

Promoting and Funding Illinois Stormwater Programs



Mark Hoskins PE, CFM

Promoting Stormwater

Outline

Stormwater Utility Basics (5 slides)

Overcoming Political Obstacles (14 slides)

Initiate a strong outreach campaign

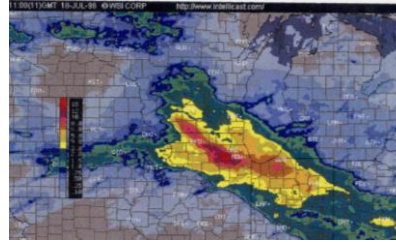
2015 Stormwater Utility Seminar (11 slides)

May 21, 2015 in Chicago

Stormwater Utility Fee

The Basics

Stormwater Infrastructure protected? Big storm ready?



Utility A municipal utility provides a service based on “use” like: water, natural gas, cable, garbage, sewer, or electrical.



Water



Gas



Cable



Garbage



Sewer



Electric

Fee The fee must be equitable, regulatory, and voluntary.

Fair fee for residents and Businesses !

MS4 Permit

Credit Manual

Stormwater Utility — Funded activities



Infrastructure



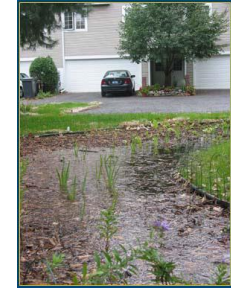
Erosion Control Issues



Capital Improvements



Street Sweeping



Rain Gardens



Inlet Labeling

SWU Funding

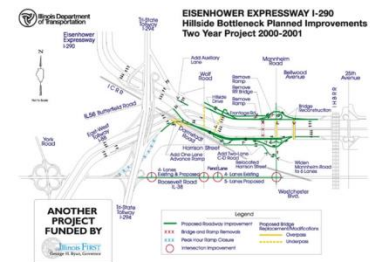


Retain First Flush



Education Outreach

NPDES Permitting
Operations and Maintenance
Engineering Services
BMPs



Master planning

SWU Fee Approaches

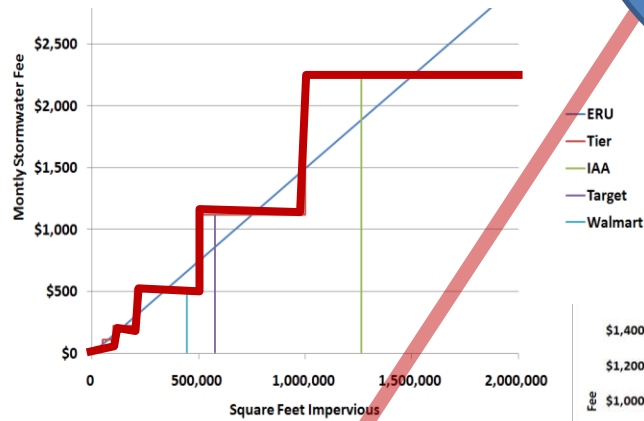


Flat Fee often based on size of water meter

$$\text{Residence Equivalent} = \text{REF (Rainfall)} * \text{Base Rate} * \text{acreage}$$

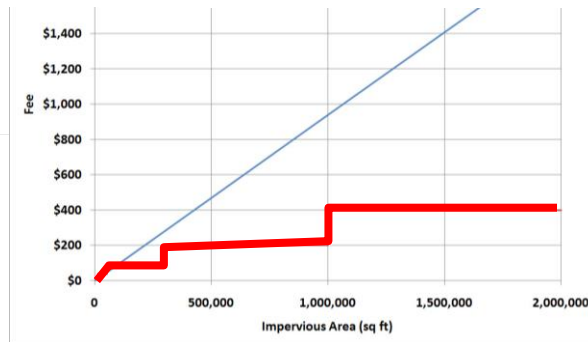
Different ways to estimate the Stormwater Utility Fee !

Good rate structure



Tiered Approach has one fee for a range of lot sizes, a stepped approach

Bad rate structure as larger ratepayers are paying less

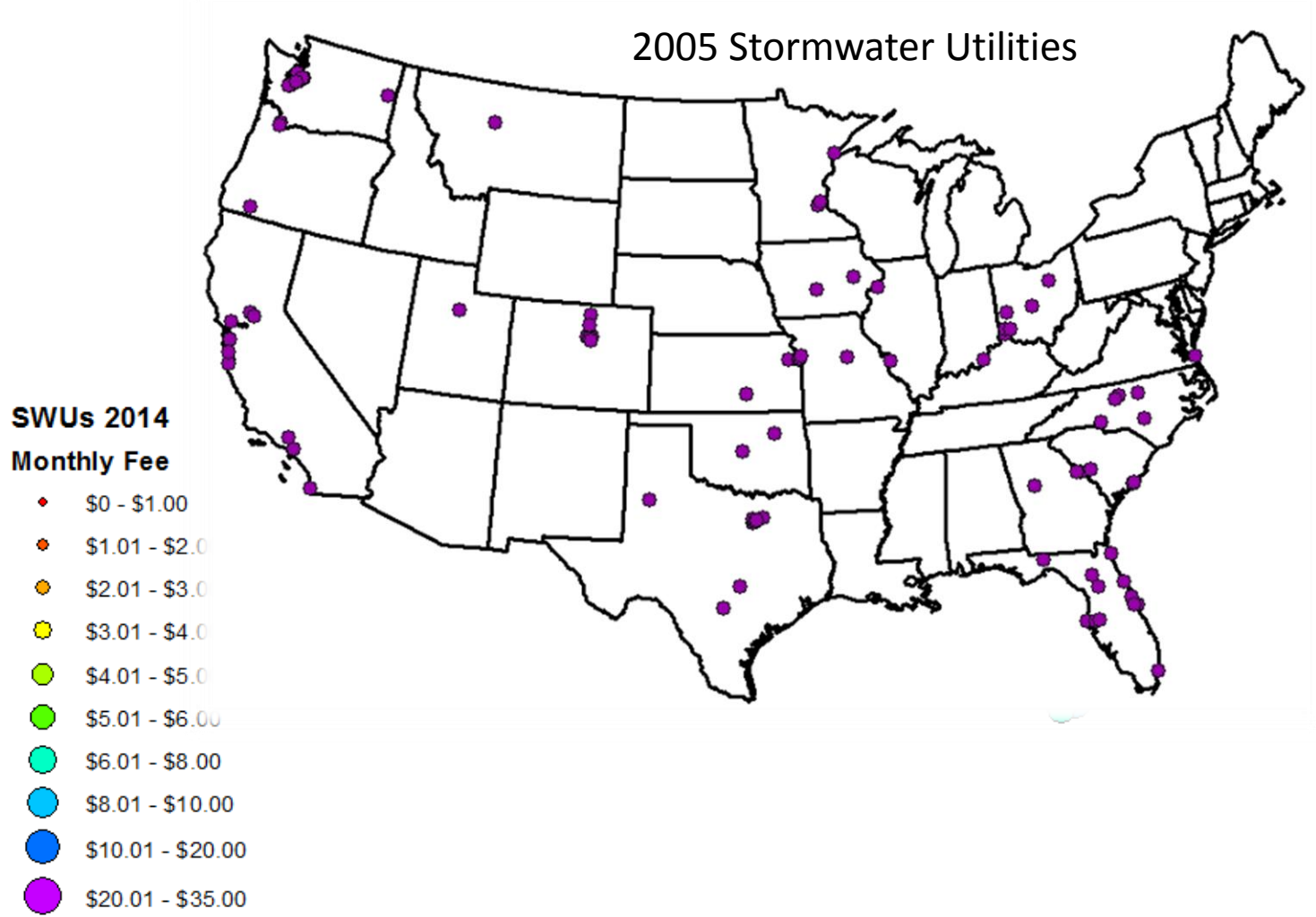


Most Popular = ERU



2014 Stormwater Utilities Map

Mid western States highest density



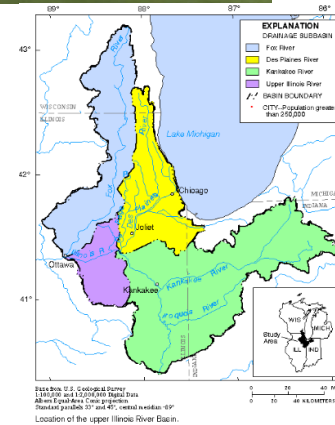
Three Point Outreach Plan

To overcome political obstacles

1 Define storms



2 Resident Outreach

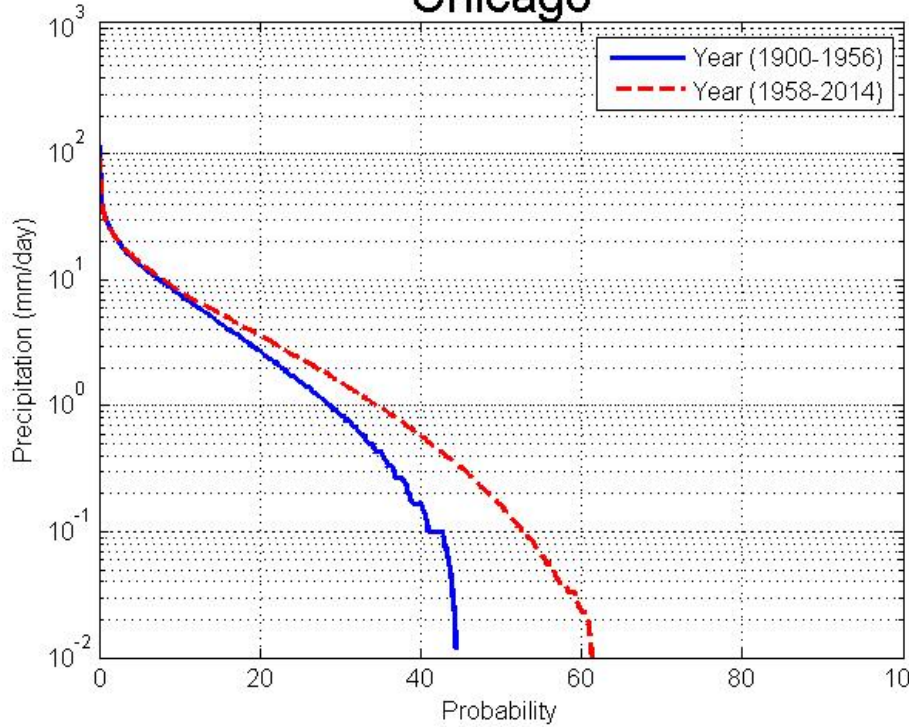


3 Projects to lessen future damages

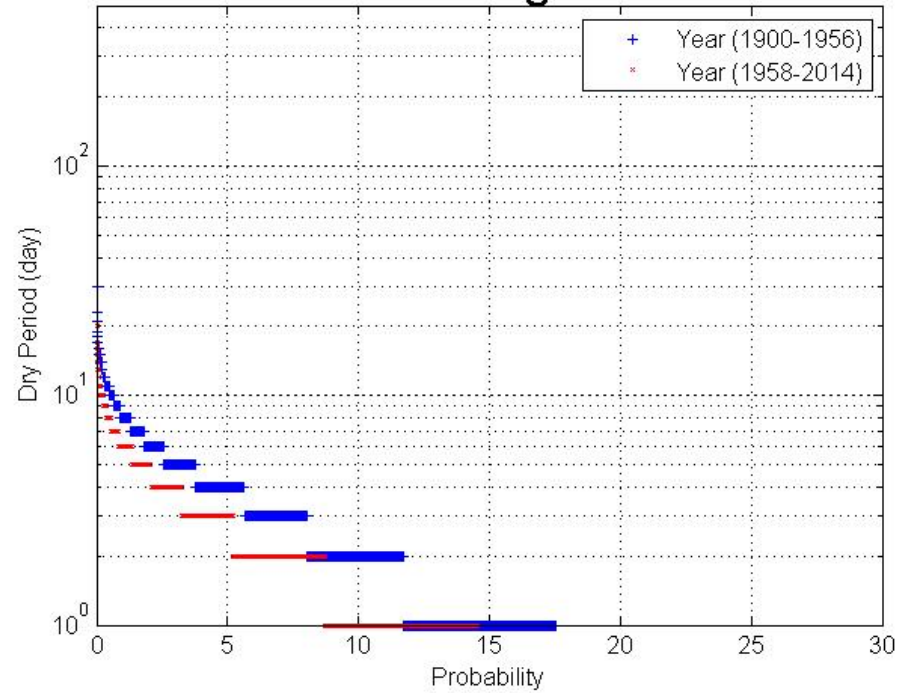


1. Define Storms

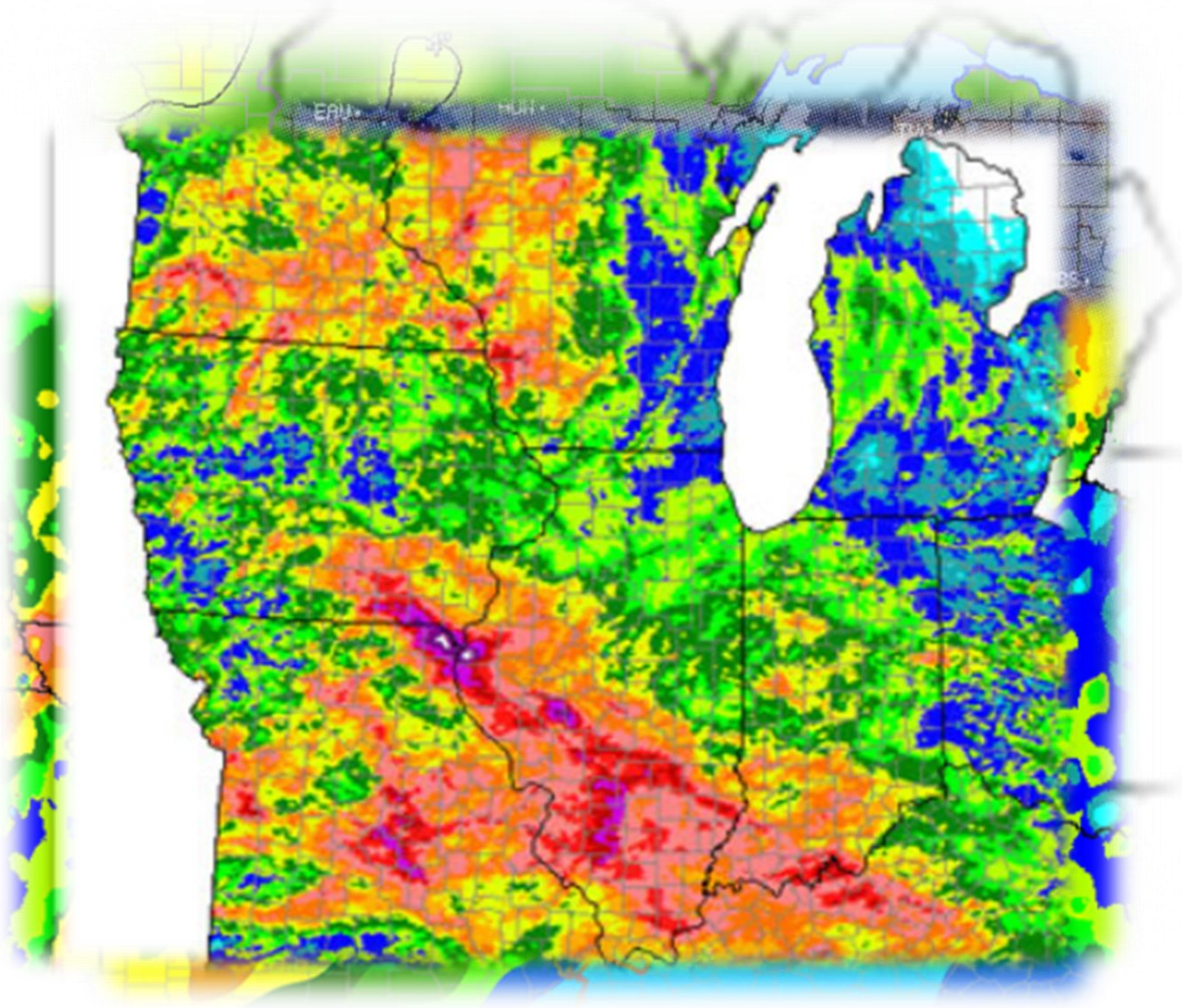
Chicago



Chicago



Define Storms



June 12-19, 2011 (7 days)

Define Rainfall

You hear on the radio... “It rained four inches yesterday!”
You think... “Did my house flood?”

Watershed to Storm Size: Sensitivity	
You need a 10 day storm for a Mississippi Flood	
10 Day	Mississippi River Watershed (1000 SM)
1 Day	Fox River Watershed (100 SM)
1 Hour	Tributary Creek (1 SM)
10 Min.	Small Creek (0.2 SM)

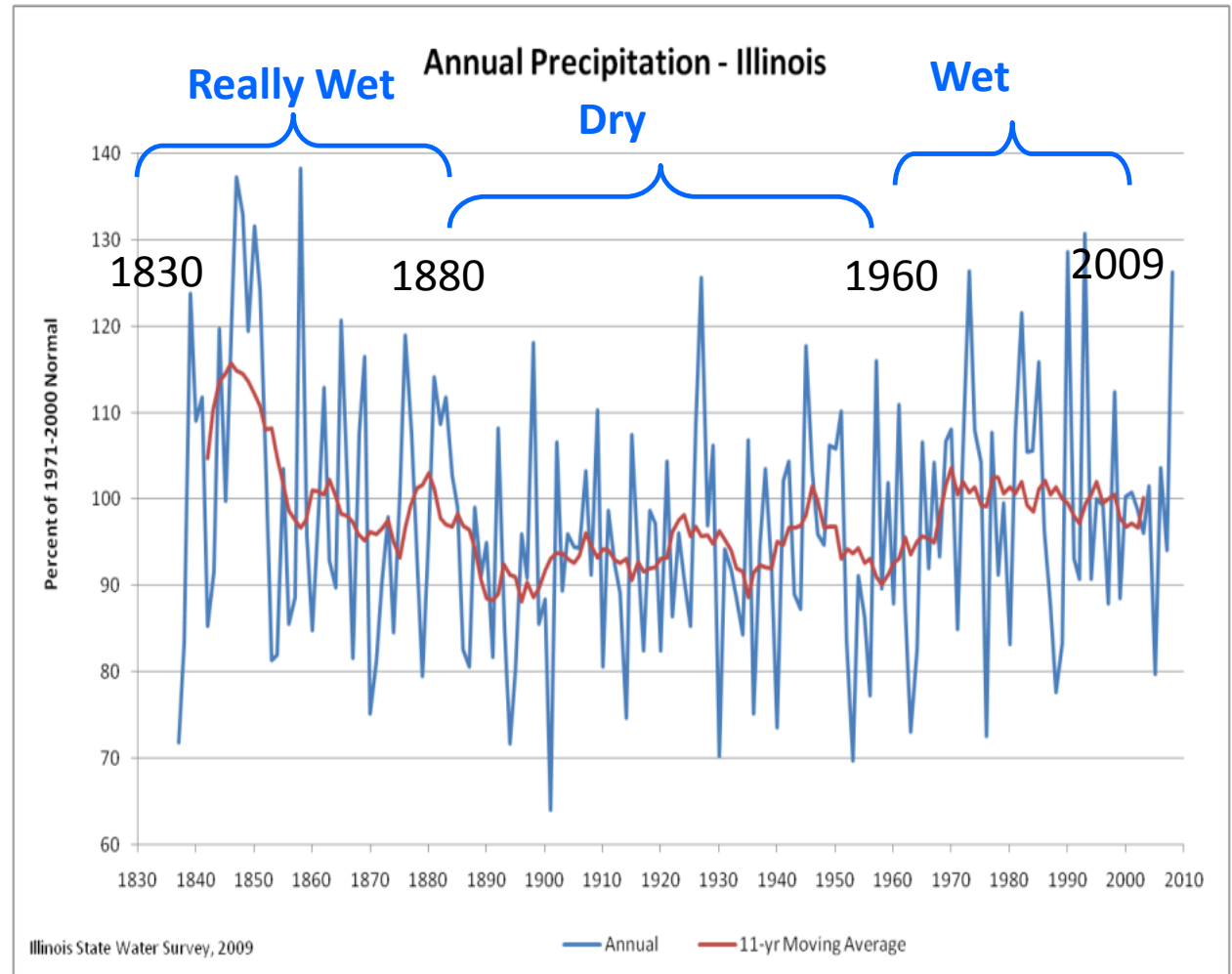
Bigger Watersheds with longer storms = flooding

Define Storms

Illinois “Climate Change” has Cycles

Jim Angel is the Illinois state Climatologist for Illinois.

Illinois appears to be in a 40 year wet cycle as compared to collected observations dating back to the year 1830.



2. Outreach Plan

It's expensive to maintain... far more to replace!

INFORM RESIDENTS

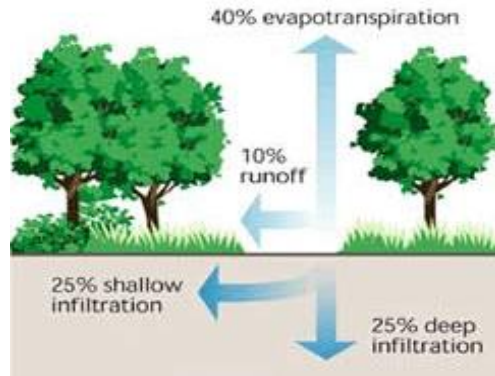
- a) Impervious Area causes flooding
- b) Typical Runoff: Urban verses Rural
- c) An Animated Floodplain

Internet – Tent Events

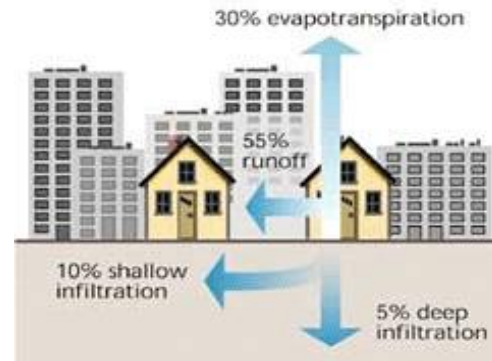
- a) Facebook Examples
- b) Tent Events

Outreach

Urban vs. Rural Impervious



UNDEVELOPED
10% Runoff



DEVELOPED
90% Runoff



Outreach

Facebook

City of Los Angeles Stormwater

Promotional

- 1) Recycle polluting wastes (oil filters, etc)
- 2) Pet selfie contests
- 3) Photo with “Trashman”
- 4) Monthly volunteers
- 5) Monthly Themes

LA Stormwater
Government Organization

Stormwater Program
CITY OF LOS ANGELES

Timeline About Photos Likes More

PEOPLE >
6,117 likes

ABOUT >

- The LA Stormwater Program is committed to keeping our beaches clean and safe, because we don't like pollution in our ocean! www.lastormwater.org
- <http://www.lastormwater.org/>

APPS >

- eNewsletter
- Twitter
- Blog

LA Stormwater
Yesterday at 10:21am · 🌐

The state's plastic bag ban is on hold. Thankfully the City of LA's ordinance is here to stay! <http://lat.ms/1BbzINs>

Like · Comment · Share · 👍 37 💬 1

LA Stormwater
March 6 at 8:00am · 🌐

Celebrate Day of Unplugging by heading outside without your phone or other digital devices. We're unplugging by picking up litter at the LA River 😊

Outreach

Computer Animation



Michael Baker
INTERNATIONAL

XP-SWMM based Animation

developed by Michael Baker

Outreach Venues

Schools, Libraries, Parks, Town Halls, and Fairs

Enlist Conservation groups:

Conservation Foundation, Fermi Lab

Arboretums

Engineering Groups - IAFSM, ASCE, ISPE

Boy Scouts - Eagle rank projects

Plan Events at:

Local Museums, Libraries

Parks for Rain Garden Lectures

State Fairs or County Fairs

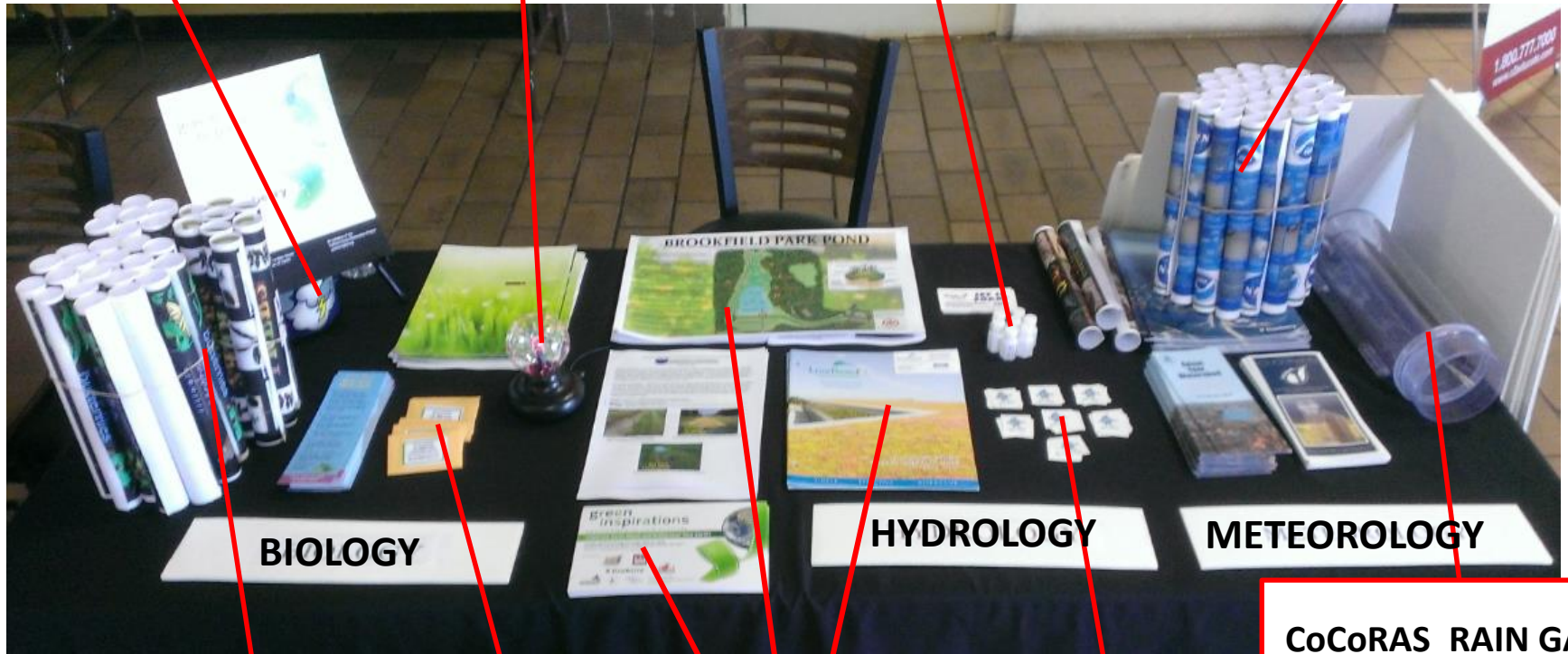


**THUNDER CUP
MAKES A THUNDER
SOUND**

**GLASS LIGHTENING
BALL**

**SOAP BUBBLES
(ABOUT 10 CENTS EACH)**

**NOAA CLOUD CHARTS
PRINT ON 11X17 PAPER**



BIOLOGY

HYDROLOGY

METEOROLOGY

**ANIMAL POSTERS
ILLINOS DNR
PRINTED FROM PDFs**

EVENT LITERATURE

**RAINDROP TATOOS
(ABOUT 3 CENTS EACH)**

CoCoRAS RAIN GAGE

WILDFLOWER SEEDS

Promotion TABLE: Make it Fun!

Outreach Handouts

Meteorology, Hydrology, and Biology



alligator snapping turtle *Macrochelys temminckii* Photo © Scott Pl. Gallard



painted turtle *Chrysemys picta* Photo © Dr. E. O. Moff



snapping turtle *Chelydra serpentina* Photo © Dr. E. O. Moff



river cooter *Pseudemys concinna* Photo © Dr. E. O. Moff



slider *Trachemys scripta* Photo © Dr. E. O. Moff



common map turtle *Graptemys geographica* Photo © William Wengeler/ISI



false map turtle *Graptemys pseudo-geographica* Photo © Dr. E. O. Moff



Ouchita map turtle *Graptemys ouachitana* Photo © Dr. E. O. Moff

Tent Event: "Rain Day" at County Fairgrounds

Invite Federal and Local Stormwater Agencies



USACE Tulsa District Joe Remondini



USACE Floodplain Management Model



GAMES



IEPA Steve Kolsto and Kristi Morris-Richards



Demonstrating the ENVIROSCAPE Model



NOAA CoCoRaHS Steve Hilberg



MWRDGC Deep Tunnel Lou Storino

USACE, EPA, NOAA, MWRDGC

Outreach: Public School Events

Watershed Stewardship

Several States have **Water Festivals** where public school students are bussed to a fairground and students are taught about Sustainable / Environmental topics.



Using the **Wards Model** to teach how manmade impacts change runoff can be fun and used to promote municipal stormwater programs. Here a levee fails and homes are flooded.



3. Infrastructure Solutions

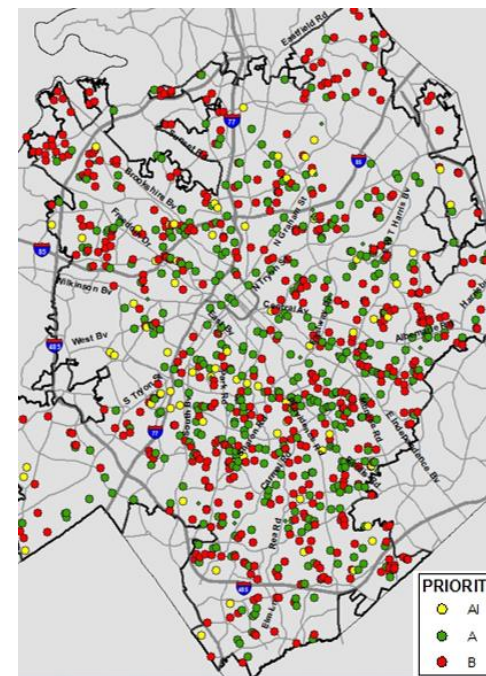
Stormwater infrastructure is expensive. Who knows this? Nobody.

Inform residents

- a) Highly visible stormwater projects
- b) Show flood benefits, CURE the “Measles” Map
- c) Consider a Hazard Mitigation Study

Plan and Budget

- a) Five year plan: Maintenance-Capital Improvements
- b) Example Chicagoland Village Stormwater Budgets



“Measles” Map

Infrastructure Solutions

Annual Stormwater Costs Village of Palatine (Pop.=50,000)

Creek Clutter



Expenditures Type	Recent Expenditures
Detention/ Retention	\$12,750
Creek System	\$722,500
Inlets/ Catch Basins/ Manholes	\$345,000
Pipelines/ Ditches	\$476,000

\$1.55 million

Root Growth



Aeration & Erosion



Clean Debris (Turtle)

Infrastructure Solutions

Local Municipal Funds (not only Federal Funding)

Downers Grove has **\$16M** stormwater

Winnetka is **\$41.0M** for a tunnel project

Bloomington is **\$136M** in 20 years

Decatur is **\$7.7 M** annual

Glenview is **\$11.4M** in 2015

Des Plaines increased **\$13M** in 2015



Illinois Stormwater Utilities Seminar

May 21, 2015

The Experts Present

Stormwater Utility Seminar

May 21, 2015 Willis Tower (CMAP Conference Room)

National Trends in Stormwater Utilities
Stormwater Utility Fee Development
Tri-County Regional Planning Commission
Illinois Legal Aspects
Illinois EPA

Dr. Warren Campbell

Doug Noel

Maggie Martino

Hal Sprague

Amy Walkenbach

Charlotte Mecklenburg
Downers Grove
Northbrook
Rock Island

David Canaan

Karen Daulton Lange

Paul Kendzior

Randy Tweet

POWERPOINTS
AVAILABLE (as a .PDF)
CALL / TEXT
(312) 515 5277

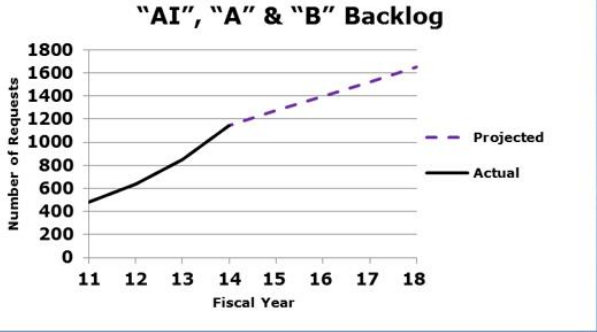
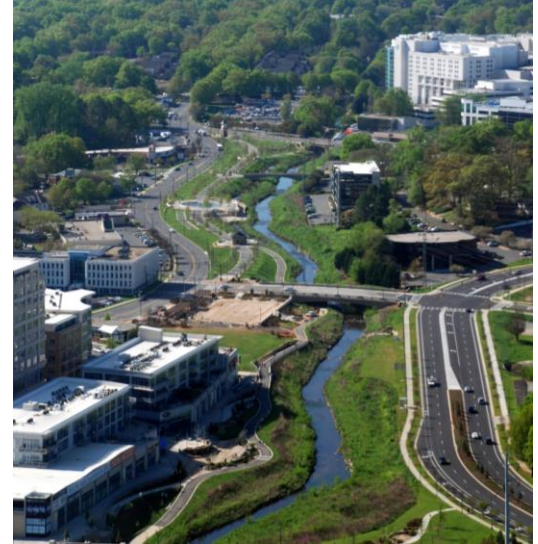
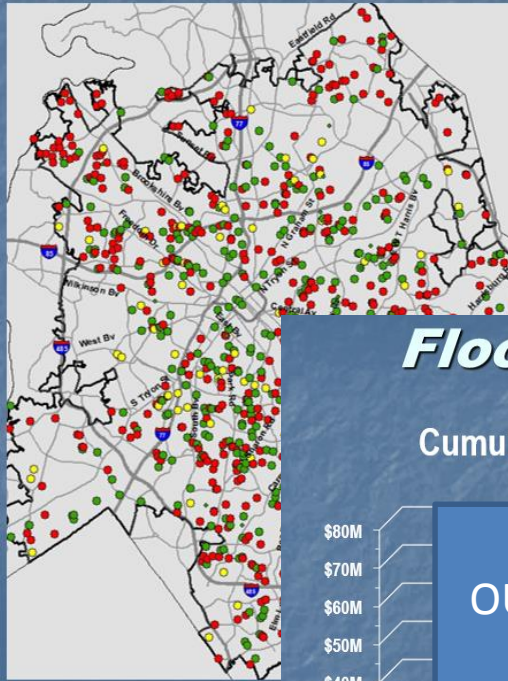




Maintenance and Repair Program, FY15 - FY19

5-Year Budget \$94 million

- Estimate 360 new AI, A and B requests added per year
- Average 235 requests for service evaluated per year
- Average cost per request is \$70,000



Flood Mitigation Results

Cumulative Investment & Benefits in Mitigation



David Canaan, PE
 Water & Land Resources Director
 Charlotte-Mecklenburg, NC



Illinois EPA State Revolving Fund Loan Programs

- Water Pollution Control Loan Program
 - grant program in 1972
 - transitioned to loans in 1987
- Public Water Supply Loan Program loan program in 1996

2008	– 32 Loans -	\$175 M
2009	– 150 Loans -	\$582 M
	(ARRA 16 months)	
2010	– 4	
	(4 months)	
2011	– 1	
2012	– 6	
2013	– 45 Loans -	\$182 M
2014	– 80 Loans -	\$502 M
2015	– 80 Loans -	\$600 M-
		Projected

EPA SUPPORTS SWU PROGRAMS
STATE REVOLVING FUND UP x3

Amy Walkenbach
Illinois EPA, Watershed Management



What are the steps?



- Develop / implement a public outreach program
- Involve stakeholders *{optional}*
- Determine problems, needs, and goals
- Determine level of service to be provided
- Determine cost of service to be provided
- Determine a rate methodology and rate structure
- Determine the rate per billing unit
- Enact ordinance
- Create master account file and supporting tools
- Begin the billing and customer service

CONTACT A CONSULTANT
START OUTREACHING NOW

Douglas Noel, PE
Senior Vice President, AMEC Foster Wheeler



How VODG Implemented SWU 10 Years in the Making...

- 2003 - Exploratory Committee/Leadership
- 2006 - Master Plan
- 2007 – Watershed Infrastructure Improvement Plan (WIIP)
- 2010 – Long Range Financial
- 2011 – RFP for SWU Study
- 2012 – Study Completed, Co proceed, Intense public outreach
- 2013 – January 1st implementation

IT TAKES TIME TO SET UP A
STORMWATER UTILITY



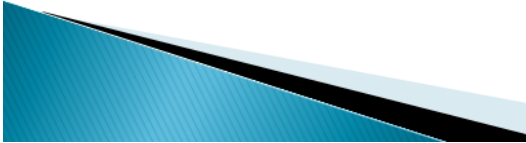
Karen Daulton-Lange, PE, CFM
Village Engineer, Village of Downers Grove



Step 3: Determine the Annual Budget

SAMPLE STORMWATER MANAGEMENT PROGRAM	
Task	Annual Expenses
Administration	
Engineering & Planning	
Operations & Maintenance	
Capital Improvements	
Regulation & Enforcement	
Water Quality	
Public Education	\$225,000
TOTAL	\$4,829,750

PLAN AHEAD
NETWORK WITH OTHER
MUNICIPALITIES

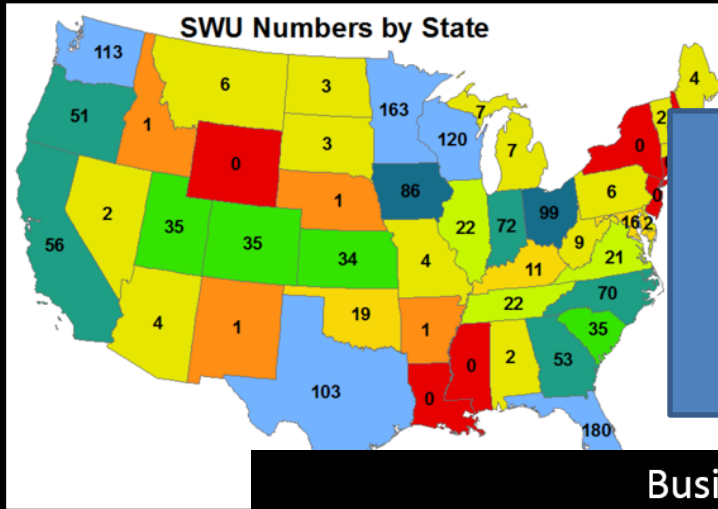


Maggie Martino
Tri-County Regional Planning Commission



U.S. SWUs

Why do they form easily in some states and not in others?



NUMEROUS STORMWATER UTILITIES ARE BEING CREATED NATION-WIDE

Annual Revenue =
13 X Monthly Fee X
Population

Business Argument

You will drive businesses out of town.

2013 or sales in malls - \$341 per square foot per year

Average sales from a 100,000 square foot store per month = $341 \times 100,000 / 12 = \$2.8M$

Fee is \$1 for every \$7,100 in sales or 1 penny for every \$71 in sales.

Dr. Warren Campbell
Western Kentucky University





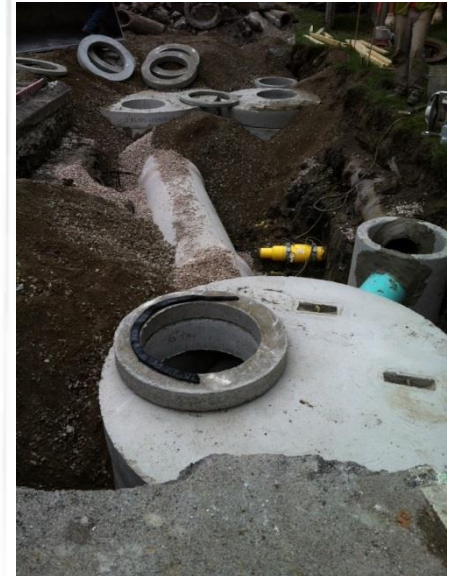
Village of Northbrook
 1225 Cedar Lane
 Northbrook, IL 60062-4582
 847 664-4171
 Village's web site at: www.northbrook.il.us

Village Water Bill

Account Number: 1-2015-071-0000-0000-0000 Due Date: 04/21/14
 Name: L M GARDNER Service From: 12/11/13
 Service Address: 2015 THORNWOOD Service To: 03/11/14

Bill Type	Current Reading	Previous Reading	Usage in 1,000 Gallons
Actual	561	541	20
Current Charges:			
Water service			\$81.60
Sewer service			\$16.00
Stormwater service			\$20.00
Total Current Charges			\$117.60
Past Due Balances:			
Water service			\$0.00
Sewer service			\$0.00
Stormwater service			\$0.00
Total Past Due Balances			\$0.00
Total amount due by 04/21/14			\$117.60
Amount due after 04/21/14			\$123.48

**TELL YOUR RESIDENTS ABOUT
YOUR CAPITAL IMPROVEMENTS**



VILLAGE BULLETIN BOARD
WATER BILL PAYMENTS - Please be sure to pay the amount due by the due date. The amount in the enclosed box is the amount you should select the correct amount when you pay.
MOVING IN OR OUT OF THE VILLAGE - Please call us for a meter reading on your water meter and update our records.



Village of Northbrook
 1225 Cedar Lane
 Northbrook, IL 60062-4582
 847 664-4171
 Village's web site at: www.northbrook.il.us

RETURN THIS PORTION OF BILL WITH PAYMENT. DO NOT SEND CASH.
 Make Check Payable To: **Village of Northbrook**
 Payment must be RECEIVED, NOT POSTMARKED, by the due date to avoid a late payment charge.
Village Water Bill ACCT# 1-2015-071-0000-0000-000

*PAID
4/16/14*

WATER CHARGE	\$81.00
SEWER CHARGE	\$16.00
STORMWATER CHARGE	\$20.00
WATER ARREARS	\$0.00
SEWER ARREARS	\$0.00
STORMWATER ARREARS	\$0.00
TOTAL AMOUNT DUE BY 04/21/14	\$117.60
AMOUNT DUE AFTER 04/21/14	\$123.48
PAYMENT AMOUNT ENCLOSED	

27 11 P1 *****"AUTO"5-DIGIT 60062
 L M GARDNER
 2015 THORNWOOD LN
 NORTHBROOK IL 60062-3634

**Paul Kendzior, PE
Public Works Director, Village of Northbrook**



**Michael Baker
INTERNATIONAL**

Credit Manual

• Credit Types

• Direct Discharge

- Direct Discharge Credit (50%, expanded to 100% in late 2003)

• Quantity Reduction

- Rate Reductions Credit (25%)
- Additional Rate Reduction Credit (10%)
- Additional Volume Credit (5%)

• Quality

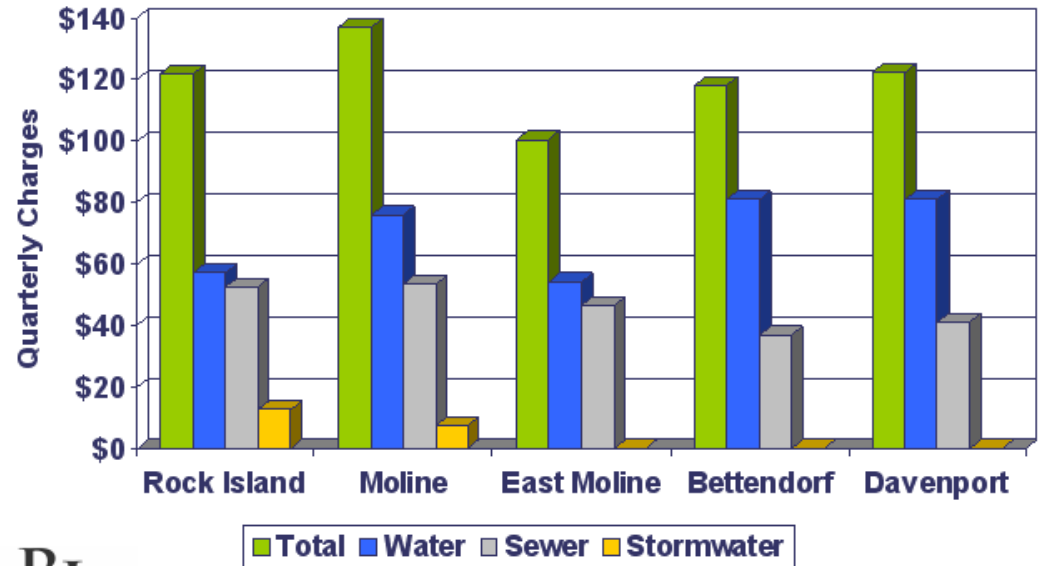
- Quality Credit (10%)
- National Pollution Credit (\$200)

• Unique and Special Cases

• Appeal Process

CREDITS ARE ESSENTIAL
GREEN TECHNOLOGIES SELL WELL

Water, Sewer and Stormwater Charges



Randy Tweet, PE
Public Works Director, City of Rock Island

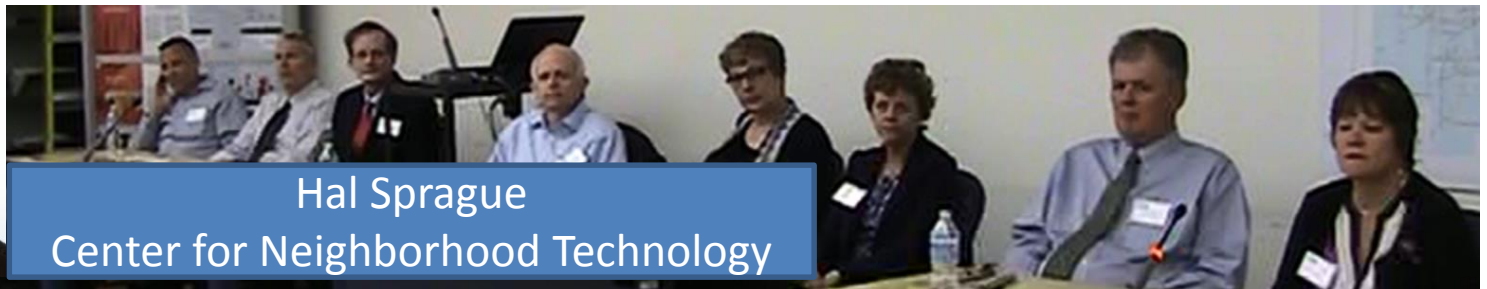


Are Taxes a more fair Fee Assessment ?

PROBLEMS with General Revenue (Tax) Approach

- **Arbitrary:** no relationship between amount paid and service required or provided
- **Unfair:** some property owners subsidize services provided to others
- **Poorly Protects:** owners of property with impervious surfaces but lower value
- **Penalizes:** owners of more valuable property pay for less runoff
- **Taxes:** can be diverted to other uses by elected officials

STORMWATER UTILITIES ARE LEGAL IN ILLINOIS, NOT NECESSARILY COUNTY-WIDE



Hal Sprague
Center for Neighborhood Technology

Presentation “Take-Aways”

1. Big **upward trend** for Stormwater Utility Programs
2. Illinois has 25 programs now and **will double in five years**
3. The **ERU is the most popular** fee structure, of four main options
4. Outreach, **outreach, and outreach** and you will be fine.

Questions?

