

Urban Stormwater Working Group

Wednesday, April 26, 2023

Starts at 1:30 PM



Photo by Layne Knoche



ILLINOIS
NUTRIENT LOSS
REDUCTION STRATEGY

Welcome!

Please Type your name and affiliation in the chat box.



ILLINOIS
NUTRIENT LOSS
REDUCTION STRATEGY

Agenda

1:30 – 1:35 (5 minutes)	Welcome <i>Eliana Brown, University of Illinois Extension</i>
1:35 – 1:50 (15 minutes)	Illinois Green Infrastructure Inventory Updates <i>Lisa Merrifield, University of Illinois Extension</i> 10-minute presentation followed by a 5-minute Q&A
1:50 – 2:05 (15 minutes)	Illinois Groundwork Website <i>Margaret Schneemann, Illinois-Indiana Sea Grant</i> 10-minute presentation followed by a 5-minute Q&A
2:05-2:15 (10 minutes)	2023 NLRS Biennial Report Updates <i>Eliana Brown</i>
2:15-2:25 (10 minutes)	Round Robin Member Updates (time permitting) Members provide a 1- to 3-minute update on current programs or projects
2:25 – 2:30 (5 minutes)	Next steps <i>Eliana Brown</i>



GREEN INFRASTRUCTURE INVENTORY

Funding from Illinois EPA

Project Partners

- Eliana Brown, Water Quality Specialist, University of Illinois Extension
- Reid Christenson, Research Assistant Professor, Crop Sciences, University of Illinois at Urbana-Champaign (former)
- Mary Beth Falsey, Water Quality Supervisor, DuPage County Stormwater
- Justin Keller, Project Manager, Metropolitan Planning Council
- Jong Sung Lee, Deputy Associate Director, National Center for Supercomputing Applications, University of Illinois at Urbana-Champaign
- Gabe Harper-Hagen, Extension Associate, University of Illinois Extension
- Laura Kammin, Education Program Specialist, National Great Rivers Research and Education Center
- Lisa Merrifield, Extension Specialist, University of Illinois Extension
- Piper Siblik, Extension Associate, University of Illinois Extension
- Dick Warner, Senior Scientist for Sustainability, National Great Rivers Research and Education Center



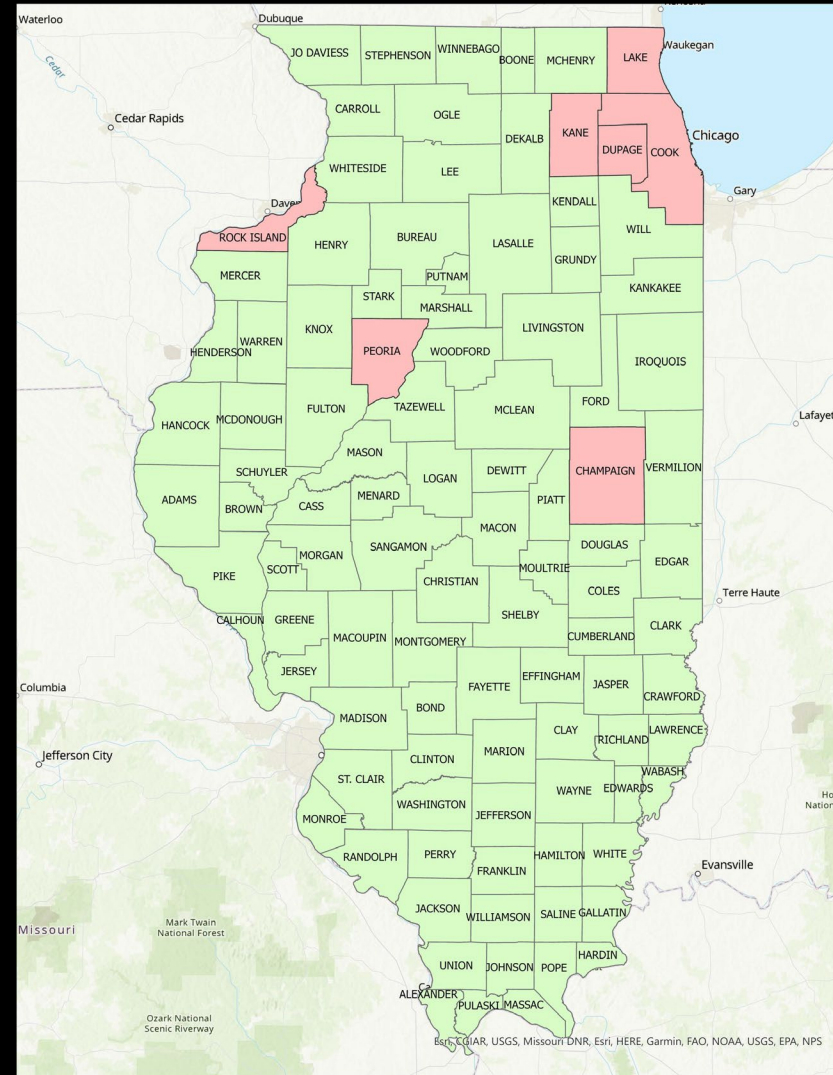
Illinois Extension
UNIVERSITY OF ILLINOIS-URBANA-CHAMPAIGN

Purpose of the GI Inventory

- Measure and evaluate stormwater practices across Illinois
 - Can be compared to existing data on nutrient levels in surrounding water ways
 - Helps to understand long term impacts of GI on water quality and flooding
 - Allows communities to make informed decisions to reach goals
 - Statewide data source of stormwater BMPs that can be used by researchers, students, and planning commissions
 - Help communities choose the best solution for their stormwater management challenges
-

Current data

- 2000 records collected
 - Calumet Stormwater Collaborative
 - DuPage County
 - University of Illinois
 - MS4 Reports submitted to IEPA
- ~750 BMPs without enough information to map
- Likely an undercount



Data Collected for Sites

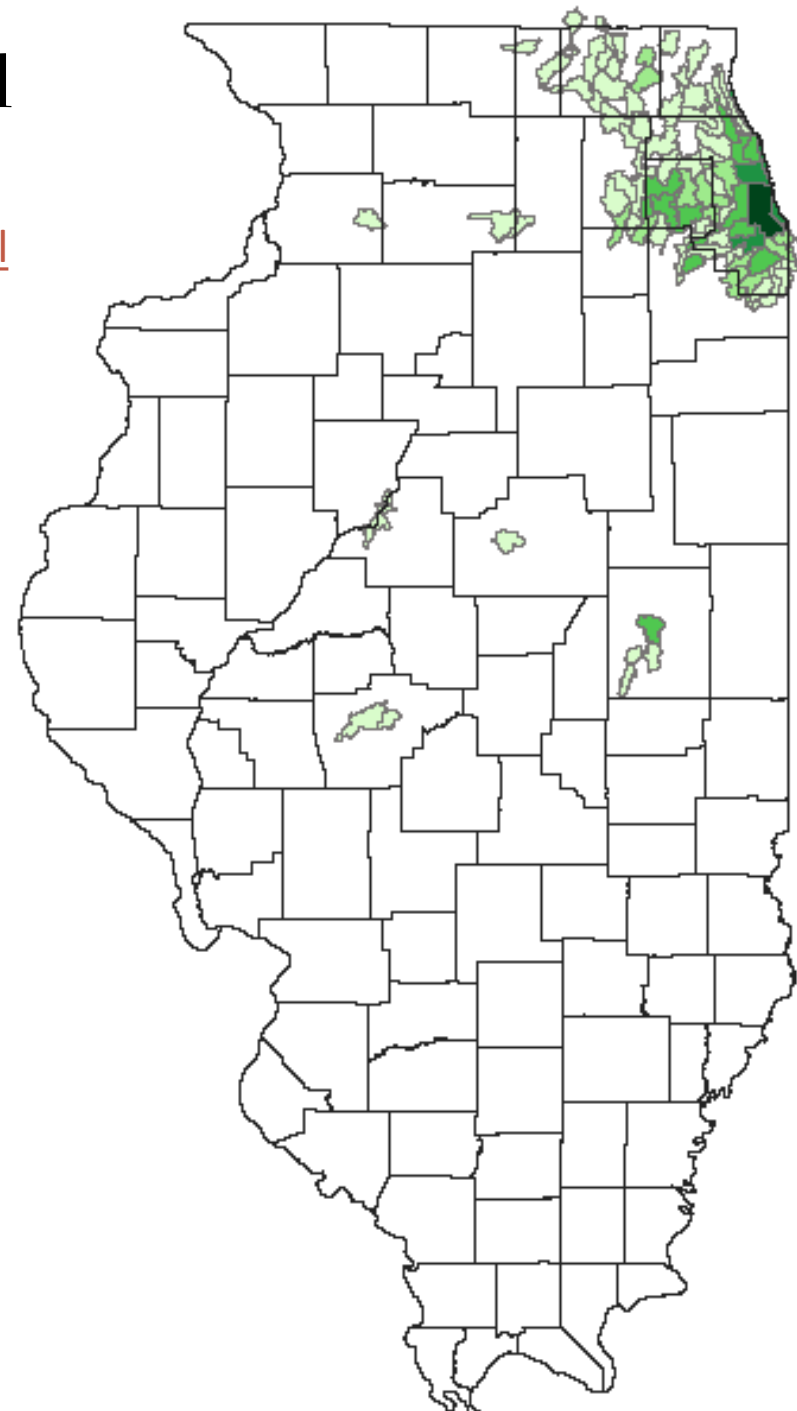
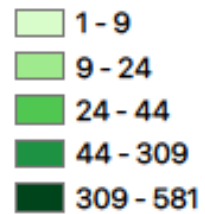
- For all records
 - BMP Name
 - HUC 8 and 12
 - Location including Lat/Long
 - Category and Type of practice
 - Where available
 - Funding source
 - Size
 - Installation date
 - Cost
 - Drainage area
 - Gallons treated
 - New development or retrofit
 - Under construction or completed
-

The Great Lakes to Gulf Virtual Observatory

<https://greatlakestogulf.org/explore/all#/explore/all>

Legend

GI Locations Count by HUC 12



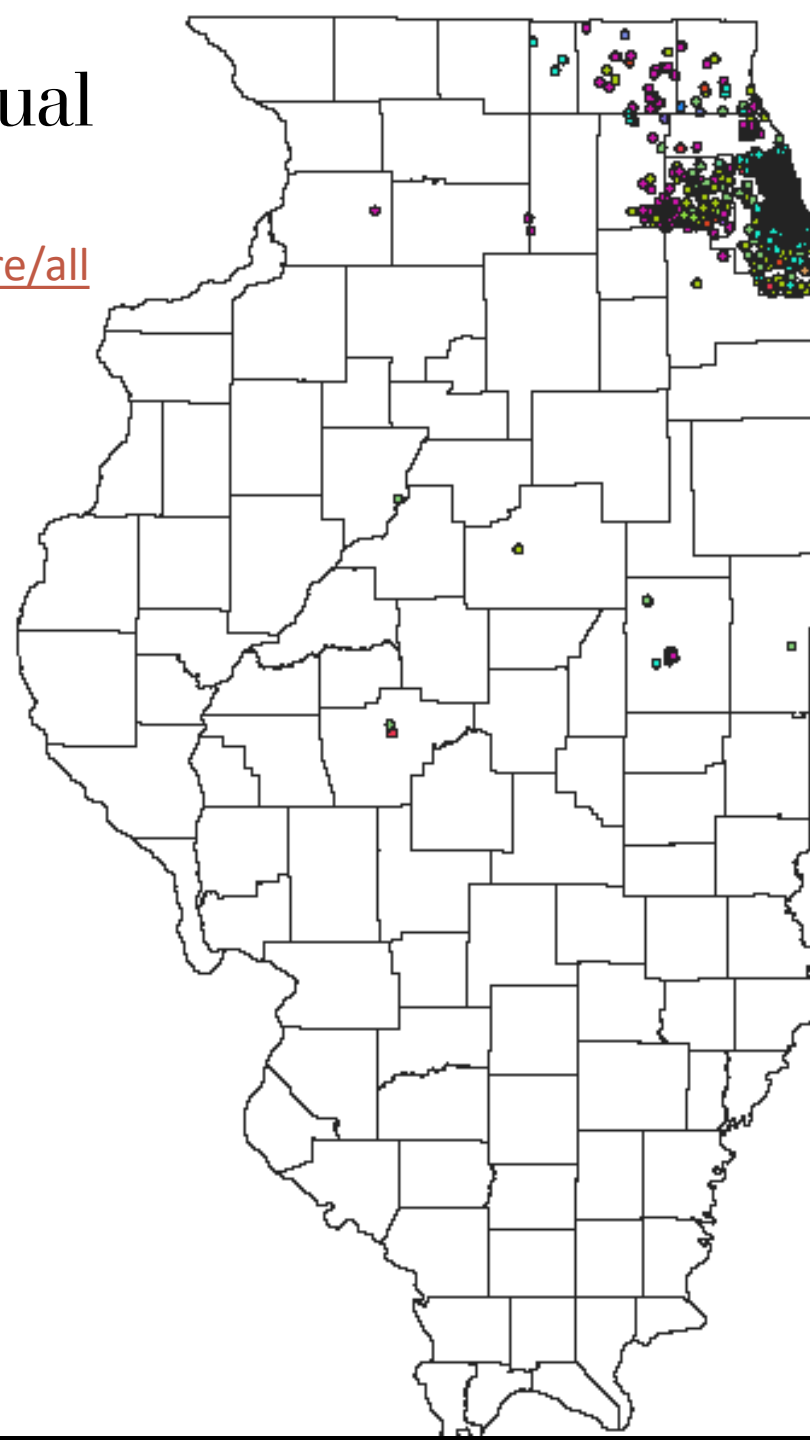
The Great Lakes to Gulf Virtual Observatory

<https://greatlakestogulf.org/explore/all#/explore/all>

Legend

BMP Categories

- Bioinfiltration
- ◻ Bioswale
- Conveyance
- ◻ Detention
- Green Roof
- Infiltration
- ◻ Land Use
- Manufactured
- ◻ Mechanical Separator
- Permeable pavement
- Permeable Pavement
- ◻ restoration projects
- Shoreline Enhancement
- ◻ Storage
- Streambank stabilization
- ◻ Underground Detention System
- ◻ Unknown
- Void Volume



The Great Lakes to Gulf Virtual Observatory

<https://greatlakestogulf.org/explore/all#/explore/all>

Click on “Explore Layers”
Then Green Infrastructure

Next Steps

- Great Lakes to Gulf will maintain the data
- Illinois EPA is considering options for updates



Illinois Extension

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

ILLINOIS GROUNDWORK WEBSITE
ILLINOISGROUNDWORK.ORG/

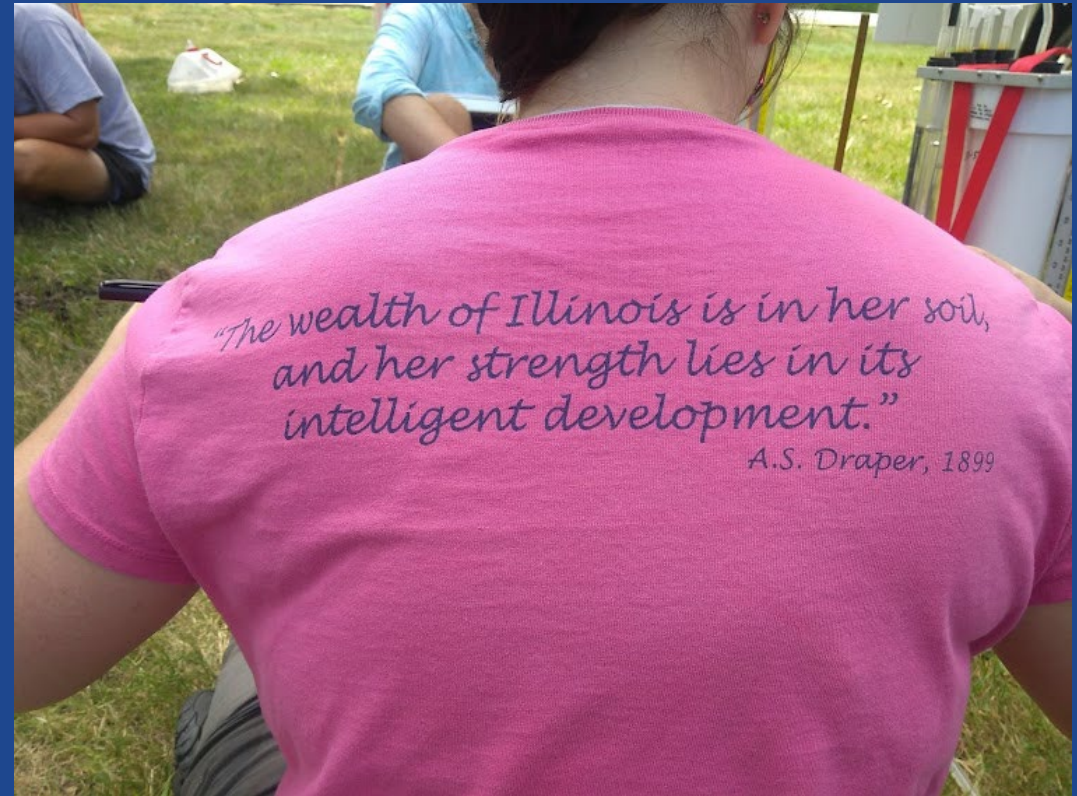
URBAN STORMWATER WORKING
GROUP (USWG)
APRIL 26, 2023



Margaret Schneemann, Illinois Indiana Sea Grant

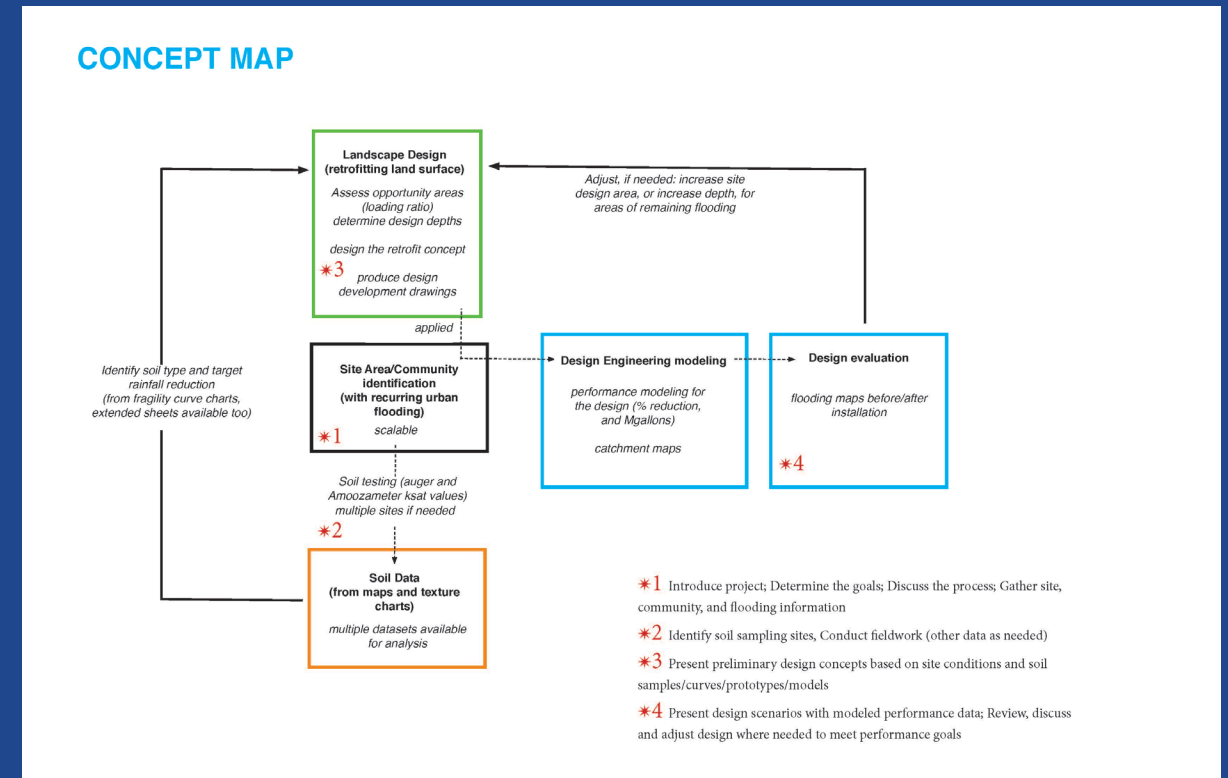
Background

- Calumet Stormwater Collaborative, *founded 2014*
- Hydrogeologic Soil Research for Green Stormwater Infrastructure Planning and Design Replicable Research from the Chicago-Calumet Region (Illinois-Indiana Sea Grant Program (NOAA) *2018-2019*)



Background

- Calumet Soils Green Infrastructure Design Toolkit Working Group 2019 – 2020
- Red Oak Rain Garden, 2019 renovation
- Rainscaping – Illinois 2021
- University of Illinois Extension Collaboration 2021- 2022



Theory of Change

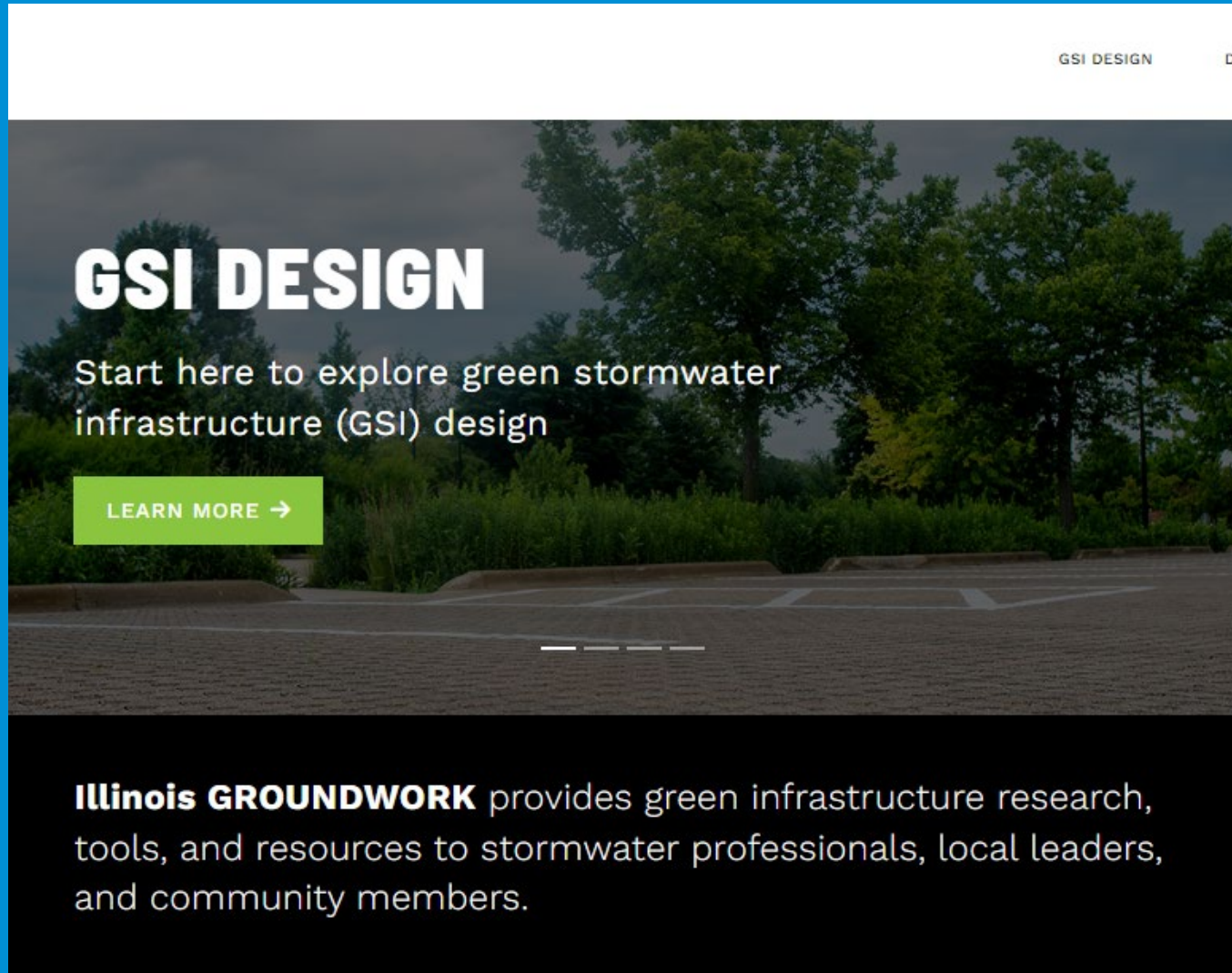
The purpose of Illinois Groundwork is to... provide green infrastructure research, tools, and resources to stormwater professionals, local leaders, and community members

So that they understand... GSI design & research /tools/resources

And will be able to... integrate research/tools/resources into GSI design projects

Resulting ultimately in... reduced flooding and improved water quality

illinoisgroundwork.org/



The screenshot shows a website page with a white header containing the text "GSI DESIGN" and "DE". Below the header is a large image of a paved area with greenery and trees. Overlaid on the image is the text "GSI DESIGN" in large white letters, followed by "Start here to explore green stormwater infrastructure (GSI) design" in smaller white text. A green button with the text "LEARN MORE →" is positioned below the text. At the bottom of the page, a black banner contains the text "Illinois GROUNDWORK provides green infrastructure research, tools, and resources to stormwater professionals, local leaders, and community members."

GSI DESIGN DE

GSI DESIGN

Start here to explore green stormwater infrastructure (GSI) design

LEARN MORE →

Illinois GROUNDWORK provides green infrastructure research, tools, and resources to stormwater professionals, local leaders, and community members.

GSI Design

GSI DESIGN

DESIGN PROCESS

What is GSI?

What is GSI Design?

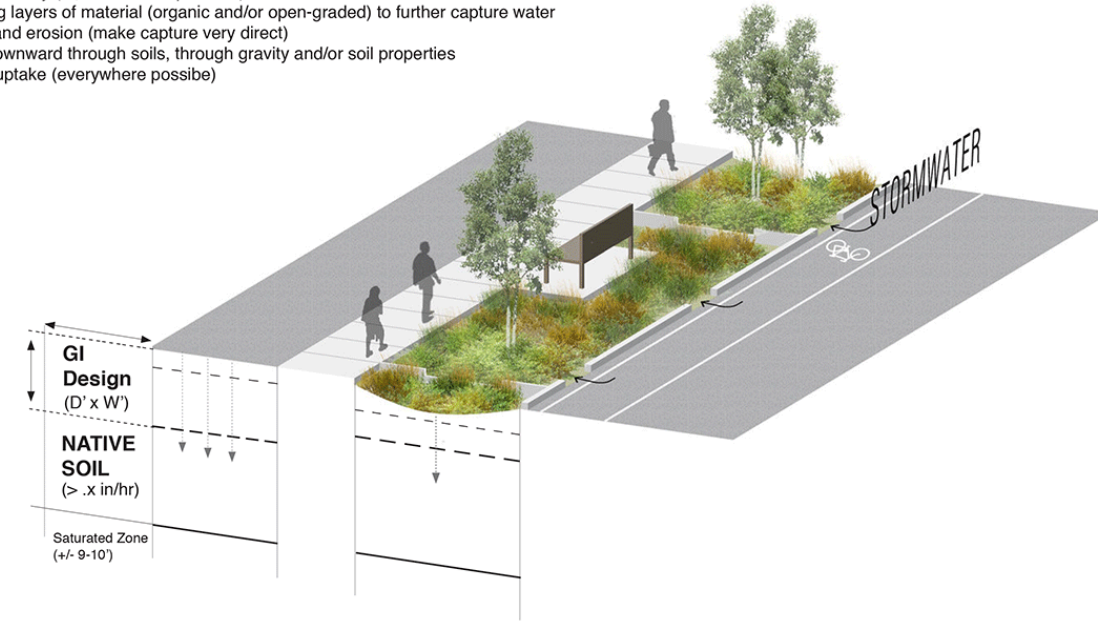
Why are Soils Important in GSI Design?

Who Might be Involved in GSI design?

Green Stormwater Infrastructure Design, based on underlying soils

key principles:

- intercept water directly (or, as close as possible)
- create underlying layers of material (organic and/or open-graded) to further capture water
- reduce energy and erosion (make capture very direct)
- convey water downward through soils, through gravity and/or soil properties
- use planting to uptake (everywhere possible)



GI Surfaces
(e.g. parking lots)

- designed to handle water directly through the surface
- optional to receive from adjacent surfaces
- lower loading ratio

GI Features
(e.g. bioswales)

- designed to receive water from adjacent surfaces
- higher loading ratio

Illinois-Indiana Sea Grant Program (NOAA) 2018-2019 #NA18OAR4170082
Hydrogeologic soil research for green stormwater infrastructure planning and design: new methods for adapting urban coastal communities
(Drawn by M.P. McGuire)

Design Process

DESIGN PROCESS	RESOURCES
Introduction	
Engagement	
Native Soils	
Design	
Implementation	
GSI Design in Action: The Calumet Region	

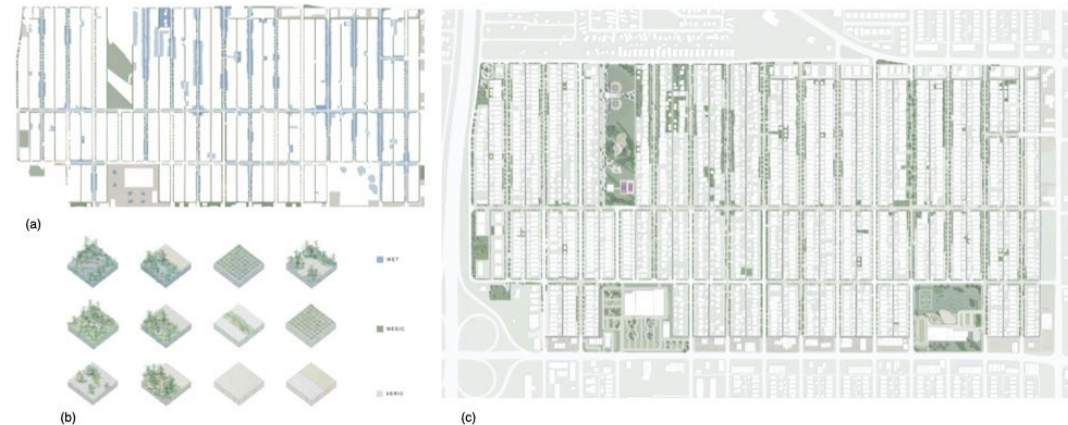
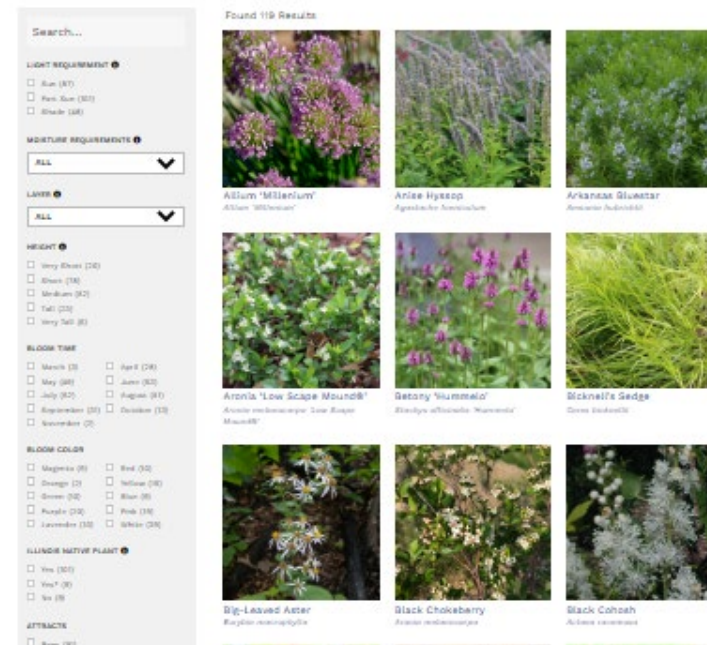
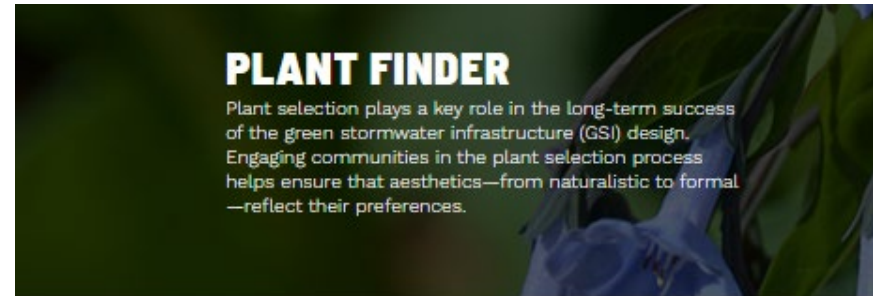
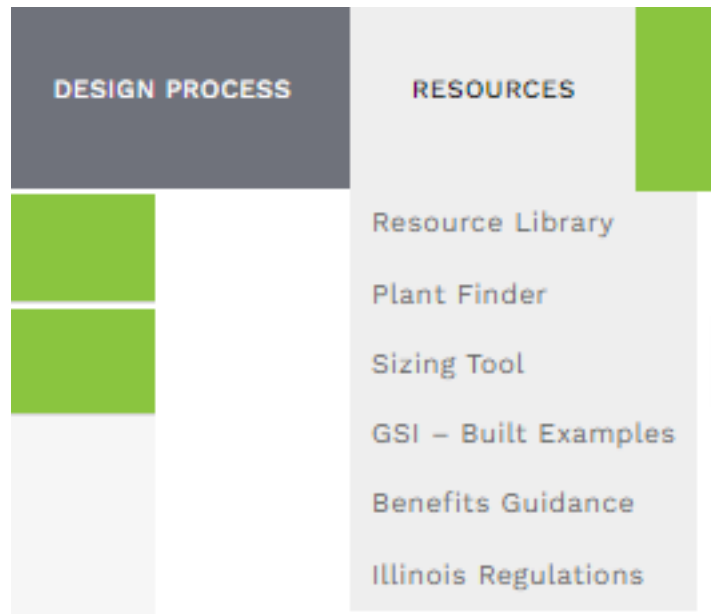


Figure 9: Calumet City, IL, (a) studies of wetness and flooding variations throughout neighborhood; (b) variety of GSI strategies corresponding to alternative pavement needs and planting opportunities; and (c) network of GSI interventions in rights-of-way, streets, and school grounds, playgrounds, and shopping area.

Resources



Next Steps

- Continue incorporating feedback
- Adding sections
- Promotion
- Program and Projects

2023 NLRS Biennial Report Updates

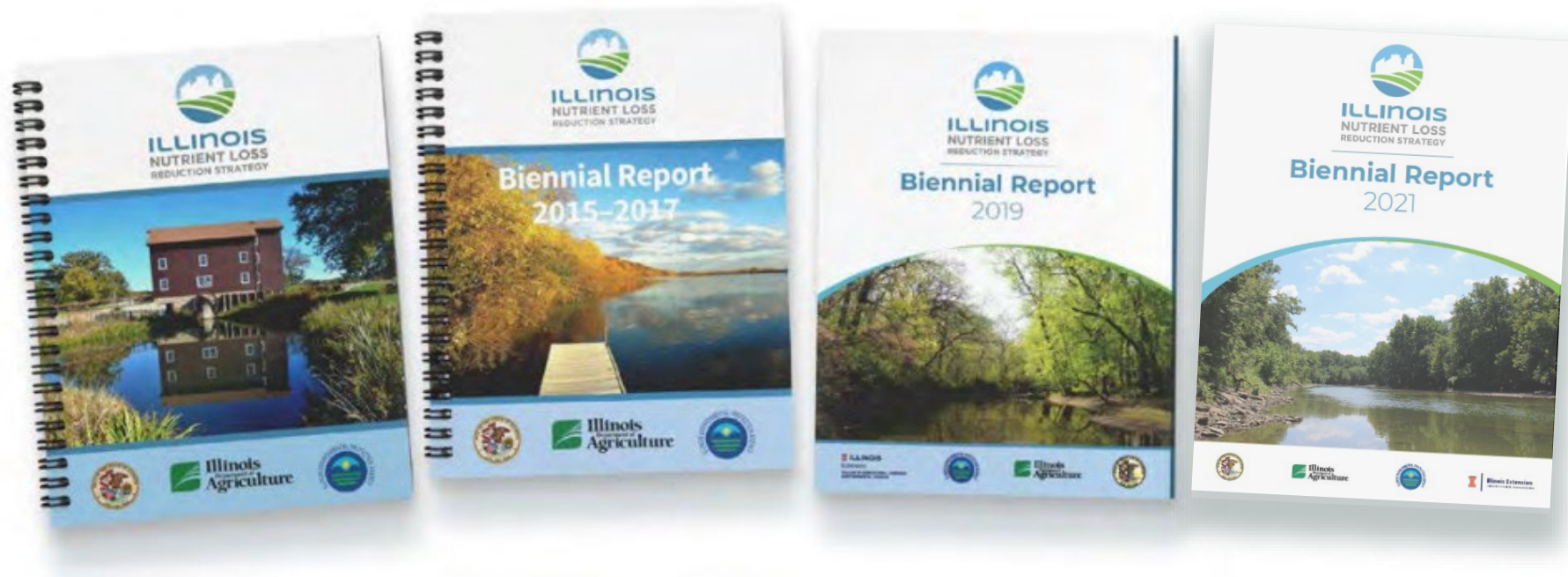
Eliana Brown, University of Illinois Extension



ILLINOIS
NUTRIENT LOSS
REDUCTION STRATEGY

Biennial Reports

Every two years a Biennial Report will be written to document progress implementing the NLRs.



ILLINOIS
NUTRIENT LOSS
REDUCTION STRATEGY

Chapter 6: Stormwater Sector

Implementation Report

Data sources: Partner spreadsheets, MS4 reports, MWRDGC, Illinois EPA 319

Resource Measures: Staff Resources and Funding

Outreach Measures: Education and Outreach

Land and Facilities Measures:

- Illinois Environmental Protection Agency Section 319 Grant Program
- Green Infrastructure Grant Opportunities (GIGO)
- MS4 Report Analysis
- Green Infrastructure Inventory
- MWRDGC Green Infrastructure Program



Chapter 6: Stormwater Sector (con't)

Current Programs and Projects Supporting Nutrient Loss Reduction Goals

Program Project names and 2-3 sentence summaries. 1-3 pages for each partner in the Partner Updates Appendix.

- Calumet Stormwater Collaborative
- CMAP Indian Creek/Fox River
- CMAP Technical Assistance Program
- Conservation@Home
- DuPage County Water Quality Improvement Program
- East Branch DuPage River Watershed-Based Plan
- Illinois Department of Transportation Stormwater Programs
- Kinkaid Creek Watershed-based Plan
- Lawn to Lake
- National Green Infrastructure Certification Program
- Rainscaping Education Program
- Red Oak Rain Garden
- Western Crab Orchard Creek Watershed-based Plan



Draft Review

Thank you for submitting the requested information for the Biennial Report. Below are links to the chapter drafts.

INSTRUCTIONS: We ask that you review the areas that are applicable to your sector -- especially the sections that you contributed.

You'll find two versions: word doc and pdf. You may use either one. For the word doc, please track your changes so we can see them. Otherwise, we may not be able to capture your suggestions. A lower tech alternative is to print out the pdf, make handwritten comments, and scan it. You'll have 2 weeks for review. RETURN IT BY JUNE 8.

Chapters 1 and 2 (Executive Summary and Introduction) will be written post-feedback

Chapter 3: Science Assessment Update - [Here](#).

Chapter 4: Agricultural Sector - [Here](#).

Chapter 5: Point Source Sector - [Here](#).

Chapter 6: Stormwater Sector will be sent to USWG in July due so MS4 report analysis can be included

Chapter 7: Working Group Accomplishments - [Here](#).

Chapter 8: Adaptive Management - [Here](#).



Draft Review

Thank you for submitting the requested information for the Biennial Report. Below are links to the chapter drafts.

INSTRUCTIONS: We ask that you review the areas that are applicable to your sector -- especially the sections that you contributed.

You'll find two versions: word doc and pdf. You may use either one. For the word doc, please track your changes so we can see them. Otherwise, we may not be able to capture your suggestions. A lower tech alternative is to print out the pdf, make handwritten comments, and scan it. You'll have 2 weeks for review. RETURN IT BY JUNE 8.

Chapters 1 and 2 (Executive Summary and Introduction) will be written post-feedback

Chapter 3: Science Assessment Update - [Here](#).

Chapter 4: Agricultural Sector - [Here](#).

Chapter 5: Point Source Sector - [Here](#).

Chapter 6: Stormwater Sector will be sent to USWG in July due so MS4 report analysis can be included

Chapter 7: Working Group Accomplishments - [Here](#).

Chapter 8: Adaptive Management - [Here](#).



Timeline

Draft Reviews	Due Date
CH 3, 4, 5, 7, 8 first draft due to PWG	June 8
Comments due back to Extension	June 21
Incorporate edits	July 6
CH 6 first draft due to USWG	July 13
Comments due back to Extension	July 19
Incorporate edits	July 21
CH 1 and 2 first drafts to Steering	July 24
Final edits before design	August 7
Design	
Text and photos (and alt-text) to graphic designer	July 6 – Aug. 7
Design work	Sept. 25
Final Stretch	
Notify directors of incoming draft report	Oct. 2
Notify print shop of incoming printing job	Oct. 12
Copy editing and final changes	Oct. 19
Hand to Directors	Oct. 19
Directors hand in review	Oct. 27
Online version with Appendices completed	Nov. 20
Due to printer	Dec. 1
Print version copies available	Dec. 6



Timeline

Draft Reviews	Due Date
CH 3, 4, 5, 7, 8 first draft due to PWG	June 8
Comments due back to Extension	June 21
Incorporate edits	July 6
CH 6 first draft due to USWG	July 13
Comments due back to Extension	July 19
Incorporate edits	July 21
CH 1 and 2 first drafts to Steering	July 24
Final edits before design	August 7
Design	
Text and photos (and alt-text) to graphic designer	July 6 – Aug. 7
Design work	Sept. 25
Final Stretch	
Notify directors of incoming draft report	Oct. 2
Notify print shop of incoming printing job	Oct. 12
Copy editing and final changes	Oct. 19
Hand to Directors	Oct. 19
Directors hand in review	Oct. 27
Online version with Appendices completed	Nov. 20
Due to printer	Dec. 1
Print version copies available	Dec. 6



Call for photos for the Biennial Report

We need your help! Partner photos make the Biennial Reports more meaningful.



Photos are due **FRI, JUNE 16, 2023**

Send to lknoch2@illinois.edu



ILLINOIS
NUTRIENT LOSS
REDUCTION STRATEGY

Round Robin Member Updates (time permitting)

Members provide a 1- to 3-minute update on current programs or projects



Next Steps

Eliana Brown, University of Illinois Extension



ILLINOIS
NUTRIENT LOSS
REDUCTION STRATEGY

Thank you



ILLINOIS
NUTRIENT LOSS
REDUCTION STRATEGY