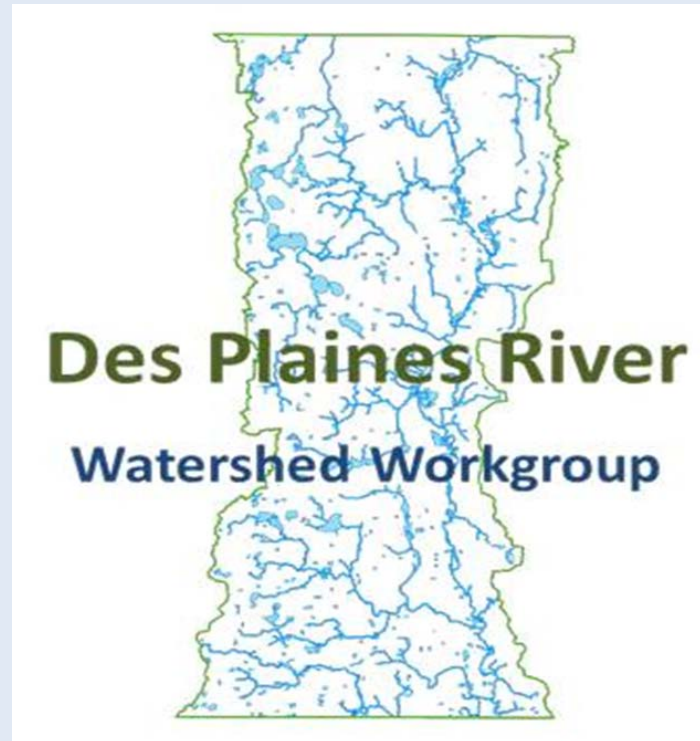


Benefits of Joining a Watershed Workgroup



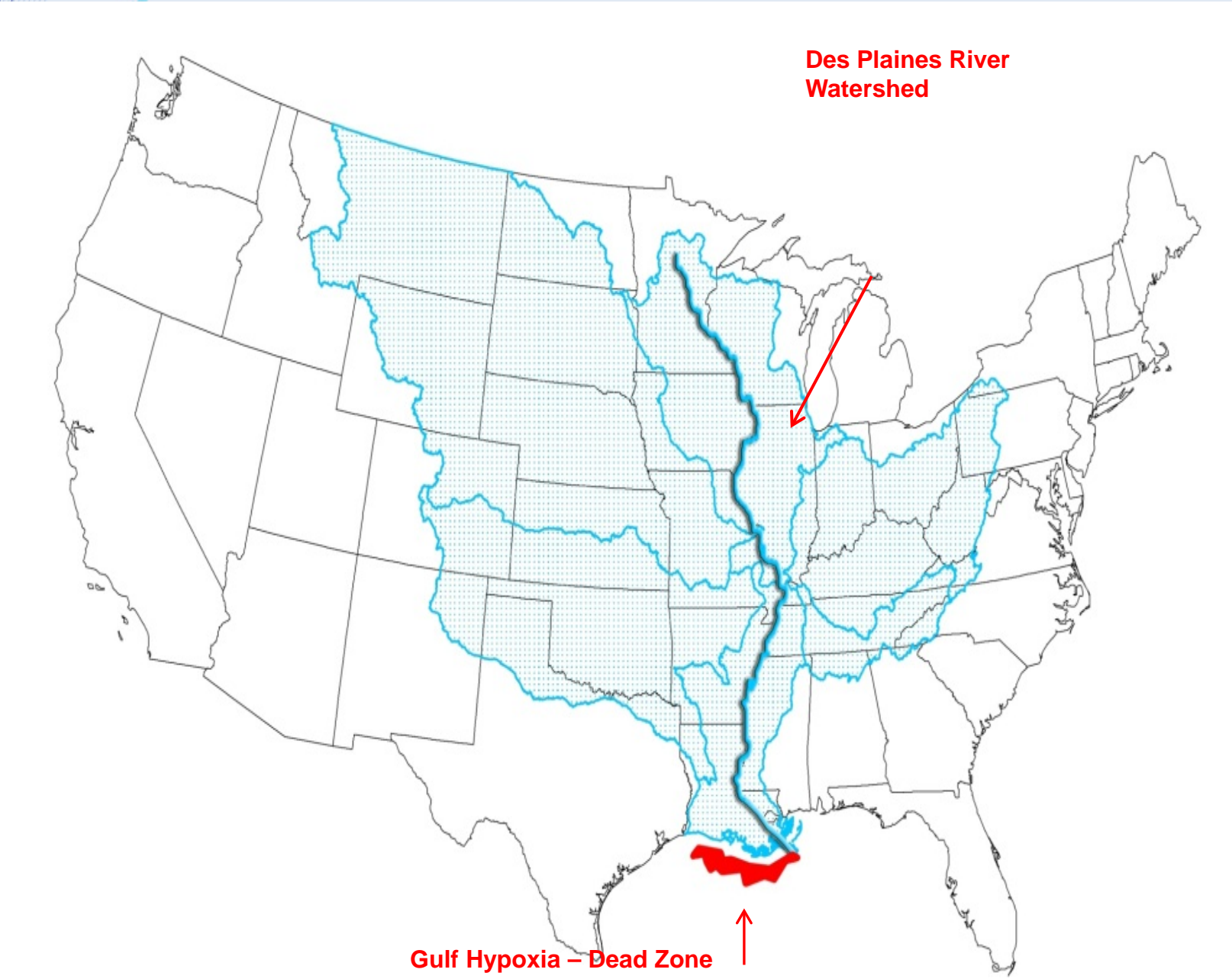
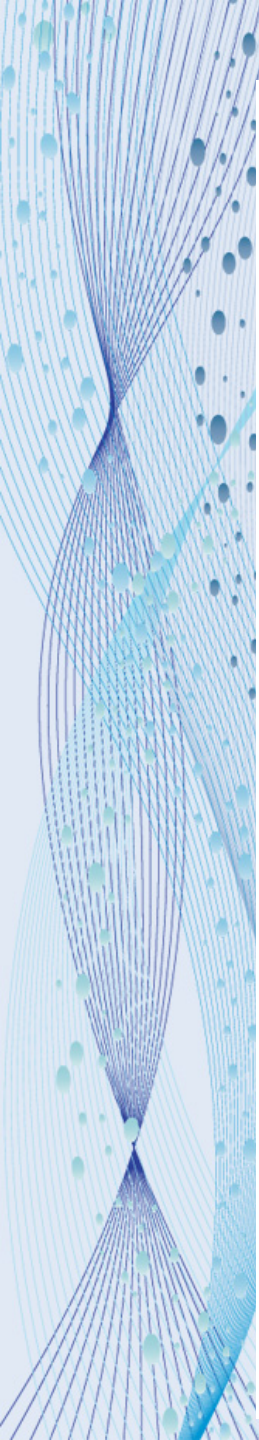


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JD, Chicago-Kent College of Law
12 years with U.S. EPA Region 5

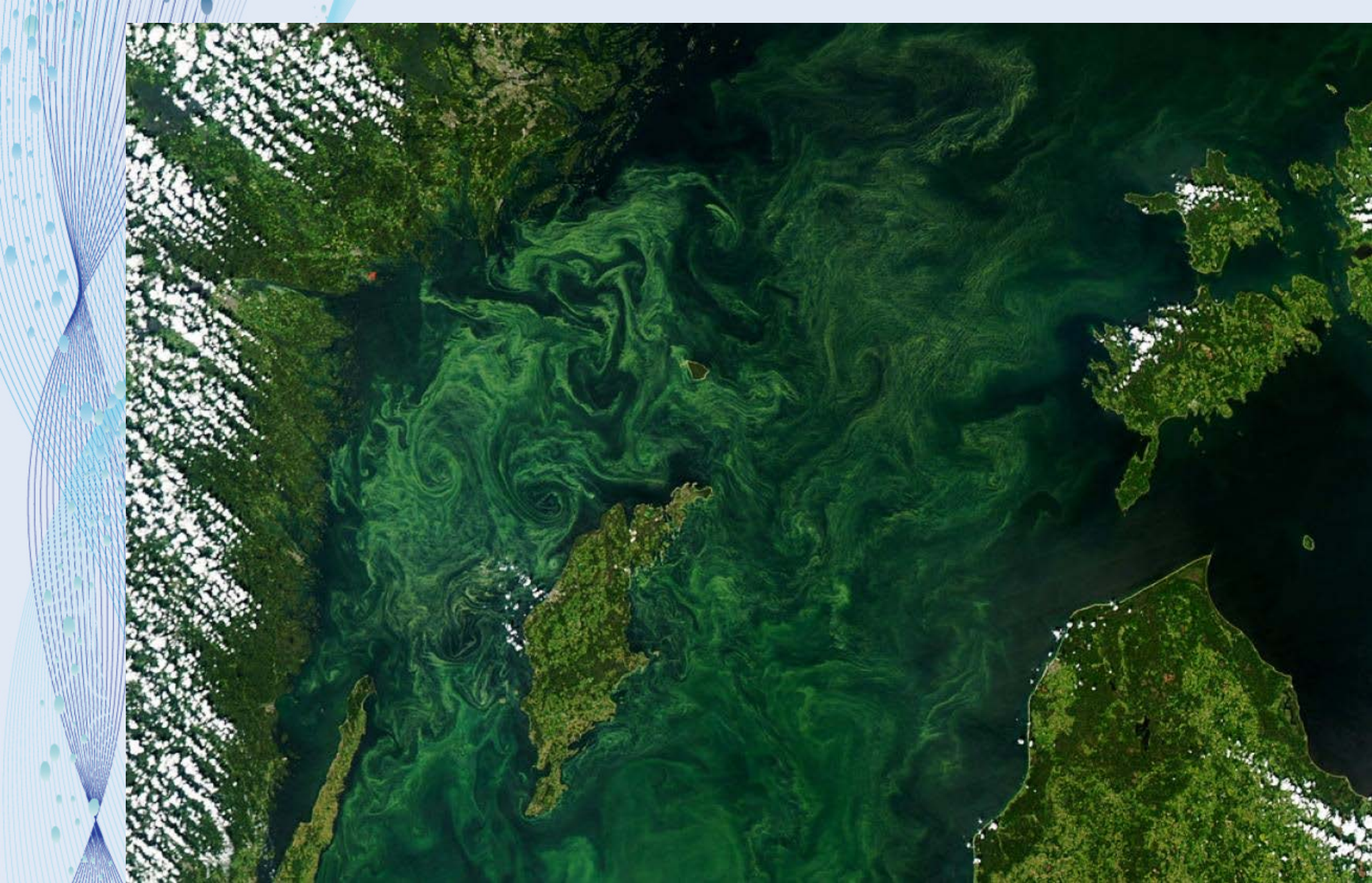
What Drives the need for Watershed Workgroups?

- **Gulf of Mexico Hypoxia (Dead Zone)**
- **2009 National Academy of Sciences Report: Urban Stormwater Management in the U.S.**
- **Local Watershed Stream/Lake Impairment**

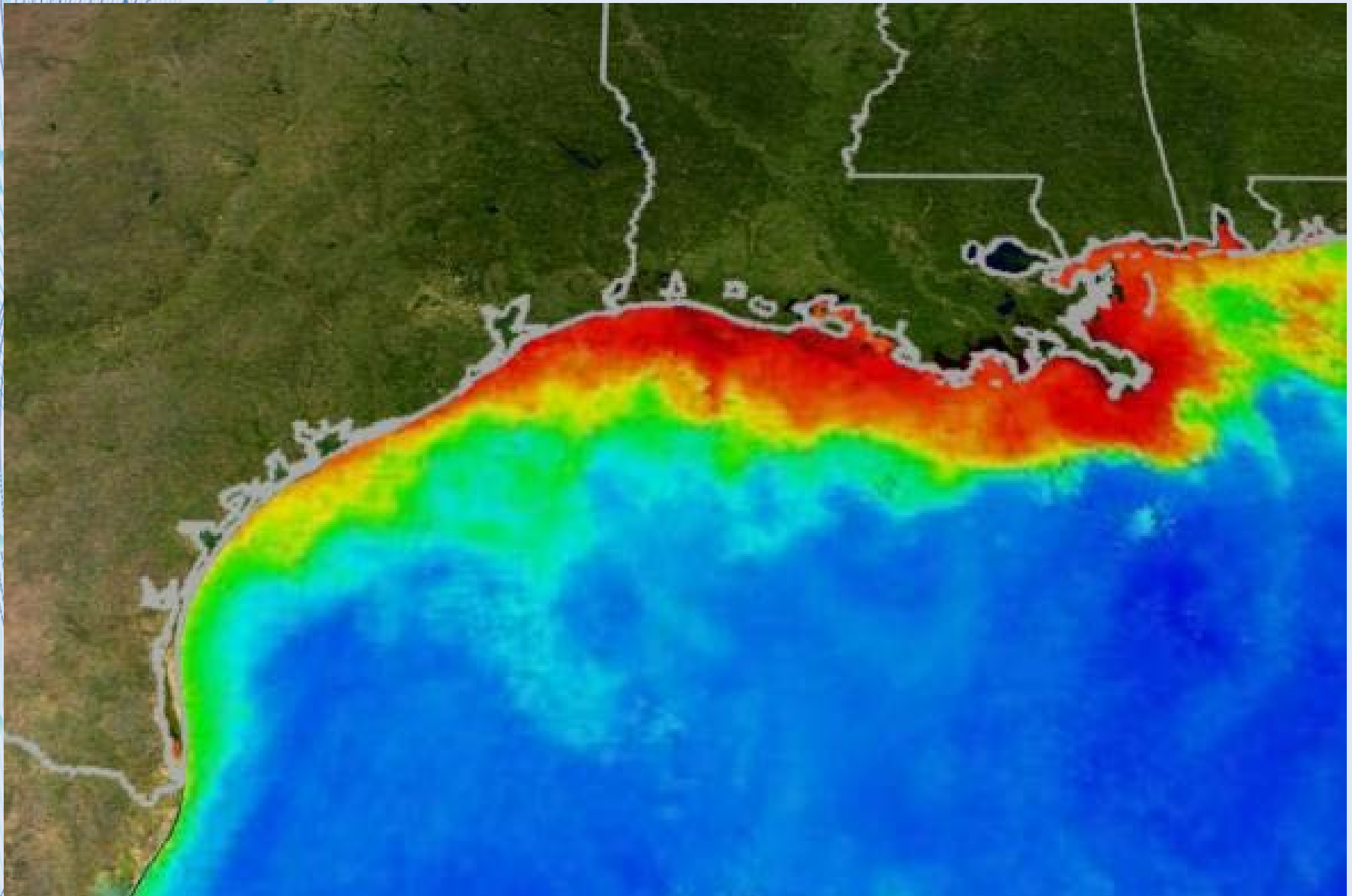


**Des Plaines River
Watershed**

Gulf Hypoxia - Dead Zone



Source: <http://news.nationalgeographic.com/news/2010/02/100305-baltic-sea-algae-dead-zones-water/>



Reds and oranges represent high concentrations of phytoplankton and river sediment.

Illinois Nutrient Loss Reduction Strategy (2015)

- 2008 Gulf Hypoxia Action Plan
- US EPA's 2011 Memo: All 12 states in Mississippi River Basin must produce a plan to reduce P and N carried in rivers throughout the US to the Gulf of Mexico.
- IL Goal: reduce nitrate-nitrogen by 15% and total P by 25% by 2025.

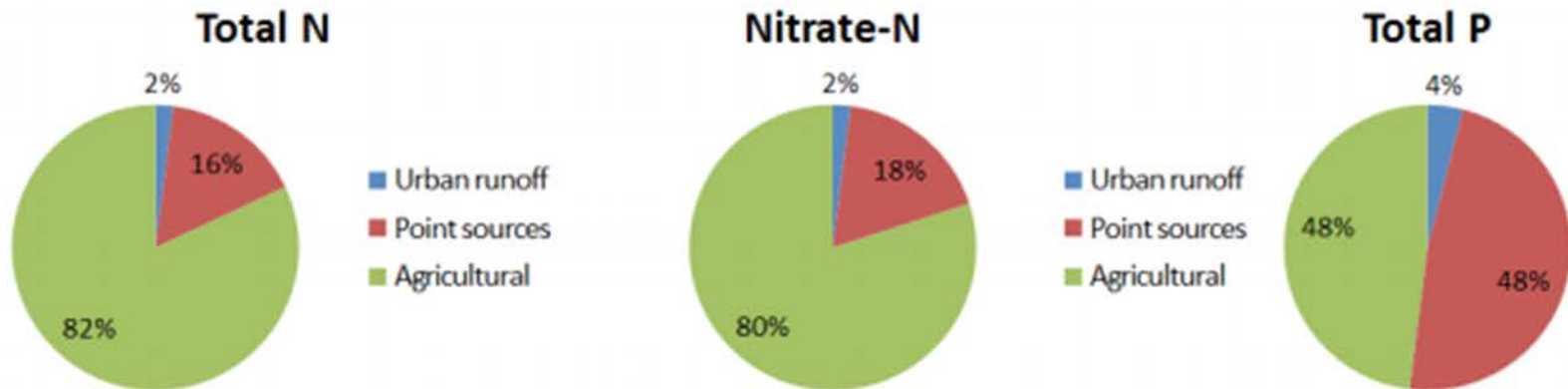


Figure 2.1. The proportion of nitrate and total phosphorus lost to the Mississippi River by source.

POTWs did not have a P limit in their permit until 2014/2015.

**Avg. P discharge was 3-4 mg/l
New Permit Limit 1 mg/l**

To meet new 1 mg/l limit, all POTWs in our Watershed had to upgrade their plants, to add Biological or Chemical Phosphorus Removal:

NSWRD (2 plants):	\$14.0 Million
Lindenhurst	\$ 1.0 Million
Libertyville	\$ 2.1 Million
Lake County (3 plants)	\$16.0 Million
Mundelein	\$ 1.0 Million

\$34.1 Million

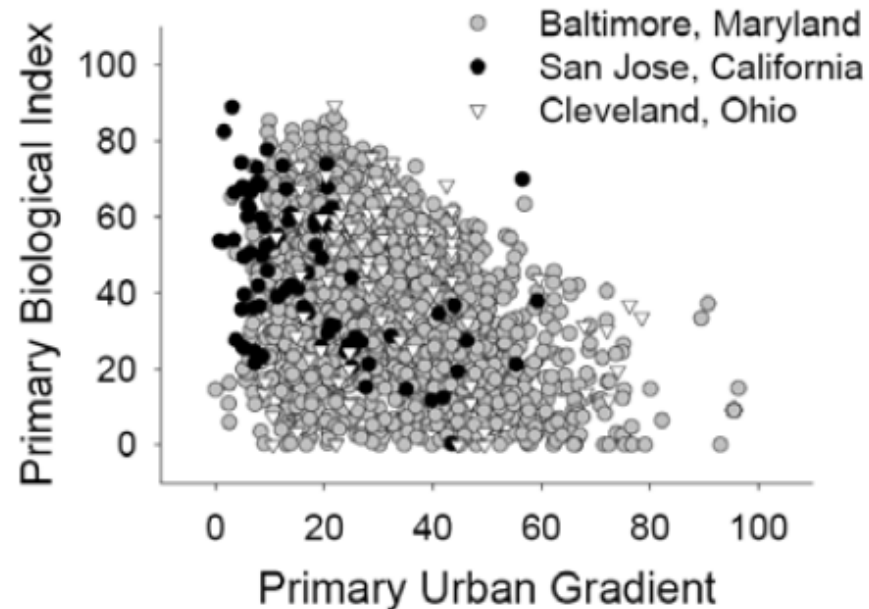
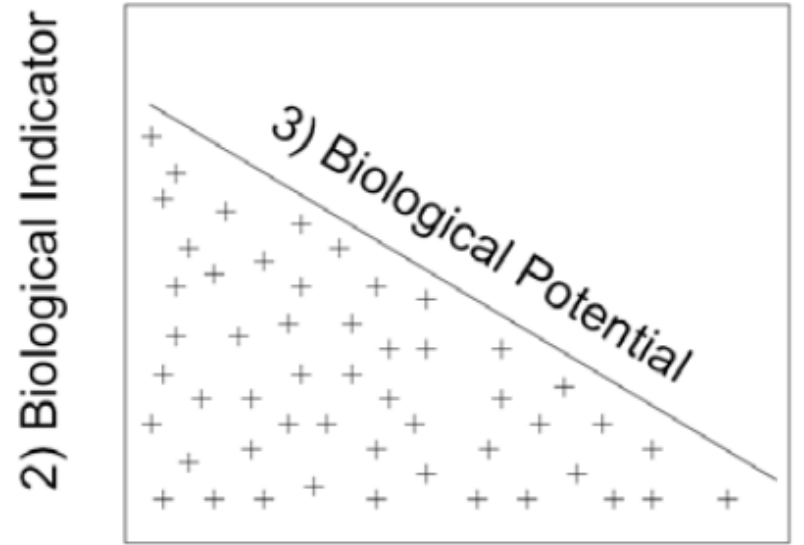


National Academy of Sciences Report Urban Stormwater Management in the United States (2009)

The **National Academy of Sciences** is a private, non-profit society of distinguished scholars. Established by an Act of Congress, signed by President Abraham Lincoln in 1863, they are charged with providing independent, objective advice to the nation on matters related to science and technology.

Report Preface:

Urban/Suburban Stormwater runoff remains one of the **great challenges** of modern water pollution control, as this source of contamination is a **principal contributor** to water quality impairment of waterbodies nationwide.





What is the problem with urban stormwater?

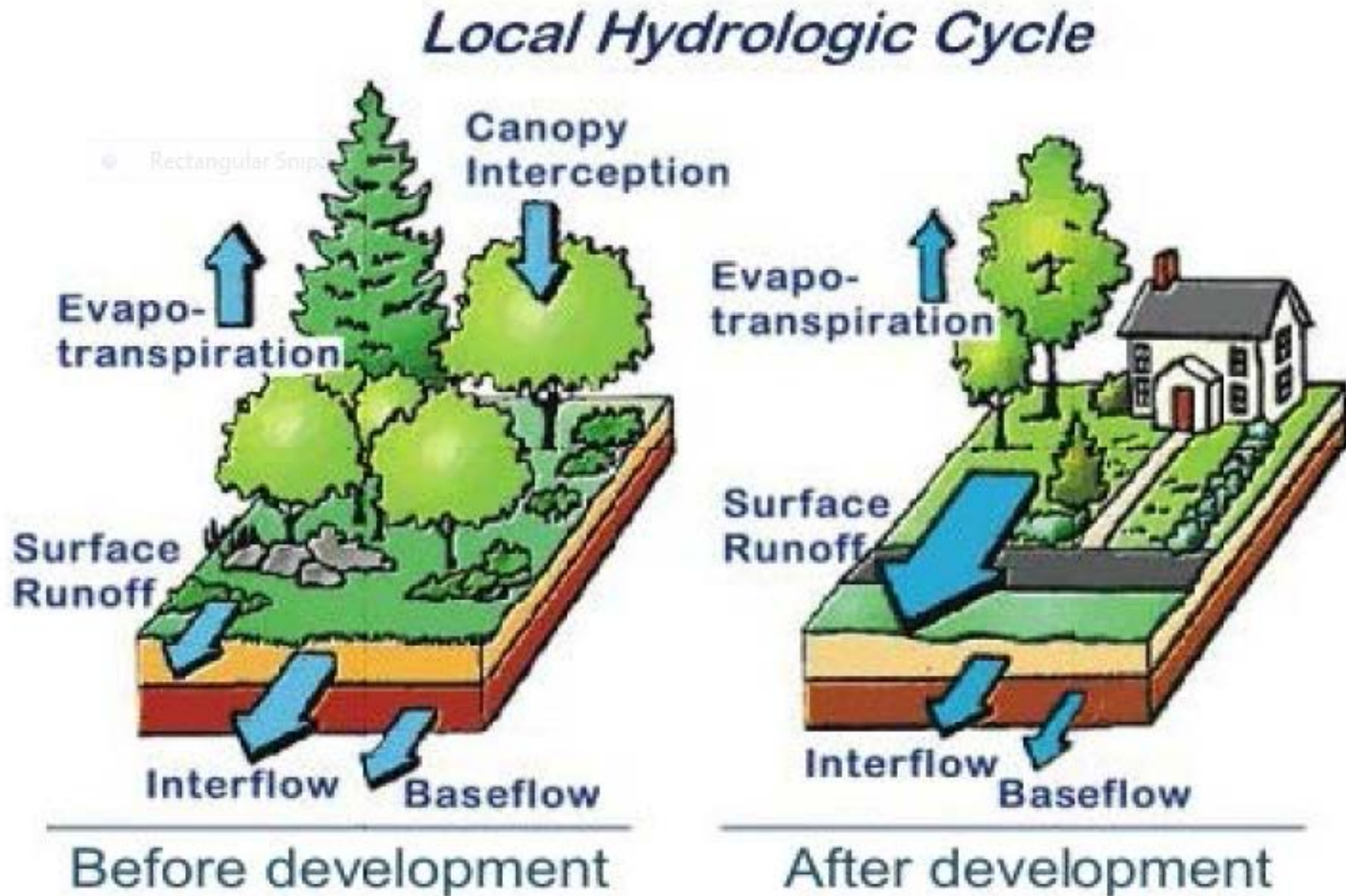
- As stormwater runs over roads, rooftops, and compacted land, it picks up and moves **chemical and microbial contaminants** to streams.
- Physical hazard to aquatic habitats and stream function, due to the increase in **water velocity and volume** that inevitably result on a **watershed scale** as many individually managed sources are combined.

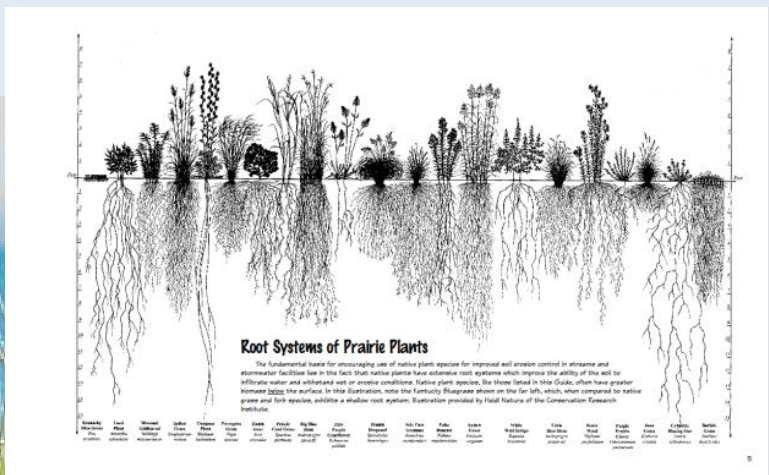
- There is little doubt as to why the problem of urban stormwater has not yet been “solved”—because every functional element of an aquatic ecosystem is affected. Urban stormwater has resulted in such **widespread impacts**, both physical and biological, that this phenomenon has been termed the “Urban Stream Syndrome.”



FIGURE 1-5A Headwater tributary in Philadelphia suffering from Urban Stream Syndrome. SOURCE: Courtesy of Chris Crockett. Philadelphia Water Department.

Nearly all of the associated problems result from **one underlying cause**: loss of the water-retaining function of the soil and vegetation in the urban landscape. (p. 28)














1830

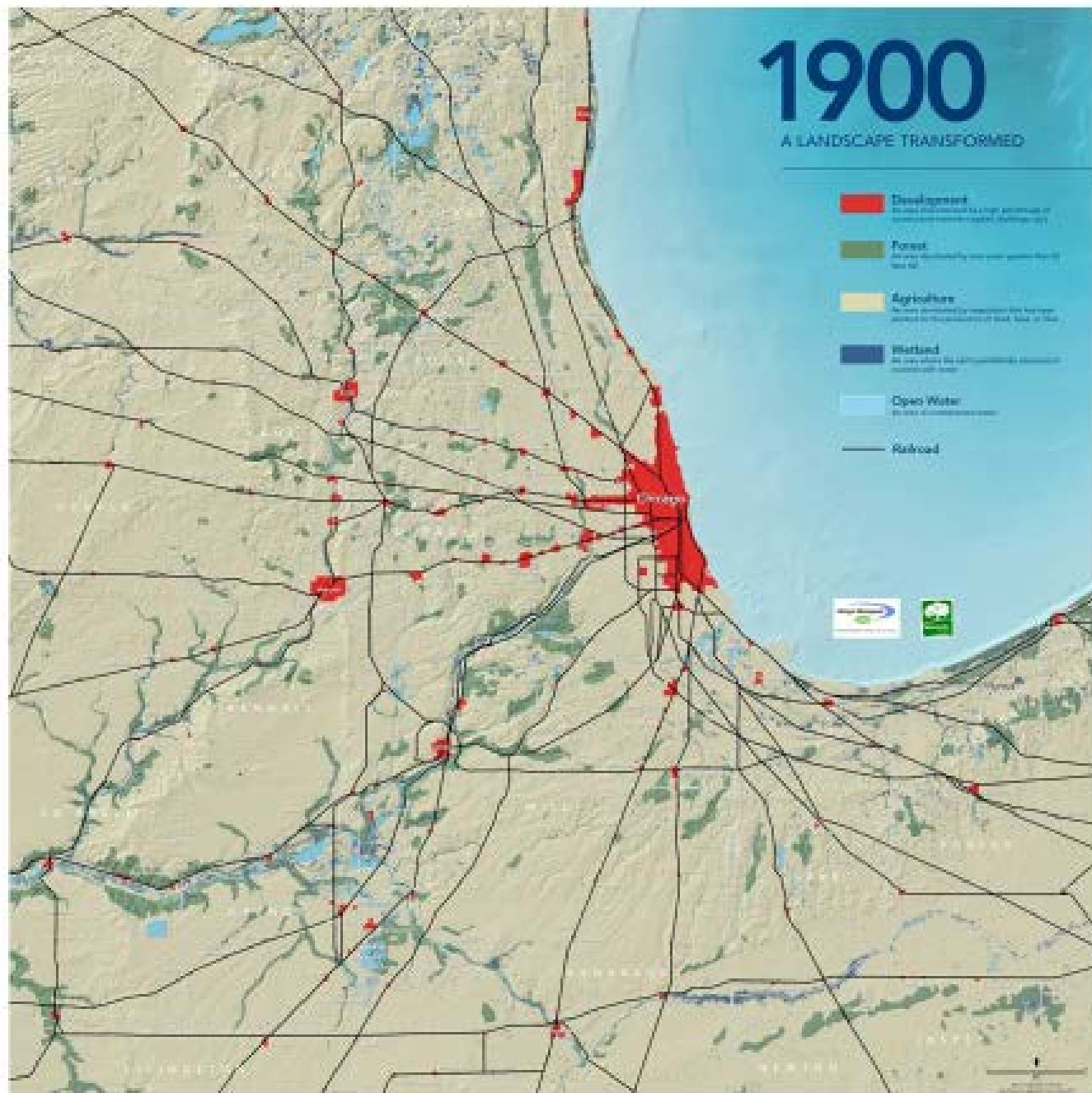
BEFORE THE WESTWARD EXPANSION

-  **Forest**
A thick growth of trees covering a large area of land.
-  **Prairie**
An open, grassy area of flat or rolling ground in predominantly temperate regions.
-  **Wet Prairie**
An elevated area of flat or rolling ground in predominantly temperate regions or wet ground.
-  **Wetland**
An area where the soil is permanently saturated or flooded with water.
-  **Open Water**
An area of undisturbed water.
-  **Finnish Settlement**
-  **Native American Settlement**



1900

A LANDSCAPE TRANSFORMED

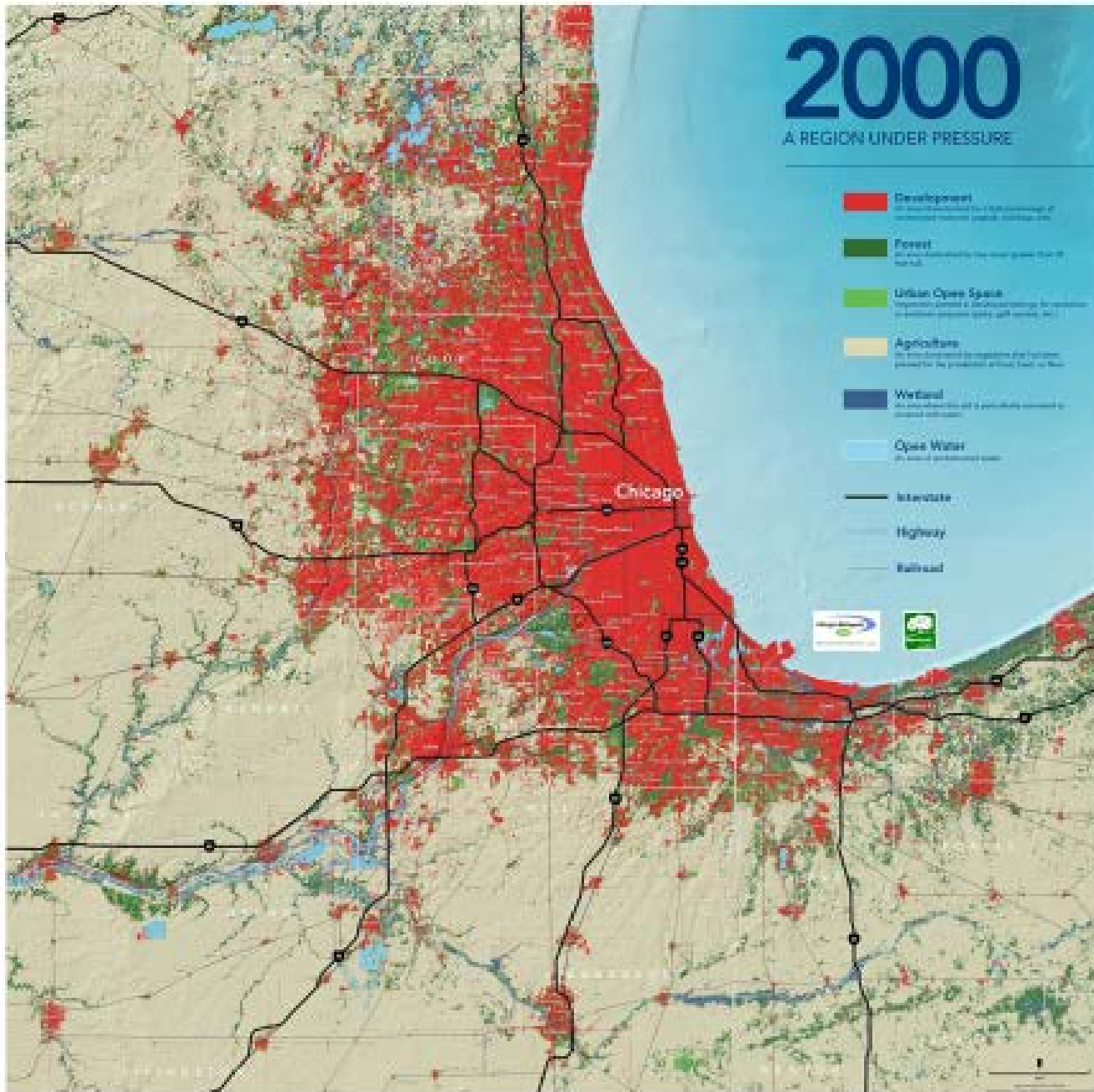


- Development**
In 1900, development was concentrated in a few pockets of urban centers and along the coast.
- Forest**
The area was dominated by forest and open space that had been cleared for agriculture.
- Agriculture**
The area was dominated by agriculture and forest, which had been cleared for agriculture.
- Wetland**
The area was dominated by wetlands and open water.
- Open Water**
The area was dominated by open water.
- Railroad**
The area was dominated by railroads.



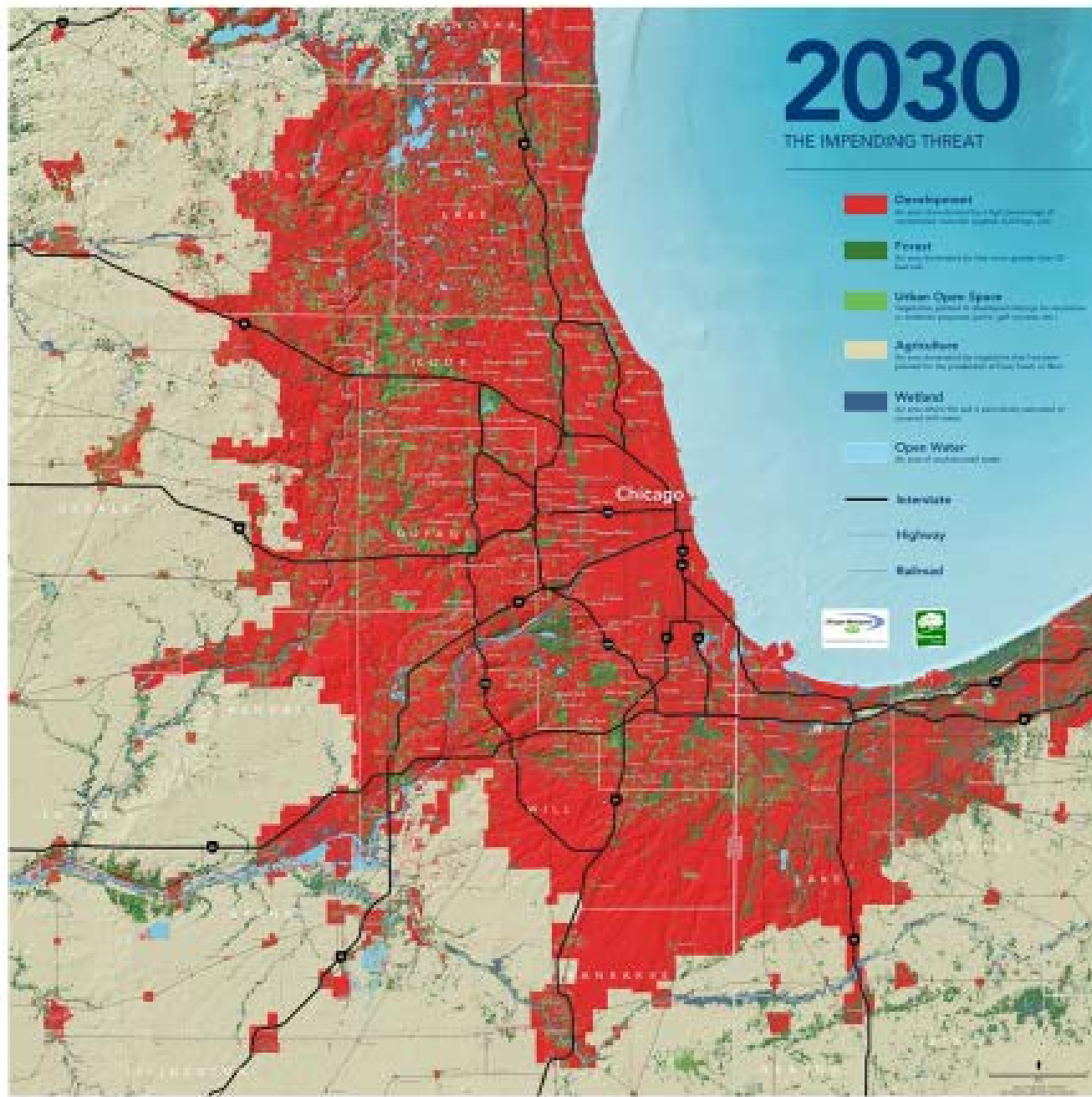
2000

A REGION UNDER PRESSURE



2030

THE IMPENDING THREAT



Ecosystem Services

(the benefits people obtain from ecosystems)

Flow Regulation/Flood Control	(\$1.85 billion/year)
Water Purification	(\$210 million/year)
Groundwater Recharge	(\$344 million/year)
Carbon Storage	(\$4.1 million/year)

Total: \$2.408 Billion/year

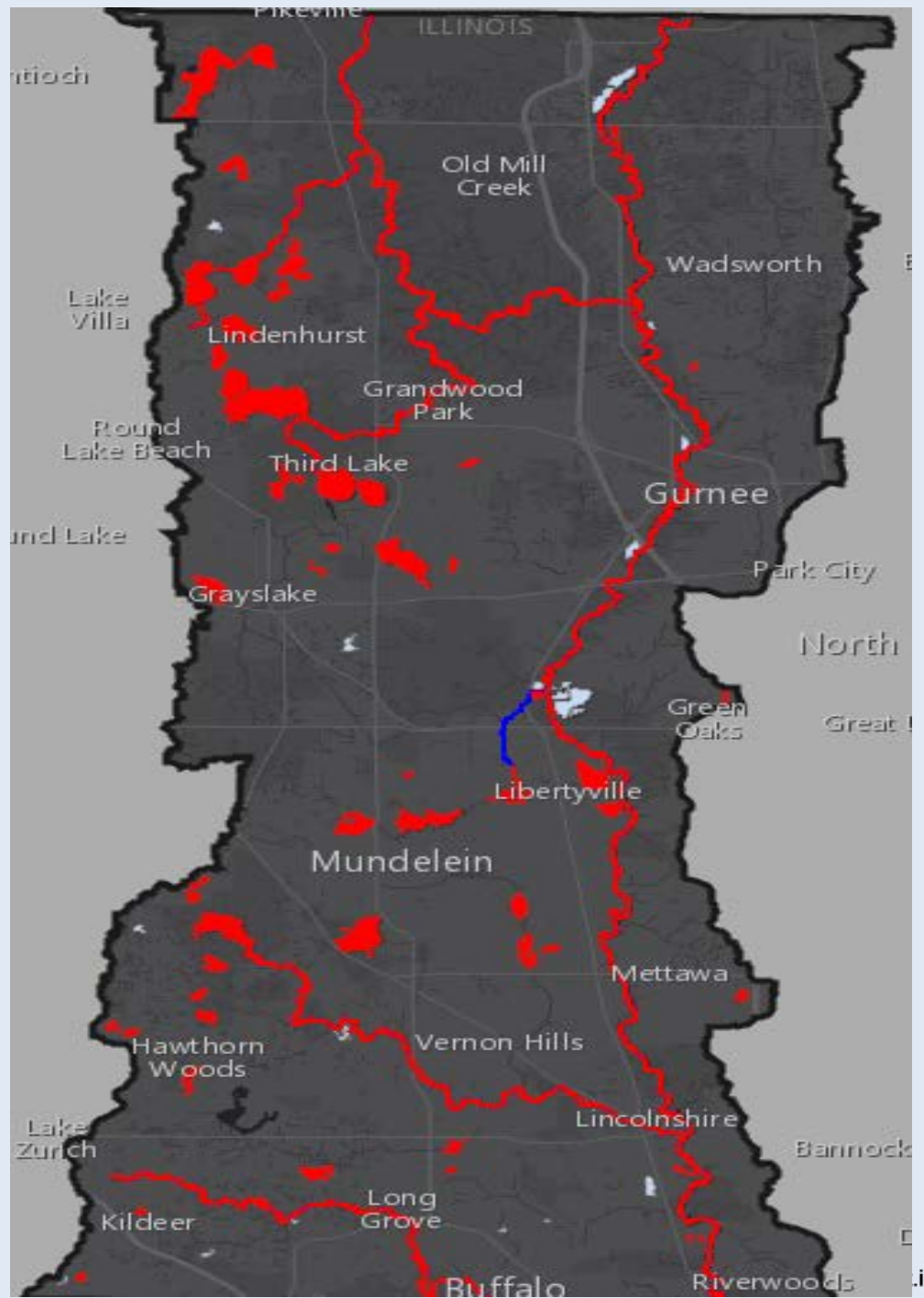
(Current valuation in 2015 – LCFPD.ORG)

Recommendation of National Academy of Sciences Report

The broad scale that these impacts occur at suggest that solutions, if effective, need to be implemented at a similar scale.

The greatest improvement to the EPA's Stormwater Program would be to convert the current piecemeal system into a **WATERSHED-BASED** permitting system.

Watershed Lakes/Streams

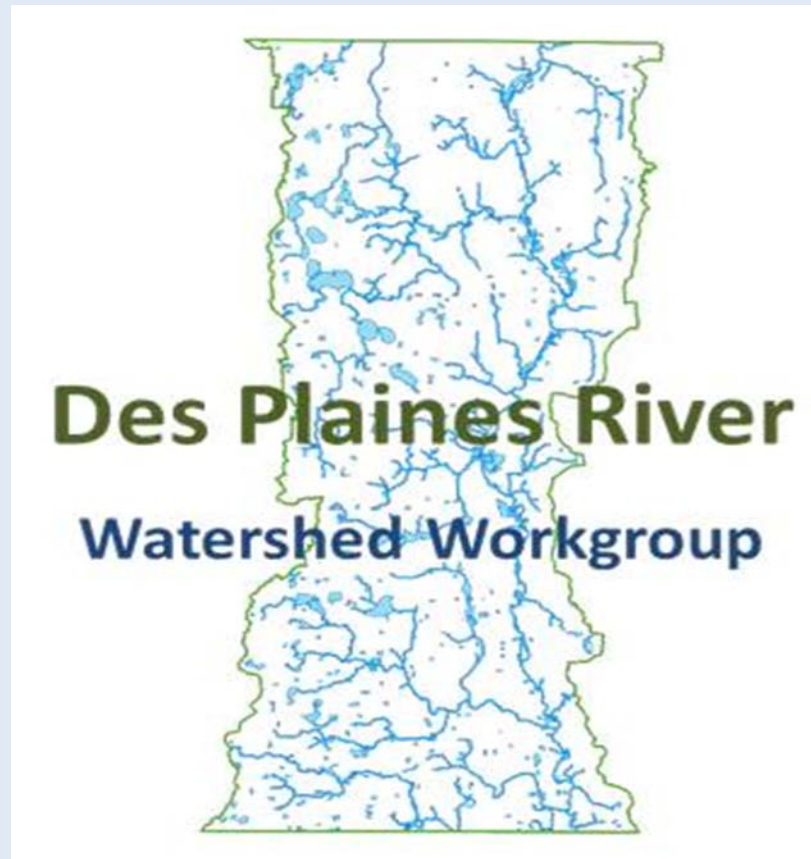


Why form a Watershed Workgroup?

- Effective Solutions happen on a Watershed scale
- Cost effective – data collection, modeling, K mgmt., data reporting.
- Local decision-making vs. IEPA telling us what to do
- Innovative Approach –handful of pollutants vs. broader solutions
- Permit encourages partnering with other MS4s (Part II.D/MS4)

A Voluntary, Dues Paying Organization

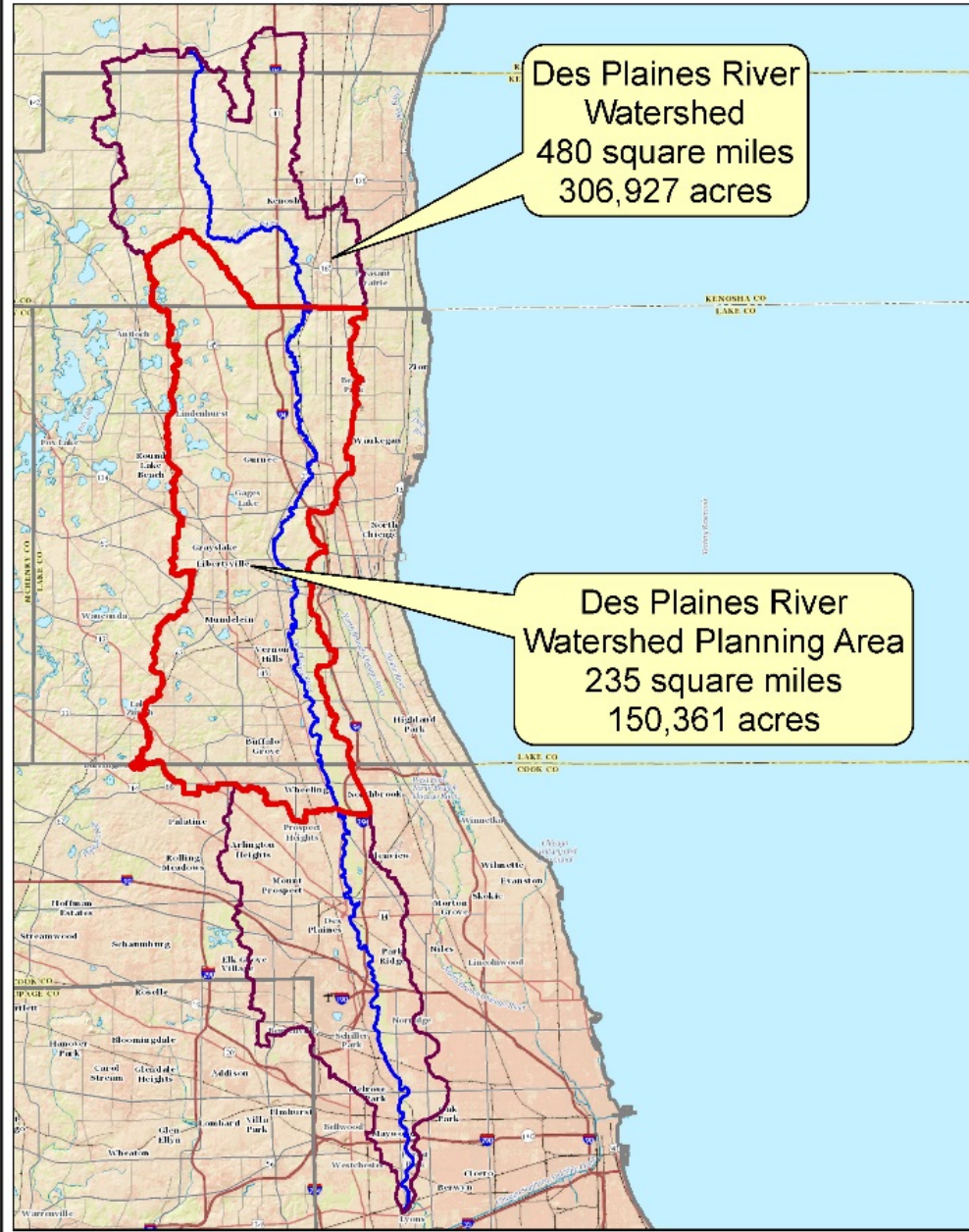
Mission: Improve Water Quality and help our members meet their Permit Requirements Cost Effectively.



- **Data Driven Decision-making**
- **Resolving Water Impairment Issues and Implementing Solutions**
- **Modeling Du Page River Salt Creek Watershed (DRSCW) Workgroup**
- **Aquatic Life vs. Pollutants**



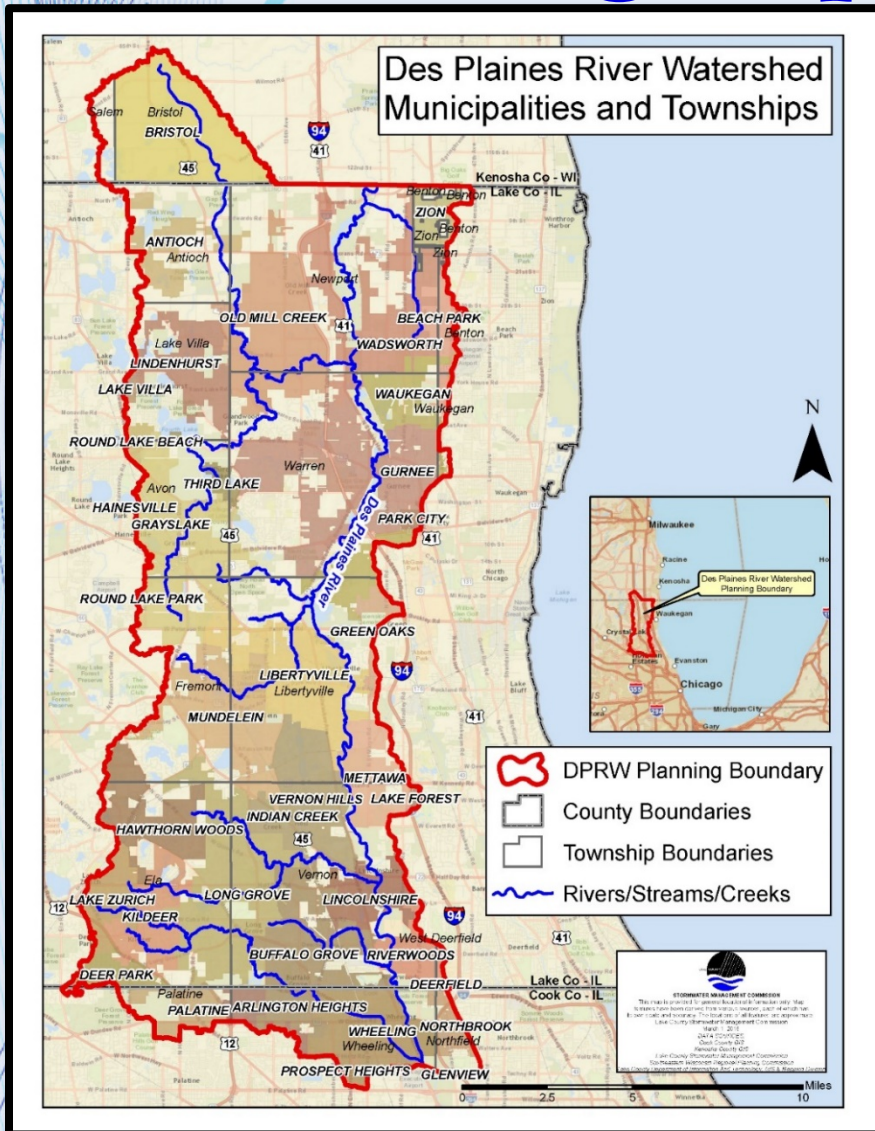
Des Plaines River Watershed Location



Des Plaines River Watershed
480 square miles
306,927 acres

Des Plaines River Watershed Planning Area
235 square miles
150,361 acres

Des Plaines River Watershed Workgroup (“DRWW”)

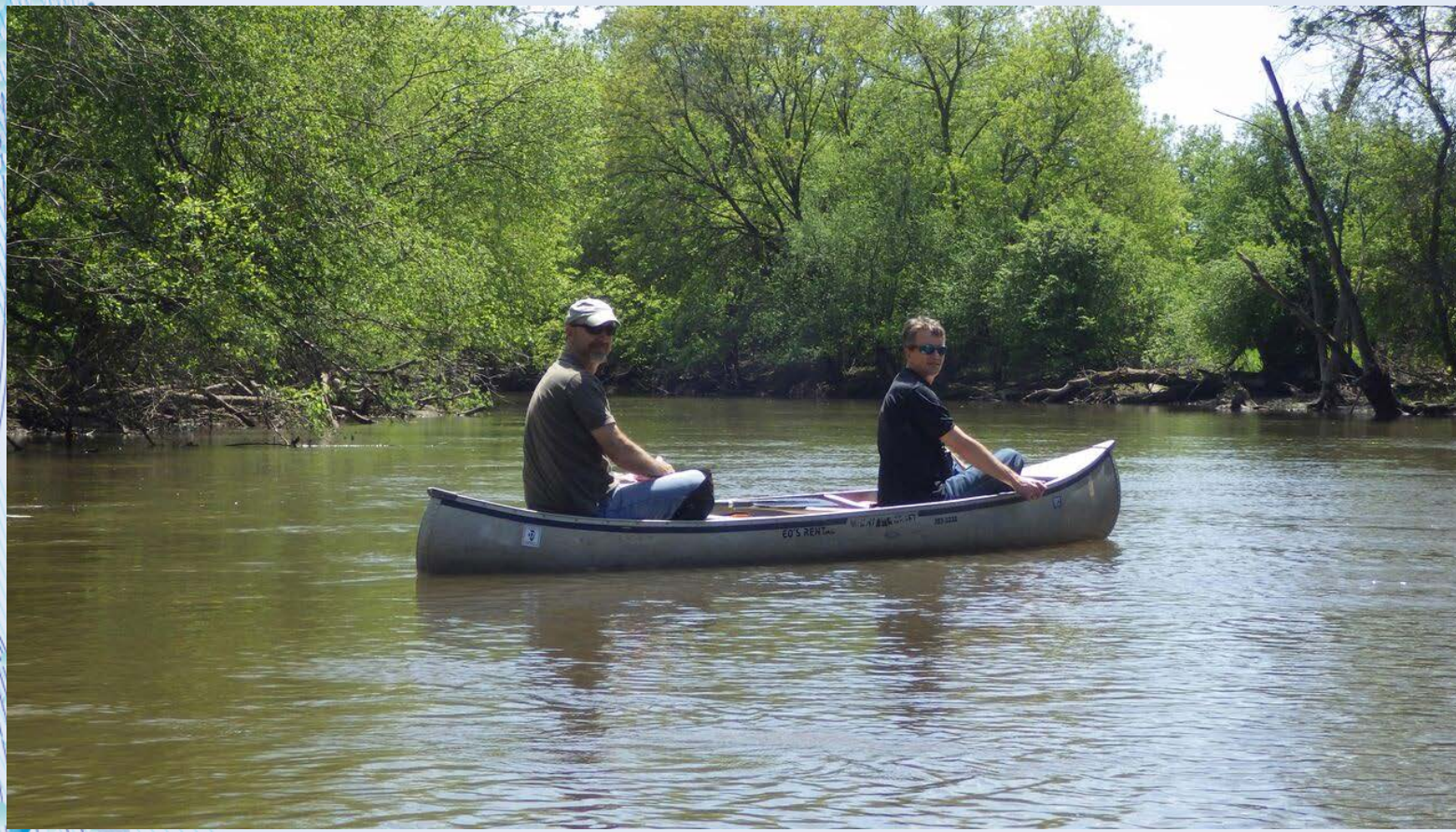


- Lake County portion of Watershed is served by the DRWW.
- 200 square miles (130,000 acres)
- 9 Subwatersheds
- Portions of 33 municipalities; 12 twps.; 2 drainage districts
- 8 POTWs discharging 80 MGD

Des Plaines River Watershed Workgroup (DRWW)

2016 had 24 members (POTWs, MS4s, Government, Consultants, Not-For-Profits)

2016 Membership Dues \$227,381



DRWW Dues

67% from POTWs (DPR is effluent dominated)

33% from MS4s

\$2,479 per DAF MGD (POTWs)

\$200 plus \$0.78/acre in the Watershed (MS4)

\$200 (Consulting firms, Not-for-Profits, etc.)

In 2016:

POTWs contributed: \$179,014 (79%)

MS4's contributed: \$ 48,367 (21%)

\$227,381 (100%)

2016 Expenditures

DRWW 2016 Expenses



DRWW EXECUTIVE BOARD

- President: Brian Dorn, North Shore Water Reclamation District
- Vice President: Al Giertych, Lake County Division of Transportation
- Treasurer: Michael Talbett, Village of Kildeer
- Secretary: Paul Kendzior, Village of Libertyville
- Member at Large: Jim Anderson, Lake County Forest Preserve District
- Joe Robinson – Monitoring / Water Quality Improvements Committee Chair
- Mike Adam – Lakes Committee Chair

DRWW MONITORING/WQ IMPROVEMENTS COMMITTEE

- Chair – Joe Robinson, North Shore Water Reclamation District
- Mike Adam, Lake County Health Department
- Jim Bland, Sierra Club
- Al Giertych, Lake County Dept of Transportation
- Austin McFarland, Lake County Public Works
- Jim Anderson, Lake County Forest Preserve District
- Steve Vella, Wastewater Superintendent Village of Libertyville

DRWW LAKES COMMITTEE

- Chair – Mike Adam, Lake County Health Department
- Alana Bartolai, Lake County Health Department
- Jim Bland, Sierra Club
- Rob Flood, North Shore Water Reclamation District
- Sharon Osterby, Lake County Stormwater Management Commission
- Gerry Urbanozo, Lake County Health Department

DRWW Monitoring Program – DATA DRIVEN DECISION MAKING

Philosophy: Use Adaptive Management to review, revise and update our monitoring program annually.

Goals:

- Identify stressors
- Establish baseline conditions



2015 – 44 sites total

- Biological, water and sediment chem

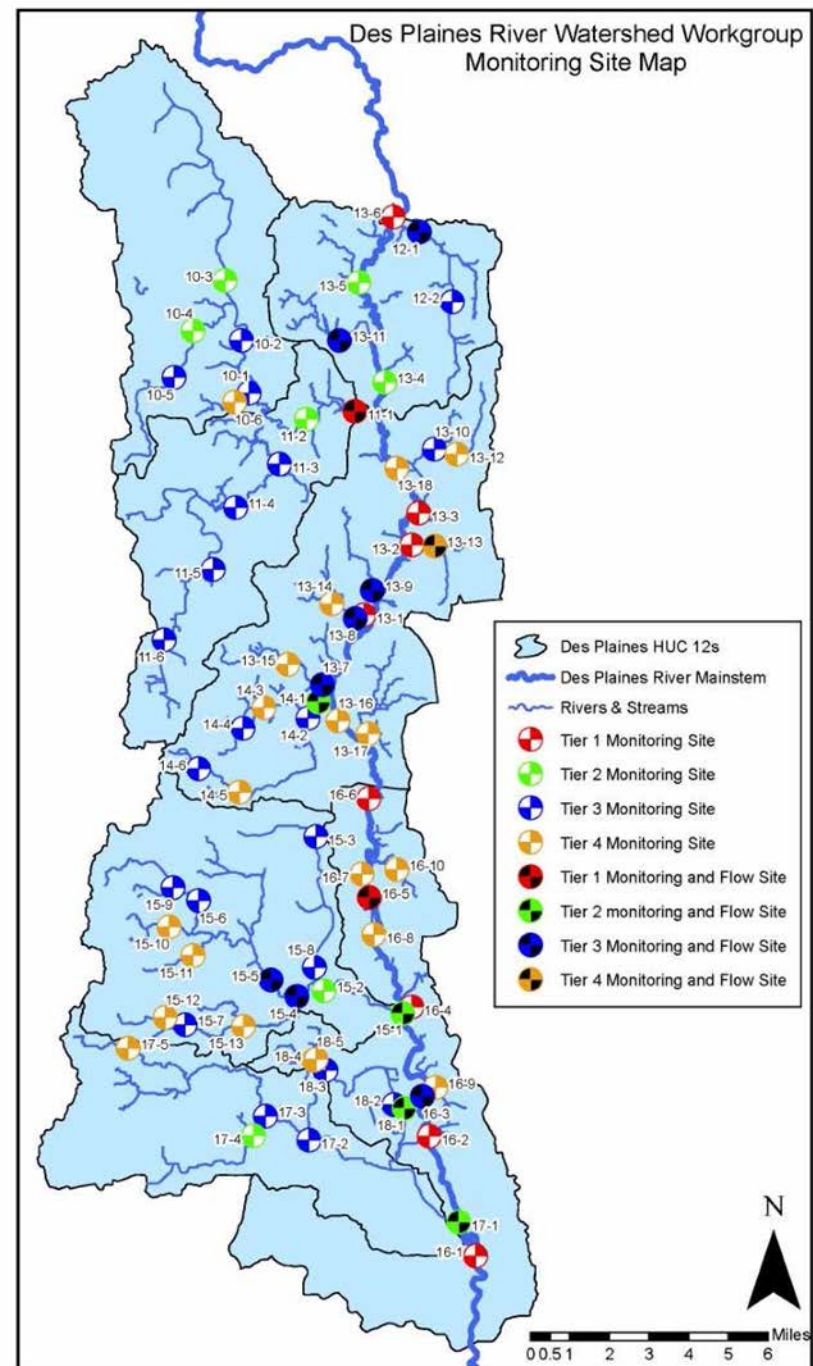
2016 – 70 sites total

- Added 26 sites
- 21 sites flow monitoring

BASELINE DATA COMPLETE

2017 – 71 sites total

- 14 locations for continuous monitoring of DO/pH/temp/Conductance and Chlorophyll-a





Largemouth Bass



Bluegill



Hornyhead Chub



Stonecat Madtom



Blackside Darter



Warmouth Indian

Next Steps

- Collect Data for Next 3 years
- Modeling of baseline data to identify statistically significant stressors and a “restorability rating.” (2018)
- List of Projects addressing biggest stressors and most restorable (2019)
- Talk to permit holders about writing these projects into their permit in exchange for freezing permit limits at current levels for 10 years (DRSCW’s approach).
- Pursue 319 grant or other grant monies.

Membership Benefits

- DATA DRIVEN – identifying stressors, causes of stressors and projects to reduce stressors **cost effectively**.
- Data Reporting to IEPA for our Members
- Contractor Management
- Comprehensive Look at Watershed
- MUCH Better chance to get grant \$
- DRSCW has success getting POTWs to fund projects
- U.S. EPA/IEPA Relationship
- Education and Outreach
- Professional Development Hours for Attending DRWW Meetings
- Networking
- Wider Perspective on what is going on in this field
- Being a part of the solution....

What's on the Horizon for MS4 Permits in 2021?

Al Keller, IEPA says:

- **Watershed specific permit with watershed-specific action items**
- **U.S. EPA may require monitoring at storm sewers.**
- **Industrial Site Stormwater General Permit – quarterly sampling for compliance, non-compliance triggers corrective action.**




TOGETHER



WE
WANT
YOU

TO
JOIN
THE
DRWW





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DRWW Technical
Coordinator

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847-377-7702

DRWW.org