

Promoting and Funding Illinois Stormwater Programs



Mark Hoskins PE, CFM

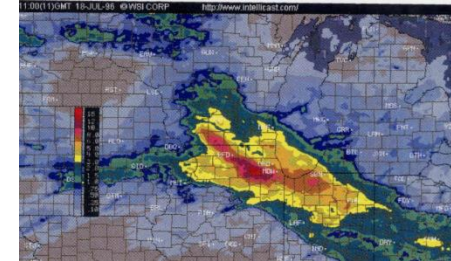
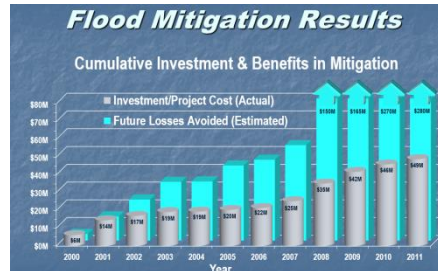
Presentation Outline

1. Basics of a Stormwater Utility (5 slides)
2. Stormwater Utility Outreach 101 (14 slides)
3. Family-Oriented Stormwater Outreach (5 slides)
4. IAFSM Stormwater Utility Seminar Summary (11 slides)

Basics of a Stormwater Utility

Stormwater Utility Fee

Stormwater Infrastructure protected? Big storm ready?



Utility A utility company provides **service based on use** like: water, natural gas, cable, garbage, sewer, or electrical.



Water



Gas



Cable



Garbage

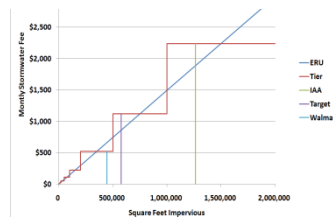


Sewer



Electric

Fee This payment must be **equitable, regulatory, and voluntary**.



MS4
Permit

Credit
Manual

Stormwater Utility — Funded activities



Infrastructure



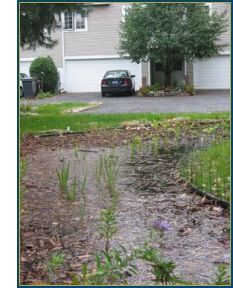
Erosion Control Issues



Capital Improvements



Street Sweeping



Rain Gardens



Inlet Labeling



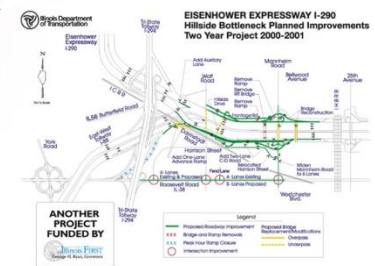
Retain First Flush



Education Outreach

SWU Funding

NPDES Permitting
Operations and Maintenance
Engineering Services
BMPs



Master planning

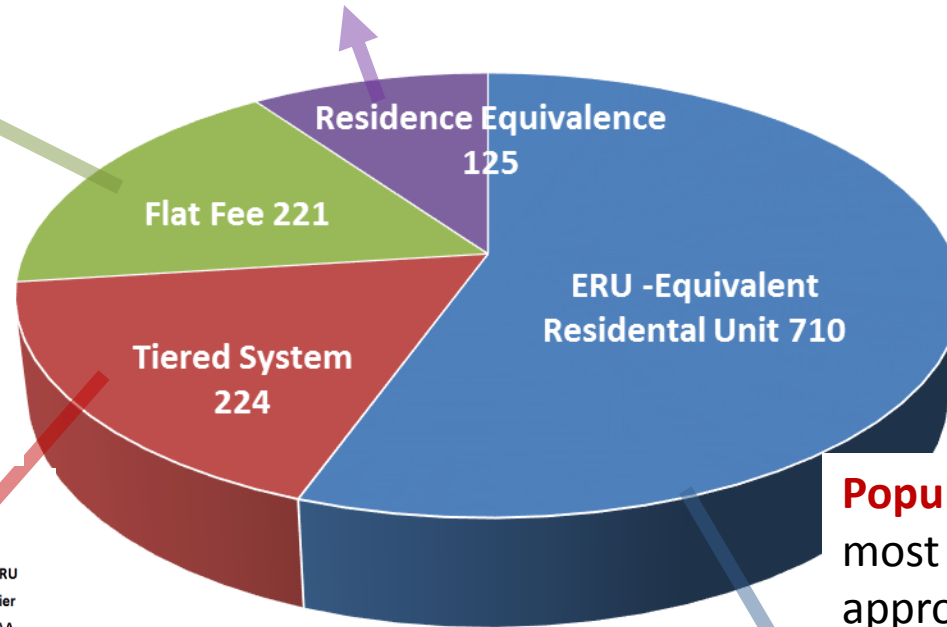


Flat Fee often based on size of water meter

Residence Equivalent = REF * Base Rate * acreage

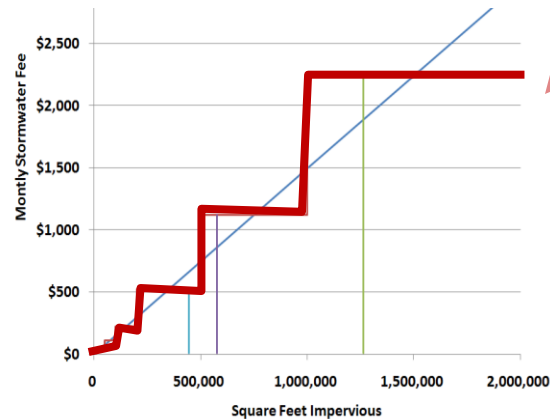
Example REF factors:

Rural=0.6 residential= 1.0 urban=1.4 industrial=2.1
Parks=0.4 institutional=1.0 commercial downtown= 1.4



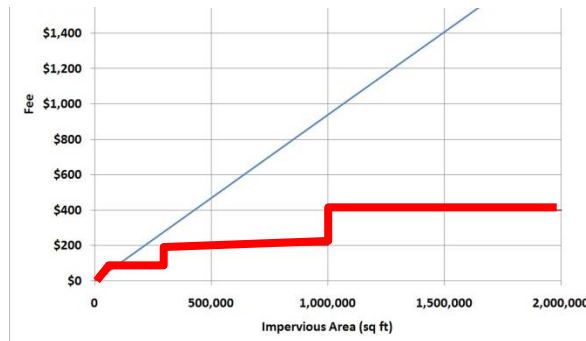
1280 SWU programs nationwide

Good equitable 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

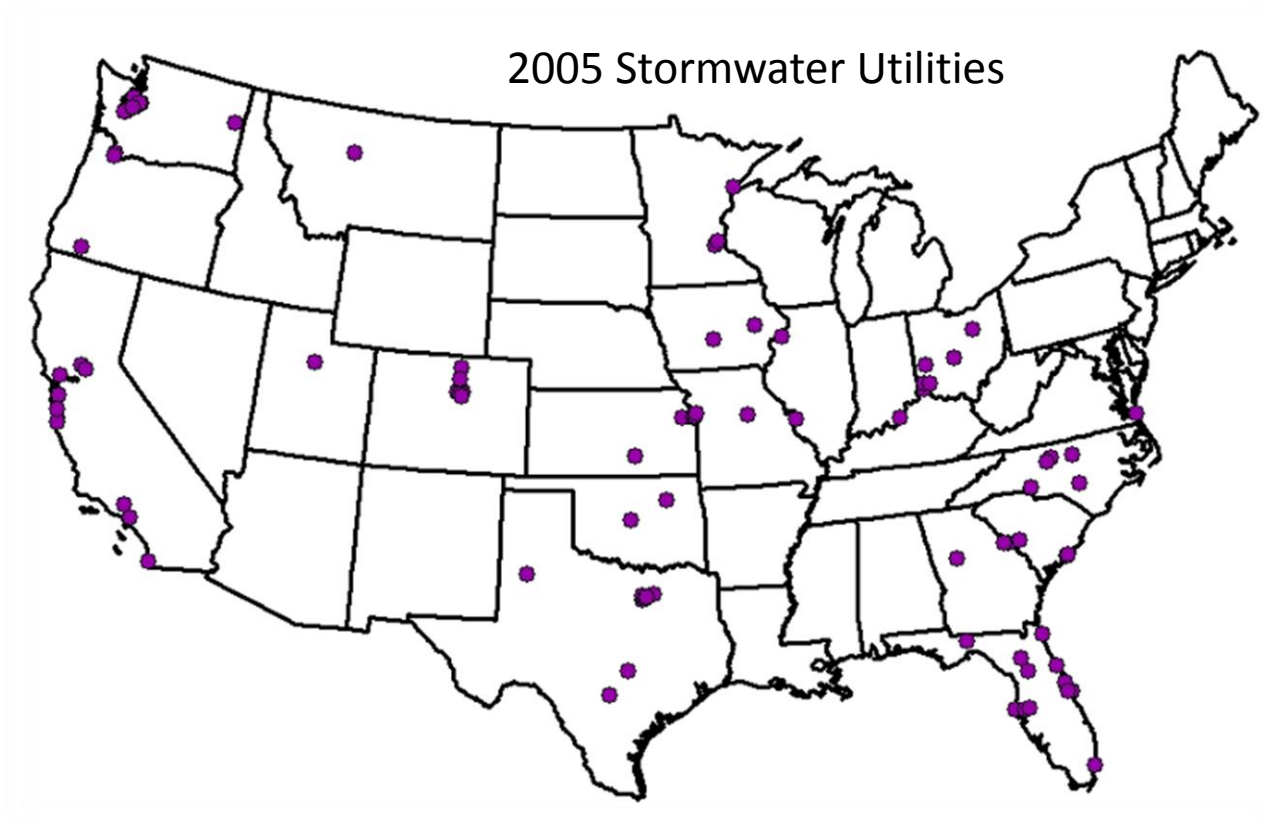


Popular ERU is the most commonly used approach in Illinois.



2014 Stormwater Utilities Map

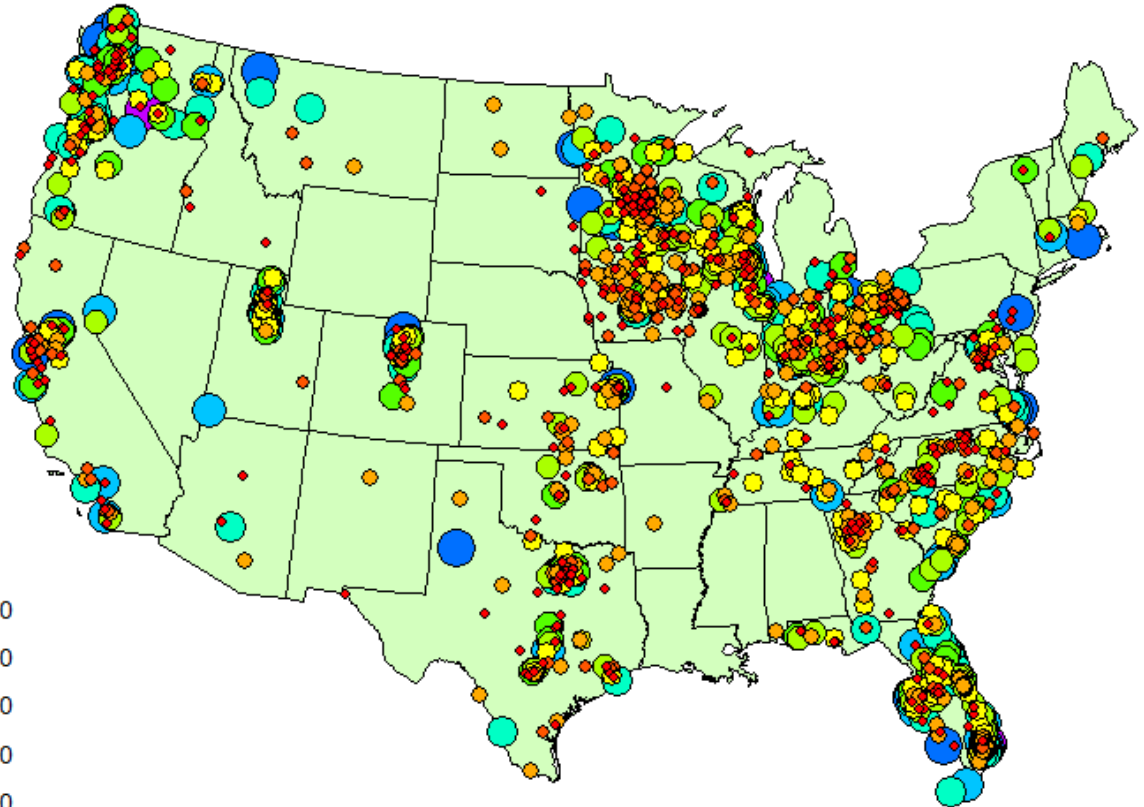
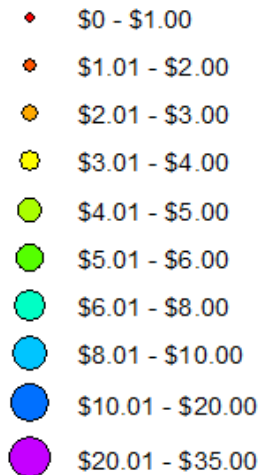
Mid western States highest density



2014 Stormwater Utilities Map

Mid western States highest density

SWUs 2014 Monthly Fee



Stormwater Utility Outreach 101

Stormwater Outreach 101

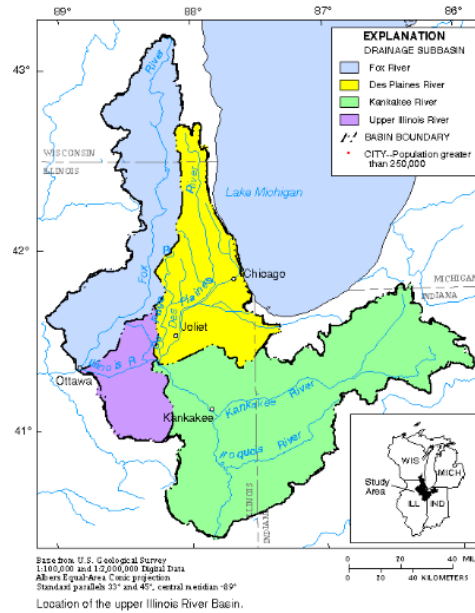
Answering Outreach Questions



WHY?

Stormy Weather

Define storms



HOW?

By Watershed

Group and outreach by watersheds

Upstreammatters.com



WHAT?

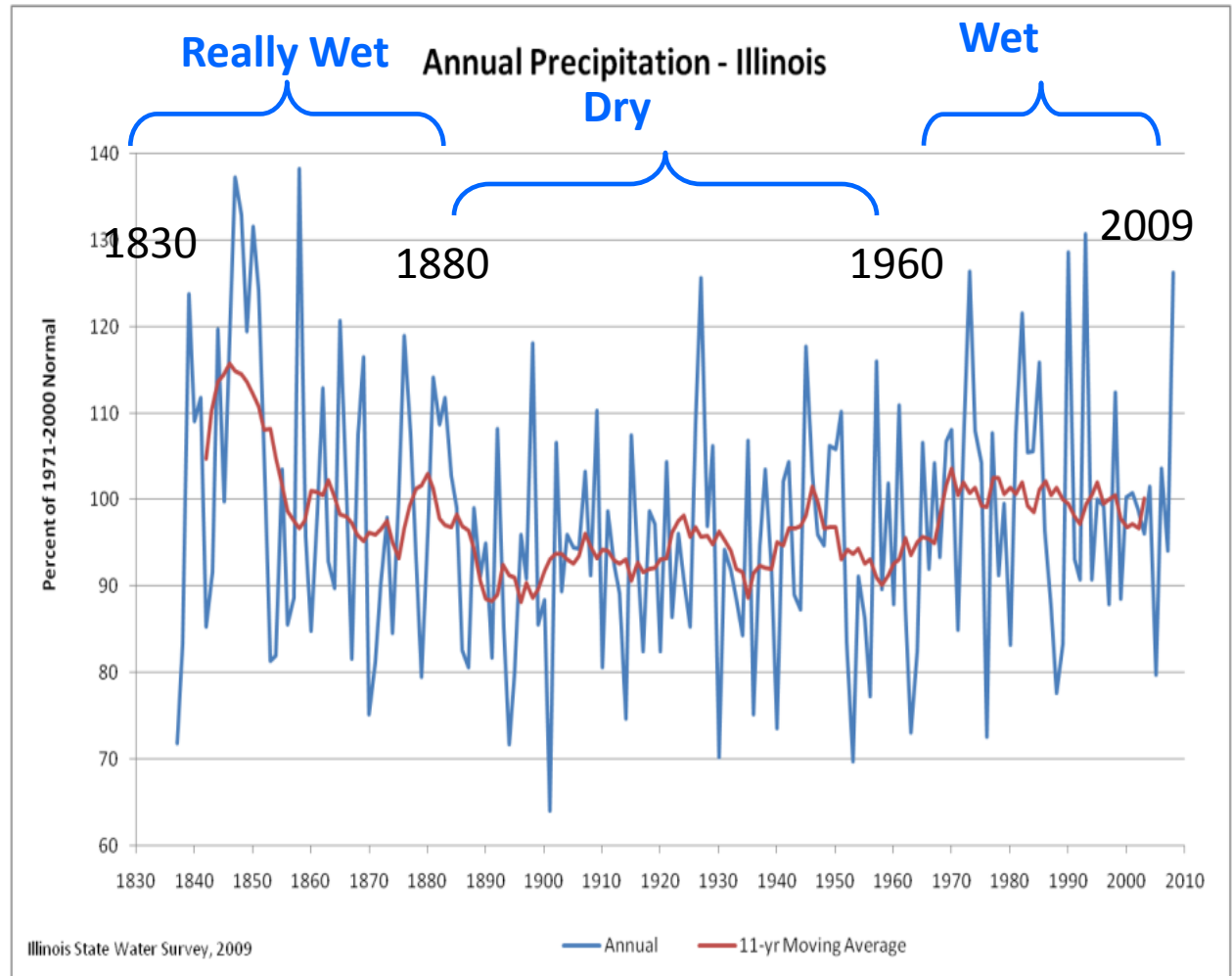
Stormwater Projects

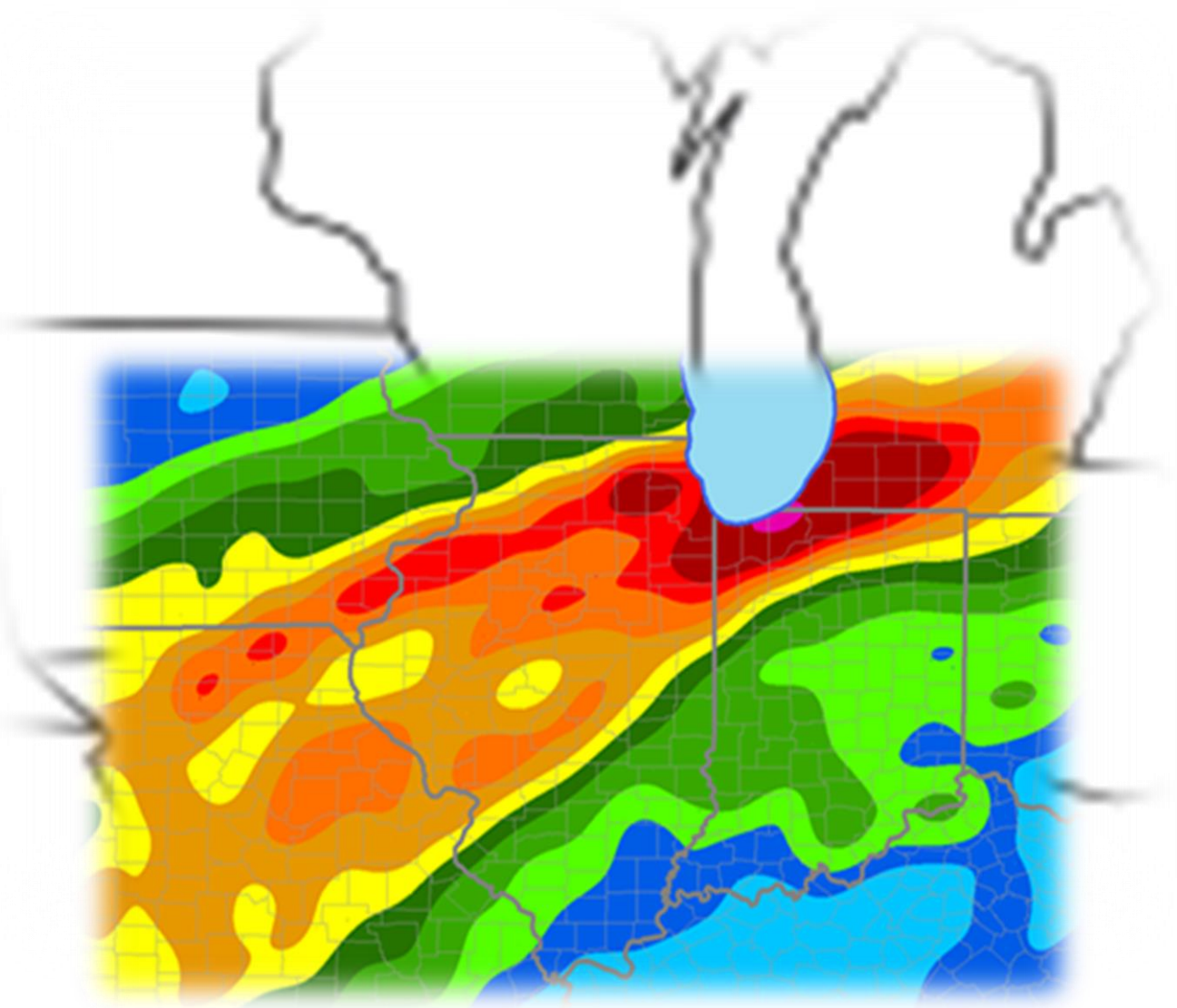
How will new projects lessen future damages

Illinois “Climate Change” has Cycles

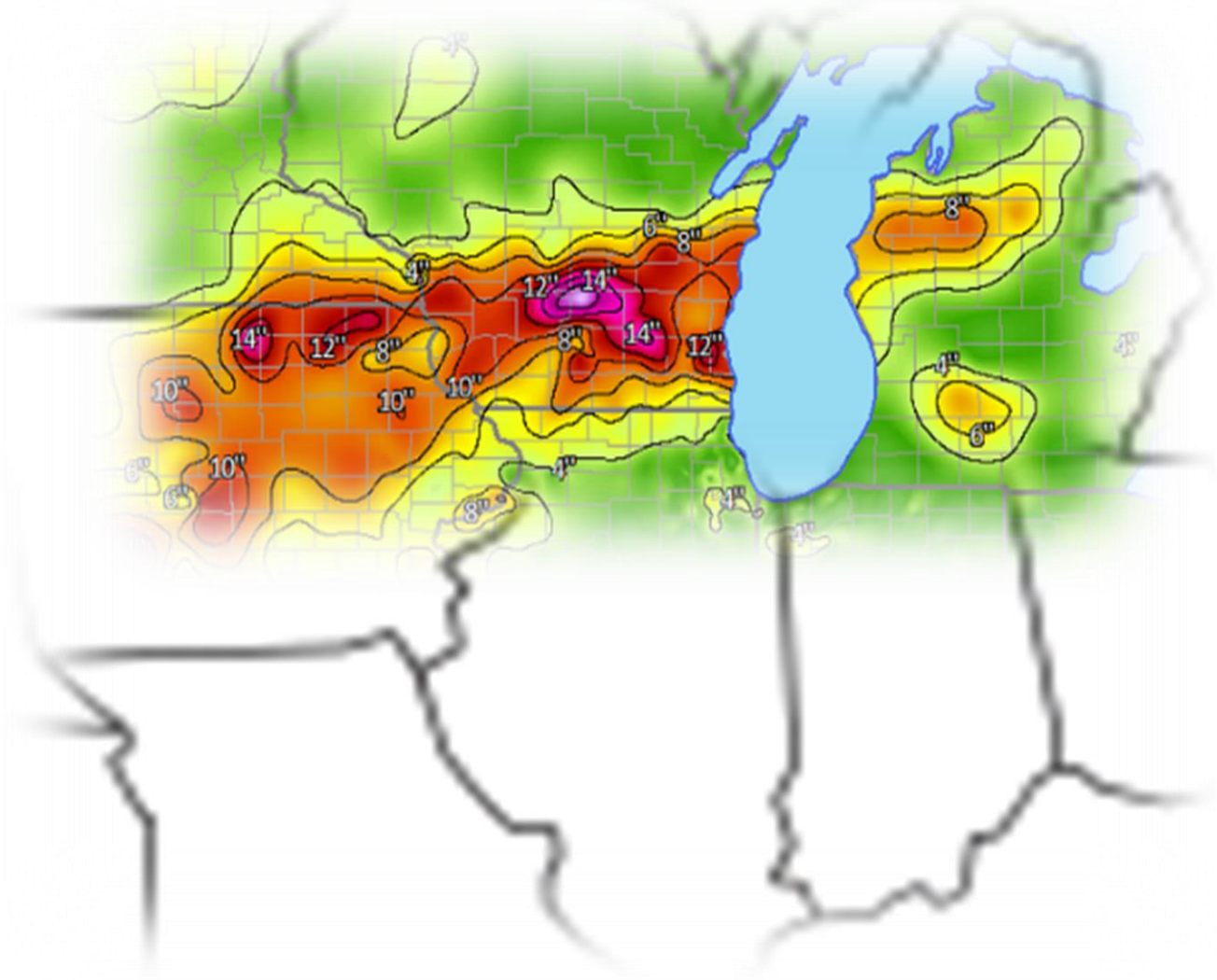
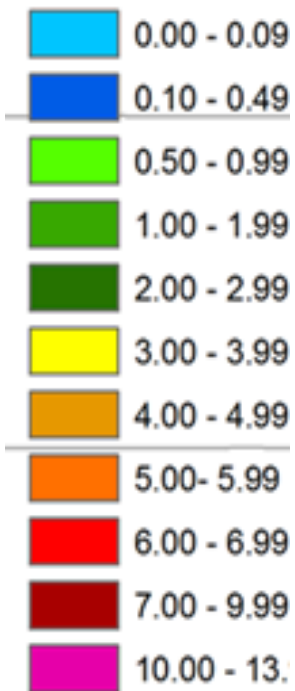
Jim Angel is the
Illinois state
Climatologist for
Illinois.

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

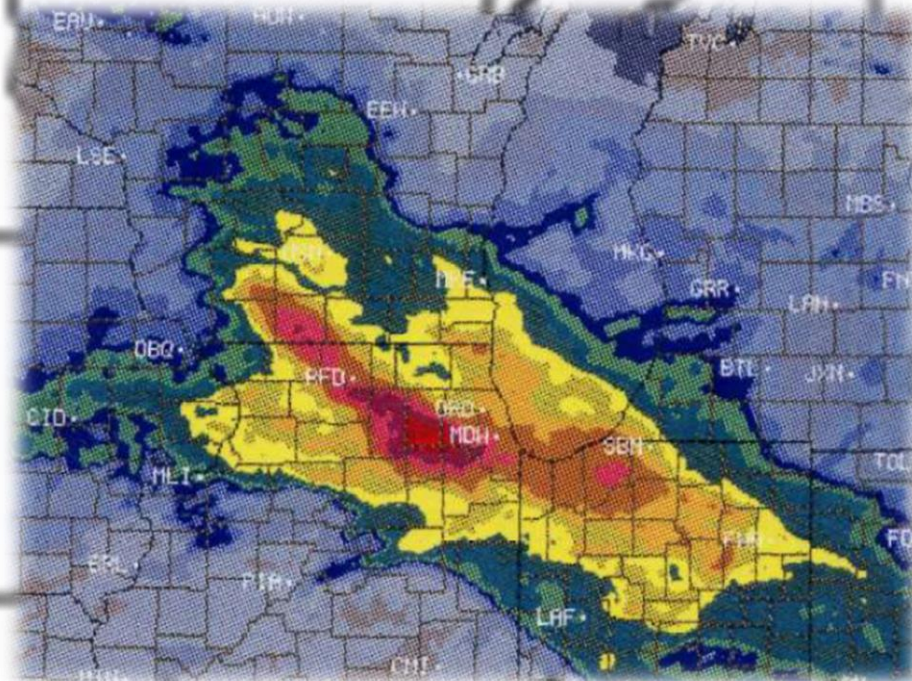
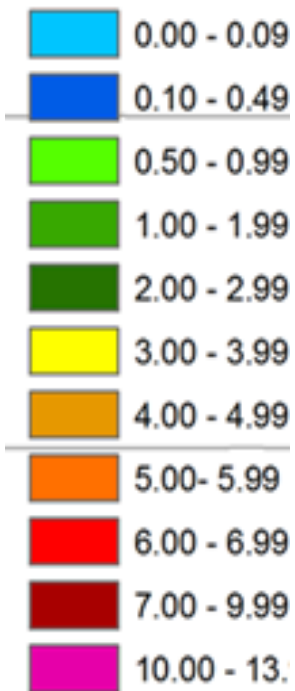




September 12-15, 2008
\$250,000 damages



June 1-15, 2008
\$300,000 damages



July 18, 1996
\$500,000 damages

Little and Big Rain Storms

Rainfall Frequencies from NOAA Atlas 14

Illinois RAINFALL in INCHES				
	1 Year	10 Year	100 year	1000 year
10 day	4.1	6.7	11.2	17.3
1 day	2.4	4.4	7.3	11.6
1 Hour	1.2	2.0	3.1	4.4
10 min.	0.6	0.93	1.3	1.7

Flood Zone

1 inch in 1 hour is common (1 Year)

3 inches in 1 hour is very heavy rainfall (100 Year)

4 inches in one hour is very, very heavy rainfall (1000 Year)

My Watershed

Facebook Ideas

San Benardino County Stormwater

Promotional Ideas

- 1) Uses gathering with music and kid friendly activities
- 2) Contests for \$50 about once a month
 - 1) Pet Selfies
 - 2) Recycling challenge

San Bernardino County Stormwater
Government Organization

Timeline About Photos Likes More ▾

PEOPLE >

6,225 likes

ABOUT >

What do gardening, taking care of your dog & protecting our waterways have in common? Stormwater Pollution Prevention!
<http://www.sbcountystormwater.org/>

<http://www.sbcountystormwater.org/>

LIKED BY THIS PAGE >

EarthShare

Energizer

sga S. Groner Associates

PHOTOS >

we ♥ our fans!

San Bernardino County Stormwater
Yesterday at 9:38am · 🌐

Attention lovers of our environment: Join us on Saturday, March 14th, Redlands Sustainability Network for a family-friendly event filled with exhibits, plant sales, local musicians, activities for children and more!

Festival - Redlands Sustainability Network

GENERAL INFO EXHIBITORS SPONSORS VOLUNTEERS Mark Your Calendars for the 3rd Annual Redlands Sustainability Festival! March 14, 2015, 11 am – 3 pm The Redlands Sustainability Network (RSN) and students of the University of...

SUSTAINABLEREDLANDS.ORG

Like · Comment · Share · 👍 70 💬 2 ➦ 21

San Bernardino County Stormwater
March 6 at 11:33am · 🌐

"Look deep into nature, and then you will understand everything better." -Albert Einstein

New every other day

My Watershed

Facebook Ideas

San Benardino County Stormwater

Promotional Ideas

- 1) Uses gathering with music and kid friendly activities
- 2) Contests for \$50 about once a month
 - 1) Pet Selfies
 - 2) Recycling challenge

San Bernardino County Stormwater
Government Organization

Timeline About Photos Likes More ▾

March 3 at 3:00pm · 🌐

Do you have what it takes to win the recycling challenge? See how fast you can sort recyclables and tell us your score. Ready - Set - Recycle!
<http://bit.ly/1BZXqzi>

ay, March 14th, Redlands with exhibits, plant sales,

work
ERS Mark Your Calendars
h 14, 2015, 11 am – 3 pm
s of the University of...

"Look deep into nature, and then you will understand everything better." -Albert Einstein

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My Watershed

Facebook Ideas

San Benardino County Stormwater

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- 1) Uses gathering with music and kid friendly activities
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The screenshot displays the Facebook profile of "San Bernardino County Stormwater", a Government Organization. The page features a cover photo of autumn foliage and a profile picture of the County Stormwater Program logo. The main post, dated January 19, is titled "Dude, Where's My HHW?" and promotes a contest where users can win a \$25 Amazon gift card by identifying their nearest Household Hazardous Waste (HHW) Collection Center. The post includes a large image of a man in glasses looking thoughtful. To the right of the main post, there are suggestions for related pages, including "rch 14th, Redlands" and "rk Your Calendars". At the bottom of the page, there is a collage of images related to environmental themes, including a person with a recycling symbol, a river, and a person wearing a t-shirt with a recycling message. A large blue arrow graphic points upwards from the bottom right corner, containing the text "New every other day".

San Bernardino County Stormwater
Government Organization

Timeline About Photos Likes More ▾

San Bernardino County Stormwater
January 19 · Edited · 🌐

Know where your nearest Household Hazardous Waste Collection Center is located? Tell us in our new "Dude, Where's my HHW Center?" contest and you'll be entered to win a \$25 gift card to Amazon! ---> <http://bit.ly/1uj3gUa>

Dude, Where's My HHW?
Select your nearest HHW Center and be entered to win a \$25 Amazon gift card. Deadline to enter is Friday, January 30, 2015. Only one randomly selected winner will receive the Amazon gift card.
SBCOUNTYSTORMWATER.OFFERPOP.COM

rch 14th, Redlands
xhibits, plant sales,

rk Your Calendars
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University of...

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New every other day

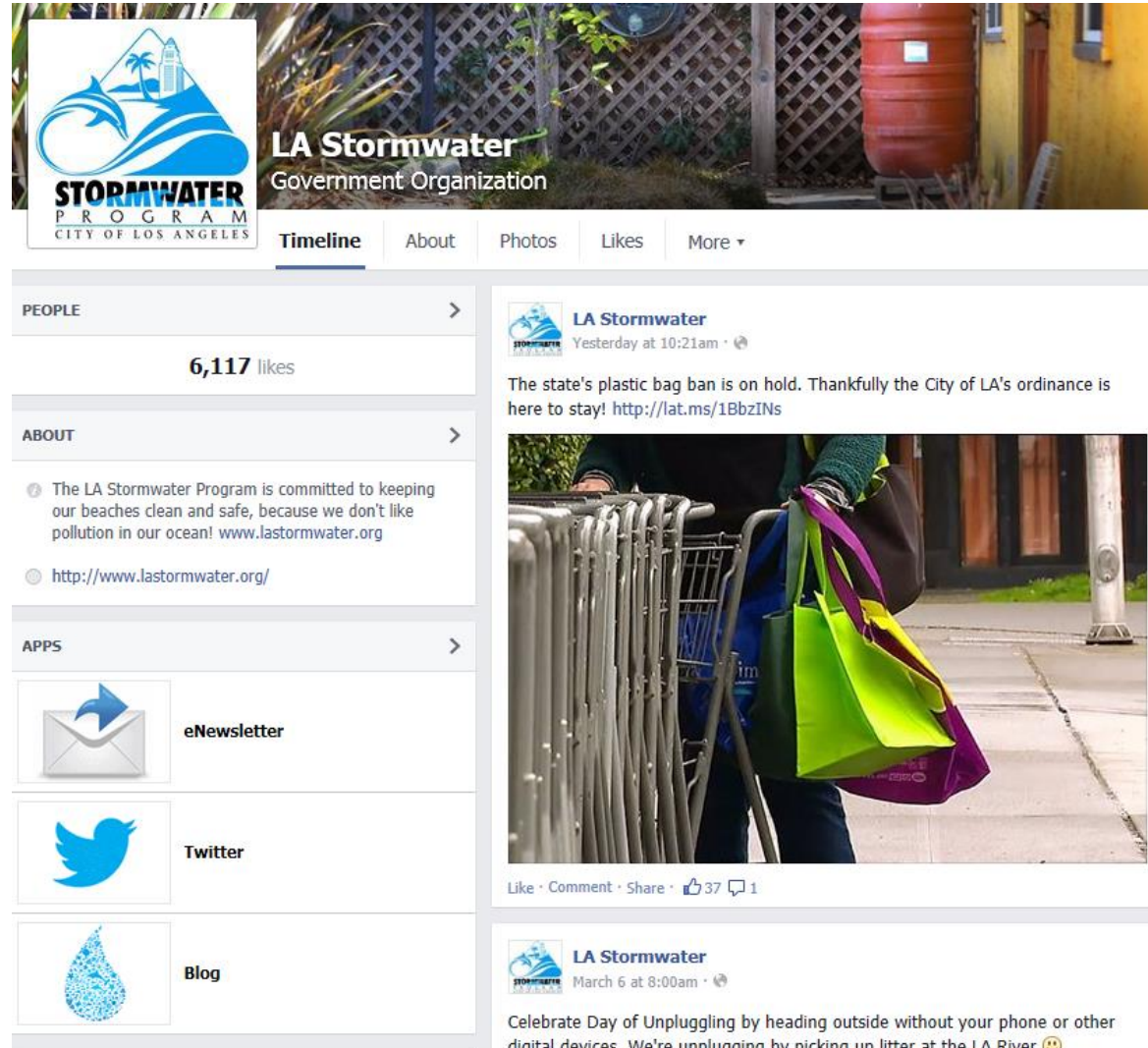
My Watershed

Facebook Ideas

**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



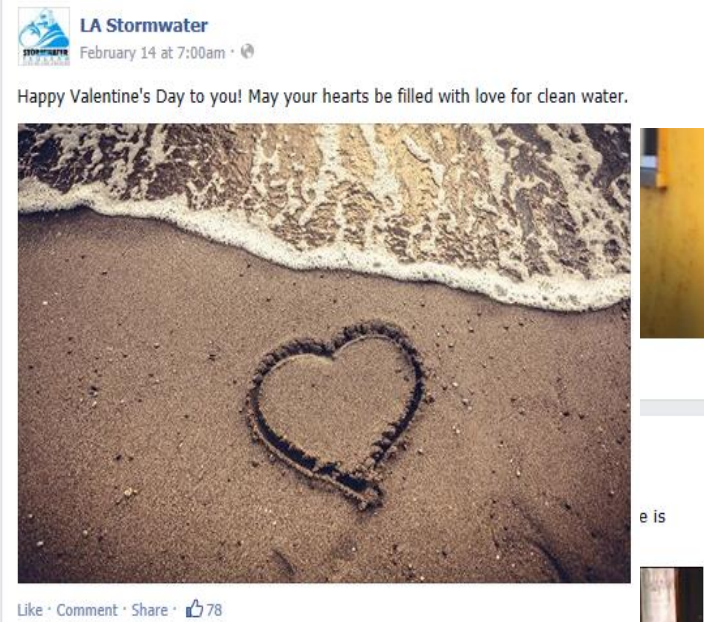
My Watershed

Facebook Ideas

**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



MONTHLY THEMES

Stars and Stripes and Stormwater

March in and Celebrate Spring

Resolve to Solve with January Events

Preventing Pollution is Patriotic

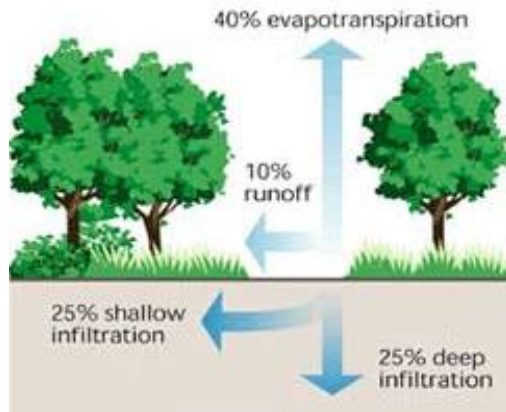
Thanks for Giving the November

It's June and the City's in Bloom

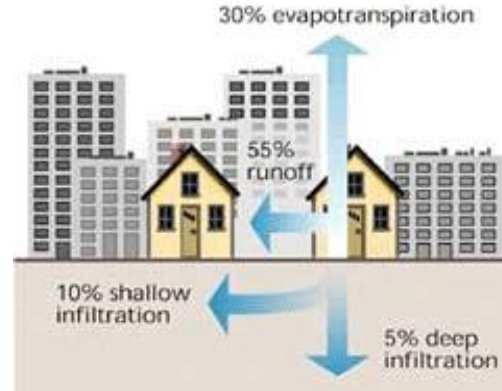
May(be) this is the month to volunteer?

April Showers bring... a month of Eco-Events

My Watershed: Runoff



UNDEVELOPED
10% Runoff



DEVELOPED
90% Runoff



My Watershed: Animation 2



Stormwater Projects

Palatine's
Maintenance
Costs

Creek Clutter



Root Growth

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

Aeration & Erosion



Clean Debris (Turtle)

Stormwater Projects are Expensive

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

Funding by a
Stormwater Utility Fee ?



Family Oriented Stormwater Outreach Ideas

Record 1 Minute Videos

“The Stormwater Minute”

Three Themes

Rainfall Becomes Runoff

My Watershed

Stormwater Projects

Record similar to the Ken Burns Series

Pan photos

End with Social Media Contact

Go Blue and "Be Prepared"

Involve Community based Organizations

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

CoCoRAS RAIN GAGE

**ANIMAL POSTERS
ILLINOS DNR
PRINTED FROM PDFs**

EVENT LITERATURE

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

WILDFLOWER SEEDS

Promotion event: Make it Fun!

Promotion events 2007 & 2013 Rain Day

KID GAMES



USACE, EPA, NOAA, MWRDGC



USACE Tulsa District Joe Remondini



USACE Floodplain Management Model



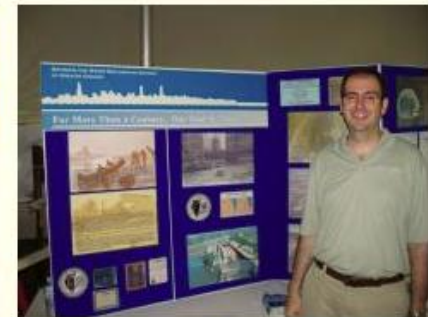
IEPA Steve Kolsto and Kristi Morris-Richards



Demonstrating the ENVIROSCAPE Model



NOAA CoCoRaHS Steve Hilberg



MWRDGC Deep Tunnel Lou Storino

Upstreammatters.com

www.upstreammatters.com

WE'VE GOT THE DIRT

(On Him)



You've seen him.

He's never late for work.
Always has a smile on his face. Even helps little ladies across the street.

BUT don't let him fool you,
he isn't perfect ...

He doesn't test his soil!

GIVE US YOUR DIRT

Too much fertilizer causes the Illinois River Watershed problems and costs you more money. So let us test your dirt for FREE so you know how much to use. Soil testing is free in Arkansas through your Benton and Washington County Cooperative Extension Services offices. IRWP makes it convenient by offering drop-off events for FREE soil testing.

GET DIRTY

To collect a lawn soil sample, dig twelve 4" deep soil samples from various spots and mix in a bucket. You'll need 2 cups for a good sample.



Bring Us Your Dirt! Free Soil Drop-Off Event from IRWP!

Northwest Arkansas Home Builders
Association Home & Garden Show
John Q. Hammons Center, Rogers

**MARCH
2-4**

Enjoy The Illinois River Watershed!

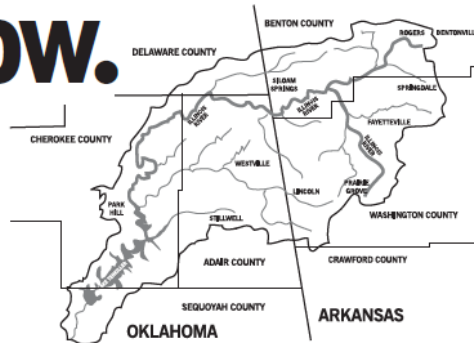


ILLINOIS River
WATERSHED PARTNERSHIP

learn more @
www.IRWP.org

P.O. Box 8506, Fayetteville, AR 72703 contact@IRWP.org

Go With The Flow.



The Flow? Yes, you can relax. You're a stakeholder in the Illinois River Watershed. Anyone who has an interest in the issues related to the watershed is a stakeholder.

Water... what? Watershed is the area of land that receives rainfall and stormwater run-off that drains or seeps into a wetland, stream, river, lake or groundwater.

I don't have anything to do with that. Do I? Since we all live in a watershed, we have to

be conscious of what goes into our water systems and ultimately into our watershed.

And I should care because...? Taking care of our watershed is taking care of our drinking water, places where kids play, our furry friends of the wild, the trees, our residential neighbors and ourselves.

Gulp! Your drinking water might just be coming from the very water that is being polluted.



ILLINOIS River
WATERSHED PARTNERSHIP

LEARN MORE @ www.IRWP.org

Enjoy The Illinois River Watershed

This Is Your Land...



Picnics. Kids Playing. Great Fishing. Wilderness Adventures. The Illinois River Watershed is a scenic and fun area for people of all ages to enjoy.

A Watershed is the area of land that receives rainfall and stormwater runoff that drains or seeps into a wetland, stream, river, lake or groundwater. As stakeholders and people with an interest in this area, we respect the beauty and fun our watershed holds.

Protect our watershed,
it's yours to enjoy!



ILLINOIS River
WATERSHED PARTNERSHIP

LEARN MORE @ www.IRWP.org

Promotion Event at Public Schools

Students learn about 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.



IAFSM Seminar on Illinois Stormwater Utilities

May 21, 2015

IAFSM 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

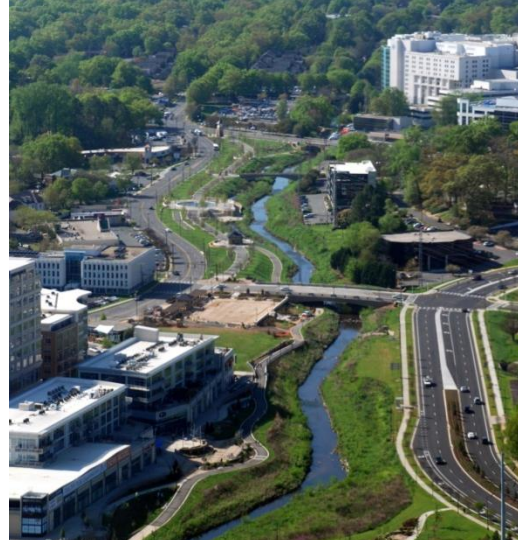
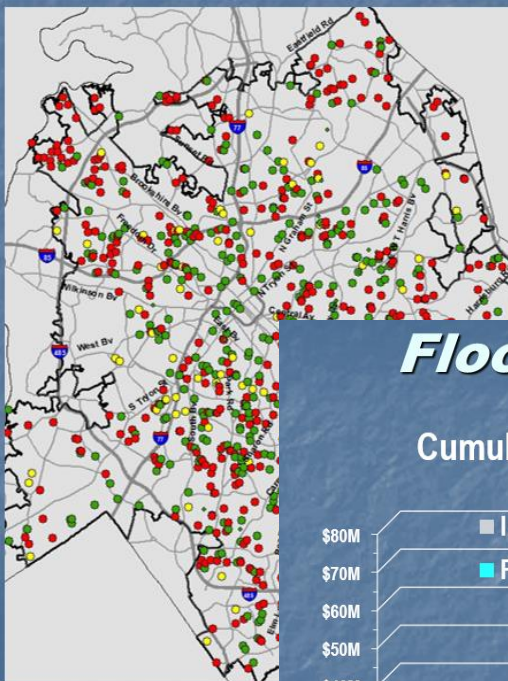




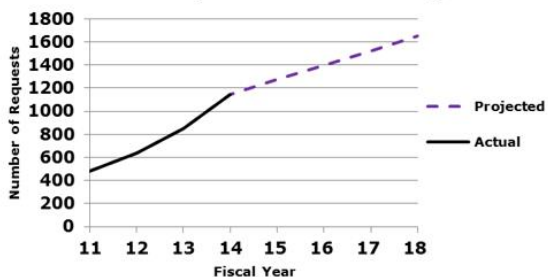
Maintenance and Repair Program, FY15 – FY19

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



"AI", "A" & "B" Backlog



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 - (ARRA 16 months)	\$582 M
2010 – 41 Loans - (4 months)	\$289 M
2011 – 100 Loans -	\$532 M
2012 – 62 Loans -	\$260 M
2013 – 49 Loans -	\$462 M
2014 – 80 Loans -	\$502 M
2015 – 80 Loans -	\$600 M-
	Projected

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 base
- Determine the rate per billing unit
- Enact ordinance
- Create master account file and supporting tools
- Begin the billing and customer service

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 Plan
- 2011 – RFP for SWU Study
- 2012 – Study Completed, Council authorization to proceed, Intense public outreach
- 2013 – January 1st implementation



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



Step 3: Determine the Annual Budget

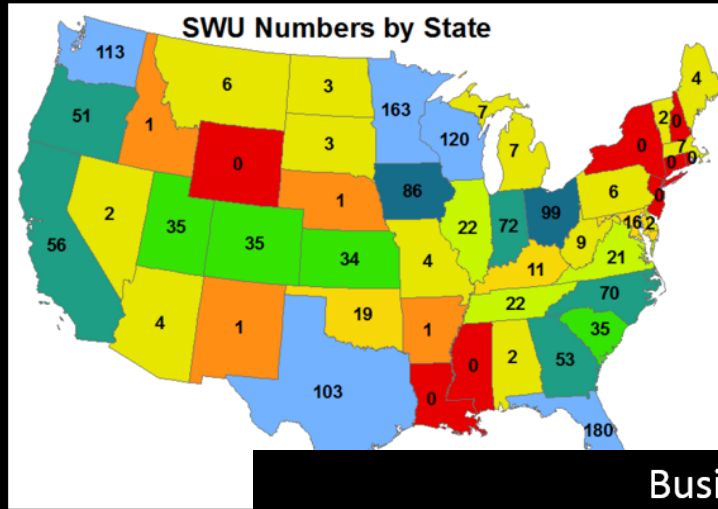
SAMPLE STORMWATER MANAGEMENT PROGRAM	
Task	Annual Expenses
Administration	\$309,750
Engineering & Planning	\$535,000
Operations & Maintenance	\$1,000,000
Capital Improvements	\$2,510,000
Regulation & Enforcement	\$100,000
Water Quality	\$150,000
Public Education	\$225,000
TOTAL	\$4,829,750

Maggie Martino
Tri-County Regional Planning Commission



U.S. SWUs

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



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: 1-2015-071-0000-0000-000

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

5% Late Charge added to Current Charges if payment not received by Due Date. See reverse side for additional billing information.
 IF MAILED PLEASE ALLOW SEVEN MAILING DAYS TO ASSURE CREDITING BY THE DUE DATE.

VILLAGE BULLETIN BOARD

WATER BILL PAYMENTS – Please be sure to pay the correct amount that is listed on the bill. The amount in the green shaded box is the amount due by the due date. The amount listed in the box below is the higher amount that is due after the due date. Make sure to select the correct amount when you pay.

MOVING IN OR OUT OF THE VILLAGE – Please call the Village when you are moving even if within the Village so that we can obtain a final reading on your water meter and update our billing information. This is critical to keep you from paying for water that you didn't use.

RETAIN THIS PORTION FOR YOUR 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

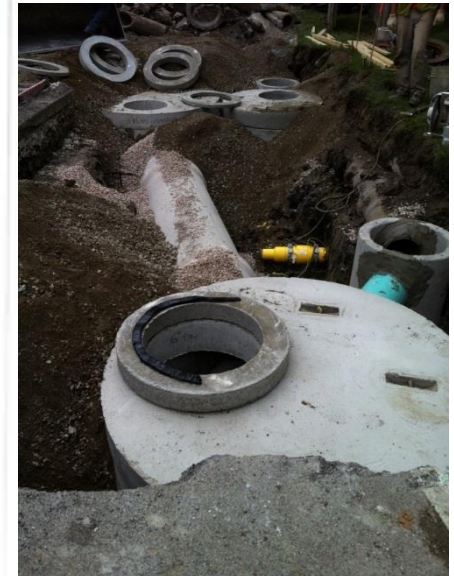
Payment must be RECEIVED, NOT POSTMARKED, by the due date to avoid a late payment charge.

Village Water Bill ACCT# 1-2015-071-0000-0000-000

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	
Credit Card Payments (See Reverse Side)	

27 T1 P1 *****"AUTO"5-DIGIT 60062
 L M GARDNER
 2015 THORNWOOD LN
 NORTHBROOK IL 60062-3634

PAID
 4/16/14



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

Why are Rain Gardens good for Rock Island?

Rain Gardens...

- are miniature storm water retention basins
- reduce the total quantity of storm water runoff
- reduce flooding
- reduce creek erosion
- absorb pollutants
- sustain wildlife
- are attractive



"captured" stormwater

Randy Tweet, PE

Public Works Director, City of Rock Island



City of Rock Island

Outline costs, Compare to adjacent Villages

Stormwater Advisory Committee Recommendations

- Create a Stormwater Utility
- Gross Area Charge (13,000 sq ft) = \$12.24 per year
- Impervious Area Charge (2,800 sq ft) = \$38.04 per year
- Flat Rates for **Single Family Detached Homes** on.....
 - Small Lots (<6,000 sq ft)..... \$31.97/year
 - Medium Lots (6,000 to 18,000 sq ft)..... \$50.28/year
 - Large Lots (18,000 to 87,120 sq ft)..... \$68.23/year

Sample Calculation



Impervious Area Charge

impervious Area = 20,150 sq ft

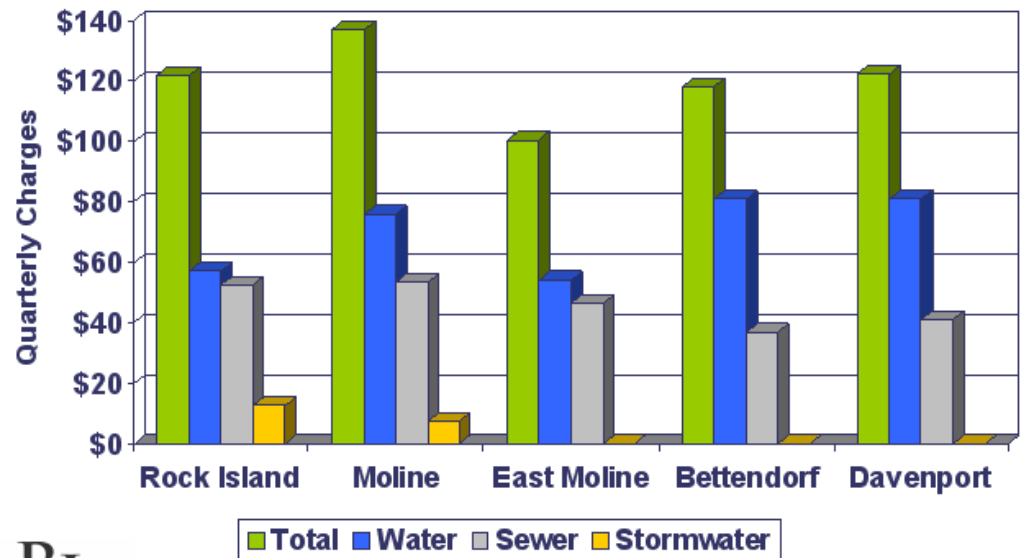
$20,150 / 2,800 = 7.20$ IAU's

round up to 8 IAU's

8 IAU's X \$38.04 = **\$304.32/year**

Total = \$341.04/year

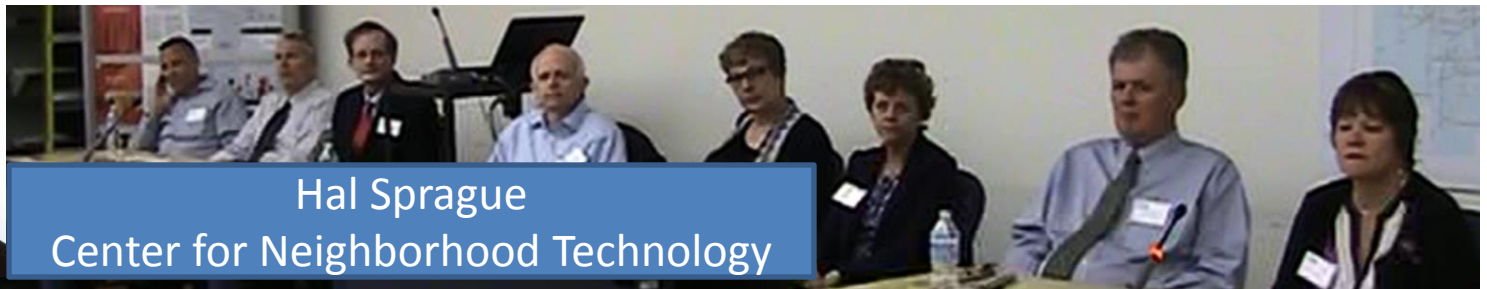
Water, Sewer and Stormwater Charges



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 large impervious surfaces but lower value, and non-profits
- **Penalizes:** owners of more valuable that may contribute less runoff
- **Taxes:** can be diverted to other uses by elected officials



Presentation “Take-Aways”

Starting a Stormwater Utility Program

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?

