definite efficiencies in administrating the program via headquarters staff, including the development of uniform standards in the form of statewide manuals, including a Stormwater Design Manual (i.e., the Highway Runoff Manual), Hydraulics Manual, and Maintenance Manual. In fact, WSDOT's work with the DOE on their design guidance generated efficiencies (for the state, municipalities, and presumably for water resource protection) far beyond the DOT.

Administration of the program from WSDOT HQ is consistent with the expertise of the HQ staff and WSDOT organizational choices. WSDOT and other DOTs are frequently staffed with specialists/experts at HQ while environmental generalists lead and/or consult with construction and maintenance staff on environmental work in the regions (i.e., districts). To help coordinate between HQ and the regions, the WSDOT put together a stormwater policy committee consisting of representatives from different WSDOT divisions (the regions, operations and maintenance, design, ferries, etc.).

Like NCDOT and other state DOTs, WSDOT realized efficiencies in the design of their Illicit Discharge Detection and Elimination program. They trained staff that already had field skills to identify and report potential violations, especially during dry weather conditions. The new permit also allowed the DOT to tailor their program plan by organizational responsibility. This greatly facilitated understanding roles and responsibilities and therefore implementation. The DOT's ability to develop and structure their own program to a large extent allowed them to more readily leverage existing programs and procedures that supported the NPDES permit.

Relations with DOE staff in the permitting division have been good; however, there appears to be some disconnects between the DOE stormwater permitting staff and other DOE programs (e.g., the TMDL staff). This led to WSDOT being subject to separate TMDL implementation plans, with highly divergent requirements, where both permitting staff and WSDOT expected more consistency. The two agencies concurred that WSDOT would be more involved in future TMDLs to avoid these types of discrepancies. Other impracticalities arose in the monitoring program, though WSDOT did achieve some leniency in monitoring requirements due to the difficulty of monitoring highway runoff because of its inconsistent or "flashy" nature. Now WSDOT, DOE, and municipalities have a working group which aims to make these requirements more meaningful in the future.

Many issues in the state of Washington concentrate on the biology and preservation of salmonid habitat under the Endangered Species Act. WSDOT initially was caught between conflicting water quality focused requirements from the DOE and the biological priorities of the US Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) fisheries. A major programmatic breakthrough occurred when an interagency team convened by WSDOT was able to get approval from senior management at each agency on a jointly developed, multi-resource prioritization scheme for retrofitting. This approach was satisfactory to all agencies and much more efficient, enabling more resources to be able to be spent on on-the-ground improvements, rather than the interagency process.

Remaining issues include inefficient monitoring requirements and TMDL requirements. The TMDL requirements remain difficult, especially with respect to addressing legacy issues and requirements. Managing expectations continue to be an ongoing process; regulators seem to want the MS4 permit to address a universe of environmental problems whereas WSDOT feels that the MS4 permit should focus on stormwater issues.

Click here to read the WSDOT interview results in Appendix C.

3.1.4 MS4 Permit Synthesis of Findings

The following is a summary of how the selected DOTs are finding more efficient means of coordinating with regulatory agencies and complying with permit conditions. Selected examples have been taken from the DOT interviews that are provided in Appendix C.

Centralization of Staff

Many DOTs reported efficiencies, though they were not able to quantify them, with headquarters centralization and development of approaches that could then be applied statewide. As one said, "DOTs are generally top down agencies," even if regions/districts have a lot of authority. "The regions aren't sufficiently staffed with the expertise for a decentralized model."

Even where districts act as permittees, headquarters staff were demonstrated to provide key guidance in an advisory role. Mn/DOT said their "Central Function acts as advisor to outstate districts and the metropolitan Minneapolis-St. Paul District, with emphasis on providing guidance and assistance but not prescriptively." Mn/DOT went on to say, "Some districts need more attention and encouragement by Central – but overall this cooperative partnership is working well." Most DOTs emphasized relatively seamless working relationships with the regions, specifically maintenance departments, and had developed systems that worked smoothly.

Headquarters/Region Coordinating Group

At some DOTs, a stormwater policy committee was established with representatives from different regions and focus areas (for instance, maintenance and operations, or ferry control) to help coordinate between headquarters and regions. This committee was consulted and involved in providing feedback/input on permit negotiations. Such groups can be a key resource in permit implementation.

DOT Program Education

Most DOTs spoke about the benefit of the state regulatory agency understanding how DOTs differed from municipalities, and additionally how the USEPA six MCMs could and should be varied to be more applicable in the DOT context. The following are examples of areas where DOTs successfully obtained permit requirements that were more responsive to DOT conditions:

Alternative approaches to Illicit Discharge Detection and Elimination: DOTs have the benefit of having controlled access to the ROW, which is very different from municipalities' (i.e., cities and counties) experience. The DOT also has the benefit of having field staff out on the highways regularly, so DOTs can train and utilize existing maintenance staff to recognize and report illicit discharges, rather than developing stand-alone illicit discharge detection and elimination teams to monitor and search out potential violations. NCDOT said they found that Michigan DOT was required to implement a separate program which was highly inefficient; with a $1 million investment, less than 20 potential violations were found. This information was instrumental in NCDOT being able to negotiate an alternate, more efficient approach for their agency (see Appendix C, NCDOT response to Question 2).

Stormwater design guidance and requirements: Orientation to the highway setting is preferable, under all permit types.

Monitoring: Monitoring is another area where DOTs benefit from customization (e.g., highway-oriented characterization and monitoring tailored to rest areas, maintenance facilities, and freight

terminals rather than residential and commercial land uses). DOTs may work hard to negotiate a monitoring structure that could provide a beneficial feedback loop for them as well as provide what the regulator needs.

Statewide/Programmatic Procedures

Multiple states reported that even without a statewide permit, "there were efficiencies with a statewide approach." For example, in Washington State, where the WSDOT individual permit covers the Phase 1/II and TMDL areas of the state, "a lot of WSDOT's procedures are applied statewide," including their Stormwater Design Manual (i.e., the Highway Runoff Manual), Hydraulics Manual, and Maintenance Manual. MDOT adheres strongly to a restricted, Phase I/II area approach, but still noted that "the DOT is applying standards to all of our construction projects at a higher level than required since 1997 under the State Stormwater Rules and an MOA the DOT has with the DEP."

Addressing Maximum Extent Practicable (MEP)

Issues with incorporating the MEP standard were addressed in both individual and general permitting approaches. For example, Mn/DOT's permitting negotiation discussions centered on two permitting options: 1) follow the USEPA six MCM approach, or 2) be more specific and prescriptive. Ultimately Mn/DOT decided on the USEPA 6 MCMs and how to comply with the MEP standard. WSDOT has invested in additional research in certain cases or application areas, to support an evidence-based definition of MEP (see Appendix C, WSDOT response to Question 6).

Importance of Good Relationships with Regulatory Agency

All states spoke about the importance of having cooperative relationships with their state regulatory agency. As one DOT said, "They (permitting authority staff) better understand the challenges faced by the DOT, and the DOT understands their challenges and constraints." Maine DOT said their good relationship with their DEP allowed them to "have candid one-on-one discussions and come up with practical solutions." Collaborative relationships were found to help generate benefits in the following areas:

Improved design guidance for the whole state: One state said they worked closely with the regulatory agency on refining and improving the Design Guidance, "which has benefited the whole state, not just the DOT."

Retrofit prioritization procedures that address multiple resources: WSDOT worked collaboratively with the Department of Ecology, NOAA Fisheries, and USFWS to develop retrofit prioritization procedures. This was significant, because under their previous prioritization procedures, "the agencies were putting more information into prioritization and scoring than they were into on the ground retrofits."

In North Carolina, the retrofit program looked at high ADT roads and sensitive waters across the states. They used the GIS (implicit) outfall analysis and receiving water classifications to select

potential sites for retrofits, including rest areas and interchanges near shellfish waters. Now NCDOT is prioritizing retrofit sites in TMDL areas.

Collaboration on TMDLs: NCDOT has helped to develop research databases that have lead to economies of scale with respect to statewide applicability. These databases have come into play most prominently with nutrient reduction TMDLs. NCDOT has leveraged the research and retrofit programs to provide a single set of data to characterize nutrient loading and pollutant removal data within the NCDOT system. NCDOT additionally has centralized management of TMDL requirements which has promoted consistency and effectiveness in the agency's responses to the TMDL program.

Use of GIS for Analysis

DOTs with both statewide programs and MS4 permits limited to Phase I/II municipalities found that GIS analyses, either for outfalls or of potential retrofit sites, were more efficient ways to conduct screening and eliminate the need to inventory and/or assess a much larger number of sites in the field.

Focused Research Programs

When a permitting authority sets triggers and thresholds for more stringent regulations, these are often based on best professional judgment. WSDOT has conducted research to help better inform and define where those thresholds should be set. Investing in research helped WSDOT and the permitting authority set evidence-based thresholds.

Adaptive Management

WSDOT has agreed to be more involved in the TMDL and water clean-up plan development process, with the aim of developing better/more appropriate strategies. "Part of what they are wrestling with now is legacy issues and that WSDOT was not involved in the manner it should have been. There is joint understanding that that needs to change."

Use of Prioritization to Help Guide Scheduling

ADOT commented that permits need a balance between specificity and flexibility. ADOT gave the example of infeasibility of scheduling and implementation of a particular provision and how ADOT was able to negotiate a more reasonable timeline and more flexible approach that included prioritization and implementation which recognized resource constraints.

3.2 Construction Permit Evaluation

This section summarizes the permitting methods and options for construction activities for Arizona, Delaware, Georgia, Minnesota, North Carolina, Texas, and Washington, and evaluates the efficiencies of the various construction-phase permitting options. The summary of state programs also takes into account the results from the construction permit interviews summarized in Appendix D.

3.2.1 Types of Construction Permits

A NPDES permit is required to discharge stormwater from any construction activity that disturbs greater than one acre of land, or from a construction activity that is part of a larger plan of development that disturbs greater than one acre. As presented in Section 2, the following categories summarize the variation in construction permitting across the states.

1. *Permitting by Project (regardless of DOT affiliation):* Each individual construction project applies under the State's CGP for site-specific permit coverage. Forty state DOTs fall under this category.
6. *DOT Blanket Coverage under General Permit:* DOT construction projects are covered under a State Construction General Permit, however, the state's authorization covers all DOT activities statewide or on a regional basis (i.e., DOT applies for and receives one General Permit authorization for all construction projects). Missouri is regulated under a state General Permit with this type of blanket coverage, whereas in Oregon, a Construction General Permit has been developed for each DOT Region.
7. *Individual Combined MS4 and Construction Permit:* DOT construction projects are covered under the combined MS4 and construction individual permit. There are three state DOTs regulated by a combined permit (California, Arizona, and North Carolina).
8. *DOT Delegated to Approve DOT Projects:* The DOT is a delegated agency for NPDES plan review and approvals for its own construction projects (Delaware and Hawaii).

3.2.2 Simplifications in Analysis

Since the majority of DOTs are required to apply for coverage under State CGPs, and have little to no voice in the requirements contained within those CGPs, it was determined that an in-depth analysis of permit requirements for state General Permits would not serve a useful purpose in evaluating permitting strategies. Most CGPs are based loosely on the Federal CGP, and all contain standard requirements, such as a Stormwater Pollution Prevention Plan (SWPPP), which is referenced as a variety of other names (such as an Erosion and Sediment Control (ESC) Plan), ESC site maps, inspection schedules, and BMP and stabilization guidelines. These requirements vary slightly on a state-by-state basis and have no impact on DOT permitting strategy; therefore, the focus of this analysis is on the differences in requirements for DOTs with individual permits (ADOT and NCDOT) versus those subject to their respective state CGP. This section will also discuss the difference in an infrastructure-specific CGP in the State of Georgia versus the traditional CGP, and will explore a model where the State DOT (Delaware) has been delegated as the permitting authority by the state regulatory agency. As Minnesota, Texas, and Washington all permit each project under their state's CGP, as explained above, detailed analysis of these state's construction permit requirements will not be performed.

Based on these considerations, interviews were conducted with three state DOTs: ADOT, NCDOT, and Delaware. The questions and responses from those interviews are provided in Appendix D.

3.2.3 Summary of Key CGP Features

Arizona (Combined MS4/Construction Permit)
Arizona is one of the three states currently covered under one permit that combines the MS4 and construction requirements (referred to herein as a "combined MS4/construction permit or combined permit"). Section 5.0 of the combined permit covers construction requirements for ADOT projects. While much of the language contained in Section 5 correlates directly with language found in the state CGP, there are some differences. It should be noted, however, that the combined permit for ADOT requires general contractors (those who meet the definition of "operator," with control over day-to-day operations) working on ADOT projects to submit a NOI for coverage under the state's CGP and conditions of both the CGP and the individual permit apply. The individual permit and exemption from NOI submittal under the state permit applies only to projects managed exclusively by ADOT construction personnel.

The following major requirements contained in the ADOT individual permit were compared to corresponding state CGP requirements. The major requirements of the ADOT permit are summarized in Appendix B, Table B-2. The differences between the two permits are also discussed in the following text and summarized in Table 3-2.

Construction Requirements (Permit Section 5.1)

The state CGP does not have specific monitoring protocols for "support activities" as described in ADOT permit Section 8.3; however, standard site discharge monitoring requirements are consistent. The CGP allows for small construction site erosivity waivers; these are expressly prohibited in the ADOT permit. All other requirements appear to be consistent with the CGP.

Site Stormwater Pollution Prevention Plans (SWPPPs) (Permit Section 5.2)

The majority of the requirements for the SWPPP site description and site map are equivalent between the state CGP and the ADOT permit. The ADOT permit requires that minor additional items be identified in the site description or on site maps, such as the latitude and longitude of the sites at discharge points, the identification of the Erosion Control Coordinator (ECC) for the project, anticipated slopes after grading activities, the location of anticipated concrete and asphalt batch plants, and the location of off-site material borrow and storage areas. The ADOT permit does not contain the CGP requirement that trees and boundaries of environmentally sensitive areas be delineated on site maps.

Erosion and Sediment Control BMPs

The state CGP contains additional minor BMP provisions that do not appear in the ADOT permit. These include installing perimeter controls around stockpiles and preserving natural vegetation to the greatest extent possible.

Non-Structural BMPs

The non-structural BMP requirements are similar between the state CGP and the ADOT combined MS4/construction permit.

Maintenance Procedures

The state CGP contains one additional provision; that all construction site entrance and egress points must be maintained to remove accumulated sediment as soon as practicable after discovery. This requirement is loosely covered by a requirement in the ADOT combined permit that requires removal of sediment that has accumulated off-site as the result of vehicle track-out or any other cause.

Post Construction BMPs

The state CGP does not require information regarding the long-term maintenance of post-construction controls. In addition, the CGP clearly states that new outfalls to impaired or unique waters are not permitted; whereas the ADOT permit allows outfalls, but requires monitoring.

Site Inspection Requirements

Inspection requirements are fundamentally the same between the state CGP and the ADOT permit; however, the CGP does not require an Erosion Control Coordinator (only requires a "qualified" individual) to perform the inspections. In addition, the record retention for ADOT is more onerous than the general public (five years beyond the expiration of the permit for ADOT vs. three years after following the Notice of Termination (NOT) for CGP permittees). The CGP also requires those permittees discharging to a unique or impaired water body to inspect after rain events, in addition to once every seven days. ADOT's individual permit does not require this additional level of inspection.

Operators under Contract with ADOT (Permit Section 5.3)

When ADOT contracts with an outside entity for construction activities and that party is defined as an "operator," that entity is required to file an NOI for coverage under the state CGP, and must meet all CGP requirements, as well as all requirements of the ADOT individual permit.

Additional Items

ADOT must submit a report to the state twice per year detailing all construction projects that have reached final stabilization and ADOT considers to be complete (in lieu of site Notices of Termination)

ADOT must, in its annual report (as required by the combined individual permit), identify any permit violations as they relate to the construction program, including any actions or penalties assessed to their contractors.

Table 3-2: Summary of Differences between ADOT Individual Permit and State Construction General Permit (SCGP)

Topic	ADOT Requirements not contained in SCGP	SCGP Requirements not contained in ADOT permit
Application	• No application required (unless subcontracted to General Contractor)	• NOI and associated fee, etc… must be submitted to state for coverage
Construction Requirements	• Monitoring required for all sites where runoff discharges to impaired or unique waters	• Small construction site erosivity waivers allowed
Background Site Information (on Site Map)	• The identification of the ESC coordinator for the project • Anticipated slopes after grading activities • The location of anticipated concrete and asphalt batch plants • The location of off-site material borrow and storage areas	• Delineation of trees and boundaries of environmentally sensitive areas on the site map
ESC BMPs	• None identified	• Perimeter controls around stockpiles • Preserving natural vegetation to maximum extent practical
Non-Structural BMPs	• None identified	• None identified
Maintenance	• None identified	• Entrance and egress points must be maintained to remove accumulated sediment (although loosely covered by other similar ADOT requirements)
Post-Construction BMPs	• Long term maintenance plan	• New outfalls to impaired or unique waters prohibited
Inspection and Recordkeeping	• Inspections must be performed by ECC Coordinator • Records must be kept for 5 years after permit expires	• Discharges to unique or impaired waters must be sampled every 7 days and after rainfall of 0.5 inches (ADOT permit doesn't require the inspection after 0.5 inch rainfall)
Termination	• ADOT must submit a report every 6 months detailing all sites at final stabilization	• Notice of Termination when site reaches final stabilization
Compliance Reporting	• ADOT must annually submit all construction compliance issues, and subsequent penalties or actions against Contractors	• None identified

Delaware (NPDES Delegated Program)

Delaware DOT (DelDOT) is unique in their approach to construction permitting. In 1991, DelDOT sought and received delegation through the Delaware Department of Natural Resources and Environmental Control (DNREC) to implement its own stormwater program, which would address both the state and federal stormwater requirements for all construction activities. In order

to qualify for delegation, DelDOT established a "Stormwater Engineer" position that has the role of controlling and overseeing all aspects of DelDOT's program to ensure compliance with Delaware Sediment and Stormwater Regulations. The Stormwater Engineer position manages the following NPDES activities for all DelDOT projects:

- Plan review and approval,
- Inspection during construction, and
- Maintenance inspection.

The Stormwater Engineer is responsible to ensure that all plans meet state standards, and completes and signs applications (NOIs) for projects that have been approved to DNREC. DNREC immediately issues a permit authorization for any project submitted by DelDOT.

DelDOT maintains this authorization for three year periods, after which DNREC reviews the program for adequacy and reissues authorization for an additional three years. DNREC performs a thorough audit of the DelDOT program, including auditing of plans, site inspections, and detailed interviews with the Stormwater Engineer. All construction projects are still required to meet the same standards as all construction projects within the state in regards to SWPPP and site requirements set forth in the Construction General Permit and the State's Sediment and Stormwater Regulations. DelDOT maintains control over permit document review schedule, thereby controlling the overall construction timeframe of projects. DelDOT sought this delegation specifically for the purpose of incorporating the state's environmental requirements in DelDOT's project plans, while still maintaining control over transportation goals, objectives, and timetables. There do not appear to be any negatives associated with this approach, in fact, it is likely the most administratively efficient for both the state and the DOT. However, the majority of state environmental regulatory agencies are not willing to delegate NPDES authority to the DOT.

Georgia (Infrastructure-Specific Construction General Permit)

Georgia is the only state that has an Infrastructure-Specific Construction General Permit (Oregon has a Public Agencies General Permit, but it is not solely for transportation projects). Infrastructure projects, as defined in the permit, are those that are for "the construction, installation, and maintenance of roadway projects and conduits, pipes, pipelines, substations, cables, wires, trenches, vaults, manholes, and similar or related structures or devices for the conveyance of natural gas (or other types of gas), liquid petroleum products, electricity, telecommunications (telephone, data, television, etc.), water or sewage." The permit is applied project by project and thus does not contain the administrative convenience of a "self-certifying" permit condition as exists in Delaware and North Carolina. In a direct comparison between Georgia's infrastructure-specific permit and its stand-alone construction permit, the only noticeable difference identified was related to sampling points on receiving waters where, under the infrastructure specific permit, sampling may not be required if a certified design professional

can provide the technical basis for certifying that the discharge will not alter existing water quality conditions.

North Carolina
NCDOT is technically authorized for construction discharges as part of their individual combined MS4/Construction permit; however, this permit doesn't provide any specific requirements for the DOT's construction program. Instead, it refers to the NCDOT's delegated ESC program, in a very similar fashion to the State of Delaware. The NCDOT individual permit requires that the NCDOT follow all regulations as set forth in the state CGP, as incorporated into the already delegated program. NCDOT has both the administrative benefits of ADOT, in that it does not need to file permit application or termination documents, and the delegated benefits of Delaware, in that they can review and approve their construction plans internally (all plans must be approved in North Carolina for permit issuance), allowing project schedule to be controlled by NCDOT.

3.2.4 Construction Permit Synthesis of Findings

The following is a synthesis of findings regarding permitting options and efficiencies associated with construction requirements

Permitting Options are Limited
Although on the surface it may appear that there are multitudes of ways that construction permitting is conducted by DOTs, after in-depth analysis it appears that the majority of DOTs are subject to the provisions of their respective state Construction General Permit, either directly, or through reference or inclusion in an individual permit. ADOT appears to have the most comprehensive individual permit, covering specific construction requirements and merging reporting requirements for construction activities into those for MS4 discharges; however, the majority of the construction requirements in the permit correlate to the Arizona General Permit and contractors working for ADOT are subject to the requirements of both permits, including application requirements of the CGP.

There appears to be no substantive difference in permitting requirements for the GADOT between the State Construction General Permit and the specific infrastructure-only permit, as they are essentially the same except for the designation of sampling points discussed above. For this reason, it does not appear that an infrastructure-specific permit, as portrayed here, results in any additional efficiencies to the GADOT.

Individual Permit can lead to Administrative Efficiency
Since it appears that individual permits present no more onerous technical requirements to a DOT, they then provide a net benefit in allowing reduced costs in permit application time and fees (by not requiring them), and requiring less organizational structure to manage the related compliance documentation (applications, authorization letters, etc.). The information collected as part of this project would indicate that some DOTs have achieved significant efficiencies in their

construction programs through an individual combined MS4/construction permit with requirements that mirrored the CGP, do not require project application or termination materials be submitted to the state, and do not require general contractors contracted with the DOT to apply for General Permit coverage

Flexibility of a Delegated Authority

A state-delegated program, as found in Delaware (and to an extent, North Carolina), allows the DOT flexibility in design and construction schedule that requiring a separate permit application for each specific project could hinder. It is important to note that the majority of the benefits to having NPDES delegation only apply to states in which the DOT must have construction ESC plans and/or SWPPPs reviewed and approved by regulators prior to obtaining permit coverage. A major obstacle to obtaining NPDES delegation as a preferred method is reluctance of states' environmental quality divisions or departments to delegate their NPDES authority, although legally allowed to do so.

4. COST CONSIDERATIONS

One objective of this report was to address the costs of alternative permit types and, more specifically, to evaluate the cost of those permits that are more DOT-specific versus the cost of permits that are not DOT-specific. However, there is a large diversity amongst DOTs in terms of size and other factors apart from permit type that can influence permit-related costs. This research also indicated that permit requirements as well as permit type can affect DOT permit compliance costs. Section 4.1 summarizes cost information obtained from the interviews and cost factors apart from permit type that can affect compliance costs. Section 4.2 summarizes how permit type could affect costs. Section 4.3 and Section 4.4 (and Appendix E) address the program effectiveness of different permit requirements in terms of ratio of relative benefits to relative costs. Section 4.5 discusses how areal coverage and special provisions associated with TMDLs or Endangered Species can affect costs.

4.1 Permit Cost Analysis and Review Findings

This section summarizes cost factors and cost information obtained from the interviews and other research.

4.1.1 Cost Factors

Quantifying the effect of the permit type (e.g., DOT-specific vs. non-DOT specific) on cost requires, for a diverse community of DOTs, consideration of major cost factors, including: the size of the DOT system permitted, specific permit requirements, litigation exposure, harsher climates, economies of scale, and level of funding. With respect to permitting requirements, mapping, monitoring, TMDL compliance, and retrofitting can add substantial costs. Also ecological issues can drive costs.

Another subtle factor that complicates interpretation of cost data is an unknown level of compliance. It is expected that some DOTs will implement their permit requirements more exactly and consistently than other DOTs. This may not be a deliberate avoidance of responsibility by some DOTs, because available funding can be the underlying cause of inconsistent implementation. In other cases, state law supports federal law and compliance programs have been longstanding. For example, some DOTs have implemented more robust programs for attaining consistent, good performance for erosion and sedimentation control. Cost limitations are an accepted reality and encourage prioritization schemes. DOT commitment to environmental stewardship and continuous improvement and responsiveness to what are essentially public priorities within the state are also possible cost factors.

Moreover, DOTs' organizational structure, which includes multiple departments, headquarters, and divisions, is not conducive to tracking all NPDES-related costs separately. The interviews of individual state DOTs indicated, in general, that DOTs do not account separately for the cost of complying with NPDES permit requirements or the costs of the program as a whole. This

reflects, in part, the fact that much of the labor associated with permit implementation is conducted by staff whose principal function is not NPDES permit implementation, and distinguishing time solely spent on NPDES compliance would be impractical. One exception to this is construction projects, where NPDES requirements for construction and post-construction controls are often documented either separately and as part of overall environmental compliance costs.

Due to the lack of comprehensive cost data, this report includes a qualitative cost examination using readily available cost factors.

4.1.2 System Size and Number of Employees

Quantifiable cost factors include DOT lane-miles, lane-miles covered by the permit, and the number of employees. Lane-miles is a good measure of the size of the current infrastructure. Demands for new facilities to increase service capacity or maintenance demands for a higher level of service for existing facilities are not reflected in lane-miles, so the number of employees is also presented as a surrogate for these factors. There are many other factors that could be used, but choosing between correlated factors may not be important since the objective is a qualitative cost analysis. Lane-miles and number of employees are presented in Table 4-1 and a comparison of lane-miles is shown in Figure 4-1.

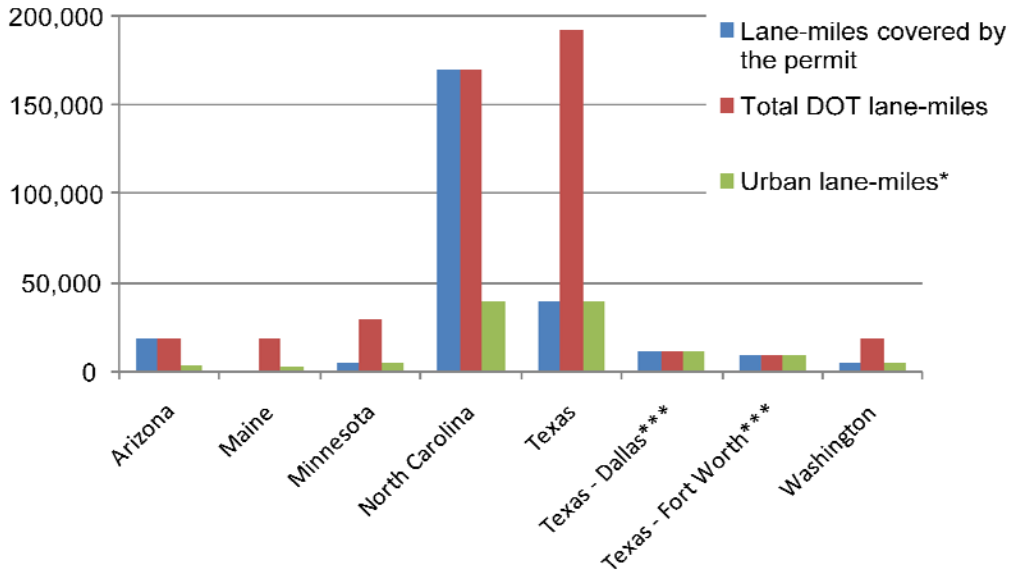
Table 4-1: Lane Miles and Total Employees of Selected DOTs

State	Lane-Miles Covered by the Permit	Total DOT Lane Miles*	Urban Lane-Miles*	Total Employees
Arizona	18,752	18,752	4,110	4,500
Maine	77**	18,111	2,354	2,000
Minnesota	4,425	29,180	4,425	5,000
North Carolina	169,612	169,612	39,782	12,000
Texas	39,710	192,345	39,710	15,000
Texas – Dallas ***	10,698	10,698	10,698	966
Texas – Fort Worth ***	8,713	8,713	8,713	630
Washington	5,236	18,392	5,236	7,200

*Urban and total lane-miles from FHWA were used except for Maine and the Texas Districts. MDOT data was provided via the interviews. Texas data obtained from the TxDOT website.

**MDOT reported road miles covered by the permit rather than lane miles. Even then, this number is also low because the Maine Turnpike Authority operates most highway facilities and the MDOT has Urban Compacts whereby 44 of the 77 road miles in municipal areas are maintained by the municipalities.

***Assumed that all lane-miles in these Texas districts were urban and thus covered under the permits.



*Urban lane-miles from FHWA were used except for Maine and the Texas Districts. Main was provided via interviews. Texas total miles was obtained from the TxDOT website.
** Maine reported miles covered by the permit rather than lane miles, even then, this number is also low because the Maine Turnpike Authority operates most highway facilities, and the DOT has urban contracts with municipalities for maintenance of DOT roads.
***Assumed that all lane-miles in these Texas districts were urban and thus covered under the permits.

Figure 4-1: Permit-Covered Lane-Miles, Total DOT Lane-Miles, and Urban Lane-Miles

4.1.3 Personnel Resources Dedicated to NPDES Permit Compliance

Another significant cost factor is the Full Time Equivalents (FTEs) responsible for permit compliance. The DOTs that participated in this study submitted FTE and consultant contract totals for management and oversight roles. The consultant costs were converted into FTEs using a conversion factor of $100,000 per FTE.

The resulting management, oversight, and general support FTEs generally follow the size of the DOT as previously reported, with some exceptions as noted below. ADOT reported one ADOT FTE staff person in charge of the program with a budget of $300,000 for consultant assistance. Assuming $100,000 per year for a full time consultant yields a total of 4 FTEs. This is a new statewide program. MDOT reported two FTEs with no consultant assistance, but their program is

restricted to 33 road miles.[2] Lane miles are unknown, but would still be quite low even assuming a large number of lanes. Minnesota reported 8 FTEs and no consultant help.

NCDOT reported 15 FTEs, which is consistent with the greater number of DOT lane-miles that fall under jurisdiction of their permit. Texas reported three FTEs; two for Dallas and one for Fort Worth. The number of FTEs in other districts was not reported. Consultants utilized by Texas accounts for 10 FTEs. Of those 10 FTEs, the Dallas district uses one contract-derived FTE (based on $102,000 in consultant contracts) and the Forth Worth district uses 3 FTEs (based on $300,000 in contracts).

WSDOT reports 14 FTEs, but they report that their consultant contracting is substantially changing, so FTEs from contracts could not be estimated. The number of WSDOT's FTEs seems high compared to the size of the DOT covered by the permit, but WSDOT is subject to a comprehensive permit that has extensive monitoring and ESA issues are likely an important cost driver in Washington. This makes comparison of FTEs among the DOTs difficult to interpret.

4.1.4 Construction Project-Related Stormwater Costs

Another measure of compliance cost is the impact of stormwater compliance on construction project delivery. MnDOT and WSDOT reported costs per project based on two and 14 case studies, respectively (WSDOT, 2009; Mn/DOT, 2009). Mn/DOT reported an average erosion control cost of 1 percent of total project costs and pond construction cost of 2 percent of total project costs. WSDOT averaged 7 percent for erosion control (included any temporary construction BMPs) and 4 percent for permanent stormwater treatment BMPs. NCDOT estimated that the cost for Erosion and Sedimentation Control are 7-8% of construction costs or approximately $52 million a year.

4.1.5 Costs Associated with Other Permitting Requirements

An influence on project cost that is very difficult to quantify is that regulators may negotiate a level of effort that exceeds what stormwater permits specifically require. For example, it is commonly reported that the water quality certifications needed to obtain a 401/404 permit are often held up if the regulator is uncomfortable with the normal approach to stormwater management as required by the permit and related management plans. Though cost to obtain the water quality certification would not be an NPDES stormwater permit compliance cost, it would be difficult to differentiate when costs are caused by such negotiations and when the costs are a natural outcome of permit conditions. This example suggests that stormwater policies established by DOTs should address related regulatory requirements, such as the need for 401 Certifications.

[2] According to the Maine interviewee, the total road miles subject to the Permit is 77. Urban Compacts with local municipalities assign those municipalities the responsibility of maintenance within their jurisdictions, The Urban Compacts cover approximately 44 road miles, leaving 33 road miles that the DOT maintains. The DOT is responsible for capital improvements and construction on all 77 road miles.

4.2 Costs Associated with Permit Type

Cost differences between permit programs must be analyzed carefully. Correlation does not necessarily signify cause and effect. For example, states such as North Carolina and Washington report a relatively high level of effort and have individual permits, but as indicated in Table 4-1, this likely stems from permit requirements, and not necessarily the permit scenario.

The question is then whether the permit type has an effect on the permit requirements. Since permit requirements drive cost, the permit type may be only one of several factors driving the permit requirements. (For example, one might expect that the maturity of the state's regulatory and DOT stormwater program would be an important factor affecting permit requirements.) The type of permit, however, may affect how efficiently the DOT negotiates, plans, and implements the requirements in the permit. The survey feedback indicates that subtle factors, such as available scientific knowledge, public awareness, likelihood of litigation, receiving water sensitivity, and presence of multiple regulated aquatic resources, can have a profound impact on construction project costs. This hypothesis is supported by comparing the project cost differential between Western and Eastern Washington, where the upper range of stormwater mitigation costs in the coastal side of the state are almost double that of projects on the inland side (WSDOT, 2009). In this case, the coastal side of Washington has more intense ESA influences than the inland side of the state. Other differences within the state may also be influencing these differences, but the permit applies equally across the state. Another supporting observation is that the lower range of project costs throughout Washington (<4%) is still greater than the two cases studies in Minnesota (around 3%). Similar arguments can be made that Washington costs are greater due to differences in drivers such as ESA rather than because Washington has an individual permit and Minnesota has a general Phase II permit.

The research team had extensive conversations on how to normalize costs and explored a number of different potential approaches; however normalizing costs in this analysis did not seem practical given the limited and somewhat disparate cost information.

4.3 Cost/Benefit of Permit Elements

This section provides a qualitative cost/benefit assessment of individual permit requirements. Assessing permit requirements assumes that there is flexibility in prioritizing funding based on effectiveness, so permit 'requirements' are herein referred to as 'elements' of a permit.

Cost/benefit assessment of the stormwater program is important because the permits' compliance standards can be somewhat vague concerning how much effort is required. The standards in Phase I MS4 permits specify discharge prohibitions as well as receiving water limitations. The discharge prohibitions only allow discharge of waste that has been reduced to the Maximum Extent Practicable (MEP). Some permits stipulate that if receiving water limitations (or objectives) are not met, then BMP implementation must be further enhanced (the so called

'iterative" approach). This is ultimately a difficult goal and the level of attainment will be limited by a number of factors, including funding.

The goal of stormwater management is then twofold:

1. Maximize the use of BMPs to reduce pollutant discharge (technology-based approach), and
2. Maximize attainment of receiving water objectives, where impairments exist (water quality-based approach).

These two standards, though perhaps of co-equal importance in the permits, are not always complementary. This potential conflict is inherent in the Clean Water Act requirements. For example, the MEP response would focus on areas where pollutant generation is high and the cost per unit of pollutant load reduction is lower, regardless of receiving water quality. Focusing on addressing receiving water impairment, however, would maximize the restoration of impaired waterbodies with the available funding. Both are cost/benefit approaches, but the stormwater management plan for each is not necessarily the same. Ideally, a permit would have the flexibility to allow a DOT to address both without being in non-compliance. Exposure to legal liabilities as TMDL waste load allocations are integrated into NPDES permits may, however, shift DOTs' emphasis towards TMDL implementation and receiving water outcomes.

Absolute cost estimates were not available for individual permit elements for more than just a few DOTs (AzDOT 2009; WSDOT, 2008a). Consequently, evaluation of relative costs and benefits of permit elements was based on the experience and professional judgment of the project team. Table 4-2 provides a preliminary Program Effectiveness Assessment (PEA) for common program elements and activities within those elements. The assessment consists of ranking benefits and costs relative to the overall program using a high, medium, and low scale.. The rightmost column provides an estimate of benefit/cost (B/C); a B/C score of **H** means that the benefits are high relative to the costs (compared to other program elements). Table 4-2 is intended to provide general guidance subject to the assumptions and limitations indicated in the relative cost and benefits columns[3].

Considering the six MCMs, Table 4-2 indicates that Public Involvement and Participation can be effective (High B/C score) if it results in leveraging volunteers (e.g., through an Adopt-A-Highway trash removal program). In contrast, Public Education and Outreach is considered to have a low B/C score because changing behavior of users of DOT systems is challenging, and whereas MS4 Programs are incentivized to conduct Public Education and Outreach to garner public support, DOTs do not derive funding directly from taxpayers and thus do not benefit

[3] DOTs may wish to implement a more detailed analysis of their program based on a Program Effectiveness Assessment (PEA). PEA methods are available and refinement of these methods is an ongoing endeavor (EPA, 2010; CASQA, 2007).

much from this MCM. For the Illicit Discharge Detection and Elimination MCM, a distinction is made between mapping and field inspection, which has a low B/C score, compared to spill prevention and control which is considered to have a high B/C score. Construction stormwater management is given a high B/C score because it is true source control and has a clear nexus with receiving water quality. The New Development and Significant Redevelopment MCM is given a medium B/C score in part because of difficulties in selecting, designing, and constructing BMPs in the highway environment that are effective in addressing the pollutants of concern. Good Housekeeping BMPs are also given a medium B/C score because, although the benefits may be high, BMPS for transportation systems may be widely spread out along the transportation corridor thereby requiring extensive labor resources to conduct inspection and maintenance. The score could be higher for BMPs that are less maintenance intensive (e.g., BMPs that rely on vegetation once established).

Other program activities are also evaluated in Table 4-2. For example, the B/C score for monitoring depends on the type of monitoring. Monitoring for the purpose of characterization, trends analysis, or compliance is considered to have to a low B/C score because the cost of monitoring tends to be high, especially in the highway environment, and data may not lead to unqualified conclusions that can easily be implemented. In addition, much data has been collected on the quality of transportation runoff, thus additional land use-based monitoring to generally characterize highway runoff is not warranted. Focused and limited monitoring to evaluate BMP performance or to address a specific research question that will be used to make better management decisions are considered to have a higher B/C score.

Another set of program activities evaluated in Table 4-2 relate to BMPs. BMP retrofit programs are considered to have a medium B/C score given that the cost of retrofitting in the highway environment is high and typically the retrofit BMP is only addressing a relatively small segment of the highway. A higher score may be appropriate where runoff from limited highway segments is entering a particularly sensitive receiving water. Focused BMP pilot studies can provide practical information on appropriateness of BMPs in different circumstances and are considered to have a high B/C score.

4.4 Cost/Benefit of Permit Types

The cost/benefit advantages among permit types depend on the regulatory, environmental, financial, and geographic context of the DOT. The overall magnitude of stormwater compliance costs, however, is more likely defined by the financial condition of the DOT (and the state). Since the magnitude of cost is more or less set, regardless of the permit type, permit type is selected based on how efficient the permit will be given the level of funding. This argument assumes that cost is a component of MEP, which is the performance standard for stormwater permits[4]. Efficiency has been presented in terms of environmental benefits (Table 4-2).

[4] The federal Clean Water Act provides that NPDES permits for Municipal Separate Storm Sewer Systems (MS4s) must require municipalities to reduce pollutants in their storm water discharges to the Maximum Extent Practicable

Environmental benefits, in turn, also have associated public relations benefits and legal benefits. Legal benefits ultimately can result in fewer costs to the DOT. So assuming that the setting of the DOT largely dictates costs, the permit type that affords the greatest flexibility within that setting is then the one that should be pursued.

Permits with prescriptive requirements must be negotiated to exclude elements that are inefficient for the DOT. These requirements are shown in Table 4-2. An alternative for some of these elements is for the DOT to partially fund the local MS4 program relative to its footprint within the MS4 or some other measure of relative responsibility. This could work particularly well with Public Education and Outreach, Public Participation and Involvement, Receiving Water Monitoring, and Trend Monitoring.

4.5 MEP, TMDLs, and Statewide Coverage

4.5.1 Statewide Permit Coverage

If a state has autonomous regulatory regions, a statewide permit may be much more valuable because statewide analysis and prioritization may be less likely to be thwarted by local pressure. TMDLs, however, stand to undermine this optimization because the implementation requirements are typically incorporated into NPDES permits, sometimes as numeric effluent limitations. It is easy to imagine that TMDL implementation requirements for many DOTs will surpass the available funding. In anticipation of this, the best defense is for a DOT to proactively participate in the development of the TMDL and implementation plans so that they include scientifically defensible prioritization schemes (although regulations do not allow prioritization amongst competing TMDLs). They can be optimized on maximizing load reduction, which focuses on the most polluted and degraded waterbodies, or they can be optimized on maximizing the number of waterbodies restored, which focuses on the lesser polluted and degraded

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(MEP). (CWA §402(p)(3)(B).) MS4 permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods." (Id.)

The MEP standard involves applying BMPs that are effective in reducing the discharge of pollutants in storm water runoff. In discussing the MEP standard, the California State Water Resources Control Board has said the following: "There must be a serious attempt to comply, and practical solutions may not be lightly rejected. If, from the list of BMPs, a permittee chooses only a few of the least expensive methods, it is likely that MEP has not been met. On the other hand, if a permittee employs all applicable BMPs except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit to be derived, it would have met the standard. MEP requires permittees to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive." MEP is the result of the cumulative effect of implementing, continuously evaluating, and making corresponding changes to a variety of technically and economically feasible BMPs that ensures the most appropriate controls are implemented in the most effective manner. This process of implementing, evaluating, revising, or adding new BMPs is commonly referred to as the iterative approach.
(Source: Hhttp://www.waterboards.ca.gov/water_issues/programs/stormwater/smallms4faq.shtmlH)

waterbodies where a smaller investment is sufficient to meet TMDL expectations. Different TMDL waterbodies also will provide a range of habitat value. Some waterbodies support important sport and commercial fisheries, but they tend to be away from population centers where citizens would like to see local waterbodies restored for other beneficial uses. A statewide permit should allow some flexibility to cope with these issues as deemed most appropriate by the DOT.

A statewide permit that covers non-MS4 areas does have a marked downside, especially within TMDL watersheds. Non-compliance with an NPDES permit is actionable by a 3rd party lawsuit, so regardless of the status of the working relationship with state or federal regulators, non-compliance issues could result in inefficient court proceedings, settlement, and orders. This is less troublesome under the MEP standard, which requires continual evaluation and enhancement of BMPs. TMDL requirements have more definitive deadlines and outcomes, which increases exposure of the DOT to legal action. Extending the permit boundary to non-urban areas increases legal liability for those areas with TMDLs or future TMDLs (i.e., 303(d) listed waterbodies).

4.5.2 MEP and TMDLs

To allow for 'permitting flexibility' in the Phase II rule, USEPA purposely left MEP without a precise definition (USEPA, 1999, Section H(3)(a)(iii)), after they defined the six minimum measures as MEP for Phase II (Section H(3)(a)(i)). This would seem to limit the exposure of DOTs that co-permit with Phase II permittees. This flexibility, however, still allows regulators to add additional requirements to the Phase II permits. So in environmentally sensitive areas, this may be less advantageous and more complicating.

TMDLs may be the equalizer between the Phase I and Phase II programs. TMDLs supplant the MEP requirement and push both Phase I and Phase II programs toward receiving water outcomes. If this seems likely for a DOT (i.e., the DOT or 'transportation' or 'highway runoff,' is named in many 303(d) listings), then the benefits of being a Phase II co-permittee are further diminished.

Table 4-2: Program Categories, Elements, and Selected Activities and Their Associated Cost and Environmental Benefits

Program Category	Program Elements	Example Activities	Costs of a Typical Effort* (relative to overall program $$)	Environmental Benefits (relative to overall program benefits)**	B/C ***
Planning	Management Planning	Storm Water Management Plan development and approval, technical guidance manuals	**L** The staff time required may seem quite substantial and consultant support is often required because of the temporary, yet intense, nature of the work. Review and approval by regulatory agencies can be time consuming and resource intensive. Yet, compared to the other elements, planning costs are usually lower.	**H** Guidance manuals and policy documents obviously have a profound impact on compliance, so the investment in discovering cost-effective practices (see research) and negotiating (internally and externally) for adoption of those practices is highly beneficial. These documents define the level of effort of all program elements and, permit-allowing, prioritizes funding among these elements based on cost-effectiveness. Prioritizing by cost-effectiveness will result in higher environmental benefit for a given stormwater budget.	**H+**
	Program Assessment and Evaluation	Program Effectiveness Assessment (PEA) *(also see Research Planning below)*	**L** The cost of PEA is relatively small, assuming all the information has been collected. It is the methods by which effectiveness is measured and PEA serves as the basis for cost benefit assessment among program elements (EPA, 2010; CASQA, 2007).	**H** Where permit conditions allow funding flexibility, PEA is critical in determining the cost benefit of and prioritizing program elements. See above discussion.	**H+**

Program Category	Program Elements	Example Activities	Costs of a Typical Effort* (relative to overall program $$)	Environmental Benefits (relative to overall program benefits)**	B/C ***
6 Minimum Mgmt Measures	Public Involvement and Participation	Public awareness outreach, public education website, Adopt-a-Highway program	**L** Public involvement and participation is a fairly low-cost program that really leverages volunteers. The return on investment is attractive, especially for well-designed, labor-intensive programs like Adopt-a-Highway. For example, the North Carolina Adopt-A-Highway program for 2009 cost $396,173, but the estimated equivalent value obtained from volunteers was $6,400,000 (North Carolina, 2009). This benefit is measured in terms of labor costs rather than environmental benefit, but it still demonstrates a high return on the investment--even if only a portion of the diverted litter would have affected receiving waters.	**M** While these programs can have a pronounced effect for MS4s who tend to organize cleanup efforts in the actual receiving water, the public involvement conducted by a typical DOT program has a more aesthetic impact, unless litter has been identified as a source of impairment. Highway litter reduction is often the main objective of DOT public awareness programs as litter can increase the costs of storm drain maintenance and is one of the sources of litter in receiving waters.	**H**
	Public (and Employee) Education and Outreach	Media programs, litter campaigns, employee training and certification programs	**L** Public education costs can range tremendously, depending on the medium used and desired exposure. Still, compared to other programs, the cost of a modest program is likely lower relative to other program elements. Public education is often critical groundwork by which MS4s get water quality funding approved by voters. This cost benefit is lost on a DOT, whose funding is not dependent on ratepayer approval or taxpayer vote.	**L** Direct environmental benefits rely on substantial behavior change that results in environmental benefit. This is difficult to establish (Caltrans, 2003a). Absent of evidence of significant impact, the benefit for DOTs is assumed to be low.	**L**

Program Category	Program Elements	Example Activities	Costs of a Typical Effort* (relative to overall program $$)	Environmental Benefits (relative to overall program benefits)**	B/C ***
	Illicit Discharge Detection and Elimination	Mapping	**H** The cost to map outfalls and drainage areas and document illicit connections is substantial because it is labor intensive. For safety in the highway environment, two-person crews are recommended, which doubles the cost of equivalent mapping in the MS4. However, mapping is primarily a one-time expense.	**L** The environmental benefit of mapping itself is low. It is, however, very helpful for BMP planning. The more TMDLs facing a DOT, the more valuable this element will be. To be more effective, mapping should be considered and prioritized based on need, rather than as a baseline characterization effort.	**L**
		Inspection, documentation, reporting, spill prevention and control planning	**L** Spill response and response to citizen complaints would likely exist outside of the NPDES program due to public health and motorist safety issues. Even so, the cost relative to other elements seems low, but the project team does not have much experience with this element.	**H** As a source control activity, spill response and eliminated illicit discharges have a high benefit because of the ongoing negative impact these pollutant sources can have on receiving water. These discharges often occur during dry weather when there is no dilution effect, except in the receiving water.	**H+**
	Construction	ESC program and guidance, design standards, SWPPP development, BMP design, construction, inspection, monitoring, reporting	**L** programmatic, **H** project. The project related activities are often performed by the project contractor, so these costs primarily impact project budgets, rather than the typical NPDES program budgets of environmental offices. Since inspectors (whether DOT or contracted) are often covered by federally appropriated project funds, the cost to the DOT is low, assuming that the DOT receives separate allocations for the stormwater program elements that are not covered by project cost. For permanent stabilization, this element is effective in reducing loads (and maintenance) to treatment BMPs and it also preserves the structure integrity of the highway, both of which reduce long-term maintenance costs.	**H** Whether for construction sites or permanent stabilization, ESC is source control. This element is highly effective in reducing the impact of sediments on receiving waters. Permanent stabilization has a secondary environmental benefit. It keeps downstream treatment BMPs working efficiently; otherwise, vegetation and filter media will be inundated and blinded by high sediment loads. Keeping treatment BMP systems working optimally helps maintain the reduction of other pollutants that are generated on the roadway, such as metals.	**H+**

Program Category	Program Elements	Example Activities	Costs of a Typical Effort* (relative to overall program $$)	Environmental Benefits (relative to overall program benefits)**	B/C ***
	New and Significant Re-development	BMP design and construction	**L** programmatic, **H** project. The cost of this element is similar to the ESC element in that it is a high cost, but it is often incorporated into project cost so it does not impact the ability of the DOT to fund other program elements. Even the design of BMPs is often covered by the design costs allocated to the project. The key to keeping the costs within budget is a well-defined BMP selection and design process that reduces or eliminates project-by-project negotiations over BMPs.	**M**. Treatment BMPs can only accomplish so much environmental benefit because of limitations in treatment and because they are often applied without a specific receiving water objective. This element will score higher if it incorporates specific environmental goals, such as addressing 303(d)-listed waterbodies to restore beneficial uses.	**M**

Program Category	Program Elements	Example Activities	Costs of a Typical Effort* (relative to overall program $$)	Environmental Benefits (relative to overall program benefits)**	B/C ***
		BMP inspection, maintenance, vegetation management	**H**, with exception. Maintaining BMPs strung out over great distances throughout the DOT system has many inefficiencies that are not realized by typical MS4 installations. First, the BMPs are small because it is rare that drainage areas can be combined to total much more than 10 acres per BMP (Caltrans, 2004). This results in many small BMPs rather than fewer, larger BMPs. With each BMP there are baseline costs of mobilization and equipment setup and take down, so more BMPs per treated area increases the cost of maintaining DOT treatment BMPs. Second, safety near high-speed traffic also adds to costs within the highway environment, whether by using traffic control or an additional crew person as a 'spotter.' The exceptions are BMPs with treatment attributes that are sustainable with little maintenance. Examples include the systems that use vegetation to treat sheet flow. The vegetation maintains long-term infiltration and evapotranspiration benefits. Sheet flow keeps sediment loading low enough that vegetation can incorporate the sediment without diminishing infiltration. For design examples, see Dispersion BMPs and Biofiltration BMPs within Section 5 of the WsDOT BMP manual (WsDOT 2008b); also see Chapter 2 of NCHRP Report 565 (2006) for a discussion of removal mechanisms.	**H** The benefit of maintained systems is clear. Pollutant reduction is maintained. The greater the BMP depends on maintenance, the greater the environmental benefit to keeping the BMP in optimal condition. However, it should be a DOT goal to install effective BMPs that are less dependent on maintenance. These systems, as described in the previous column, would actually score low for the environmental benefit gained ***by maintenance***. That is not to say that the BMPs themselves are not highly beneficial. Consequently, the cost/benefit is greatly dependent on the type of treatment BMP being deployed by DOTs.	**M**

Program Category	Program Elements	Example Activities	Costs of a Typical Effort* (relative to overall program $$)	Environmental Benefits (relative to overall program benefits)**	B/C ***
	Pollution Prevention and Good Housekeeping (Maintenance Activities and Facilities)	Operation and maintenance procedures, road sweeping, drain inlet cleaning, facility inspections, SWPPP development (industrial)	**L** and **H**. This element varies tremendously with the level of effort and the desired outcome. For example, the primary objective of many road sweeping programs is to reduce debris for motorist safety. This can be accomplished with broom sweepers at a fairly high speed (say 10 mph), but the water quality benefit is questionable even at much lower speeds. Similar arguments can be made regarding the level of effort for drain cleaning.	**L** Cleaning operations have an uncertain impact, so they are ranked as low relative to the other program elements (Caltrans, 2003c).	**L**
		Pesticide and fertilizer management, salt/sand abrasives management	**L** Pesticide management and good snow/ice management practices can be less costly due to the tradeoff between less chemical use and an increase in maintenance requirements.	**H** Chemical use reduction programs can have a high benefit. These are true source control efforts.	**H**
Other Measures	TMDL Implementation	Planning, monitoring, design, construction, maintenance	**L** to **H**. The cost in responding to TMDL requirements ranges from low to very high. Some TMDLs only formalize the existing BMP effort of the DOT. Others require stand-alone retrofit of treatment BMPs and these are addressed in the following element.	**H** The benefit of BMP implementation is high, assuming that the DOT is named in the TMDL and named with scientific justification. The monitoring component, however, must be thoughtfully constructed to answer meaningful management questions or else it will have no value (see monitoring and research).	**M to H**

Program Category	Program Elements	Example Activities	Costs of a Typical Effort* (relative to overall program $$)	Environmental Benefits (relative to overall program benefits)**	B/C ***
	BMP Retrofit Requirements	Design, construction, and maintenance of treatment BMPs	**H++** to **L**. Stand-alone retrofit requirements can be very costly endeavors. Unlike the project-integrated construction of treatment BMPs, these costs tend to compete directly with the other program elements because their cost is not covered by the funding for a larger rehabilitation or expansion project. A single treatment BMP in a stand-alone retrofit can range in cost from $100,000 to $50,000 for modest drainage areas of less than 10 acres (Caltrans, 2004). Cost can be even higher in locations where the available space for BMPs requires extensive conveyance to the drainage areas that require retrofit (these locations were avoided in the Caltrans study). Arbitrary retrofit requirements can astronomically escalate the cost of these programs. WsDOT also appears to have a retrofit program which allows preference to sites based on the ease of retrofitting the BMP. Even more important, the WsDOT program seems to have a funding cap that actually makes their retrofit program a medium- to low-cost program compared to their other elements (WsDOT, 2008a).	**H**. The benefit of these retrofits are high, providing that they are designed to address specific pollutants that are discharged from the DOT at levels frequently and substantially above water quality objectives. Flow controls to address hydro-modification can provide an even higher benefit to receiving water ecology. However, without these conditions, the benefit of these retrofits is questionable.	**M**
	Monitoring and Research	Monitoring guidance, QAQC requirements, field and laboratory sampling SOPs	**L** These appear to be expensive documents to develop, but the cost is low relative to other program elements.	**L** Protocols themselves have little environmental benefit, but they are critical to the success of monitoring and research. The existing body of work, however, is ever expanding so the need for guidance specific to each DOT is not as critical. These issues are better addressed at a national level through research cooperatives.	**M**

Program Category	Program Elements	Example Activities	Costs of a Typical Effort* (relative to overall program $$)	Environmental Benefits (relative to overall program benefits)**	B/C ***
		BMP pilot studies,	**L** Compared to implementation of any other program element, a modest research budget is usually relatively low. In some cases, the pilot test may not require a comprehensive water quality evaluation, which is expensive (see monitoring below). Because some engineering basis of performance is available based on unit operations and processes (see NCHRP Report 565), these evaluations can focus on issues unique to the DOT environment: safety, access, maintenance, and cost in the space-constrained DOT environment within close proximity to high-speed traffic. However, when reacting to legal settlements or court decrees, research can become dictated and inefficient. In this case, research may not be a low-cost activity.	**H** Focused, outcome-based, problem-solving research is extremely valuable. It has been said, facetiously, that research is cheaper than implementation. While not an appropriate strategy to delay implementation of proven practices, applied research discovers both failures and successes. Even studies that identify inefficient practices are just as valuable as research that discovers the good. The failure of a pilot trial of any type of BMP is far less costly than widespread implementation of BMPs that are not cost-effective in the DOT environment.	**H**

Program Category	Program Elements	Example Activities	Costs of a Typical Effort* (relative to overall program $$)	Environmental Benefits (relative to overall program benefits)**	B/C ***
		Research planning	**M** A comprehensive characterization program can be quite expensive. Monitoring and reporting cost for less than 10 storms a year at one location can cost around $200,000. To account for annual, seasonal, and spatial differences, many locations may be needed over many years. A statewide monitoring effort could result in costs on a scale similar to other program elements.	**L** immediately, with **H** potential. Monitoring can often be a hit or miss endeavor. An over-simplified test of benefit of monitoring is to ask what will be done with the data. What if concentrations are high? Low? And how is high and low defined? If these questions cannot be definitively answered before the study is initiated, the study may not result in any environmental benefit. General characterization monitoring, trend monitoring, and receiving water monitoring are often components of a municipal monitoring program, but these can be over-emphasized within a DOT (discussed below). Beneficial monitoring, on the other hand, will answer specific questions: identifying high-priority pollutants and, conversely, identifying pollutants that do not justify substantial investments. Since the DOT crosses so many waterbodies, research planning is critical to prioritize among an endless supply of monitoring opportunities. The environmental benefit will only be realized if the study findings are used to prioritize funding. If there will be no change in practices across the state, then monitoring has no benefit.	**M**
		Characterization monitoring	**H** The cost of monitoring can easily exceed a million dollars each year.	**L** A substantial dataset is available on highway runoff (Caltrans, 2003b; Pitt et al., 2004). Overall characterization would not result in environmental improvement. More focused monitoring efforts are discussed below.	**L**

Program Category	Program Elements	Example Activities	Costs of a Typical Effort* (relative to overall program $$)	Environmental Benefits (relative to overall program benefits)**	B/C ***
		Receiving water monitoring	**H** The cost to characterize receiving waters, given the diurnal, seasonal, and storm-based variability, can be high. DOTs cross many receiving waters and prioritization can be difficult. Autonomous regulatory regions throughout the state can make statewide prioritization more difficult.	**L** Understanding receiving water conditions has environmental value if the data could be and is used to support BMP decisions. Receiving water monitoring often looks for trends (see next discussion) based on changes in watershed dominated by stormwater. The more stormwater dominates the receiving water, the more likely that the effect of stormwater management can be measured. This is usually impossible for DOTs to detect because they have such a small footprint within any given watershed. Hence, the environmental benefit is tenuous, at best. Even if DOT impact was easier to measure, DOTs simply have too many waterbodies in question to perform this type of analysis. To prioritize among all waterbodies, the analysis would need to consider all waterbodies. This impracticality makes the environmental value very low. The exception may be data needed to refute poorly developed regulations (see strategic monitoring below).	**L**

Program Category	Program Elements	Example Activities	Costs of a Typical Effort* (relative to overall program $$)	Environmental Benefits (relative to overall program benefits)**	B/C ***
		'Trend' monitoring	**L** Trend monitoring, properly designed, can be performed with fairly few samples each year. However, the expected change or sensitivity of the analysis is not very large so this is more likely to show the more substantial effects of BMPs like source reductions. In these cases the monitoring is actually a BMP assessment rather than trend monitoring. If detection of small changes over time is desired, trend monitoring can become very expensive.	**L** The value of trend monitoring for detection of changes over time has no direct environmental benefit. Even as a management tool, it is difficult to imagine a scenario where quantifying the trend would lead to the implementation of BMPs that would result in any more benefit than would be realized under typical BMP deployment. This is because gradual trends are often the result of factors that are uncontrollable for the DOT, such as air quality changes, land use changes, urban growth, etc. While these are legitimate concerns, they do not fall within the realm of DOT influence or responsibility.	**L**

Program Category	Program Elements	Example Activities	Costs of a Typical Effort* (relative to overall program $$)	Environmental Benefits (relative to overall program benefits)**	B/C ***
		Strategic monitoring: identify factors causing elevated pollutant loads, TMDL preparation, TMDL response	H. An individual study in a particular watershed may not be very costly, but the cost quickly escalates with a growing number of TMDLs.	**L** immediately, with **H** potential. Identification of factors that contribute to higher pollutant loads is only of environmental benefit if it is used to focus stand-alone retrofit programs or other BMP efforts that would respond to known and solvable water quality problems. Responding to a 303-d listing (in anticipation of a TMDL) answers a very specific question on load generation that may have a very high environmental benefit by identifying how the DOT can prioritize between important and less important pollutants and watersheds. Collecting data to refute a poorly developed TMDL can also allow prioritization of more beneficial TMDLs. However, since monitoring is expensive and the list of pollutants is ever growing, strategic planning is necessary to triage upcoming pollutants to avoid launching field investigations for constituents that are not likely to be problematic.	**H**

Note: For scoring cost and environmental benefit, this table uses **H**, **M**, and **L** to represent high, medium, and low, respectively.

*It is recognized that each element could range in cost according to the intensity of the implementation, so cost was qualitatively estimated assuming a statewide level of effort that the authors felt would be required to accomplish some measurable benefit.

** The benefits assume that all other dischargers have a similar level of effort, because without this, the benefit of cleaner DOT discharges will be overwhelmed by other discharges. This assumption is particularly questionable in areas with unregulated discharges.

*** Cost/benefit is estimated as benefits divided by costs (**B/C**) so the high scores are better than low scores. This is consistent with the use of cost/benefit in the report.

5. ALTERNATIVE PERMIT STRATEGIES

This section discusses three alternative permitting strategies.

5.1 Permit Types and Focus

Recommended strategies ideally must accommodate the broad diversity of state DOTs and permit types nationwide (see Table A-1). Not surprisingly, individual permits tend to be more DOT-specific. In all of the selected states with DOT-specific individual permits, the permitting authority and the DOT saw multiple advantages and mutually agreed to develop an individual permit. The primary factor in opting for this approach is that transportation entities and infrastructure are different than municipal entities and infrastructure. Note that a few general permits are also DOT-specific. For example, MDOT and MTA are covered by a general permit that adapted the six minimum control measures for the DOT. Also, some requirements, such as for construction, are covered under a long standing MOU between the MDOT and regulatory agency, so some DOT-specificity was incorporated via the MOU.

General permits that are written primarily for municipal agencies were found to be acceptable to certain DOTs. For example, the Mn/DOT interviewee appreciated the lack of specificity that allowed him to negotiate how the DOT would comply, although he is worried about having a more prescriptive permit in the future. Some DOTs also indicated that the development of DOT-specific guidance was another means of providing desired specificity within the general permit context.

5.2 Goal and Definition of Alternative Strategies

The goal of this research is to develop alternative strategies to assist the diverse community of DOTs in negotiating stormwater NPDES permitting and providing guidance in negotiating permit conditions that are more aligned with the physical, operational, and institutional goals and missions of DOTs. The goal recognizes that the DOT community is diverse, and, moreover, the choice of permitting type is primarily the responsibility of the regulatory agency, which may or may not be motivated to consider changing permit type and conditions.

Thus the following three alternative strategies are discussed below:

- Strategy 1: Moving from General to Individual Permit
- Strategy 2: Working within General Permit
- Strategy3: Pursing Nationwide TS4 Permit

Strategy 1 applies to those DOTs that wish to move from coverage under a general MS4 permit that is not DOT-specific to an individual permit that is DOT-specific. This strategy may be more applicable to DOTs that operate a large and complex transportation system; have an organizational structure characterized by a strong central headquarters with a high level of

technical and management expertise; and a mature regulatory climate where the regulatory agency has the interest, expertise, and resources to work with the DOT in tailoring an individual permit.

Strategy 2 applies to those DOTs that currently have a general permit and want to continue to be regulated under a general permit, but would like to negotiate more DOT-specific implementation requirements. This strategy may be more applicable to smaller DOTs with a flatter organizational structure, where the districts tend to be more autonomous, and where the regulatory agency has limited resources or interest in developing a DOT-specific individual permit.

Strategy 3 is an strategy whereby a nationwide model Transportation Separate Stormwater Sewer System (TS4) Permit would be developed by the US Environmental Protection Agency (EPA) which would focus permit requirements specifically to transportation systems.

The following describes the factors that a DOT may wish to consider in choosing a strategy and some recommended steps to implement the strategy.

5.3 Strategy 1: Moving from General to Individual Permit

5.3.1 Consideration Related to Pursuing Strategy 1

The following section discusses the benefits that could be derived by moving from a general (non-DOT specific) permit to a DOT-specific individual permit.

Combined MS4/DOT Permits with Common Requirements for Municipalities and DOTs Can Lead to Inefficiencies/Individual Permit Requirements Can Be More Efficient

- NCDOT indicated that "The regulators have a tougher time with a combined permit. If you have a combined permit, the DOT may be doing things that aren't as effective for the DOT. The regulator can't say, 'the DOT doesn't have to do system mapping but the municipality does.' It seems better to separate them, from a national perspective."
- The WSDOT interviewee pointed out that the Illicit Discharge Detection and Elimination provision in a combined MS4/DOT permit can be inefficient because conditions in a controlled, relatively narrow ROW setting are so different from those in a municipality where there may be numerous sources of illicit discharges.
- WSDOT stated that an area of efficiency with their individual permit was the ability to develop a DOT-specific stormwater guidance manual.
- The Arizona interviewee indicated that having one individual permit that addressed the entire DOT had the advantage of consolidating, and making more uniform, the requirements. The interview felt that these advantages clearly facilitated program administration, tracking, and compliance.

Individual Permits Provide Platform to Educate Regulators about DOT Specific Needs

Those states with DOT-specific individual permits (AZ, NCDOT, WSDOT) indicated that having a more DOT-specific permit afforded them the opportunity to educate their regulators regarding highway facility construction, operation, and constraints driven by mission, including safety and constraints on land use. WSDOT indicated that the sections of their individual permit were developed by DOE working with WSDOT staff, which provided a communication mechanism for WSDOT to present and explain to DOE what existing programs and procedures WSDOT already had in place that would meet the expectations of the regulators. The permit requirements were focused on closing gaps or where the bar needed to be raised a little bit. It gave the permit writer a richer understanding of the operations of the DOT.

NCDOT reported that their individual permit has allowed the NCDOT to develop positive relationships with regulators. An example they cited in the interview responses is the stormwater requirements associated with bridge replacement, where the regulatory agency has agreed to allow NCDOT to identify low impact (low ADT) bridges whose replacement will not require additional stormwater controls. Efficiencies also have been realized in related permitting programs such as the 401 certification requirements.

The NCDOT and WSDOT funded a regulator position to support the development and retention of regulatory staff who are knowledgeable in terms of DOT conditions and operations during the permit development process.

Individual Permit Puts DOT in Better Negotiating Position with Municipalities

"The DOT works with municipalities a lot, and looks to do so, but they can enter these agreements on their own terms and have a better negotiating position. The DOT is the storm sewer owner in most small municipalities (along roadways) anyway. Counties and most small towns do not own and operate storm sewers in North Carolina." (NCDOT)

Individual Permits Provide More Flexibility in Coordinating with Municipalities

Multiple DOTs indicated they felt there were too many municipalities to work with practically within their state. Regarding co-permittee status, there are "too many jurisdictions for that to be a practical approach" (WSDOT). This is not to say that the DOTs do not coordinate with the municipalities; the municipalities' permits require coordination with the DOT and the DOT coordinates as needed/required.

Individual Permit Allows for Greater Legal Protection for the DOT

NCDOT reported that they "think the DOT is protected a bit, by their relationship with Division of Water Quality." If there is a TMDL with many municipalities involved, the NCDOT can work directly with the Division of Water Quality rather than coordinating with all the municipalities. Also NCDOT has to be careful how they work with municipalities because everyone looks at the public ROW as a good place to put a BMP, where maintenance of it quickly becomes DOT's responsibility, regardless of what the agreement was in the beginning (see NCDOT interview).

Individual Permit Gives DOT More Flexibility to Address Watershed Needs.
NCDOT reported that "with an individual permit – since they traverse watersheds, there may be many areas in a priority watershed where the DOT can do things to improve the situation." NCDOT specifically identify TMDLs as an area where resources are focused. Specifically, having an individual permit allows for more BMP implementation with the goal of preservation and protection of high quality waters and less emphasis on program elements such as Illicit Discharge Detection and Elimination. The Program also contains more emphasis on minimization and avoidance, including identification of such opportunities at the NEPA planning stage.

Individual Permit Leads to More Consistent Statewide Approach
Coverage under an individual permit can lead to a consistent statewide approach with specific accountability for success. For example, the NCDOT doesn't have to issue a construction permit notice of intent on the state or local level because the state has developed a robust erosion and sedimentation Quality Assurance/ Quality Control (QA/QC) program and performance to standard is considered in evaluation of construction engineers.

Individual Permit Leads to More Efficient Project Delivery
NCDOT says they have a more flexible, non-prescriptive approach on a project by project basis than some states because of their individual permit. "This allows DOT to work with [maximum extent practicable] better. [They] do have measurable goals in the permit. A lot is gained in the highway environment, through minimization and avoidance, in NEPA too."

Individual Permit Allows DOT to Develop DOT-Specific Stormwater Management Program
One of the most beneficial aspects of a tailored permit (WA, CA, NC) was the DOT's ability to develop their own stormwater management program, which was in turn reviewed and/or approved by the regulator upon permit issuance. When DOTs organize their own programs, the stormwater program can be presented and organized operationally by functional areas, which greatly facilitates implementation. WSDOT considered this a substantial efficiency. Often, the vast majority of the DOT's permit obligations are included in the program plan.

Individual Permit May Reduce Staff Time in Permit Negotiations
WSDOT anticipated for more staff time to be required to actively participate in the writing of a WSDOT-only permit as compared to the re-issuance of the Phase I and adoption of Phase II permits, but this turned out not to be the case. WSDOT staff time *was* required to track the entire scope of municipal permit development activity so as to maintain awareness of any implications for WSDOT.

Individual Permit Can Incorporate Other Permit Requirements
In Washington, the permitting agency agreed to not regulate stormwater through 401 Water Quality Certifications provided the DOT was in compliance with the MS4 permit. In addition, construction stormwater requirements could be added to the individual permit eliminating the need to submit a Notice of Intent (NOI) and subsequent Notice of Termination (NOT) for

coverage under the general construction permit for every project individually, and decreasing (or possibly eliminating) the need for individual construction NPDES permits (AZ and NC).

Individual Permit Can Facilitate Meeting Redevelopment and Retrofit Requirements

Under the umbrella of an individual stormwater permit, it may be possible to define redevelopment/retrofit requirements on a programmatic basis, rather than the project-by-project basis that is currently the default. This could lead to better environmental results for the same or possibly reduced costs.

Individual Permits May Facilitate Compliance with Local Requirements

Local governments will still be responsible for their storm sewer systems and as a consequence are expected to exercise their authority to control what is discharged into their systems. But WSDOT anticipates that most of their concerns will be addressed by the new uniform standards represented by the Ecology stormwater management manuals and the *Highway Runoff Manual*; uniformly accepted guidance developed by local governments is not a common occurrence.

5.3.2 Steps in Implementing Strategy 1

The route to obtaining a DOT-specific individual permit varied from state to state, and may include a long standing relationship on stormwater program development originally based on state requirements (NCDOT), a mutually agreed upon preference for an individual permit (WSDOT), or an outcome from a court ordered settlement agreement (ADOT). So the conditions for obtaining such a permit cannot simply be identified and implemented; particularly since the decision is not the DOTs, but the regulatory agency's. Thus the steps described below are intended to be considerations or recommendations of possible steps that could be adapted and refined by the DOT.

Step 1: Build Relationship with Regulatory Agency: A key element in pursing an individual permit is establishing a non-adversarial cooperative relationship with the regulatory agency. Such a relationship is ultimately built on trust and often involves key individuals from both agencies who establish a working problem solving relationship over time. The relationship also must overcome institutional issues that may arise because DOTs and regulatory agencies are "sister agencies." Such issues may include a reluctance on the part of the DOT to be regulated by a sister agency or a belief on the part of the regulatory agency that the DOT should be treated in the same way as the MS4s.

Step 2: Educate Regulatory Agency: Many regulators are not knowledgeable about the facilities and operations required to own and operate a transportation system. What seems to be common knowledge within a DOT cannot be assumed to be understood by other agencies. The DOT must consider the need to educate the regulators, with the goal that the individual permit will have requirements that are aligned with construction and operational functions specific to the DOT.

Step 3: Provide Regulatory Funding: A possible impediment to obtaining an individual permit is the lack of sufficient regulatory staff to undertake the development of the permit, and the lack of continuity in regulatory staffing needed to ensure a sustained and knowledgeable oversight of the permit. To address this impediment, some DOTs have chosen to fund regulatory positions dedicated to overseeing their permits. This funding may be a key step in this strategy.

Step 4: Develop Permit Templates: Some DOTs may wish to be proactive to the point of providing a DOT-specific permit template for regulatory consideration. Such templates could reasonably be developed using examples from states that now have DOT-specific individual permits, or could be developed by AASHTO for the member agencies, taking into account the knowledge and experience of those DOTs that have individual permits.

Step 5: Conduct Research to Guide Permit Development and Program Improvement: A number of the DOTs with individual permits that were interviewed committed to a limited and focused research program dedicated to developing an evidence-based approach to filling critical data gaps needed to help inform the development of practical and effective permit conditions. Such a commitment could go a long way to convincing regulatory agencies that decision making will be scientifically-based to better ensure the achievement of environmental benefits.

5.4 Strategy 2: Working Within a General Permit

5.4.1 Reasons for Pursuing Strategy 2

A number of DOTs are covered by Phase II general permits, most of which lump DOTs with municipalities (e.g., Minnesota and Texas in Phase II areas), and one of which is written specifically for a DOT or similar agency (e.g., MDOT). A few of the interviewees said that they liked the general permitting approach and/or that the general permitting approach did not present a problem for them. Some of the factors cited by these DOTs for being comfortable with their general permits are described in the following sections.

General Permits are Appropriate for Current Level of Enforcement
Mn/DOT said that "not having a DOT-specific permit has not been a problem, in part because the current level of enforcement of the permit by the Pollution Control Agency has been modest." TxDOT indicated that being combined with a number of municipalities as co-permittees reduced the regulatory focus on the DOT.

DOT Specific Considerations Can be Incorporated at Implementation
If the general permit requirements do not specifically pertain to DOT operations and conditions, the DOTs tended to (re)interpret the requirements in a way that made sense for the DOT. For example, Mn/DOT said, "the Pollution Control Agency wanted DOT to comply with other construction/post-construction provisions in the MS4 permit such as developing ordinances. But the DOT does not have ordinances, and instead did revise contracting requirements as part of MS4 compliance." Maine DOT also found that methods for achieving the overall goals of the

permit could be worked out with the regulatory agency during the implementation phase. In both these cases, the DOTs had developed a working relationship whereby regulator and DOT could meet and work out details in a non-adversarial climate.

General Permit Requirements Provide Flexibility in Making Management Decisions
The Maine general permit, although specifically written for MDOT and the Maine MTA, is still fairly general compared to a typical individual permit. The MDOT contact said he "likes the fact that [their] permit is more general in nature and gives the DOT latitude to make management decisions as [they] go and discuss direction in the annual report to the Department of Environmental Protection."

General Permit Requirements Take DOT Expertise into Account

MDOT stated that regulators relied on MDOT for guidance and technical expertise (especially in technical areas like construction erosion and sediment control) in crafting some of the permit provisions and approaches to implementation.

General Permit Requirements Provide Flexibility in Scheduling
Mn/DOT felt their general permitting approach had allowed the DOT to build off what they were doing already and that has been helpful and allowable with this permit. The permit also allows for more flexibility in meeting requirements and schedule. However, in most of the cases researched, the permitting authority did work with the DOT on requirements and schedule.

5.4.2 Steps in Implementing Strategy 2

In contrast to the strategy required to obtain an individual permit, the goal in Strategy 2 is to work within the General Permit and take advantage of the ambiguity in permit language, while also including some DOT-specific considerations. Some of the steps previously discussed for Strategy 1, especially those related to working with regulatory agency, also apply here.

Step 1: Build Relationship with Regulatory Agency: A key element in pursing the strategy is establishing a non-adversarial cooperative relationship with the regulatory agency. Such a relationship is ultimately built on trust and often involves key individuals from both agencies who over time establish a working problem-solving relationship. Strategies for building such a relationship may developing ongoing jointly staffed committees to review progress and make adjustments, keeping the regulator informed of needs for modifications, and responsiveness to regulatory inquiries.

Step 2: Educate Regulatory Agency: Many regulators are not knowledgeable about the facilities and operations required to own and operate a transportation system. What seems to be common knowledge within a DOT cannot be assumed to be understood by others outside the DOT. So the DOT must consider the need to educate the regulators and take every opportunity to inform the regulators about the construction, and operation and maintenance activities conducted by the

DOT and how best to incorporate water quality considerations within the DOT context. Educational strategies may include funding regulatory staff to better ensure continuity of staffing, conducting joint site visits where the regulatory staff have the opportunity to observe highway conditions and constraints, and participating in joint workshops.

*Step 3: Pursue DOT-Specific Considerations Through Means Outside the Permit***:** Permits often require DOTs to develop planning and guidance documents that provide an opportunity to incorporate DOT considerations, and clarify approaches to permit compliance. Some DOTs also have utilized Memorandum of Agreements (MOAs) and comparable vehicles for this purpose.

Step 4: Anticipate Possible Evolution to Individual or more DOT-Specific Permit: A number of DOTs currently regulated under general permits indicated that they expected that over time their permits would become more prescriptive and specific to DOT conditions, so making preparations (e.g., in organizational structure and roles and responsibilities) in the DOT program in anticipation of this may be appropriate. For example, WSDOT was able to work with the DOE to organize their permit so that provisions were more aligned with the functional organization of WSDOT, which considerably facilitated implementation. So anticipating permit implementation responsibilities prior to the permit renewal stage could result in a more implementable permit.

5.5 Pursuing Nationwide Model TS4 Permit

Strategy 3 is the concept of a pursuing the development of a model Transportation Separate Storm Sewer System (TS4) permit. This concept is being considered by members of the DOT community through the auspices of the American Association of State Highway and Transportation Officials (AASHTO) and as part of the National Cooperative Highway Research Program (NCHRP) U.S. Domestic Scan Program 20-68A. The following discussion is based in part on discussions about the TS4 Permit concept contained in Scan Team Report 08-03, titled "Best Practices in Addressing NPDES and Other Water Quality Issues in Highway System Management" (NCHRP, 2009).

The TS4 permit strategy is to develop a model permit that would take advantage of the knowledge developed by state DOTs (some of which has been reported herein) and would be specific to DOT highway systems and facilities. The model permit would allow state DOTs whose current permits are up for renewal to submit the model permit to their regulatory agencies as an initial "straw permit" for regulatory agency consideration. This approach would allow the state DOTs to take a more pro-active approach to the permitting process than in the past and would likely result in more efficient permit conditions that are more relevant to the DOT's organizational structure and conditions.

There are various options for developing and implementing such a permitting approach. One option would be for the DOT community to work with US EPA in developing the model permit, which then could be applied to the few remaining non-delegated states (similar to the nationwide Multi-Sector Industrial Permit). This approach also could ease acceptance of the model permit by

state regulatory agencies in delegated states, as the permit would be more likely to be approved by the Regional EPA. Alternatively, the model permit could be developed solely within the DOT community as an internal resource to be used by the member agencies as needed. This approach would be more timely, but would not have the advantage of US EPA involvement and support.

Given the range in climatic and other conditions amongst DOTs, the model permit would ideally be designed to be modular so as to facilitate each DOTs' ability to tailor the permit scope and conditions to their state's conditions.

One potential advantage of this nationwide approach is that some permit provisions could take advantage of economies of scale associated with a cooperative, national approach. For example, it may be possible to enlist state DOTs into a nationwide Public Education and Outreach Program that would meet each state's compliance requirements. Also, it may be possible to develop nationwide (or regional) guidance to address a variety of issues, such as TMDL compliance. Such pooling individual state resources could lead to efficiencies in terms of benefits to costs in other program elements as well.

Some of the steps required in this approach are as follows:

Step 1: Develop More Detailed Concept: The DOT community (through AASHTO) would develop a more detailed concept that would be at a sufficient level of detail to understand the scope of the concept and the process by which the concept would be advanced.

Step 2: Survey DOTs for Interest and Feedback: The concept paper/presentation would be made available to state DOTs to obtain feedback on the concept and potential support. The concept would then be refined based on state DOT input.

Step 3: Approach US EPA: The refined model permit concept then could be taken to US EPA to gauge interest and ideally a commitment to cooperate with ASSHTO in developing the model permit.

Step 4: Develop Model Permit: AASHTO and USEPA would form a working committee to develop the model permit where the DOT community members represented a cross section of the DOT community.

Step 5: Role out Model Permit to DOT Community: Develop and implement communication strategy to inform and educate state DOTs on how to approach their regulators and utilize the model TS4 permit in upcoming permit renewals.

Step 6: Refine Model Permit: Continue to refine and improve the permit as experience is gained.

6. REGULATORY AGENCY COMMUNICATION STRATEGIES

6.1 Regulatory Interviews and Findings

Telephone interviews were conducted with regulators directly involved with MS4 permitting for DOTs for four of the six selected states: Maine, North Carolina, Texas, and Washington. The purpose was to assess regulator perspectives, priorities, and procedures in MS4 permitting for the DOTs. The questions focused on five topic areas:

1. Permit type - rational for permitting approach,
2. Consideration of unique DOT characteristics in permit development,
3. Communication and negotiation with DOTs,
4. Compliance and litigation, and
5. Future permitting directions.

The interviews lasted 30 to 45 minutes. Documented responses were then returned to the regulators for review and editing. The questions and answers from the phone interviews are provided in Appendix E. The main points from each of the interviews are summarized below. This is followed by the key findings from the interviews.

6.1.1 Maine

MS4 permitting for MDOT is conducted by the Maine Department of Environmental Quality (DEQ). The current permit is a DOT-specific General Permit for Phase II areas.

Permit Conditions Recognize DOT Characteristics
The permitting approach was based on US EPA and state requirements, and the framework in an MOA between DEQ and DOT. The DEQ recognized that the general permit needs to be tailored to DOT characteristics, and therefore worked with DOT to refine the general permit requirements into a DOT-specific general permit. The process involved an extended and transparent development period that included US EPA, DOT, and stakeholders.

DOT's Shift on Environmental Awareness has led to Cooperative Working Relationship With DEQ
DEQ reports a cooperative working relationship with DOT that evolved with the DOT's increased environmental awareness and incentives through past enforcement actions. DOT now communicates regularly with DEQ on issues and problems and views DEQ as a helpful partner. This has fostered a climate of trust and facilitates cooperation and compromise on working through problems and issues.

Future Permits Will Address US EPA and DEQ Initiatives
DEQ foresees expanded programs in the next permit, motivated in part by US EPA recommendations, and DEQ goals of including DOT maintenance facilities and activities that are

not currently covered. DEQ recognizes program expansion must build judiciously based on local experience.

6.1.2 North Carolina

MS4 permitting for NCDOT is conducted by the North Carolina DWQ. The current permit is an individual DOT-specific Phase I MS4 permit, combined with construction and industrial permits. The coverage area is statewide. The interviewee was responsible for development of the current permit, and is also responsible for ongoing permit compliance oversight.

Permit Type is a Result of DWQ Initiatives and Mutual Agreement

DWQ rational for a DOT-specific Phase I permitting approach was that regulations required that larger municipal agencies (>100,000 population) had to be included in the Phase I program, so also should larger DOTs such as NCDOT. NCDOT, which manages 79,000 of 114,000 road miles in the state, agreed with this assessment. Combining the MS4, construction, and industrial permits also made sense in terms of integrating all DOT-specific activities into a single permit. Thus, the DOT-specific permit is well tailored to the functions and operations of NCDOT. A statewide coverage area was not an issue during permit development because NCDOT was already implementing stormwater management practices throughout the state.

Active Coordination Between DWQ and NCDOT Fosters Mutual Understanding and Cooperation

The interviewee strongly conveyed a close cooperative and active working relationship NCDOT. This relationship fosters an in-depth understanding of the responsibilities, concerns, and programmatic activities among the two agencies. DWQ notes that NCDOT is environmentally proactive and is responsive to advice and suggestions from DWQ. Similarly DWQ is receptive to NCDOT suggestions and constraints. In addition, NCDOT and DWQ have close partnerships with universities which pull together a variety of stakeholders.

Cooperation Between DWQ and NCDOT Simplified Permit Development

The interviewee reported a short and congenial permit development process, which reflected the strong cooperation between DWQ and NCDOT, and partnerships in NC. There was no protracted permit development and negotiation, and no comments during public review. Litigation is generally not a concern. The cooperative atmosphere in North Carolina may partly reflect the maturity of the permit (in 1998, NCDOT had the first statewide MS4 permit in the country) and the reliance on a science-based approach that provides an objective basis for agreements.

Ongoing Cooperation Aids Long Term Compliance

Cooperation between DWQ and NCDOT is further evidenced in ongoing interaction regarding permit compliance. This interaction spans three levels.

1. Upper level coordination. Bi-monthly meetings between upper management personnel to discuss and resolve permit issues
6. Central office coordination. The interviewee meets monthly with NCDOT to go over various permit conditions, with the focus on developing efficient and effective management practices to sustain long term compliance with the permit conditions.
7. Regional office coordination. Each regional office has one staff member dedicated to NCDOT projects (funded by NCDOT), who works closely with the NCDOT field and construction personnel.

Few Changes Expected in Next Permit

The interviewee believes that NC is ahead of most states on US EPA initiatives, especially in areas of BMP research and LID. Therefore, DWQ does not foresee significant changes in the next permit.

6.1.3 Texas

MS4 permitting for TxDOT is conducted by the Texas Commission on Environmental Quality (TCEQ). TxDOT permitting is conducted on a district-by-district basis. In most Phase I areas TxDOT is a co-permittee to MS4 permits. In Phase II areas there is a mixture of DOT-specific and co-permitted Phase II permits.

Permit Type is a Result of TXDOT Requests and Precedence

TCEQ's permitting approach was based on TxDOT's request to maintain district-by-district permitting and also on historical precedence from the previous term permits. TCEQ believes that many TxDOT districts like to form collaborations with other agencies in order to effectively divide compliance requirements.

Change in Permitting Structure Would Be Difficult

TCEQ will be taking a closer look at the permits in the next cycle and will consider regional approaches. However, a change from the district-by-district approach to a TxDOT-specific statewide or regional permits (Phase I) would be difficult to complete due to TCEQ resource limitations. It would likely be a slow process. In addition, combining MS4 with construction or industrial permits is not under consideration by TCEQ.

Permits are not Tailored to TXDOT

TCEQ considers linear characteristics of DOTs where is makes sense, but generally permit conditions do not appear tailored to TXDOT. Instead, TCEQ is receptive to change requests for permit conditions that are not applicable to DOTs.

TCEQ Has Limited Direct Negotiation With TXDOT
TCEQ reports a good working relationship with TXDOT; in particular TCEQ is actively working with TXDOT on construction permit issues. However, TCEQ has not entered into a lot of direct negotiates with TXDOT because in many cases local municipalities are the primary permittee.

TCEQ Seeks a Balance in Permit Conditions
Litigation is generally not an issue in permitting. However, environmental and industrial interests are both considerations in the permit development. TCEQ's philosophy in permit development is to strike a balance between environmental protection and sustainable development.

Future Permits Likely to Address US EPA Initiatives
Future permits will address US EPA initiatives on post development requirements, particularly LID and green infrastructure, and TMDLs. Phase I permits are likely to include more measurable goals; Phase II permits are likely to include more monitoring.

6.1.4 Washington

MS4 permitting for WSDOT is conducted by the Washington Department of Ecology (DOE). The current permit is an individual DOT-specific MS4 permit that covers Phase I, Phase II, and TMDL areas. All other areas are covered under an MOA. The interviewee was responsible for development of the current permit.

Permit Type Reflects DOE Goals for Expanded Coverage Area
DOE wanted statewide coverage for WSDOT, which necessitated a DOT-specific MS4 permit. Negotiation led to a compromise on permit coverage area coupled with an MOA that effectively provided statewide coverage. DOE did not see any benefit in combining industrial and construction activities into the DOT permit, as the industrial and construction general permits are working well.

DOE Considered DOT Characteristics During Permit Development
DOT characteristics are reflected in the WSDOT permit through the DOE approved WSDOT Highway Runoff Manual, which is applicable statewide. DOE also focused on high traffic areas for developing monitoring requirements. DOE felt monitoring was very important for tailoring future permits.

Collaboration was the key to successful permit development
DOE actively pursued a collaborative process in negotiation and did not want to dictate to WSDOT. Collaboration between the interviewee and WSDOT was the key to developing a successful permit.

6.2 Key findings

Key findings of the regulatory interviews are:

Limited regulator resources for permit development can influence permitting. Several regulators expressed that they had limited agency resources for meeting obligations. Resource constraints could potentially affect DOT permitting strategies. For example, Texas regulators felt a single TXDOT permit would be difficult to accomplish quickly given resource constraints.

Regulators recognize DOT characteristics in permits. Most regulators recognized the uniqueness of DOTs and tailored permits to some extent to DOTs (MDOT, NCDOT, WSDOT). WSDOT also focused on traffic features of DOTs in developing monitoring requirements, which increased requirements to WSDOT.

Regulators are responsive to inappropriate conditions. Regulators were receptive to working with DOTs on tailoring or removing inappropriate permit conditions. For example, Texas noted they routinely accommodate justifiable 'notice of change' requests on Phase II permitting requirements. Both Maine and Washington recognized DOTs don't have legal authority to control offsite discharges into DOT storm drain system, but that DOTs needed to report violations. North Carolina DWQ worked with NCDOT to develop an illicit detection training program for their field personnel that emphasized detection and reporting to DWQ or local agencies for follow up source identification and elimination.

Cooperation and communication is pivotal and beneficial to both sides. Regulators provided numerous accounts of the how cooperation and ongoing dialogue between agencies has led to improved permits, eased negotiations and permit development, and aids ongoing permit compliance. One regulator noted that it is inherently more costly to have an adversarial relationship built on mistrust, which wastes resources on oversight and inspections.

6.3 Regulatory Agency Communication Strategies

6.3.1 Developing Ongoing Dialogue

Ongoing dialogue is essential for promoting interagency cooperation, understanding, and trust. DOTs should seek to develop multiple avenues for ongoing dialogue between agencies. For example:

Regional and field level coordination based on environmental stewardship. Promote environmental stewardship in field personnel to encourage active interaction, cooperation, and responsiveness with regulatory compliance auditors. For example, train field personnel to recognize issues of concern and to notify and/or work with regulators about the potential problems. Encourage field personnel to suggest/develop procedural or programmatic changes that can have environmental benefits.

Central or programmatic level collaboration meetings to review ongoing compliance. Regular meetings between DOT environmental program managers and regulatory agency compliance officers should be held on a continuing basis (e.g., monthly). The purpose is to review ongoing practices for compliance, to work through issues and problems of concern, and to seek efficiencies that can benefit both agencies.

High level interaction. Regular inter-agency meetings between high level managers and permit developers should be considered in states with complicated permitting processes and diverse environmental interests.

6.3.2 Developing a Culture of Environmental Stewardship

The dialogue and communication between agencies inherently depends on the individuals involved. However, inter-agency coordination is promoted when there is a shared goal of environmental stewardship. Developing a culture of environmental awareness within the DOT will foster inter-agency cooperation and mutual trust. Potential strategies include:

- Developing policies and training on environmental protection.
- Partnering with researchers, communities, and regulators on environmental related projects.
- Promoting successes to regulators and to the public.

6.3.3 Seeking Efficiencies

Agencies are often strapped for resources needed to meet obligations. Cooperation and communication with regulators is supported when DOTs recognize regulatory agency constraints and seek efficiencies that can benefit both agencies. For example:

- Unifying and developing programmatic procedures such as environmental management systems can streamline information gathering by DOTs and compliance auditing by regulators. Some DOTs have very active EMS programs which benefits the DOT and regulators.
- Employee continuity and turnover is a potential issue. NCDOT addressed this issue by funding DOT dedicated regulatory field auditors to ensure continuity and responsiveness.

7. SUMMARY AND CONCLUSIONS

7.1 Summary

The goal of this project was to identify the cost and environmental benefits of different types of NPDES stormwater permits that regulate DOTs. More specifically, the aim of this project was to assess to what extent those permits that are more tailored to DOT conditions may lead to efficiencies. The project involved various tasks consisting of: 1) conducting a nationwide reconnaissance of permit types and coverage, 2) performing a more detailed permit review for selected states that had a range of permit types, including completing phone interviews with DOT staff, 4) assessing qualitatively the cost / benefit of permit requirements, 5) developing of alternative permitting strategies, and 6) recommending methods for working with regulators.

7.1.1 Nationwide Permit Survey

The initial task was to conduct a nationwide website reconnaissance of DOT permit types and coverage for MS4 permits and construction permits. With respect to MS4 permits, the survey indicated that DOTs are regulated by individual or general permits, but the variability in terms of the combination of permitting types and coverage was quite broad. Eleven states are covered by DOT-specific individual permits which tend to be written specifically for transportation agencies, but could include construction requirements. Although coverage tends to be limited to urban areas (defined under the Phase I and II regulations), in two cases (ADOT, NCDOT) coverage extends to all transportation facilities within the state. Twenty seven states are covered by general permits that typically lump the DOTs with municipalities leading to more generic permits, but some general permits were written specifically for transportation agencies (e.g., MDOT). The remaining seven state DOTs are either permitted by DOT district (FL and TX) under various permit types; co-permitted with surrounding Phase I and/or II areas (AL, AK, SD); or have a combination of permit types (AR, DE).

With respect to construction permitting, thirty nine DOTs are regulated under a state general construction permit. Three states DOTs are regulated under a separate DOT-specific construction permit. In three states, the construction requirements are included in the MS4 permit and in three states the DOTs operate under separate agreements. Two state DOTs (Delaware and Hawaii) have delegated authority to regulate their construction projects.

7.1.2 State Detailed Permit Reviews and Interviews

The next phase of the project involved the selection of a subset of states for a more detailed review of permit conditions and phone interviews. Selection criteria required that the permit be current, that the selected states represent a range of permitting types and coverage, be geographically representative of the country, and be willing to cooperate in terms of providing additional information and participate in the interviews.

North Carolina, Washington, and Arizona have individual DOT-specific permits. Although the specific requirements for each permittee varied, the interviewees were generally of the opinion that their permits led to efficiencies in terms of having to comply with only one permit, achieving uniform standards and conditions (often as conveyed through DOT-specific guidance and manuals), centralized data management and reporting, and training. NCDOT reported efficiencies by prioritization of activities such as mapping (with higher priority given to drainages subject to 303(d) or TMDL requirements). One DOT was able to get their regulatory agency to agree that compliance with the NPDES permit would automatically satisfy 401 Certification requirements. Special conditions related to TMDLs, ESA, and retrofitting requirements were cited as particularly difficult issues, compounded by inconsistent requirements being set by different departments within the water quality regulatory agency, as well as different requirements from different resource agencies. In contrast to NCDOT and

WSDOT, ADOT only recently received an individual permit (as part of a consent order). That permit has a challenging implementation schedule that did not allow for phasing in requirements.

With respect to construction permitting, some individual permits allowed the DOTs to self certify their construction projects, thereby retaining more control on project delivery, and avoiding the project by project administrative and review requirements. In these cases the DOTs are able to report compliance in the Annual Report.

MDOT and Minnesota are interesting contrasts to the individual permitting strategies described above. Both have general permits, however, the Maine permit, although described as a general permit and based on the six MCMs, was issued only to the MDOT and MTA. The interviewee for MDOT was satisfied overall with the permit, in large part because in Maine everyone in the various agencies knows each other and they resolve problems by getting together and working things out. This informal relationship between the DOT and regulatory agency also includes a long standing Memorandum of Understanding that governs the construction program, which was developed before the NDPES MS4 requirements.

The Minnesota DOT is covered under the Phase II general MS4 permit that applies to all of the small MS4s in the state of Minnesota. The permit covers municipal as well as DOT facilities and operations. The Minnesota DOT districts are autonomous, so DOT Central (term used for headquarters) plays an advisory role to the Districts. The cooperative partnership between DOT Central and the Districts appears to be working well. The interviewee felt that having a non-DOT-specific permit at this time was acceptable given that the current level of enforcement by the state regulatory agency is relatively modest. However, in the future, the interviewee felt that a more DOT-specific permit may be preferable.

In Texas, the 25 DOT districts hold the permits, which may be an individual permit (e.g., Dallas District), a co-permittee with other entities (e.g., Fort Worth District), or a general permit that applies to districts and municipalities that have facilities in Phase II areas. The Districts in Texas are fairly autonomous, but the Division (TxDOT central office) has the primary responsibility in preparing the stormwater management plans and permit applications which the districts only had to modify slightly to fit their local situation. So Texas provides an example of how efficiencies can be realized in a more decentralized permitting atmosphere. Where districts are co-permittees with other municipalities, the interviewee indicated that costs are lower compared to Districts that have individual permits, where the DOT must address all of the six Minimum Measures and permit responsibilities within the MS4. Regarding future permit types, the Division proposed a statewide DOT general permit applicable to urban areas to the Texas Commission on Environmental Quality (TCEQ) during the Phase II discussions, but TCEQ wanted the permit to then apply to the entire state. TxDOT plans to revisit this request when the permits come up for renewal in 2013.

In summary, the interviews indicated that, irrespective of the permit type, many DOTs find ways of tailoring the permit language and/or the implementation approach to their DOT. Sometimes

this is done outside the permit through an MOU or comparable vehicle, and in other cases it is accomplished with the issuance of policy and technical documents by the DOT. DOTs also take advantage of partnering with the municipal agencies when it leads to efficiencies. The take home message is that DOTs throughout the country vary substantially in terms of size, organizational structure, regulatory climate, program maturity, and special requirements such as TMDLs and ESA; all of which factor into the permit type, requirements, and approach to compliance.

7.1.3 Cost Benefit Analysis

The next phase of the project involved addressing the costs and environmental benefits of different permitting approaches. The interviews of individual state DOTs requested cost information, but the study results found in general that DOTs do not account separately for the cost of complying with permit requirements or the costs of the program as a whole. This reflects in part the fact that many of the labor costs associated with permit implementation are conducted by staff whose principal function is not NPDES permit compliance, and distinguishing time solely spent on NPDES permitting would be impractical.

Some estimates of the cost to administer the overall programs were provided. NCDOT, which has approximately 170,000 lane miles under permit, did provide an overall annual program cost of about $5M. ADOT's initial annual program costs for their approximately 19,000 lane miles under permit were estimated at $1M.

For construction projects, NPDES requirements for construction and post-construction controls are often documented either separately and as part of overall environmental compliance costs. Some DOTs were able to provide estimated costs for complying with construction and post-construction BMP implementation for construction projects. In general these were reported to range between about 3% to 8% of the construction costs, depending on the state. NCDOT indicated that the total NPDES-related costs for construction and post construction was $52M. This suggests that construction and post construction runoff quantity and quality control may be the most costly element in DOT stormwater programs.

Given the lack of quantitative cost information by permit type, and additionally that permit type was only one of several factors that appeared to affect effectiveness, a qualitative cost benefit analysis of permit requirements was conducted. Costs and benefits were expressed as high, medium, or low relative to other permit requirements. Estimates of relative effectiveness were then made based on comparing the ranking of benefits to that of costs.

With respect to the six MCMs, public involvement and participation is considered to be of high effectiveness, given such programs as Adopt-a-Highway can leverage DOT resources in reducing trash loads to receiving waters. Public education, on the other hand, is generally considered as having low relative effectiveness in terms of delivering environmental benefits (although educational school programs conducted by municipal agencies may provide long term benefits to the general awareness of the need for environmental stewardship). Illicit discharge

detection and elimination requirements also are considered to result in relatively low effectiveness given the evidence that the number of such discharges is relatively few (and sometimes related to offsite sources) and the mapping and inspection requirements are resource intensive. Construction runoff erosion and sediment control (ESC) programs are considered highly effective given the role that construction sites have on sediment and associated pollutant loads to receiving waters. Post construction management is assigned a medium to high effectiveness depending on whether there is evidence of impairment and the extent to which the BMPs are tailored to treat the types and forms of the pollutants of concern. The effectiveness of good housekeeping and maintenance activities vary depending on the activity. Roadway sweeping as commonly performed is for safety and not water quality, whereas pesticide and fertilizer programs can be highly effective.

With respect to other permit requirements, the development of sound policy planning documents reaps benefits across the board for all permit requirements. Similarly, exercises in evaluating program effectiveness can help with prioritization and resource allocations across the entire program. Both of these activities are considered to have high effectiveness. TMDL implementation can be very costly but also can be highly effective if there is good scientific evidence that highways are a major source of the constituents causing impairment, and additionally that the BMPs used are designed to control those specific constituents. Monitoring as usually required in permits is too often focused on characterization or compliance, and under these circumstances are considered to be relatively low effectiveness. Short term monitoring and research designed to support management decisions and resolve key questions can be highly beneficial.

7.1.4 Alternative Permitting Strategies

A major goal of this study was to develop alternative strategies to assist the diverse community of DOTs in negotiating stormwater NPDES permits and permit conditions that are more aligned with the physical, operational, and institutional goals and missions of DOTs. This goal recognizes that the DOT community is diverse, and moreover the choice of permitting types is primarily the responsibility of the regulatory agency, who may or may not be motivated to consider changing permit type and conditions.

The following three alternative strategies were presented and discussed:

- Strategy 1: Moving from General to Individual Permit
- Strategy 2: Working within General Permit
- Strategy3: Developing Model TS4 Permit

Strategy 1 applies to those DOTs that wish to move from having a General Permit that is less DOT-specific to an individual permit that is more DOT-specific. This strategy may be desirable to DOTs that operate a large and complex transportation system, have an organizational structure

characterized by a strong central headquarters with technical and management expertise, and a mature regulatory climate where the regulatory agency has the interest, expertise and resources to work with the DOT in tailoring an individual permit.

Strategy 2 applies to those DOTs that currently have a general permit and wish to continue to be regulated under that general permit. These DOTs may prefer to retain more general provisions but negotiate DOT-specific implementation requirements though vehicles such as guidance documents or MOUs. This strategy may be more desirable to smaller DOTs with a flatter organizational structure, where the districts tend to be more autonomous and where the regulatory agency has limited resources or interest in developing a more DOT-specific permit.

Strategy 3 is an innovative concept currently under consideration by the DOT community to develop a nationwide model TS4 permit that would be specific to DOT facilities and operations and would take advantage of what has been learned by those DOTs that have DOT specific individual or general permits. One option for the development of the model TS4 permit would be to approach US EPA to work with AASHTO to develop a permit that then could be tailored by individual state DOTs and regulatory agencies to best reflect state conditions. This nationwide approach could also lead to economies of scale whereby pooled resources could be applied to common permit requirements (e.g., public information and outreach) or common guidance requirements (e.g., TMDL compliance or BMP retrofit approach).

7.1.5 Regulator Interviews and Strategies

Telephone interviews with regulators directly involved with MS4 permitting for DOTs were conducted with Maine DEP, North Carolina DWQ, TXCEQ, and Washington DOE. The purpose was to assess regulator perspectives, priorities, and procedures in MS4 permitting for the DOTs. Based on the interviews the following steps may be helpful in developing a strategy of working with the regulatory agency:

Step 1: Develop ongoing dialogue: Ongoing dialogue is essential for promoting interagency cooperation, understanding, and trust. DOTs should seek to develop multiple avenues for ongoing dialogue between agencies.

Step 2: Develop a culture of environmental stewardship: The dialogue and communication between agencies inherently depends on the individuals involved. However, inter-agency coordination is promoted when there is a shared goal of environmental stewardship. Developing a culture of environmental awareness within the DOT will foster inter-agency cooperation and mutual trust.

Step 3: Seeking efficiencies: Agencies are often strapped for resources needed to meet obligations. Cooperation and communication with regulators is supported when DOTs recognize regulatory agency constraints and seek efficiencies that can benefit both agencies.

7.2 Conclusions

The following conclusions can be drawn from this study:

- *Current Permitting Approaches Vary Considerably and Include Inefficiencies Derived in Part from Traditional MS4 Permitting Experience.* The permitting approaches vary considerably from state to state and even within states from DOT district to district, although DOTs facilities and services are all basically the same. Examples include coverage as a co-permittee with municipal agencies under Phase I MS4 individual permit or Phase II MS4 general permit, or coverage as a permittee under a general permit or individual permit. Similarly, coverage may include urban areas, areas discharging to sensitive receiving water bodies subject to TMDLs, or statewide. A number of DOT permits have requirements that are more applicable to traditional MS4s that have been applied to DOTs, which are uniquely different from traditional MS4s. Interviews with selected DOTs and a relative benefit/cost analysis indicate that some of the MCM requirements, such as public education and outreach and illegal discharge detection and elimination, are less appropriate to TS4s than municipal MS4s.

- *Experience of Some Individual DOT-Specific Permitting Approaches Are Encouraging.* North Carolina, Washington State, and Arizona have operated or are beginning to operate under individual DOT-specific permits. Their experience indicates that more tailored permits can lead to efficiencies of scale that take into account centralized environmental, planning, and database management expertise tied to District environmental leads and trained field staff. The centralized function also provides the opportunity for allocation of statewide resources for the protection of sensitive receiving waters, and in the case of NCDOT, the development of practical BMP retrofit programs.

- *Some DOTs Can Function Satisfactorily under More General Permits*. Some DOTs were able to work successfully under non-DOT specific permits. These DOTs were typically smaller and/or less centralized and appeared to have good working relationships with the regulators, which allowed them to meet and work out implementation approaches that were satisfactory to the agency and the DOT. These DOTs also tended to be in regulatory programs that were less mature and some were concerned that more stringent regulatory requirements could evolve in the future.

- *Need for More Uniform Permit Requirements Specific to DOTs.* There is clearly a need for a more uniform permitting approach and permitting requirements that are appropriate to highway systems and DOT facilities, while still accommodating climatic and environmental conditions that vary from state to state. Given the diversity of the DOT community, strategies for accomplishing this have been provided in the context of individual, general, and a nationwide TS4 model permit. The strategy of individual permitting applies to those DOTs that are in the process of moving from a more general, non-DOT specific permit to an individual DOT-specific permit. The strategy for the general permit is for those DOTs that may wish to remain under the more general requirements of such a permit. The nationwide permitting concept could include cooperative development of DOT-specific permit language with US EPA which would provide an incentive for acceptance by state regulatory agencies. The concept also could allow for pooling state DOT resources to accomplish some permit requirements that could be more efficiently implemented at a national (or regional) scale, as well as allow for the development of guidance to address key issues such as TMDLs, BMP retrofitting, and ESAs.

- *Not All of the Minimum Measures are Cost Effective for DOTs*. A preliminary cost benefit analysis indicated that the most effective program elements are planning and effectiveness assessment, construction runoff management, and maintenance measures such as pesticide control, which address sources of pollution. Less effective elements are public outreach and education, maintenance activities like roadway sweeping, and traditional requirements for monitoring. The effectiveness of BMP installations for post construction controls and TMDL compliance are highly dependent on the selection of BMPs that address the forms and types of pollutants and the extent to which the highway system is a major source of the pollutants responsible for the impairment. Maintenance of BMPs in the highway environment is also an issue in terms of access and cost.
- *Long-Term Cooperative Relationship with Permitting Agency is Valuable*. Permitting negotiating strategies depend on the development of a long-term cooperative relationship with the regulatory agency, ideally prior to permit renewal.

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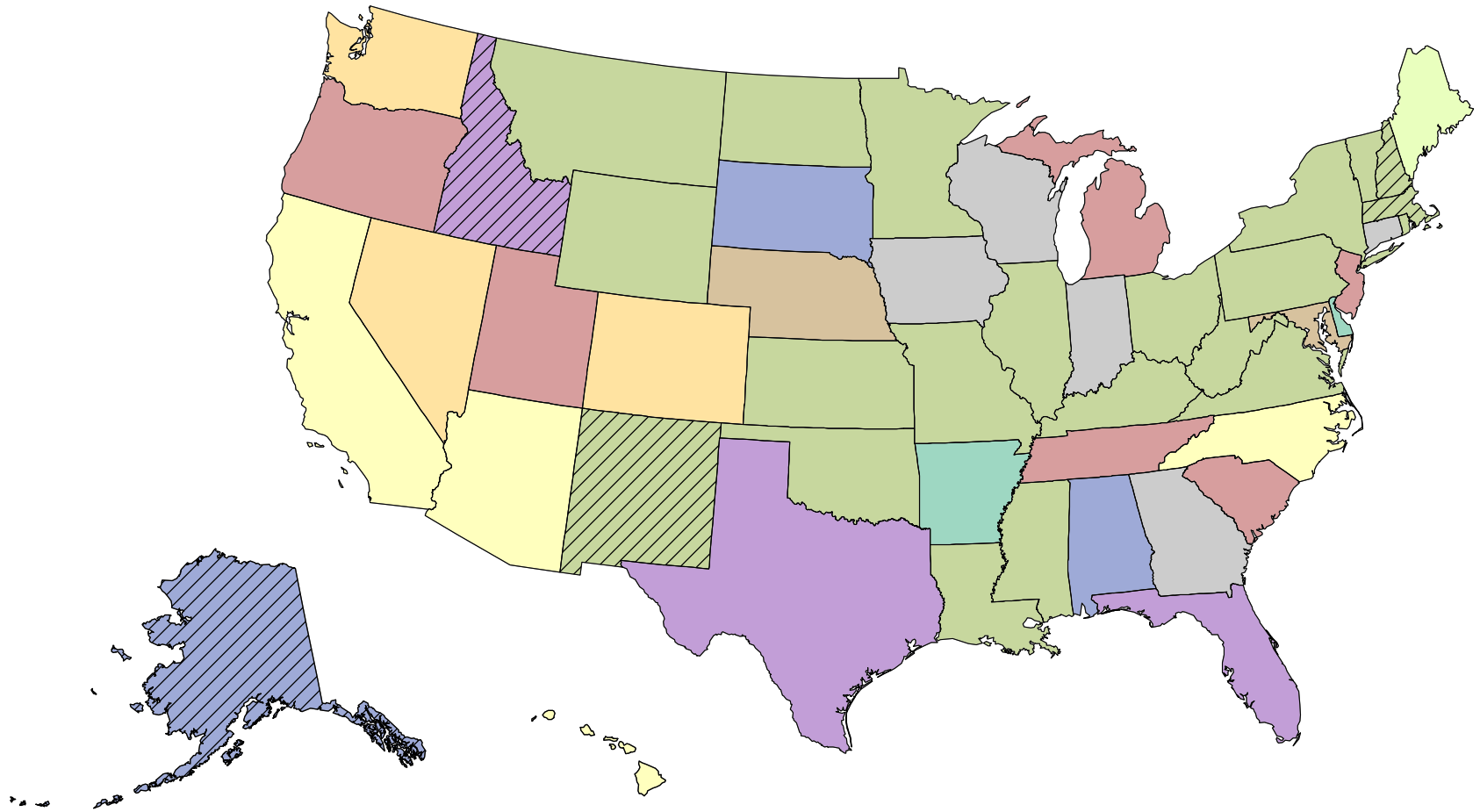
APPENDIX A. NATIONWIDE PERMIT REVIEW SUMMARY



Legend

Permit Type

- General, Phase II
- General, Phase II (DOT specific)
- Statewide MS4+Construction (All DOT)
- Individual, DOT in Phase I/II areas
- Individual, DOT in Phase II areas
- Individual, Statewide (All DOT)
- Permitted by DOT District
- Copermitted with Phase I and/or II
- Multiple Permit Types
- Not Permitted

Regulatory Agency

- EPA
- State (HOLLOW)

DOT MS4 Permit Type

NCHRP 25-25/ Task 56

Geosyntec consultants

Oakland, CA

NCHRP National Cooperative Highway Research Program

05-Aug-2009

Figure 1

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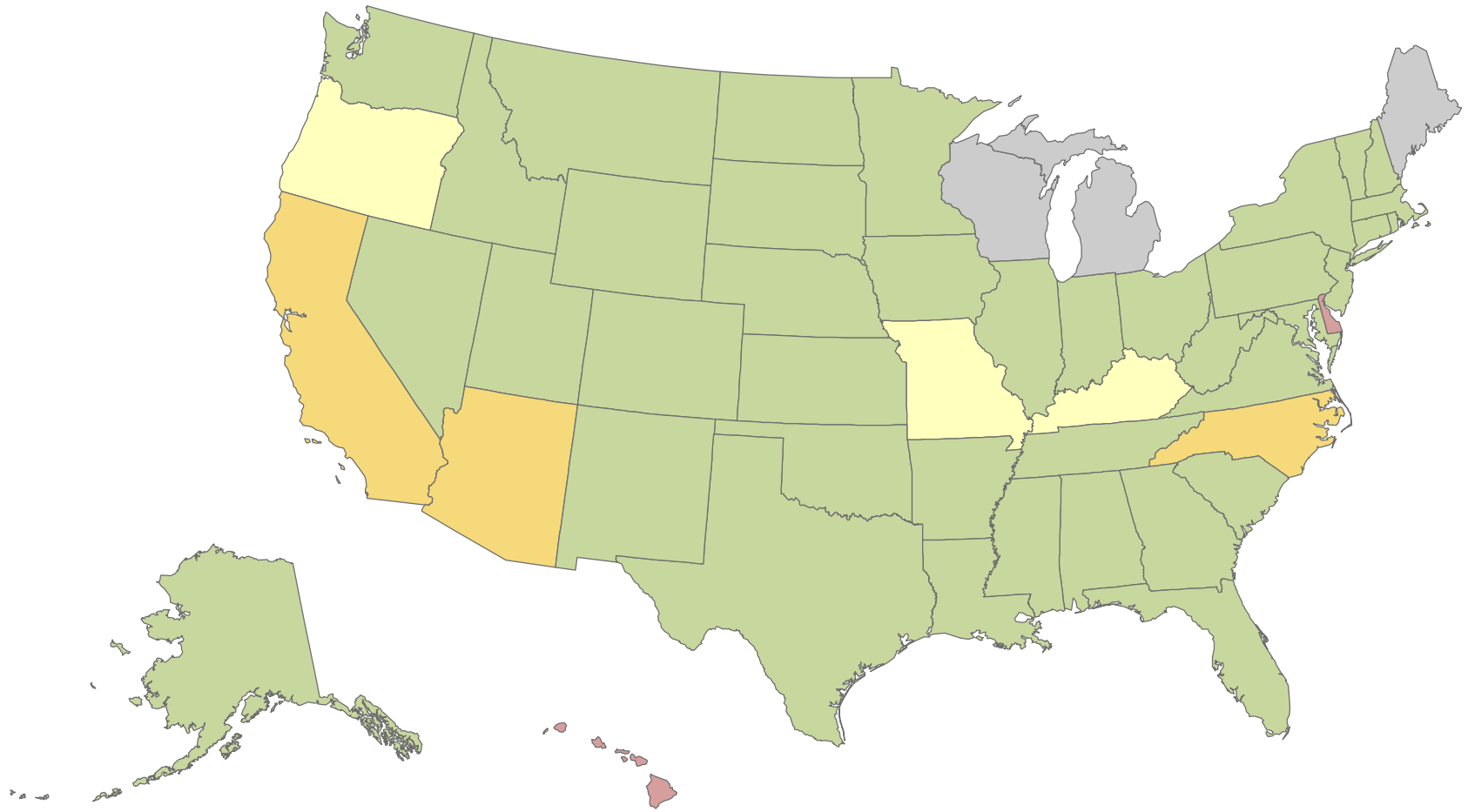

Legend

Permit Type

- DOT Projects Apply under General Permit
- DOT- Specific Statewide Construction Permit
- DOT- Specific MS4+Construction Permit
- DOT Delegated Permits with NPDES Approval
- DOT exempt

DOT Construction Permit Type

NCHRP 25-25/ Task 56

Geosyntec consultants

Oakland, CA

NCHRP National Cooperative Highway Research Program

05-Aug-2009

Figure 2

P:\GIS\NCHRP\Construction_map_072809\K Hovens; 28-Jul-2009; PW02335-01

Table A-1: 50 State Preliminary Permit Review

State	Permit Type						Permitted Area	Permit Effective Dates		Additional Information	Construction Permit Type
	Permit/ NOI ID	MS4/ MS4+Construction	Phase (I/II)	Individual/ General	Permit Coverage Area/ Permittee	Regulator		Permit Start	Permit End		
Alabama	not found	MS4	not found	not found	Phase I and II areas (Copermittee)	State	Not found	not found		Co-permit with Phase I/II MS4s (according to ADEM); MS4 permits not found.	General Construction Permit
Alaska	AKS-053406	MS4	II	General	Phase II areas (Copermittee)	EPA	Covers DOT located within the boundaries of the Fairbanks Urbanized Area.	6/6/2005	5/31/2010		General Construction Permit
	AKS-05255-8	MS4	I	Individual	Phase I area (Copermittee)	EPA	DOT within Anchorage	3/3/1995	3/3/2000	Administratively extended.	
Arizona	AZS000018	MS4+ Construction	I/II	Individual	Statewide (All DOT)	State	MS4, construction initiated and controlled by ADOT and Facilities; Considered a med/lg MS4 in Phoenix and Tucson and a small MS4 elsewhere in state.	9/19/2008	9/18/2013		MS4+ Construction DOT Permit
Arkansas	ARR040000*	MS4	II	General	Statewide (Phase II)	State	General Permit, includes DOT	2/1/2004	1/31/2009	Arkansas Highway Transportation Dept NOI # not found.	General Construction Permit
	ARS000002	MS4	I	Individual	Phase I area (Copermittee)	State	Discharges from DOT from all portions MS4 within the city boundaries of Little Rock, Arkansas	9/1/2005	8/31/2010		
California	99-06 DWQ (CAS000003)	MS4+ Construction	I/II	Individual	Statewide (All DOT)	State	This permit authorizes storm water and authorized non-stormwater discharges from Caltrans properties, facilities, and activities	7/15/1999	2004		MS4+ Construction DOT Permit
Colorado	COS-000005	MS4	I/II	Individual	DOT in Phase I/II areas	State	Authorizes discharges from CDOT MS4 in Phase I areas and Phase II areas	10/31/2005	12/31/2001		General Construction Permit
Connecticut	NOT PERMITTED- No DOT MS4 permit- operates under draft SWMP					State	N/A	n/a	n/a		General Construction Permit
Delaware	not found	MS4	I	Individual	Phase I area (Copermittee)	State	Copermitted with New Castle county	not found	not found		DOT Delegated Permits with NPDES Approval
	DE0051144	MS4	II	General	DOT in Phase II area	State	Authorizes DOT discharges within Kent county, DE "Dover, DE urbanized area"	1/1/2003	1/1/2008	Administratively extended.	
Florida	varies	MS4	I	varies	DOT District	State	Each District co-permits with Phase I entities	varies	varies		General Construction Permit
	varies	MS4	II	General	DOT District	State	Each District submits a NOI for the General Permit	varies	varies		

State	Permit Type						Permitted Area	Permit Effective Dates		Additional Information	Construction Permit Type
	Permit/ NOI ID	MS4/ MS4+Construction	Phase (I/II)	Individual/ General	Permit Coverage Area/ Permittee	Regulator		Permit Start	Permit End		
Georgia	NOT PERMITTED - No DOT MS4 permit					State	n/a	n/a	n/a		General Construction Permit
Hawaii	HI S000001	MS4	I	Individual	DOT in Phase I areas	State	applies to DOT in Oahu county	3/31/2006	9/8/2009		DOT Delegated Permits with NPDES Approval
Idaho	varies	MS4	II	General	DOT District	EPA	Individual permits for "Ada County Highway District", "Canyon County Highway District", Idaho Transportation Dept Districts 1, 2, and 3, "Lakes Highway District", “Notus-Parma Highway District", "Nampa Highway District", "Post Falls Highway District"	Permit still draft			General Construction Permit
Illinois	ILR40*	MS4	II	General	Statewide (Phase II)	State	General Permit, includes DOT	4/1/2009	3/31/2014	Illinois DOT NOI # not found.	General Construction Permit
Indiana	NOT PERMITTED – submitted application; permit not yet active					State	n/a	n/a	n/a	Permit still in application stage.	General Construction Permit
Iowa	NOT PERMITTED- ~46 MS4 permits (no DOT permits; DOT within permit jurisdiction subject to permit)					State	n/a	n/a	n/a	IA DNR does not apply NPDES to DOT.	General Construction Permit
Kansas	varies	MS4	II	General	Statewide (Phase II)	State	Kansas DOT has NOIs for Shawnee County-Topeka Area; Doniphan County- St. Joseph's Area; Douglas County- Lawrence Area; Wyandotte County - Kansas City Area; Sedgwick County - Wichita Area	10/1/2004	9/30/2009	2004 was first year DOT permitted.	General Construction Permit
Kentucky	KYG200000*	MS4	II	General	Statewide (Phase II)	State	General permit covers all DOT except Henderson County	1/1/2003	12/31/2007	Administratively extended; DOT does not appear to have its own NOI #.	DOT-Specific Construction Permit
Louisiana	LAR043001	MS4	II	General	Statewide (Phase II)	State	General Permit, includes DOT	3/7/2003	3/7/2008		General Construction Permit
Maine	MER043000	MS4	II	General/Individual	Statewide (Phase II)	State	Specific Statewide permit covers Maine DOT and Maine Turnpike Authority; individual dischargers must apply for permit	7/1/2008	6/30/2013		DOT exempt from Construction Permit
Maryland	MD0068276	MS4	II	General	DOT in Phase II areas	State	MD State Hwy Admin (SHA) MS4 in Anne Arundel, Baltimore, Carroll, Charles, Frederick , Harford, Howard, Montgomery, and Prince George counties	10/21/2005	10/21/2010		General Construction Permit

State	Permit Type						Permitted Area	Permit Effective Dates		Additional Information	Construction Permit Type
	Permit/ NOI ID	MS4/ MS4+Construction	Phase (I/II)	Individual/ General	Permit Coverage Area/ Permittee	Regulator		Permit Start	Permit End		
Massachusetts	MAR043025	MS4	II	General	Statewide (Phase II)	EPA	Covers entire state of Mass, plus NH, etc. in same permit (EPA region 1).	5/1/2003	4/30/2008	Regulated jointly by EPA/DEQ (EPA "in charge"); administratively extended until USEPA issues a new permit.	General Construction Permit
Michigan	MI0057364	MS4	I	Individual	Statewide (All DOT)	State	Michigan DOT Statewide	1/21/2004	4/1/2009		DOT exempt from Construction Permit
Minnesota	MNR040000*	MS4	II	General	Statewide (Phase II)	State	General Permit	6/16/2009	5/31/2011	Mn DOT covered under 2 NOIs: Metro Districts, and Outstate Districts. NOI #s not found.	General Construction Permit
Mississippi	MSRMS4*	MS4	II	General	Statewide (Phase II)	State	MDOT coverage applies to counties of: DeSoto, Forrest, Hancock, Harrison, Hinds, Jackson, Lamar, Madison and Rankin and any other Phase II area.	1/5/2009	12/31/2013	Last permit expired 2007; NOI #(s) not found.	General Construction Permit
Missouri	MOR04000*	MS4	II	General	Statewide (Phase II)	State	General Permit, includes DOT	6/13/2008	6/12/2013	MoDOT NOI # not found.	DOT-Specific Construction Permit
Montana	MTR040000*	MS4	II	General	Statewide (Phase II)	State	General Permit, includes DOT	1/1/2005	12/31/2009	MTDOT NOI # not found.	General Construction Permit
Nebraska	NE0134015	MS4	II	General	DOT in Phase II areas	State	Permit covers all property or locations owned by NE Dept of Roads	2/1/2007	12/31/2011		General Construction Permit
Nevada	NV0023329	MS4	I/II	Individual	Statewide (Phase I/II)	State	Covers all Nevada DOT in regulated and unregulated MS4s	2/24/2004	2/22/2009		General Construction Permit
New Hampshire	NHR040000*	MS4	II	General	Statewide (Phase II)	EPA	Covers state of NH, including state transportation agency	5/1/2003	5/1/2008	NH DOT NOI # not found.	General Construction Permit
	Draft Permit	MS4	II	General	Statewide (Phase II)	EPA	General Permit, includes DOT			Draft Permit "Not effective as of May 1, 2009"	
New Jersey	NJ0141887	MS4	I/II	Individual	Statewide (All DOT)	State	Highway Agency stormwater Gen Permit- "applies to all areas of the state of NJ"	3/1/2009	2/28/2014		General Construction Permit
New Mexico	NMR040000*	MS4	II	General	Statewide (Phase II)	EPA	New Mexico "non-Indian Country Lands", including "departments of transportation".	7/1/2007	6/30/2012	NM DOT NOI # not found.	General Construction Permit

State	Permit Type						Permitted Area	Permit Effective Dates		Additional Information	Construction Permit Type
	Permit/ NOI ID	MS4/ MS4+Construction	Phase (I/II)	Individual/ General	Permit Coverage Area/ Permittee	Regulator		Permit Start	Permit End		
New York	GP-0-10-002	MS4	II	General	Statewide (Phase II)	State	General Permit, includes "non-traditional MS4s", such as the DOT	5/1/2010	4/30/2015	NYSDOT NOI # is NYR20A288.	General Construction Permit
North Carolina	NCS000250	MS4+ Construction	I/II	Individual	Statewide (All DOT)	State	Includes all construction related activities and "roadway drainage" from NCDOT	4/1/2005	3/31/2010	Permit covers both Phase I and II areas.	MS4+ Construction DOT Permit
North Dakota	NDR040000*	MS4	II	General	Statewide (Phase II)	State	General Permit, includes DOT	7/1/2009*	3/31/2014	Permit is still in draft form, start date is subject to "actual issue date". ND DOT NOI # not found.	General Construction Permit
Ohio	4GQ00000*BG	MS4	II	General	Statewide (Phase II))	State	General Permit, includes DOT	5/26/2009	5/26/2014	NOI # Statewide MS4 for Ohio DOT	General Construction Permit
Oklahoma	OKR040000*	MS4	II	General	Statewide (Phase II)	State	General Permit, includes DOT	2/8/2005	2/7/2010	OKDOT NOI# not found.	General Construction Permit
Oregon	101822	MS4	I/II	Individual	Statewide (All DOT)	State	ODOT Statewide	6/9/2000	5/31/2005	Permit administratively extended; ODEQ will issue a new permit in 2010.	DOT-Specific Construction Permit
Pennsylvania	PAG-13	MS4	II	General	Statewide (Phase II)	State	General permit "includes state department of transportation"	Still Draft		PA DOT NOI # not found.	General Construction Permit
Rhode Island	RIR040000*	MS4	II	General	Statewide (Phase II)	State	General statewide permit, includes MS4s operated by RI DOT	11/14/2003	12/19/2008	No note of continued permit on website; RI DOT NOI number not found.	General Construction Permit
South Carolina	SCS040001	MS4	I/II	Individual	Statewide (All DOT)	State	Phase I SCDOT permit	11/1/2006	10/31/2011		General Construction Permit
South Dakota	SDS-000001	MS4	I	Individual	Phase I area (Copermittee)	State	Sioux Falls and SD DOT (all interstate highways)	11/1/1999	9/30/2004	Permit has been administratively extended; SDDOT is still under the jurisdiction of this permit.	General Construction Permit
Tennessee	TNS077585	MS4	I/II	Individual	Statewide (All DOT)	State	Covers TNDOT statewide	4/28/2006	4/27/2011	Consideration to include TNDOT in general small MS4 permit also; has not been done at this point.	General Construction Permit

State	Permit Type						Permitted Area	Permit Effective Dates		Additional Information	Construction Permit Type
	Permit/ NOI ID	MS4/ MS4+Construction	Phase (I/II)	Individual/ General	Permit Coverage Area/ Permittee	Regulator		Permit Start	Permit End		
Texas	Varies	MS4	varies	varies	DOT District	State	Varies	varies	varies	25 DOT districts; each has own permit (may be phase I/II; co-permitted/individual)	General Construction Permit
Utah	UTS000003	MS4	I/II	Individual	Statewide (All DOT)	State	Permit covers all of UDOT	12/1/2003	11/29/2008	Administratively extended,	General Construction Permit
Vermont	VTR040000*	MS4	II	General	Statewide (Phase II)	State	General permit, includes "Vtrans" (VDOT)	2/19/2004	3/18/2008	Administratively extended; VTDOT NOI# not found.	General Construction Permit
Virginia	4VAC50-60-1200*	MS4	II	General	Statewide (Phase II)	State	Governs all small MS4s "including but not limited to the Dept of Transportation"	7/9/2008	7/9/2013	VA NOI# not found.	General Construction Permit
Washington	WAR043000A	MS4	I/II	Individual	DOT in Phase I and II areas	State	Covers all DOT in Phase I/II urban areas and all WSDOT facilities	3/6/2009	3/6/2014	Changed from Phase I/II permits copermitting with cities to a WSDOT-specific permit	General Construction Permit
West Virginia	WVR030004	MS4	II	General	Statewide (Phase II)	State	General Permit, includes DOT	7/22/2009	7/22/2014	WVDOT NOI # listed	General Construction Permit
Wisconsin	NOT PERMITTED, complies with a MOU with Wisconsin DNR regarding Stormwater					State					DOT exempt from Construction Permit
Wyoming	WYR04-0000	MS4	II	General	Statewide (Phase II)	State	General Permit, includes DOT	12/1/2008	9/30/2013	WYDOT (district 1) submitted NOI; WY DOT NOI #s not found.	General Construction Permit

*General permit number, not DOT-specific.

Table A-2: Short List Permit Condition Review (Suggested States are Highlighted in Yellow; Alternatives in Blue)

State Permit Type; Coverage	Public Education/ Outreach	Public Involvement/ Participation	Illicit Discharge Detection and Elimination (IDDE)	Construction Runoff Control	Post-Construction Controls	Pollution Prevention and Good Housekeeping	TMDLs	Monitoring
Arizona Individual DOT-specific combined MS4/Industrial/ Construction Permit; statewide coverage	• Distribution of materials through public places • Distribution of materials through stormwater website	• Make SWMP available to public • Record and consider public comment • Implement public recording system • Stormwater component of litter program • Continue implementing litter program	• Maintain illicit discharge authority • Enforce encroachment permits • Update non-stormwater BMPs in BMP manual • Inventory outfalls (Maps) • Map storm sewer system (within 4 years) • Update dry weather discharge monitoring guidance • Monitor dry weather discharges • Program for illicit discharge investigation/ follow-up • Eliminate dry weather flows for six major outfalls	• Entire program within MS4 permit separate from standard MS4 • Requirements essentially mirror AZ General Permit • Requires contractors under contract with AZDOT to obtain NOI under General Permit • Annual report required with all construction sites and violations	• Post-construction manual required (12 months) • LID/post construction controls required on projects less than 15% complete • Inventory post-construction controls • Inspect storm sewer; implement repairs • Pesticide/fertilizer requirements • Winter management program	• Generic requirements for all ADOT maintenance facilities • Specific requirements for site-specific maintenance yards • SWPPPs required for specific maintenance yards identified in permit • Extensive SWPPP requirements • Maintenance inspection requirements	• No discharge into TMDL waterbody outside of the provisions of the TMDL • No negative impacts on water quality	• 2 separate monitoring sections; standard outfall monitoring and impaired waters monitoring • Outfall monitoring on a case-by-case basis • Requires QA manual • Industrial monitoring requirements. • Includes site specific limits for current industrial facilities
	Other Conditions: • Allows use of temporary experimental BMPs; requires coordination between agencies for BMP substitution, removal • Extensive sections on training (type of training and included materials for each of the sections above), and the required personnel; All contractors required to have 16 hours of training and 1 year experience • Contains provisions on industrial SWPPPs and facilities • Contains both standard provisions and specific provisions for named industrial operations currently undertaken							

State Permit Type; Coverage	Public Education/ Outreach	Public Involvement/ Participation	Illicit Discharge Detection and Elimination (IDDE)	Construction Runoff Control	Post-Construction Controls	Pollution Prevention and Good Housekeeping	TMDLs	Monitoring
California Individual DOT-specific combined MS4/Construction Permit; statewide coverage	• Implement the program specified in the SWMP • Audiences are employees; construction contractors, and the general public • Conduct research on public behavior • Mass media advertising	• Public input and review during the BMP selection process	• Train field maintenance personnel to recognize illicit connection/illegal discharge (IC/IDs) and to respond to them • Have a method for receiving and responding to public complaints • Examine all IC/ID investigation results for the presence of elevated levels of pollutants	• Implement stormwater program contained in the SWMP, BMP manuals, and standard specifications that contain the details of BMP implementation. • Construction program must comply with requirements in CGP. • Notify the RWQCB that a project is to be covered under this permit at least 30-days prior to the onset of construction. • Plan, site, and develop roads and highways in a manner that protects water quality, beneficial uses of water and minimizes erosion and sedimentation • Site, design, and maintain bridge structures so that sensitive and valuable aquatic ecosystems and areas providing water quality benefits are protected from adverse effects	• The SWMP must be updated each year and contain: • A listing of appropriate control measures, including design, operation, and maintenance specifications, referenced by facility type, location, and other suitable factors • A mechanism for evaluating new treatment and control technologies and for considering these technologies as part of the BMP programs • In urban areas subject to a MS4 permit, seek opportunities to retrofit the Storm Water Drainage System for water quality improvement whenever a section of the rights-of-way undergoes significant construction or reconstruction	• Remove all waste from those inlets that pose a significant threat to water quality on an annual basis prior to the winter season each year. • Prepare Maintenance Facility Pollution Prevention Program Plans for all maintenance facilities, implement BMP programs at each facility as necessary and periodically inspect each facility.	• Not specifically mentioned, although subject to the policies and prohibitions and requirements contained in the Basin Plans in the Region in which the Basin Plan is applicable	• Evaluate the effectiveness and adequacy of the stormwater program on an annual basis. • This includes both monitoring and a self-audit of the program. • Update three-year monitoring strategy annually. • Submit a detailed monitoring program prior to the upcoming rainy season for each year
	Other Conditions: • Requires reevaluation of legal authority each year and recertify that it is adequate. • Caltrans must maintain adequate funding to implement an effective stormwater program and submit an analysis of the funding each year • Requires Caltrans to develop a program for vegetation control that minimizes the use of agricultural chemicals and maximizes the use of appropriate native and adapted vegetation for erosion control and filtering of runoff. • Requires Caltrans to notify the MS4 permittee of any spills that may have an impact on the MS4's ability to comply with its municipal stormwater permit.							

State Permit Type; Coverage	Public Education/ Outreach	Public Involvement/ Participation	Illicit Discharge Detection and Elimination (IDDE)	Construction Runoff Control	Post-Construction Controls	Pollution Prevention and Good Housekeeping	TMDLs	Monitoring
Delaware Individual Phase II permit; covers stormwater discharges from Delaware Dept of Transportation in Kent County, DE and "Dover, DE Urbanized Area"	• Permittee req'd to develop/ implement public education program to distribute educational mat'ls to contractors, individuals, public • Program must include coordination with local groups	• Permittee to provide opportunities for public participation in development/ implementation/ review of SWMP	• Permittee must develop/implement IDDE program, including MS4 map • Prohibit non-stormwater discharges to storm sewer system via appropriate regulatory mechanism • Promote awareness of illicit discharges through educational programs • Permittee to implement a program to limit discharge of floatables • Permittee to maintain and update a list of dischargers to the MS4 that have been issued an MS4 permit	• Continue to implement/enforce a program to reduce discharge of pollutants from construction sites, using following actions: • Requirements for use/maintenance of non/structural sediment and erosion controls/ BMPs/waste control • Sanctions to ensure compliance • Site planning incorporating WQ impacts • Training/ information • Inspection of sites/ enforcement of controls • Comply with all sediment/stormwater controls (including federal/ state/ department code)	• Continue to implement/enforce a program to address post-construction runoff, with following: • Ordinance/regulatory mechanism to address post construction stormwater controls • Strategies for addressing post-construction WQ issues • Long term O&M of BMPs • Comply with sediment/ stormwater controls/SWMP	• Permittee to develop/implement O&M program to prevent/reduce discharges associated with operations • Must include a training program • Maintenance activity controls/ schedules/ inspection	• No TMDL provisions are included in the permit	• No monitoring requirements in permit
	Other Conditions: • Covers "removed substances" (i.e. proper disposal of substances)							
Florida District based(12 districts): Each district submits an NOI for coverage under Phase II general permit and is also included as a co-permittee on Phase I permits; coverage statewide in Phase I and II areas District 1 (Phase I): FLS000004, co-permitted with Sarasota County/ parts of Manatee County and cities	• Notices with Drainage Connection Permit with info re: stormwater pollution • Public Notification of illicit discharges, IDDE program	• "Adopt-a-Road" program	• Permittee to continue IDDE program, including following measures: • Inspect, and enforce (via ordinances) non-stormwater discharges • Dry Weather Field Screening • Inspection/ investigation of illicit discharge and/or improper disposal • Spill prevention/response and hazardous waste control • Limit sanitary sewer seepage/SSOs • Training course for all personnel to identify and report illicit discharges	• Permittee to implement discharge of pollutants from construction sites, including following measures: • Site planning, non/ structural BMPs • Inspection, enforcement • Site operator training	• Permittees to continue master planning process (or equivalent) to reduce stormwater discharge of pollutants from MS4s • Permittees must manage roadways, flood control projects, municipal waste, pesticide/fertilizer application in a manner to reduce discharge of pollutants • Maintain up-to-date inventory of structural controls	• Litter control program, street sweeping program • Minimize use of pesticides/herbicides/ fertilizers • Spill prevention/response and training • Report on all training activities • FDOT District 1 to annually assess accomplishments of inspection/maintenance program of structural controls	• The permit may be revised to adjust effluent limitations/ monitoring requirements for future adopted TMDLs	• Permittees to provide estimates of seasonal pollutant load and EMCs for parameters listed in permit via monitoring program
	Other Conditions: • Provision for "industrial and high risk runoff", including identification, up-to-date inventory, and monitoring • Drainage connection Permit requirements							

State Permit Type; Coverage	Public Education/ Outreach	Public Involvement/ Participation	Illicit Discharge Detection and Elimination (IDDE)	Construction Runoff Control	Post-Construction Controls	Pollution Prevention and Good Housekeeping	TMDLs	Monitoring
Florida General Permit (Phase II): FDOT District 1, FLR04E048 FDOT District 4, FLR04E083 , general permit expired may 2008, administratively extended	• Operator must implement program to distribute educational materials to community (number of suggestions of program features included)	• Operator must comply with state/local notice reqm'ts • Lists "acceptable efforts" for public involvement program, including involving public in SWMP, setting up local stormwater panel, etc	• Develop, implement, enforce IDDE program • Develop storm sewer map • Prohibit non-stormwater discharges via regulatory mechanism • Develop/implement plan to address illegal dumping • Inform public of hazards of dumping to stormwater sewers • Includes list of suggestions for implementation	• Operator must develop/ implement/ enforce program to reduce pollutants in stormwater runoff to Phase II MS4 from construction activities > 1 acre • Use ordinance or regulatory mechanism to require erosion/sediment controls/ BMPs • Site plan review to include water quality impacts • Includes list of suggestions for implementation	• Operator chooses not to utilize available Qualifying Local Program in Part IX of permit, must: • Develop/implement/ enforce program to address post-construction runoff • Include structural/non-structural BMPs • Long term O&M of BMPs	• Develop, implement M&O program • Use training materials • Includes list of suggestions for implementation • Operators must control waste	• MS4 Operator must review SWMP for consistency with any relevant TMDLs	• No monitoring requirements; but if monitoring occurs, results must be included in annual report
	Other Conditions: • NOI must included an outline of a SWMP, along with proposed BMPs to be implemented • Qualifying Alternative Program- Dept can recognize where other government entities are already responsible for minimum control measures. Where this is the case, permittee must only implement minimum control measures not taken by other entity; Permittee may also share responsibility with other entities for minimum control measures							
Maine General Permit for Maine DOT and Main Turnpike Authority MS4s; statewide within Phase II areas	• Permit applicants required to publish public notice that an NOI was submitted • Permittees must raise awareness about stormwater issues	• Applicants and Dept publish NOIs and allow for public comment • Permittee must coordinate with regulated community in regards to MS4 activities	• Each permittee must develop, implement and enforce a program to detect and eliminate illicit discharges/ non-stormwater discharges, including: • Storm sewer system map • Dry weather outfall inspection plan • Develop strategy to detect illicit discharges to open ditch system within 2 highest priority watersheds	• Each permittee must develop, implement and enforce a program to reduce pollutants in any stormwater runoff from construction activities > 1 acre • Permittees must include SOPs in program	• Each permittee must develop, implement, enforce a post-construction program to address stormwater runoff • Permittee develop/ implement combo of structural/ non-structural BMPs • Develop a BMP inspection program	• Develop an O&M Program, including: • Inventory of potential pollutant sources and associated operations • Develop associated O&M procedures (include source control/spill response) • Program to sweep paved streets, parking lots • Program to evaluate/ clean catch basins that accumulate sediment • Implement schedule for repairing/upgrading MS4 • SWPPP for vehicle maintenance areas	• Requires that permittees identify and comply with any relevant TMDLs • Changes to TMDLs require permittee to modify program in order to comply	• Department may require a monitoring program as necessary to characterize discharge

State Permit Type; Coverage	Public Education/ Outreach	Public Involvement/ Participation	Illicit Discharge Detection and Elimination (IDDE)	Construction Runoff Control	Post-Construction Controls	Pollution Prevention and Good Housekeeping	TMDLs	Monitoring
Maryland Individual Phase II Permit; covers stormwater discharges from MD State Highway Administration (SHA) MS4 within 9 counties in the state	• SHA to "fully engage public and accept comments" SWMP planning • Public Education programs req'd to be included in annual report (Public Education programs do not appear to be defined/ suggested in permit itself)	• If permit is modified, a public hearing must be arranged for public comment on the revised permit	• IDDE program required to continue to be implemented by SHA, including: • Visual inspections of stormwater outfalls • Appropriate enforcement of Illicit discharge elimination • Annual reporting	• Erosion and Sediment Control Program required to continued to be implemented • No specific "construction runoff control" section in permit; nor a reference to construction permit	• SWMP implemented, along with design policies etc. found in 2000 MD Stormwater Design Manual • BMP inspection/ maintenance program to inspect stormwater facilities at least once every 3 years	• Requires highway maintenance activities be carried out • Pollution prevention training for vehicle maintenance shops • Pollution prevention (i.e. atmospheric) via encouraging mass transit, carpooling etc.	• Stormwater BMPs/programs must be consistent with TMDL wasteload allocations	• SHA selects watershed restoration project for monitoring; monitoring reqm’ts for that site are listed in permit; incl. 12 storm events per year and an annual report
Minnesota Phase II General Permit; Mn/DOT Metro District MS4 and MNDOT Outstate District MS4 are listed as mandatory small MS4s	• Requires public education and outreach to be distributed to the community that address stormwater impacts and control measures • Hold one public meeting per year	• Solicit public input/opinion on SWPPP	• Develop, implement, enforce IDDE program, including: • Storm sewer map • Prohibit non-stormwater discharges via regulatory mechanism • Characterizing Illicit discharges and non-stormwater discharges	• Implement a program to reduce pollutants in stormwater to your small MS4 from construction activities > 1 acre, via: • Regulatory mechanism • Erosion/sediment BMPs • Waste control • Site plan review for WQ impacts • Site inspection • Non-compliance actions	• Implement program to address stormwater from new, re development including: • Strategies with structural/non-structural BMPs • Regulatory Mechanism for enforcement • Long term O&M of BMPs	• O&M program with training • Annual inspections of structural pollutant control devices, outfalls, exposed stockpiles etc. and determine repairs/ pollutant controls • Annual Report	• Must review SWPPP for WQ impacts to impaired waters • Must review SWPPP to meet TMDL waste load allocation for stormwater; modify SWPPP within 18 mo of new TMDLs	• Does not require monitoring, but if monitoring occurs, results must be included in annual report
Montana Phase II General Permit within regulated small MS4s; MDT Phase II is a co-applicant with various municipalities except within City of Helena	• Permittee to implement program to distribute educational materials (or equivalent) • Permittee to document decision process used for development of public education program	• Permittee to comply with state, tribal, local notice reqm’ts when implementing public involvement program • Permittee to document decision process for development of program	• Permittee to develop IDDE program to detect/eliminate illicit discharges: create MS4 map; prohibit non-stormwater discharges; address non-stormwater discharges; inform public of ID hazards • Permittee to document decision process used for implementation of IDDE program	• Permittee to develop/ implement/ enforce program to reduce pollutants in stormwater runoff to MS4 from construction activities> 1 acre • Program to include: Erosion/sediment controls; disposal controls; site plan review to include WQ impacts; public review; site inspection and enforcement • Permittee to document decision process used for development of construction stormwater control program	• Permittee to implement program to address stormwater runoff from new, redevelopment; including structural, non-structural BMPs; regulatory mechanisms to enforce; ensure long term O&M • Permittee to document decision process	• Permitted to develop/implement O&M program with training component • Permittee to document decision process for development of program	• Department must incorporate TMDL wasteload allocations into permittee's permit	• Specific cities required to monitor stormwater discharge; includes monitoring procedures and constituents

State Permit Type; Coverage	Public Education/ Outreach	Public Involvement/ Participation	Illicit Discharge Detection and Elimination (IDDE)	Construction Runoff Control	Post-Construction Controls	Pollution Prevention and Good Housekeeping	TMDLs	Monitoring
Nebraska Individual Phase II permit; covers "any property owned by Nebraska Dept of Roads which is located within the urbanized area of regulated MS4s throughout state"	• Must implement public education program to distribute educational materials to community or conduct equivalent outreach activities	• "Permittee must comply with State, Tribal and local public notice requirements when implementing this measure"	• Permittee must develop storm system map • Permittee must prohibit non-stormwater discharges via "adequate enforceable authority" • Permittee must develop IDDE program • Permittee must inform public of ID hazards	• Permittee must develop/ implement/ enforce program to reduce pollutants in stormwater from construction activities> 1 acre • Program must include erosion/sediment controls, as well as sanctions to ensure compliance; requirements for construction site operators; site plan review incorporating WQ impacts; site inspection and enforcement of controls	• Permittee must develop/ implement/enforce program to reduce pollutants in stormwater from new and redevelopment • Program to include structural / non-structural BMPs; use of "adequate enforceable authority" for stormwater runoff; long term BMP O&M	• Permittee must develop/implement O&M program that includes a training component	• Definition of TMDL in permit; no section covering discharges to impaired waters or TMDL-imposed waters	• No monitoring requirements? • Section explaining monitoring procedures
	Other Conditions: • Infiltration prohibitions listed in permit • Drinking water requirements listed							
New York Phase II General Permit within regulated small MS4s; NY State DOT is listed as permittee	• Identify POCs • Develop, implement public education to address impacts of SW discharges; POCs and sources; steps to reduce POCs in SW • Develop measureable goals • Select education/ outreach activities and goals • Include in SWMP Reporting	• Comply with State Open Meetings Law • Develop, implement a public involvement/ participation program to ID key groups affected; ID input sought; describe public involvement/ participation programs • Include in annual report, SWMP Reporting	• Develop, implement, enforce program to detect, eliminate illicit discharges; address categories of discharges • Develop, maintain a map showing locations of outfalls and receiving waters; by Mar 2010, permittee's storm sewersheds; update as needed • Outfall reconnaissance inventory • Prohibit illicit discharges through a regulatory mechanism • Develop, implement program to detect and address non-SW discharges to small MS4 • Inform public employees of hazards associated with illegal discharges • Develop measureable goals to ensure reduction of POCs in SW • Annual Reporting/ SWMP reporting	• Program to provide equivalent protection to Construction General Permit • Projects >1 acre • Program to implement regulatory mechanism to require SWPPP from each land disturbing activity; Program to describe SWPPP review • Requirements for operators to implement erosion controls and control wastes; erosion training reqs for operators; educate owners/operators in regards to SW requirements • Develop procedures to follow up on complaints from public\ • Procedures for site inspection and enforcement of erosion control • Establish, maintain inventory of active sites • Reporting/ SWMP Reporting	• Regulatory mechanism to require post-construction runoff controls from new/ re-development • New/redevelopment >1 acre • Controls to include combination of structural and non-structural management practices • Program to describe procedures for SWPPP review of requirements • Establish, maintain inventory of BMPs within permittees jurisdiction • Long term O&M • Develop inspection program • Reporting/ SWMP Reporting	• Pollution prevention program to address operations/ facilities that contribute to POCs • Permittees to perform self-assessment of all municipal operations addressed by SWMP at least once every 3 years • Permittees to determine management practices to be developed/ implemented • Permittee to prioritize pollution prevention efforts • Permittee to Implement training program • Require 3rd party entities performing contracted services to meet permit • Reporting/ SWMP Reporting	• The permittee must ensure that, for all POCs with associated receiving waters on the 303(d) list,, there is a net reduction in the POC to the listed receiving waterbody • By Jan 2013, permitteees must assess their progress in meeting the bullet above	• Permit does not appear to directly require monitoring at any set frequency • If monitoring is conducted, monitoring data must be included in annual report

State Permit Type; Coverage	Public Education/ Outreach	Public Involvement/ Participation	Illicit Discharge Detection and Elimination (IDDE)	Construction Runoff Control	Post-Construction Controls	Pollution Prevention and Good Housekeeping	TMDLs	Monitoring
North Carolina Individual DOT-specific combined MS4/Industrial/ Construction Permit; statewide coverage	• Develop and implement program to train NCDOT staff and contractors about importance of SW quality • Develop and implement program to educate the public about the importance of stormwater quality	• Maintain public education website; Adopt-a-highway program; illicit discharge training for volunteers	• Implement illicit discharge detection and elimination program • Implement appropriate procedures and actions to report illicit discharges • Implement illicit discharge management measures, including: illicit discharge identification training; illicit discharge inspections; illicit discharge reporting format and contact for all complaints and reports; investigation of all reports; maintenance of a tracking database for all reports of illicit discharges	• Control development activities >1 acre • Require construction site operators to implement appropriate erosion and sediment control • Require site inspection and enforcement of control measures • Implement sediment and erosion control measures on borrow pit and waste pile projects • Require monitoring of borrow pit wastewater discharges	• Build statewide NCDOT stormwater system inventory of outfalls • Develop a BMP retrofit program • Develop /maintain a BMP toolbox for runoff control for linear applicability • Develop/ implement a BMP inspection and maintenance program • Develop/ implement a post-construction runoff program with structural and non-structural controls	• Stormwater Pollution Prevention Plans are required on all NCDOT industrial facilities along with qualitative monitoring of the outfalls. • Other sections of permit include measures to develop a vegetation management program, and Provide pollution prevention awareness training for construction and maintenance workers	• NCDOT must implement a program to address impaired waters for which a TMDL has been approved for USEPA • NCDOT must identify outfalls, and develop an assessment and monitoring plan to assess potential impacts	• Monitoring is required for a number of programs, including: • Development of the BMP toolbox • May require monitoring for post-construction controls • Borrow pit wastewater treatment monitoring • Industrial site SWPPP monitoring requirement • Monitoring for each TMDL the NCDOT is subject to
	Other Conditions: • Encroachment Requirement: Ensure all discharges to NCDOTs roadway drainage are properly permitted; Coordinate with DENR on reporting of private discharges that may adversely impact NCDOTs discharges • Industrial activities Requirement: SWPPP required, permit lists SWPPP requirements • Research Program: NCDOT to conduct research with faculty /staff at state universities for independent quantitative assessment of pollutant loads from NCDOT permitted activities; and research to enhance or improve existing practices							
Tennessee Individual Phase I/II permit; permit covers all highways and facilities owned by TDOT	• TDOT to develop an education program to reach: the public; TDOT contractors; TDOT employees • Education avenues include: website; media; volunteer opportunities; anti-litter programs; training	• TDOT SWMP must include 'mechanisms to involve the public' including: • Volunteer opportunities • Public input on implementing control mechanisms • Involving municipalities	• TDOT SWMP must include IDDE, including: • Outfall mapping • IDDE program for public, employees, contractors • Spill response • Disposal from vehicles action task force	• TDOT to implement following actions: • Require NOI for each TDOT construction project for general permit coverage • TDOT must submit application for coverage under Aquatic Resource Alteration Permit, if required • Require other parties conducting work on TDOT ROWs to obtain permit coverage • Develop construction stormwater Manual; Statewide SWMP • Update construction stds to include erosion/sediment controls, including program to detect where soil is tracked	• TDOT to implement post-construction controls: • BMP menu • BMP installation tracking system • Random inspection of drainage systems • Update storm drain inlet standards • Research BMPs • Develop maintenance manual	• TDOT to identify operations with potential to pollute stormwater • Enact source control requirements • Facility Inventory • SWPPP • Stormwater Monitoring (quarterly visual; random sampling) • Develop SOPs	• Requires compliance with WQ controls for discharges to impaired water bodies • Requires consistency with TMDLs	• Included in Pollution Prevention/good housekeeping section
	Other Conditions: • Upon determination of a breach of WQ standards, permittee must promptly notify and submit report listing current and additional BMPs to control WQ issue							

State Permit Type; Coverage	Public Education/ Outreach	Public Involvement/ Participation	Illicit Discharge Detection and Elimination (IDDE)	Construction Runoff Control	Post-Construction Controls	Pollution Prevention and Good Housekeeping	TMDLs	Monitoring
Texas Permits are district based (25 districts); each district is regulated by a different combination of Phase I/II and co- or non co- permitted permits Dallas District Phase I permit: TXS000702; covers Phase I and Phase II portions of MS4, Individual permit	• Permittee to implement public education program: • Promote, publicize, facilitate public reporting • Promote, publicize, facilitate proper management and disposal • Distribute educational materials to public	• Permittee to implement public involvement program to comply with state/tribal/local public notice requirements.	• IDDE program implemented, including: • SSO controls • Floatable controls • Household Haz waste/ motor vehicle fluid controls • Screening and Inspection of MS4 • Elimination of Illicit discharge/ improper disposal	• Implement program to reduce discharge of pollutants into MS4 from construction, including: • BMP use/maintenance requirements • Inspection of sites/ enforcement of control measures • Education/Training for construction site operators • Ordinance/ regulatory mechanism for erosion/sediment controls • Site plan review taking WQ into account • Public Input	• Permittee to implement master planning process to develop, implement, enforce controls to minimize discharge of pollutants from new, redevelopment	• Roadways operated, maintained in a manner to minimize discharge of pollutants • Permittee to develop, implement controls to reduce discharge of pollutants related to pesticides and fertilizers • Spill Prevention and Response / Waste Control • Good Housekeeping/ BMPs identified, implemented • Training for all employees responsible for municipal operations • Structural Control Maintenance	• No provisions for TMDLs	• Dry Weather Screening program- once per permit term • Representative storm event monitoring requirement, with list of constituents • Bioassessment monitoring • Wet weather characterization program • Storm Event Data collection • Seasonal Loadings/ EMCs • Floatables Monitoring
	Other Conditions: • Flood control Projects: WQ assessed, structures constructed to provide pollutant removal from stormwater							
Texas Fort Worth District: Phase II NOI, Permit TXR040184, covers all TXDOT owned highway/facilities in Fort Worth District cities; regulated under general Phase II permit	• NOI to be published in newspaper of largest circulation in county; public comment period required; public meeting must be held if there is interest • Public Education program developed to distribute educational materials to community	• Operator must comply with state/local public notice reqm'ts when implementing public involvement program • Recommended that program include provisions to allow members of public to participate in SWMP development	• IDDE program developed; specific techniques for detection and elimination of illicit discharges must be included in SWMP • Storm sewer map to be developed	• Operator to develop/implement/enforce program to reduce pollutants to MS4 from construction > 1 acre: • Ordinance or Regulatory Mechanism to enforce • Erosion/Sediment Control BMP • Control Waste • Site Plan Review considering WQ Impacts • Receipt of info submitted by public • Site inspection/enforcement of control measures	• Develop/Implement combo of structural/ non-structural controls appropriate for community • Use ordinance/regulatory mechanism to address post-construction runoff • Ensure long term O&M	• Good Housekeeping, BMPs identified and implemented • Requires training component • Structural Control Maintenance • Disposal of Waste • SWMP to include list of all municipal operations subject to O&M; municipally owned/operated industrial activities	• Discharges under this permit must be consistent with any relevant approved TMDL	• Permitted MS4 operators must incorporate TMDL monitoring frequency into SWMP • Any monitoring data collected must be reported • Monitoring required from concrete batch plants (1x year)
	Other Conditions: • Discharges authorized by an individual or other general TPDES permit may be authorized under this permit under certain conditions; Authorization for Municipal construction activities "MCM"							

State Permit Type; Coverage	Public Education/ Outreach	Public Involvement/ Participation	Illicit Discharge Detection and Elimination (IDDE)	Construction Runoff Control	Post-Construction Controls	Pollution Prevention and Good Housekeeping	TMDLs	Monitoring
Virginia Phase II General permit; VA DOT is listed as a permittee	• Operator must integrate an awareness campaign into its existing public education/outreach program • Distribute educational materials to community 3. Provide access to permit/ annual report	• MS4 operator to identify opportunities for, schedule, implement public involvement in stormwater program	• Develop/implement/enforce IDDE program • Develop/maintain storm sewer map • Prohibit through ordinance or other regulatory mechanism non-stormwater discharges from MS4 • Develop/implement procedures to address non-stormwater discharges, including illegal dumping • Prevent/minimize to MEP discharge of hazardous substances from MS4 • Track illicit discharges • Notify any downstream MS4 to which regulated MS4 is physically connected	• MS4 operator to develop/implement/enforce procedures to reduce pollutants in stormwater runoff to the regulated small MS4 from construction activities • Develop ordinance/regulatory mechanism to require erosion/sediment controls • Construction site owner/operators implement BMPs • Site owner/operators secure stormwater discharge authorization under VA construction permit	• MS4 operators to develop/implement/enforce stormwater runoff from new and re-development > 1 acre • Develop/ implement combo of structural/ non structural BMPs • Use regulatory mechanism to address runoff control • Site owner/operator secure stormwater discharge authorization	• Develop/implement O&M program consistent with MS4 program plan with training component • Lists good housekeeping such as: O&M; illicit discharge elimination; proper disposal; protection of material from rainfall; nutrient management plans	• TMDLs must be addressed through MS4 stormwater program	• Monitoring shall be conducted according to procedures under 40 CFR • Operator "periodically" calibrate and maintain all monitoring and analytical instrumentation • No mention of monitoring frequency
	Other Conditions: • Operator must notify Department of any planned physical operation that may introduce more/different pollutants to stormwater							
Washington Individual Phase I/II permit; covers DOT in Phase I/II areas in WA	• Permit Materials available to public upon request • Information regarding WSDOT SWMP on WSDOT website • Support knowledge transfer via stormwater Management presentations, publications, telecasts, stormwater Committees	• Programs: Adopt-a-Highway Program; Highway Runoff Manual listserv and training • List NPDES permits, annual reports, manual, maintenance and operations links on website • Customer Service to respond to inquiries • Advisory group for WSDOT permit/ SWMP with representatives from a number of groups	• WSDOT staff required to visibly identify potential illicit discharges when performing field observations • WSDOT must report all ids of illicit discharges • WSDOT must seek remediation and clean up of illicit discharge by responsible party • Personnel must be trained to id illicit discharges	• Information/ Programs: Erosion Control Program; Highway Runoff Manual; Construction Manual; Std Specs • Requires Contractor Certification • BMP Inspection • Information Management • Training • Must report on construction	• Highway Runoff Manual requirements; Hydraulics Manual requirements • Training for hydrologic analysis/ hydraulic modeling required for all consultants/contractors • Track number and type of stormwater treatment facilities installed	• Requires SWPPPs; effectiveness of plans must be evaluated • Training for WSDOT personnel involved in design/inspection of plans • Construction Pollution Prevention section • Source Controls listed/ Spill Prevention & Containment/ Disposal • Road O&M Requirements • Corrective Actions	• Requires compliance with applicable TMDLs • Lists applicable TMDLs	• Requires a Monitoring Program • Includes Baseline Monitoring Reqs, include sampling parameters • Reporting and implementation of monitoring results into BMP design

State Permit Type; Coverage	Public Education/ Outreach	Public Involvement/ Participation	Illicit Discharge Detection and Elimination (IDDE)	Construction Runoff Control	Post-Construction Controls	Pollution Prevention and Good Housekeeping	TMDLs	Monitoring
Wisconsin Not permitted; Wisconsin DOT complies with comparable stormwater requirements as part of a MOU between Wisconsin DOT and Wisconsin Department of Natural Resources	• No public outreach re: stormwater	• No public involvement re: stormwater	• DNR to assist DOT in IDDE, including: • Creating a storm sewer map • Negotiate intergovernmental agreements with permitted municipalities • One-time dry weather screening of major outfalls • DOT report all illicit discharges to DNR • DNR to take 'appropriate action' in regards to illicit discharges	• DOT to implement construction site erosion control BMPs	• DOT to implement stormwater measures for new and redevelopment construction per DOT "facilities manual"	• DOT must implement highway source controls	• No mention of TMDLs or Impaired Waters	• DOT is to monitor "representative" outfalls to characterize stormwater quality; quarterly sampling for the first year, tbd afterwards • Includes procedures and recommended analytes

APPENDIX B: DETAILED PERMIT EVALUATION

Table B-1: Detailed Evaluation of Arizona DOT Permit

State	Arizona
Permit Type:	Individual; Combined MS4/Industrial/Construction
Permittee(s):	Arizona Department of Transportation (ADOT)
Regulator:	Arizona Department of Environmental Quality
Coverage:	Statewide (except Indian Country)
Issuance Date	9/13/2008
Previous Permit Issuance	9/30/1999 (MS4 Permit issued by U.S. EPA)
SPECIAL PERMIT PROVISIONS	
Authorized and Non-Authorized Discharges (Section 1)	• *Authorized discharges*: Stormwater and listed non-stormwater, to and from MS4; Stormwater from industrial, construction, maintenance, and MS4 activities as listed in Table 1.3; • Non-stormwater discharges listed and those approved by ADEQ in accordance with permit or those otherwise covered under a separate NPDES or AZPDES permit are allowed, provided: o The non-stormwater discharge is a result of ADOT's activities; o The discharge is not a significant source of pollutants; and o ADOT implements effective BMPs during all non-stormwater discharges and describes those BMPs in the SSWMP or SWPPP. • Allowed non-stormwater discharge list includes some DOT-specific discharges, such as: o Routine tunnel wall washwater o Sign washwater o Discharges from emergency highway situations where federal rules specify washing as the preferred method to assure public safety. • *Non-Authorized discharges*: non-stormwater discharges to 303(d)-listed waterbodies and unique receiving waters; industrial or construction discharges that will cause or contribute to the non-attainment of water quality standards or to the designated uses of receiving waters; discharges into a water body for which a TMDL has been established or

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	approved by EPA, if that discharge is inconsistent with the TMDL; non-stormwater discharges resulting from third parties with exception of fire-fighting; • If a discharge to an impaired receiving water body contains pollutants for which a TMDL has been established (for that receiving water body), the SSWMP and/or applicable SWPPP shall identify specific BMPs necessary to ensure that the discharges will be consistent with the provisions of the TMDL. • ADOT shall eliminate or reduce discharges of non-stormwater to the maximum extent feasible. • ADOT may request approval for additional sources of non-stormwater discharge(s) that ADOT does not expect to be a significant contributor of pollutants
Legal Authority (Section 2.0)	• *Source of Authority*: ADOT shall utilize the powers delegated to it by the Arizona Legislature through A.R.S. Title 28 to control and enforce the release of pollutants to and discharges from the MS4 that is owned or operated by ADOT through rules and regulations regulating encroachments, permits, contracts or similar means.
Compliance with Standards (Section 7.0)	• *MS4 MEP Standard*: ADOT shall protect water quality by reducing, to the maximum extent practicable (MEP), any discharge that may cause or contribute to an exceedance of any water quality standard (WQS) of the State of Arizona applicable to receiving waters of the MS4. To do so, ADOT shall fully implement the SSWMP, and subsequent revisions, as well as all the requirements of the MS4 permit. • *MS4 Iterative Improvement Standard*: ADOT shall compare stormwater discharge water quality monitoring data, as measured from the MS4 outfalls, to the water quality standards applicable to receiving waters. If monitoring data show a recurring (more than once) condition of exceedance, ADOT shall investigate and identify potential source(s) of the pollutant(s) and evaluate the effectiveness of existing BMPs and identify additional BMPs or actions necessary to improve the quality of the discharges. • *Industrial and Construction Standard*: ADOT shall protect water quality by ensuring that no discharge from industrial or construction activities causes or contributes to an exceedance of any applicable surface water quality standard. If ADOT finds that a discharge is causing or contributing to an exceedance, it will report that exceedance in the Annual Report and take any necessary actions to ensure that future discharges do not cause or contribute to an exceedance of any WQS. • *TMDLs*: If a TMDL is established during the permit term for any receiving water into which ADOT discharges, ADOT shall modify the SSWMP to ensure that the wasteload allocation, load allocation, and associated implementation plan will be met. ADOT also will ensure that any pollutants associated with the TMDL be included in monitoring to be performed at the outfalls, and will report monitoring results in the Annual Report.

State	Arizona
STORMWATER MANAGEMENT PROGRAM ELEMENTS	
General Requirements	• *SSWMP maintenance*: ADOT shall implement, update, and maintain a SSWMP designed to minimize ADOT contributions of pollutants statewide and limit to MEP discharges from MS4 owned, operated, and used by ADOT. • *Precedence*: Permit is the governing document in any discrepancy between ADOT's SSWMP and this permit. • *BMP modifications*: Revisions to SSWMP may address adding new BMPs, adding temporary or experimental BMPs, increasing existing BMPs, and replacing existing BMPs; ADOT will report such modifications in subsequent Annual Reports, and in case of replacing BMPs must apply for approval 60 days prior to ADOTs planned implementation of the alternative BMP.
Program Assessment and Evaluation	• *Annual Review*: ADOT shall conduct an annual program review, in conjunction with preparation of Annual Report.
Illicit Discharge Detection and Elimination (3.2.3)	• *Program*: ADOT shall implement an ongoing program to minimize, detect, investigate and eliminate illicit discharges, including unauthorized non-stormwater discharges and spills. Implementation will be supported through maintenance of illicit discharge legal authority, enforcement of standard encroachment permit, and updating of *Maintenance and Facilities Best Management Practices Manual*. • *Inventory:* ADOT shall inventory outfalls, including 71 major outfalls identified in 2005 Phase I and Phase II Storm Water Systems Maps; ADOT will develop proposal to ADEQ, including schedule to identify all outfalls in the Phase II municipalities and all Priority Outfalls statewide. • *Map Storm System:* No later than 4 years from effective date of this permit, ADOT shall develop a storm sewer system map(s) identifying location of all ADOTs stormwater collection and conveyance structures, highway system, jurisdictional boundaries, drainage patterns, and unique, impaired and not attaining waters. • *Dry Weather Screening:* Within 12 months from effective date of this permit, ADOT will update dry weather field screening portion of *Stormwater Monitoring Guidance Manual for MS4 Activities.* • *Inspections:* Within 12 months from effective date of this permit, ADOT shall inspect 35 of 71 major outfalls identified in Sept. 2005 Phase I and Phase II Storm Water System Maps. Within 24 months of permit issuance, ADOT shall inspect balance of major outfalls. In years 3, 4, and 5 of the permit term, ADOT shall inspect each of the 71 outfalls at least once per year. • *Recording:* ADOT shall implement and maintain a system to track and record findings from outfall inspections. • *Investigating Potential Illicit Discharges:* Within 12 months of permit issuance, ADOT shall update Stormwater Monitoring Guidance Manual for MS4 Activities to describe procedures to investigate illicit discharges; within 15 days of date of detection, ADOT shall initiate investigations of illicit discharges to identify potential sources. • *Complaint Response:* Within 15 days of report, ADOT shall respond to calls and complaints from public via the Public

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	Reporting System and shall develop a system to track reports and ADOT's responses. • *Incidental Dry Weather Discharges:* ADOT shall report dry weather discharges from any ADOT outfall, regardless of size and within 15 days of detection, initiate appropriate follow up action. • *Eliminating Illicit Discharges and Illegal Dumping:* With 90 days of permit issuance, ADOT shall investigate the source(s) and if appropriate take action to eliminate the dry weather flows from the six major outfalls identified in the July 21, 2005 Summary Report –Dry Weather Screening. • *Coordination:* ADOT will modify the SSWMP to include a description of procedures for coordination with municipalities and other agencies where investigations indicate that the illicit discharge originates outside ADOT's jurisdiction: within 12 months of permit issuance, ADOT will establish procedures for notifying other jurisdictions for assistance in enforcement where ADOT lacks legal authority.
Construction Stormwater Pollution Prevention (3.2.4)	• *Updating SSWMP*: Within 12 months from permit issuance, ADOT shall update its SSWMP as needed to describe a construction program that addresses new requirements described in Section 5 of this permit.
Stormwater Management for New Facilities	• *Develop Manual*: Within 12 months of effect date of permit, ADOT will develop *Post-Construction Stormwater Control BMP Manual* that will address design standards, source reduction measures such as LID, describe how measures will reduce discharge pollutants to MEP, and submit manual to ADEQ within 12 months of permit date (3.2.5.1) • *Install BMPs*: ADOT to install Post-Construction Stormwater Control BMPs for all newly developed roadways that discharge stormwater runoff to impaired or unique waters. For other areas, ADOT shall evaluate the need for installation of post construction controls. Where controls are indicated, they shall be installed within 3 months after roadway construction is complete (3.2.5.2).
Stormwater Management for Maintenance Facilities (Section 4.0)	• *Good Housekeeping:* ADOT shall prevent litter, debris, and chemicals that could be exposed in stormwater from becoming a pollutant source (4.1.5.1). • *Vehicle and Equipment Storage:* ADOT shall describe and implement BMPs that prevent or minimize contamination of stormwater from all areas used for equipment storage, including confining leaking equipment scheduled for maintenance in designated areas. Use drip pans, keep inventory of materials used in shop, drain all parts of fluid prior to disposal, use dry cleanup methods, and treat, recycle, or properly dispose of collected stormwater to and from maintenance areas. • *Material Storage Areas:* ADOT shall implement following BMPs: maintain all material storage vessels, move storage indoors whenever practical, install berms and dikes around the areas, minimize run-on, use dry cleanup methods, and treat, recycle or properly dispose of collected stormwater runoff. • *Spill Response and Prevention:* ADOT shall implement management practices and procedures for handling toxic and

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	hazardous materials to prevent spills, and to prevent or minimize discharges to the storm sewer system or receiving waters; Within 12 months from permit issuance, ADOT shall establish a system to track and record spills and other releases at ADOT maintenance facilities including information on number, type, and amount of material released and circumstances of the release. • *Stenciling:* ADOT shall install markers or stencils on all new catch basins upon installation and at all existing catch basins before the expiration of this permit. • *SWPPP:* For selected maintenance yards (permit specifically names 19 maintenance yards) that require a SWPPP, ADOT shall continue to develop and implement SWPPPs; keep copy of SWPPP on site; develop SWPPPs for new maintenance yards; update existing SWPPPs to comply with this permit; and document in the first Annual Report the status of the SWPPP update required for each maintenance yard. • *SWPPP requirements:* include all areas of maintenance facility that may impact stormwater; address pollutants of concern; identify appropriate BMPs, include site description; locate vehicle/equipment maintenance activities; locate outdoor storage, fueling and maintenance areas; identify nearest receiving waters, including wetlands and other sensitive water bodies, and identify potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from a facility. • *SWPPP BMPs:* Describe and ensure implementation of BMPs that reduce pollutants in runoff including: stormwater diversions, erosion and sediment control BMPs, and treatment. • *TMDLs:* Ensure that all BMPs are consistent with any relevant TMDL that has been established by EPA. • *Inspections:* ADOT shall conduct a Comprehensive Maintenance Facility Inspection at least once per year, and ADOT shall complete an inspection report for all maintenance facility inspections that addresses inspection date, qualifications of inspectors, weather information, discharge locations, locations of existing BMPs and where additional BMPs are needed, corrective actions needed, identification of material storage areas, any incidents of non-compliance with permit conditions, and needed follow up actions. • *Sediment Removal:* If sediment or other materials escape the site, ADOT shall remove the off-site accumulations of sediment or other materials at a frequency sufficient to minimize off-site impacts. • *Inspection Records:* ADOT shall retain inspection records as part of the SWPPP for at least five years from the expiration of this permit.
Stormwater Management for ADOT Facilities Associated with	• *Coverage:* Industrial facilities covered by this permit include following facilities that are operated by ADOT: Grand Canyon National Park Airport, Durango Sign Factory, various statewide material storage areas, and Print Shop located in City of Phoenix. • *General Requirements for SWPPPs:* ADOT will prepare SWPPP for each facility, implement BMPs and monitoring programs described in the SWPPPs within 12 months of the effective date of this permit.

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Industrial Activity (Section 6.0)	• *Scope of SWPPP:* The scope of the SWPPPs will include site description including location of activities that could be pollutant sources or sources of leaks and spills, location of nearest receiving waters, sampling data taken at the facility, and stormwater BMPs including structural and non-structural BMPs. • *Comprehensive Facility Inspection:* ADOT shall conduct a Comprehensive Industrial Facility Inspection at least once per year using qualified personnel who inspect all areas of site where materials are exposed to precipitation. Inspection reports shall be completed and retained on site for a period of at least 5 years from the expiration date of this permit. • *Measures:* Measures to control pollutants will be identified in each SWPPP and will address fueling areas, and tank and container storage areas, including spill prevention and countermeasure programs if applicable. • *Pollution Prevention Team:* The SWPPP will identify individuals that comprise the facility's stormwater pollution prevention team. • *Grand Canyon National Park Airport:* ADOT is authorized to discharge only stormwater from those portions of the Grand Canyon National Park Airport that are involved in vehicle maintenance, equipment cleaning operations, de-icing operations, and from runways and parking lots. ADOT is not authorized to discharge washwater from cleaning aircraft, ground vehicles, runways, or equipment , or dry weather discharges of de-icing chemicals. Such discharges must be covered under a separate AZPDES permit. • *Durango Sign Factory:* ADOT is authorized to discharge stormwater associated with industrial activity from the Durango Sign Factory, which is primarily engaged in the manufacture of fabricated metal products/signs. • *Material Sources Statewide:* Material use sites are categorized as actively mined sources that have a potential to discharge stormwater associated with industrial activity (Group A), sites that are inactive material sources (Group B), sites that are undergoing reclamation (Group C), and non-mining sites that contain stockpiles of processed material (Group I). ADOT shall prepare SWPPPs for all material source sites (A-C) located within ¼ miles of unique, impaired, and non-attaining waters within one year of the effective date of this permit. Material source site management will address clearing, grading and excavating activities including good housekeeping, velocity dissipation devices, retention and detention of stormwater runoff, and stabilization of disturbed sites. Requirements will include inspection, maintenance of BMPs, and reporting. • *ADOT Phoenix Administrative Headquarters Print Shop:* ADOT operates a print shop at the ADOT Phoenix Administrative Headquarters that meets a condition of "no exposure" and as such, the requirements for this facility are limited to continuing and maintaining practices related to avoidance of conducting activities or storing materials that could be exposed to stormwater. ADOT shall confirm in each Annual Report that the no exposure conditions remain applicable.
Maintenance	• *General*: ADOT shall continue to implement its programs of roadway and storm drain repair, maintenance and cleaning, vegetation management, and winter storm policies to reduce release of pollutants from the storm sewer system. • *Update Manual*: ADOT will update Maintenance and Facilities Best Management Practices BMP Manual within 12

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(Section 3.2.6)	months of permit issuance. • *Inventory*: ADOT will develop and maintain an inventory of post-construction BMPs, and shall submit the inventory to ADEQ no later than 24 months after effective date of this permit. • *Schedule and Priorities*: ADOT shall identify routine maintenance schedules and priorities for its storm sewer system, including roadways to minimize pollutant discharges from the storm sewer system. • *Implement BMPs*: ADOT shall implement BMPs to reduce potential for releases of pollutants to the storm sewer system when performing repair, maintenance, or cleaning of its storm sewer system, including roadways. • *Roadside Management*: ADOT shall continue to implement BMPs described in its Highway Maintenance Program specifically those BMPs related to vegetation control and landscaping, and in Appendix D – Excerpts from Vegetation Management Guidelines of the *ADOT Maintenance and Facilities BMP Manual.* • *Pesticide Management*: ADOT shall continue to implement practices and procedures for ADOT staff and commercial applicators to only use Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) approved pesticides/herbicides at ADOT facilities and roadside right-of-ways. • *Winter Storm Policies*: ADOT shall continue to implement BMPs in the Highway Maintenance Program specifically those regarding Snow and Ice Removal, and those BMPs in Appendix E – Winter Storm Management in the *ADOT Maintenance and Facilities BMP Manual.*

State	Arizona
Research & Monitoring (Section 8)	• *Methods*: ADOT shall monitor stormwater discharges associated with its construction and industrial facilities, and its MS4 locations at designated outfall points. Such monitoring will be conducted in accordance with *Standard Methods for Examination of Water and Wastewater* and in ADOT *QA Manual* which will address sample collection procedures, approved analytical methods to be used, and data review and reporting procedures to be followed. • *Where Monitoring Required*: For construction sites, concrete and asphalt batch plants within ¼ mile of a unique or impaired water body, the SWPPP shall include a monitoring program to determine if BMP are effective. • *Construction Sites*: ADOT shall monitor turbidity upstream and downstream of all water quality impacts from the construction site and at least one monitoring point at the discharge point(s) of the construction site. If the turbidity is increased by more than 25%, ADOT shall evaluate, and replace, maintain, or install additional BMPs as necessary if indications are the site may be contributing to the turbidity load. • *Concrete Batch Plants*: Plants within ¼ mile of unique or impaired waters require monitoring each storm with at least 0.1 inch of precipitation. Monitoring requires that at least one grab sample be taken and analyzed and compared to monitoring limits for TSS, Total Iron, and Total Aluminum if concrete manufacturing taking place and TSS and pH if runoff derives from material storage. • *Asphalt*: Similar sampling requirement to concrete batch plants but constituents consist of TSS, TPH, and pH depending on specific activities. • Industrial Facilities: Within 12 months of permit issuance, ADOT shall update Stormwater Monitoring Guidance Manual for Industrial Activities.
Education, Training & Public Involvement	• *Scope of Training*: ADOT shall provide specific stormwater training to educate personnel who are directly involved in activities that may impact stormwater quality including illicit discharges and illegal dumping, non-stormwater discharges, new construction and land disturbances, new development and significant redevelopment, storm sewer system and highway maintenance, good housekeeping and material BMPs, and application of pesticides and fertilizers. For each topic the number of trainings offered, the number of employees trained, and other appropriate measureable goals shall be presented in Annual Report. • *Certification*: ADOT shall continue to require training and certification for Construction Contractors including 16 hour Erosion Control Coordinator course and have minimum of one year of experience. • Training Manuals: ADOT will update and maintain ADOT's Erosion and Pollution Control Manual. • *Public education*: ADOT will continue to implement educational and public information activities to distribute educational materials on stormwater quality, and include number and type of materials developed and distributed in Annual Reports. • *Website*: ADOT will maintain a publicly accessible website on the stormwater program and shall update the webpage as needed, and report the number of "hits" in the Annual Report.

State	Arizona
	• *Public Involvement*: ADOT shall implement a Public Involvement/Participation Program that will include making stormwater documents available to public, record and consider public comments, and implement a Public Reporting System. • *Litter Initiative*: ADOT shall develop a stormwater component of the Adopt-a-Highway Litter Initiative and continue implementation of a Litter Hotline • *Coordination*: ADOT shall implement a program that established internal coordination and intergovernmental coordination with other regulated MS4s and shall describe these partnerships in the SSWMP.
Reporting	• ADOT shall prepare an Annual Report summarizing progress of the SSWMP and findings of monitoring activities for each year of the permit term. The Annual Report will address annual report certification, narrative and numeric summary of SSWMP activities, evaluation of SSWMP, SSWMP modifications, monitoring location information, storm event records, summary of monitoring data by location, assessment of monitoring results, estimate of pollutant loadings, and annual expenditures.

Table B-2: Detailed Evaluation of Arizona Construction Program Details

State	Arizona
Permit Type:	Individual; Combined MS4/Industrial/Construction
Permittee(s):	Arizona Department of Transportation (ADOT)
Regulator:	Arizona Department of Environmental Quality
Coverage:	Statewide (except Indian Country)
Issuance Date	9/13/2008
Previous Permit Issuance	9/30/1999 (MS4 Permit issued by U.S. EPA)
SPECIAL PERMIT PROVISIONS	
Construction Requirements	• Applies to 1 acre or greater of disturbance, or any are part of a larger common plan of development that disturbs greater than one acre; includes borrow, storage and mobile access areas. • Applies to "support activities" specific to ADOT; these include asphalt and concrete batch plants. • Support activities within ¼ mile of an impaired waterbody trigger monitoring requirements in accordance with Section 8.3 of the Individual permit. • Discharges from a construction site within ¼ mile of an impaired waterbody must monitor in accordance with Permit Section 8.3.
SWPPP	In the ADOT permit, the SWPPP shall include the following background site information: • A detailed site description • A detailed site map • Receiving water description • A monitoring program (if applicable) • A summary of potential pollutant sources • A description of off-site material use or storage

State	Arizona
Erosion and Sediment Control BMPs	In the ADOT permit, the SWPPP shall require the following ESC BMPs: • Temporary or permanent stabilization must be initiated within 14 days on areas that are not actively under construction (temporarily or permanently ceased). • Sediment removal off-site must occur within 7 days of discovery and must be of sufficient frequency to protect water quality. • Down-gradient sediment controls must be installed prior to upgradient land disturbance. • A sediment basin must be provided and maintained until final stabilization and must have 3600 ft3 (or volume sufficient to contain the 2 year 24 hour storm) per acre of storage for disturbed drainage areas greater than 10 acres. • Perimeter controls must be installed downgradient of construction activity for any drainage area not contained by a sediment basin. • Velocity dissipation devices must be provided at all discharge points from the site. • Inlet protection must be provided on all operational storm drain inlets.
Non-structural BMPs	• In the ADOT permit the SWPPP shall require the following non-structural BMPs: • Minimization of waste discharges, including construction debris, concrete, aggregate, chemicals, fly ash, and settled dust. • Spill prevention and response practices
Maintenance Procedures	• In the ADOT permit the SWPPP shall require the following maintenance procedures: • Any BMP not working effectively must be maintained within seven days of discovery, and prior to next forecasted rain event. • Sediment basins and traps must be maintained when their capacity has been reduced by 50%.
Post Construction BMPs	• In the ADOT permit The SWPPP shall require the following post-construction BMPs: • Post-construction controls are required for all newly developed or redeveloped roadways that discharge stormwater runoff to impaired or unique waters. For other areas ADOT is required to evaluate the need for post construction controls as appropriate and consistent with the ADOT's Post-Construction Stormwater Control BMP Manual. • A description of post-construction controls, including the long-term maintenance responsible party, should be included in the SWPPP. • All infiltration post-construction BMPs should be inspected during construction to prevent compaction and sedimentation.
Site Inspections	• Sites within ¼ mile of impaired or unique water must be inspected every 7 days. • All other sites may be inspected either every 7 days, or every 14 days and after any rainfall in excess of 0.5 inches. • Inspections may be reduced to monthly (and prior to expected storm events) if the site is temporarily stabilized, or runoff is unlikely due to winter conditions • All inspections are to be done by a trained Erosion Control Coordinator (ECC).

State	Arizona
	• All asphalt and concrete batch facilities must be inspected once per month. • A detailed report must be prepared that identifies (1) inspection date, (2) inspector's qualifications, (3) weather information, (4) description of discharge, (5) BMPs that require maintenance or repair, (6) additional BMPs required, (7) corrective actions needed, including dates, (8) non-stormwater discharges, and (9) material storage area condition. • Reports must be appropriately signed and should contain any reports of non-compliance with the permit. If no issues are identified, language to this effect should be included. • Inspection reports must be maintained for five years following notice of termination (NOT)

Table B-3: Detailed Evaluation of Maine DOT Permit

State	Maine
Permit Type:	DOT/MTA Specific Phase II General Permit
Permittee(s):	Maine Department of Transportation and Maine Turnpike Authority
Regulator:	State of Maine Department of Environmental Protection (DEP)
Coverage:	All DOT and MTA facilities within the Phase II areas
Issuance Date	July 1, 2008
Previous Permit Issuance	
SPECIAL PERMIT PROVISIONS	
Authorized and Non-Authorized Discharges (Parts I.A; I.D.2,3,6; IV.H.3.b)	• *Authorized Discharges*: This general permit authorizes the direct discharge of stormwater from or associated with a regulated small Municipal Separate Sewer System (MS4) operated by Maine Department of Transportation ("MaineDOT") or Maine Turnpike Authority ("MTA") to waters of the State other than groundwater. Unless otherwise explicitly noted, this permit only covers operations and activities associated with stormwater runoff from the regulated small MS4 within an identified Urbanized Area. • *Non-Authorized Discharges*: The general permit does not authorize discharges that are mixed with sources of non-stormwater, other than those identified in Part IV.H.3.b which include, but are not limited to, landscape irrigation, uncontaminated pumped groundwater, air conditioning and compressor condensate, lawn watering runoff, hydrant flushing and fire fighting activity runoff. The permit does not authorize discharges of hazardous substances, chemical or oil, and a waste discharge license (WDL) may be required for the discharge of stormwater through any well, including dry wells and subsurface fluid distribution systems (defined as an "assemblage of perforated pipes, drain tiles, or similar mechanisms intended to distribute fluids below the surface of the ground"). (See section below Compliance with Standards for other non-authorized discharges.)
Legal Authority	Legal authority not specifically addressed under this heading.
Compliance with	• *MEP Standard*: The permit does not authorize the discharge that is not in compliance with the requirements of this

State	Maine
Standards (Part I.D.1,4,5)	general permit, or a discharge that fails to reduce the pollutants from the permittee's MS4 to the maximum extent practicable ("MEP") • *TMDLs*: This general permit does not authorize a direct discharge that is inconsistent with any EPA approved TMDL waste load allocation and any implementation plan for the water body to which the direct discharge drains. • *Water Quality Standards*: This general permit does not authorize a discharge that may cause or contribute to a violation of a water quality standard. • *Urban Impaired Stream Systems*: Additional stormwater treatment within the urban area are necessary for Urban Impaired Stream watersheds. The permittee shall implement measures necessary to control, to the MEP, the discharge of stormwater runoff including known pollutants of concern that have been identified as causing or contributing to the water body's impairment.
STORMWATER MANAGEMENT PROGRAM ELEMENTS	
General Requirements (Parts III and IV)	• *Notice of Intent (NOI):* MaineDOT and MTA shall each file with the Department a NOI form that meets the requirements of Part III of this general permit, and must be submitted no later than July 7, 2008. The NOI must include contact information for transportation entity; permit number assigned; name of the Urban Impaired stream(s), non-impaired streams, wetlands and waterbody(s) to which the transportation entity discharges within each regulated small MS4 municipality; and maps or narrative description of roads and drainage ways that the permittee is responsible for within the UA. Applicants for NOI are required to publish a public notice that a NOI is being filed with the DEP. • *Stormwater Program Management Plan ("Plan")*: Interim coverage under the NOI will terminate in 180 days following permit issuance or earlier if a complete Plan has been submitted and is reviewed and approved by the Department. Each permittee shall develop, implement, and enforce a Plan implementing the six minimum control measures that are designed to reduce the discharge of pollutants from the transportation entity's regulated small MS4 to the MEP. • *Minimum Control Measures*: For each Minimum Control Measure, the permittee shall: define appropriate BMPs, designate the person(s) responsible for each BMP, define the time line for implementation of the BMP, and define measureable goals for each BMP.
Program Assessment and Evaluation (Part IV.E)	• *Assessing the Plan:* The Plan must address the six Minimum Control Measures and must, at a minimum, include the measures indicated as required within the UA of the municipality in which the permittee operates an MS4. The Plan also will identify the measureable goals by which each BMP will be evaluated. • *Amending the Plan:* The Department shall notify the permittee if Department determines that the Plan must be amended. Major modifications of the Plan by the permittee must be submitted to the Department and approved prior to implementation.
Illicit Discharge	• *Mapping:* By June 30, 2013, each permittee will develop a watershed based storm sewer system infrastructure map of

State	Maine
Detection and Elimination (Part IV.H.3)	its respective MS4 within the UA showing location of catch basin, pipes, and outfalls. • *Outfall Inspection Plan:* Each permittee will develop and implement a prioritized dry weather outfall inspection plan; in the first permit year conduct dry weather inspection of their MS4 outfalls that discharge to the two highest priority watersheds. In subsequent years, expand inspections to other urban impaired streams in their UA. MaineDOT and MTA shall have a defined procedure/policy or protocol in place that details the steps that must be taken when an illicit discharge is identified during these inspections to locate the source of the illicit discharge and eliminate it.
Construction Stormwater Pollution Prevention (Part IV.H.4)	• *Strategies*: Permittee shall develop, implement, and enforce a program or modify an existing program, to reduce pollutants in stormwater runoff from construction activities that result in land disturbance of greater than equal to 1 acre. Each permittee must include standard operating procedures for addressing and implementing compliance and enforcement actions.
Stormwater Management for New Facilities	• *Strategies*: Each permittee shall develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to 1 acre. The strategies should include a combination of structural and non-structural BMPs appropriate for its regulated small MS4. • *Inspection*: To ensure adequate long-term operation and maintenance of post construction BMPs, each permittee shall develop, as part of its Plan, an approved BMP inspection schedule that at minimum stipulates that new BMPs are inspected at least once during the first year of installation. Inspections must determine if the BMP is adequately maintained and is functioning as intended or requires maintenance. In the Annual Report, the permittee will include: cumulative number of post construction BMPs discharging into waters of the State, the number of sites with documented functioning post construction BMPs, and the number of sites that required routine maintenance or remedial action to ensure that the post construction BMP is functioning as intended.
Stormwater Management for Maintenance Facilities (Part IV.H.6.a.vi)	• *Vehicle Maintenance:* The permittee by the end of permit year two, shall develop and implement a stormwater pollution prevention plan ("SWPPP") for vehicle maintenance facilities operated by permittee within the UA unless the facility is currently regulated under Maine's Industrial Stormwater Program.
Stormwater Mgmt for Industrial Activity	• Industrial facilities not specifically addressed under this heading (see Section above on Stormwater Management for Maintenance Facilities).

State	Maine
Maintenance (Part IV.H.6)	• *Pollution Prevention and Good Housekeeping Program*: The goal of the minimum measure is to prevent or reduce pollutant runoff from the MaineDOT's/MTA's roads, other paved surfaces, infrastructure, and facilities through the development and implementation of an operation and maintenance ("O&M") program. The Program will address the following. • *Inventory and O&M procedures*: inventory of potential pollutant sources and associated operations conducted in, on, or associated with facilities, buildings, roads, travel ways including ROWs that have potential to cause or contribute to stormwater or surface water pollution. By the end of permit year two, the permittee shall develop written operation and maintenance procedures that include maintenance schedule and inspection procedures to ensure long term operation of structural and non-structural controls that reduce stormwater pollution to the MEP. The procedures must at minimum address proper use, storage and disposal of products and materials; spill response and prevention; vehicle and equipment storage, maintenance, and fueling; landscaping and lawn care including establishing buffers, and vegetation management; erosion and sedimentation control; and disposal of road-killed wildlife. • *Employee Training*: Using available training materials from EPA, the State, regional stormwater groups and other agencies, the Pollution Prevention and Good Housekeeping Program must include employee training to prevent and reduce stormwater pollution from permittee operations and facilities. • *Sweeping*: The permittee shall develop and implement a program to sweep all paved streets and parking lots at least once a year as soon as possible after snowmelt. • *Cleaning*: The permittee shall develop and implement a program to evaluate and, if necessary, clean catch basins and other stormwater structures that accumulate sediment at least once every other year and dispose of removed sediments consistent with current state law. The permittee shall clean catch basins more frequently if inspections indicate accumulation is greater or equal to 50 percent of the capacity of the basin. • *Infrastructure Repair*: The permittee shall evaluate and implement a prioritized schedule, as necessary, for repairing or upgrading conveyances, structures, and outfalls of the regulated small MS4.
Research & Monitoring	• Monitoring requirements limited to inspections as required to implement Minimum Management Measures.
Education, Training & Public Involvement (Part IV.H.1 and IV.H.2))	• *Public Education and Outreach*: Goals are to raise awareness, and motivate staff and contractors to use BMPs which reduce polluted runoff. Strategies may include partnering with local regulated stormwater communities. • *Public Involvement and Participation*: Goal is to involve the permittees communities including departments, bureaus or facilities, and when applicable the regulated small MS4 communities in both the planning and implementation process. Required strategies include public notice requirements and coordination with regulated community(s).

State	Maine
Reporting	• *Annual Reporting*: By September 15, 2009 and annually thereafter by September 15, the permittee shall submit a report for the Department's review and approval. The report must include the current copy of the Plan; status of compliance with permit conditions; an assessment of the appropriateness of identified BMPs; progress towards achieving measureable goals; results of information collected and analyzed including monitoring data if any; a summary of activities to be taken pursuant to its plan during the next reporting cycle; any changes in measureable goals; a summary of activities, progress and accomplishments for each of the six Minimum Control Measures, and an estimate of annual expenditures for reporting period and projected budget for the following year.

Table B-4: Detailed Evaluation of Minnesota DOT Permit

State	Minnesota
Permit Type:	General Permit applicable to Small Municipal Separate Storm Sewer Systems (Phase II)
Permittee(s):	Owners and Operators of Small Municipal Separate Storm Sewer Systems (including Minnesota DOT)
Regulator:	Minnesota Pollution Control Agency
Permit Type	Phase II General Permit
Coverage:	Phase II urbanized area
Issuance Date	June 1, 2006
Previous Permit Issuance	
SPECIAL PERMIT PROVISIONS	
Authorized and Non-Authorized Discharges (Parts II, IX)	• *Authorized Discharges*: This permit does not authorize discharges other than Storm Water. • *Non-Authorized Discharges*: Non storm water discharges may include: combined sewer overflow, noncontact cooling water, sewage, wash water, scrubber water, spills, oil, hazardous substances, fill, commercial equipment/vehicle cleaning and maintenance wastewaters. A separate NPDES permit may be required for these discharges.
Legal Authority	• Not specifically addressed as separate topic, but rather included under 6 minimum measures where applicable.
Compliance with Standards (Part IX, App C &	• *Limitations on Coverage*: This permit does not authorize discharges unless the requirements of Part IX (Appendix C) are met: discharges to waters with Restricted Discharge designation, discharges to Trout Waters, discharges to wetlands, discharges requiring Environmental Review, discharges affecting Threatened and Endangered Species and their Habitat, discharges affecting Historical and Archeological sites, and discharges affected Source Water Protection Areas. (Definitions of many of these provided in permit by reference to various Minnesota statutes and other

State	Minnesota
Part X, App D)	regulations.) • *Non-degradation and Loads Assessment*: The Commissioner has selected specific MS4s ("Selected MS4s) based on population growth that requires those MS4s to conduct a loading assessment using a pollutant water quality model, or equivalent, to project past, current, and future loads. Results to be reported in a Nondegradation Report, to help select appropriate BMPs that address nondegradation, to determine whether additional control measures can reasonably be taken to reduce pollutant loading, and for a few Selected MS4s that elect to do so, to evaluate the significance of the New or Expanded Discharge.
STORMWATER MANAGEMENT PROGRAM ELEMENTS	
General Requirements (Part III.C)	• *SWPPP*: The proposed Storm Water Pollution Prevention Program (SWPPP) for implementing the permit shall be attached to the application on forms provided by the Commissioner, and shall detail the BMPs that will be implemented for each minimum control measure, and the measurable goals for each of the BMPs, including the duration of BMPs (months and years), the frequency of action, and interim milestones. • *TMDL*: If MS4 discharges to a Water of the State that appears on the current USEPA approved list of impaired waters, review whether changes may be warranted in SWPPP to reduce the impact of discharge. If a USEPA approved TMDL has been developed, review the adequacy of the SWPPP to meeting the TMDLs Waste Load Allocation for storm water sources. If the SWPPP is not meeting the applicable requirements, modify the SWPPP within 18 months after the TMDL is approved.
Program Assessment and Evaluation (Part H)	• *Modification to the SWPPP by Order of Commissioner*: The Commissioner may require modification of the SWPPP as needed to consider the following factors: discharges from the storm sewer system are impacting the quality of receiving waters; more stringent requirements are necessary to comply with state and federal regulations; measures are necessary to meet the applicable requirements of Appendices C (Limitations on Coverage) and D (Nondegradation for selected MS4s); or additional conditions are deemed necessary to comply with the goals and requirements of the Clean Water Act or water quality standards. • *Modification to the SWPPP:* The SWPPP may be modified without prior approval of the Commissioner provided: a BMP is added and none subtracted; a less effective BMP is replaced with a more effective BMP; and the Commissioner is notified of the modification in the Annual Report for the year the modification is made. • *Evaluation and Assessment:* For each Annual Report, evaluate program compliance, the appropriateness of the identified BMPs, and progress towards achieving the identified measureable goals.
Illicit Discharge Detection and Elimination	• *Minimum Measures* Develop, implement, and enforce a program to detect and eliminate illicit discharges as defined at 40 CFR § 122.26(b)(2) by selecting and implementing a program of appropriate BMPs and measureable goals consisting of: development of a storm sewer map; obtain legal authority to effectively prohibit through ordinance or other regulatory mechanism, non-stormwater discharges into your storm sewer system; develop and implement a

State	Minnesota
(Part G.3)	program to detect and address non-storm water discharges; inform employees, businesses and general public in the MS4 area of hazards associated with illegal discharges and improper disposal of waste; and address category of non-stormwater discharges that are considered authorized (see list under authorized and non-authorized discharges above) unless identified as significant contributors of pollutants to the small MS4.
Construction Stormwater Pollution Prevention (Part V.4)	• *Minimum Measures*: Within 6 months after extension of coverage under this permit, develop and commence to implement and enforce a program to reduce pollutants in any storm water runoff to the small MS4 from construction activities within the jurisdiction that result in a land disturbance of greater than or equal to 1 acre. Select and implement a program of appropriate BMPs and measureable goals consisting of: an ordinance or other regulatory mechanisms to require erosion and sediment controls, as well as sanctions to ensure compliance: requirements for construction site operators to implement appropriate erosion and sediment control BMPs; requirements for construction site operators to control waste, such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste that may cause adverse impacts to water quality; procedures for site plan review which incorporate consideration of potential water quality impacts; procedures for receipt and consideration of reports of non-compliance or other information submitted by the public; and procedures for site inspection and enforcement of control measures.
Stormwater Management for New Facilities (Part V.5)	• *Minimum Measures* Develop, implement, and enforce a program to address storm water runoff from new development and redevelopment that disturb greater than or equal to 1 acre, including projects less than 1 acre that are part of a larger common plan of development by June 30, 2008, or another date established by the Commissioner. The program must select and implement appropriate BMPs and measurable goals consisting of, at a minimum: develop and implement strategies including a combination of structural and non-structural BMPs appropriate for your community; use an ordinance or other regulatory mechanism to address post-construction runoff to extend allowable under the law; and ensure adequate long-term operation and maintenance of BMPs installed as a result of these requirements.
Stormwater Management for Maintenance Facilities	• Not specifically addressed as separate topic, but rather included under 6 minimum measures where applicable.
Stormwater Management for Facilities Associated with Industrial Activity	• Not specifically addressed as separate topic, but rather included under 6 minimum measure where applicable.

State	Minnesota
Maintenance (Part V.6)	• *Pollution Prevention and Good Housekeeping Training:* Select and implement a program of appropriate BMPs and measurable goals for this minimum control measure consisting of, at minimum: operation and maintenance program that includes training component that has ultimate goal of preventing or reducing runoff from MS4 operations; operate and maintain your storm water system in a manner to reduce discharge of pollutants to MEP. • *Inspections and Follow Up:* Inspect annually all structural pollution control devices (e.g., trap manholes, sumps, separators); inspect at a minimum 20% of all MS4 outfalls, sediment basin and ponds on a rotating basis during the effective period of this permit, inspect all exposed stockpiles, storage, and material handling areas at least annually; based on inspections, determine if repair, replacement, or maintenance are necessary for proper operation and to prevent environmental impacts such as erosion; summarize results of inspections in Annual Report, keep records of inspection results; and after 2 years of inspections adjust frequency of inspections if necessary. If maintenance of sediment removal is required, the frequency of inspection shall be increased to at least two times annually, or more frequently, to prevent carry-over or washout of pollutants from the structure and maximize pollutant removal.
Research & Monitoring	• Monitoring limited to visual inspections as indicated above.
Education, Training & Public Involvement (Part V.G)	• *Public Education*: Implement a public education program to distribute educational materials to the community about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff. Individual BMPs must include public education and outreach, public participation, illicit discharge detection and elimination, construction site storm water runoff control, post-construction storm water management, and pollution prevention for municipal operations. • *Public Participation*: Select and implement a program of appropriate BMPs and measureable goals for this minimum control measure consisting of complying with applicable public notice requirements; soliciting public input and opinion of the adequacy of the SWPPP, including input from the required public meeting prior to submittal of the Annual Report; and must consider the input to the SWPPP and shall make appropriate adjustments.
Reporting	• *Annual Reporting:* Submit Annual Reports to the MPCA by June 30 of each year covering the entire previous calendar year. The report must address: status of compliance; storm water activities; changes in BMPs; and a statement that You are relying on another entity to satisfy some of your permit obligations (if applicable).

Table B-5: Detailed Evaluation of North Carolina DOT Permit

State	North Carolina
Permit Type:	Individual Statewide DOT Permit that includes construction and industrial activities
Permittee(s):	North Carolina Department of Transportation (NCDOT)
Regulator:	North Carolina Department of Environment and Natural Resources
Coverage:	Statewide, including new industrial discharges and construction activities
Issuance Date:	April 1, 2005
Previous Permit Issuance:	April 1, 1998
SPECIAL PERMIT PROVISIONS	
Authorized and Non-Authorized Discharges (Part I)	• *Authorized Discharges*: During the period beginning on the effective date of the permit and lasting until expiration, NCDOT is authorized to discharge general roadway drainage, borrow pit wastewater and stormwater associated with industrial activity, including: ferry terminals and maintenance facilities, vehicle and equipment maintenance facilities, pesticide and fertilizer storage facilities, salt and deicing chemical storage facilities, construction activities that disturb greater than one acre, borrow pit/waste piles (including mines), and general roadway drainage.
Legal Authority	• Not specifically addressed.
Compliance with Standards (Part III.C)	• See section titled Monitoring for program to comply with TMDLs.

State	North Carolina
STORMWATER MANAGEMENT PROGRAM ELEMENTS	
General Requirements (Part II.C)	• *Encroachment*: NCDOT shall require that all facilities requesting to connect to NCDOT roadway drainage submit a certification of appropriate NPDES stormwater permit coverage and compliance, and shall develop in year 1 and implement in subsequent years strategies to address areas not covered by Phase I or Phase II permits that have potential to adversely impact NCDOT's discharges.
Program Assessment and Evaluation (Parts III.A)	• *Program Assessment*: NCDOT shall provide DWQ with an annual report consisting of a program summary and assessment that will address proposed changes to the Stormwater Management Program or implementation schedule, and successes and failures and milestones and accomplishments of the program.
Illicit Discharge Detection and Elimination (Part II.A)	• *Scope*: Implement an Illicit Discharge Detection and Elimination Program to assure that illicit discharges, spills, and illegal dumping into NCDOT MS4 are detected and eliminated. • *Management Measures*: Management measures will address: illicit discharge identification training, illicit discharge inspections, maintain point of contact to receive complaints and reports of illicit discharges, report illicit connections, and maintain a tracking database.
Construction Stormwater Pollution Prevention (Part II.D)	• *Sediment and Erosion Control Program*: NCDOT shall implement the Erosion and Sediment Control Program developed by the NCDENR Division of Land Resources for NCDOT construction projects disturbing one or more acres of land surface; and shall incorporate the applicable requirements of the North Carolina General Permit associated with construction activities into its delegated Erosion and Sediment Control Program. • *Borrow Pit and Waste Pile Activities*: NCDOT shall implement erosion and sediment control measures on all borrow pit and waste pile projects; implement approved reclamation plans on all borrow pits/waste piles; and develop and implement a Borrow Pit Discharge Management Program that will include identification of appropriate management measures, development of an inspection and maintenance program, and training. NCDOT also may continue with a comprehensive pilot study to evaluate management practices for treating borrow pit wastewater. If the pilot study fails to provide a quantitative valid evaluation of pollutant removal efficiencies, NCDOT shall monitor borrow pit wastewater discharges in accordance with guidance provided in the table titled "Monitoring Requirements for Borrow Pit Wastewater Discharges".

State	North Carolina
Stormwater Management for New Facilities (Part II.B)	• *Stormwater System Inventory and Prioritization*: Continue to build a statewide stormwater system inventory including maintaining a stormwater system GIS to map and prioritize sensitive stream crossings, and develop a field inventory system for identified priority areas. • *BMP Retrofits*: Use retrofits to address pollutant loadings from existing NCDOT activities by (a) identify minimum of 14 appropriate retrofit areas per year, and (b) implement/install a minimum of 5 BMP retrofits projects per year with a total of 70 projects implemented over 5 year permit period. • *BMP Toolbox*: (a) Develop a BMP toolbox to provide internal guidance on design of post-construction runoff control measures. (b) Evaluate BMPs provided in Stormwater Best Management Practices Manual (NCDEHNR, 1995) for applicability to NCDOT activities and based on evaluation, develop NCDOT BMP Toolbox that addresses uses, construction guidelines, siting constraints, etc. (c) Evaluate design related BMPs that address BMPs that can be incorporated at planning phase of project, including such items as reducing imperviousness, encouraging sheet flow. The evaluation may include monitoring, pilot studies, literature research, and other appropriate resources. (d) NCDOT will submit the BMP toolbox to DWQ within 12 months of the issue date of this permit. • *Inspection and Maintenance*: As part of program, NCDOT will evaluate BMP inspection and maintenance needs, develop a BMP Inspection and Maintenance Manual, and develop and implement a BMP Inspection and Maintenance Program that will include training for appropriate NCDOT staff, volunteers, and contractors. Inspection and maintenance information obtained as part of program will be submitted to DWQ as part of Annual Report. • *Runoff Controls*: NCDOT will continue to implement post-construction runoff controls for discharges to sensitive waters, develop a Post-Construction Stormwater Program (PCSP) that will define implementation of the BMP toolbox, define training program, and consult with DWQ's ambient monitoring program as necessary, and submit PCSP to DWQ for approval. • *Vegetation Management Program*: NCDOT will consult with NCDA and NCSU in selecting appropriate pest control methods and implementation practices and will maintain and update NCDOT Roadside Vegetation Management Manual; NCDOT will ensure that pesticide and fertilizer usage shall be restricted to those materials approved by EPA/NCDA; and shall continue to provide annual training to vegetation management staff with goal of increasing awareness of proper mowing techniques, release of biologic agents, appropriate spill response, and correct use and handling of products.
Stormwater Management for Maintenance Facilities	• See below

State	North Carolina
Stormwater Management for Facilities Associated with Industrial Activity (Part II.E)	• *Stormwater Pollution Prevention Plan (SPPP):* NCDOT shall maintain and implement a site specific SPPP for each covered industrial activity and related facility that will include: a site plan that includes a site map, description of industrial activities, list of spills that have occurred at the facility over the 3 previous years, and certification that outfalls have been inspected for presence of non-stormwater discharges. The required SPPPs shall be updated annually for existing industrial facilities, and developed and implemented prior to the beginning of discharges from proposed or new facilities. • *Stormwater Management Plan:* NCDOT will develop a Stormwater Management Plan for the facility that describes the management practices employed to control or minimize exposure of significant materials to stormwater and shall include a review of the technical and economic feasibility of changing methods of operations and/or storage practices to eliminate or reduce exposure of materials to stormwater, a schedule to provide secondary containment for appropriate materials, a narrative description of BMPs to be considered such as oil and grease separation, debris control, vegetative filter strips, infiltration and stormwater detention and retention, etc.; inspection schedules for stormwater conveyances and controls to prevent erosion associated with the storm drain system, and develop measures that prevent or minimize stormwater runoff from vehicle equipment and cleaning; spill prevention and response plan; develop a Preventative Maintenance and Good Housekeeping Program; conduct employee training; and identify NCDOT personnel who will be responsible for overall coordination, development, implementation, and revision of the Plan; conduct facility inspections at a minimum on a semi-annual schedule, once in the fall and one in spring; and document and retain on site findings including all monitoring, measurements, inspection and maintenance activities and training provided. • *Monitoring:* NCDOT shall perform visual monitoring at each facility twice per year (spring and fall) that includes inspection of each outfall for parameters listed in permit for purpose of evaluating effectiveness of SPPP.
Maintenance (Part IV.B)	• *Proper Operation and Maintenance*: The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control including adequate laboratory controls and appropriate quality assurance procedures.

State	North Carolina
Research & Monitoring (Parts II.G, III.C, IV.C))	• *Research Plan*: NCDOT shall update the Research Plan following guidelines established in the FHWA Evaluation and Management of Highway Runoff Water Quality Manual including schedule to evaluate the pollutant removal effectiveness of structural BMPs, and a schedule that identifies research needs that will evaluate program improvement areas and use of state of the art technology. The proposed Research Plan shall be submitted to the DWQ for approval in Year 1, and implemented 6 months following DWQ approval. • *TMDL*s: NCDOT shall develop and implement a program to address impaired waters for which a TMDL has been developed by EPA. For each TMDL NCDOT shall develop and Assessment & Monitoring Plan (Plan) that shall include an evaluation of the need for additional data collection related to the NCDOT's discharge of the TMDL pollutant(s) of concern. Additional data collected may include supplementary inventory information, monitoring, assessment of BMP effectiveness. The Plan will include a schedule of implementation of the proposed assessment and monitoring activities and NCDOT shall submit a report of its findings within 6 months of completing the assessment and monitoring activities and will address whether additional BMPs are necessary to meet the NCDOT's WLA. Upon approval of DWQ, NCDOT shall implement any needed BMPs in accordance with the schedule and report on the effectiveness of the BMPs in subsequent Annual Reports. • *Monitoring and Records*: Samples collected and measurements taken shall be characteristic of the volume and nature of the permitted discharge including representativeness of the storm event(s) selected to be sampled. Test procedures for analysis of pollutants will conform to EMC regulations published pursuant to NCGS 143-215.63 et. seq, the Water and Air Quality Reporting Acts, and to regulations published pursuant to Section 304(g), 33 USC 1314, of the Federal Water Pollution Control Act, as Amended, and Regulation 40 CFR 136.
Education, Training & Public Involvement (Part II.F)	• *Internal*: NCDOT shall provide annual pollution awareness training for appropriate NCDOT personnel and contractors, and for NCDOT maintenance staff, Adopt-A-Highway volunteers, and prison inmate laborers. Training will address identification of stormwater pollution potential, appropriate spill response actions, and illicit connections/illegal dumping. • *External*: NCDOT shall develop the External Education and Involvement Plan and submit for DWQ approval in Year 1. The Plan will address providing pollution prevention awareness information for the general public, a public education website, distribution of public education materials annually, and continue to implement the Adopt-A-Highway program.

State	North Carolina
Reporting	• *Annual Report*: NCDOT shall provide DWQ with an annual report consisting of a program summary and assessment that will address proposed changes to the Stormwater Management Plan, summary of illicit connection and illegal dumping reports and inspections, identification of water quality improvements or degradation as a result of NCDOT activities, and successes, failures and milestones/accomplishments of the program. The Annual Report shall be submitted to DWQ no later than June 30 of each year. Analytical data for the borrow pit wastewater discharges shall be submitted to the DWQ with each annual report. • *Record Keeping*: Implementation of the SPPPs at each industrial facility shall include documentation of all monitoring, measurements, inspections, maintenance activities, and training to be kept on site for period of 5 years and made available to DWQ immediately upon request. Similarly results from monitoring activities will be retained on site.

Table B-6: Detailed Evaluation of Texas (Dallas) DOT Permit

State	Texas (Dallas)
Permit Type:	Individual Permit.
Permittee:	Dallas District of the Texas Department of Transportation (TDOT)
Regulator:	Texas Commission on Environmental Quality
Coverage:	All areas, except for any agricultural lands, located within the corporate boundary of Cities of Dallas, Garland, Irving, Mesquite, and Plano served by, or otherwise contributing to discharges to the MS4 owned or operated by the permittee, located in Dallas, Rockwall, Collin, Kaufman, Denton, Navarro, and Ellis Counties, Texas.
Issuance Date	June 30, 2006
Previous Permit Issuance	September 26, 1997
SPECIAL PERMIT PROVISIONS	
Authorized and Non-Authorized Discharges (Part II.A, III.B.6)	• *Authorized Discharges*: The permit authorizes existing and new storm water point source discharges to surface water in the state from the Phase I and Phase II portions of the MS4 owned or operated by the permittee, except as follows: non-storm water and industrial stormwater, discharges resulting from a spill, or other storm water discharges required by the TCEQ to obtain a TPDES Permit. • *Authorized Non-Storm Water Discharges*: Categories of non-storm water discharges that the permittee may exempt from the prohibition on non-storm water discharges are listed in the permit and include, for example, water line flushing, landscape irrigation, uncontaminated pumped groundwater, and flows from fire fighting unless such discharges are identified as significant source of pollutants to surface waters.
Legal Authority	• *Inspection Authority:* The permittee shall perform inspections and exert enforcement authority as required by this permit for its facilities, employees, and contractors; for discharges from third party actions, the permittee shall perform

State	Texas (Dallas)
(Part II.B.2, III.E)	inspections and exert enforcement to the MEP. If the permittee lacks enforcement authority, it shall enter into inter-local agreements with municipalities in order to meet the conditions of this permit, or notify the TCEQ Enforcement Division. • *Ensuring Legal Authority*: The permittee shall ensure legal authority to control discharges to and from the MS4 and may be combination of statue, ordinance, permit, contract, order or inter-jurisdictional agreements with the permittee with existing legal authority to: control the contributions of pollutants to the MS4 by storm water discharges associated with industrial activity; prohibit illicit discharges; control the discharge of spills and dumping or disposal of materials other than storm water; require compliance with conditions in ordinances, permits, contracts, or orders; and carry out inspections, surveillance and monitoring procedures.
Compliance with Standards (part III.A)	• *MEP*: The SWMP must include controls necessary to effectively prohibit the discharge of non-storm water into the MS4 (except as described in Part III.B.6) and reduce the discharge of pollutants from the MS4 to the Maximum Extent Practicable. • *Effluent limits*: The controls and BMPs included in the Storm Water Management Program constitute effluent limitations for the purpose of compliance with the requirements of 30 TAC Chapter 319, Subchapter B, related to Hazardous Metals, unless otherwise limited in the permit.
STORMWATER MANAGEMENT PROGRAM ELEMENTS	
General Requirements (Part III.A, B)	• *Stormwater Management Program*: The permittee shall develop, implement, and revise a comprehensive Storm Water Management Program (SWMP) which includes pollution prevention measures, treatment of pollutant removal techniques, storm water monitoring, use of legal authority, and other appropriate means to control the quality of storm water. The SWMP shall contain following elements: (1) Structural Controls; (2) Areas of New Development and Redevelopment; (3) Roadways; (4) Flood Control Projects; (5) Pesticide, Herbicide, and Fertilizer Applications, (6) Illicit Discharges and Improper Disposal; (7) Spill Prevention and Response; (8) Construction Site Runoff; (9)Public Education; (10)Monitoring and Screening Programs; (11) Public Involvement and Participation; (12) Pollution Prevention/Good Housekeeping for Municipal Operations. Each element of the plan must be developed to include measurable goals, whenever feasible.
Program Assessment and Evaluation (Part III.G)	• *SWMP Review*: The permittee shall conduct in an annual review of the current SWMP in conjunction with the preparation of the annual report. • *SWMP Updates*: The SWMP can be updated and depending on the nature of the change, requires either notification to or prior approval from TCEQ. SWMP updates may also be required by TCEQ as needed to: address impacts on receiving waters; include more stringent requirements to comply with new state and federal statutory or regulatory requirements; include other conditions deemed necessary to comply with the Texas Water Code, or the Clean Water Act, or incorporate new program elements necessary to continue to meet MEP.

State	Texas (Dallas)
Illicit Discharge Detection and Elimination (Part III.B.6)	• *Sanitary Sewer Overflows and Infiltration*: The permittee shall implement controls where necessary and where feasible to prevent dry and wet weather overflows from sanitary sewers into the MS4, and shall limit the infiltration of seepage from municipal sanitary sewers into the MS4. • *Floatables*: The permittee shall reduce the discharge of floatables (e.g., litter and other human generated waste) into the MS4, including source, structural and other appropriate controls. • *Household Hazardous Waste and Used Motor Vehicle Fluids*: The discharge or disposal of used motor vehicle fluids, household hazardous wastes, and the intentional disposal of collected quantities of grass clippings, leaf litter, and animal wastes into the MS4 shall be prohibited by any TxDOT-Dallas contractor. The permittee shall ensure the implementation of programs to collect used motor vehicle fluids for recycle, reuse, or proper disposal and to collect household hazardous waste materials for recycle, reuse, and proper disposal. • *MS4 Screening and Illicit Inspections*: The permittee shall implement the Dry Weather Screening Program described in Part III.B.11.a (Monitoring and Screening) of this permit; follow-up activities to eliminate illicit discharges and improper disposal may be prioritized on the basis of magnitude and the nature of the suspected discharge, sensitivity of receiving waters, or other relevant factors. The entire MS4, but not necessarily every individual outfall, shall be screened at least once per five years. • *Mapping*: Within five years for Phase II areas; three years for Phase I areas, the permittee must map all areas of the MS4 that were not previously authorized under an NPDES Permit. • *Elimination*: The permittee shall require the elimination of illicit discharges and improper disposal practices as expeditiously as possible to the MEP.
Construction Stormwater Pollution Prevention (Part III.B.8)	• *Construction Site Runoff*: The permittee shall implement a program to reduce the discharge of pollutants into the MS4 from construction sites, including: requirements for structural and non-structural control measures; inspection and enforcement of control measure requirements; education and training for construction site operators; an ordinance or other regulatory mechanism to require erosion and sediment controls; requirements to control wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site; site plan review which incorporate consideration of potential short and long term water quality impacts; and receipt and consideration of information from the public.
Stormwater Management for New Facilities (Part III.B.2)	• *Areas of New Development and Significant Redevelopment:* The permittee shall implement comprehensive master planning process (or equivalent) to develop, implement, and enforce controls to minimize the discharges from new development and significant redevelopment after construction is complete. • *Flood Control Projects:* Where feasible, new flood control structures must be designed and constructed to provide pollutant removal from storm water. If feasible, the retro-fitting of existing structural flood control devices shall be implemented, to the MEP.

State	Texas (Dallas)
Stormwater Management for Maintenance Facilities	• Not specifically addressed.
Stormwater Management for Facilities Associated with Industrial Activity (Part III.B.8)	• *Industrial and High Risk Runoff*: The permittee shall continue and improve as necessary the existing programs to identify and control the pollutants in storm discharges from municipal landfills; other treatment, storage, or disposal facilities for municipal waste; hazardous waste treatment, storage, disposal and recovery facilities; and any other industrial or commercial discharge the permittee determines are contributing a substantial loading to the MS4.
Maintenance (Part III.B.2,7,12)	• *Roadways*: State highways, streets, and roads must be operated and maintained to minimize discharge of pollutants, including pollutants related to deicing and sanding activities. • *Pesticide, Herbicide and Fertilizer Applications*: The permittee shall develop and implement controls to reduce discharge of pollutants related to storage and application of pesticides, herbicides, and fertilizers applied, by the copermittee employees or contractors, to public right-of-ways, parks, or other municipal property. • *Spill Prevention and Response*: The permittee shall continue existing programs which prevent, contain, and respond to spills that may discharge into the MS4. • *Areas of New Development and Significant Redevelopment*: The permittee shall insure adequate long term operation and maintenance of BMPs. • *Pollution Prevention/Good Housekeeping for Municipal Operations*: The permittee shall implement a pollution prevention/good housekeeping program which includes: Good Housekeeping and Best Management Practices, training, structural control maintenance, waste management, and SWMP list of all municipal operations subject to the municipal operation, maintenance, and training programs under this program element.
Research & Monitoring (Part III.B.10 and Part IV.A.1,2,3)	• *Monitoring and Screening*: The permittee will implement a Dry Weather Screening Program to detect the presence of illicit discharges and improper discharges to the MS4. All areas of the MS4 must be screened at least once during the permit term. • *Representative Storm Event Monitoring:* Monitoring shall be conducted on representative outfalls, internal sampling stations, and/or instream monitoring locations to characterize the quality of storm water discharges from the Texas Department of Transportation – Dallas District MS4. The permit identifies one specific outfall to be monitored 1time/yr, subject to permittee evaluation of representativeness of the site re different land uses. Quantitative data shall be collected to estimate storm event pollutant loadings and event mean concentrations for each parameter sampled.

State	Texas (Dallas)
	Estimates of seasonal loadings also will be made and reported in the Fourth Year Annual Report. Requirements to conduct representative monitoring within a prescribed monitoring period may be temporarily suspended for adverse weather conditions. • *Rapid Bioassessment:* The permittee has the option of developing and implementing a rapid bioassessment monitoring program which will allow the permittee to reduce scope of Representative Storm Event Monitoring from annual for 5 years to Years 1 and 4 only. If the permittee elects to develop and implement a rapid bioassessment monitoring program, the permittee shall submit a monitoring program to the TCEQ's Storm Water & Pretreatment Team (MC-148) for approval no later than one year from the effective date of this permit. An approvable program must include monitoring of at least two water bodies subject to MS4 discharges, and one reference site; twice per year monitoring; and monitoring of the reference site within a day or two each time a station located in the receiving waters of the MS4 is monitored. • *Regional Wet Weather Characterization Program*: Alternatively the TxDOT – Dallas District may participate in the Dallas-Fort Worth Wet Weather Characterization Program, as approved by the TCEQ, and as amended by the TCEQ. • *Floatables Monitoring*: The permittee shall monitor floatables a minimum of four times per year in one or two creeks or storm sewer conveyances. If one site is selected, monitoring will be conducted four times per year. The amount of material collected shall be estimated by weight, volume, or by practical means, and will reported in the Annual Report.
Education, Training & Public Involvement (Part III.B.9,11)	• *Public Education Program*: The permittee shall implement a public education program component that includes an element to promote, publicize, and facilitate public reporting of illicit discharges or improper disposal of materials, including floatables, into the MS4; an element to promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous wastes; and an element to distribute education materials to the community or conduct equivalent outreach activities about the impact of storm water discharges on water bodies and steps to reduce pollutants in storm water runoff. • *Public Involvement and Participation*: The permittee shall implement a public involvement/participation program which, at a minimum, must comply with State, Tribal, and local public notice requirements.
Reporting (Part IV.C)	• *Annual Reporting*: The permittee shall prepare an annual report to be submitted by no later than March 1 of each year, and shall address: the status of implementing the SWMP; any proposed changes to the SWMP; revisions, if necessary, to the assessments of controls and the fiscal analysis; summary of the data collected; summary of number of the NPDES and TPDES NOIs received for each general permit; annual expenditures broken down by program element; summary of enforcement actions, inspections, and public education programs; and identification of any water quality improvements, degradations, and progress towards any measureable goals or measured reductions in pollutants. • *Records Retention*: The permittee shall retain the SWMP and all associated records for at least three years after coverage under this permit terminates.

Table B-7: Detailed Evaluation of Texas (Fort Worth) DOT Permit

State	Texas (City of Fort Worth)
Permit Type:	Joint Phase 1 Individual MS4 Permit
Permittee(s):	City of Fort Worth, Fort Worth District of the Texas Department of Transportation (TDOT), and Tarrant Regional Water District
Regulator:	Texas Commission on Environmental Quality
Coverage:	All areas, except for any agricultural lands, located within the corporate boundary of City of Fort Worth.
Issuance Date:	February 22, 2006
Previous Permit Issuance:	January 9, 1998
SPECIAL PERMIT PROVISIONS	
Authorized and Non-Authorized Discharges (Part II, Part III.B.6,a3)	• *Authorized Discharges*: The permit authorizes existing and new storm water point source discharges to surface water in the state from those portions of the MS4 owned and operated by the co-permittees, except for: non-storm water and industrial storm water, and discharges of materials resulting from a spill. • *Authorized Non-Storm Water Discharges*: Categories of non-storm water discharges that the copermittee may exempt from the prohibition on non-storm water discharges are listed in the permit and include, for example, water line flushing, landscape irrigation, uncontaminated pumped groundwater, and flows from fire fighting unless such discharges are identified as significant source of pollutants to surface waters.
Legal Authority (Part III.E)	• *Mechanisms*: Each copermittee shall ensure legal authority to control discharges to and from the MS4. This legal authority shall be a combination of statute, ordinance, permit, contract, order or inter-jurisdictional agreements with co-permittees with existing legal authority to: (1) control contributions to MS4 from industrial activity, (2) prohibit illicit discharges, (3) control the discharge of spills and dumping or disposal of materials other than storm water, (4) control through interagency agreements amongst co-permittees the contribution of pollutants from one MS4 to another, and (5) require compliance with conditions in ordinances, permits, contracts, and (6) carry out inspections and monitoring necessary to determine compliance with permit conditions.

State	Texas (City of Fort Worth)
Compliance with Standards (part III.A)	• *MEP*: The SWMP, taken as a whole, must include controls necessary to effectively prohibit the discharge of non-storm water into the MS4 (except as described in Part III.B.6) and reduce the discharge of pollutants from the MS4 to the Maximum Extent Practicable. • *Effluent limits*: The controls and BMPs included in the Storm Water Management Program constitute effluent limitations for the purpose of compliance with the requirements of 30 TAC Chapter 319, Subchapter B, related to Hazardous Metals, unless otherwise limited in the permit.
STORMWATER MANAGEMENT PROGRAM ELEMENTS	
General Requirements (Part III.A, B)	• *Stormwater Management Program*: Each copermittee shall contribute to the development, implementation and revision of a comprehensive Storm Water Management Program (SWMP) which includes pollution prevention measures, treatment of pollutant removal techniques, storm water monitoring, use of legal authority, and other appropriate means to control the quality of storm water. The SWMP shall contain following elements: Structural Controls; Areas of New Development and Redevelopment; Roadways; Flood Control Projects; Pesticide, Herbicide, and Fertilizer Applications, Illicit Discharges and Improper Disposal; Spill Prevention and Response; Industrial and High Risk Runoff; Construction Site Runoff; Public Education; and Monitoring and Screening Programs.
Program Assessment and Evaluation (Part III.G)	• *SWMP Review*: The co-permittees shall participate in an annual review of the current SWMP in conjunction with the preparation of the annual report. • *SWMP Updates*: The SWMP can be updated and depending on the nature of the change, requires either notification to or prior approval from TCEQ.
Illicit Discharge Detection and Elimination (Part III.B.6)	• *Sanitary Sewer Overflows and Infiltration*: Each copermittee shall implement controls where necessary and where feasible to prevent dry and wet weather overflows from sanitary sewers into the MS4, and shall limit the infiltration of seepage from municipal sanitary sewers into the MS4. • *Floatables*: The co-permittees shall reduce the discharge of floatables (e.g., litter and other human generated waste) into the MS4, including source, structural and other appropriate controls. • *Household Hazardous Waste and Used Motor Vehicle Fluids*: The discharge or disposal of used motor vehicle fluids, household hazardous wastes, and the intentional disposal of collected quantities of grass clippings, leaf litter, and animal wastes into the MS4 shall be prohibited. • *MS4 Screening and Illicit Inspections*: The co-permittees shall implement the Dry Weather Screening Program described in Part III..11.a of this permit; follow-up activities to eliminate illicit discharges and improper disposal may be prioritized on the basis of magnitude and the nature of the suspected discharge, sensitivity of receiving waters, or other relevant factors. The entire MS4, but not necessarily every individual outfall, shall be screened at least once per five years.

State	Texas (City of Fort Worth)
Construction Stormwater Pollution Prevention (Part III.B.9)	• *Construction Site Runoff*: The co-permittees shall implement a program to reduce the discharge of pollutants into the MS4 from construction sites, including: requirements for structural and non-structural control measures; inspection and enforcement of control measure requirements; education and training for construction site operators; and notification , as appropriate, to building permit applicants of their potential responsibilities under the NPDES/TPDES permitting regulations and permits for construction site runoff.
Stormwater Management for New Facilities (Part III.B.2)	• *Areas of New Development and Significant Redevelopment:* The co-permittees shall implement comprehensive master planning process (or equivalent) to develop, implement, and enforce controls to minimize the discharges from new development and significant redevelopment after construction is complete.
Stormwater Management for Maintenance Facilities	• Not specifically addressed.
Stormwater Management for Facilities Associated with Industrial Activity (Part III.B.8)	• *Industrial and High Risk Runoff*: The co-permittees shall continue and improve as necessary the existing programs to identify and control the pollutants in storm discharges from municipal landfills; other treatment, storage, or disposal facilities for municipal waste; hazardous waste treatment, storage, disposal and recovery facilities; and any other industrial or commercial discharge the co-permittees determine are contributing a substantial loading to the MS4.
Maintenance (Part III.B.3,5,7)	• *Roadways*: Public streets, roads, and highways shall be operated and maintained to minimize discharge of pollutants, including pollutants related to deicing and sanding activities. • *Pesticide, Herbicide and Fertilizer Applications*: The co-permittees shall develop and implement controls to reduce discharge of pollutants related to storage and application of pesticides, herbicides, and fertilizers applied, by the copermittee employees or contractors, to public right-of-ways, parks, or other municipal property. • *Spill Prevention and Response*: The copermittee shall continue and improve as necessary existing programs which prevent, contain, and respond to spills that may discharge into the MS4.

State	Texas (City of Fort Worth)
Research & Monitoring (Part III.B.11 and Part IV.A.1,2,3)	• *Monitoring and Screening*: The co-permittees will implement a Dry Weather Screening Program to detect the presence of illicit discharges and improper discharges to the MS4. All areas of the MS4 must be screened at least once during the permit term. The co-permittees also will implement a Wet Weather Screening Program as specified in the SWMP and should specify the sampling and non-sampling techniques to be used for current screening and also for follow-up screening. • *Representative Storm Event Monitoring:* Monitoring shall be conducted on representative outfalls, internal sampling stations, and/or instream monitoring locations to characterize the quality of storm water discharges from the MS4. The permit identifies four specific outfalls to be monitored 3times/yr, subject to co-permittees evaluation of representativeness of different land uses. • *Rapid Bioassessment:* The co-permittees have the option of developing and implementing a rapid bioassessment monitoring program which will allow co-permittees to reduce scope of Representative Storm Event Monitoring from annual for 5 years to Years 1 and 4 only. • *Industrial and High Risk Runoff Monitoring*: This program shall include monitoring for pollutants in storm water discharges to the MS4 from municipal landfills; other treatment, storage, or disposal facilities for municipal waste, hazardous waste treatment, storage, disposal, and recovery facilities; and any other industrial or commercial discharge the co-permittees determine are contributing a substantial pollutant load to the MS4. • *Certification Exemption*: In lieu of monitoring discussed above, the co-permittees may accept a "no-exposure certification" subject to the copermittee conducting site inspections to verify the no-exposure exemption not less than once per permit term.
Education, Training & Public Involvement (Part III.B.10)	• Program: The co-permittees shall implement a public education program component that includes an element to promote, publicize, and facilitate public reporting of illicit discharges or improper disposal of materials, including floatables, into the MS4; and an element to promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous wastes; and an element to promote, publicize, and facilitate the proper use, application, and disposal of pesticides, herbicides, and fertilizers by public, commercial, and private applicators and distributors.
Reporting	• *Annual Reporting*: Annual report required.

Table B-8: Detailed Evaluation of Texas (General Phase II) DOT Permit

State	Texas (General Phase II)
Permit Type:	General Permit to Discharge Under the Texas Pollutant Discharge Elimination System (TPDES) for Small Municipal Separate Storm Sewer Systems. (In Texas, permits are District based (25 DOT Districts) and many districts are regulated by one Phase II permit.)
Permittee(s):	Individual DOT Districts
Regulator:	Texas Commission on Water Quality (TCEQ)
Coverage: (Part II.A)	Small MS4s located in an Urbanized Area (UA) or otherwise designated by TCEQ based on evaluation criteria as required by 40 CFR § 122.32(a)(2) or 40 CFR §122.26(a)(1)(v) and adopted by reference in Title 30, Texas Administrative Code (TAC), §281.25. Small MS4s is a term that "includes systems similar to separate storm systems at military bases, large hospital or prison complexes, and ***highways*** and other thoroughfares".
Issuance Date	August 13, 2007
Previous Permit Issuance	
SPECIAL PERMIT PROVISIONS	
Authorized and Non-Authorized Discharges (Part II.A, B,C)	• *Authorized Storm Water Discharges* – This general permit provides authorization for storm water and certain non-storm water discharges from small municipal separate storm sewer systems (MS4) to surface water in the state if: (a) the discharges meet the applicability and eligibility requirements for coverage under this general permit, (b) a previous application for a discharge has not been denied, terminated or revoked, and (c) the executive director has not determined that continued coverage under an individual permit is required. Storm water discharges that combine with sources of non-stormwater are not eligible for coverage under this permit unless the non-storm discharges are authorized under this permit or under a separate TPDES Permit. • *Allowable Non-Storm Water Discharges* – The following non-storm water discharges may be discharges from the small MS4 unless they are determined by the permittee or the TCEQ to be significant contributor to the small MS4: water line

State	Texas (General Phase II)
	flushing, runoff from landscape irrigation, discharges from potable water sources, diverted stream flows, rising ground water, uncontaminated groundwater infiltration, uncontaminated pumped ground water, foundation and footing drains, air conditioning condensation, water from crawl space pumps, individual residential vehicle washing, flows from wetlands and riparian habitats, dechlorinated swimming pool discharges, street wash water, discharges from fire fighting activities, other non-storm water discharges listed in 40 CFR § 122.26(d)(2)(iv)(B)(1), non storm water discharges listed in the TPDES Multi-Sector General Permit (MSGP) or the TPDES Construction General Permit (CGP), and other similar occasional incidental non-storm water discharges, unless the TCEQ develops permits or regulations addressing these discharges.
Legal Authority (Part III)	• *Lacking Legal Authority*: Where the permittee lacks the authority to develop ordinances or to implement enforcement actions, the permittee shall exert enforcement authority as required by this permit for its facilities, employees, and contractors. For discharges from third party actions, the permittee shall perform inspections and exert enforcement authority to the MEP. • *Interlocal agreements*: Where the permittee does not have enforcement authority, the permittee will enter into interlocal agreements with municipalities that have additional authority, or notify the TCEQ's Field Operations Division as needed to report discharges or incidents that it cannot itself enforce.
Compliance with Standards (Part II.C, III)	• *Water Quality Standards*: Discharges to surface water in the state that would cause or contribute to a violation of water quality standards or that would fail to protect and maintain existing beneficial uses are not eligible for coverage under this permit. • *Water Quality Impaired Receiving Waters:* New sources or new discharges of the constituent(s) of concern to impaired waters are not authorized by this permit unless otherwise allowable under 30 TAC Chapter 305 and applicable state law. • *TMDLs*: Discharges of constituent(s) of concern to impaired waters for which there is a TMDL implementation plan are not eligible under this permit unless they are consistent with the approved TMDL and the implementation plan. • *Edwards Aquifer Recharge Zone:* Discharges from regulated small MS4s cannot be authorized where those discharges are prohibited by 30 TAC Chapter 213 (relating to Edwards Aquifer). • *MEP Standard:* The SWMP must be developed to reduce the discharge of pollutants to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act and Texas Water Code.
STORMWATER MANAGEMENT PROGRAM ELEMENTS	

State	Texas (General Phase II)
General Requirements (Part II.D & III)	• *SWMP*: A Storm Water Management Plan (SWMP) must be developed and submitted with the NOI and must include a timeline that demonstrates a schedule for implementation of the program for the complete permit term. The MS4 operator must develop the SWMP to include the six minimum control measures described in Part III.A.1 through 6, and must develop and include the optional seventh minimum control measure in Part III.A.7 (Municipal Construction Activities).
Program Assessment and Evaluation (Part II.D.3 & III)	• *Modifying SWMP*: Changes may be made to the SWMP during the permit term and may include adding components, replacing less effective or infeasible BMPs with alternative BMPs: changes must be submitted on a Notice of Change (NOC) form to TCEQ for approval.
Illicit Discharge Detection and Elimination (Part III.A.3)	• *Requirements*: The SWMP must include the manner and process to be used to effectively prohibit illicit discharges, and to extent allowable include an ordinance or other regulatory mechanism to prohibit and eliminate illicit discharges. Elements must include detection and elimination of the source of an illicit discharge. • *Allowable non storm water discharges*: List of discharges to be addressed: In lieu of considering non-storm water discharges on a case-by-case basis, the MS4 may develop a list of common and incidental non-storm water discharges that will not be addressed as illicit discharges requiring elimination. • *Storm Sewer Map*: A map of the storm sewer system must be developed that includes the location of outfalls, names and locations of waters of the U.S. that receive discharges from the outfalls, and any additional information needed to implement the SWMP.
Construction Stormwater Pollution Prevention (Part III.A.4,7)	• *Requirements*: The MS4 operator must develop, implement, and enforce a program to reduce pollutants in any storm water runoff from construction activities that result in land disturbance greater than or equal to one acre of if that construction activity is part of a larger common plan of development or sale that would disturb one or more acres. (The MS4 operator is not required to develop such a program where the construction site operator has obtained a waiver based on low potential for erosion.) • *Elements of Program*: The program must include the development and implementation of an ordinance or other regulatory mechanism to require erosion and sediment controls; implement erosion and sediment control BMPs; require contractors to implement control waste from discarded building materials, concrete truck washout water, chemical, litter and sanitary waste; develop procedures for site plan reviews that consider water quality impacts, allows for receipt and consideration of information received from the public and allows for site inspection and enforcement. • *Optional Measure - Municipal Construction Measure (MCM):* The development of a MCM for municipal construction activities is an optional measure and is an alternative to the MS4 operator seeking coverage under the TPDES Construction General Permit TXR150000.

State	Texas (General Phase II)
Stormwater Management for New Facilities (Part III.A.5	• *Scope:* To extent feasible under state and local law, the MS4 operator must develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre of land including: develop and implement strategies which include a combination of structural and non-structural BMPs; use of an ordinance or other regulatory mechanisms to address post-construction runoff; and ensuring adequate long term operation and maintenance of BMPs. (This requirement applies to discharges to Edwards Aquifer and San Antonia Area, as well as projects that require USCOE permits within 5 miles of a regulated water body.)
Stormwater Management for Maintenance Facilities	• Maintenance facilities not explicitly addressed in the permit.
Stormwater Management for Facilities Associated with Industrial Activity Part III.A.6.e,2)	• The SWMP must include a list of all municipally owned or operated industrial activities that are subject to the TPDES industrial storm water regulations.
Maintenance (Part III.A.6)	• *Pollution Prevention and Good Housekeeping:* A section within the SWMP must be developed to establish an operation and maintenance program, including an employee training component, that has the ultimate goal of preventing and reducing pollutant runoff from municipal operations. • *Good Housekeeping*: Good housekeeping measures and BMPs must be identified and implemented with the goal of preventing or reducing pollutant runoff from municipal operations, and must include, but not be limited to: park and open space maintenance; street, road and highway maintenance; fleet and building maintenance; storm water system maintenance; new construction and land disturbances; municipal parking lots; vehicle and equipment maintenance and storage yards; waste transfer stations; and salt/sand storage locations. • *Training:* A training program must be developed for all employees responsible for municipal operations subject to the pollution prevention/good housekeeping program. The training must include materials directed at preventing and reducing storm water pollution from municipal operations. The SWMP must include a list of all municipal operations that are subject to this program. • *Structural Control Maintenance:* If BMPs include structural controls, maintenance of the controls must be performed at a frequency determined by the MS4 operator and consistent with maintaining the effectiveness of the BMP and must address: maintenance activities; maintenance schedules; and long term inspection procedures and controls used to

State	Texas (General Phase II)
	reduce floatables and other pollutants. • *Waste Disposal:* Waste removed from the small MS4 must be properly disposed and include procedures for the proper disposal of dredge spoil, accumulated sediments, and floatables.
Research & Monitoring	• No specific research and monitoring requirements listed separately, but inspections, compilation and analysis of results, and reporting are included in some of minimum management measures.
Education, Training & Public Involvement (Part III.A.1,2)	• *Public Education and Outreach*: A public education program must be developed and implemented to distribute materials to the community or conduct equivalent outreach activities that will be used to inform the public including residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel. The MS4 operator must document activities and materials uses and retained in Annual Reports. • *Public Involvement/Participation:* The MS4 operator must comply with any state and local public notice requirements and allow all members of the public within the small MS4 the opportunity to participate in SWMP development and implementation.
Reporting	• *Annual Report:* The MS4 operator must submit a concise annual report to the executive director within 90 days of the end of each permit year and must address status of compliance; status of any additional control measures implemented; any MCM activities; summary of results of information collected and analyzed, summary of storm water activities planned for next reporting cycle; proposed changes to the SWMP; number of municipal construction activities authorized under this permit and total number of acres disturbed; number of non-municipal construction activities that occurred within jurisdiction of the permittee; and notice that the MS4 operator is relying on another governmental entity to satisfy some of its obligations if applicable.

Table B-9: Detailed Evaluation of Washington State DOT Permit

State	Washington State
Permit Type:	Individual MS4 ;Separate Industrial and Construction
Permittee(s):	Washington State Department of Transportation (WSDOT)
Regulator:	Department of Ecology
Permit Type	General Permit for Large, Medium, and Small Separate Storm Sewer Systems
Coverage:	Phase I and Phase II areas only (also excludes federal and tribal lands)
Issuance Date	2/04/2009 (effective date March 6, 2009)
Previous Permit Issuance	
SPECIAL PERMIT PROVISIONS	
Authorized and Non-Authorized Discharges (Section S2)	• *Authorized discharges*: the permit authorizes discharge of stormwater to surface waters and to ground waters of the state from MS4s owned and operated by WSDOT in Phase I and Phase II areas. So permit does not explicitly cover rural areas, but by policy and agreement with DOE, WSDOT applies the Highway Runoff Manual statewide. The permit covers stormwater discharges to any water body in Washington State for which there is a US EPA approved TMDL with load allocation and Detailed Implementation Plan (DIP) specifying actions for WSDOT stormwater discharges. • *Non*-stormwater discharges: This permit authorizes discharges of non-stormwater flows to surface waters and ground waters only under the following conditions: discharge is authorized by a separate or general NPDES permit; the discharge is for emergency fire fighting activities, or discharge is managed by WSDOT as provided in Section 3 of WSDOTs Stormwater Management Program Plan (Appendix 7). • *Non-Authorized discharges*: discharges to ground waters through facilities are regulated under the Underground Injection Control (UIC) program and other regulatory programs.
Legal Authority	Not specifically addressed under this heading.

State	Washington State
Compliance with Standards (Sections S4 & S6)	• *Toxicant Standards:* Discharge of toxicants to waters of the state of Washington which would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria is prohibited. • *Other State and Federal Standards*: This permit does not authorize any discharge which would be in violation of Washington State surface water quality standards, groundwater quality standards, sediment management standards, or human health-based criteria in the national Toxics Rule. • *Adaptive Management Response*: WSDOT will notify Ecology in writing within 30 days of becoming aware that a discharge is causing or contributing to a known or likely violation of water quality standards in receiving waters. Ecology will notify WSDOT in writing that an adaptive management response is required at which point WSDOT will review its Stormwater Management Program and submit a report to Ecology within 60 days describing existing controls and potential additional operational and/or structural BMPs that will or may be implemented, and the potential monitoring or other assessment to evaluate the effectiveness of the additional BMPs. WSDOT shall implement the BMPs pursuant to a schedule approved by Ecology and shall report implementation in subsequent annual reports. In the event that there are on-going violations of water quality standards despite implementation of the BMP approach, WSDOT may be subject to compliance schedules to eliminate the violation under various state administrative codes or other enforcement actions. • *MEP Standard*: WSDOT shall reduce the discharge of pollutants to the maximum extent practicable. • *TMDLs*: WSDOT shall comply with assigned loading allocations of applicable TMDLs and/or assigned best management practices (BMPs) from a Detailed Implementation Plan (DIP) for applicable TMDLs. For TMDLs requiring monitoring, WSDOT shall develop and implement a TMDL monitoring Quality Assurance Project Plan (QAPP) using the most recent version of the *Guidelines for Preparing Quality Assurance Project Plans for Environment Studies*, Ecology Publication #04-03-030, as guidance. WSDOT shall include a TMDL summary implementation report as part of the annual report for every applicable TMDL as described in Section 8.
STORMWATER MANAGEMENT PROGRAM ELEMENTS	
General Requirements (Section S5)	• *SWMP Implementation*; WSDOT shall implement and enforce its Ecology approved SWMP and all performance measures and milestones as enforceable conditions of this permit. • *Technical Standards*: WSDOT shall apply technical standards from the June 2008 version of the Washington State Highway Runoff Manual (HRM) for the planning, design, and operation and maintenance of stormwater facilities in Phase I, Phase II, and TMDL areas covered under this permit. • *LID*: WSDOT's SWMP shall require non-structural preventative actions and source reduction approaches including Low Impact Development (LID), to minimize the creation of impervious surfaces, and measures to minimize the disturbance of soils and vegetation where feasible.

State	Washington State
Program Assessment and Evaluation (Appendix 7)	• *Performance Measures*: WSDOT will meet the performance measures provided in Appendix 2 to implement actions and construct, operate, and maintain facilities in accordance with this permit and the SWMP; and will report on status of SWMP implementation in Annual Stormwater Management Program Progress Report. • *Stormwater Facilities Inventory*: By end of year two of permit, develop facilities inventory and initial program to map connection points between municipal and WSDOT facilities. By end of year 3, integrate newly constructed stormwater facilities into database. • *Coordination*: Continue to coordinate with other entities as needed in implementation of SWMP. • *Update and revise SWMP*: Continue to update and report modifications to SWMP in Annual report. • *Facilities inventory and mapping*: Map and document all known MS4 outfalls and stormwater treatment and flow controls that WSDOT owns and operates within Phase I and Phase II designated areas by end of year five of permit. • *Costs*: Estimate and report annually the cost of implementing the stormwater management program plan.
Illicit Discharge Detection and Elimination (App. 7)	• *Tracking and Remediation*: Track all illicit discharges and illegal connections discovered by maintenance and construction staff and contractors, seek remediation, and annually summarize and report these activities..
Construction Stormwater Pollution Prevention (App 7)	• *Training and Assessment*: Require training for WSDOT personnel involved in design and inspection of TESC plans, and continue full effectiveness assessment of all moderate to high-risk construction sites. Summarize findings in Annual Report.
Stormwater Management for New and Retrofit Facilities (Appendix 7)	• *Field verification of as-builts*: Work with project offices to develop a procedure for insuring field verified as-builts are provided to Headquarters as part of project close out. • *Maintenance*: Integrate maintenance's involvement as part of stormwater facility design process. • *Training*: Require *Highway Runoff Manual* training for WSDOT consultants and contractors. • *Impervious tracking*: Track and annually report acres of existing impervious surfaces retrofitted and/or reverted to pervious surface as part of a highway improvement or preservation projects. • *Offsite retrofit obligation*: Track amount of offsite retrofit obligation accrued and location and extent of the alternative retrofits accomplished in order to verify that an equivalent surface area of highway received retrofit based on environmental priorities.
Stormwater Management for Maintenance Facilities	• See Maintenance below.

State	Washington State
Stormwater Management for WSDOT Facilities Associated with Industrial Activity	• See Ferry Terminal Maintenance element below.
Maintenance (Appendix 7)	• *SWPPP*s: Complete SWPPPs for all maintenance facilities, rest areas, and WSDOT maintained park and ride lots for Phase I and Phase II designated areas; • *Training*: Continue training of all new maintenance staff on stormwater related maintenance activities including spill response awareness training. • *Stormwater Related Maintenance Activities*: Continue routine stormwater related maintenance activities including street sweeping, catch basin cleaning, and ditch, channel and culvert maintenance; and continue maintenance of all known permanent stormwater BMPs. • *Anti-icing product use*: Continue to support and participate in PNS (Pacific Northwest Snowfighters) and to track statewide totals for anti-icing product use. • *Litter control and herbicide use*: Continue to report litter removed annually and amount of herbicides used and acres treated annually. • *Ferry Terminal Maintenance*: Complete development of the Environmental Management System, integrate EMS with *WSF Safety Management System Manuals* and complete a generic SWPPP for all facilities through completion of EMS.

State	Washington State
Monitoring (Section S8)	• *Objectives*: WSDOT shall develop and implement a monitoring program to establish baseline stormwater discharge information from its highway conveyances, rest areas, maintenance facilities, and ferry terminals and develop and implement a program for Best Management Practice effectiveness. • *Baseline Monitoring*: WSDOT shall obtain discharge quality and quantity data from the edge of pavement at highway sites to allow analysis of pollutant loads and prioritize parameters of concern. Continuous flow recording and permanent flow weighted composite samplers will be utilized. Sites will be at 5 locations selected to address a specified range in annual average daily traffic (AADT). Parameters to be sampled for using the composite sampler and grab samples are specified in the permit. Results will be provided in the Annual Stormwater Monitoring Report. • *Toxicity Testing*: WSDOT shall test the seasonal first flush for toxicity in accordance with criteria and procedures provided in the permit, including criteria for selecting the 3 sites, selecting sample volumes, sampling methods, and supporting chemical analyses. • *Baseline Monitoring of Rest Areas, Maintenance Facilities, and Ferry Terminals*: WSDOT shall conduct stormwater discharge monitoring to collect baseline water quality data at nine sites covering range of facility types. Parameters for sampling, sampling methods, and sample timing and frequency are specified in the permit. WSDOT shall submit results from the monitoring programs in the Annual Report. • *Effectiveness of Stormwater Treatment*: WSDOT shall conduct a full-scale monitoring program to evaluate the effectiveness and operation and maintenance requirements of stormwater treatment and hydrologic management BMPs. WSDOT shall monitor at least two treatment BMPs at no less than two sites per BMP. Monitoring shall continue until statistical goals are met as described in *Guidance for Evaluating Emerging Stormwater Treatment Technologies, Technical Assistance Protocol (TAPE).* • *Quality Assurance Project Plan*: WSDOT shall prepare a Quality Assurance Project Plan (QAPP) in accordance with Ecology's Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies. • *Collaboration*: WSDOT may independently develop any or all of the components of the monitoring program, conduct the monitoring, and report results; or WSDOT may choose to develop any or all of the components through an integrated, long-term, water quality monitoring agreement with other entities.
Education, Training & Public Involvement (App 7)	• Adopt-a-Highway: Continue to support Adopt-a-Highway Program. • *Commute Trip Reduction*: Continue to provide technical assistance to local agencies and employers for the Commute Trip Reduction Program. • *Internet Service*: Maintain and expand WSDOTs internet sites to disseminate information regarding WSDOTs SWMP. • *Technology Transfer*: Continue to support knowledge and technology transfer related to stormwater management through presentations, publications, web telecasts, and participation on stormwater committees.

State	Washington State
Reporting (S8)	• *Annual Report*: WSDOT shall submit a SWMP Progress Report no later than October 31 of each year beginning in 2010 that will include a description of current implementation status, summary of any actions taken pursuant to compliance with standards (Section 4), barriers to implementation of LID, and status of any TMDL implementation requirements. • *Stormwater Monitoring Report*: WSDOT will prepare and submit an Annual Monitoring Report with each Annual Report due October 31 reporting status of each monitoring program in Section 8. A Final Monitoring Report for each monitoring program will be provided at the end of the permit period.

Table B-10: Comparison of Special Permit Provisions – Authorized and Non-Authorized Discharges

Permit Focus	DOT	Permit Provisions
DOT-Specific	AZ	• *Authorized discharges*: Stormwater and listed non-stormwater, to and from MS4; Stormwater from industrial, construction, maintenance, and MS4 activities as listed in Table 1.3; • Non-stormwater discharges listed and those approved by ADEQ in accordance with permit or those otherwise covered under a separate NPDES or AZPDES permit are allowed, provided: o The non-stormwater discharge is a result of ADOT's activities; o The discharge is not a significant source of pollutants; and o ADOT implements effective BMPs during all non-stormwater discharges and describes those BMPs in the SSWMP or SWPPP. • Allowed non-stormwater discharge list includes some DOT-specific discharges, such as: o Routine tunnel wall washwater o Sign washwater o Discharges from emergency highway situations where federal rules specify washing as the preferred method to assure public safety. • *Non-Authorized discharges*: non-stormwater discharges to 303(d)-listed waterbodies and unique receiving waters; industrial or construction discharges that will cause or contribute to the non-attainment of water quality standards or to the designated uses of receiving waters; discharges into a water body for which a TMDL has been established or approved by EPA, if that discharge is inconsistent with the TMDL; non-stormwater discharges resulting from third parties with exception of fire-fighting; • If a discharge to an impaired receiving water body contains pollutants for which a TMDL has been established (for that receiving water body), the SSWMP and/or applicable SWPPP shall identify specific BMPs necessary to ensure that the discharges will be consistent with the provisions of the TMDL. • ADOT shall eliminate or reduce discharges of non-stormwater to the maximum extent feasible. • ADOT may request approval for additional sources of non-stormwater discharge(s) that ADOT does not expect to be a significant contributor of pollutants
	NC	• *Authorized Discharges*: During the period beginning on the effective date of the permit and lasting until expiration, NCDOT is authorized to discharge general roadway drainage, borrow pit wastewater and stormwater associated with industrial activity, including: ferry terminals and maintenance facilities, vehicle and equipment maintenance facilities, pesticide and fertilizer storage facilities, salt and deicing chemical storage facilities, construction activities that disturb greater than one acre, borrow pit/waste piles (including mines), and general roadway drainage.
	WA	• *Authorized discharges*: the permit authorizes discharge of stormwater to surface waters and to ground waters of the state from MS4s owned and operated by WSDOT in Phase I and Phase II areas. So permit does not explicitly cover rural

Permit Focus	DOT	Permit Provisions
		areas, but by policy and agreement with DOE, WSDOT applies the Highway Runoff Manual statewide. The permit covers stormwater discharges to any water body in Washington State for which there is a US EPA approved TMDL with load allocation and Detailed Implementation Plan (DIP) specifying actions for WSDOT stormwater discharges. • *Non-stormwater discharges*: This permit authorizes discharges of non-stormwater flows to surface waters and ground waters only under the following conditions: discharge is authorized by a separate or general NPDES permit; the discharge is for emergency fire fighting activities, or discharge is managed by WSDOT as provided in Section 3 of WSDOTs Stormwater Management Program Plan (Appendix 7). • *Non-Authorized discharges*: discharges to ground waters through facilities are regulated under the Underground Injection Control (UIC) program and other regulatory programs.
	Dallas	• *Authorized Discharges*: The permit authorizes existing and new storm water point source discharges to surface water in the state from the Phase I and Phase II portions of the MS4 owned or operated by the permittee, except as follows: non-storm water and industrial stormwater, discharges resulting from a spill, or other storm water discharges required by the TCEQ to obtain a TPDES Permit. • *Authorized Non-Storm Water Discharges*: Categories of non-storm water discharges that the permittee may exempt from the prohibition on non-storm water discharges are listed in the permit and include, for example, water line flushing, landscape irrigation, uncontaminated pumped groundwater, and flows from fire fighting unless such discharges are identified as significant source of pollutants to surface waters.
	Maine	• *Authorized Discharges*: This general permit authorizes the direct discharge of stormwater from or associated with a regulated small Municipal Separate Sewer System (MS4) operated by Maine Department of Transportation ("MaineDOT") or Maine Turnpike Authority ("MTA") to waters of the State other than groundwater . Unless otherwise explicitly noted, this permit only covers operations and activities associated with stormwater runoff from the regulated small MS4 within an identified Urbanized Area. • *Non-Authorized Discharges*: The general permit does not authorize discharges that are mixed with sources of non-stormwater, other than those identified in Part IV.H.3.b which include, but are not limited to, landscape irrigation, uncontaminated pumped groundwater, air conditioning and compressor condensate, lawn watering runoff, hydrant flushing and fire fighting activity runoff. The permit does not authorize discharges of hazardous substances, chemical or oil, and a waste discharge license (WDL) may be required for the discharge of stormwater through any well, including dry wells and subsurface fluid distribution systems (defined as an "assemblage of perforated pipes, drain tiles, or similar mechanisms intended to distribute fluids below the surface of the ground"). (See section below Compliance with Standards for other non-authorized discharges.)
Non-	Fort	• *Authorized Discharges*: The permit authorizes existing and new storm water point source discharges to surface water in the state from those portions of the MS4 owned and operated by the co-permittees, except for: non-storm water and

Permit Focus	DOT	Permit Provisions
DOT Specific	Worth	industrial storm water, and discharges of materials resulting from a spill. • *Authorized Non-Storm Water Discharges*: Categories of non-storm water discharges that the copermittee may exempt from the prohibition on non-storm water discharges are listed in the permit and include, for example, water line flushing, landscape irrigation, uncontaminated pumped groundwater, and flows from fire fighting unless such discharges are identified as significant source of pollutants to surface waters.
	Minnesota	• *Authorized Discharges*: This permit does not authorize discharges other than Storm Water. • *Non-Authorized Discharges*: Non storm water discharges may include: combined sewer overflow, noncontact cooling water, sewage, wash water, scrubber water, spills, oil, hazardous substances, fill, commercial equipment/vehicle cleaning and maintenance wastewaters. A separate NPDES permit may be required for these discharges.
	TX	• *Authorized Storm Water Discharges* – This general permit provides authorization for storm water and certain non-storm water discharges from small municipal separate storm sewer systems (MS4) to surface water in the state if: (a) the discharges meet the applicability and eligibility requirements for coverage under this general permit, (b) a previous application for a discharge has not been denied, terminated or revoked, and (c) the executive director has not determined that continued coverage under an individual permit is required. Storm water discharges that combine with sources of non-stormwater are not eligible for coverage under this permit unless the non-storm discharges are authorized under this permit or under a separate TPDES Permit. • *Allowable Non-Storm Water Discharges* – The following non-storm water discharges may be discharges from the small MS4 unless they are determined by the permittee or the TCEQ to be significant contributor to the small MS4: water line flushing, runoff from landscape irrigation, discharges from potable water sources, diverted stream flows, rising ground water, uncontaminated groundwater infiltration, uncontaminated pumped ground water, foundation and footing drains, air conditioning condensation, water from crawl space pumps, individual residential vehicle washing, flows from wetlands and riparian habitats, dechlorinated swimming pool discharges, street wash water, discharges from fire fighting activities, other non-storm water discharges listed in 40 CFR § 122.26(d)(2)(iv)(B)(1), non storm water discharges listed in the TPDES Multi-Sector General Permit (MSGP) or the TPDES Construction General Permit (CGP), and other similar occasional incidental non-storm water discharges, unless the TCEQ develops permits or regulations addressing these discharges.

Table B-11**: Comparison of Special Permit Provisions – Legal Authority**

Permit Focus	DOT	Permit Provisions
DOT-Specific	AZ	• *Source of Authority*: ADOT shall utilize the powers delegated to it by the Arizona Legislature through A.R.S. Title 28 to control and enforce the release of pollutants to and discharges from the MS4 that is owned or operated by ADOT through rules and regulations regulating encroachments, permits, contracts or similar means.
	NC	• Not specifically addressed.
	WA	• Not specifically addressed under this heading.
	Dallas	• *Inspection Authority:* The permittee shall perform inspections and exert enforcement authority as required by this permit for its facilities, employees, and contractors; for discharges from third party actions, the permittee shall perform inspections and exert enforcement to the MEP. If the permittee lacks enforcement authority, it shall enter into inter-local agreements with municipalities in order to meet the conditions of this permit, or notify the TCEQ Enforcement Division. • *Ensuring Legal Authority*: The permittee shall ensure legal authority to control discharges to and from the MS4 and may be combination of statue, ordinance, permit, contract, order or inter-jurisdictional agreements with the permittee with existing legal authority to: control the contributions of pollutants to the MS4 by storm water discharges associated with industrial activity; prohibit illicit discharges; control the discharge of spills and dumping or disposal of materials other than storm water; require compliance with conditions in ordinances, permits, contracts, or orders; and carry out inspections, surveillance and monitoring procedures.
	Maine	• Legal authority not specifically addressed under this heading.
Non-DOT Specific	Fort Worth	• *Mechanisms*: Each copermittee shall ensure legal authority to control discharges to and from the MS4. This legal authority shall be a combination of statute, ordinance, permit, contract, order or inter-jurisdictional agreements with co-permittees with existing legal authority to: (1) control contributions to MS4 from industrial activity, (2) prohibit illicit discharges, (3) control the discharge of spills and dumping or disposal of materials other than storm water, (4) control through interagency agreements amongst co-permittees the contribution of pollutants from one MS4 to another, and (5) require compliance with conditions in ordinances, permits, contracts, and (6) carry out inspections and monitoring necessary to determine compliance with permit conditions.
	Minnesota	• Not specifically addressed as separate topic, but rather included under 6 minimum measures where applicable.
	TX	• *Lacking Legal Authority*: Where the permittee lacks the authority to develop ordinances or to implement enforcement actions, the permittee shall exert enforcement authority as required by this permit for its facilities, employees, and contractors. For discharges from third party actions, the permittee shall perform inspections and exert enforcement

Permit Focus	DOT	Permit Provisions
		authority to the MEP. • *Interlocal agreements*: Where the permittee does not have enforcement authority, the permittee will enter into interlocal agreements with municipalities that have additional authority, or notify the TCEQ's Field Operations Division as needed to report discharges or incidents that it cannot itself enforce.

Table B-12: Comparison of Special Permit Provisions – Compliance with Standards

Permit Focus	DOT	Permit Provisions
DOT-Specific	AZ	• *MS4 MEP Standard*: ADOT shall protect water quality by reducing, to the maximum extent practicable (MEP), any discharge that may cause or contribute to an exceedance of any water quality standard (WQS) of the State of Arizona applicable to receiving waters of the MS4. To do so, ADOT shall fully implement the SSWMP, and subsequent revisions, as well as all the requirements of the MS4 permit. • *MS4 Iterative Improvement Standard*: ADOT shall compare stormwater discharge water quality monitoring data, as measured from the MS4 outfalls, to the water quality standards applicable to receiving waters. If monitoring data show a recurring (more than once) condition of exceedance, ADOT shall investigate and identify potential source(s) of the pollutant(s) and evaluate the effectiveness of existing BMPs and identify additional BMPs or actions necessary to improve the quality of the discharges. • *Industrial and Construction Standard*: ADOT shall protect water quality by ensuring that no discharge from industrial or construction activities causes or contributes to an exceedance of any applicable surface water quality standard. If ADOT finds that a discharge is causing or contributing to an exceedance, it will report that exceedance in the Annual Report and take any necessary actions to ensure that future discharges do not cause or contribute to an exceedance of any WQS. • *TMDLs*: If a TMDL is established during the permit term for any receiving water into which ADOT discharges, ADOT shall modify the SSWMP to ensure that the wasteload allocation, load allocation, and associated implementation plan will be met. ADOT also will ensure that any pollutants associated with the TMDL be included in monitoring to be performed at the outfalls, and will report monitoring results in the Annual Report.
	NC	• See Monitoring for program to comply with TMDLs.
	WA	• *Toxicant Standards:* Discharge of toxicants to waters of the state of Washington which would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria is prohibited. • *Other State and Federal Standards*: This permit does not authorize any discharge which would be in violation of Washington State surface water quality standards, groundwater quality standards, sediment management standards, or human health-based criteria in the national Toxics Rule. • *Adaptive Management Response*: WSDOT will notify Ecology in writing within 30 days of becoming aware that a discharge is causing or contributing to a known or likely violation of water quality standards in receiving waters. Ecology will notify WSDOT in writing that an adaptive management response is required at which point WSDOT will review its Stormwater Management Program and submit a report to Ecology within 60 days describing existing controls and potential additional operational and/or structural BMPs that will or may be implemented, and the potential monitoring or other assessment to evaluate the effectiveness of the additional BMPs. WSDOT shall implement the BMPs pursuant to a schedule approved by Ecology and shall report implementation in subsequent annual reports. In the event that there are

Permit Focus	DOT	Permit Provisions
		on-going violations of water quality standards despite implementation of the BMP approach, WSDOT may be subject to compliance schedules to eliminate the violation under various state administrative codes or other enforcement actions. • *MEP Standard*: WSDOT shall reduce the discharge of pollutants to the maximum extent practicable. • *TMDLs*: WSDOT shall comply with assigned loading allocations of applicable TMDLs and/or assigned best management practices (BMPs) from a Detailed Implementation Plan (DIP) for applicable TMDLs. For TMDLs requiring monitoring, WSDOT shall develop and implement a TMDL monitoring Quality Assurance Project Plan (QAPP) using the most recent version of the *Guidelines for Preparing Quality Assurance Project Plans for Environment Studies*, Ecology Publication #04-03-030, as guidance. WSDOT shall include a TMDL summary implementation report as part of the annual report for every applicable TMDL as described in Section 8.
	Dallas	• *MEP*: The SWMP must include controls necessary to effectively prohibit the discharge of non-storm water into the MS4 (except as described in Part III.B.6) and reduce the discharge of pollutants from the MS4 to the Maximum Extent Practicable. • *Effluent limits*: The controls and BMPs included in the Storm Water Management Program constitute effluent limitations for the purpose of compliance with the requirements of 30 TAC Chapter 319, Subchapter B, related to Hazardous Metals, unless otherwise limited in the permit.
	Maine	• *MEP Standard*: The permit does not authorize a discharge that is not in compliance with the requirements of this general permit, or a discharge that fails to reduce the pollutants from the permittee's MS4 to the maximum extent practicable ("MEP") • *TMDLs*: This general permit does not authorize a direct discharge that is inconsistent with any EPA approved TMDL waste load allocation and any implementation plan for the water body to which the direct discharge drains. • *Water Quality Standards*: This general permit does not authorize a discharge that may cause or contribute to a violation of a water quality standard. • *Urban Impaired Stream Systems*: Additional stormwater treatment within the urban area are necessary for Urban Impaired Stream watersheds. The permittee shall implement measures necessary to control, to the MEP, the discharge of stormwater runoff including known pollutants of concern that have been identified as causing or contributing to the water body's impairment.
Non-DOT Specific	Fort Worth	• *MEP*: The SWMP, taken as a whole, must include controls necessary to effectively prohibit the discharge of non-storm water into the MS4 (except as described in Part III.B.6) and reduce the discharge of pollutants from the MS4 to the Maximum Extent Practicable. • *Effluent limits*: The controls and BMPs included in the Storm Water Management Program constitute effluent limitations for the purpose of compliance with the requirements of 30 TAC Chapter 319, Subchapter B, related to Hazardous Metals, unless otherwise limited in the permit.

Permit Focus	DOT	Permit Provisions
	Minnesota	• *Limitations on Coverage*: This permit does not authorize discharges unless the requirements of Part IX (Appendix C) are met: discharges to waters with Restricted Discharge designation, discharges to Trout Waters, discharges to wetlands, discharges requiring Environmental Review, discharges affecting Threatened and Endangered Species and their Habitat, discharges affecting Historical and Archeological sites, and discharges affected Source Water Protection Areas. (Definitions of many of these provided in permit by reference to various Minnesota statutes and other regulations.) • *Non-degradation and Loads Assessment*: The Commissioner has selected specific MS4s ("Selected MS4s") based on population growth that requires those MS4s to conduct a loading assessment using a pollutant water quality model, or equivalent, to project past, current, and future loads. Results to be reported in a Nondegradation Report, to help select appropriate BMPs that address nondegradation, to determine whether additional control measures can reasonably be taken to reduce pollutant loading, and for a few Selected MS4s that elect to do so, to evaluate the significance of the New or Expanded Discharge.
	TX	• *Water Quality Standards*: Discharges to surface water in the state that would cause or contribute to a violation of water quality standards or that would fail to protect and maintain existing beneficial uses are not eligible for coverage under this permit. • *Water Quality Impaired Receiving Waters:* New sources or new discharges of the constituent(s) of concern to impaired waters are not authorized by this permit unless otherwise allowable under 30 TAC Chapter 305 and applicable state law. • *TMDLs*: Discharges of constituent(s) of concern to impaired waters for which there is a TMDL implementation plan are not eligible under this permit unless they are consistent with the approved TMDL and the implementation plan. • *Edwards Aquifer Recharge Zone:* Discharges from regulated small MS4s cannot be authorized where those discharges are prohibited by 30 TAC Chapter 213 (relating to Edwards Aquifer). • *MEP Standard:* The SWMP must be developed to reduce the discharge of pollutants to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act and Texas Water Code.

Table B-13: Comparison of Special Permit Provisions – Program Assessment and Evaluation

Permit Focus	DOT	Permit Provisions
DOT-Specific	AZ	• *Annual Review*: ADOT shall conduct an annual program review, in conjunction with preparation of Annual Report.
	NC	• *Program Assessment*: NCDOT shall provide DWQ with an annual report consisting of a program summary and assessment that will address proposed changes to the Stormwater Management Program or implementation schedule, and successes and failures and milestones and accomplishments of the program.
	WA	• *Performance Measures*: WSDOT will meet the performance measures provided in Appendix 2 to implement actions and construct, operate, and maintain facilities in accordance with this permit and the SWMP; and will report on status of SWMP implementation in Annual Stormwater Management Program Progress Report. • *Stormwater Facilities Inventory*: By end of year two of permit, develop facilities inventory and initial program to map connection points between municipal and WSDOT facilities. By end of year 3, integrate newly constructed stormwater facilities into database. • *Coordination*: Continue to coordinate with other entities as needed in implementation of SWMP. • *Update and revise SWMP*: Continue to update and report modifications to SWMP in Annual report. • *Facilities inventory and mapping*: Map and document all known MS4 outfalls and stormwater treatment and flow controls that WSDOT owns and operates within Phase I and Phase II designated areas by end of year five of permit. • *Costs*: Estimate and report annually the cost of implementing the stormwater management program plan.
	Dallas	• *SWMP Review*: The permittee shall conduct in an annual review of the current SWMP in conjunction with the preparation of the annual report. • *SWMP Updates*: The SWMP can be updated and depending on the nature of the change, requires either notification to or prior approval from TCEQ. SWMP updates may also be required by TCEQ as needed to: address impacts on receiving waters; include more stringent requirements to comply with new state and federal statutory or regulatory requirements; include other conditions deemed necessary to comply with the Texas Water Code, or the Clean Water Act, or incorporate new program elements necessary to continue to meet MEP.
	Maine	• *Assessing the Plan:* The Plan must address the six Minimum Control Measures and must, at a minimum, include the measures indicated as required within the UA of the municipality in which the permittee operates an MS4. The Plan also will identify the measureable goals by which each BMP will be evaluated. • *Amending the Plan:* The Department shall notify the permittee if Department determines that the Plan must be amended. Major modifications of the Plan by the permittee must be submitted to the Department and approved prior to implementation.
Non-	Fort	• *SWMP Review*: The co-permittees shall participate in an annual review of the current SWMP in conjunction with the preparation of the annual report.

Permit Focus	DOT	Permit Provisions
DOT Specific	Worth	• *SWMP Updates*: The SWMP can be updated and depending on the nature of the change, requires either notification to or prior approval from TCEQ.
	Minnesota	• *Modification to the SWPPP by Order of Commissioner*: The Commissioner may require modification of the SWPPP as needed to consider the following factors: discharges from the storm sewer system are impacting the quality of receiving waters; more stringent requirements are necessary to comply with state and federal regulations; measures are necessary to meet the applicable requirements of Appendices C (Limitations on Coverage) and D (Nondegradation for selected MS4s); or additional conditions are deemed necessary to comply with the goals and requirements of the Clean Water Act or water quality standards. • *Modification to the SWPPP:* The SWPPP may be modified without prior approval of the Commissioner provided: a BMP is added and none subtracted; a less effective BMP is replaced with a more effective BMP; and the Commissioner is notified of the modification in the Annual Report for the year the modification is made. • *Evaluation and Assessment:* For each Annual Report, evaluate program compliance, the appropriateness of the identified BMPs, and progress towards achieving the identified measureable goals.
	TX	• *Modifying SWMP*: Changes may be made to the SWMP during the permit term and may include adding components, replacing less effective or infeasible BMPs with alternative BMPs: changes must be submitted on a Notice of Change (NOC) form to TCEQ for approval.

Table B-14: Comparison of Special Permit Provisions – Illicit Discharge Detection and Elimination

Permit Focus	DOT	Permit Provisions
DOT-Specific	AZ	• *Program*: ADOT shall implement an ongoing program to minimize, detect, investigate and eliminate illicit discharges, including unauthorized non-stormwater discharges and spills. Implementation will be supported through maintenance of illicit discharge legal authority, enforcement of standard encroachment permit, and updating of *Maintenance and Facilities Best Management Practices Manual*. • *Inventory:* ADOT shall inventory outfalls, including 71 major outfalls identified in 2005 Phase I and Phase II Storm Water Systems Maps; ADOT will develop proposal to ADEQ, including schedule to identify all outfalls in the Phase II municipalities and all Priority Outfalls statewide. • *Map Storm System:* No later than 4 years from effective date of this permit, ADOT shall develop a storm sewer system map(s) identifying location of all ADOTs stormwater collection and conveyance structures, highway system, jurisdictional boundaries, drainage patterns, and unique, impaired and not attaining waters. • *Dry Weather Screening:* Within 12 months from effective date of this permit, ADOT will update dry weather field screening portion of *Stormwater Monitoring Guidance Manual for MS4 Activities.* • *Inspections:* Within 12 months from effective date of this permit, ADOT shall inspect 35 of 71 major outfalls identified in Sept. 2005 Phase I and Phase II Storm Water System Maps. Within 24 months of permit issuance, ADOT shall inspect balance of major outfalls. In years 3, 4, and 5 of the permit term, ADOT shall inspect each of the 71 outfalls at least once per year. • *Recording:* ADOT shall implement and maintain a system to track and record findings from outfall inspections. • *Investigating Potential Illicit Discharges:* Within 12 months of permit issuance, ADOT shall update Stormwater Monitoring Guidance Manual for MS4 Activities to describe procedures to investigate illicit discharges; within 15 days of date of detection, ADOT shall initiate investigations of illicit discharges to identify potential sources. • *Complaint Response:* Within 15 days of report, ADOT shall respond to calls and complaints from public via the Public Reporting System and shall develop a system to track reports and ADOT's responses. • *Incidental Dry Weather Discharges:* ADOT shall report dry weather discharges from any ADOT outfall, regardless of size and within 15 days of detection, initiate appropriate follow up action. • *Eliminating Illicit Discharges and Illegal Dumping:* With 90 days of permit issuance, ADOT shall investigate the source(s) and if appropriate take action to eliminate the dry weather flows from the six major outfalls identified in the July 21, 2005 Summary Report –Dry Weather Screening. • *Coordination:* ADOT will modify the SSWMP to include a description of procedures for coordination with municipalities and other agencies where investigations indicate that the illicit discharge originates outside ADOT's jurisdiction: within 12 months of permit issuance, ADOT will establish procedures for notifying other jurisdictions for assistance in enforcement where ADOT lacks legal authority.

Permit Focus	DOT	Permit Provisions
	NC	• *Scope*: Implement an Illicit Discharge Detection and Elimination Program to assure that illicit discharges, spills, and illegal dumping into NCDOT MS4 are detected and eliminated. • *Management Measures*: Management measures will address: illicit discharge identification training, illicit discharge inspections, maintain point of contact to receive complaints and reports of illicit discharges, report illicit connections, and maintain a tracking database.
	WA	• *Tracking and Remediation*: Track all illicit discharges and illegal connections discovered by maintenance and construction staff and contractors, seek remediation, and annually summarize and report these activities..
	Dallas	• *Sanitary Sewer Overflows and Infiltration*: The permittee shall implement controls where necessary and where feasible to prevent dry and wet weather overflows from sanitary sewers into the MS4, and shall limit the infiltration of seepage from municipal sanitary sewers into the MS4. • *Floatables*: The permittee shall reduce the discharge of floatables (e.g., litter and other human generated waste) into the MS4, including source, structural and other appropriate controls. • *Household Hazardous Waste and Used Motor Vehicle Fluids*: The discharge or disposal of used motor vehicle fluids, household hazardous wastes, and the intentional disposal of collected quantities of grass clippings, leaf litter, and animal wastes into the MS4 shall be prohibited by any TxDOT-Dallas contractor. The permittee shall ensure the implementation of programs to collect used motor vehicle fluids for recycle, reuse, or proper disposal and to collect household hazardous waste materials for recycle, reuse, and proper disposal. • *MS4 Screening and Illicit Inspections*: The permittee shall implement the Dry Weather Screening Program described in Part III.B.11.a (Monitoring and Screening) of this permit; follow-up activities to eliminate illicit discharges and improper disposal may be prioritized on the basis of magnitude and the nature of the suspected discharge, sensitivity of receiving waters, or other relevant factors. The entire MS4, but not necessarily every individual outfall, shall be screened at least once per five years. • *Mapping*: Within five years for Phase II areas; three years for Phase I areas, the permittee must map all areas of the MS4 that were not previously authorized under an NPDES Permit. • *Elimination*: The permittee shall require the elimination of illicit discharges and improper disposal practices as expeditiously as possible to the MEP.
	Maine	• *Mapping:* By June 30, 2013, each permittee will develop a watershed based storm sewer system infrastructure map of its respective MS4 within the UA showing location of catch basin, pipes, and outfalls. • *Outfall Inspection Plan:* Each permittee will develop and implement a prioritized dry weather outfall inspection plan; in the first permit year conduct dry weather inspection of their MS4 outfalls that discharge to the two highest priority watersheds. In subsequent years, expand inspections to other urban impaired streams in their UA. MaineDOT and MTA shall have a defined procedure/policy or protocol in place that details the steps that must be taken when an illicit

Permit Focus	DOT	Permit Provisions
		discharge is identified during these inspections to locate the source of the illicit discharge and eliminate it.
Non-DOT Specific	Fort Worth	• *Sanitary Sewer Overflows and Infiltration*: Each copermittee shall implement controls where necessary and where feasible to prevent dry and wet weather overflows from sanitary sewers into the MS4, and shall limit the infiltration of seepage from municipal sanitary sewers into the MS4. • *Floatables*: The co-permittees shall reduce the discharge of floatables (e.g., litter and other human generated waste) into the MS4, including source, structural and other appropriate controls. • *Household Hazardous Waste and Used Motor Vehicle Fluids*: The discharge or disposal of used motor vehicle fluids, household hazardous wastes, and the intentional disposal of collected quantities of grass clippings, leaf litter, and animal wastes into the MS4 shall be prohibited. • *MS4 Screening and Illicit Inspections*: The co-permittees shall implement the Dry Weather Screening Program described in Part III..11.a of this permit; follow-up activities to eliminate illicit discharges and improper disposal may be prioritized on the basis of magnitude and the nature of the suspected discharge, sensitivity of receiving waters, or other relevant factors. The entire MS4, but not necessarily every individual outfall, shall be screened at least once per five years.
	Minnesota	• *Minimum Measures* Develop, implement, and enforce a program to detect and eliminate illicit discharges as defined at 40 CFR § 122.26(b)(2) by selecting and implementing a program of appropriate BMPs and measureable goals consisting of: development of a storm sewer map; obtain legal authority to effectively prohibit through ordinance or other regulatory mechanism, non-stormwater discharges into your storm sewer system; develop and implement a program to detect and address non-storm water discharges; inform employees, businesses and general public in the MS4 area of hazards associated with illegal discharges and improper disposal of waste; and address category of non-stormwater discharges that are considered authorized (see list under authorized and non-authorized discharges above) unless identified as significant contributors of pollutants to the small MS4.
	TX	• *Requirements*: The SWMP must include the manner and process to be used to effectively prohibit illicit discharges, and to extent allowable include an ordinance or other regulatory mechanism to prohibit and eliminate illicit discharges. Elements must include detection and elimination of the source of an illicit discharge. • *Allowable non storm water discharges*: List of discharges to be addressed: In lieu of considering non-storm water discharges on a case-by-case basis, the MS4 may develop a list of common and incidental non-storm water discharges that will not be addressed as illicit discharges requiring elimination. • *Storm Sewer Map*: A map of the storm sewer system must be developed that includes the location of outfalls, names and locations of waters of the U.S. that receive discharges from the outfalls, and any additional information needed to implement the SWMP.

Table B-15: Comparison of Special Permit Provisions – Construction Stormwater Pollution Prevention

Permit Focus	DOT	Permit Provisions
DOT-Specific	AZ	• *Updating SSWMP*: Within 12 months from permit issuance, ADOT shall update its SSWMP as needed to describe a construction program that addresses new requirements described in Section 5 of this permit.
	NC	• *Sediment and Erosion Control Program*: NCDOT shall implement the Erosion and Sediment Control Program developed by the NCDENR Division of Land Resources for NCDOT construction projects disturbing one or more acres of land surface; and shall incorporate the applicable requirements of the North Carolina General Permit associated with construction activities into its delegated Erosion and Sediment Control Program. • *Borrow Pit and Waste Pile Activities*: NCDOT shall implement erosion and sediment control measures on all borrow pit and waste pile projects; implement approved reclamation plans on all borrow pits/waste piles; and develop and implement a Borrow Pit Discharge Management Program that will include identification of appropriate management measures, development of an inspection and maintenance program, and training. NCDOT also may continue with a comprehensive pilot study to evaluate management practices for treating borrow pit wastewater. If the pilot study fails to provide a quantitative valid evaluation of pollutant removal efficiencies, NCDOT shall monitor borrow pit wastewater discharges in accordance with guidance provided in the table titled "Monitoring Requirements for Borrow Pit Wastewater Discharges".
	WA	• *Training and Assessment*: Require training for WSDOT personnel involved in design and inspection of TESC plans, and continue full effectiveness assessment of all moderate to high-risk construction sites. Summarize findings in Annual Report.
	Dallas	• *Construction Site Runoff*: The permittee shall implement a program to reduce the discharge of pollutants into the MS4 from construction sites, including: requirements for structural and non-structural control measures; inspection and enforcement of control measure requirements; education and training for construction site operators; an ordinance or other regulatory mechanism to require erosion and sediment controls; requirements to control wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site; site plan review which incorporate consideration of potential short and long term water quality impacts; and receipt and consideration of information from the public.
	Maine	• *Strategies*: Permittee shall develop, implement, and enforce a program or modify an existing program, to reduce pollutants in stormwater runoff from construction activities that result in land disturbance of greater than equal to 1 acre. Each permittee must include standard operating procedures for addressing and implementing compliance and enforcement actions.
Non-DOT	Fort Worth	• *Construction Site Runoff*: The co-permittees shall implement a program to reduce the discharge of pollutants into the MS4 from construction sites, including: requirements for structural and non-structural control measures; inspection and enforcement of control measure requirements; education and training for construction site operators; and notification , as

Permit Focus	DOT	Permit Provisions
Specific		appropriate, to building permit applicants of their potential responsibilities under the NPDES/TPDES permitting regulations and permits for construction site runoff.
	Minnesota	• *Minimum Measures*: Within 6 months after extension of coverage under this permit, develop and commence to implement and enforce a program to reduce pollutants in any storm water runoff to the small MS4 from construction activities within the jurisdiction that result in a land disturbance of greater than or equal to 1 acre. Select and implement a program of appropriate BMPs and measureable goals consisting of: an ordinance or other regulatory mechanisms to require erosion and sediment controls, as well as sanctions to ensure compliance: requirements for construction site operators to implement appropriate erosion and sediment control BMPs; requirements for construction site operators to control waste, such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste that may cause adverse impacts to water quality; procedures for site plan review which incorporate consideration of potential water quality impacts; procedures for receipt and consideration of reports of non-compliance or other information submitted by the public; and procedures for site inspection and enforcement of control measures.
	TX	• *Requirements*: The MS4 operator must develop, implement, and enforce a program to reduce pollutants in any storm water runoff from construction activities that result in land disturbance greater than or equal to one acre of if that construction activity is part of a larger common plan of development or sale that would disturb one or more acres. (The MS4 operator is not required to develop such a program where the construction site operator has obtained a waiver based on low potential for erosion.) • *Elements of Program*: The program must include the development and implementation of an ordinance or other regulatory mechanism to require erosion and sediment controls; implement erosion and sediment control BMPs; require contractors to implement control waste from discarded building materials, concrete truck washout water, chemical, litter and sanitary waste; develop procedures for site plan reviews that consider water quality impacts, allows for receipt and consideration of information received from the public and allows for site inspection and enforcement. • *Optional Measure - Municipal Construction Measure (MCM):* The development of a MCM for municipal construction activities is an optional measure and is an alternative to the MS4 operator seeking coverage under the TPDES Construction General Permit TXR150000.

Table B-16: Comparison of Special Permit Provisions – Stormwater Management for New Facilities

Permit Focus	DOT	Permit Provisions
DOT-Specific	AZ	• *Develop Manual*: Within 12 months of effect date of permit, ADOT will develop *Post-Construction Stormwater Control BMP Manual* that will address design standards, source reduction measures such as LID, describe how measures will reduce discharge pollutants to MEP, and submit manual to ADEQ within 12 months of permit date (3.2.5.1) • *Install BMPs*: ADOT to install Post-Construction Stormwater Control BMPs for all newly developed roadways that discharge stormwater runoff to impaired or unique waters. For other areas, ADOT shall evaluate the need for installation of post construction controls. Where controls are indicated, they shall be installed within 3 months after roadway construction is complete (3.2.5.2).
	NC	• *Stormwater System Inventory and Prioritization*: Continue to build a statewide stormwater system inventory including maintaining a stormwater system GIS to map and prioritize sensitive stream crossings, and develop a field inventory system for identified priority areas. • *BMP Retrofits*: Use retrofits to address pollutant loadings from existing NCDOT activities by (a) identify minimum of 14 appropriate retrofit areas per year, and (b) implement/install a minimum of 5 BMP retrofits projects per year with a total of 70 projects implemented over 5 year permit period. • *BMP Toolbox*: (a) Develop a BMP toolbox to provide internal guidance on design of post-construction runoff control measures. (b) Evaluate BMPs provided in Stormwater Best Management Practices Manual (NCDEHNR, 1995) for applicability to NCDOT activities and based on evaluation, develop NCDOT BMP Toolbox that addresses uses, construction guidelines, siting constraints, etc. (c) Evaluate design related BMPs that address BMPs that can be incorporated at planning phase of project, including such items as reducing imperviousness, encouraging sheet flow. The evaluation may include monitoring, pilot studies, literature research, and other appropriate resources. (d) NCDOT will submit the BMP toolbox to DWQ within 12 months of the issue date of this permit. • *Inspection and Maintenance*: As part of program, NCDOT will evaluate BMP inspection and maintenance needs, develop a BMP Inspection and Maintenance Manual, and develop and implement a BMP Inspection and Maintenance Program that will include training for appropriate NCDOT staff, volunteers, and contractors. Inspection and maintenance information obtained as part of program will be submitted to DWQ as part of Annual Report. • *Runoff Controls*: NCDOT will continue to implement post-construction runoff controls for discharges to sensitive waters, develop a Post-Construction Stormwater Program (PCSP) that will define implementation of the BMP toolbox, define training program, and consult with DWQ's ambient monitoring program as necessary, and submit PCSP to DWQ for approval. • *Vegetation Management Program*: NCDOT will consult with NCDA and NCSU in selecting appropriate pest control methods and implementation practices and will maintain and update NCDOT Roadside Vegetation Management Manual; NCDOT will ensure that pesticide and fertilizer usage shall be restricted to those materials approved by EPA/NCDA; and

Permit Focus	DOT	Permit Provisions
		shall continue to provide annual training to vegetation management staff with goal of increasing awareness of proper mowing techniques, release of biologic agents, appropriate spill response, and correct use and handling of products.
	WA	• *Field verification of as-builts*: Work with project offices to develop a procedure for insuring field verified as-builts are provided to Headquarters as part of project close out. • *Maintenance*: Integrate maintenance's involvement as part of stormwater facility design process. • *Training*: Require *Highway Runoff Manual* training for WSDOT consultants and contractors. • *Impervious tracking*: Track and annually report acres of existing impervious surfaces retrofitted and/or reverted to pervious surface as part of a highway improvement or preservation projects. • *Offsite retrofit obligation*: Track amount of offsite retrofit obligation accrued and location and extent of the alternative retrofits accomplished in order to verify that an equivalent surface area of highway received retrofit based on environmental priorities.
	Dallas	• *Areas of New Development and Significant Redevelopment:* The permittee shall implement comprehensive master planning process (or equivalent) to develop, implement, and enforce controls to minimize the discharges from new development and significant redevelopment after construction is complete. • *Flood Control Projects:* Where feasible, new flood control structures must be designed and constructed to provide pollutant removal from storm water. If feasible, the retro-fitting of existing structural flood control devices shall be implemented, to the MEP.
	Maine	• *Strategies*: Each permittee shall develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to 1 acre. The strategies should include a combination of structural and non-structural BMPs appropriate for its regulated small MS4. • *Inspection*: To ensure adequate long-term operation and maintenance of post construction BMPs, each permittee shall develop, as part of its Plan, an approved BMP inspection schedule that at minimum stipulates that new BMPs are inspected at least once during the first year of installation. Inspections must determine if the BMP is adequately maintained and is functioning as intended or requires maintenance. In the Annual Report, the permittee will include: cumulative number of post construction BMPs discharging into waters of the State, the number of sites with documented functioning post construction BMPs, and the number of sites that required routine maintenance or remedial action to ensure that the post construction BMP is functioning as intended.
Non-DOT Specific	Fort Worth	• *Areas of New Development and Significant Redevelopment:* The co-permittees shall implement comprehensive master planning process (or equivalent) to develop, implement, and enforce controls to minimize the discharges from new development and significant redevelopment after construction is complete.
	Minnesota	• *Minimum Measures* Develop, implement, and enforce a program to address storm water runoff from new development and redevelopment that disturb greater than or equal to 1 acre, including projects less than 1 acre that are part of a larger

Permit Focus	DOT	Permit Provisions
		common plan of development by June 30, 2008, or another date established by the Commissioner. The program must select and implement appropriate BMPs and measurable goals consisting of, at a minimum: develop and implement strategies including a combination of structural and non-structural BMPs appropriate for your community; use an ordinance or other regulatory mechanism to address post-construction runoff to extend allowable under the law; and ensure adequate long-term operation and maintenance of BMPs installed as a result of these requirements.
	TX	• *Scope:* To extent feasible under state and local law, the MS4 operator must develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre of land including: develop and implement strategies which include a combination of structural and non-structural BMPs; use of an ordinance or other regulatory mechanisms to address post-construction runoff; and ensuring adequate long term operation and maintenance of BMPs. (This requirement applies to discharges to Edwards Aquifer and San Antonia Area, as well as projects that require USCOE permits within 5 miles of a regulated water body.)

Table B-17: Comparison of Special Permit Provisions – Stormwater Management for Maintenance Facilities

Permit Focus	DOT	Permit Provisions
DOT-Specific	AZ	• *Good Housekeeping:* ADOT shall prevent litter, debris, and chemicals that could be exposed in stormwater from becoming a pollutant source (4.1.5.1). • *Vehicle and Equipment Storage:* ADOT shall describe and implement BMPs that prevent or minimize contamination of stormwater from all areas used for equipment storage, including confining leaking equipment scheduled for maintenance in designated areas. Use drip pans, keep inventory of materials used in shop, drain all parts of fluid prior to disposal, use dry cleanup methods, and treat, recycle, or properly dispose of collected stormwater to and from maintenance areas. • *Material Storage Areas:* ADOT shall implement following BMPs: maintain all material storage vessels, move storage indoors whenever practical, install berms and dikes around the areas, minimize run-on, use dry cleanup methods, and treat, recycle or properly dispose of collected stormwater runoff. • *Spill Response and Prevention:* ADOT shall implement management practices and procedures for handling toxic and hazardous materials to prevent spills, and to prevent or minimize discharges to the storm sewer system or receiving waters; Within 12 months from permit issuance, ADOT shall establish a system to track and record spills and other releases at ADOT maintenance facilities including information on number, type, and amount of material released and circumstances of the release. • *Stenciling:* ADOT shall install markers or stencils on all new catch basins upon installation and at all existing catch basins before the expiration of this permit. • *SWPPP:* For selected maintenance yards (permit specifically names 19 maintenance yards) that require a SWPPP, ADOT shall continue to develop and implement SWPPPs; keep copy of SWPPP on site; develop SWPPPs for new maintenance yards; update existing SWPPPs to comply with this permit; and document in the first Annual Report the status of the SWPPP update required for each maintenance yard. • *SWPPP requirements:* include all areas of maintenance facility that may impact stormwater; address pollutants of concern; identify appropriate BMPs, include site description; locate vehicle/equipment maintenance activities; locate outdoor storage, fueling and maintenance areas; identify nearest receiving waters, including wetlands and other sensitive water bodies, and identify potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from a facility. • *SWPPP BMPs:* Describe and ensure implementation of BMPs that reduce pollutants in runoff including: stormwater diversions, erosion and sediment control BMPs, and treatment. • *TMDLs:* Ensure that all BMPs are consistent with any relevant TMDL that has been established by EPA. • *Inspections:* ADOT shall conduct a Comprehensive Maintenance Facility Inspection at least once per year, and ADOT shall complete an inspection report for all maintenance facility inspections that addresses inspection date, qualifications of inspectors, weather information, discharge locations, locations of existing BMPs and where additional BMPs are

Permit Focus	DOT	Permit Provisions
		needed, corrective actions needed, identification of material storage areas, any incidents of non-compliance with permit conditions, and needed follow up actions. • *Sediment Removal:* If sediment or other materials escape the site, ADOT shall remove the off-site accumulations of sediment or other materials at a frequency sufficient to minimize off-site impacts. • *Inspection Records:* ADOT shall retain inspection records as part of the SWPPP for at least five years from the expiration of this permit.
	NC	• *Stormwater Pollution Prevention Plan (SPPP):* NCDOT shall maintain and implement a site specific SPPP for each covered industrial activity and related facility that will include: a site plan that includes a site map, description of industrial activities, list of spills that have occurred at the facility over the 3 previous years, and certification that outfalls have been inspected for presence of non-stormwater discharges. The required SPPPs shall be updated annually for existing industrial facilities, and developed and implemented prior to the beginning of discharges from proposed or new facilities. • *Stormwater Management Plan:* NCDOT will develop a Stormwater Management Plan for the facility that describes the management practices employed to control or minimize exposure of significant materials to stormwater and shall include a review of the technical and economic feasibility of changing methods of operations and/or storage practices to eliminate or reduce exposure of materials to stormwater, a schedule to provide secondary containment for appropriate materials, a narrative description of BMPs to be considered such as oil and grease separation, debris control, vegetative filter strips, infiltration and stormwater detention and retention, etc.; inspection schedules for stormwater conveyances and controls to prevent erosion associated with the storm drain system, and develop measures that prevent or minimize stormwater runoff from vehicle equipment and cleaning; spill prevention and response plan; develop a Preventative Maintenance and Good Housekeeping Program; conduct employee training; and identify NCDOT personnel who will be responsible for overall coordination, development, implementation, and revision of the Plan; conduct facility inspections at a minimum on a semi-annual schedule, once in the fall and one in spring; and document and retain on site findings including all monitoring, measurements, inspection and maintenance activities and training provided. • *Monitoring:* NCDOT shall perform visual monitoring at each facility twice per year (spring and fall) that includes inspection of each outfall for parameters listed in permit for purpose of evaluating effectiveness of SPPP.
	WA	• See Maintenance
	Dallas	• Not specifically addressed.
	Maine	• *Vehicle Maintenance:* The permittee by the end of permit year two, shall develop and implement a stormwater pollution prevention plan ("SWPPP") for vehicle maintenance facilities operated by permittee within the UA unless the facility is

Permit Focus	DOT	Permit Provisions
		currently regulated under Maine's Industrial Stormwater Program.
Non-DOT Specific	Fort Worth	• Not specifically addressed.
	Minnesota	• Not specifically addressed as separate topic, but rather included under 6 minimum measures where applicable.
	TX	• Maintenance facilities not explicitly addressed in the permit.

Table B-18: Comparison of Special Permit Provisions –Maintenance

Permit Focus	DOT	Permit Provisions
DOT-Specific	AZ	• *General*: ADOT shall continue to implement its programs of roadway and storm drain repair, maintenance and cleaning, vegetation management, and winter storm policies to reduce release of pollutants from the storm sewer system. • *Update Manual*: ADOT will update Maintenance and Facilities Best Management Practices BMP Manual within 12 months of permit issuance. • *Inventory*: ADOT will develop and maintain an inventory of post-construction BMPs, and shall submit the inventory to ADEQ no later than 24 months after effective date of this permit. • *Schedule and Priorities*: ADOT shall identify routine maintenance schedules and priorities for its storm sewer system, including roadways to minimize pollutant discharges from the storm sewer system. • *Implement BMPs*: ADOT shall implement BMPs to reduce potential for releases of pollutants to the storm sewer system when performing repair, maintenance, or cleaning of its storm sewer system, including roadways. • *Roadside Management*: ADOT shall continue to implement BMPs described in its Highway Maintenance Program specifically those BMPs related to vegetation control and landscaping, and in Appendix D – Excerpts from Vegetation Management Guidelines of the *ADOT Maintenance and Facilities BMP Manual.* • *Pesticide Management*: ADOT shall continue to implement practices and procedures for ADOT staff and commercial applicators to only use Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) approved pesticides/herbicides at ADOT facilities and roadside right-of-ways. • *Winter Storm Policies*: ADOT shall continue to implement BMPs in the Highway Maintenance Program specifically those regarding Snow and Ice Removal, and those BMPs in Appendix E – Winter Storm Management in the *ADOT Maintenance and Facilities BMP Manual.*
	NC	• *Proper Operation and Maintenance*: The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control including adequate laboratory controls and appropriate quality assurance procedures.
	WA	• *SWPPP*s: Complete SWPPPs for all maintenance facilities, rest areas, and WSDOT maintained park and ride lots for Phase I and Phase II designated areas; • *Training*: Continue training of all new maintenance staff on stormwater related maintenance activities including spill response awareness training. • *Stormwater Related Maintenance Activities*: Continue routine stormwater related maintenance activities including street sweeping, catch basin cleaning, and ditch, channel and culvert maintenance; and continue maintenance of all known permanent stormwater BMPs. • *Anti*-icing product use: Continue to support and participate in PNS (Pacific Northwest Snowfighters) and to track statewide totals for anti-icing product use. • *Litter control and herbicide use*: Continue to report litter removed annually and amount of herbicides used and acres

Permit Focus	DOT	Permit Provisions
		treated annually. • *Ferry Terminal Maintenance*: Complete development of the Environmental Management System, integrate EMS with *WSF Safety Management System Manuals* and complete a generic SWPPP for all facilities through completion of EMS.
	Dallas	• *Roadways*: State highways, streets, and roads must be operated and maintained to minimize discharge of pollutants, including pollutants related to deicing and sanding activities. • *Pesticide, Herbicide and Fertilizer Applications*: The permittee shall develop and implement controls to reduce discharge of pollutants related to storage and application of pesticides, herbicides, and fertilizers applied, by the copermittee employees or contractors, to public right-of-ways, parks, or other municipal property. • *Spill Prevention and Response*: The permittee shall continue existing programs which prevent, contain, and respond to spills that may discharge into the MS4. • *Areas of New Development and Significant Redevelopment*: The permittee shall insure adequate long term operation and maintenance of BMPs. • *Pollution Prevention/Good Housekeeping for Municipal Operations*: The permittee shall implement a pollution prevention/good housekeeping program which includes: Good Housekeeping and Best Management Practices, training, structural control maintenance, waste management, and SWMP list of all municipal operations subject to the municipal operation, maintenance, and training programs under this program element.
	Maine	• *Pollution Prevention and Good Housekeeping Program*: The goal of the minimum measure is to prevent or reduce pollutant runoff from the MaineDOT's/MTA's roads, other paved surfaces, infrastructure, and facilities through the development and implementation of an operation and maintenance ("O&M") program. The Program will address the following. • *Inventory and O&M procedures*: inventory of potential pollutant sources and associated operations conducted in, on, or associated with facilities, buildings, roads, travel ways including ROWs that have potential to cause or contribute to stormwater or surface water pollution. By the end of permit year two, the permittee shall develop written operation and maintenance procedures that include maintenance schedule and inspection procedures to ensure long term operation of structural and non-structural controls that reduce stormwater pollution to the MEP. The procedures must at minimum address proper use, storage and disposal of products and materials; spill response and prevention; vehicle and equipment storage, maintenance, and fueling; landscaping and lawn care including establishing buffers, and vegetation management; erosion and sedimentation control; and disposal of road-killed wildlife. • *Employee Training*: Using available training materials from EPA, the State, regional stormwater groups and other agencies, the Pollution Prevention and Good Housekeeping Program must include employee training to prevent and reduce stormwater pollution from permittee operations and facilities. • *Sweeping*: The permittee shall develop and implement a program to sweep all paved streets and parking lots at least once

Permit Focus	DOT	Permit Provisions
		a year as soon as possible after snowmelt. • *Cleaning*: The permittee shall develop and implement a program to evaluate and, if necessary, clean catch basins and other stormwater structures that accumulate sediment at least once every other year and dispose of removed sediments consistent with current state law. The permittee shall clean catch basins more frequently if inspections indicate accumulation is greater or equal to 50 percent of the capacity of the basin. • *Infrastructure Repair*: The permittee shall evaluate and implement a prioritized schedule, as necessary, for repairing or upgrading conveyances, structures, and outfalls of the regulated small MS4.
Non-DOT Specific	Fort Worth	• *Roadways*: Public streets, roads, and highways shall be operated and maintained to minimize discharge of pollutants, including pollutants related to deicing and sanding activities. • *Pesticide, Herbicide and Fertilizer Applications*: The co-permittees shall develop and implement controls to reduce discharge of pollutants related to storage and application of pesticides, herbicides, and fertilizers applied, by the copermittee employees or contractors, to public right-of-ways, parks, or other municipal property. • *Spill Prevention and Response*: The copermittee shall continue and improve as necessary existing programs which prevent, contain, and respond to spills that may discharge into the MS4.
	Minnesota	• *Pollution Prevention and Good Housekeeping Training:* Select and implement a program of appropriate BMPs and measurable goals for this minimum control measure consisting of, at minimum: operation and maintenance program that includes training component that has ultimate goal of preventing or reducing runoff from MS4 operations; operate and maintain your storm water system in a manner to reduce discharge of pollutants to MEP. • *Inspections and Follow Up:* Inspect annually all structural pollution control devices (e.g., trap manholes, sumps, separators); inspect at a minimum 20% of all MS4 outfalls, sediment basin and ponds on a rotating basis during the effective period of this permit, inspect all exposed stockpiles, storage, and material handling areas at least annually; based on inspections, determine if repair, replacement, or maintenance are necessary for proper operation and to prevent environmental impacts such as erosion; summarize results of inspections in Annual Report, keep records of inspection results; and after 2 years of inspections adjust frequency of inspections if necessary. If maintenance of sediment removal is required, the frequency of inspection shall be increased to at least two times annually, or more frequently, to prevent carry-over or washout of pollutants from the structure and maximize pollutant removal.
	TX	• *Pollution Prevention and Good Housekeeping:* A section within the SWMP must be developed to establish an operation and maintenance program, including an employee training component, that has the ultimate goal of preventing and reducing pollutant runoff from municipal operations. • *Good Housekeeping*: Good housekeeping measures and BMPs must be identified and implemented with the goal of preventing or reducing pollutant runoff from municipal operations, and must include, but not be limited to: park and open space maintenance; street, road and highway maintenance; fleet and building maintenance; storm water system

Permit Focus	DOT	Permit Provisions
		maintenance; new construction and land disturbances; municipal parking lots; vehicle and equipment maintenance and storage yards; waste transfer stations; and salt/sand storage locations. • *Training:* A training program must be developed for all employees responsible for municipal operations subject to the pollution prevention/good housekeeping program. The training must include materials directed at preventing and reducing storm water pollution from municipal operations. The SWMP must include a list of all municipal operations that are subject to this program. • *Structural Control Maintenance:* If BMPs include structural controls, maintenance of the controls must be performed at a frequency determined by the MS4 operator and consistent with maintaining the effectiveness of the BMP and must address: maintenance activities; maintenance schedules; and long term inspection procedures and controls used to reduce floatables and other pollutants. • *Waste Disposal:* Waste removed from the small MS4 must be properly disposed and include procedures for the proper disposal of dredge spoil, accumulated sediments, and floatables.

Table B-19: Comparison of Special Permit Provisions – Research and Monitoring

Permit Focus	DOT	Permit Provisions
DOT-Specific	AZ	• *Methods*: ADOT shall monitor stormwater discharges associated with its construction and industrial facilities, and its MS4 locations at designated outfall points. Such monitoring will be conducted in accordance with *Standard Methods for Examination of Water and Wastewater* and in ADOT *QA Manual* which will address sample collection procedures, approved analytical methods to be used, and data review and reporting procedures to be followed. • *Where Monitoring Required*: For construction sites, concrete and asphalt batch plants within ¼ mile of a unique or impaired water body, the SWPPP shall include a monitoring program to determine if BMP are effective. • *Construction Sites*: ADOT shall monitor turbidity upstream and downstream of all water quality impacts from the construction site and at least one monitoring point at the discharge point(s) of the construction site. If the turbidity is increased by more than 25%, ADOT shall evaluate, and replace, maintain, or install additional BMPs as necessary if indications are the site may be contributing to the turbidity load. • *Concrete Batch Plants*: Plants within ¼ mile of unique or impaired waters require monitoring each storm with at least 0.1 inch of precipitation. Monitoring requires that at least one grab sample be taken and analyzed and compared to monitoring limits for TSS, Total Iron, and Total Aluminum if concrete manufacturing taking place and TSS and pH if runoff derives from material storage. • *Asphalt*: Similar sampling requirement to concrete batch plants but constituents consist of TSS, TPH, and pH depending on specific activities. • Industrial Facilities: Within 12 months of permit issuance, ADOT shall update Stormwater Monitoring Guidance Manual for Industrial Activities.
	NC	• *Research Plan*: NCDOT shall update the Research Plan following guidelines established in the FHWA Evaluation and Management of Highway Runoff Water Quality Manual including schedule to evaluate the pollutant removal effectiveness of structural BMPs, and a schedule that identifies research needs that will evaluate program improvement areas and use of state of the art technology. The proposed Research Plan shall be submitted to the DWQ for approval in Year 1, and implemented 6 months following DWQ approval. • *TMDL*s: NCDOT shall develop and implement a program to address impaired waters for which a TMDL has been developed by EPA. For each TMDL NCDOT shall develop and Assessment & Monitoring Plan (Plan) that shall include an evaluation of the need for additional data collection related to the NCDOT's discharge of the TMDL pollutant(s) of concern. Additional data collected may include supplementary inventory information, monitoring, assessment of BMP effectiveness. The Plan will include a schedule of implementation of the proposed assessment and monitoring activities and NCDOT shall submit a report of its findings within 6 months of completing the assessment and monitoring activities and will address whether additional BMPs are necessary to meet the NCDOT's WLA. Upon approval of DWQ, NCDOT shall implement any needed BMPs in accordance with the schedule and report on the effectiveness of the BMPs in

Permit Focus	DOT	Permit Provisions
		subsequent Annual Reports. • *Monitoring and Records*: Samples collected and measurements taken shall be characteristic of the volume and nature of the permitted discharge including representativeness of the storm event(s) selected to be sampled. Test procedures for analysis of pollutants will conform to EMC regulations published pursuant to NCGS 143-215.63 et. seq, the Water and Air Quality Reporting Acts, and to regulations published pursuant to Section 304(g), 33 USC 1314, of the Federal Water Pollution Control Act, as Amended, and Regulation 40 CFR 136.
	WA	• *Objectives*: WSDOT shall develop and implement a monitoring program to establish baseline stormwater discharge information from its highway conveyances, rest areas, maintenance facilities, and ferry terminals and develop and implement a program for Best Management Practice effectiveness. • *Baseline Monitoring*: WSDOT shall obtain discharge quality and quantity data from the edge of pavement at highway sites to allow analysis of pollutant loads and prioritize parameters of concern. Continuous flow recording and permanent flow weighted composite samplers will be utilized. Sites will be at 5 locations selected to address a specified range in annual average daily traffic (AADT). Parameters to be sampled for using the composite sampler and grab samples are specified in the permit. Results will be provided in the Annual Stormwater Monitoring Report. • *Toxicity Testing*: WSDOT shall test the seasonal first flush for toxicity in accordance with criteria and procedures provided in the permit, including criteria for selecting the 3 sites, selecting sample volumes, sampling methods, and supporting chemical analyses. • *Baseline Monitoring of Rest Areas, Maintenance Facilities, and Ferry Terminals*: WSDOT shall conduct stormwater discharge monitoring to collect baseline water quality data at nine sites covering range of facility types. Parameters for sampling, sampling methods, and sample timing and frequency are specified in the permit. WSDOT shall submit results from the monitoring programs in the Annual Report. • *Effectiveness of Stormwater Treatment*: WSDOT shall conduct a full-scale monitoring program to evaluate the effectiveness and operation and maintenance requirements of stormwater treatment and hydrologic management BMPs. WSDOT shall monitor at least two treatment BMPs at no less than two sites per BMP. Monitoring shall continue until statistical goals are met as described in *Guidance for Evaluating Emerging Stormwater Treatment Technologies, Technical Assistance Protocol (TAPE).* • *Quality Assurance Project Plan*: WSDOT shall prepare a Quality Assurance Project Plan (QAPP) in accordance with Ecology's Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies. • *Collaboration*: WSDOT may independently develop any or all of the components of the monitoring program, conduct the monitoring, and report results; or WSDOT may choose to develop any or all of the components through an integrated, long-term, water quality monitoring agreement with other entities.

Permit Focus	DOT	Permit Provisions
	Dallas	• *Monitoring and Screening*: The permittee will implement a Dry Weather Screening Program to detect the presence of illicit discharges and improper discharges to the MS4. All areas of the MS4 must be screened at least once during the permit term. • *Representative Storm Event Monitoring:* Monitoring shall be conducted on representative outfalls, internal sampling stations, and/or instream monitoring locations to characterize the quality of storm water discharges from the Texas Department of Transportation – Dallas District MS4. The permit identifies one specific outfall to be monitored 1time/yr, subject to permittee evaluation of representativeness of the site re different land uses. Quantitative data shall be collected to estimate storm event pollutant loadings and event mean concentrations for each parameter sampled. Estimates of seasonal loadings also will be made and reported in the Fourth Year Annual Report. Requirements to conduct representative monitoring within a prescribed monitoring period may be temporarily suspended for adverse weather conditions. • *Rapid Bioassessment:* The permittee has the option of developing and implementing a rapid bioassessment monitoring program which will allow the permittee to reduce scope of Representative Storm Event Monitoring from annual for 5 years to Years 1 and 4 only. If the permittee elects to develop and implement a rapid bioassessment monitoring program, the permittee shall submit a monitoring program to the TCEQ's Storm Water & Pretreatment Team (MC-148) for approval no later than one year from the effective date of this permit. An approvable program must include monitoring of at least two water bodies subject to MS4 discharges, and one reference site; twice per year monitoring; and monitoring of the reference site within a day or two each time a station located in the receiving waters of the MS4 is monitored. • *Regional Wet Weather Characterization Program*: Alternatively the TxDOT – Dallas District may participate in the Dallas-Fort Worth Wet Weather Characterization Program, as approved by the TCEQ, and as amended by the TCEQ. • *Floatables Monitoring*: The permittee shall monitor floatables a minimum of four times per year in one or two creeks or storm sewer conveyances. If one site is selected, monitoring will be conducted four times per year. The amount of material collected shall be estimated by weight, volume, or by practical means, and will reported in the Annual Report.
	Maine	• Monitoring requirements limited to inspections as required to implement Minimum Management Measures.
Non-DOT Specific	Fort Worth	• *Monitoring and Screening*: The co-permittees will implement a Dry Weather Screening Program to detect the presence of illicit discharges and improper discharges to the MS4. All areas of the MS4 must be screened at least once during the permit term. The co-permittees also will implement a Wet Weather Screening Program as specified in the SWMP and should specify the sampling and non-sampling techniques to be used for current screening and also for follow-up screening. • *Representative Storm Event Monitoring:* Monitoring shall be conducted on representative outfalls, internal sampling stations, and/or instream monitoring locations to characterize the quality of storm water discharges from the MS4. The

Permit Focus	DOT	Permit Provisions
		permit identifies four specific outfalls to be monitored 3times/yr, subject to co-permittees evaluation of representativeness of different land uses. • *Rapid Bioassessment:* The co-permittees have the option of developing and implementing a rapid bioassessment monitoring program which will allow co-permittees to reduce scope of Representative Storm Event Monitoring from annual for 5 years to Years 1 and 4 only. • *Industrial and High Risk Runoff Monitoring*: This program shall include monitoring for pollutants in storm water discharges to the MS4 from municipal landfills; other treatment, storage, or disposal facilities for municipal waste, hazardous waste treatment, storage, disposal, and recovery facilities; and any other industrial or commercial discharge the co-permittees determine are contributing a substantial pollutant load to the MS4. • *Certification Exemption*: In lieu of monitoring discussed above, the co-permittees may accept a "no-exposure certification" subject to the copermittee conducting site inspections to verify the no-exposure exemption not less than once per permit term.
	Minnesota	• Monitoring limited to visual inspections as indicated above.
	TX	• No specific research and monitoring requirements listed separately, but inspections, compilation and analysis of results, and reporting are included in some of minimum management measures.

Table B-20: Comparison of Special Permit Provisions – Education, Training & Public Involvement

Permit Focus	DOT	Permit Provisions
DOT-Specific	AZ	• *Scope of Training*: ADOT shall provide specific stormwater training to educate personnel who are directly involved in activities that may impact stormwater quality including illicit discharges and illegal dumping, non-stormwater discharges, new construction and land disturbances, new development and significant redevelopment, storm sewer system and highway maintenance, good housekeeping and material BMPs, and application of pesticides and fertilizers. For each topic the number of trainings offered, the number of employees trained, and other appropriate measureable goals shall be presented in Annual Report. • *Certification*: ADOT shall continue to require training and certification for Construction Contractors including 16 hour Erosion Control Coordinator course and have minimum of one year of experience. • Training Manuals: ADOT will update and maintain ADOT's Erosion and Pollution Control Manual. • *Public education*: ADOT will continue to implement educational and public information activities to distribute educational materials on stormwater quality, and include number and type of materials developed and distributed in Annual Reports. • *Website*: ADOT will maintain a publicly accessible website on the stormwater program and shall update the webpage as needed, and report the number of "hits" in the Annual Report. • *Public Involvement*: ADOT shall implement a Public Involvement/Participation Program that will include making stormwater documents available to public, record and consider public comments, and implement a Public Reporting System. • *Litter Initiative*: ADOT shall develop a stormwater component of the Adopt-a-Highway Litter Initiative and continue implementation of a Litter Hotline • *Coordination*: ADOT shall implement a program that established internal coordination and intergovernmental coordination with other regulated MS4s and shall describe these partnerships in the SSWMP.
	NC	• *Internal*: NCDOT shall provide annual pollution awareness training for appropriate NCDOT personnel and contractors, and for NCDOT maintenance staff, Adopt-A-Highway volunteers, and prison inmate laborers. Training will address identification of stormwater pollution potential, appropriate spill response actions, and illicit connections/illegal dumping. • *External*: NCDOT shall develop the External Education and Involvement Plan and submit for DWQ approval in Year 1. The Plan will address providing pollution prevention awareness information for the general public, a public education website, distribution of public education materials annually, and continue to implement the Adopt-A-Highway program.
	WA	• Adopt-a-Highway: Continue to support Adopt-a-Highway Program. • *Commute Trip Reduction*: Continue to provide technical assistance to local agencies and employers for the Commute Trip Reduction Program.

Permit Focus	DOT	Permit Provisions
		• *Internet Service*: Maintain and expand WSDOTs internet sites to disseminate information regarding WSDOTs SWMP. • *Technology Transfer*: Continue to support knowledge and technology transfer related to stormwater management through presentations, publications, web telecasts, and participation on stormwater committees.
	Dallas	• *Public Education Program*: The permittee shall implement a public education program component that includes an element to promote, publicize, and facilitate public reporting of illicit discharges or improper disposal of materials, including floatables, into the MS4; an element to promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous wastes; and an element to distribute education materials to the community or conduct equivalent outreach activities about the impact of storm water discharges on water bodies and steps to reduce pollutants in storm water runoff. • *Public Involvement and Participation*: The permittee shall implement a public involvement/participation program which, at a minimum, must comply with State, Tribal, and local public notice requirements.
	Maine	• *Public Education and Outreach*: Goals are to raise awareness, and motivate staff and contractors to use BMPs which reduce polluted runoff. Strategies may include partnering with local regulated stormwater communities. • *Public Involvement and Participation*: Goal is to involve the permittees communities including departments, bureaus or facilities, and when applicable the regulated small MS4 communities in both the planning and implementation process. Required strategies include public notice requirements and coordination with regulated community(s).
Non-DOT Specific	Fort Worth	• *Program*: The co-permittees shall implement a public education program component that includes an element to promote, publicize, and facilitate public reporting of illicit discharges or improper disposal of materials, including floatables, into the MS4; and an element to promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous wastes; and an element to promote, publicize, and facilitate the proper use, application, and disposal of pesticides, herbicides, and fertilizers by public, commercial, and private applicators and distributors.
	Minnesota	• Monitoring limited to visual inspections as indicated above.
	TX	• *Public Education and Outreach*: A public education program must be developed and implemented to distribute materials to the community or conduct equivalent outreach activities that will be used to inform the public including residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel. The MS4 operator must document activities and materials uses and retained in Annual Reports. • *Public Involvement/Participation:* The MS4 operator must comply with any state and local public notice requirements and allow all members of the public within the small MS4 the opportunity to participate in SWMP development and implementation.

Table B-21: Comparison of Special Permit Provisions – Reporting

Permit Focus	DOT	Permit Provisions
DOT-Specific	AZ	• ADOT shall prepare an Annual Report summarizing progress of the SSWMP and findings of monitoring activities for each year of the permit term. The Annual Report will address annual report certification, narrative and numeric summary of SSWMP activities, evaluation of SSWMP, SSWMP modifications, monitoring location information, storm event records, summary of monitoring data by location, assessment of monitoring results, estimate of pollutant loadings, and annual expenditures.
	NC	• *Annual Report*: NCDOT shall provide DWQ with an annual report consisting of a program summary and assessment that will address proposed changes to the Stormwater Management Plan, summary of illicit connection and illegal dumping reports and inspections, identification of water quality improvements or degradation as a result of NCDOT activities, and successes, failures and milestones/accomplishments of the program. The Annual Report shall be submitted to DWQ no later than June 30 of each year. Analytical data for the borrow pit wastewater discharges shall be submitted to the DWQ with each annual report. • *Record Keeping*: Implementation of the SPPPs at each industrial facility shall include documentation of all monitoring, measurements, inspections, maintenance activities, and training to be kept on site for period of 5 years and made available to DWQ immediately upon request. Similarly results from monitoring activities will be retained on site.
	WA	• *Annual Report*: WSDOT shall submit a SWMP Progress Report no later than October 31 of each year beginning in 2010 that will include a description of current implementation status, summary of any actions taken pursuant to compliance with standards (Section 4), barriers to implementation of LID, and status of any TMDL implementation requirements. • *Stormwater Monitoring Report*: WSDOT will prepare and submit an Annual Monitoring Report with each Annual Report due October 31 reporting status of each monitoring program in Section 8. A Final Monitoring Report for each monitoring program will be provided at the end of the permit period.
	Dallas	• *Annual Reporting*: The permittee shall prepare an annual report to be submitted by no later than March 1 of each year, and shall address: the status of implementing the SWMP; any proposed changes to the SWMP; revisions, if necessary, to the assessments of controls and the fiscal analysis; summary of the data collected; summary of number of the NPDES and TPDES NOIs received for each general permit; annual expenditures broken down by program element; summary of enforcement actions, inspections, and public education programs; and identification of any water quality improvements, degradations, and progress towards any measureable goals or measured reductions in pollutants. • *Records Retention*: The permittee shall retain the SWMP and all associated records for at least three years after coverage under this permit terminates.

Permit Focus	DOT	Permit Provisions
	Maine	• *Annual Reporting*: By September 15, 2009 and annually thereafter by September 15, the permittee shall submit a report for the Department's review and approval. The report must include the current copy of the Plan; status of compliance with permit conditions; an assessment of the appropriateness of identified BMPs; progress towards achieving measureable goals; results of information collected and analyzed including monitoring data if any; a summary of activities to be taken pursuant to its plan during the next reporting cycle; any changes in measureable goals; a summary of activities, progress and accomplishments for each of the six Minimum Control Measures, and an estimate of annual expenditures for reporting period and projected budget for the following year.
Non-DOT Specific	Fort Worth	• *Annual Reporting*: Annual report required.
	Minnesota	• *Annual Reporting:* Submit Annual Reports to the MPCA by June 30 of each year covering the entire previous calendar year. The report must address: status of compliance; storm water activities; changes in BMPs; and a statement that You are relying on another entity to satisfy some of your permit obligations (if applicable).
	TX	• *Annual Report:* The MS4 operator must submit a concise annual report to the executive director within 90 days of the end of each permit year and must address status of compliance; status of any additional control measures implemented; any MCM activities; summary of results of information collected and analyzed, summary of storm water activities planned for next reporting cycle; proposed changes to the SWMP; number of municipal construction activities authorized under this permit and total number of acres disturbed; number of non-municipal construction activities that occurred within jurisdiction of the permittee; and notice that the MS4 operator is relying on another governmental entity to satisfy some of its obligations if applicable.

APPENDIX C: PERMIT QUESTIONAIRES

State: Arizona

Permit Type: Combined MS4 , Construction and Industrial Permit

Permit Type and Effects on Efficiency

Definition: Efficiency in this context means complying with permit conditions with minimum costs, while reducing third party liability.

1. Permit Negotiations – An individual permit covering a large area may require more time to negotiate the permit conditions, compared to say a General MS4 Permit that does not specifically address DOT conditions. What was your experience in terms of the time and staff resources needed in the negotiating the permit? Was there any flexibility on the Permit Type? If so, what was ADOT's rationale for pursuing a Phase I permit?

   Response: In 1999, EPA designated ADOT a Phase I and issued a permit. The Phase I permit expired in 2002 and was administratively continued by EPA. In 2002, ADOT submitted a reapplication for the Phase I MS4 permit. (During which time ADEQ was granted primacy over the NPDES program.) Additionally, ADEQ determined ADOT is subject to provisions under the Phase II MS4 regulations, and requested ADOT reapply to include the Phase II MS4 areas (thus combining the Phase I and Phase II permits).

   In 2004, ADOT received a consent order on one of its' construction projects: one of requirements was to apply for an individual permit, so no choice of permit type.

   But going from 3 permits to 1 permit is clearly better, all requirements can be found in one document so no contradictions. Also when ADOT had 3 permits, multi-sector permit expired which caused ADOT problems with compliance. Whereas with current permit, if it expires, DEQ will probably give automatic extension. ADOT also now uniformly applies permit requirements independent of whether in phase I or II so that simplifies life.

2. *Long versus Short Time Perspective* – Setting up a statewide program could be quite expensive in the early years of the program, but once set up, are there efficiencies of scale that in the long term could lead to reduced costs over time? Has this been your experience? Can you provide specific examples of upfront program development requirements and expected long term benefits (some possible examples are storm system mapping, monitoring, maintenance program development, record keeping). Do you have any associated cost information (specific or general)?

   Response: She sees efficiency in long term compliance. She has no additional budget to implement new permit (would like to point out that there was never any stormwater funding above what may have been included in construction project prices), but there is a stormwater sub-program with budget of $1M that was set up earlier to address erosion control issues in the Districts and she uses primarily for consultants to help implement the program, but she is trying to be as efficient and frugal as possible. She is sole NPDES

Permit lead at ADOT and helps District with implementation guidance. Also as lead, she can provide uniform policy direction to all districts at once. Environmental coordinators in each district are her primary initial contacts with each district, so communication is streamlined**.**

3. *Coordination between Headquarters and Districts* - State DOTs are organized into districts, and having one individual permit, in contrast to differing permits for each district, requires more coordination between headquarters and districts in terms of "getting everyone on the same page". Given your organizational structure, did this requirement for a more "top-down" and uniform implementation result in more or less efficiency? Are there specific examples and possibly cost data?

   Response: See answer to question 2. There was some top down implementation just due to the fact that it was a change to the way that we have done business in the past. Having the support of the State Engineer and the Director has been important.

4. *Uniform set of management goals and approaches:* Individual permits may be more conducive to establishing uniform statewide goals and approaches, which could lead to greater efficiency, for example with respect to compliance. Is this your experience in Arizona? Examples?

   Response: She thinks so… e. g., for construction program Wendy can provide uniform guidance to all the districts, so everyone is on same page. Same with our maintenance yards, even though some have SWPPPs and some don't; they all need BMPs.

5. *Responsibility, Control and Compliance*- An individual permit, in contrast to a permit that covers both municipal MS4s and DOT MS4s, may better clarify the role of the DOT in terms of responsibility and compliance. Does having an individual permit lead to clearer roles and responsibilities for the DOT and more efficiency in terms of less of a burden on coordination with municipal MS4s, and simpler reporting compliance? Are there specific examples and cost information?

   Response: Everybody knows where they sit, but HQ office is still a bit new, so Districts still getting to understand what is and what is not their responsibility – still in growing stage on this issue. With regards to other MS4s it has created great confusion. ADOT has always accepted their drainage largely because we bisect them via our roadways. With the new permit it has called into question how we handle the existing runoff, but also the new runoff. So it appears there will be more coordination between ADOT and the MS4s.

6. *Permit Specificity and Recognition of Unique Aspects of Highway Systems* - Your permit is an individual permit with provisions that, compared to more general permits, are more tailored to the linear nature of highway systems and the multiple types of facilities the DOT owns and operates. Such specificity in the permits may aid in determining what is required and "how much is enough" (a clearer performance standard) which could lead to efficiencies. On the other hand, individual permits may result in higher costs to DOTs

due to increased permit areas, monitoring and mapping requirements, and BMP implementation requirements. Is it your opinion that a more specific permit leads to longer-term efficiencies in terms of reduced costs and increased benefits? Please provide specific examples. We also need to find out if they have cost information.

Response: Cuts both ways. With our Phase I permit only the Phoenix and Tucson areas were regulated. Staff could not understand why other areas were not covered. However, with the new permit it is statewide regardless of the MS4 areas. This has made a huge jump in the areas that we are required to implement and monitor the program.

Regulatory agency does not understand what DOT does, so permit details can tie DOT hands – need balance between specificity vs. flexibility. Regulatory agencies still feel need to retain things like 6 MMs including outreach, but general public outreach requirement just does not apply to DOTs like an MS4… Fortunately ADOT has been able to partner with 3 MS4 groups to meet this requirement.) But this leads to the question that is it cost effective for the DOT to be educating the public on MS4 pollutant concerns (dog waste, waste oil, car washing)?

7. *Flexibility in Implementation* – By recognizing the unique characteristics of transportation facilities, the individual permit begins to recognize that "one size does not fit all" and could lead to providing more flexibility for the DOT in implementing what makes sense in different situations. What is your experience? Has the individual permit changed your working relationship with regulators? Are regulators receptive to flexibility in permit implementation if there are benefits to receiving waters? Or is your relationship unchanged and permit requirements are viewed as prescriptive?

   Response: Have some flexibility but DEQ does not have very good idea of what DOTs do and sometimes put in unreasonable requirements. For example, in one version of permit, DEQ wanted new documents, training etc – all done in 1st year, but schedule was not flexible and much too aggressive. Similarly DEQ wanted erosion problems fixed within 14 days. But after negotiation (and sometimes renegotiation after the permit was issued) DEQ came up with more flexible requirement including identification of erosion sites, prioritization, and implementation consistent with available resources.

   Have good relationship with some of people in DEQ (e.g., deputy director of water), but complicated with high turnover.

8. *Prioritization of Implementation* – An individual statewide permit in principle could allow the DOT some leeway in terms of prioritization of problems and solutions and thereby lead to efficiencies in terms of resource allocation. Does having a statewide permit facilitate focusing resources on most important issues, or does it not? If yes, are there specific examples of how ADOT has reprioritized resources. If not, why not?

   Response: No separate allocation of funds for stormwater, Wendy's $1M subprogram pulls funds from other sources. Resources needed for permit compliance for construction

can be tied to construction projects (sometimes covered by stimulus $$). For maintenance, additional costs are unfortunately picked up by routine maintenance budgets and these are going down. If district has issue, it can apply for program funds in HQ $1M subprogram.

9. *Area of Coverage* – Your permit covers the entire state rather than just Phase I/II areas. In other states, the individual DOT permits sometimes cover only the Phase I/II areas. Did you have the option of covering Phase I/II only, or do you prefer the statewide coverage? By avoiding a "patchwork of Phase I/II jurisdictions", does the statewide coverage lead to efficiencies in terms of having uniform requirements everywhere?? Request examples and cost information.

   Response: Truly a statewide permit covers everything but Indian lands. In Phase I/II some special requirements – e.g., for maintenance yards in Phase I/II need SWPPP for each yard, whereas outside of Phase I/II only need copy of maintenance yard guidance document. Mapping on other hand is statewide. It has been a giant leap in what needs to be accomplished from just dealing with two areas (Phoenix and Tucson) to the entire state.

10. *Phase I vs. Phase II Requirements*: Is Phoenix/Tucson (considered Phase I) treated differently based on the permit language than the rest of the state (considered Phase II)? How much do you coordinate with MS4s in Phoenix/Tucson. Has your individual permit affected the level of coordination with MS4s. Examples? If so, do you considered this a benefit?

    Response: See response to Question 2. In general ADOT/ADEQ does not make Phase I/II distinction.

11. *Individual vs General Permit*: Prior to this permit, the Arizona DOT was covered under the Phase I municipal stormwater permit issued by EPA in 1999, and ADOT's coverage under the AZPES Construction General Permit and ASPDES multi-Sector General Permit. The current permit is more comprehensive in that it covers all construction, post-construction, and industrial activities conducted by ADOT in one permit. Has consolidation of permitting requirements led to efficiencies for the ADOT? Examples/costs? Can you comment on any other benefits or disadvantages in going from Phase I permit to current statewide permit?

    Response: Yes, see response to Questions 1 and 2 above.

12. Specific permit related questions

    1) What do you like most about your permit and why?
    2) Are there any permit conditions that you view as ineffective or have low benefits (and high costs) to receiving waters?

3) What changes would you like to see in the next permit? What permit type would most likely facilitate these changes?

4) What are your greatest concerns regarding potential future requirements? Does your permit type help or hinder negotiations regarding these requirements?

Response:

Likes: Wendy likes that there is only one permit to go to for requirements, and she feels Districts would agree with her.

Dislikes: Wendy does not like focus on all urbanized areas – too drastic a shift from 2 Phase Is (Phoenix/Tucson) to all urban areas in whole state. Too extreme a change, especially given limited resources. She has no specific staff to support her, and use a lot of consultants which is not always most effective.

13. *Costs:* Ultimately we are trying to develop guidance on the costs and benefits of DOT permitting strategies. Describe ADOT's cost tracking for programmatic functions associated with permitting and permit compliance. Can you provide estimates of following ?:

    1) Total statewide lane miles owned and operated by the DOT

    2) Total number of employees in the DOT including HQ and Districts

    3) Total number of full time equivalents (FTEs) assigned to stormwater program support in (i) headquarters, and (ii) Districts,

    4) Total annual value of contract funds for consultants and universities used to assist the DOT in support of stormwater program.

    Response:

    Lane miles 18,000 travel lane miles (this does not include shoulders, only the traveled surface), 28,000 maintenance lane miles (this includes additional equivalent lane miles for the shoulders and ramps).

    4000 employees total

    1 FTE in HQ (Wendy) none in districts except for environmental coordinators but they are responsible for all environmental compliance, not just stormwater.

    2009-2010 FY $300,000 so far, and probably more if she can (She has $1M in her HQ subprogram)

14. We are very interested in the costs of alternative permit types and permit conditions. Do you have an opinion in whether your current permit type and conditions are more or less costly than previous permits??

1) Is there someone we can follow up with to obtain cost data or general cost information?

Response:

15. *Regulatory Contact*: As part of our project, we may be interviewing regulators who oversee the DOT permits. Would you mind if we interview the regulator for your permit? If so, could you provide contact information?

    Response: Chris Henninger, Surface Water Section Unit Manager

    henninger.christopher@azdeq.gov, 602-771-4508

16. Permit specific Questions:

    Retrofitting – As part of iterative improvement standard and/or meeting TMDL allocation, is retrofitting existing areas possible permit requirement?

    Response: At this point no retrofitting being required.

State: Maine

Interviewee: Peter Newkirk, Senior Environmental Engineer (207) 592-1804

Interview Date/Time: March 1, 2010 2-3 pm (Eastern)

Permit Type:

General Permit Specific to Maine DOT and MTA only; General Permit includes requirements for construction phase. DOT/MTA are not exempt from Maine General Construction Permit, but are implementing Construction Program under MOA with DEP.

Coverage: applies to regulated small MS4 areas within an identified Urbanized Area.

Questions:

Permit Type and Effects on Efficiency

Definition: Efficiency in this context means complying with permit conditions with minimum costs, while reducing third party liability.

1. *Permit Negotiations* – Although the general permit is specific to DOT/MTA activities, it is fairly general and focuses on Minimum Control Measures. What was your experience in terms of the time and staff resources needed in the negotiating the permit? Was there any flexibility on the permit type? If so, what was Maine DOTs rationale for pursuing a general permit?

   Response: Went with general permit, but hybrid in terms of adapting MCMs to DOT. In doing so, looked at system of control measures, and met with DEP and discussed practicality of how to craft MCMs general enough as applied to MS4 but specific to DOTs. Other states may have adversarial relationships, but not the case in Maine; they have a good relationship with DEP and have candid one-on-one discussions and come up with practical solutions.

   Negotiation Resources Used : 2 DOT staff met with DEP in series of meetings that took about 60 staff hours in total.

2. *Long versus Short Time Perspective* – Setting up a statewide program could be quite expensive in the early years of the program, but once set up, are there efficiencies of scale that in the long term could lead to reduced costs over time? Has this been your experience? Can you provide specific examples of upfront program development requirements and expected long term benefits (some possible examples are storm system mapping, monitoring, maintenance program development, record keeping). Do you have any associated cost information (specific or general)?

Response: Permit applies to Urban Areas only and therefore is not a statewide program. Maine is relatively rural state. DOT has Urban Compacts with MS4s so state owned roads within MS4 communities are maintained by MS4s (catch basin cleaning, street sweeping)… So DOT owns and is responsible for capital improvements, but does not operate (maintain) all state highways in these areas. Urban compacts cover about 44 out of total of 77 DOT miles, so DOT only maintains 33 miles. So permit requirements for inventory outfalls, catch basins cleaning, etc. is limited to 33 miles which is not huge burden on DOT.

3. *Coordination between Headquarters and Districts* - State DOTs are organized into districts, and having one general permit, in contrast to differing permits for each district, requires more coordination between headquarters and districts in terms of "getting everyone on the same page". Given your organizational structure, did this requirement for a more "top-down" and uniform implementation result in more or less efficiency? Are there specific examples and possibly cost data?

   Response: Entire permit handled out of his office with one additional staff person who works for him. Districts (called Regions) have assigned environmental coordinator in each region. Bulk of work done out of state DOT office.

4. *Coordination with Maine MTA* – Did the fact that the general permit applies to MaineDOT and Maine MTA lead to collaboration on uniform approaches (e.g., development of design guidance) that resulted in cost sharing and savings? Give examples if available.

   Response: MTA historically rode coattails of DOT. Have 150 miles of turnpike. Good relationship with MTA. In recent years, MTA has entered into contracts with consultants that have a great asset to the cooperative effort. Good cooperation.

5. *Uniform set of management goals and approaches :* A statewide general permits may be more conducive to establishing uniform statewide goals and approaches, which could lead to greater efficiency, for example with respect to compliance. Is this your experience in Maine? Examples?

   Response: The more urbanized areas in state limited to 2 districts – Region 1 NH border up thru Portland is biggest, and then Region 4 Bangor (5 or 6 municipalities lumped together). Some differences in each region – e.g., training for maintenance staff in good housekeeping in Region 1, Regional Director wanted to have training to apply to entire region, whereas in Bangor Regional Director wanted Peter to instruct only individual crews within UAs. So uniformity not issue in small non-urbanized state, and having flexibility not onerous.

6. *Responsibility, Control and Compliance*- A general permit specific to Maine DOT and MTA, in contrast to a permit that covers both municipal MS4s and DOT MS4s, may better clarify the role of the DOT in terms of responsibility and compliance. Does having

a general permit specific to DOT activities lead to a clearer role and responsibilities for the DOT and more efficiency in terms of less of a burden on coordination with municipal MS4s, and simpler reporting compliance? Are there specific examples and cost information?

Response: Again, DOT HQ thought about delegating responsibilities to Regions, but took advantage of economies of scale and DOT HQ took lead.

7. *Permit Specificity and Recognition of Unique Aspects of Highway Systems* - Your permit is a general permit specific to transportation, but does not have specific requirements that recognize the unique aspects of highway systems and facilities. Individual permits for some DOTs have provisions that, compared to more general permits, are more tailored to the linear nature of highway systems and the multiple types of facilities the DOT owns and operates. Such specificity in the permits may aid in determining what is required and "how much is enough" (a clearer performance standard) which could lead to efficiencies. On the other hand, individual permits may result in higher costs to DOTs due to increased permit areas, monitoring and mapping requirements, and BMP implementation requirements. What is your opinion in terms of relative efficiency of your general permit compared to individual permits? Please provide specific examples and if available, cost information.

   Response: As far as efficiency is concerned, he likes fact that his permit is more general in nature, gives DOT latitude to make management decisions as they go and discuss direction in annual report to DEP – he would not like to have specific goals at this time given where the program is at this point, he likes it the way it is.

   Example of Permit specificity that works - each MS4 has public outreach minimum measure but DOT got DEP to agree that for MS4s the public are citizens in their jurisdiction, whereas DOT's "public" is employees. There is an emphasis on coordination and responsiveness to MS4 needs when DOT is designing a capital improvement project within the MS4.

8. *Flexibility in Implementation* – The MaineDOT permit is fairly general and appears to afford some flexibility in approaches towards implementation. Has having a general permit specific to transportation facilities changed your working relationship with regulators? Are regulators receptive to flexibility in permit implementation if there are benefits to receiving waters? Or is your relationship unchanged and permit requirements are viewed as prescriptive?

   Response: Adequate flexibility with program and good relationship with DEP. Also DOT has had an MOA with DEP since 1997 for construction, and DEP utilized DOT (specifically Peter) as a technical resource in their rulemaking and as an instructor for their Certified Contractor in Erosion and Sedimentation Control program.

9. *Prioritization of Implementation* – A statewide general permit in principle could allow the Maine DOT some leeway in terms of prioritization of problems and solutions and thereby lead to efficiencies in terms of resource allocation. Does having a general permit applicable to all small urban MS4s facilitate focusing resources on most important issues, or does it not? If yes, are there specific examples of how MaineDOT has reprioritized resources. If not, why not?

   Response: Available resources not a constraint for DOT. The Bureau of Maintenance and Operations has been good in terms of assuming additional responsibilities, and no special funds added to maintenance budget.

   The Bureau of Project Development (capital improvement) is different, where additional costs associated with permit compliance applied to capital costs of project. Peter does have some additional funds to address specific issues.

10. *Area of Coverage* – Your permit covers regulated small MS4 areas within an identified Urbanized Area. In a few states, the individual DOT permits apply statewide. Did you have the option of statewide coverage, or do you prefer covering small urbanized MS4s only? Does the coverage of a patchwork of small urbanized MS4s lead to inefficiencies in terms of managing the statewide transportation system?? Request examples and cost information.

    Response: Maine is less urbanized than most states, and so no efficiencies would result from a broader application of Permit requirements. Some aspects of Permit requirements (e.g., training) might be done more regionally, but requirements like outfall mapping and catch basin cleaning will continue to be done on patchwork level.

11. *Construction Requirements Outside the urbanized MS4s*: Is Maine DOT required to comply with the Maine General Construction Permit in areas outside the coverage of this permit? If so, does having two sets of requirements depending on project location lead to inefficiencies??

    Response: Maine DOT is not exempt from CGP, it just does not have any effect on DOT workload as DOT is applying standards to ALL of their construction projects at a higher level than required in the CGP since 1997 under the State Stormwater Rules and an MOA they have with the DEP. And under this MOA, they submit annual batch notices of projects begun and ended; it was agreed that the batch notices would suffice for the required NOI and NOTs to DEP. The CGP (including the current draft revision) has a section that addresses this.

12. *Coordination of Construction and Post-Construction Requirements:* Did the fact that your permit includes construction phase requirements and MaineDOT is exempt from the requirements of the Maine Construction General Permit facilitate compliance and avoid possible overlapping requirements? Examples/costs.

Response: See response to question 10. MOA requirements are more stringent than CGP. MOA recognizes what DOT had in place was adequate.

For future, Peter concerned that new effluent limitations guidelines beginning this year where if exceed 20 acre threshold for disturbed land will require effluent monitoring for turbidity.

Also in future, if project exceeds 5 acres DOT must have individual NOIs and SWPPPs for each project and will no longer be able to include such projects in annual batch application under MOA. But only a couple of projects per year will fall into this category.

13. Specific permit related questions

    - What do you like most about your permit and why?
    - Are there any permit conditions that you view as ineffective or have low benefits (and high costs) to receiving waters?
    - What changes would you like to see in the next permit? What permit type would most likely facilitate these changes?
    - What are your greatest concerns regarding potential future requirements? Does your permit type help or hinder negotiations regarding these requirements?

    Response: Working via AASHTO who is negotiating with EPA to understand that transportation systems are unique and need to be considered as such – EPA does not appear to recognize that and he is concerned that EPA rigidity might be transferred down to state level. DOT mission is primarily safe transportation and permit requirements would ideally recognize this.

    Maintenance camps currently covered under MS4. First round of Multi-sector Industrial permit in 2003 – DEP wanted to apply Industrial Permit requirements to DOT facilities but DOT maintenance facilities did not have SIC code, but now through residual designation authority, DEP can include maintenance facilities and wants to regulate all facilities statewide under industrial permitting, rather than just the maintenance facilities within the UAs in the MS4 permit.

14. *Costs:* Ultimately we are trying to develop guidance on the costs and benefits of DOT permitting strategies. Describe ADOT's cost tracking for programmatic functions associated with permitting and permit compliance. Can you provide estimates of following ?:

    - Total statewide lane miles owned and operated by the DOT
    - Total number of employees in the DOT including HQ and Districts
    - Total number of full time equivalents (FTEs) assigned to stormwater program support in (i) headquarters, and (ii) Districts,

- Total annual value of contract funds for consultants and universities used to assist the DOT in support of stormwater program.
- We are very interested in the costs of alternative permit types and permit conditions. Do you have an opinion in whether your current permit type and conditions are more or less costly than previous permits??
- Is there someone we can follow up with to obtain cost data or general cost information?

Response:

18,031 miles

1,936 FTE filled and 282 FTE Vacant

Nine Total, but only 4 that do it full time. The other 5 have it as one of their duties, assume around 20% of their time

Over the last 3 years and in our current budget that total would be zero.

Regulatory Contact: As part of our project, we may be interviewing regulators who oversee the DOT permits. Would you mind if we interview the regulator for your permit? If so, could you provide contact information?

Response: David Ladd, Maine DEP , 207-287-5404

15. Questions specific to Permit Provisions:

    Part 1A General coverage of this permit: permit authorizes discharges of stormwater … to waters of the state other than groundwater. Does this restriction apply to infiltration BMPs?

    Response. This permit requirement does not, but State stormwater rules have resulted in a de minimus permit that is difficult to meet. DOT does not encourage infiltration BMPs just to avoid this issue.

16. Minimum measures, measurable goals, program assessment – the permit calls for developing and tracking progress with the aid of measureable goals, including in Part IV.E "measures indicated as required within the UA of the municipality in which the permittee operates an MS4… and only requires implementation of the minimum control measures within the UA to the extent the measures will have an impact on the MS4" – could you briefly comment on this aspect of the permit and progress in this area?

    Response: He recalls that it was the lawyers for the MTA that requested this be inserted to make it clear that, although the permit mentions suggested measures, the permittee is only required to installed the required measures. Verbatim from IV. E.:

The Plan must, at a minimum, include the measures indicated as required within the UA of the municipality in which the permittee operates an MS4. The permittee may also include in the Plan those measures indicated as suggested and any other measures the permittee deems appropriate. This general permit only requires implementation of the minimum control measures within the UA to the extent the measures will have an impact on the MS4, and for transportation facilities, operations and activities within the UA, that discharge to waters of the State other than groundwater.

17. Part IV – I: Sharing responsibility: Part IV section I list opportunities to share responsibilities for implementation with a) qualifying local programs, b) qualifying state or federal programs (including MTA), or c) other MS4 permittees. To what extent does Maine DOT share responsibilities with these entities?

    Response: DOT encouraged to partner by DEP and this is done with respect to maintenance.

State: Minnesota

Interviewee: Nick Tiedeken, Hydrologist, 651 3663628, Nick.Tiedeken@dot.state.mn.us

Date/Time of Interview: February 25, 2010 (11-12 AM Central Time)

Permit Type: General Permit for Small Ms4s (not specific to transportation); Construction activities covered under separate State General Construction Permit

Coverage: applies to regulated small MS4 areas within an identified Urbanized Area (Outside Districts) and also applied to Metro District (Minneapolis St Paul District).

Questions and Responses:

Permit Type and Effects on Efficiency

Definition: Efficiency in this context means complying with permit conditions with minimum costs, while reducing third party liability.

1. *Permit Negotiations* – What was your experience in terms of the time and staff resources needed in the negotiating the permit? Was there any flexibility on the Permit Type? If so, what was Minnesota DOT's rationale for pursuing coverage under a General permit?

   Response: For the original general permit in 2003, an extensive negotiation process was used. DOT central office participated in original negotiations which included series of stakeholder meetings. Negotiations went on for a fair amount of time. Discussions centered around 2 permitting options: 1) follow EPA 6 minimum measures approach, or 2) be more specific and prescriptive and decided on EPA 6 minimum measures and how to comply with MEP. PCA was sued and had to revise permit in 2005 to include additional measures, including for example, identification of 30 faster growing MS4s that must ensure that their SWPPPs address non degradation for all waters in their jurisdiction.

2. *Long versus Short Time Perspective* – Did your agency choose to set up a statewide program that could be quite expensive in the early years of the program, but once set up, could lead to efficiencies of scale that in the long term could lead to reduced costs over time? Has this been your experience? Can you provide specific examples of upfront program development requirements and expected long term benefits (some possible examples are storm system mapping, monitoring, maintenance program development, record keeping). Do you have any associated cost information (specific or general)?

   Response: Metro district (Twin Cities 8 county area) hired consultant to evaluate current management practices and found that much required in the permit was already being done, and gap analysis identified additional things that DOT needed to do to comply (e.g., in area of public education and outreach). As the Metro District worked through the

2005 permit application and complying with the permit once in place, additional measures and challenges have presented themselves. DOT Central Function acts as advisor to outstate districts and metro district with emphasis on providing guidance and assistance but not prescriptive. Central Function does provide BMP summary sheets that have timelines and goals. Metro DOT district also covered under small MS4 Permit. Not sure if current level of centralized structure is efficient or not efficient, but feeling is that Districts are more autonomous and Central Function role is more advisory and that seems to be generally working.

3. *Coordination between Headquarters and Districts* - State DOTs are organized into districts, and having one general permit, in contrast to differing permits for each district, requires more coordination between headquarters and districts in terms of "getting everyone on the same page". Given your organizational structure, did this requirement for a more "top-down" and uniform implementation result in more or less efficiency? Are there specific examples and possibly cost data?

   Response: Some districts need more attention and encouragement by Central – but overall this cooperative partnership is working well – in developing SWPPP, got all metro and district folks together and tried to be collaborative – have a metro SWPPP and outstate SWPPP, former more detailed than latter.

4. *Coordination with Municipal Agencies* – Did the fact that the general permit applies to both municipal agencies as well as the DOT lead to efficiencies in terms of areas of collaboration, or inefficiencies in terms of excessive need to manage co-mingled discharges? Give examples if available.

   Response: Level of coordination varies depending on districts and MS4s. In Metro District, some relationships with MS4s are cooperative, e.g., Duluth MS4 and District have more organizational integration for funding outreach. Rochester MS4 has monthly meetings with DOT district in district offices. Cooperation sometimes extends to maintenance agreements where MS4s assist DOT districts with maintenance. DOTs revisit coordination issue annually with MS4s to identify current or possible future areas of coordination.

   Mn/DOT has moved forward in the direction of establishing who is responsible for maintenance of stormwater features and major maintenance is being set based on % of drainage to that feature. A provision is left in the maintenance agreement to renegotiate this % if land use changes and additional drainage is allowed into the stormwater feature. In addition, for features owned by Mn/DOT and maintained by other entities, those entities are required to report their inspection and maintenance activities for compliance with MS4 permit.

5. *Uniform set of management goals and approaches:* Did the fact that the permit is a statewide general permit make it more conducive to establishing uniform statewide goals

and approaches, which could lead to greater efficiency, for example with respect to compliance. Is this your experience in Minnesota? Examples?

Response: DOT has not formalized anything beyond SWPPPs. For example, DOT does not have uniform BMP sizing criteria, as criteria can **vary** depending on watershed district and MS4s within those districts.

6. *Responsibility, Control and Compliance* - Did a general permit that covers both municipal MS4s and DOT MS4s lead to more difficult determination of the role of the DOT in terms of responsibility and compliance? Would having a general permit specific to DOT activities lead to a clearer role and responsibilities for the DOT and more efficiency in terms of less of a burden on coordination with municipal MS4s, and simpler reporting compliance? Are there specific examples and cost information?

   Response: Not having a DOT specific permit has not been problem, in part because the current level of enforcement of the Permit by the PCA has been modest. The DOT has brought up the issue **of having a separate permit** with the PCA. A one size fits all approach that doesn't fit entities that aren't traditional municipal MS4s. Some examples, we don't have ordinance authority, we cover a much bigger area with a lot more lane miles squeezed into a much smaller footprint, holding an annual public meeting is a lot more work since we can't just add it onto a city or council meeting, we don't have a lot of public contact so doing public education is more complex than a brochure mailing. However a separate permit has not been developed to date. As the new permit is expected to be more prescriptive, it is important that the different nature of linear MS4s be reflected in the statewide general permit. If not then it may be appropriate to seek a separate permit.

7. *Permit Specificity and Recognition of Unique Aspects of Highway Systems* - Your permit is a general permit that is not specific to transportation, and therefore does not have specific requirements that recognize the unique aspects of highway systems and facilities. Individual permits for some DOTs have provisions that, compared to more general permits, are more tailored to the linear nature of highway systems and the multiple types of facilities the DOT owns and operates. Could you comment on the extent to which permit requirements are more specific to transportation can lead to or detract from greater efficiency? Please provide specific examples and if available, cost information.

   Response: In future Nick feels they will need specific recognition of linear MS4s (see response to Q 5).

8. *Flexibility in Implementation* – Your permit is fairly general and appears to afford some flexibility in approaches towards implementation. Has having a general permit that is not specific to transportation facilities seen as an advantage or disadvantage? Are regulators receptive to flexibility in permit implementation if there are benefits to receiving waters? Or is your relationship unchanged and permit requirements are viewed as prescriptive?

Response: Current permit does provide for flexibility, again in part because of current modest enforcement level. PCA is starting to do random audits of MS4s, and where there are deficiencies, following up with letter requesting improvement. DOT has not had any audits yet. However the existing permit does not acknowledge nontraditional MS4s, there are too many assumptions that everyone is a municipality. There has been little recognition of the complexity of non-traditional MS4s. Statements made in the new MS4 permit negotiations indicate that the regulators view nontraditional MS4s as "a special problem."

9. *Prioritization of Implementation* – A statewide general permit in principle could allow the Minnesota DOT some leeway in terms of prioritization of problems and solutions and thereby lead to efficiencies in terms of resource allocation. Does having a general permit applicable to all small urban MS4s facilitate focusing resources on most important issues, or does it not? If yes, are there specific examples of how Minnesota DOT has reprioritized resources. If not, why not?

   Response: Nick does not think there is any separate budget accounting for say outstate districts that would allow one to track resource allocations. The reality appears to be that resource allocations amongst districts is negotiated with HQ based on current overall budgets and staffing needs, rather than specific NPDES permitting responsibilities.

10. *Area of Coverage* – Your permit covers regulated small MS4 areas. In a few states, the individual DOT permits apply statewide. Did you have the option of statewide coverage, or do you prefer covering small urbanized MS4s only? Does the coverage of a patchwork of small urbanized MS4s lead to inefficiencies in terms of managing runoff from the statewide transportation system?? Do you have examples and cost information.

    Response: Statewide coverage not beneficial at this point and not going to happen soon. For example, inspection requirements are significant and DOT would not like to see such requirements expanded statewide. Metropolitan district is trying to extend MS4 permit requirement to include its entire district area some of which is outside the Metro urbanized area. He has one concern regarding fragmented permit coverage and that has to do with TMDL compliance. Currently TMDLs limited to permittees, but where TMDLs cover growth areas, some MS4 that in reality contribute loads are not covered, but will be covered when their population exceeds threshold. Statewide coverage could address this issue, but DOT not supportive of statewide coverage at this time.

11. *Coordination of Construction and Post-Construction Requirements:* Did the fact that your MS4 permit includes construction phase requirements but the Minnesota DOT also had to comply with the Minnesota Construction General Permit lead to overlapping and conflicting requirements or were the requirements in each permit similar? Examples/costs.

    Response: Initially DOT requested to PCA that DOT would comply with minimum control measures (MCMs) for construction and post construction by complying with the

General Construction Permit. But PCA also wanted DOT to comply with other construction/post construction provisions in the MS4 permit such as developing ordinances. But DOT does not have ordinances, and instead did revise contracting requirements as part of MS4 compliance.

The MS4 permit reinforces the construction site permit conditions. Metro District, for example, does an annual update each year to cover what is new in the Construction Permit and also what needs to be improved based on previous construction season. We are also working with our permits group to include construction and post construction requirements on those permits we grant to those discharging to our R/W.

12. Specific permit related questions

    - What do you like most about your permit and why?
    - Are there any permit conditions that you view as ineffective or have low benefits (and high costs) to receiving waters?
    - What changes would you like to see in the next permit? What permit type would most likely facilitate these changes?
    - What are your greatest concerns regarding potential future requirements? Does your permit type help or hinder negotiations regarding these requirements?

    Response: What we like about current permit: it allowed the DOT to build off what they were doing already and that has been helpful and allowable with this permit. The permit also allows for more flexibility in meeting requirements and schedule

    What DOT does not like: The CGP is more prescriptive. Both the CGP and MS4 permit conditions don't always fit linear entities. The MS4 annual public meeting is a poor use of resources as few people show up.

    Future: Nick worries about having more prescriptive permit in future, and need for more top down approach, more formalized training, etc.

13. *Costs:* Ultimately we are trying to develop guidance on the costs and benefits of DOT permitting strategies. Describe Minnesota DOT's cost tracking for programmatic functions associated with permitting and permit compliance. Can you provide estimates of following ?

    - Total statewide lane miles owned and operated by the DOT
    - Total number of employees in the DOT including HQ and Districts
    - Total number of full time equivalents (FTEs) assigned to stormwater program support in (i) headquarters, and (ii) Districts,

- Total annual value of contract funds for consultants and universities used to assist the DOT in support of stormwater program.
- We are very interested in the costs of alternative permit types and permit conditions. Do you have an opinion in whether your current permit type and conditions are more or less costly than previous permits??

Response: Don't have any cost numbers. **Mn/DOT has about** 5000 FTEs statewide. Metro district four FTE, four student workers and work maintenance/construction and design folks to comply with MS4 MCMs. The HQ **and** outstate districts have about **3** FTEs.

Consultants used in setting up original SWPPP, but in general not using consultants.

Cost tracking is not done specific to MS4 Permit compliance, but DOT does make an estimate of what percentage of construction costs are associated with environmental compliance include NPDES.

14. *Regulatory Contact*: As part of our project, we may be interviewing regulators who oversee the DOT permits. Would you mind if we interview the regulator for your permit? If so, could you provide contact information?

    Response: Mary Lynn PCA or Dale Thompson

    Would you like to review your responses before we use them in our report?

    Response: yes

15. Questions regarding specific requirements in permit.
    - Part IV.D required to meet TMDL Waste Load Allocation Requirement – is DOT subject to this requirement and if so, what is status of compliance?

    Response: TMDLs have been approved and DOT has gone back to update SWPPP to address TMDL during annual update. Current reporting form requires DOT to answer yes or no in terms of compliance with this requirement. But this year, PCA will be using EPA reporting form which may require more specific response.

    In the SWPPP we had to write a narrative on how we were going to reduce pollutants covered by the TMDL.

    - Part IX, Appendix C: Limitation on Coverage – Permit requires assessment of effectiveness of SWPPP where discharges enter sensitive habitats, and presentation to public and inclusion in Annual Report

Response: In response to CGP **and MS4** requirements, DOT districts do provide more stringent construction phase controls if project is within a 1 mile of sensitive water bodies.

- Part XI, Appendix E: Selected MS4s based on population growth – DOT not listed, so can we assume that DOT not subject to this requirement?

Response: Yes, not yet.

State: North Carolina

Permit Type: Individual MS4 Permit and General Construction Permit

Interviewees:

Matthew (Matt) Lauffer, PE, Project Manager
Highway Stormwater Program, Hydraulics Unit
North Carolina Department of Transportation
919-250-4100
mslauffer@ncdot.gov

Ken Pace, Roadside Environmental Operations Manager

Interviewer: Marie Venner, Venner Consulting

Date of Interview: March 1, 2010

Coverage: Phase I and Phase II Jurisdictions

Definition: Efficiency in this context means complying with permit conditions with minimum costs, while reducing third party liability.

Questions:

1. *Permit Negotiations* – An individual permit covering a large area may require more time to negotiate the permit conditions, compared to say a General MS4 Permit that does not specifically address DOT conditions. What was your experience in terms of the time and staff resources needed in the negotiating the permit? Was there any flexibility on the Permit Type? If so, what was NCDOT's rationale for pursuing an individual permit?

   Response: In 1998, NC had the first statewide MS4 approach in the country. Not sure how long it took. House Bill 515 in 1997 required NCDOT to work with the Division of WQ to establish an NPDES permit, and that was required to be done by October 1997. First permit was issued in April 1998. He thinks it was the preferred method by both agencies.

2. *Long versus Short Time Perspective* – Setting up a statewide program could be quite expensive in the early years of the program, but once set up, are there efficiencies of scale that in the long term could lead to reduced costs over time? Has this been your experience?

   Response: From a scale standpoint, it did. They had to do mapping. In a typical MS4 would really map the system and connectivity in the field. NCDOT got permission to do an implicit outfall mapping, intersecting streams with roads. By implicit, they mean that the sites were not actually visited, but outfalls were assumed at such intersections. Then

NCDOT does a more explicit inventory, with actual site visits, in areas of concern or where more information is needed. Prioritization is focused on TMDL areas. The philosophy behind the two-pronged outfall program (implicit and explicit mapping) is due to the expense of going out and collecting that data; for explicit, on-site data collection a near-term need must be identified. They've established a program by which the consumers of that data, the internal DOT program manager requests and coordinates the data collection that is required. NCDOT is only collecting field data where it is needed.

The first thing the DOT asked with the inventory requirement and the 79,288 miles of highway the DOT manages statewide (at 76% of the total, one of the highest among all DOTs), was what the data would be used for. Then the DOT proposed an implicit inventory/GIS exercise, that the DWQ and the DOT could then use as a planning tool. The outfall management program/emphasis in the MS4 program assumes that the location of the outfall is that that is the best place of management. NCDOT does not make that assumption. It does support illicit discharge detection, but they are focusing more on prevention. In urban MS4s, an outfall inventory is more important.

3. Can you provide specific examples of upfront program development requirements and expected long term benefits (some possible examples are storm system mapping, monitoring, maintenance program development, record keeping). Do you have any associated cost information (specific or general)?

   Response: Illicit Discharge Elimination Program – Worked with Michigan. They spent $1.1 million and found 2 illicit discharges, looking for dry weather discharges. This was a TetraTech contract – Dan Christian, Lansing office. NCDOT was thinking that doing and tracking dry weather tests would be significantly difficult and they wanted to take a programmatic approach. NCDOT trained field staff on what to look for, and developed illicit discharge educational brochure to support training. Then that was used with the roadside environmental unit, and they did follow up verification, then a website to track any, thought that would work well with regional offices of DEQ. But they haven't used the website much, so NCDOT is sending DEQ copies for them to act on. DEQ is still working on who to assign to the task – some difficulty with low income houses straight piping to the outfall, need to find funds to deal with the issue, there are also septic tank failures running out to ditches, where there is a high water table. Only option is to move residents off the property because the septic system is never going to work properly.

   Stormwater Pollution Prevention Plans. 14 divisions, 100 counties, each has a maintenance yard, each requires a SWPPP, plus ferries and rail divisions having industrial activities, over 90-110 or so SWPPPs. Hard to look at compliance without going to each individual site. They have plans that are hard copies, but NCDOT now has a website, so HQ can see who is completing their reviews, wet weather observations. NCDOT's IT people developed the website, in house. Other DOTs have inquired whether they could purchase. The broader concept is to use the website as a means of managing

and documenting preparation and completion of SWPPPs. They had 184 facilities when they started. They thought about having files and files of paper and how would they manage it. They developed a beta site and it has gone through a couple iterations. It now includes SPCCs. They are using the website to comply with multiple federal regulations. The end portion is tailored to the user, so they don't have to know all the different regs; that is managed from HQ. HQ can see the percentage completion rate at any yard. This also helps with turnover on the District level.

Sharing the business plan with other DOTs might be helpful.

4. *Coordination between Headquarters and Districts* – Did having one individual permit (in contrast to differing permits for each district like TxDOT) requires more coordination between headquarters and districts in terms of "getting everyone on the same page"? Did more "top-down" and uniform implementation result in more or less efficiency?

   Response: With over 130 Phase II entities, a dispersed approach would have been a big headache. DOT is also viewed as having "deep pockets" and would have gotten an unfair share of the work.

   Contrasted with Texas: Texas is a big state, different population density (less). They really only have post-construction stormwater controls in Edwards Aquifer and San Antonio area, so they really have a different regulatory framework.

   If you don't have these efficiencies set up, such as an explicit and implicit outfall program and an approach to illicit discharge detection. If you do have these efficiencies, it is more workable. Clearly define what is going to be required where. Coordinating with municipalities can be time-consuming and resource intensive – have to have someone to coordinate.

5. Are there specific examples and possibly cost data?

   Response: One of the warnings on the cost side, even on the implementation of the 184 SWPPPs, it is very smart to take a pilot approach first. They did a couple divisions first, tested it and made sure it worked well before implementing it statewide. As far as cost savings information.

   They know what the FTEs cost in Raleigh. But cost of construction oversight would be unaccountable. County DOT maintenance engineers, not clear what percentage of their time is stormwater compliance.

   Post-construction side is heavily operated by consultants - $3.9 million budgeted/year for the program. Some of that is related to retrofit construction, which is about $1.5 to $2 million. The retrofit program looked at high ADT roads and sensitive waters across the states. They used the implicit outfall analysis and waters classifications to select potential sites for retrofits. Then they did field visits and looked at the constraints on those sites.

They found a lot of opportunities at rest areas, which tended to be hotspots. They also found good opportunities at interchanges near shellfish waters. Found TMDL waters where they could implement BMPs. They also looked closely for partnerships – if the DOT built a retrofit, would a municipality maintain it? Their 14 retrofits a year also include non-structural retrofits, such as pet waste stations. They have put posts at the rest areas for dog-walking areas. Foundries that deliver catch basin hoods, now imprint fish on them – don't dump to streams. Now they are also prioritizing retrofit sites in TMDL areas. The rest of it goes to program requirements.

Open-graded friction course. Highway 540. Irreducible TSS concentration 10 mg/liter. Follows what Michael Barrett's been finding in Texas. Another research project is going to start, next summer. On this type of pavement, an overlay on regular asphalt, plenty of openings – it doesn't tend to get clogged. I-40 open-graded friction course has been there a while, getting ready to re-overlay.

6. *Uniform set of management goals and approaches:* Individual permits may be more conducive to establishing uniform statewide goals and approaches, which could lead to greater efficiency, for example with respect to compliance. Is this your experience in North Carolina? Examples?

   Response: This has led to efficiencies in NC. It has definitely helped with the TMDL program. The development of TMDLs are centralized in Raleigh, in NC Div of WQ. While a statewide permit opens NCDOT to more exposure, it also allows/forces NCDOT to work very closely with NC Division of WQ on the development of TMDLs, which has led to some advantages – establishing a good working relationship as well as an expectation on NCDOT's part that they will work with the agency and NCDOT will be a part of the TMDLs. NCDOT has worked with NC Div of WQ. NCDOT has helped to develop research databases; there have been economies of scale there. These databases have come into play most prominently with nutrient reduction TMDLs. NCDOT has leveraged the research and retrofit programs to provide a single set of data to characterize nutrient loading and pollutant removal data. NCDOT has centralized management of the TMDL program which has promoted consistency and effectiveness in the agency's response to the TMDL program, in contrast to what it would be like if one group makes a greater commitment than another – setting precedents.

7. *Responsibility, Control and Compliance*- An individual permit, in contrast to a permit that covers both municipal MS4s and DOT MS4s, may better clarify the role of the DOT in terms of responsibility and compliance. Does having an individual permit lead to clearer roles and responsibilities for the DOT and more efficiency in terms of less of a burden on coordination with municipal MS4s, and simpler reporting compliance? Are there specific examples and cost information?

   Response: Think the DOT is protected a little bit, with their relationship with Div of WQ. If there is a TMDL with many municipalities involved, the DOT can work directly with

the Div of WQ rather than coordinating with all those municipalities and their meetings, and develop an approach. They could get really bogged down in meetings and paper work otherwise, and not do much for water quality. Look to achieve load reductions and implement BMPs on public lands. DOT has to be careful how they work with municipalities because everyone looks at the public ROW as a good place to put a BMP, where maintenance of it quickly becomes the DOT's, regardless of what the agreement was in the beginning. The public expects the DOT to maintain what is in the ROW.

Transportation entities are different than municipal entities. The regulators have a tougher time. If you have a combined permit, the DOT may be doing things that aren't as effective for the DOT. The regulator can't say, the DOT doesn't have to do system mapping but the municipality does. It seems better to separate them, from a national perspective. The DOT works with municipalities a lot, and looks to do so, but they can enter these agreements on their own terms and have a better negotiating position. DOT is the storm sewer owner in most small municipalities (along roadways) anyway. Counties and most small towns do not.

The individual permit – since they traverse watersheds, there may be many areas in a priority watershed where the DOT can do things to improve the situation.

NCDOT doesn't have to issue a NOI – on erosion and sedimentation control – on state or local level. They haven't tried to quantify this since it's been delegated since the 70s. Through the permit, they meet the applicable requirements of the construction permit.

8. *Permit Specificity and Recognition of Unique Aspects of Highway Systems* - Your permit is an individual permit with provisions that, compared to more general permits, are more tailored to the linear nature of highway systems and the multiple types of facilities the DOT owns and operates. Such specificity in the permits may aid in determining what is required and "how much is enough" (a clearer performance standard) which could lead to efficiencies. On the other hand, individual permits may result in higher costs to DOTs due to increased permit areas, monitoring and mapping requirements, and BMP implementation requirements. Is it your opinion that a more specific permit leads to efficiencies in terms of reduced costs and increased benefits? Please provide specific examples and any relevant cost information. "how much is enough" (a clearer performance standard) which could lead to efficiencies.

   Response: NCDOT has a more flexible, non-prescriptive approach on a project by project basis than some states, because of their individual permit – allows DOT to work with MEP better. They do have measurable goals in the permit. A lot is gained in the highway environment, through minimization and avoidance, in NEPA too.

9. *Flexibility in Implementation* – By recognizing the unique characteristics of transportation facilities, the individual permit begins to recognize that "one size does not fit all" and could lead to providing more flexibility for the DOT in implementing what

makes sense in different situations. What is your experience? Has the individual permit changed your working relationship with regulators?

Response: Yes, it has been a big benefit in terms of a positive relationship with regulators. The state has a lot of bridges to replace. They are working with them on low impact bridges, to not require a lot of stormwater elements. The DOT is achieving a lot of efficiencies from working with DWQ on an individual basis, 401, etc. They have tried to expedite 401/404. NCDOT has established a threshold, low ADT (average daily traffic) facilities, where the DWQ considers/agrees that NCDOT is just replacing the bridge and that additional stormwater improvements are not justified.

- Or is your relationship unchanged and permit requirements are viewed as prescriptive?

Response: In an individual permit, you are more directly dealing with the DWQ, which leads to more one on one communication and ultimately a good partnership. They don't have as many multi-party discussions going on. The regulators are free to give the DOT a little more lee-way.

10. Are regulators receptive to flexibility in permit implementation if there are benefits to receiving waters?

    Response: With DOT having restricted ROWs, corridors already set. If they need a 2 ft groundwater separation and can't get it – not feasible, then regulator is more flexible with not meeting that requirement, without making the DOT purchase private property.

    Because of the NEPA-Merger process, the resource agencies are involved at the front end, throughout, they've already accepted early in the process that there is a need for the road, and they've already interacted on where the road will be located, and then this is at the end, they have an appreciation for the fact that avoidance and minimization efforts have already occurred in earlier stages. This all factors into the MEP.

    Also, the Div of WQ (DWQ) has a dedicated unit, the transportation permitting unit. NCDOT pays for the staff in that unit since resource agencies have had limited staff, which helps in dealing with the same set of people, DOT engineers are the same, can anticipate the others' issues and concerns. This helps avoid re-training and re-training. This helps promote the philosophy that DOTs are different and should be treated differently, too. That's a more difficult concept to get across when a regulator just finished permitting a subdivision that included roads; it is more difficult to see or justify a different approach.

    NCDOT feels like it has a less prescriptive process, with more flexibility – NCDOT doesn't get: "you must hit this or you won't get a permit". Understood that transportation projects are for the public good, rather than being a for-profit project.

11. *Prioritization of Implementation* – An individual statewide permit in principle could allow the DOT some leeway in terms of prioritization of problems and solutions and thereby lead to efficiencies in terms of resource allocation. Does having a statewide permit facilitate focusing resources on most important issues, or does it not? If yes, are there specific examples of how NCDOT has reprioritized resources. If not, why not?

    Response: TMDLs focus resources. Focusing resources on IDEP could take resources away from where they could make more difference. A shared permit could require dumping a lot of money on mapping instead of retrofits. The permitting approach does allow the DOT to focus their resources better. For example, the initial permit required 3 permits per division, now it is 14 statewide.

    As far as putting BMPs in, statewide, they might be more focused on preservation/protection along high quality waters than if they had a different permitting approach.

    North Carolina Ecosystem Enhancement Program (NC EEP) is 404, not stormwater focused. NCDOT has been thinking for a number of years about how they might be able to use NC EEP to leverage retrofit opportunities, since it identifies restoration opportunities. But if they identify opportunities, NCDOT could be expected to address them all, so there is a difficult balance.

12. *Area of Coverage* – Your permit covers the Phase I/II areas. In other states, the individual DOT permits sometimes cover the entire state. Did you have the option of having statewide coverage or Phase I/II only, and if so, why did you choose Phase I/II? Do you feel that having requirements specific to a "patchwork of Phase I/II jurisdictions" is a problem in terms of compliance, and managing statewide transportation system? Request examples and cost information.

    Response: NCDOT did have the option. Some of the reasons were based on the DOT maintaining such a large portion of the system. DOT manages 79K of 114K road miles in the state.

13. *Coordination of Construction Requirements in MS4 and CGP:* Did the fact that your Individual permit includes compliance with the MS4 Permit as well as the State General Construction Permit lead to inefficiencies? For example, the MS4 permit requires that NCDOT comply with the NCDENR Division of Land Resources Erosion and Sediment Control program while also complying with the North Carolina General Permit to Discharge Stormwater associated with construction activities. Are the requirements in these separate permits compatible or do they lead to inefficiencies in terms of redundant and overlapping requirements? Examples/costs.

    Response: There is a little bit of inefficiency. They have components in the delegated agreement already. But the important part is the monitoring, make sure installing and maintaining correctly. They report when they have sediment losses. There is just a little

bit of overlapping on the reporting. The Sedimentation and Control Act in NC has allowed NC to get on top of the construction general permit process and will help NCDOT with the effluent limit guidelines too.

Multi-precipitation estimator. (Ken) Construction general permit requires inspection after ½ inch of rainfall. This allows a mechanism for remote locations or in an incomplete stage of construction, when no one is there, and also allows a way to document the rainfall amount, for the general permit. You don't have to have a rain gauge on site. The person can check the website and see if they need to send someone out, calibrated to Doppler radar.

14. Specific permit related questions

    - What do you like most about your permit and why?

    Response: It has allowed the DOT to have a good partnership with DWQ. The DOT has compliance meetings with DWQ on a regular basis, in office, in field. Could talk with Mike Randall at DWQ.

    They like the measurable goals format; it is a readable permit. The DOT can understand what they need to do. In several places the DOT needs to develop a plan, then the DOT can work with the DWQ regulator on it. The plan development allows the DOT to make the argument that the way the outline is the best way to go, rather than a more prescriptive approach. NC is a diverse state.

15. Are there any permit conditions that you view as ineffective or have low benefits (and high costs) to receiving waters?

    Response: A lot of states have said they don't want a retrofit program, but NCDOT has been able to develop their own toolbox and tailor it to the DOTs. The DOT is more experienced than the other Phase I/Phase II communities. On the production side, the DOT has been able to work out the design kinks. They've been able to discover which contractors are good and what contractor characteristics they need to be looking for. Has helped DWQ train their staff on what they are looking for. Has given DWQ cover as well – point out they are regulating DOT on existing as well as new development. On Operations side, it has helped the DOT learn how to maintain the devices, know which ones they want to keep building.

    The encroachment program is the best they can do with the types of pollutants they are receiving.

    They feel they don't have ineffective parts of their program, with this permit. They even partner with the zoo – built a cool wetland.

    NCDOT has negotiated every term. If there is anything inefficient, it is their fault. If you are a co-permittee, there's less flexibility.

16. What changes would you like to see in the next permit? What permit type would most likely facilitate these changes?

    Response: They are concerned about the impervious cover TMDL. Their permit is at EPA right now. Trying to think of anything they negotiated in this permit…think they were able to keep out prescriptive requirements and keep in more of a measurable goal format, co-developing things with DWQ.

17. What are your greatest concerns regarding potential future requirements? Does your permit type help or hinder negotiations regarding these requirements?

    Response: DOTs need to be concerned about Effluent Limit Guidelines. Regulators in NC haven't dealt with this yet. Going to be passive treatment systems, early stabilization of exposed areas, having contractor on site, prime contractor have personnel to do their own seeding. Monitoring will be the big challenge. Compliance too – 280.

18. *Costs:* Ultimately we are trying to develop guidance on the costs and benefits of DOT permitting strategies. Describe ADOT's cost tracking for programmatic functions associated with permitting and permit compliance. Can you provide estimates of following?

    - Total statewide lane miles owned and operated by the DOT –

    79,000

    - Total number of employees in the DOT including HQ and Districts – **12,000**

    Response: total (7-8,000 construction staff in the field)

19. Total number of full time equivalents (FTEs) assigned to stormwater program support in (i) headquarters, and (ii) Districts,

    Response: 9.5 FTEs HQ, not including consultants, not including ES compliance – 15 assigned to HQ, but located in the field, doing site compliance, assigned to geographic areas.

    10 designing plans in HQ, then have consultants and division staff that. Use consultants primarily to help implement the programs, provide training, help with TMDL compliance – whenever there is a paper-based deliverable.

20. Total annual value of contract funds for consultants and universities used to assist the DOT in support of stormwater program.

Estimates for compliance with the NCDOT NPDES permit.

- 15 FTE for NPDES Program Oversight (Includes Consultant Time, Not including ESC)
- 10 FTE for Erosion and Sedimentation Control Plan Review

- 16 FTE for Statewide Oversight of ESC and NCG01 requirements in the field (Twice to once a month audits)

NCDOT Stormwater Program Costs Since 2005				
Program Area		**Consultants**	**NCDOT**	**NCDOT Const**
Project Management		1,000,000	500,000	
Permit Negotiation		600,000	300,000	
IDDEP		30,000	80,000	
Post Construction Controls		2,100,000	2,000,000	
	Retrofit Design	500,000	1,000,000	
	Retrofit Construction			6,000,000
	BMP Toolbox	500,000	200,000	
	Inventory/Inspection and Maintenance	340,000	500,000	
	Post Const Program	300,000	350,000	
Encroachment		7,000		
Construction			6-8% of Construction Costs	
Industrial Activities		800,000	1,500,000	
Education and Involvement		150,000	200,000	
Research		320,000	200,000	
Information Technology		880,000	1,000,000	
TMDL		830,000	300,000	
		6,717,000	6,080,000	6,000,000
Total	18,797,000*			

*Need to get Construction Costs to you so ESC $ can be estimated.

The above costs do not include Stormwater Control Costs on new projects. The cost above only include costs toward programs to maintain compliance and retrofit construction.

21. We are very interested in the costs of alternative permit types and permit conditions. Do you have an opinion in whether your current permit type and conditions are more or less costly than previous permits?

22. Is there someone we can follow up with to obtain cost data or general cost information?

23. *Regulatory Contact*: As part of our project, we may be interviewing regulators who oversee the DOT permits. Would you mind if we interview the regulator for your permit? If so, could you provide contact information?

    Yes. Mike Randall.

State: Texas

Interviewee:

Interviewer: Marie Venner, Veneer Consulting

Date:

Permit Type: District-based

(Permitting requirements vary by district depending on whether the district is located within a Phase I or Phase II area. In Phase I areas, some Phase 1 permits include TxDOT District as copermittee, whereas in others, TxDOT District has individual permit). In Phase II areas (small urban MS4) the DOT District is subject to the Texas general permit for small urban MS4s .

Questions:

Permit Type

1. *Effect of District Based Permits on Negotiating Requirements:* Given that the permitting requirements apply to individual districts, and primarily address municipal activities, did this lead to less of a negotiation burden in terms of staff and time with the TDEQ than would have been the case if the permit were an individual permit

   Response: No, in fact it increased the time needed to work with TCEQ. It also took time to negotiate with the Phase I & II cities.

2. *Long vs Short Time Efficiencies:* Depending on the permit type, one could argue that having district based permits does not allow for larger scale statewide efficiencies that might occur if you had a statewide permit. Would you agree or disagree with this statement? Examples/costs?

   Response: TxDOT basically disagrees with this statement. The example provided was that in the Phase II preparation, they developed a standardized SWMP and permit application that the Districts modified slightly to fit their local situation.

3. *Effect of District Based Permits on Coordination between Headquarters and Districts:* Did district based permits minimize the coordination required between Texas DOT headquarters and DOT Districts, or did the need for statewide compliance still require significant coordination of District activities? Is there any statewide coordination among districts to ensure somewhat uniform requirements or to guard against excessive requirements in a particular district? Or are the Districts viewed as somewhat autonomous and allowed to negotiate their own conditions?

   Response: The permitting approach increased the coordination necessary between the District and Division. Although the Districts are very autonomous, The Division had the

primary responsibility in preparing the SWMPs and permit applications with the assistance of the Districts.

4. *Effect of District Based Permits on Statewide Coordination with municipalities:* Given that in Texas the DOT districts are co-permittees with municipalities, did this arrangement lead to increased requirements for coordination with municipal co-permittees? For example in Houston, TXDOT is concerned about bacteria TMDLs, even though highway facilities are typically not major sources. How does TXDOT deal with these types of permit conditions that have low relevance to transportation facilities? An individual permit could likely reduce irrelevant permit conditions, but with potentially more focus and costs on DOT relevant conditions. What is your view on the costs/benefits of an individual DOT permit versus the current TXDOT permitting strategy?

   Response: Most of the TxDOT Districts under Phase I MS4 are co-permittees with the municipalities. Under Phase II there are no co-permittees relationships. The Phase I co-permittee situation has been very beneficial to TxDOT in that most of the compliance requirements have fallen on the cities not TxDOT. The requirements are spelled out in the permits and they have been a significant cost savings to TxDOT.

5. *Uniform set of management goals and approaches*: Did having district-based permits prevent or complicate the development of statewide goals and approaches to compliance? Request examples. Does this lead to greater costs, or potentially lower costs because there are fewer DOT specific conditions, or costs are more effectively targeted to regional District specific issues.

   Response: Under Phase I the permit requirements vary significantly depending on the co-permittee city, but generally are beneficial to TxDOT and have led to lower costs. Conversely, in the few areas under Phase I that TxDOT is the sole permittee, the costs of compliance are significant. Under Phase II TxDOT bears all the compliance costs. To ease the process and to maximize cost-effective compliance, under Phase II as mentioned above, TxDOT HQ developed a generic SWMP with a number of options to comply with the six minimum measures that the Districts could pick from for compliance.

6. *Responsibility, Control and Compliance :* Does having district based permits make it more difficult to identify what department is responsible for compliance and who has authority and is in charge in terms of compliance? If yes, request examples?

   Response: TxDOT says not necessarily. Under Phase I, the permits clearly define who has responsibility for what. Under Phase II TxDOT has sole responsibility.

7. *Permit ambiguity and lack of recognition of unique aspects of highway systems*: The district based permits focus on provisions that apply more for municipal types of

activities, rather than for the DOT type activities and facilities. Does this ambiguity lead to inefficiencies in terms of understanding "what is required" and "how much is enough", or is the ambiguity somehow beneficial? Request examples.

Response: Not for Phase I since the cities bear most of the burden. Under Phase II it is definitely an issue. For example/specifically, the new development/re-development provisions are difficult for a transportation projects since those are more designed for a fixed facility.

8. *Flexibility in Implementation:* The district-based permits do not distinguish requirements for different types of DOT activities and facilities. Did this lead to a sense of inflexibility on the part of the regulators to understand that measures commonly applicable in a municipal agency might not be so for a DOT, and thereby resulted in inefficiencies and more costly measures being taken to comply? Alternatively, fewer DOT-specific conditions could lead to cost savings? Request examples.

   Response: No for Phase I, yes for Phase II. See Item 7.

9. *Prioritization of implementation*: Do district-based permits prevent Texas DOT headquarters from prioritizing statewide resources so as to address the most significant problems and most sensitive water bodies?

   Response: Not sure this really applies as TxDOT HQ hasn't prioritized statewide resources to address. But the Districts are responsible for compliance. When they need assistance, they notify HQ and HQ allocates resources both internal and contract to comply with the requests. In Houston the interaction and handling of bacteria TMDLs is done by the district with assistance from Austin as needed.

   Area of Coverage and Type of Permit: In retrospect, if you had a choice between your current district based permits with municipal co-permittees, or an individual permit specific to the types of facilities and activities conducted by your DOT, what might you choose?

   Response: During the Phase II discussions with TCEQ, we proposed a statewide DOT specific general permit vs District based. The TCEQ agrees but with the condition that it would apply to the entire TxDOT road system not just municipal areas. We will readdress this issue when the permits come up for renewal in 2013.

10. *Coordination of Construction and Post-Construction Requirements:* Does having district permits for post construction and a general permit for construction phase cause any confusion or inefficiencies that might otherwise be overcome with a single permit that covered construction and post-construction activities?

Response: No, TxDOT headquarters has provided a lot of consistency to the alternatives given the Districts. The Districts generally use the same procedures and BMPs statewide for compliance based on the TxDOT approved product list and guidance from the Division.

11. Specific permit related questions

    - What do you like most about your permit and why?

    Response: Phase II is a statewide general permit and the conditions and requirements do not vary.

    - Are there any permit conditions that you view as ineffective or have low benefits (and high costs) to receiving waters?

    Response: No, because TxDOT has the authority to customize compliance and BMPs through the individual SWMPs.

    - What changes would you like to see in the next permit? What permit type would most likely facilitate these changes?

    Response: We would like a statewide general permit for TxDOT that only applies to Phase I & II municipal areas, not statewide.

12. What are your greatest concerns regarding potential future requirements? Does your permit type help or hinder negotiations regarding these requirements?

    Response: The new Effluent Limit Guidelines and new development and redevelopment requirements published by EPA and to be implemented by TCEQ in 2013 are going to be extremely time consuming and costly to comply with.

13. *Costs:* Ultimately we are trying to develop guidance on the costs and benefits of DOT permitting strategies. Describe TxDOT's cost tracking for programmatic functions associated with permitting and permit compliance. Can you provide estimates of following ?:

    - Total statewide lane miles owned and operated by the DOT

    Response: 79,361 total road miles

    - Total number of employees in the DOT including HQ and Districts

    Response: Approx 15,000

14. Total number of full time equivalents (FTEs) assigned to stormwater program support in (i) headquarters, and (ii) Districts,

    i. 3

ii. 26 +

Response: The key word is “support” here. Neither the Dallas or Ft Worth Districts (or any others) have a person assigned full time to storm water. Many employees deal with storm water on a part time basis including environmental specialists, design engineers, field construction inspectors and maintenance personnel. Dallas has two FTE's assigned to Environmental and Ft Worth has one.

The current budget for 2010 for Dallas is $102,000 and Ft Worth is $300,000. For both Phase I and II compliance.

15. Total annual value of contract funds for consultants and universities used to assist the DOT in support of stormwater program.

    Response: For 2010 - $955,000

16. We are very interested in the costs of alternative permit types and permit conditions. Do you have an opinion in whether your current permit type and conditions are more or less costly than previous permits?

    Response: Phase II is much more costly that Phase I since we are responsible for compliance.

17. Is there someone we can follow up with to obtain cost data or general cost information?

    Response: Amy Foster, 512-416-2649

18. *Regulatory Contact*: As part of our project, we may be interviewing regulators who oversee the DOT permits. Would you mind if we interview the regulator for your permit? If so, could you provide contact information?

    Response: TCEQ Storm Water and Pretreatment Team

    Jaya Zyman-Ponebshek 512 239-2012

State: Washington State

Permit Type: Individual MS4 Permit and Separate General Construction Permit

Coverage: Phase I and Phase II Jurisdictions

Definition: Efficiency in this context means complying with permit conditions with minimum costs, while reducing third party liability.

Questions:

1. *Permit Negotiations* – An individual permit covering a large area may require more time to negotiate the permit conditions, compared to say a General MS4 Permit that does not specifically address DOT conditions. What was your experience in terms of the time and staff resources needed in the negotiating the permit? Was there any flexibility on the Permit Type? If so, what was WSDOT's rationale for pursuing an individual permit?

   Response: Permit negotiations took quite a lot of time. He started with the Department in July 2002. Part of the reason permit development took so long is the workload on the regulator's side. They were involved in several permit development efforts. Went through several permit writers, different philosophies and areas of importance, institutional knowledge loss. One of the big benefits was both WSDOT and Dept of Ecology took a lot of time to think about the approach. It was mutually agreed to develop an individual permit for the DOT. It would have been an awkward fit to fold in WSDOT into the municipal approach for the other permits (In addition to the WSDOT municipal permit, there are three other municipal general permits: Phase I, Phase 2 Westside, and Phase 2 eastside). Regarding co-permittee status, there are too many jurisdictions for that to be a practical approach. All the existing municipals permits have coordination requirements and they do that.

   They did a joint white paper on the pros and cons – statewide coverage vs coverage only in the Phase I/II geographic areas. That took some twists and turns. Initially WSDOT was strongly considering pursuing statewide coverage. After quite a bit of discussion, it became pretty evident that Dept. of Ecology didn't feel it had the latitude to make the requirements in the WSDOT permit significantly different from the Phase I permit. Trying to comply with that level of obligation on a statewide scale made WSDOT nervous. When it became evident they weren't going to be able to have allowances/consideration on the DOT level effort given the expanded geographic scope, they thought it wise to dial back to the Phase I/Phase II areas. WSDOT also recognized that it reduced their 3-party lawsuit liability "footprint." This was a risk-management dimension, given the litigious environment in Washington State surrounding stormwater issues. The political and legal landscape is different in Washington than NC for example. Washington also has a large urban areas adjacent to Puget Sound, a significant water resources, with ESA-listed species traversing through highly urbanized areas.

In Oregon, they have a statewide permit, but their requirements are so much less than in Washington. In Washington, it is a challenge to comply with their recently issued permit. The Dept. of Ecology is eyeing a statewide permit (i.e., coverage over the entire state) when it comes up for reissuance.

2. *Long versus Short Time Perspective* – Setting up a statewide program could be quite expensive in the early years of the program, but once set up, are there efficiencies of scale that in the long term could lead to reduced costs over time? Has this been your experience? Can you provide specific examples of upfront program development requirements and expected long term benefits (some possible examples are storm system mapping, monitoring, maintenance program development, record keeping). Do you have any associated cost information (specific or general)?

   Response: A lot of WSDOT's procedures are applied statewide, for instance the Stormwater Design Manual (i.e., the Highway Runoff Manual), Hydraulics Manual, and Maintenance Manual. And in terms of prioritizing work, in a permit-covered area, if resource constraints come into play, those areas under permit coverage would receive greater attention (i.e., priority).

   There is limited allowance for shifting investments to where it would do the most environmental good (e.g., project-triggered retrofit obligations per the runoff manual). Some mitigation has been targeted. Some flexibility for project-related retrofitting. But these are not necessarily a function of the permit and whether it is statewide or not.

3. *Coordination between Headquarters and Districts* - State DOTs are organized into districts, and having one individual permit, in contrast to differing permits for each district, requires more coordination between headquarters and districts in terms of "getting everyone on the same page". Given your organizational structure, did this requirement for a more "top-down" and uniform implementation result in more or less efficiency? Are there specific examples and possibly cost data?

   Generally speaking, WSDOT is a top-down agency in terms of organization now, so it nested well in the existing framework. The Regions aren't sufficiently staffed with the expertise for a decentralized model. There were efficiencies with a statewide approach.

   They are obliged to track costs of implementation, which is included in the progress report on-line. WSDOT's fiscal accounting system, like municipalities and counties are not set up (i.e., oriented) to track the full cost of stormwater implementation.

   To help coordinate between HQ and Regions, the DOT put together a stormwater policy committee, made of representatives from Regions, Op & Maint, Design, Ferries, Headquarters, etc. They were consulted and involved in providing feedback/input on

permit negotiations. Now they are involved in permit implementation. That group meets on a quarterly basis, generally.

4. *Uniform set of management goals and approaches:* Individual permits may be more conducive to establishing uniform statewide goals and approaches, which could lead to greater efficiency, for example with respect to compliance. Is this your experience in Washington State? Examples?

   Response: In some areas, yes, in some areas no. DOE in developing the permit, said they didn't feel they had the regulatory or political latitude to significantly differ WSDOT's from the municipal permits. It was customized for Illicit Discharge Detection and Elimination. They have the benefit of having controlled access to the ROW, so that was factored in. The DOT also has the benefit of having field staff out there regularly, so they were able to train and utilize existing staff to play these functions, rather than developing a complete stand-alone illicit discharge detection and elimination team.

   The nature of the illicit discharge in a controlled ROW setting is really so different from municipalities (i.e., cities & counties) experience. When walking through it with the regulators, they understood.

   There was some consideration in the stormwater design guidance and requirements, not as far as WSDOT thought it should in some areas, but it is more oriented toward the highway/roadway setting than the state's general stormwater management design guidance manuals.

5. *Responsibility, Control and Compliance*- An individual permit, in contrast to a permit that covers both municipal MS4s and DOT MS4s, may better clarify the role of the DOT in terms of responsibility and compliance. Does having an individual permit lead to a clearer role and responsibilities for the DOT and more efficiency in terms of less of a burden on coordination with municipal MS4s, and simpler reporting compliance? Are there specific examples and cost information?

   Response: It certainly better clarified the role, responsibilities, and obligations for the DOT. One of the problems WSDOT had under the old Phase I permit with the other Phase I permittees was dueling stormwater guidance manuals – which one rules the roost, so to speak. To overcome that, WSDOT worked with the regulators to add language specificity to their permit and municipal permits, to specify whose rules govern where. That has helped a lot.

6. *Permit Specificity and Recognition of Unique Aspects of Highway Systems* - Your permit is an individual permit with provisions that, compared to more general permits, are more tailored to the linear nature of highway systems and the multiple types of facilities the DOT owns and operates. Such specificity in the permits may aid in determining what is required and "how much is enough" (a clearer performance standard) which could lead to efficiencies. On the other hand, individual permits may result in higher costs to DOTs

due to increased permit areas, monitoring and mapping requirements, and BMP implementation requirements. Is it your opinion that a more specific permit leads to efficiencies in terms of reduced costs and increased benefits? Please provide specific examples and any relevant cost information.

Response: One of the biggest aspects WSDOT received with a tailored permit was their stormwater management program and have that developed, reviewed and approved by the Dept of Ecology upon permit issuance. This is organized operationally by functional areas, which greatly facilitates implementation in WSDOT. So the vast majority of their permit obligations are included in the program plan. This has helped with efficiencies. The various sections were developed working with WSDOT staff who had implementation responsibility. This process also provided a way for WSDOT to present and explain to the permit writers what existing programs and procedures WSDOT already had in place that would meet the expectations of the regulators. Then effort could be focused on closing gaps or where the bar needed to be raised a little bit. It gave the permit writer a richer understanding of the operations of the DOT.

The other municipal permits on this element (stormwater program management) were developed prescriptively (i.e., describing what the SWMPP needed to contain).

Monitoring and specific TMDL-related requirements were some of the biggest areas were the detail wasn't contained in the state stormwater management program plan. There is a TMDL section of Dept of Ecology (i.e., the TMDL writers and permit writers are different parts of their organization). It is quite a bit of work for the permit-writing section to interact with them. You could have identical pollutants of concern in a similar situation and the TMDL requirements that emerged could be vastly different. Sometimes they didn't make that much sense not only to the DOTs but also to the MS4 permit writers. There was a lot of variability and the permit writers went through a lot of effort to try to iron that out, but in the end they weren't that successful. In the end, with the WSDOT permit, they just referenced the detailed implementation plans (in the other municipal stormwater permits, the specific obligations were listed for each permittee). That made it a lot more challenging for WSDOT to go research each of those individual plans to find out what their obligations were. WSDOT will be working with the Dept of Ecology and the TMDL writers as they move forward in hopes to avoid this situation for future TMDL-related requirements.

Monitoring was customized a bit for WSDOT, more highway characterization, rest areas, maintenance facilities, freight terminals, rather than residential and commercial land uses. There was some recognition in developing toxicity testing requirements, in terms of recognizing different methodologies, due to flashier nature of highway runoffs. But WSDOT's level of effort was generally higher - geographic scope and logistics are more complex. WSDOT and municipalities worked very hard on negotiating a monitoring structure that could provide a beneficial feedback loop for them as well as provide what the regulator needed. It fell short though, and they have a working group on this for next

time, to hopefully make the monitoring and data collection requirements more meaningful for everyone involved.

7. *Flexibility in Implementation* – By recognizing the unique characteristics of transportation facilities, the individual permit begins to recognize that "one size does not fit all" and could lead to providing more flexibility for the DOT in implementing what makes sense in different situations. What is your experience? Has the individual permit changed your working relationship with regulators? Are regulators receptive to flexibility in permit implementation if there are benefits to receiving waters? Or is your relationship unchanged and permit requirements are viewed as prescriptive?

   Response: He thinks they have a stronger, closer working relationship, which has improved greatly. They better understand the challenges that the DOT faces, and the DOT understands their challenges and constraints. They've worked closely on refining and improving the Design Guidance, which has benefited the whole state, not just the DOT.

8. *Prioritization of Implementation* – An individual statewide permit in principle could allow the DOT some leeway in terms of prioritization of problems and solutions and thereby lead to efficiencies in terms of resource allocation. Does having a statewide permit facilitate focusing resources on most important issues, or does it not? If yes, are there specific examples of how WSDOT has reprioritized resources. If not, why not?

   Response: WSDOT has worked collaboratively with DOE, NOAA Fisheries, USFWS, with developing retrofit prioritization procedures. This was significant, because their prioritization procedures previously, they were putting more information into prioritization and scoring than they were on the ground retrofits. They had the benefit of lessons learned from the previous exercise.

   The importance for WSDOT is they have often been stuck between competing priorities and expectations of Dept of Ecology vs USFWS and NOAA Fisheries. There was a great benefit to getting them to agree in terms of retrofit prioritization. Generally speaking, Dept of Ecology was mostly focused on chemistry (i.e., water quality parameters) and the Services were focused on biology (i.e., biological parameters) and species recovery. He identified the key contacts he thought could get this done. They got management buy-off at each agency. It is partly a reflection of some of the working relationships they've developed at the agencies over the years and it was an area of interest among the regulators, so they made time for this. The breakthrough was in how they structured the prioritization. Multiple screening process. The first screen uses available GIS layers and existing information. That was the first cut. The high scoring areas from this go to the second stage, which involved getting more in field and local knowledge of the area. This was very important aspect for the services, talking to the local area biologist or tribal biologist – high priorities for protection or problem areas for remediation, as well as recovery strategies. It was a much more efficient approach. Important for DOTs to

identify and scope out the projects when submitting funding requests. If the legislature is going to fund something, they want the specifics about it and the benefits. It helped that there was up-front regulatory buy-in, so they could do it programmatically. Criteria for prioritizing locations was a programmatic breakthrough.

9. *Area of Coverage* – Your permit covers the Phase I/II areas. In other states, the individual DOT permits sometimes cover the entire state. Did you have the option of having statewide coverage or Phase I/II only, and if so, why did you choose Phase I/II? Do you feel that having requirements specific to a "patchwork of Phase I/II jurisdictions" is a problem in terms of compliance, and managing statewide transportation system? Request examples and cost information.

   Response: See white paper and answer to #1.

10. *Coordination of Construction Requirements in MS4 and CGP:* Did the fact that your Individual permit includes construction and post-construction phases, and yet WSDOT is still subject to requirements in the State General Construction Permit lead to overlapping and redundant requirements or were the construction requirements in each permit compatible. Examples/costs.

    Response: The MS4 permit is consistent with the State General Construction Permit, and the State Highway Runoff Manual. This was largely developed to carry out the expectations and requirements of the construction permit. The training expectations are captured into the MS4 permit. They are compatible. Construction permit folks reviewed for consistency.

11. Specific permit related questions

    - What do you like most about your permit and why?

    Response: The stormwater management program plan was developed and approved prior to permit issuance. And it is organized in a way that organizationally and operationally makes sense for the Department.

    - Are there any permit conditions that you view as ineffective or have low benefits (and high costs) to receiving waters?

    Response: Yes. The monitoring requirements are one of those. They are extremely expensive and the benefit in terms of the information being generated that would help improve and inform management of the stormwater management program is relatively low. So the cost-benefit ratio is poor. This view is shared by the other Phase I municipalities.

    WSDOT did monitoring under their previous permits and also did research to answer specific design or policy questions. For example, how much flow attenuation can be achieved if you amend soils with compost – more solutions-oriented monitoring and

research. Dept of Ecology sets triggers and thresholds. Since data was limited, the line they drew was often best professional judgment. WSDOT conducted some research to try to help better inform and define where those thresholds should be set. One of the sayings among municipal permittees – if there is a choice between compliance and science, compliance wins every time, which means a lot of this information has shortcomings in terms of how the data is being collected (or the study design has shortcomings), so the utility and value of the information diminishes in that setting.

TMDL related requirements – WSDOT has agreed to be more involved in the TMDL and water clean-up plan development process, with the aim of developing better/more appropriate strategies. Part of what they are wrestling with now is legacy issues and that WSDOT was not involved in the manner it should have been, was not at the table earlier. There is joint understanding that that needs to change.

- What changes would you like to see in the next permit? What permit type would most likely facilitate these changes?

Response: WSDOT wants to continue with an individual permitting approach. The geographic scope may change.

- What are your greatest concerns regarding potential future requirements? Does your permit type help or hinder negotiations regarding these requirements?

Response: He is not concern about Effluent Limitations. There was an appeal in Washington State about numeric compliance standards for municipal stormwater runoff and it was soundly defeated because the technical aspects make it impractical. The laws of physics and chemistry haven't changed. Plus with the drive for LID-type approaches where you are trying to get rid of the "end of pipe"…

Managing expectations is a big deal. The municipal permit is too often considered the "catch all" tool where it is just one tool in the toolbox, to meet society's water/natural resource objectives. The expectations on how far the MS4 permit can go to meet those objectives or others that might be more effective, like source control measures.

12. *Costs:* Ultimately we are trying to develop guidance on the costs and benefits of DOT permitting strategies. Describe ADOT's cost tracking for programmatic functions associated with permitting and permit compliance. Can you provide estimates of following?:

- Total statewide lane miles owned and operated by the DOT:

Response: statewide lane miles owned and operated by the DOT: 18,500 (exceeds that in Ph 1/II areas, of course)

- Total number of employees in the DOT including HQ and Districts:

Response: 7,200

- Total number of full time equivalents (FTEs) assigned to stormwater program support in (i) headquarters, and (ii) Districts.

HQ: Stormwater and Watersheds Program: 11 FTEs.

Hydraulics Program, Highway Runoff Program within that: 2.5 FTE

Maintenance, portion of time

Regions, portion of time, not sure how many FTEs deal with inspections.

- Total annual value of contract funds for consultants and universities used to assist the DOT in support of stormwater program.

Response: This varies a lot by year and is declining rapidly! It is case-specific. In terms of WQ monitoring, WSDOT has recently hired two folks in environmental assessment program to assist them in identifying monitoring location and developing QAPPs. They had used consultant contracts in the past to undertake data collection. Not sure if going to build in-house capacity, new budget restrictions. Entering uncharted waters…

13. We are very interested in the costs of alternative permit types and permit conditions. Do you have an opinion in whether your current permit type and conditions are more or less costly than previous permits?

    Response: Monitoring is more costly. Operations and maintenance expectations are a lot greater. The stormwater design guidance has more stringent standards. That is reflected in project-related costs. The TMDL obligations are largely new. These represent new costs, some yet to be discovered as they get to know what requirements and expectations are. The permit will also be reissued or administratively modified as new EPA TMDLs emerge.

    Is there someone we can follow up with to obtain cost data or general cost information?

14. *Regulatory Contact*: As part of our project, we may be interviewing regulators who oversee the DOT permits. Would you mind if we interview the regulator for your permit? If so, could you provide contact information?

    Response: Bill Hashim was permit writer for greatest amount of time. He is no longer the permit administrator but would be most informed in terms of the negotiations with WSDOT. Then he had to deal with internal negotiations. Kathleen Emmett is his supervisor and is working on the revision now.

APPENDIX D: PERMIT QUESTIONAIRE (CONSTRUCTION PHASE)

State: Arizona

Interviewee: Wendy Terlizzi, Water Quality Manager 602 712 8353

Interview Date/Time: Monday, March 01, 2010, 2 pm (Mountain time)

Interviewer: Peter Mangarella, Geosyntec Consultants

Permit Type: Individual MS4 Permit and General Construction Permit

Coverage: Statewide

Definition: Efficiency in this context means complying with permit conditions with minimum costs.

Questions:

1. *Advantages of having one permit that covers construction and post-construction*: Does having one permit that covers both construction and post-construction activities, that covers the entire state, and that focuses specifically on transportation activities and facilities lead to efficiencies (relative to having to comply with the State General Construction Permit) in terms of having a uniform set of requirements in one permit, uniform training requirements amongst the various district staff, and other efficiencies?

   Response: like one permit – one place to go for requirements. Also DEQ did good job in that permit requirements for MS4 construction are very similar to Construction General Permit requirements. Has allowed the ability to design a training class with the AZ Associated General Contractors, as required by our permit but applicable to all that do work in AZ.

2. *Programmatic Costs*: Describe how a project gets approved by ADOT for coverage under the combined permit. Has ADOT realized any cost savings by not needing AZCGP application completion (including fees and man-hours)? Has ADOT realized any streamlining of schedule and project completion due to having one all-encompassing permit?

   Response: Again, Wendy feels one permit has facilitated efficient implementation. ADOT no longer files an NOI or NOT for any construction projects. Review the information from the contractor prior to them submitting to ADEQ. In the long run this will be better for ADOT since NOTs were sometimes not filed when finally stabilized and technically ADOT was still on the hook. Now I am required to file a semi-annual report to ADEQ that identifies those projects that the contractor has closed out, ADOT has gained ownership of the areas and it has finally met final stabilization. (hope that makes sense).

3. *Permit Coverage Depending on Whether a Project has a Outside Contractor:* It is our understanding that the joint permit coverage extends to construction projects wholly implemented by ADOT, whereas projects where ADOT contracts out requires those contractors to seek coverage under the State General Construction Permit (while also meeting the ADOT permit requirements). Does having different permitting requirements depending on contractor involvement lead to inefficiencies? Does this influence ADOTs project approach (internally performed or subcontracted)? Was there discussion with ADEQ to incorporate all ADOT construction projects, regardless of operator, within the joint permit? Would this be preferential to ADOT?

   Response: Has not changed how ADOT approaches projects. There was not discussion with ADEQ, they basically took what was in the CGP and incorporated it into our permit. Correct, for projects that use contractors, contractors still get coverage under CGP and file NOI and NOT. However, 45 days following contractor application of site stabilization measures (e.g., application of seeds), ADOT takes over responsibility for final site stabilization. Every 6 months DOT reports on those sites where DOT has assumed responsibility for final site stabilization. (See answer to #2 as well)

4. *Conflicting or Compatible Construction Requirements Depending on Whether a Project has a Outside Contractor:* Although very similar, our review of the requirements in the MS4 Permit vs. the AZGCP indicate some minor differences. For example, the AZCGP does not have specific monitoring requirements for "support activities" whereas Section 8.3 of the MS4 permit does; the AZCGP allows for small construction site erosivity waivers that are prohibited in the ADOT MS4 permit; amongst others. Are these differences significant to affect efficiency?

   Response: DEQ did good job in terms of putting in similar requirements in ADOT MS4 permit and Construction general permit. One example where requirements differ, CGP does not call for monitoring batch plants, but ADOT required to monitor batch plants if used on one of projects and within ¼ mile of a unique or impaired water, and contractors are required by ADOT to conduct monitoring. One other problem occurred having to do with waivers, DEQ has filing system that has in the past identified waivers when conditions (e.g., construction near impaired water) do not warrant waiver, so ADOT does not allow any project to have waiver, even if DEQ filing system indicates waiver applies.

5. *Permit Input:* Did ADOT have any input to ADEQ as to permit requirements? Describe the process ADOT went through for getting construction activities integrated into the MS4 permit.

   Did not have any input as to requirements with regards to construction activities to be included. DEQ had a pretty good idea of what they wanted.

State: Delaware

Permit Type: DelDOT delegated NPDES authority by State

Coverage: Statewide

Definition: Efficiency in this context means complying with permit conditions with minimum costs, while reducing third party liability.

Questions:

1. *Advantages of having delegated authority*: Delaware is unique in having delegated authority over its construction storm water management program. Could you comment on how this arrangement works in terms of program structure and development, Internal requirements, the role of the Stormwater Engineer position, and other key aspects of program?

   Response: The way the delegation program works in Delaware is that the delegated agencies (DelDOT; other municipalities) have authority to do all the review and approvals, however, a NOI is still submitted to DNREC for issuance of a permit. The Stormwater Engineer gets plans once they have been thoroughly prepared (has rare input on development) and reviews and makes suggestions for erosion and sediment controls. The SWE is one of many folks that have to sign off on plans prior to them being considered administratively complete. Once this is done, the SWE signs and submits the NOI to DENREC.

2. Have you had an analysis conducted of the cost effectiveness of this approach compared to other permitting options?

   Response: No cost analysis has been performed; however, the current setup saves endless amounts of time by having appropriately DOT-specific reviewers and eliminates back and forth bureaucracy with DNREC.

   a. Would you suggest this as a model for other DOTs?

   Response: Definitely; when discussing with other employees from other state DOTs, they can't believe that DelDOT can review and approve their own plans.

3. *Compliance Oversight*: Describe the process that DNREC uses to ensure that the DelDOT program is maintaining compliance with the approved program's requirements. Do they audit files?

   Response: DNREC does thorough audits of the plan review process, and reviews multiple plans for completeness.

   - Interview the Stormwater Engineer?

Response: DNREC conducts detailed interviews with the Stormwater Engineer regarding the program. The SWE is also required to complete a multi-page questionnaire.

- Perform Site Inspections?

Response: DNREC will perform site inspections at active projects to compare to E&S reports completed by DelDOT inspectors to check for adequacy.

4. *Project Approvals*: Describe how you authorize work under your delegated authority. Do you provide a SCGP permit authorization number on a project basis, or do you simply issue a go-ahead under your general jurisdiction?

   Response: See above, DelDOT approves plans; simply submits NOI (and $195 permit filing fee per project) to state for issuance of permit number. State does not provide any level of review.

   - Does the Stormwater Engineer personally approve each project?

   Response: The Stormwater Engineer is required to be one of many individuals that signs off on a project as complete. The SWE does personally approve the E&S portion of each project.

   - How do you keep records of approval?

   Response: Electronic platform called PrimaVera; electronic files of DNREC permit authorization letters.

5. *Overall Strategy*: Do you find that having delegated authority meets the goals intended by DelDOT, to maintain project schedule and timing?

   Response: Yes, without a doubt the delegated authority streamlines the process tremendously.

   - Or does the regulatory oversight process inherently slow things down?

   Response: The oversight process is only every 3 years and does not cause any considerable slowdowns. DNREC provides recommendations for improvement, but these have never been considerably difficult to implement.

6. Is there a measurable cost savings to the old model (please provide examples, if available)?

   Response: The cost savings is in the timing and in plan review fees. Mainly the timing element, as project schedules can be maintained close to their draft since there can be no external factors affecting review.

State: North Carolina

Permit Type: Individual MS4 Permit and General Construction Permit

Coverage: Phase I and Phase II Jurisdictions

Definition: Efficiency in this context means complying with permit conditions with minimum costs, while reducing third party liability.

Questions:

1. *Delegated Program Description*: The Individual MS4/Construction Combined permit, when discussing construction requirements, simply states that NCDOT must comply with NCDOT's state-delegated program and incorporate elements of the SGCP. Please describe the make-up of this program and describe any additional requirements (outside of the SGCP) that NCDENR has included as part of your state-delegated program.

   Response: They will send a description.

2. *Compliance Evaluation*: How do you internally manage compliance with the requirements within your state-approved program? Organizational structure? Is there a detailed level of review? Do you issue authorizations to individual projects? Describe how the NCDENR/DWQ ensures that you are in compliance with your approved program. Review schedule? Continual collaboration?

   Response: DOT HQ does audits once or twice a month – the staff of 15, Ted Sherrod manages. NCDOT has an IT application for the reporting end of that. Project personnel do Construction Inspection, contractors are hired. Ken Pace (State Environmental Operations Engineer) has staff review the project info to ensure it is being done, Construction and General Permit info is complete. They do have the MPE website for the rainfall.

3. *Conflicting or Compatible Construction Requirements in NCDOTs MS4 Permit and State Construction General Permit (SCGP)- NCGO1:* Do you feel that the fact that your Individual permit includes compliance with the MS4 Permit as well as the State Construction General Permit lead to greater efficiency or inefficiencies? For example, the MS4 permit requires that NCDOT comply with the NCDENR Division of Land Resources Erosion and Sediment Control program while also complying with the North Carolina General Permit to Discharge Stormwater associated with construction activities. Are the requirements in these separate permits compatible or do they lead to inefficiencies in terms of redundant and overlapping requirements? Can you provide examples and costs to support your points?

   Response: It is integrated into the state individual MS4 permit. No, it is not conflicting.

4. *Advantages of having one permit that covers construction and post-construction*: Although the concept of having one permit that covers both construction and post construction activities could in principle lead to efficiencies, it appears that in point of fact, the MS4 permit does not provide much transportation-specific construction requirements but rather requires NCDOT to ultimately also comply with the SCGP.

   Given this situation, are there any advantages in managing construction and post – construction activities under the current combined MS4/Construction permit?

   Response: No, they manage the construction portion under the delegated program. The construction portion just says they have to report. They are doing it anyway.

   NCG01 only applies to those who don't have an individual permit. They don't have an NOI; they design and approve their own plans. State says they are in compliance because they have this program.

   Again please provide examples and costs if available to support your points.

5. *Requirements for Borrow Pit and Waste Pile Activities*: The NCDOT MS4 Permit does have specific construction phase requirements for borrow pit and waste pile activities, which are not covered as a specific category in the SGCP. Do these projects also require compliance with the SGCP and if so, are the requirements compatible or in conflict?

   Response: Nothing is in conflict. Once those areas are disturbed, they have the same inspection requirements – considered connected to the project, monitored by the same folks, even if off-site.

6. *Coverage Issue*: Does having the MS4 requirements apply to Phase I/II jurisdictions only and the SCGP apply statewide complicate compliance for DOT staff in terms of understanding what requirements apply where?

   Response: MS4 requirements are statewide jurisdiction, so this doesn't really apply. All is statewide.

APPENDIX E: REGULATORY INTERVIEW SUMMARIES

State: Maine
Regulatory Agency: Maine Department of Environmental Protection
Interviewee: David Ladd (David.Ladd@maine.gov)
Date of Interview: April 9, 2010

1. *We understand that the decisions regarding permitting type and focus can depend on a number of factors including role of USEPA, environmental stakeholders, DOT interaction and in-house experience and expertise. What are/were the principle considerations & drivers in determining the permit type and focus in your state?*

   Response: In developing DOT permit, Maine DEQ considers EPA and state requirements. EPA requirements such as MCMs obviously considered, but some EPA requirements (e.g., monitoring) seem less applicable based on state experience. Key consideration is state regulations that include MOA which provides a framework – esp. for construction where DEQ waives some administrative permitting requirements (but not standards) and evaluate compliance, not on project by project basis, but through annual review process. DEQ recognizes that DOT has certified ESC staff, and DOT is in general compliance. Have watershed specific permit in southern part of state where DOT will be co-permittee. General permit works well for municipalities but for linear systems, GP still needs to be tailored to DOT characteristics, and DEQ wants to work with DOT to refine the GP requirements.

   What was the role of the DOT (if any) in selecting the approach?

   Response: DEQ in developing permit implements an extended, transparent stakeholder process that involves DOT, EPA, and other stakeholders so as to resolve most issues at permit development step, and thereby avoid extensive comments during permit approval process.

   Some DOTs have permits that combine MS4 and construction phase requirements? Do you think that a combined MS4/Construction permit (and possibly also industrial) is a good approach for regulators and DOTs? Why/Why not?

   Response: MS4 permit is consistent with CGP, and these requirements are all covered in DEQ MOA with DOT and MTA. The MOA is governing requirement for construction sites, and it recognizes need for DOT to meet project delivery schedule while requiring DOT/MTA to document and report activities conducted to meet MOA requirements.

2. *Unique Characteristics of DOTs – Although there are many similar activities that DOTs and municipalities conduct, DOTs often feel that there are unique features associated with operating a statewide transportation system that distinguishes them from municipal agencies. For example:*
   - *Highways are linear environments that can cross numerous watersheds, but often comprise a small fraction of the total drainage area for a given receiving water.*

- *DOTs do not have the ability to impose ordinances or service fees in order to meet permit conditions. DOT funding is solely through legislative appropriation.*
- *DOTs may have little or no legal authority to control offsite discharges that enter its MS4 or the authority to impose discharge violations*
- *Limited ROWs, the need to provide transportation functions, and safety issues can constrain areas available for stormwater management facilities The decisions regarding permitting type and focus can depend on a number of factors including role of USEPA, environmental stakeholders, DOT interaction and in-house experience and expertise.*

To what extent do you consider the DOT specific issues (e.g. safety, ROW constraints, funding limitations, limited legal authority) in developing DOT permits?

Response: DEQ cannot modify requirements for DOTs, but does take into account DOT circumstances and conditions in arriving at how requirements will be met. For example, DOT cannot enforce non-stormwater discharges that may originate offsite, but if during maintenance activities there are observed non-stormwater discharges, DEQ needs to be notified. Once pollutants get into the DOT system, DOT is responsible for pollutants. Important that DOT inform DEQ when non-stormwater discharges are found and sources unknown, so that DEQ and DOT can work with MS4 to determine and eliminate source.

To what extent do you consider the DOT's funding limitations in developing permitting conditions (e.g. retrofitting DOT facilities or meeting TMDL wasteload requirements ?

Response: DEQ cannot use ability to pay explicitly in setting up GP requirements. But instead, DEQ works extensively with DOT in developing requirements that DOT can live with and which implicitly reflect ability to pay and other constraints that DOT may have. Prior to re-issuing GP in 2008, DEQ spent a year with co-permittees to negotiate requirements. Many meetings required, and some compromise. EPA may want more stringent requirements, and permittees may want less, but ultimately there needs to be compromise based on good justification for requirements. It is DEQs position that better for DEQ to take beatings in developing draft, rather than as part of public review and approval process.

Given that DOT facilities are located statewide, do you think that an individual DOT specific permit should be applied statewide or limited to Phase I and Phase II areas? How could such a permit address specific watershed issues?

Response: DEP not planning any general MS4 requirements for DOTs statewide. DEQ is considering possibly expanding construction and maintenance (covered under industrial general permit) requirements statewide to capture DOT facilities (30??) across state that are

currently not covered. DEQ can do this under "residual designation authority". This effort could be "bucket of worms" but DEQ is considering it.

3. *Communication/Negotiation with DOT:* DOTs with close cooperative relationships with the State EPA's generally view their permits more favorably. In addition these DOTs often have a very good understanding of receiving water issues and are receptive to finding effective and efficient stormwater management strategies.

   Describe your working relationship with the DOT? To what extent does your working relationship affect the permit negotiation process?

   Response: David has been around for 20 yrs, and in that time there has been a huge change in responsiveness of DOT in terms of environmental stewardship. DOT staff are now better educated in terms of environment. Also some incentive through past enforcement actions. This is background that lead to MOA. Now DOT has no problem calling DEQ if DOT is having a problem. DOT not afraid of calling and sees DEQ as being helpful. Maine may be large state, but it is primarily rural and everyone knows each other, so need to get along.

   What might be some strategies for fostering a closer and more cooperative relationship?

   Response: DOT has changed the way they do business, DEQ not looked at like the hammer. A true paradigm shift in relationship has come about.

4. *Compliance/Enforcement:* DOTs are very concerned about prescriptive DOT requirements that can be costly/difficult to meet (TMDL wasteload allocations, effluent limitations) and can potentially expose them to liability.

   What are some areas where the DOT is doing well in meeting their permit compliance?

   Response: DOT has environmental division that has good staff mix, good training programs for maintenance and other programs that include DEQ participation. Good technical expertise that DEQ can trust.

   What are some areas where the DOT can improve on? Do you have any specific concerns about the DOT permit compliance?

   Response: Still have problems with specific facilities or practice, but these are being self reported which is good.

5. *Future Direction of Permitting:*
   What changes do you envision for future DOT permits?

   Response: Hope revised IGP will add industrial sector that covers DOT maintenance facilities across the state. This also will have benefits for construction related impacts

because it can address cleaning of construction equipment that would not otherwise be addressed under CGP. Outdoor equipment areas include construction equipment and want to address this source under industrial permit. Maine has extensive freshwater wetlands that are subject to runoff from some maintenance facilities, so DEQ is keen to address this issue.

What are the drivers and concerns for these changes?

Response: EPA developing new guidance for MS4 and there will be changes. Some of EPA's recommendations (e.g., monitoring) does not necessarily work for state of Maine where DEQ has close hand on pulse of programs. Only 38 MS4s in state and most clustered. All of clusters working together and DEQ meets with them every month. DEQ also reviews Annual Reports, and does a lot of inspections of DOT facilities, even facilities outside Phase II. Industrial program has strong inspection role conducted by DEQ staff, so keeping close tabs on industries. And lastly have open stakeholder process in developing permits.

In summary programs will expand but need to build judiciously based on local experience in the state.

REGULATOR QUESTIONAIRE
State: North Carolina
Interviewee: Mike Randall (mike.randall@ncdenr.gov)
Date of Interview: April 13, 2010

1. *Choice of Permit* – The decisions regarding permitting type and focus can depend on a number of factors including role of USEPA, environmental stakeholders, DOT interaction and in-house experience and expertise.

   What are principle considerations & drivers in determining the permit type and focus in your state?

   Response. In the late 1990s the DWQ was actively permitting large municipalities and DOD facilitates under the Phase I program. The mindset was that other large MS4s, such as NCDOT, needed to be included in the mix. In addition, NCDOT was already implementing stormwater management requirements under a number of programs including industrial permitting of 80 sites, statewide construction permitting and compliance, and requirements in other state programs such as the coastal water protection program, nutrient sensitive waters program, and outstanding waters program. It made sense to have a Phase I individual DOT specific permit. The statewide coverage area was not an issue because NCDOT was already implementing stormwater requirements statewide through the programs mentioned above, as well as Section 401/404 water quality certification requirements. Statewide coverage essentially only expanded the coverage area for public education and illicit detention requirements.

   What was the role of the DOT (if any) in selecting the approach?

   Response. NCDOT is very responsible and environmentally pro-active. The decision to have a statewide Phase I permit was mutually agreed upon. NCDOT felt they should be included in the Phase I program.

   Some DOTs have permits that combine MS4 and construction phase requirements? Do you think that a combined MS4/Construction permit (and possibly also industrial) is a good approach for regulators and DOTs?

   Response. Made sense to have a combined permit to cover all activities. In addition there is a NC statute that requires NCDOT to implement a construction management program as a semi-delegated authority. They are not required to submit project NOIs. NCDOT's construction program is audited by Department of Land Resources (DLR) for compliance. Both DLR and DWQ provide oversight and field inspections of individual projects. NCDOT funds a dedicated position in each of the 7 regional offices.

2. *Unique Characteristics of DOTs – Although there are many similar activities that DOTs and municipalities conduct, DOTs often feel that there are unique features associated with operating a statewide transportation system that distinguishes them from municipal agencies. For example:*
   - *Highways are linear environments that can cross numerous watersheds, but often comprise a small fraction of the total drainage area for a given receiving water.*
   - *DOTs do not have the ability to impose ordinances or service fees in order to meet permit conditions. DOT funding is solely through legislative appropriation.*
   - *DOTs may have little or no legal authority to control offsite discharges that enter its MS4 or the authority to impose discharge violations*
   - *Limited ROWs, the need to provide transportation functions, and safety issues can constrain areas available for stormwater management facilities The decisions regarding permitting type and focus can depend on a number of factors including role of USEPA, environmental stakeholders, DOT interaction and in-house experience and expertise.*

   To what extent do you consider the DOT specific issues (e.g. safety, ROW constraints, funding limitations, limited legal authority) in developing DOT permits?

   Response. DWQ recognizes the linear nature of the DOT facilities in the permit. They have developed a BMP manual that is specific to linear projects, which must be followed by NCDOT for all linear projects. There is a separate BMP manual for non-linear projects that is applicable to nonlinear DOT facilities such as industrial sites and maintenance yards.

   There are DOT specific monitoring requirements for borrow pits, which DWQ was concerned about. NCDOT conducted a 3 to 4 year monitoring study of borrow pit discharges and developed BMPs for borrow pit areas in lieu of continuing monitoring.

   NCDOT is also conducting a wide range of monitoring related to research on BMPs, the required retrofit program, and public education. In addition there are monitoring requirements outside of the permit. Specifically, a recent state statute requires NCDOT to conduct a pilot program of WQ retrofits of 50 bridges, with pre- and post-project monitoring requirements.

   To what extent do you consider the DOT's funding limitations in developing permitting conditions (e.g., retrofitting DOT facilities or meeting TMDL wasteload requirements) ?

   Response. DWQ bases permit conditions on statutory requirements. However, DWQ is mindful of economic conditions, and seeks to development effective and efficient strategies to meet statutory requirements. For example, when pressured to mandate illicit detection monitoring through stream walks on all NCDOT roadways, DWQ and NCDOT felt this was inefficient and unreasonable. Instead DWQ worked with NCDOT to provide training for all

field personnel for spotting and reporting illicit discharges. Last year 28 illicit discharges were identified.

NCDOT is also very good at finding funding sources to meet permit obligations. For example, NCDOT frequently partners with local communities. They provided engineering services to help develop a 30-acre wetland to treat parking lot runoff at the zoo. Similarly they provided engineering services to implement BMPs at ocean outfalls in Kure Beach. In both cases, the BMPs did not directly serve NCDOT facilities, but NCDOT was given retrofit credits to help meet its permit obligation of 14 retrofits per year.

Given that DOT facilities are located statewide, do you think that an individual DOT specific permit should be applied state-wide or limited to Phase I and Phase II areas? How could such a permit address specific watershed issues?

Discussed above. NCDOT has a DOT specific permit with statewide coverage.

3. *Communication/Negotiation with DOT:* DOTs with close cooperative relationships with the State EPA's generally view their permits more favorably. In addition these DOTs often have a very good understanding of receiving water issues and are receptive to finding effective and efficient stormwater management strategies.

Describe your working relationship with the DOT? To what extent does your working relationship affect the permit negotiation process?

Response. DWQ and NCDOT have a very good and collaborative working relationship. The relationship is fostered by constant communication and interaction at 3 levels:

1. Upper management and Division level personnel from DWQ and NCDOT meet bi-monthly to discuss and resolve permit conditions and any issues.
2. Central Office Coordination. Mike works closely with Matt Lauffer of NCDOT. Mike wrote the NCDOT permit and also oversees permit compliance at a management level. Mike has 22 years experience in environmental compliance with GM, which is a very proactive company in terms of environmental compliance. Consequently Mike understands good business practices and efficiencies for permit compliance. Mike meets monthly with NCDOT to go over various permit conditions and usually concentrates on one condition per meeting. His focus is on making sure that NCDOT has efficient and effective management practices in place to sustain long term compliance with the permit conditions. Mike seeks to have uniformity in DOT practices to ensure compliance.
3. Regional Office Coordination. The regional offices have dedicated DOT Staff to ensure compliance (funded by NCDOT). The inspectors work closely with the

NCDOT field and construction personnel. The DWQ field inspectors also relay information about problem/issues to the Central Office, where it can be discussed and resolved during the monthly coordination meetings with NCDOT.

To what extent do you feel that the DOT is receptive to regulatory issues and concerns during permit negotiation? Are you receptive to DOT input regarding efficiencies and effectiveness of permit conditions?

Response. NCDOT is very responsive to advice and suggestions from DWQ. Similarly DWQ is receptive to NCDOT suggestions and constraints in areas where there is room for flexibility. For example, the retrofit credits allowance mentioned earlier.

4. *Compliance/Enforcement:* DOTs are very concerned about prescriptive DOT requirements that can be costly/difficult to meet (TMDL wasteload allocations, effluent limitations) and can potentially expose them to liability.

Does litigation or concerns about potential litigation affect permit development? What permitting strategy best addresses potential litigation issues?

Response. Litigation and protracted permit negotiations are not really a problem. This is probably a reflection of the cooperative relationship between DWQ and NCDOT, which fosters an in-depth understanding of the responsibilities, concerns, and programmatic activities among the two agencies. In addition, NC is unique in that it has good relationships and established partnerships with universities, in particular Bill Hunt at UC State. This relationship helps to pull together a variety of stakeholders including developers, local government, NCDOT, environmental groups, and engineering groups.

The permit negotiation process was very congenial and short, with only 2 to 3 iterations on the permit language. NCDOT was accepting of permit conditions/requirements based on statutory requirements and EPA mandates. There were a few face to face meetings to iron out conditions in areas where there was room for flexibility. There were no comments on the permit during the public review period.

5. *Future Direction of Permitting:*
What changes do you envision for future DOT permits?

Response. Mike does not foresee significant changes in the next permit. He believes that NC is ahead of most states on EPA initiatives, especially in areas of BMP research, and LID. Also Mike feels that EPA is generally happy with the exiting permit and their program. EPA had only one comment on the permit during the last review.

State: Texas
Permit Type: Varies, Joint and Individual Phase I and Phase II MS4 Permits by District, Separate General Construction Permit
Coverage: Phase I and Phase II Jurisdictions
Regulatory Agency: Texas Commission on Environmental Quality (TCEQ)
Interviewee: Jaya Zyman-Ponebshek (JZymanPo@tceq.state.tx.us)
Date of Interview: April 12, 2010

1. *Choice of Permit* – The decisions regarding permitting type and focus can depend on a number of factors including role of USEPA, environmental stakeholders, DOT interaction and in-house experience and expertise.

   What are principle considerations & drivers in determining the permit type and focus in your state?

   Response: The main considerations were:
   - Meeting the Federal Regulations and EPA requirements for Phase I and Phase II areas
   - Consent to applicant request for district-by-district approach
   - Historical precedence. TCEQ received delegating authority from EPA in 1998 and this was the first permit cycle. Many of the Phase I permits are coming up for renewal and TCEQ will be taking a closer look at all the Phase I MS4 permits, including TXDOT permits.

   What was the role of the DOT (if any) in selecting the approach?

   Response: TXDOT had a primary role in determining the permit approach. They advocated for a continued district-by-district approach.

   Some DOTs have permits that combine MS4 and construction phase requirements? Do you think that a combined MS4/Construction permit (and possibly also industrial) is a good approach for regulators and DOTs?

   Response: TCEQ is not considering a combined approach and it would not likely occur in the near future. TCEQ states that a potential benefit of a combined approach is that fees can be combined or lowered, as can some of the paperwork. However, noncompliance with a construction element could affect the DOT's overall compliance rating, which will have impacts throughout the agency's permitting decisions.

In general, TXDOT Districts like to form collaborations with municipalities and other agencies. Some Phase I permits are as co-permittees. Many of the TXDOT Phase II permits are also co-permittees. Forming collaborations allows co-permittees to make assignments among themselves based upon their expertise in order to meet the permit obligations. TCEQ is only concerned with ensuring that the program is complete and who is responsible for the program elements.

2. *Unique Characteristics of DOTs – Although there are many similar activities that DOTs and municipalities conduct, DOTs often feel that there are unique features associated with operating a statewide transportation system that distinguishes them from municipal agencies. For example:*
   - *Highways are linear environments that can cross numerous watersheds, but often comprise a small fraction of the total drainage area for a given receiving water.*
   - *DOTs do not have the ability to impose ordinances or service fees in order to meet permit conditions. DOT funding is solely through legislative appropriation.*
   - *DOTs may have little or no legal authority to control offsite discharges that enter its MS4 or the authority to impose discharge violations*
   - *Limited ROWs, the need to provide transportation functions, and safety issues can constrain areas available for stormwater management facilities The decisions regarding permitting type and focus can depend on a number of factors including role of USEPA, environmental stakeholders, DOT interaction and in-house experience and expertise.*

   To what extent do you consider the DOT specific issues (e.g. safety, ROW constraints, funding limitations, limited legal authority) in developing DOT permits?

   Response: TCEQ is receptive to TXDOT input and concerns. Individual permits take these issues into account on a permit-by-permit basis. General permit are written to include the federal requirements, and all MS4s (and construction) are regulated in accordance with those rules. To the extent that it makes sense and that we are able, we include linear-specific considerations. Otherwise, questions about linear activities are typically handled in guidance.

   As an example, TXDOT Phase II permit holders often realize they can't meet certain management measures because they are not applicable to them. TXDOT can then submit Notice of Change requests for TCEQ's consideration. TCEQ is very receptive to reasonable changes with legitimate justification.

   To what extent do you consider the DOT's funding limitations in developing permitting conditions (e.g. retrofitting DOT facilities or meeting TMDL wasteload requirements) ?

Response: We generally do not consider funding; just that the permit requirements must be met to the federal standard (i.e., for MS4s the "MEP" standard)

Given that DOT facilities are located statewide, do you think that an individual DOT specific permit should be applied state-wide or limited to Phase I and Phase II areas? How could such a permit address specific watershed issues?

Response: May be a good idea if we can work it out within the context of the agency's permitting rules. Also, a general permit may be an option if a GP can include Phase I areas (would need to work with EPA.)

Don't see this happening soon, unless it becomes an EPA mandate. TCEQ volume of work is too great to take on additional permits, and it would require analysis to look at impacts to the state and department resources. Would be a slow process. TCEQ has 5 full time permit writes for all MS4 permits, not counting staff involved in construction and industrial permitting NOIs, and inspectors in field offices.

3. *Communication/Negotiation with DOT:* DOTs with close cooperative relationships with the State EPA's generally view their permits more favorably. In addition these DOTs often have a very good understanding of receiving water issues and are receptive to finding effective and efficient stormwater management strategies.
Describe your working relationship with the DOT? To what extent does your working relationship affect the permit negotiation process?

Response: TCEQ has a good relationship with TXDOT. TCEQ has not entered into a lot of direct negotiations with TXDOT because the primary permittee in the Phase I areas are usually the municipalities.

To what extent do you feel that the DOT is receptive to regulatory issues and concerns during permit negotiation? Are you receptive to DOT input regarding efficiencies and effectiveness of permit conditions?

Response: TCEQ is receptive to understanding DOT constraints and working with TXDOT to resolve issues. For example, one issue involving TXDOT is the designation of primary and secondary operators for construction permits. TCEQ is actively working with TXDOT to clarify designation criteria.

TXDOT is also receptive to permit requirements, and generally is actively complying with permit conditions.

What might be some strategies for fostering a closer and more cooperative relationship?

Response: Permit meetings; communications between managers of general concepts; then between staff before and during permit development.

4. *Compliance/Enforcement:* DOTs are very concerned about prescriptive DOT requirements that can be costly/difficult to meet (TMDL wasteload allocations, effluent limitations) and can potentially expose them to liability.

   What are some areas where the DOT is doing well in meeting their permit compliance? What are some areas where the DOT can improve on? Do you have any specific concerns about the DOT permit compliance?

   Response: Generally poor performers who are not making legitimate efforts to comply with permit conditions will see increasingly stringent permit conditions. TCEQ will be responsive and work with permittees that are good citizens and are making good faith efforts to meet permit conditions.

   Does litigation or concerns about potential litigation affect permit development? What permitting strategy best addresses potential litigation issues?

   Response: Litigation is not generally an issue. TCEQ is often squeezed by both environmental (EPA) and industrial interests. TCEQ's philosophy in permit development is to strike a balance between environmental protection and sustainable development. TCEQ will not add unreasonable restrictions beyond those required by the applicable rules if they do not add value to protecting the environment.

   TCEQ seeks to develop prescriptive permit conditions that are clear, fair, and transparent. They are constantly looking for feedback to make sure that permits are as clear as possible, and seeking to learn from past experiences.

5. *Future Direction of Permitting:*
   What changes do you envision for future DOT permits?

   Response: TCEQ is required to follow EPA initiatives on post-development requirements, TMDLs, and rule-making requirements. These initiatives currently include a greater push for LID and green infrastructure requirements. In general EPA recognizes there are gaps in coverage areas and seeks to close gaps. Future Phase I permits are likely to include more requirements for minimum control measures and measurable goals, and improved stormwater management plans. Phase II permits are likely to include more monitoring requirements.

   Other possible changes are combining permits into one regional permit, and changes to permits to address TMDLs.

   What are the drivers and concerns for these changes?

Response: Drivers are EPA requirements, water quality protection, and program efficiency.

How can DOTs better prepare for these changes?

Response: Communication with agency and participating in water quality workgroups and advisory groups (e.g., during TMDL development).

REGULATOR QUESTIONAIRE
State: Washington State
Permit Type: Individual DOT Specific MS4 Permit, Separate General Construction Permit
Coverage: Phase I and Phase II Jurisdictions
Regulatory Agency: Washington Department of Ecology
Interviewee: Bill Hashim (bhas461@ecy.wa.gov)

1. *Choice of Permit* – The decisions regarding permitting type and focus can depend on a number of factors including role of USEPA, environmental stakeholders, DOT interaction and in-house experience and expertise.

   What are principle considerations & drivers in determining the permit type and focus in your state?

   Response. The previous permit was limited to Phase I areas only. The main goal for the current permit was to make sure that NPDES requirements were implemented everywhere. So this necessitated a more general DOT permit to address statewide application. The problem was how to reasonably achieve this objective. WSDOT was very concerned about the financial implications of a statewide permit, and the potential litigation if permit requirements were not implemented uniformly throughout the state. DOE was concerned about achieving statewide application if requirements were limited to Phase I/II/TMDL areas because much of the state is outside of these areas.

   What was the role of the DOT (if any) in selecting the approach?

   Response. WSDOT/DOE had a collaborative relationship and worked together to develop a practical solution that addressed both WSDOT and DOE concerns. To address WSDOT's financial and litigation concerns, DOE limited permit coverage to Phase I/II/TMDL areas. To obtain statewide application, WSDOT agreed to apply procedures in the DOE approved Highway Runoff Manual statewide. This agreement was formalized in a Memorandum of Agreement between DOE and WSDOT.

   Some DOTs have permits that combine MS4 and construction phase requirements? Do you think that a combined MS4/Construction permit (and possibly also industrial) is a good approach for regulators and DOTs?

   Response. DOE has a well established construction general permit and general industrial permit. These permits are effective and WSDOT is complying with these permits. DOE did not see a reason to "muddy the waters" of the NPDES permit by combining the MS4 and construction permits since WSDOT is bound by those requirements regardless of the source of their discharges.

2. *Unique Characteristics of DOTs – Although there are many similar activities that DOTs and municipalities conduct, DOTs often feel that there are unique features associated with operating a statewide transportation system that distinguishes them from municipal agencies. For example:*
   - *Highways are linear environments that can cross numerous watersheds, but often comprise a small fraction of the total drainage area for a given receiving water.*
   - *DOTs do not have the ability to impose ordinances or service fees in order to meet permit conditions. DOT funding is solely through legislative appropriation.*
   - *DOTs may have little or no legal authority to control offsite discharges that enter its MS4 or the authority to impose discharge violations*
   - *Limited ROWs, the need to provide transportation functions, and safety issues can constrain areas available for stormwater management facilities The decisions regarding permitting type and focus can depend on a number of factors including role of USEPA, environmental stakeholders, DOT interaction and in-house experience and expertise.*

   To what extent do you consider the DOT specific issues (e.g. safety, ROW constraints, funding limitations, limited legal authority) in developing DOT permits?

   Response. DOE recognizes the validity of unique characteristics of DOTs. One DOT characteristic that DOE really focused on was traffic volumes. We looked at where the greatest traffic was located and the amount of impervious area, which are generally along the I-5 corridor and in the Puget Sound region. We felt that these areas can have significant impacts on receiving waters and wanted to include permit conditions to monitor and characterize runoff in highly urbanized areas. Understanding the characteristics of highway runoff is very important for tailoring permit conditions in future permits. DOE has great expertise in water quality monitoring and characterization. WSDOT contracted with DOE Environmental Assessment Program to help implement monitoring requirements under the MS4.

   WSDOT considered monitoring requirements to be very expensive with limited utility. They did not concur on the value of monitoring requirements. Much of negotiation time was spent on monitoring requirements.

   The question of legal authority to control run-on to highway facilities was also discussed. DOE recognizes that WSDOT has no authority to control discharges into their conveyances. DOE suggested that WSDOT should work collaboratively with municipalities and alert DOE of uncontrolled and/or illicit discharges into their jurisdiction.

   To what extent do you consider the DOT's funding limitations in developing permitting conditions (e.g. retrofitting DOT facilities or meeting TMDL wasteload requirements) ?

As discussed above, DOE considered WSDOTs financial concerns in the selection of the permit coverage area. In other areas, specifically monitoring, DOE felt the cost of monitoring was justified and valuable, and therefore included these requirements in the permit.

Given that DOT facilities are located statewide, do you think that an individual DOT specific permit should be applied state-wide or limited to Phase I and Phase II areas? How could such a permit address specific watershed issues?

Discussed above. A practical compromise was developed to limit coverage to Phase I/II/TMDL areas but obtain statewide implementation of requirements.

3. *Communication/Negotiation with DOT:* DOTs with close cooperative relationships with the State EPA's generally view their permits more favorably. In addition these DOTs often have a very good understanding of receiving water issues and are receptive to finding effective and efficient stormwater management strategies.
Describe your working relationship with the DOT? To what extent does your working relationship affect the permit negotiation process?

Response. The Governor directed DOE and WSDOT to work together and DOE endeavored to have conflicts resolved through collaboration. Most importantly, Bill stated that he enjoyed a very cooperative and friendly relationship with Larry Schaffner of WSDOT. DOE actively pursued a collaborative process in negotiation and did not want to dictate to WSDOT. Bill indicated that a collaborative process is beneficial to both sides. It is inherently more costly to have an adversarial relationship built on mistrust, which wastes resources on oversight and inspections. Bill stated repeatedly that his collaborative and collegial relationship with Larry was the main key for developing a successful permit.

To what extent do you feel that the DOT is receptive to regulatory issues and concerns during permit negotiation? Are you receptive to DOT input regarding efficiencies and effectiveness of permit conditions?

Response. There is considerable collaboration and give/take between DOE/WSDOT, and there is mutual trust. Negotiation takes time, but collaboration can be fruitful. Bill indicated that staff level meetings could, at times, be more adversarial but that Bill and Larry would work out differences independently.

What might be some strategies for fostering a closer and more cooperative relationship?

Response. Bill reiterated the benefits of reviewing WSDOT's Stormwater Management Plan. He stated that he had no idea of the extent of WSDOT stormwater management program, and that the SWMP review helped him to understand WSDOT's program.