MS4

Information, News and Highlights of Kane County's NPDES Phase II Program for

See http://www.co.kane.il.us/kcstorm/npdes.asp for more NPDES News & Info

2008 began a new 5-year stormwater permit cycle under EPA's National Pollutant Discharge Elimination System (NPDES) Phase II program. The NPDES Phase II program requires impacted communities to meet six minimum control measures to improve or maintain water quality in Illinois' streams and rivers. Following is information on how Kane County is meeting each of the six Phase II categories.

Public Education & Outreach/ Public Involvement & Participation

Kane County provides educational and public involvement tools that municipalities can use to meet the two Public Education & Involvement categories:

- The *Kane County Recycles* publication is distributed to the residents countywide
- The design for stream identification signs is available to municipalities and townships
- The public has been involved through stream cleanups, hazardous waste collections, and a stream monitoring program
- In 2008, Kane County held its second annual NPDES Phase II workshop for MS4s. Over 40 stormwater managers attended from Kane County and neighboring communities. The workshop is a venue for Kane MS4s to share ideas and pose questions about the NPDES Phase II program. Presentations from the November workshop are available online at http://www.co.kane.il.us/kcstorm/Nov2008.asp

2008 Kane County NPDES Phase II Workshop

Kane County Stormwater Speakers' Bureau

Looking for a speaker for your next municipal function? Need someone who can review the basics of stormwater programs or push the envelope of available BMPs or techniques? Check the new Kane County Stormwater Education Website for speakers who are available to come present at your next function. Contact Karen Kosky at 630-208-8665/ koskykaren@co.kane.il.us for more information!

- A new Kane County Stormwater Education website was introduced. The website pulls together the best stormwater/ water quality educational resources for adults, children, educators, and public officials. See the website at http://www.co.kane.il.us/kcstorm/education .
- Kane County distributed two brochures in early 2008 countywide; one for the general public and one for Kane County riparian landowners. The brochures allow Kane MS4s to educate the public and improve the water quality in our stormwater systems. The brochures are available at the County's NPDES website.
- Kane MS4 communities were offered storm drain stencil kits to use or make available to local environmental groups. To date, nine townships or municipalities have picked up kits to use for stenciling "dump no waste; drains to river" on storm drains.

Corner

Managers of Municipal Separate Storm Sewer Systems (MS4s)

Construction Site Runoff Control and Post-Construction Runoff Control

Municipalities who have adopted Kane County's stormwater management ordinance automatically meet these two construction-related NPDES Phase II minimum control measures. Kane County's Stormwater Management Ordinance went into effect on January 1, 2002 and certified communities were audited in 2003. An amendment was passed in 2008, and Kane County certified communities have been asked to adopt the revisions.

Illicit Discharge Detection & Elimination/ Pollution Prevention/ Good Housekeeping For Municipal Operations

These two categories of control measures are implemented separately by each local unit of government. Kane County has worked over the last five years on a number of fronts to implement internal measures to improve the quality of stormwater runoff from its County facilities.

2009 NPDES Phase II Dates to Remember

Following are the standard 2009 NPDES Phase II Deadlines:

By February 28, 2009:

All 2008 NOI activities for 2009 should be complete

By June 1, 2009:

Each MS4s Annual Report is due to IEPA

("Annual Facility Inspection" blank form at http://www.epa.state.il.us/water/permits/storm-water/ms4.html)

NPDES Updates Next Page

Need Help?

If you need help with any of the above activities, check out the following Kane County and IEPA resources:

- IEPA NPDES Phase II Information: http://www.epa.state.il.us/water/permits/storm-water/ms4.html
- Kane County NPDES Phase II Information: http://www.co.kane.il.us/kcstorm/npdes.asp
  (includes completed forms specific to Kane MS4s and information from NPDES Phase II events)
- Contact Karen Kosky, Watershed Engineer, Kane County Environmental Management Department
  Phone: (630) 208-8665 Email: koskykaren@co.kane.il.us

In November, the U.S. EPA published a new proposed set of NPDES Phase II guidelines for operators of construction sites. The U.S. EPA will take comment on the proposed guidelines for 90 days.

The following article is found on the International Erosion Control Association website,

http://www.erosioncontrol.com/blogs/ec-editors-blog/epas-proposed-effluent-limitation-guidelines-are-here-45393.aspx

November 24th, 2008 12:30pm PST

EPA's Proposed Effluent Limitation Guidelines Are Here

Posted By Janice Kaspersen

EPA announced last week the long-awaited proposed effluent guidelines for construction sites and released a pre-publication version (http://www.epa.gov/waterscience/guide/construction/proposed/). Once the guidelines are published in the Federal Register, comments are due to EPA within 90 days. For all of us who work in the erosion and sediment control field and whose work might be affected, it's worth taking a look at the full document. But here, in a nutshell, are some of the highlights.

The full title of the proposed rule is "Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category," and its intent is to tighten controls on discharges from construction sites by establishing technology-based effluent limits and performance standards.

First, the rule calls for non-numeric limitations that require all dischargers to provide erosion and sediment control BMPs, which are specified in the rule. Additionally, sites of 10 acres or more would need to have a sediment basin, or something that controls sediment to the same extent.

For certain sites, though—"large sites located in areas of high rainfall energy and with soils with significant clay content"—EPA proposes a numeric turbidity limit of 13 NTUs. Because this level is hard to achieve with fine silty and clay soils by settling alone, EPA says such sites will probably need to use active treatment systems, such as the addition of chitosan or other polymers to promote flocculation, followed by some type of filtration. It also mentions electrocoagulation as a technology capable of reducing turbidity levels.

The sites subject to this 13-NTU limit would include those of 30 acres or more with an average soil clay content of more than 10% and a rainfall erosivity factor (the "R" factor from the Revised Universal Soil Loss Equation) of 50 or greater. (If you view the complete document, see Option 2 for more details on which sites would be subject to the numeric limit and what other possibilities EPA considered.) In areas for which the R factor hasn't been calculated, total annual rainfall will be used as a criterion. (Discharge from rainfall exceeding the local 2-year, 24-hour storm, however, would be exempt from the limit.)

The proposal addresses the concern that polymers might be overused at some sites, and that discharges from those sites would be toxic. It judges the likelihood of this problem occurring to be low, however, citing the widespread use of polymers in wastewater treatment facilities.

EPA is also asking for comment on setting a turbidity limit in the range of 50 to 150 NTUs, based on passive treatment. See the document for a discussion of this option.

EPA says the rule will cost about $1.9 billion per year, and the document includes a detailed discussion of how it arrived at this figure.

Changes to the NPDES Phase II Program, especially for Construction Site Operators

See below for a summary of Construction Site Permit Changes as of 2008.

This information is taken directly from the Illinois EPA's website, http://www.epa.state.il.us/water/permits/storm-water/general-permits.html

Construction Site Activities General Permit

The renewal of the NPDES General Permit for Stormwater Discharge from Construction Site Activities was finalized on August 11, 2008. This permit is effective August 11, 2008 and will expire July 31, 2013. Significant changes were made as a result of comments received during the public notice period. These major changes that were made as a result of public comments are as follows:

1. Part II.A.1 - has been revised to clarify the need to submit the NOI in sufficient time to allow a 30 day period after receipt of the NOI and the start of construction.
2. Part II.C.7 - has been revised to include electronic submission of the Storm Water Pollution Prevention Plan to the Agency at the following email address: epa.constilr10swppp@illinois.gov .
3. Part IV.D.2.a - has been revised to reflect a 7-day period before stabilization measures must be initiated. The period of construction interruption with stabilization measures has been reduced to 14 days. A sentence has been added to IV.D.2.a.(i) which specifies that local requirements must also be met.
4. Part IV.D.4 - has been revised to include the qualifications of qualified personnel, such as a Professional Engineer (P.E.) a Certified Professional in Erosion and Sediment Control (CPESC), a Certified Erosion Sediment and Storm Water Inspector (CESSWI) or other knowledgeable personnel.
5. Part IV.D.4.d - has been revised to allow telephone, fax, and email notification of incidences of non-compliance. However, at the present time the Agency requires original signatures on the ION forms sent to the Agency following the e-mail submission.
6. A new Notice of Intent has been developed for the Construction Site Activities General Permit and may be submitted electronically along with the SWPPP to: epa.constilr10swppp@illinois.gov .

Don't forget the Webcasts!

The U.S. EPA has begun to utilize a new means to provide education about water quality and stormwater-related issues. Webcasts, or webinars, are free seminars offered directly through your computer—all that is needed is a computer with internet connection and speakers. In 2008, Kane County began notifying MS4s as stormwater-related webcasts became available. The EPA's "Watershed Academy" offers many valuable training web-casts in real-time, and also archives them so members of the public can view them any-time! Check out http://www.epa.gov/watershedwebcasts/ for more information.

NPDES Phase II Resource Fact Sheet

Following is a "Stormwater Fact Sheet". This information can be shared with staff or elected officials and possibly with the general public through your municipal or township newsletter. Following is an article from the Center for Watershed Protection's *Stormwater Manager's Resource Center.*

Stormwater Manager's Resource Center (SMRC) Website www.stormwatercenter.net
Center for Watershed Protection, Inc.; 2000; Ellicott City, MD

Pollution Prevention Fact Sheet: Green Rooftops

What is a green rooftop?

A green rooftop, also called a "Living Rooftop", is a thin layer of vegetation installed on top of a flat or sloped roof (Figure 1). The vegetation can range from turfgrass to shrubs or even trees, depending on the climate and the load-bearing capacity of the roof.

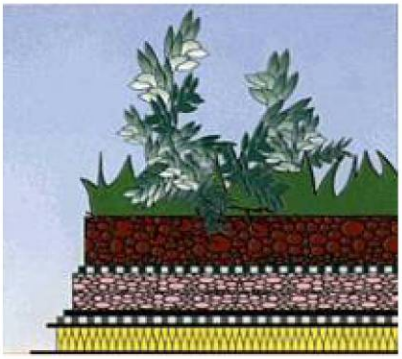
Why use a green rooftop?

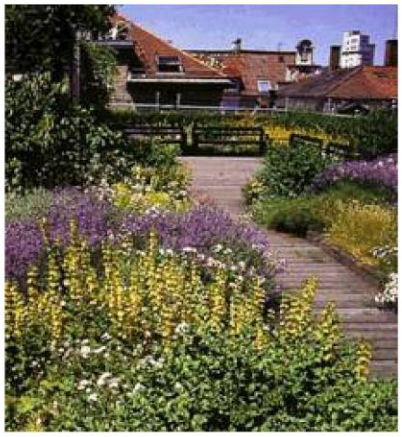
Rooftop area as a percent of total impervious area ranges from 30 to 35% in suburban development to as much as 70 to 75% in downtown business districts, and maybe as high as 80% in some warehouse/semi-industrial districts. Even partial control of these areas can reduce overall runoff volume by up to 50%. In highly urban areas, rooftops can be an unsightly element. Green rooftops and rooftop gardens provide an aesthetic appeal in the community.

In the summer, green rooftops retain 70 to 100% of the precipitation that falls on them; in the winter they retain 40 to 50%. Green rooftops can reduce the total annual runoff volume by 50 to 60%.

What are green rooftops made of?

A green rooftop typically consists of several layers, including a waterproofing membrane, insulation, protection layer, drainage layer, filter mat, soil layer, and vegetation (Figure 2). Green rooftops may have an internal drainage network that directs an overflow away from the roof to inhibit ponding. Turf based green rooftops range in weight from 5 to 30 lbs per square foot, while rooftop gardens typically range from 40 to 100 lbs per square foot. The thickness of a green rooftop can range from 1 inch of soil to over 75 inches of soil, depending on the intended use and load-bearing capacity of the roof. Green rooftops can be built on roofs with slopes up to 30 degrees.





How do I get a green rooftop?

If the projected live load of a green rooftop is greater than 17 lbs per square foot, consultation with a structural engineer is required. Rooftop gardens with large trees and seating areas (Figure 3) will require more structural support so it is recommended to consult a professional before installing a green rooftop.

How much does a green rooftop cost?

The initial cost of a green roof can be 30% greater than a conventional roof, but long term maintenance and energy cost savings can offset this cost increase by a lifespan increase of 50%. Two green roof projects in the city of Toronto ranged in cost from $33 per square foot to $55 per square foot for re-roofing and green roof installation. One source states the green rooftops prolong the life of a conventional roof by 20 years (www.greenroofs.com). Green rooftops can be warranted up to 15 years, and the plant material is typically warranted for one growing season.

References and Resources

- Johnston, J., and J. Newton. *Building Green: A guide to Using Plants on Roofs, Walls, and Pavements.*
- Kuhn, M., 1996. Roof Greening. *Eco-Architecture 2,* OAA.
- Green Roofs for Healthy Cities, 2001. www.peck.ca/grhcc/main.htm.
- Greenroofs.com, www.greenroofs.com
- Roofscapes, Inc. 2001. www.roofmeadow.com