

## Did You Know?

It has been a busy time at EEI during the first half of the year. In addition to kicking off new projects and maintaining on-going ones, our members have been presenting at technical conferences on a variety of topical subjects. Here is a list of those presentations and conferences. Contact us if you want more information on a presentation at [info@eeiweb.com](mailto:info@eeiweb.com).

**APWA Chicago Chapter Expo**, May 26, 2010  
*Northeastern Illinois Regional Water Supply Planning: What's New & What's Next*  
Peter Wallers, P.E., CFM

*Emergency Water Supply Needs Assessment for an Inland Lake Michigan Supplied Community*  
Jeffrey Freeman, P.E., CFM, LEED AP

**Sustainable Governance Conference**,  
April 23, 2010  
*The "Bits Between the Buildings": Opportunistic Conservation Design*  
Michele Piotowski, P.E., LEED AP

**The Conservation Foundation**  
**Beyond the Basics: Green Infrastructure for Clean Water**, February 18, 2010  
*Beyond LEED: A BMP Case Study for the Aurora Police Headquarters*  
Robert Walker, P.E., LEED AP

**Illinois Section of the American Water Works Association Annual Conference**,  
March 15 – 18, 2010

*Emergency Water Supply Needs Assessment for an Inland Lake Michigan Supplied Community*  
Jeffrey Freeman, P.E., CFM, LEED AP

*Pump Station Considerations*  
Michele Piotowski, P.E., LEED AP

*Construction of Deep Aquifer Water Wells*  
Andrew Deitchman, P.E.

*Rate Making in a Troubled Economy*  
Julie Morrison, P.E./ Bradley Sanderson, P.E.

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## Enterprises Trivia Challenge

**Q:** What do the 4 stars on the Chicago flag represent?

Send your answer to [eei@eeiweb.com](mailto:eei@eeiweb.com) or fax to (630) 466-6701 by September 1st 2010, to be entered in a drawing for a \$100 American Express gift card!

**Fall 2009:**

**Q:** How many bushels of corn did Illinois produce in 2008?  
**A:** 2,126,600,000 bushels



Engineering Enterprises, Inc. (EEI), founded in 1974, provides consulting engineering services throughout northern Illinois. Our expertise includes water, wastewater, transportation, stormwater, construction management, land surveying and GIS.

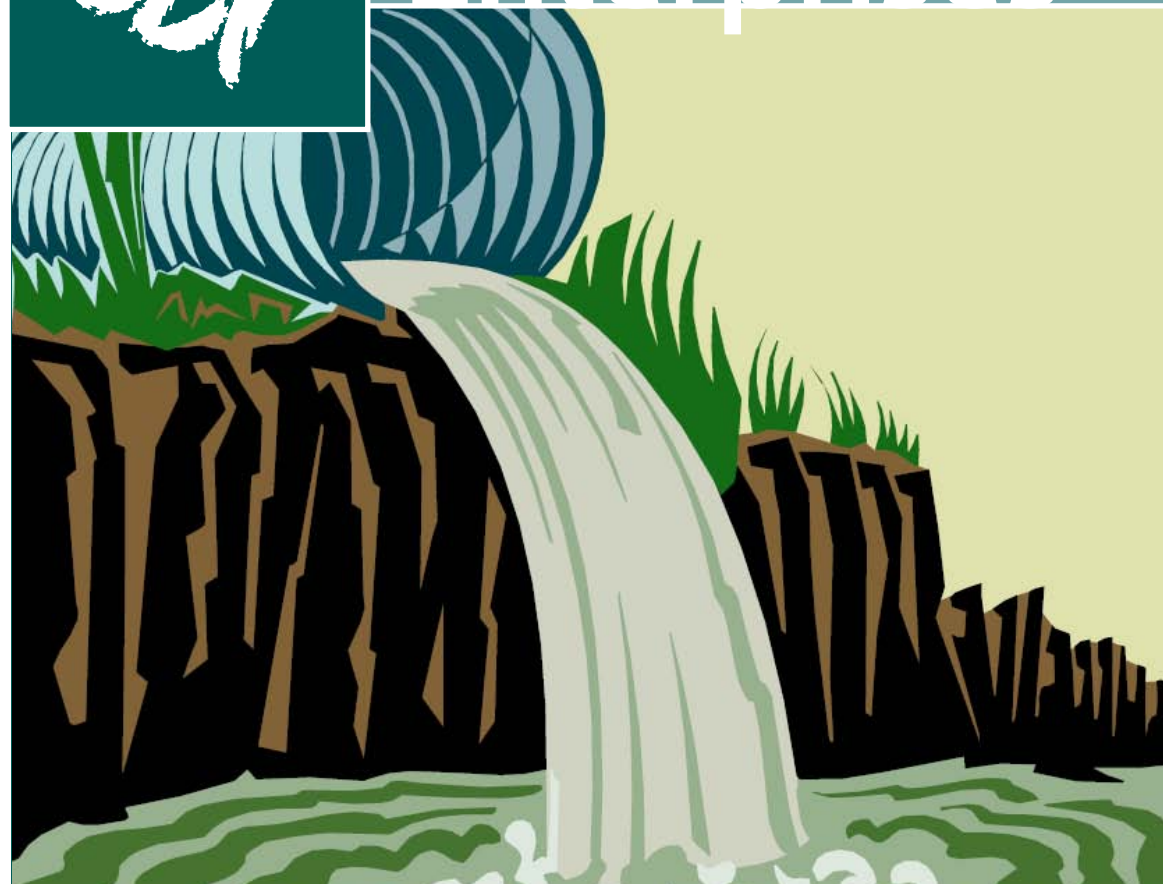
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# Enterprises



## Implementing Cost-Effective Illicit Discharge Detection & Elimination Program Measures

Eliminating illicit discharges from urban storm sewer systems is a critical step in protecting urban runoff from pollution. An EPA review of urban runoff studies found that the annual mass discharge of many urban runoff pollutants is greater during dry weather flows than during wet weather flows (EPA/CWP, 2004).

### In this Edition:

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Summer 2010

## Implementing Cost-Effective Illicit Discharge Detection & Elimination Program Measures Cont'd

Identifying and eliminating these illicit discharges can thus have a tremendously positive and immediate impact on the quality of water discharged from the community.

National Pollutant Discharge Elimination System (NPDES) Phase I (1990) and Phase II (1999) rules established minimum control measures that all regulated municipal separate storm sewer systems (MS4's) are required to implement to effectively prohibit problematic non-stormwater discharges into storm sewers.

**Illicit discharge:** any discharge to an MS4 that is not composed entirely of stormwater, except allowable discharges pursuant to an NPDES permit.

The illicit discharge detection and elimination (IDDE) minimum control measure is one of the six minimum control measures Phase II regulated MS4 operators are required to include as part of its stormwater management program to meet the conditions of its NPDES permit.

**Phase I MS4:** medium and large cities or certain counties with populations of 100,000 or more.

**Phase II MS4:** small MS4's in urban areas, and some small MS4's outside the urbanized areas that are designated by the permitting authority (IEPA in Illinois).

The goal of the IDDE measure is the elimination of inappropriate connections to urban storm systems. This requires regulated MS4's to identify and locate sources of non-stormwater discharges into storm drains so they may institute appropriate actions for their elimination.

IEPA's General NPDES Permit for Small MS4's requires eight minimum IDDE measures:

1. Develop, implement and enforce a program to detect and eliminate ID's.
2. Develop a storm sewer system outfall map showing outfall locations and their receiving waters.
3. Implement and enforce an IDDE ordinance to effectively prohibit non-stormwater discharges into the system.
4. Implement a plan to detect and address illicit discharges and dumping to the system.
5. Inform public on the hazards of ID's and the importance of reporting such.
6. Identify and regulate otherwise exempt non-stormwater discharges if found to be a significant source of pollutants.
7. Define appropriate best management practices (BMP's) and goals for such to reduce pollutants to the maximum extent practicable.
8. Conduct periodic inspections of storm sewer outfalls for detection of ID's and illegal dumping.

Fortunately for smaller MS4's, a number of excellent resources have been developed by the U.S. EPA, various state agencies, and Phase I MS4's that can be utilized to develop their IDDE programs.

Many of these resources can be found on the EPA's NPDES website:

<http://cfpub2.epa.gov/npdes/stormwater/munic.cfm>

The challenge smaller MS4's face when implementing their IDDE programs is how to cost-effectively allocate the funding and human resources available to them to maximize the success of the detection program.

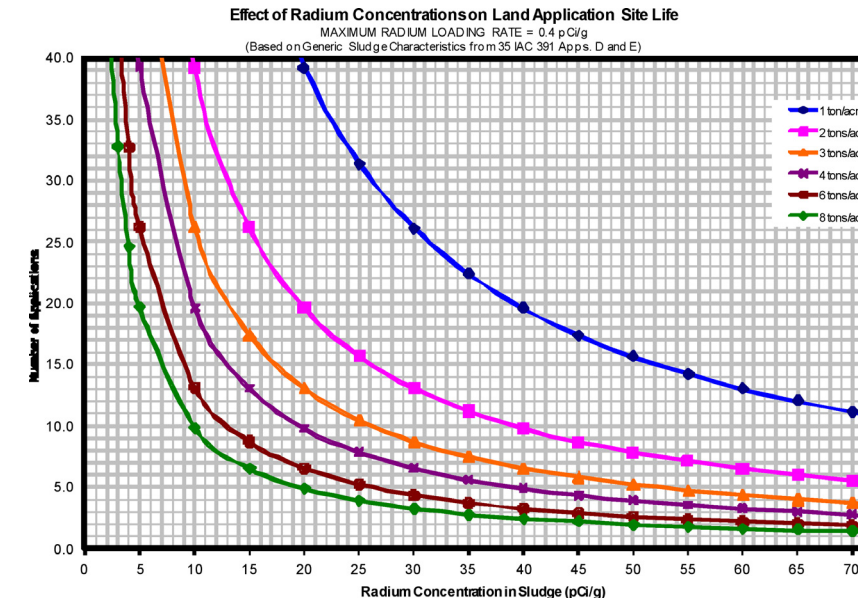
EPA guidance recommends that prior to implementation; the community should perform an initial screening of the system using available data to identify priority areas of concern. The potential for illicit discharge can be developed based on various available information including: infrastructure age, density of pollutant generating sites, high pollutant generating sites, land use/density, known areas of historic combined sewer systems, known dumping sites, proximity to opportunity, et al. Areas with a higher illicit discharge potential (IDP) can then be targeted for additional scrutiny. Given the wide variety of available geographic information; much of the initial screening can be performed in the office using geographic information systems (GIS) technology using a minimal amount of time and resources.

To discuss how GIS can be used to cost-effectively implement IDDE measures in your community, contact Tim Paulson, Project Manager at (630) 466-6700 or [tpaulson@eeiweb.com](mailto:tpaulson@eeiweb.com).

## Regulation Watch: Radium Containing Sludge Disposal

The Illinois Emergency Management Agency (IEMA) has proposed an amendment to the regulations for licensing of radioactive materials. The amendment specifically addresses disposal of radium containing sludge. If approved, the rule will apply to both potable water treatment plant (WTP) sludge, as well as, wastewater treatment facility (WWTF) biosolids/sludge. IEMA held the first public hearing on the proposed rule on September 30, 2009, and then a second public hearing on the proposed rule on April 13, 2010. Both public hearings were held in Springfield. On June 25, 2010, IEMA filed the rulemaking documents with the Joint Committee on Administrative Rules (JCAR). On August 10, 2010 JCAR supported the request of multiple municipalities and water and wastewater treatment providers and issued a filing prohibition. JCAR directed IEMA to meet with the stakeholders and develop a proposal that has less of a financial impact to the regulated community.

While the codification of the rule amendments applying to radium containing sludge appear to be a necessity, primarily because radium containing sludge could require licensing under the existing rules, the science behind the proposed rule appears to be flawed. For instance, the radiological model that was constructed to evaluate radiation dose limits



assumes a new house would be constructed on the topsoil that once received land applied sludge containing radium. Even though the construction of a house on topsoil is against building code, IEMA continues to utilize this scenario as a reference for setting the limit.

The currently proposed rule by IEMA would not require radium containing sludge producers with a radium content less than 200 pCi/g to obtain a license, but it would require these producers to register with IEMA. The rule defines regulatory requirements for sludge disposal with a radium content in three ranges. In general, the currently proposed rule would allow disposal of sludge within an approved landfill, and would place limits on the increase in radium content of soils containing land applied sludge to 0.4 pCi/g.

The above graph defines the typical site life (number of times sludge can be applied) under the currently proposed land application

requirements for a typical farm field receiving wastewater treatment facility sludge with varying radium concentrations. As shown in the graph, the site life is significantly reduced as the radium concentration in the sludge increases. Many communities are determining the site life of their land application areas will be significantly impacted by this new regulation. Therefore, they will have no choice than to haul their sludge to a landfill.

The JCAR ruling gives a second chance within the rulemaking process. It will be important for potentially affected water and wastewater treatment providers to participate in the stakeholder meeting to help define a regulation that is appropriately protective of public health at an appropriate cost.

For more information on this proposed rule and how it may affect your community, please contact Jeff Freeman, Vice President, at (630) 466-6718 or [jfreeman@eeiweb.com](mailto:jfreeman@eeiweb.com).