

Successes **in** Stewardship

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EPA Sets New Effluent Limitation Guidelines and Standards for Construction Sites



Check dams, an example of a sediment control technique, displayed at the Colorado DOT's (CDOT) Best Management Practices training facility. (Courtesy of FHWA)

Roadway construction can be a source of polluted water runoff, also known as effluent discharge. This discharge, if uncontrolled, creates hazards for humans, wildlife, and the environment. In December 2009, the U.S. Environmental Protection Agency (EPA) issued new, quantitative guidelines to control pollutant discharges from construction sites. Under the Clean Water Act, EPA is tasked with developing and implementing regulations to protect waterways from polluted water runoff emanating from construction sites. Before EPA established the guidelines, visual inspection was the primary tool for evaluating water pollution from these sites. While visual inspection is still important, EPA also recognizes that integrating it with other tools enhances the effectiveness of the evaluation.

Construction activities managed by State Departments of Transportation (DOTs) will be required to comply with EPA's new guidelines. Therefore, transportation agencies will need to plan for additional time and resources in order to meet the new requirements for stormwater discharges. This issue of *Successes in Stewardship* describes the new guidelines in place for construction sites and the upcoming rulemaking associated with postconstruction stormwater runoff and the implications for transportation officials.

Background and Development

EPA requires that all construction sites with one acre or more of land comply with a National Pollutant Discharge Elimination System (NPDES) permit program, which EPA manages. Sites subject to the program will be required to implement pollution-prevention measures and controls. The new ruling, [40 CFR 450](#), mandates measurement of turbidity levels and a report of the effectiveness of the NPDES in reducing pollutants discharged to streams.

Many roadway construction projects are covered under a State NPDES Construction General Permit (CGP), issued by the State water-quality agency, assuming that conditions and activities meet the standards listed in the permit. In States where

water-quality agencies do not have the authority to issue NPDES permits, State DOTs engaging in construction activities must apply to operate under the EPA CGP. The new standards will apply to all CGPs issued after February 1, 2010. States will not be required to comply until the reissuance of their CGP (see textbox below for a list of State CGP expiration dates).

These standards, which set turbidity levels to 280 nephelometric turbidity units (NTUs), are the first numerical, or quantitative, limitations for measuring stormwater discharge at construction sites at a national level. The effluent limitation guidelines are EPA's response to a court ruling in 2004 that involved a lawsuit filed by the National Resources Defense Council, Waterkeeper Alliance, and the States of New York and Connecticut. To develop the standards, EPA solicited comments from States and industry stakeholders.

Key Points of Effluent Limitation Standards

- All sites must implement permanent soil stabilization on completion or temporary halting, for two weeks or more, of earth-disturbing activities.
- Turbidity limit of 280 NTUs applies to construction projects with over 20 acres of exposed land.*
- EPA requires a minimum of three daily samples from all discharge units with the exception of linear projects, where a representative sample may be allowable.**
- Effective when State permits are ready for renewal, post-2010.

* Will change to 10 acres in August 2014.

** Must coordinate with State water-quality agency.

Summary of New Guidelines for Stormwater Discharge

Compliance with Pollution-Control Standards

Currently, EPA requires CGP permit holders to comply with pollution-control standards. These standards include the implementation of erosion and soil controls as well as the prevention of discharges from dewatering, the washing of concrete trucks, and additional pollution-prevention measures, such as disposal of construction waste. The standards will continue to be applicable under the new guidelines. Additionally, permit holders must implement permanent soil-stabilization methods immediately after soil-disturbing activities have been completed or if activities will be on hold for 14 days or more.

Quantitative Turbidity Limits

In addition to meeting pollution-control requirements, managers of construction sites that disturb more than 20 acres of land must monitor and limit water-turbidity levels. Average daily turbidity levels must remain below 280 NTUs. In 2014, these standards will apply to sites with over 10 acres of exposed soil. Previously, a member of the construction team inspected turbidity levels visually rather than monitoring them to numerical standards.

Monitoring Methods

EPA requires a minimum of three daily samples to measure the turbidity limit, though individual States may have stricter standards for monitoring. Specifically, EPA recommends that samples be collected from all discharge points. However, representative sampling may be employed with approval from State water-quality agencies, especially in the case of linear projects, which span longer distances and are likely to have many discharge points. State DOTs will need to work closely with water-quality agencies to ensure that procedures for monitoring water discharge can be implemented in the field and provide the necessary information for permit compliance. In 2011, EPA will issue its new CGP for non-delegated States, along with guidance on effluent-monitoring. States required by EPA to develop a monitoring method prior to release of the monitoring guidelines should look to other States that already require numerical monitoring as part of their CGP, such as California, Georgia, Vermont, and Washington.

Treatments

State DOTs will need to take actions to ensure that turbidity levels meet the new quantitative standards. Two techniques currently used to prevent the flow of pollutants to waterways are as follows:

- **Passive treatments:** Low-impact development techniques, including infiltration trenches, diversion berms, and settling basins with polymer additives, may be used as mitigation.
- **Polymer applications:** Polymers are an effective method for treating pollutants in stormwater in areas with large amounts of clay soil, such as the southeastern States. Polyacrylamide (PAM) is a chemical product commonly used as an additive in water basins. PAM removes suspended particles and can also be used to minimize soil erosion. Although EPA considers PAM to be safe, it is banned in some States. State DOTs should consult with their State water-quality agencies early in the permitting process to develop an alternative approach to reducing turbidity if PAM is not permitted.

New Development and Redevelopment Proposed Rule Expected in 2011

In addition to the new guidelines for construction sites, EPA is revising existing stormwater regulations for new development and redevelopment and is making other regulatory improvements to strengthen its stormwater program. EPA will be looking at ways to strengthen the municipal separate storm sewer system (MS4) requirements, including postconstruction requirements and other measures.

As it updates these regulations, EPA is seeking feedback from other agencies, including State DOTs, whose activities are covered under stormwater MS4 permits. Currently, EPA is soliciting comments on questionnaires that will be sent to randomly selected agencies later this summer. All recipients will be required by law to complete this survey. The Federal Highway Administration (FHWA) encourages the State DOTs to provide as much detail as possible to ensure that EPA understands how the DOTs operate their stormwater programs. EPA will consider these comments as it develops requirements for any new stormwater regulation. For example, the effluent limitations were raised significantly, from the proposed 13 NTUs to 280 NTUs, during the rulemaking process of the construction effluent guidelines, possibly due to the numerous comments, concerns, and information supplied by State DOTs and industry stakeholders. The EPA [Rulemaking](#)

State General Permit Expirations

The expiration dates of State CGPs, which determine when each State will need a new permit in compliance with new standards, are listed below.

Year	States
2009 or earlier	AL, IN, ME, MI, NC, ND, PA, SD
2010	CT, NY, OR, TN, WA
2011	AK, AR, DE, ID,* KS, MA,* MT, NH,* NM,* SC, VT, WI, WY, District of Columbia*
2012	CO, HI, IA, MO, NE, NJ, NV, OK, WV
2013	AZ, GA, IL, MD, MN, OH, RI, TX, UT
2014	CA, FL, KT, LA, VA

*Issued by EPA. A complete listing of States, territories, Tribal lands, and Federal facilities with permits issued by EPA can be found on the [EPA website](#).

[Gateway](#) has up-to-date information on the rulemaking. All comments on the proposed questionnaire should be entered on the site.

The new effluent limitation guidelines and forthcoming updates to the existing stormwater rules will be critical to preserving the quality of U.S. water systems. EPA will continue working in partnership with State DOTs and other agencies that will be affected by any revised stormwater rule and the new construction effluent guidelines.

Other Stormwater News

National Stormwater Peer Exchange and Practitioners Meeting

The 2010 National Stormwater Peer Exchange and Practitioners Meeting was held in Denver, Colorado, from April 27 to 29. The meeting was sponsored by the Center for Environmental Excellence by AASHTO (American Association of State Highway and Transportation Officials) in cooperation with FHWA, the Federal Transit Administration, and Colorado DOT. The meeting brought together DOT stormwater experts from 42 States, along with representatives from EPA and FHWA, to collaborate and seek solutions in stormwater management for transportation facilities. Proceedings will soon be posted on the [AASHTO website](#).

New Stormwater Model

Currently in beta-testing, the Stochastic Empirical Loading and Dilution Model, which is an update to the FHWA Pollutant Loading Model for Highway Stormwater Runoff, was developed jointly by the U.S. Geological Survey (USGS) and FHWA. The new model incorporates the existing model in a new software platform and provides information on the probability distributions of the following: precipitation characteristics, highway runoff volumes, highway runoff concentrations, upstream flow, upstream receiving-water concentrations, and structural best management practice performance. More information is available on the [USGS website](#).

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Look What's New!

- Due to overwhelming interest in the trainings offered in 2009, the Planning and Environment Linkages (PEL) Program, a joint effort of FHWA's Office of Planning and Office of Project Development and Environmental Review, is offering additional sessions of the training webcast, *PEL 101: The Tools for Adopting and Implementing a PEL Approach*. The purpose of the training is to help transportation professionals and resource agency practitioners to better understand, coordinate, and integrate transportation planning and the environmental review process.

The webcast will take place on Thursday, July 22, from 1 to 3 p.m. EDT ([register here](#)). Registration is limited. For questions about the registration process, please contact Gina Filosa at gina.filosa@dot.gov.

- The Center for Environmental Excellence at the AASHTO hosts three [community of practice forums](#). Recently, these forums released reports, available at the Center's website, on the following topics:
 1. DOT Practices to Limit Air Emissions from Road Construction
 2. State DOT Practices on Historic Bridges
 3. State-of-the-Practice Reports Issued on Effluent Limitation Guidelines, Total Maximum Daily Loads

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