

GREEN INFRASTRUCTURE

C. Eliana Brown

Learning Objectives

The problem Understand stormwater runoff issues in Illinois: flooding and water quality.

The solutions Become familiar with terms “grey” and “green” stormwater infrastructure and understand scale.

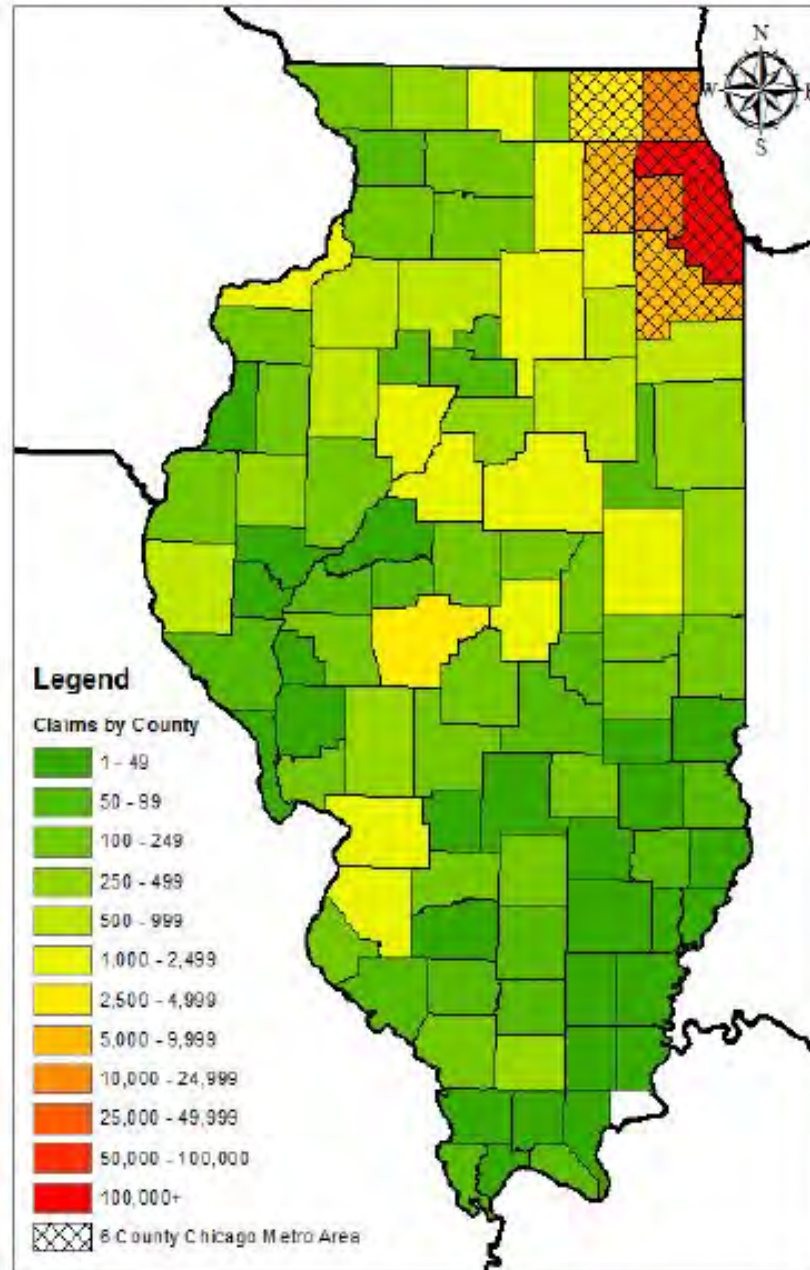
What are we doing? Learn about the Illinois NLRs Urban Stormwater Working Group: GI inventory and opportunities to get involved in this state-wide effort. Resources for Outreach.



The Problem



The Problem

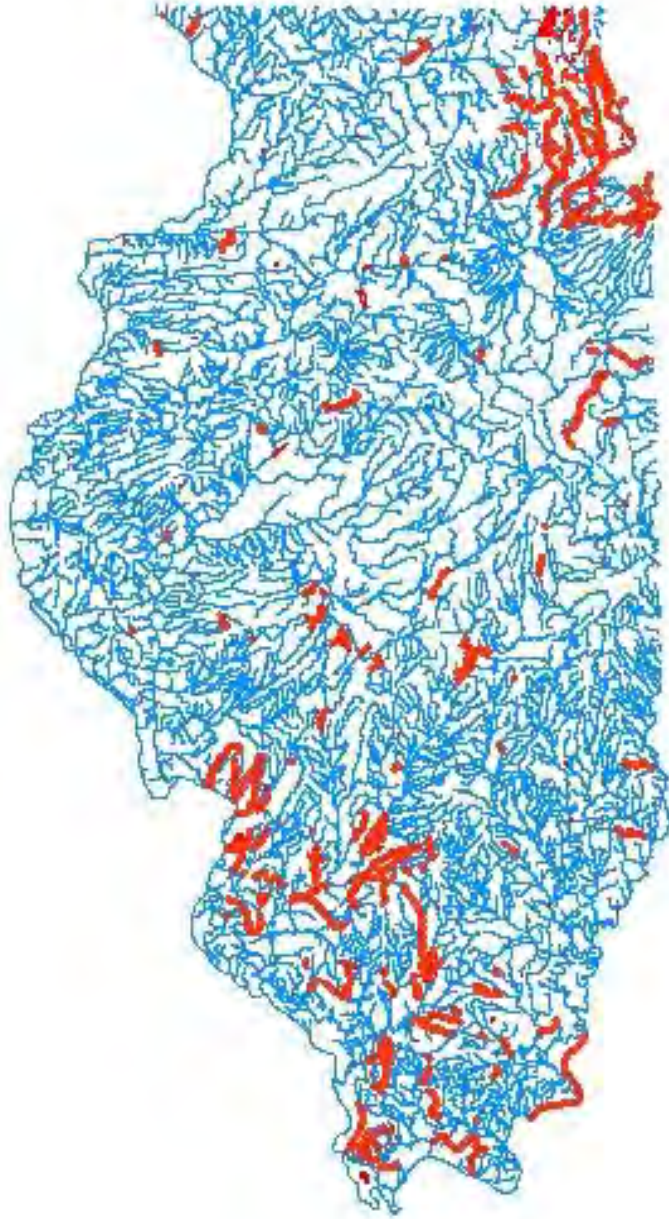


Flooding happens all over the state

(Report for Illinois Flooding Awareness Act, IDNR 2015)

A photograph of a riverbank showing significant erosion. The dark, exposed soil reveals a complex network of tree roots. A large, hollowed-out tree trunk stands prominently on the right. The bank is littered with dry leaves, twigs, and several pieces of white plastic trash. The foreground features green ferns and more debris. The water in the river is dark and still, reflecting the scene.

The Problem



**1,262 miles of streams
40,037 acres of lakes
*impaired due to
stormwater runoff***

*(2014 Illinois Integrated Water Quality Report,
Illinois EPA)*



The Solutions

Image: undermontreal.com

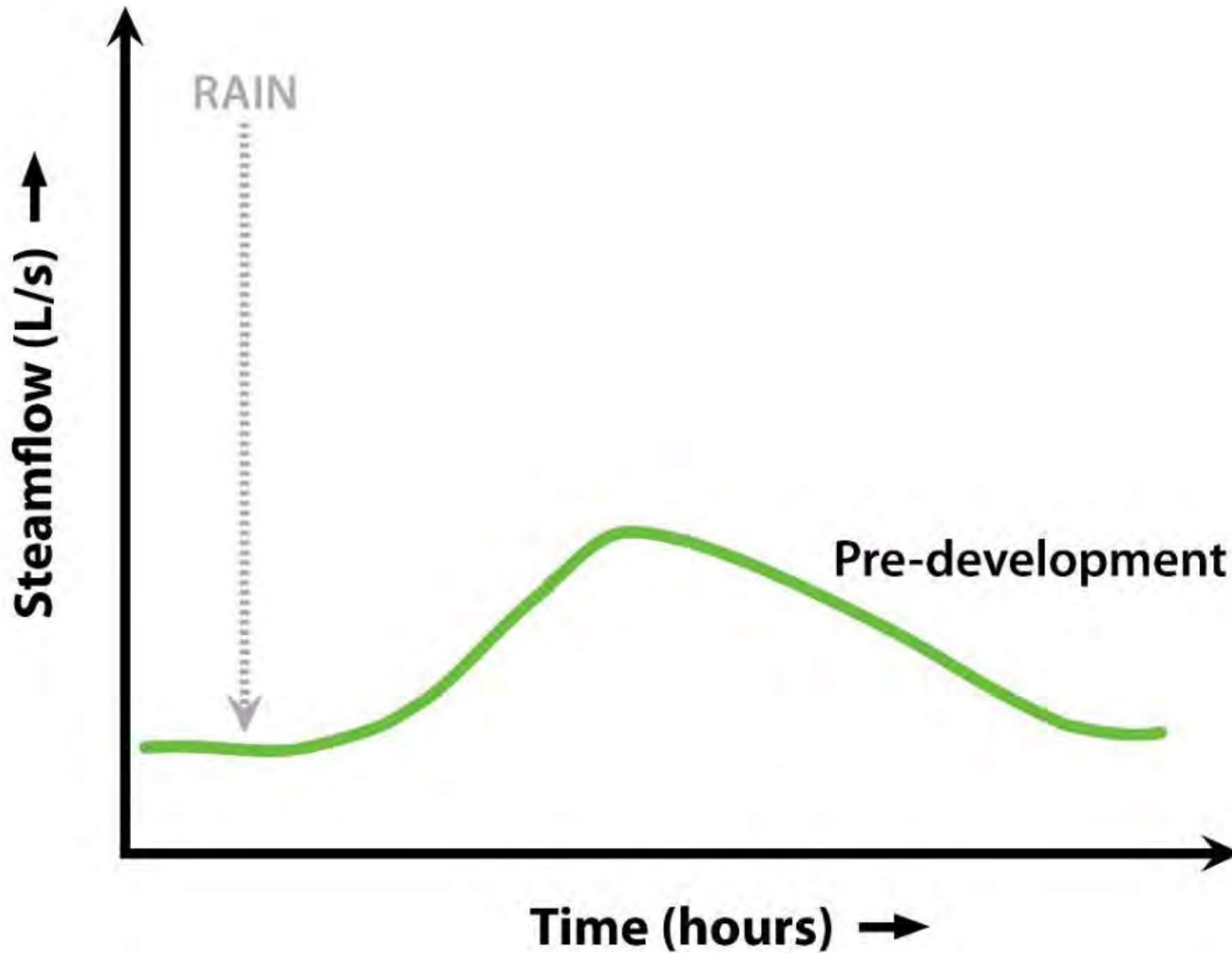
Grey Infrastructure

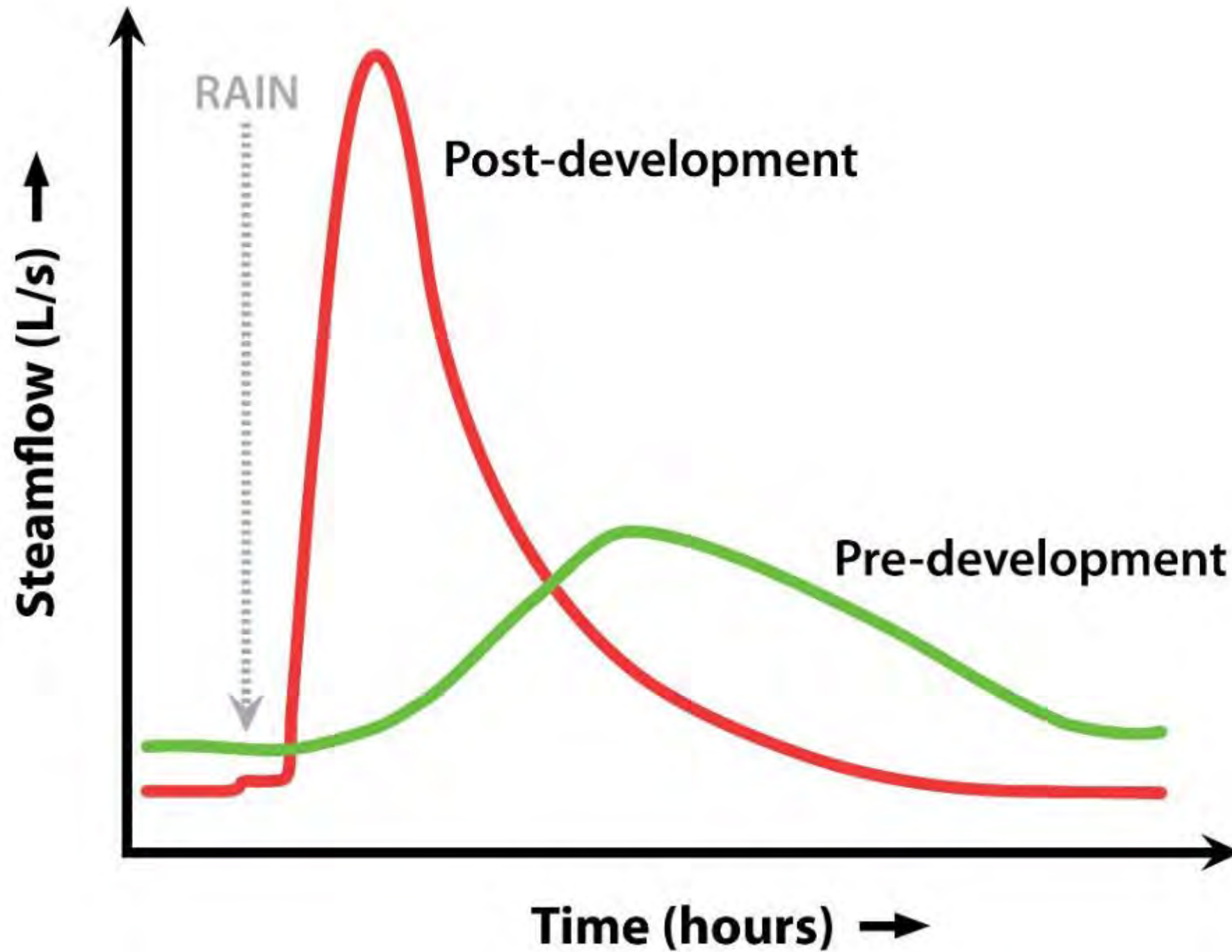
Curbs and gutters deliver water away from the road ***swiftly***.

Inlets collect stormwater and direct it through pipes to the receiving stream.

















Chronicle / Mike Kepka



Green (Stormwater) Infrastructure





BIORETENSION CELLS: RAIN GARDENS + BIOSWALES

BIOSWALE





MORE EXAMPLES





PERMEABLE PAVEMENT



PERMEABLE PAVEMENT





GREEN AND BLUE ROOFS



GREEN AND BLUE ROOFS



The image is a composite of two photographs. The top photograph shows a close-up of a grey rain barrel with a silver metal downspout attached to its top. The barrel is positioned against a house with grey horizontal siding. The bottom photograph shows a larger, light grey cistern installed next to a house. The cistern is elevated on a wooden base and has a white faucet on its side. A grey downspout runs vertically along the side of the house, which has grey siding on the upper portion and red brick on the lower portion. A window with white shutters is visible on the brick section. A black flexible hose is connected to the bottom of the cistern and runs along the ground. To the left of the cistern is a green recycling bin with the number '10146 24375' printed on it. A concrete sidewalk runs along the left side of the scene, and the ground is covered with dark brown mulch and some small green plants.

RAIN BARRELS + CISTERNS

A close-up photograph of green evergreen branches, likely a cedar or juniper, covered in numerous small, clear water droplets. The background is dark and out of focus, emphasizing the texture of the needles and the glistening water. A horizontal grey bar with white text is superimposed over the upper portion of the image.

STORMWATER TREES

STORMWATER WETLANDS





STORMWATER WETLANDS



Combining practices



Combining practices

THE PRESERVE AT OAK MEADOWS

AWARD

MERIT AWARD

SITE

ADDISON/WOOD DALE, IL

SIZE

1 MILE

CLIENT

FOREST PRESERVE DISTRICT OF
DUPAGE COUNTY

CATEGORY

DESIGN

LANDSCAPE ARCHITECTS

MARTIN DESIGN PARTNERSHIP,
LTD.

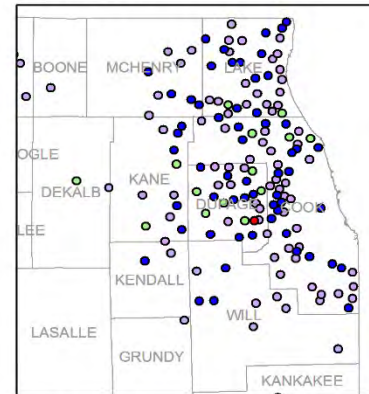


<https://il-asla.org/award/the-preserve-at-oak-meadows/>

How much green infrastructure
do we have in Illinois?

Number of GI Practices in Illinois MS4 Communities

Chicago Metro Region

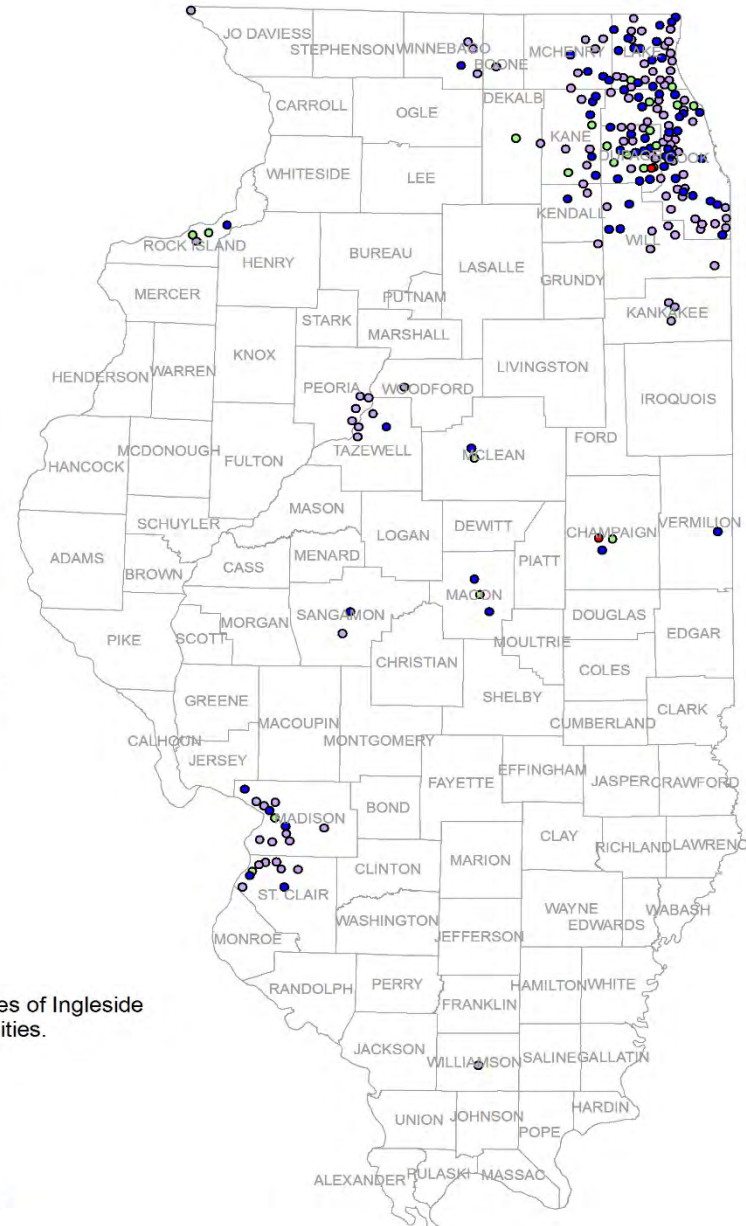


Legend

Number of GI Practices

- 5 or More
- 3 - 4
- 1 - 2
- 0

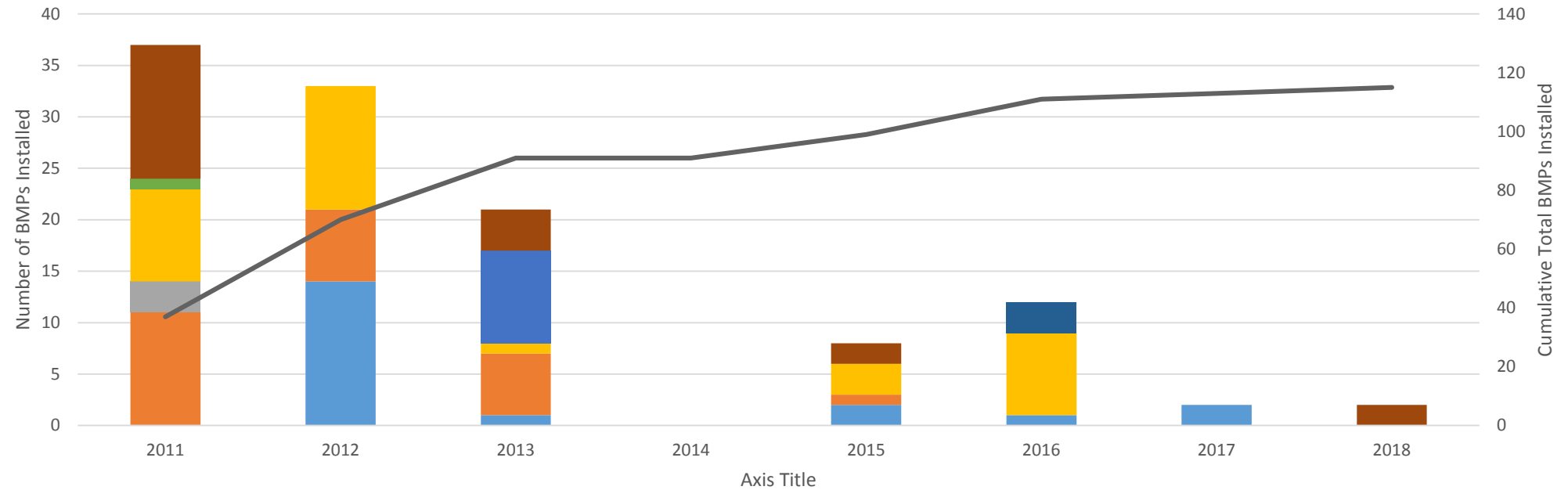
Note: The unincorporated communities of Ingleside and Mossville are also MS4 communities.



I ILLINOIS
Extension

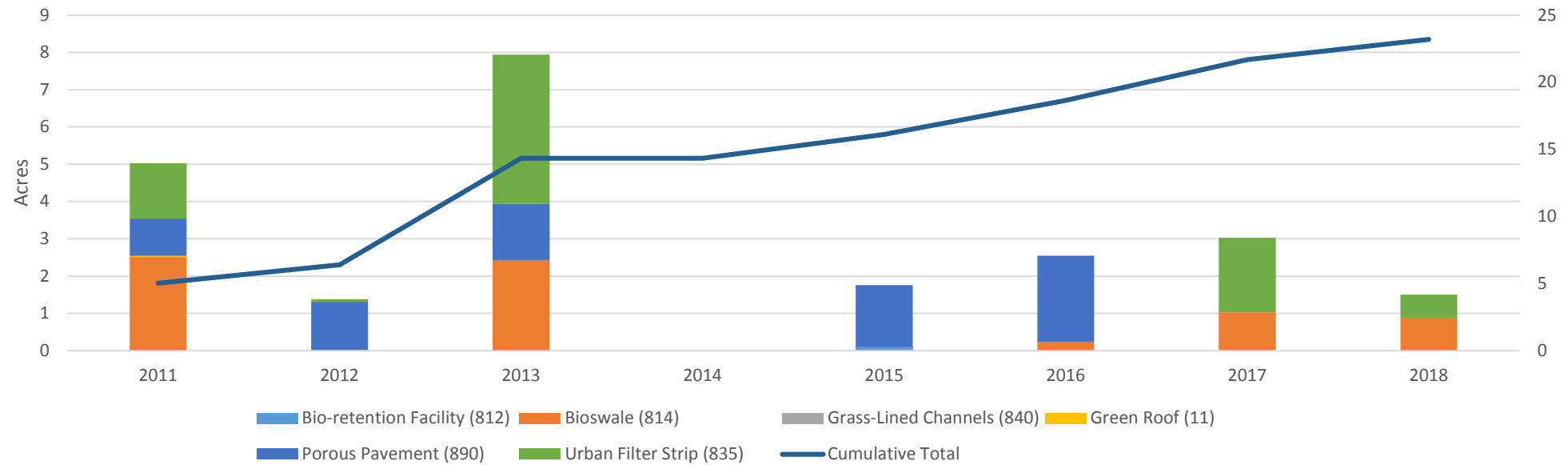
COLLEGE OF AGRICULTURAL, CONSUMER
& ENVIRONMENTAL SCIENCES

Number of Urban BMPs installed in Illinois from 2011 – 2018 under Section 319



Grade Stabilization Structure (410) Infiltration Trench (845) Oil and Grit Separator (10)
 Rain Garden (13) Rock Outlet Protection (910) Sediment Basin (350)
 Structure for Water Control (587) Urban Stormwater Wetlands (800) Cumulative Total

Acres treated by Urban BMPs in Illinois from 2011 – 2018 from Section 319 funded projects



MWRDGC Space to Grow Program



NRLS Urban Stormwater Working Group Green infrastructure Inventory

Location
Practice Kind
Size
Acres treated
Date installed

Resources



<https://iiseagrant.org/resources/publications-products/>



<https://go.illinois.edu/stormwaterhome>

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