

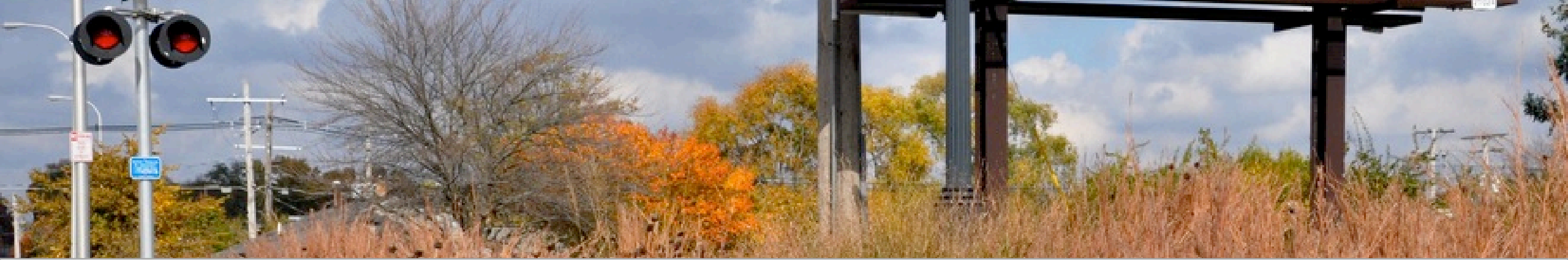
Urban Stormwater Working Group

Illinois Nutrient Loss Reduction Strategy

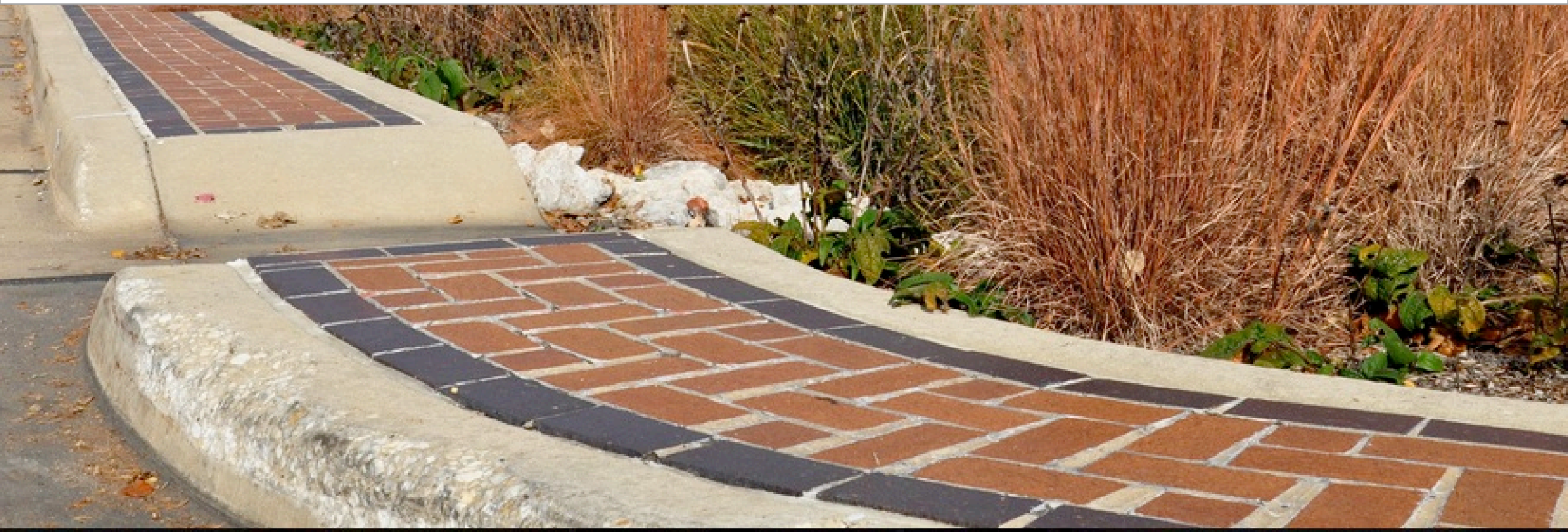
Workshop – November 13, 2018

ACES Library, Urbana IL





Introductions



EDUCATION SUBGROUP

Education Subgroup calls: June 26 and August 7

Charge: Exploring ways to provide stormwater education resources and to make audiences aware of stormwater issues

Current initiatives:

1. Resource Repository
2. Stormwater 101 PowerPoint

IAFSM to house on their website



ILLINOIS
NUTRIENT LOSS
REDUCTION STRATEGY
Improving our water resources with
collaboration and innovation

EDUCATION & ENGAGEMENT

Page 1 of 5

The IL NLR Urban Stormwater Working Group education and engagement section provides accessible stormwater resources that can be useful to local government staff, homeowners, and the general public. Hyperlinked names take you to each resource.

Factsheets and Pamphlets		
Name	Organization	Description
Rainready Factsheets	Center for Neighborhood Technology	Factsheets that provide information on urban flooding , stormwater management , and other related topics.
Stream Maintenance Brochure	Metropolitan Water Reclamation District	A pamphlet for the general public that describes the importance of regular neighborhood stream maintenance to ensure natural function and prevent flooding .
Understanding Your Sewer	Metropolitan Water Reclamation District	This document explains how a combined sewer system works, and what causes sewer overflows and backups.
World Meteorological Organization Information Pamphlets for Developers and Homeowners	Metropolitan Water Reclamation District	These documents provide general information for developers and homeowners regarding the need for a World Meteorological Organization permit .
World Meteorological Organization Short Summary	Metropolitan Water Reclamation District	This brochure provides general information on flood prevention and stream maintenance .
Adopt-A-Stream	DuPage County	This brochure shows how citizens can get involved in river and stream clean-up in DuPage County .
Best Management Practices	DuPage County	This brochure lists and explains stormwater best management practices (BMPs) to improve runoff quality, including quick fixes for homeowners , construction solutions, and the DuPage County Adopt-A-Stream program.
Emergency Flood Operations	DuPage County	This brochure explains the DuPage County flood control operations, including flood control facilities, flood forecasting, and emergency contact information.
Falling into Winter	DuPage County	This pamphlet lists stormwater best management practices (BMPs) for Fall and Winter.
Springing into Summer	DuPage County	This pamphlet lists stormwater best management practices (BMPs) for Spring and Summer.
Greening Urban Areas	DuPage County	This brochure explains the benefits and provides examples of green infrastructure .
Homeowners Guide to Naturalized Areas	DuPage County	This guide provides information on naturalized areas and how to manage them, as well as common weeds and their management practices.
Citizen Monitoring (IDDE)	DuPage County	This brochure provides information for citizens interested in monitoring illicit discharge in DuPage County .
PCBMP Brochure for Homeowners	DuPage County	This brochure provides post-construction stormwater best management practices (BMPs) for homeowners .
Rain Barrel Installation One-Sheet	DuPage County	This factsheet explains how to install a rain barrel .

TRACKING SUBGROUP

Tracking Subgroup calls: June 28 and July 24

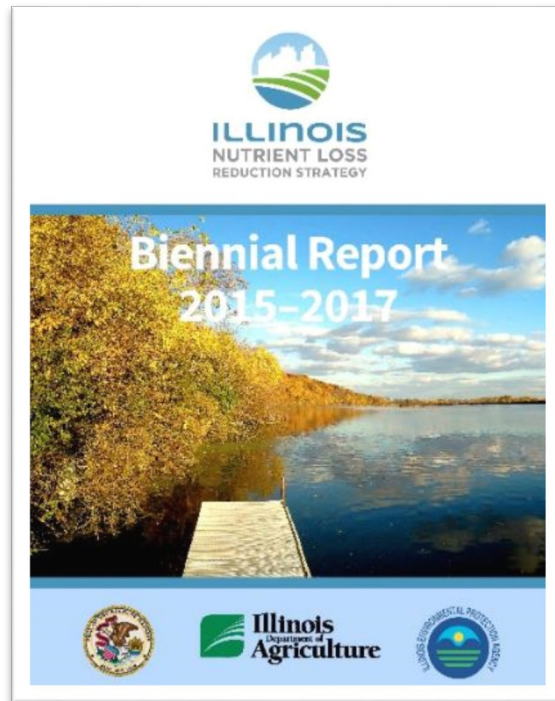
Charge: Exploring ways to track stormwater BMPs for Biennial Report and ways to capture this information.

Reid Christianson presented a spreadsheet used for all nonpoint source implementation (location, BMP, program, installation date). **But, how to collect this information?**

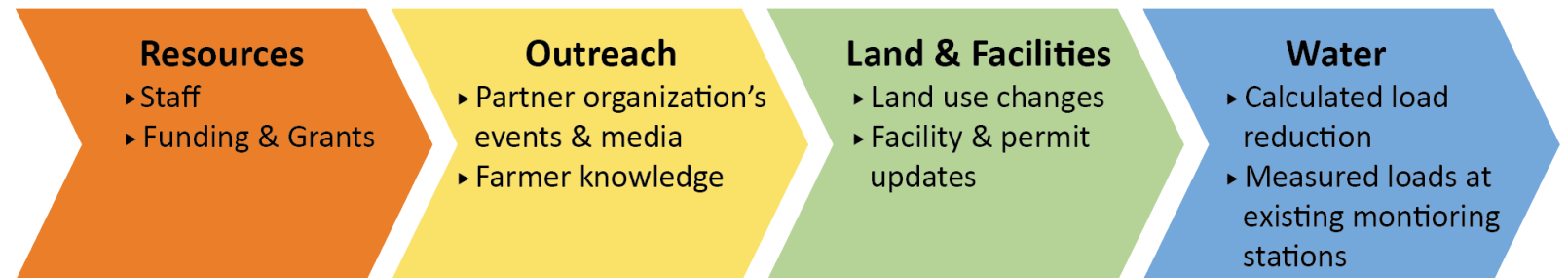
Mary Beth Falsey demonstrated DuPage County's GIS tool for managing stormwater.

Lisa Merrifield exploring ways to mine MS4 reports for data.

NLRS Biennial Report



Documents NLRS activities and progress towards goals.



Aug 2017

NLRS Biennial Report

Spreadsheet: Thank you for those who submitted it for the first half of the year.

Next due date: **DEC 31, 2018**



NLRS Biennial Report

Implementation Data:

IEPA – 319 Grants, IGIG

DuPage County information

MS4 information

Others?

Due date: **DEC 31, 2018**

Land & Facilities

- Land use changes
- Facility & permit updates

NLRS Biennial Report

Partner Project Updates:

- Section 319
- Municipal Separate Storm Sewer System Permit
- **Clean Water Initiative and State Revolving Fund**
- Illinois Green Infrastructure Grants
- Rain Barrel Programs
- Streambank Stabilization and Restoration Programs
- Total Maximum Daily Load
- **Calumet Stormwater Collaborative**



NLRS Biennial Report

New Initiatives?

- University of Illinois Extension MS4 Reports?
- Lawn to Lake Program
- DuPage County Green Infrastructure Grants
- Others?



NLRS Biennial Report

Please submit half page to a page.
Include a webpage link.

Project partner updates:

Due date: DEC 31, 2018

kgardin2@illinois.edu

NLRS Biennial Report

Date	Action
Dec 31, 2018	All spreadsheet, implementation data, and partner project updates due to Extension (kgardin2@illinois.edu)
May 31, 2019	First draft due to PWG
Jun 15, 2019	Comments due to Extension
Jul 1, 2019	Draft due to Steering Committee and Agency Directors
Jul 15, 2019	Comments due to Extension
Aug 14, 2019	Due to printer
Aug 27, 2019	Biennial Report completed



MS4 BMP Analysis

Lisa Merrifield

Community and Economic Development

University of Illinois Extension

217-333-0045 / lmorrisn@illinois.edu

Overview of MS4 permits in Illinois

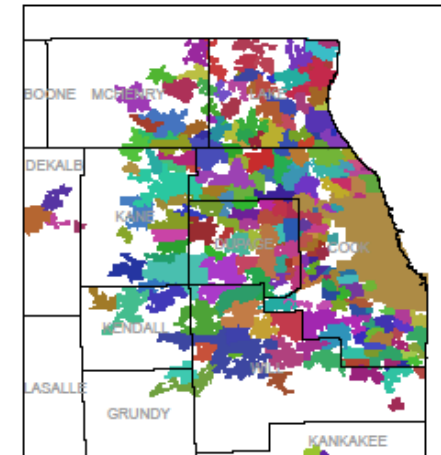
- 379 active permits
- 14 pending (new or under review)
- 278 waivers

Illinois Communities with Active MS4 Status

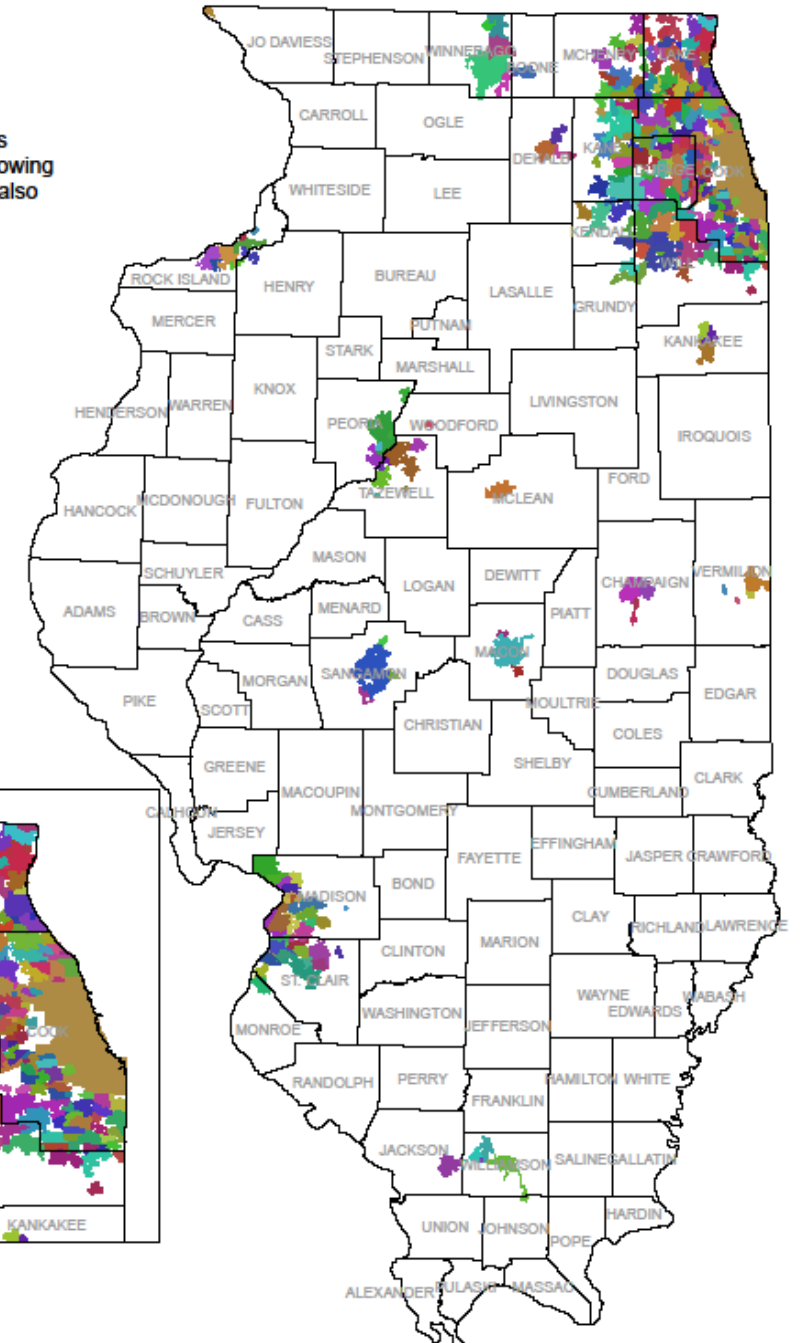
In addition to the communities depicted on the map, the following unincorporated communities also have active MS4 status:

Bristol
Ingleside
Kickapoo
Moro
Mossville
Plato Center
Scott Airforce Base

Chicago Metro Region



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Practices



- Rain Gardens
 - Community
 - Homeowner programs
- Rain barrel programs
- Stormwater utility fees
- Green infrastructure grants
- Bioswales
- Stormwater master plans
- GIS inventories
- Winter management
- River sweeps
- Street sweeps
- Outreach types

Missing Pieces

- Quantitative measurements
 - Area
 - Volume
 - Age
- Non-MS4 communities



Questions? Comments?

Lisa Merrifield

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I ILLINOIS

Extension

COLLEGE OF AGRICULTURAL, CONSUMER
& ENVIRONMENTAL SCIENCES

Nutrient Removal Efficiencies

Reid Christianson, PE, PhD
University of Illinois

Illinois NLRS Workshop
November 13, 2018

MS4 Program Elements

- ❶ **Public Education and Outreach**
Distributing educational materials and performing outreach to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality.
- ❷ **Public Participation/Involvement**
Providing opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a stormwater management panel.
- ❸ **Illicit Discharge Detection and Elimination**
Developing and implementing a plan to detect and eliminate illicit discharges to the storm sewer system (includes developing a system map and informing the community about hazards associated with illegal discharges and improper disposal of waste).
- ❹ **Construction Site Runoff Control**
Developing, implementing, and enforcing an erosion and sediment control program for construction activities that disturb 1 or more acres of land (controls could include silt fences and temporary stormwater detention ponds).
- ❺ **Post-Construction Runoff Control**
Developing, implementing, and enforcing a program to address discharges of post-construction stormwater runoff from new development and redevelopment areas. Applicable controls could include preventative actions such as protecting sensitive areas (e.g., wetlands) or the use of structural BMPs such as grassed swales or porous pavement.
- ❻ **Pollution Prevention/Good Housekeeping**
Developing and implementing a program with the goal of preventing or reducing pollutant runoff from municipal operations. The program must include municipal staff training on pollution prevention measures and techniques (e.g., regular street sweeping, reduction in the use of pesticides or street salt, or frequent catch-basin cleaning).

New Development vs. Retrofits

- New Development
 - Post-Construction Runoff Control
 - Minimum Control Measure
 - For simplicity, say this is net neutral
- Existing Development
 - Only option is to “retrofit”, or put stormwater control where there was none before



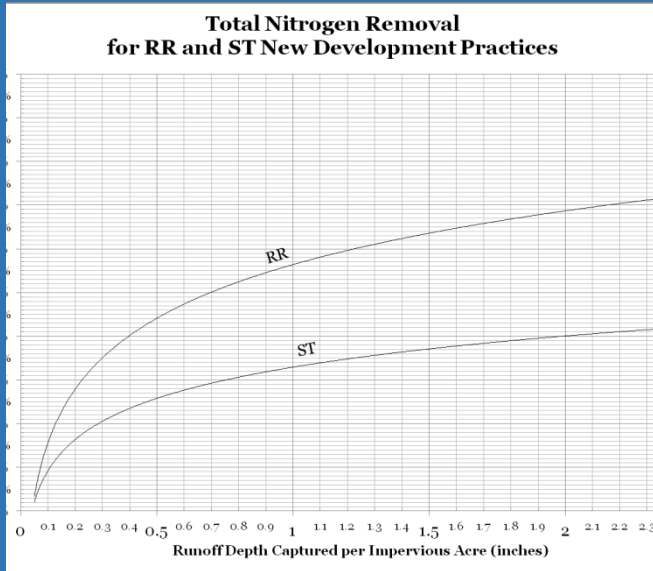
Suggested Minimum Measures

- Location
- Practice type
- Land area treated by BMP
 - Acres treated
- When the practice was installed
 - And the program for funding
 - 319
 - IGIG
 - Private
- Expected life of the practice
- Funding, if applicable



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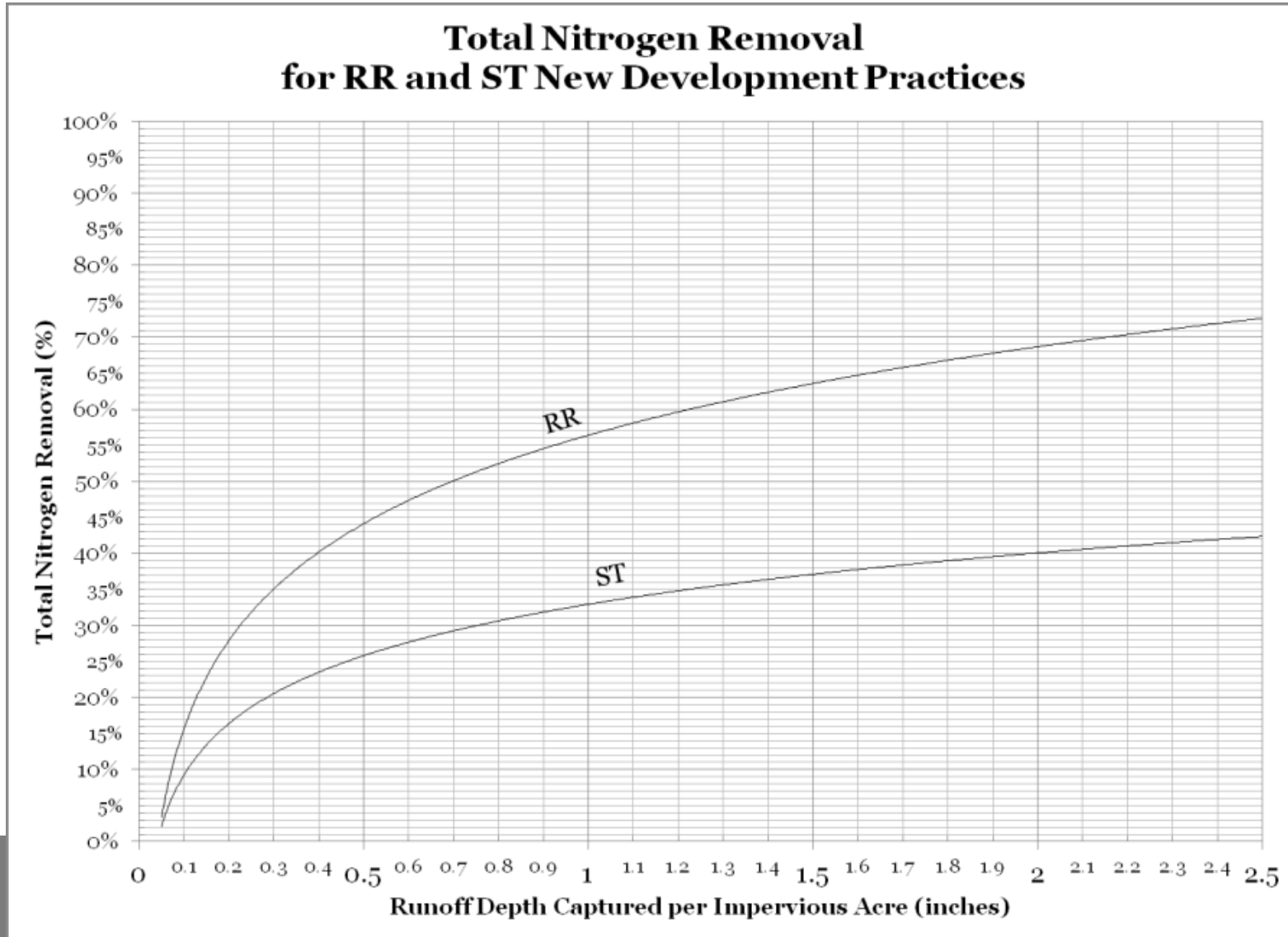
Suggested Minimum Measures

1. Base performance on specific design criteria (like Chesapeake Bay)
 1. How much water the facility treats
 2. How large the drainage area is
 3. The “type” of practice
2. Use general efficiencies
 1. Need a recognized source/list
 1. Model, report, etc.
 2. Easily implemented
 3. Easily updated

Treatment Volume Categories used in Chesapeake Bay

Runoff Reduction (RR) Practices		Stormwater Treatment (ST) Practices
Landscape Restoration/Reforestation	Expanded Tree Pits	Constructed Wetlands
Riparian Buffer Restoration	Grass Channels	Filtering Practices
Rooftop Disconnection	Green Roof	Proprietary Practices
Sheetflow to Filter/Open Space	Green Streets	Wet Ponds
Non-Structural BMPs, PA 2006 BMP Manual, Chapter 5	Infiltration	Wet Swale
All ESD practices in MD 2007	Permeable Pavement	
Bioretention or Rain Garden	Rainwater Harvesting	
Dry Swale		

Treatment Curves from CB



Example BMP Efficiencies from STEPL

BMP & Efficiency	N	P
Bioretention facility	63%	80%
Dry Detention	30%	26%
Extended Wet Detention	55%	69%
Infiltration Basin	60%	65%
Infiltration Trench	55%	60%
LID/Vegetated Swale	8%	18%
LID/Wet Swale	40%	20%
Porous Pavement	85%	65%
Sand Filter/Infiltration Basin	35%	50%
Sand Filters	-	38%
Settling Basin	-	52%
Vegetated Filter Strips	40%	45%
Weekly Street Sweeping	-	6%
Wet Pond	35%	45%
Wetland Detention	20%	44%

Runoff Reduction	Stormwater Treatment
Landscape Restoration/Reforestation	Constructed Wetlands
Riparian Buffer Restoration	Filtering Practices
Rooftop Disconnection	Wet Ponds
Sheetflow to Filter/Open Space	Wet Swale
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Green Streets	
Infiltration	
Permeable Pavement	
Rainwater Harvesting	

STEPI BMP
Bioretention facility
Dry Detention
Extended Wet Detention
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LID/Vegetated Swale
LID/Wet Swale
Porous Pavement
Sand Filter/Infiltration Basin
Sand Filters
Settling Basin
Vegetated Filter Strips
Weekly Street Sweeping
Wet Pond
Wetland Detention

QUESTIONS?

Future topics and Next meetings

How to reach MS4s?

IAFSM

Is a network needed?

Peer to peer mentoring network

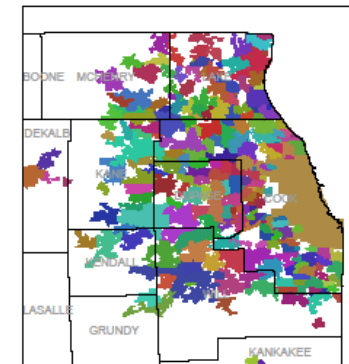
<https://www.glc.org/work/champions/network>

Illinois Communities with Active MS4 Status

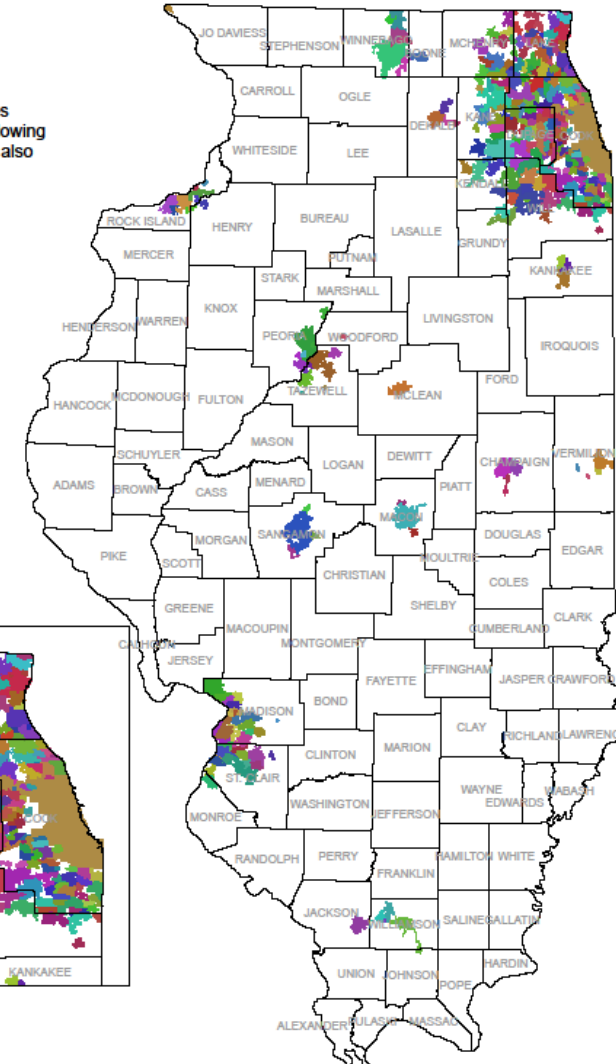
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Extension



Future topics and Next meetings

Green Infrastructure Code Audit

<http://www.seagrant.wisc.edu/Home/Topics/CoastalCommunities/Details.aspx?PostID=2462>

Golf course as stormwater facility

<http://www.dupageforest.org/the-preserve-at-oak-meadows>

Crowd source GI collection app

<http://nemo.uconn.edu/tools/lid/>

Climate change language for MS4 Outreach

<https://coast.noaa.gov/digitalcoast/tools/llv.html>



Future topics and Next meetings

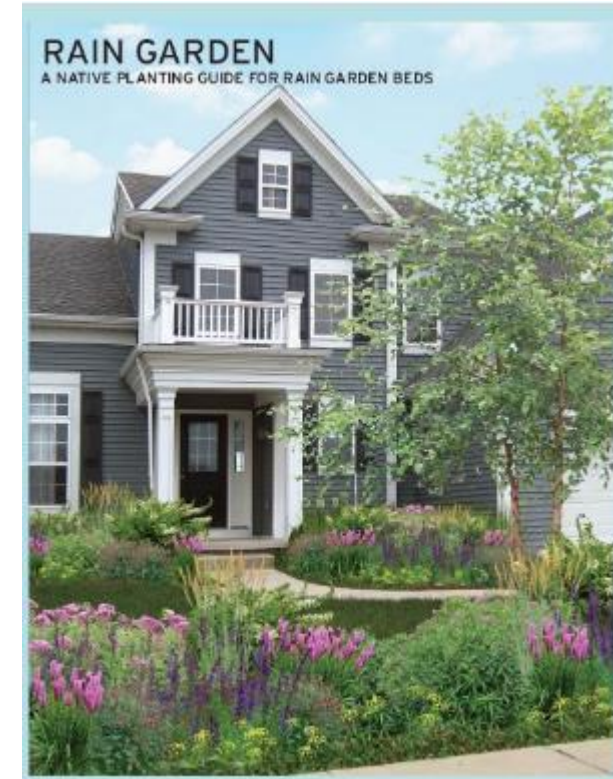
Given our geographic span, calls seem to work.

Face to face location?

CMAP

Chicago Botanical Garden

**Next year's NLRs Conference:
Nov 5-6, 2019, Springfield**



Lunch

**Meet back in
Monsanto Room (lower level)
for 1:30 pm session**