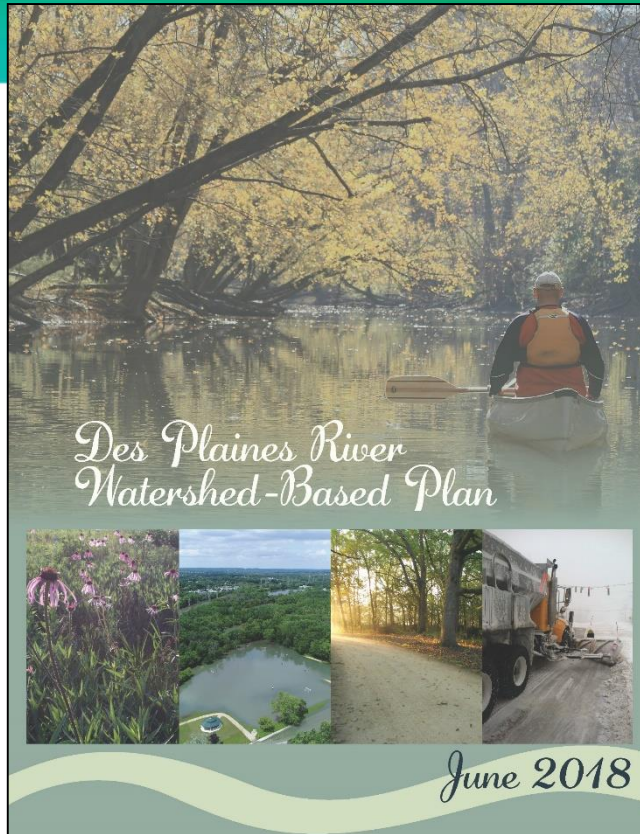


Des Plaines River Watershed-Based Plan



Mike Warner, Executive Director
Mike Prusila, Planning Supervisor



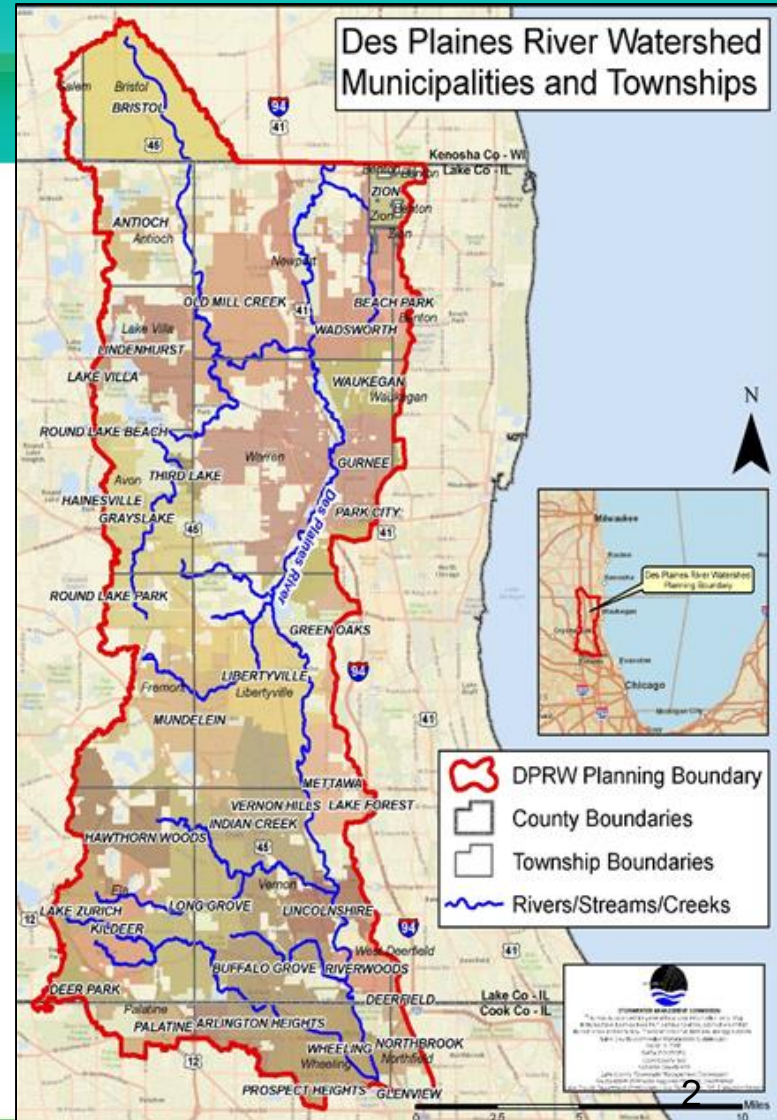
STORMWATER MANAGEMENT COMMISSION

*Funding for this project provided, in part, by the
Illinois Environmental Protection Agency through Section 319 of the Clean Water Act.*



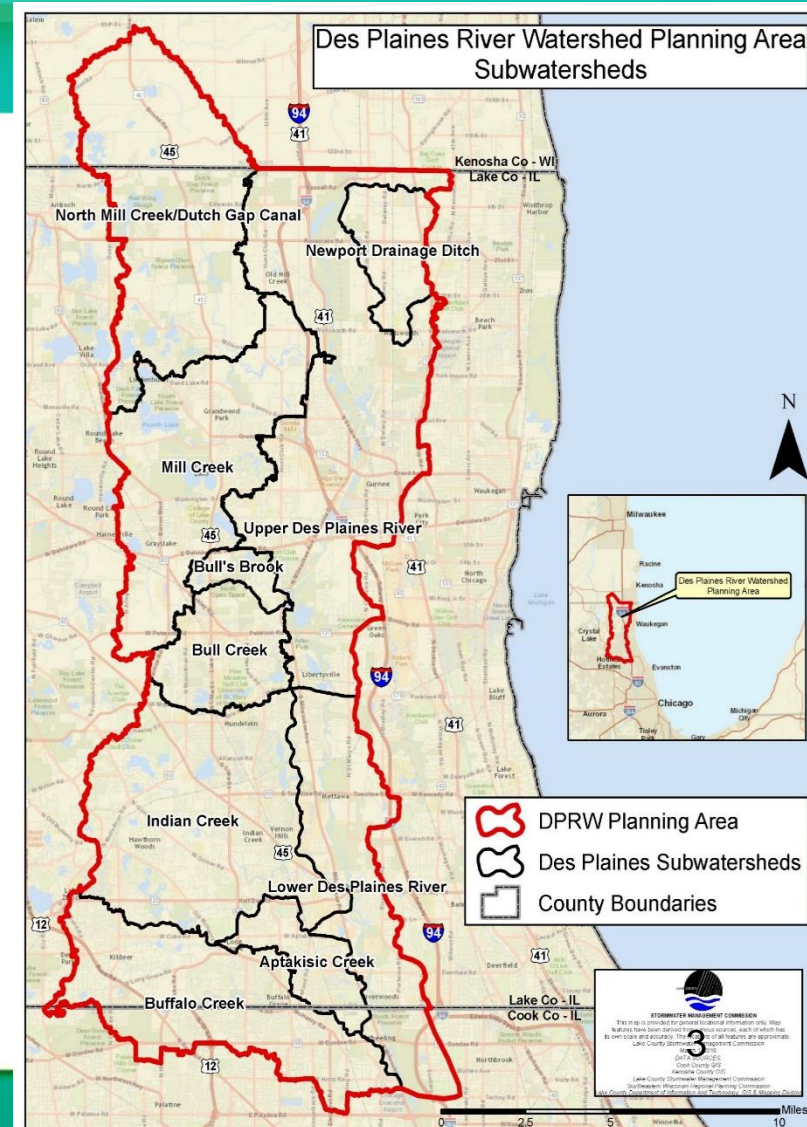
Why a Watershed-Based Plan?

- Clean water, healthy lakes and streams, and safety from flooding are important for ALL watershed stakeholders
- Watershed planning improves coordination and cooperation among communities
- Provide a “roadmap” for all stakeholders to accomplish watershed goals



Watershed Plan

- Watershed Goals & Objectives
- Watershed Characteristics Assessment
- Watershed Problem Assessment
- ***Flood Problem Assessment***
- ***Prioritized Action Plan***
- ***Plan Implementation*** & Evaluation
- Education & Outreach



Vision & Goals

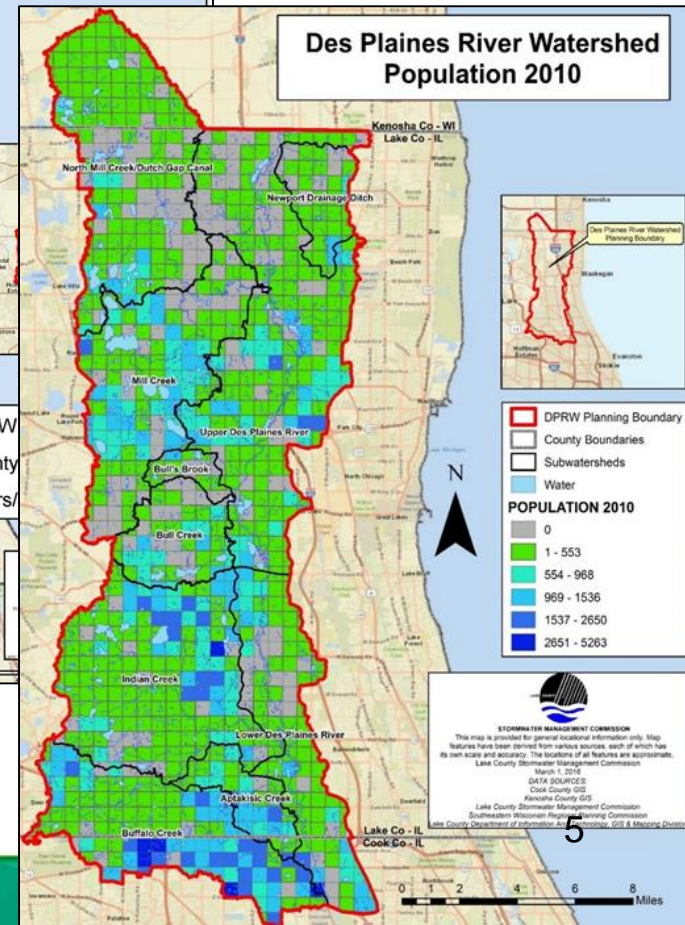
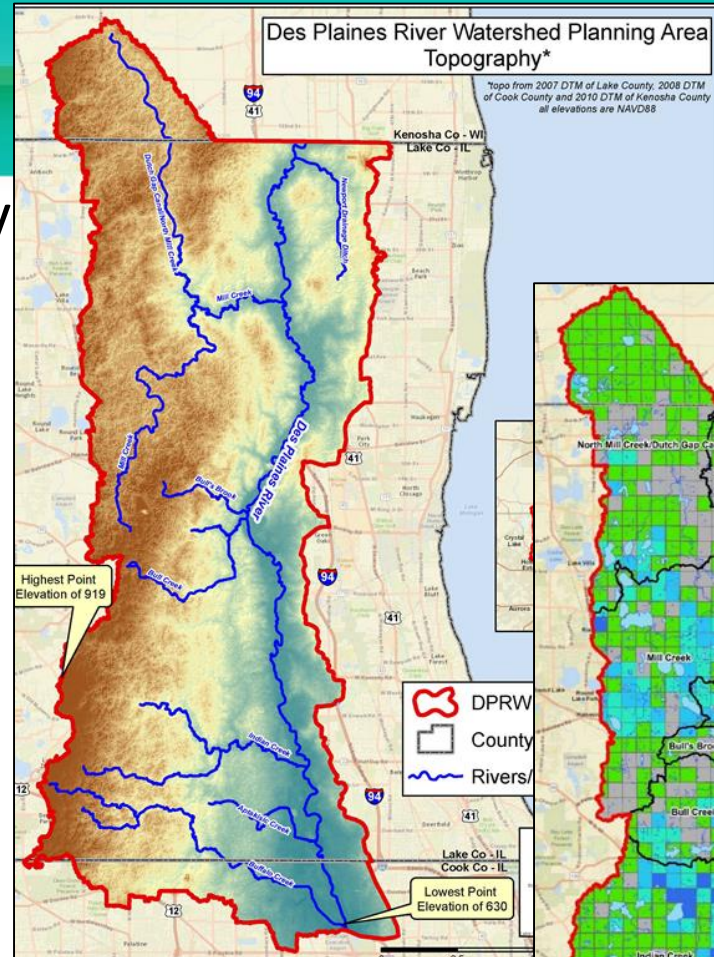
Vision Statement:

The Des Plaines River watershed planning area will be a destination valued by residents, businesses, and governments that join together to actively engage in education and participate in improving water quality. Stakeholders will preserve and enhance regional green infrastructure, resulting in cleaner streams and lakes, better plant and animal biodiversity, and reduced flood damage – while balancing a sustainable native landscape with development and economic growth.

- Improve and protect water quality
- Protect/improve natural resources & regional green infrastructure
- Flood damage reduction
- Installation/maintenance of stormwater infrastructure
- Community & agency coordination
- Sustainable agricultural systems
- Education & Outreach

Watershed Resource Inventory

- Climate & Topography
- Soils
- Jurisdictions
- Demographics
- Land Use
- Green Infrastructure
- Wetlands
- Streams & Lakes
- Detention Basins
- Water Quality



Watershed Problem Assessment

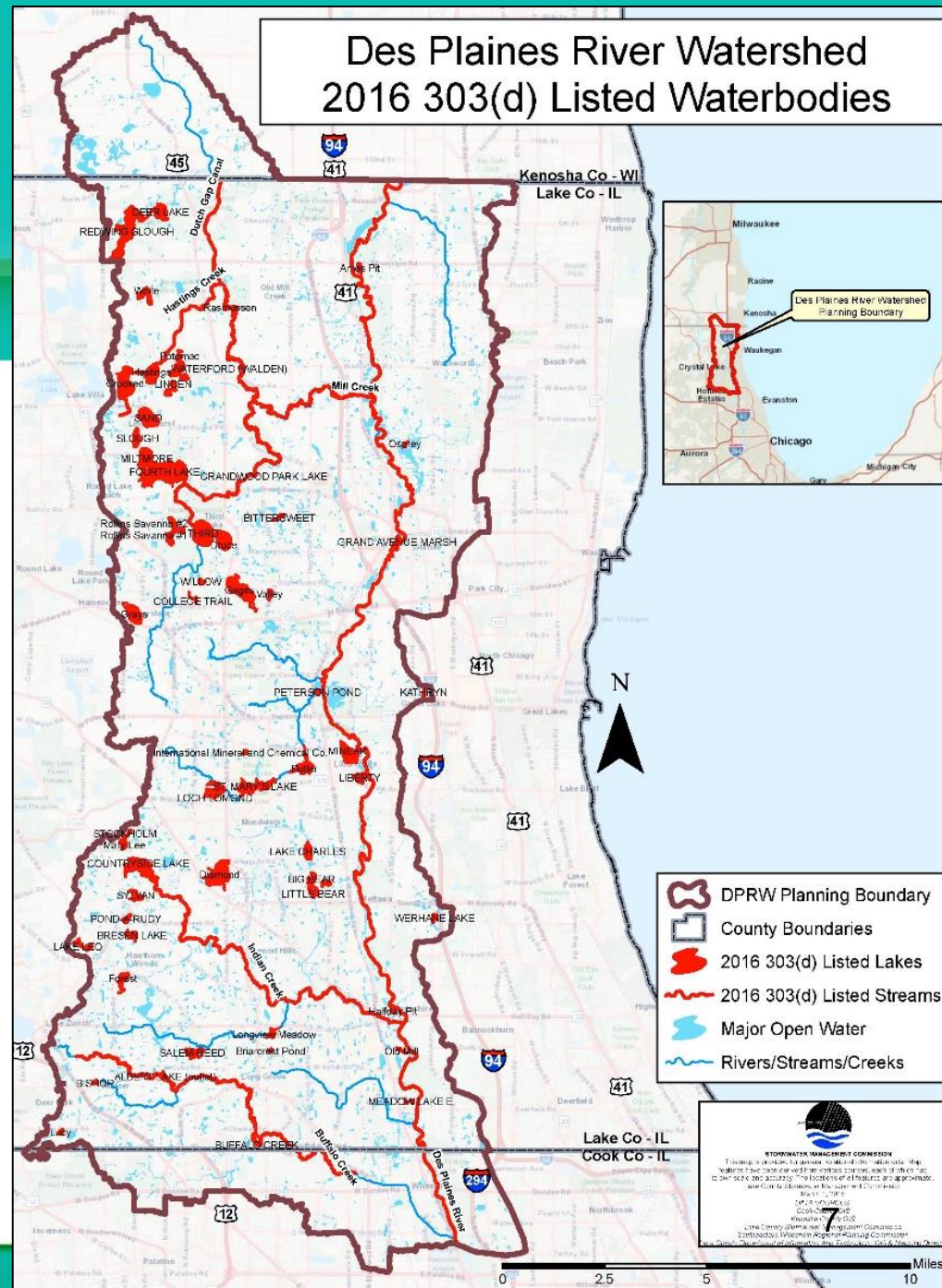
- Water Quality Impairment Causes/Sources
- Watershed Workgroup data
- Flooding



Water Quality

2016 Illinois EPA Integrated Report:

- 12 Impaired Stream Segments
- 60 Impaired Lakes



Water Quality-Lakes

60 Lakes Impaired

Most common causes:

- Phosphorus (52)
- Total Suspended Solids (43)
- Aquatic Algae (34)

Chloride levels increasing over time

Fecal coliform impairment on 4 lakes



7 lakes fully support designated uses:

Timber (North), Miltmore, Windward,
Sterling, Carina, LCFPD Dog Training
Pond, Independence Grove

**Nonpoint and legacy point sources
for MOST impairments**



Water Quality-Streams

12 Impaired segments identified by IL EPA (2016 Integrated Report)

DPR Workgroup: Aquatic Life impairment at all sites monitored (70 sites)

At least 16 causes, including:

- Siltation/Sedimentation
- Organic Enrichment/Dissolved Oxygen/Nutrients
- Chlorides
- Habitat and Hydrologic Alterations
- PAHs/Manganese

Point and Nonpoint sources contribute to impairments

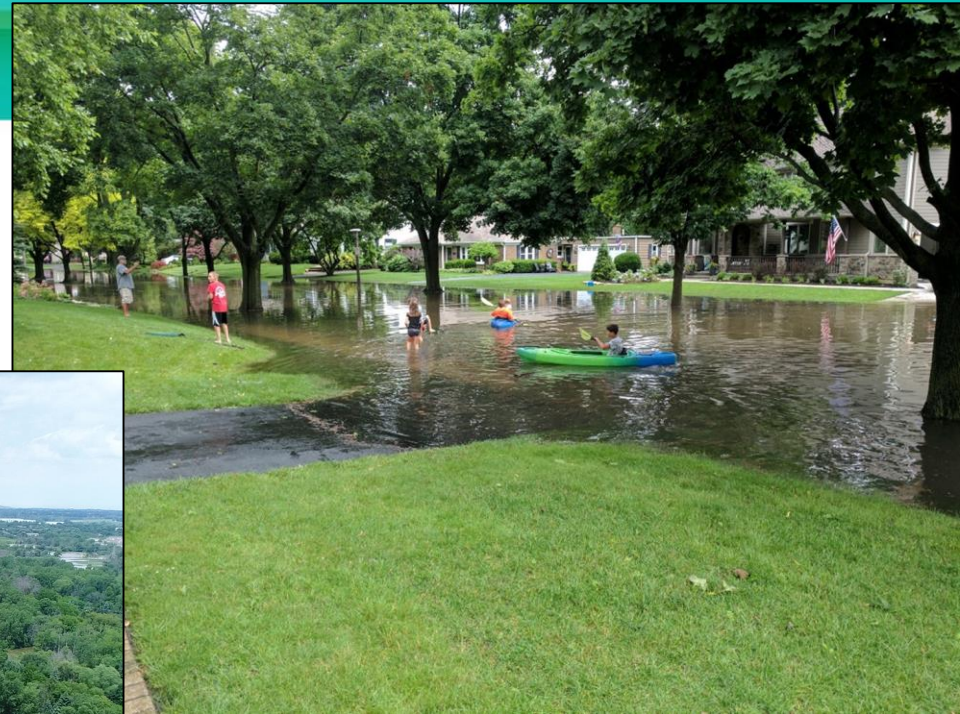
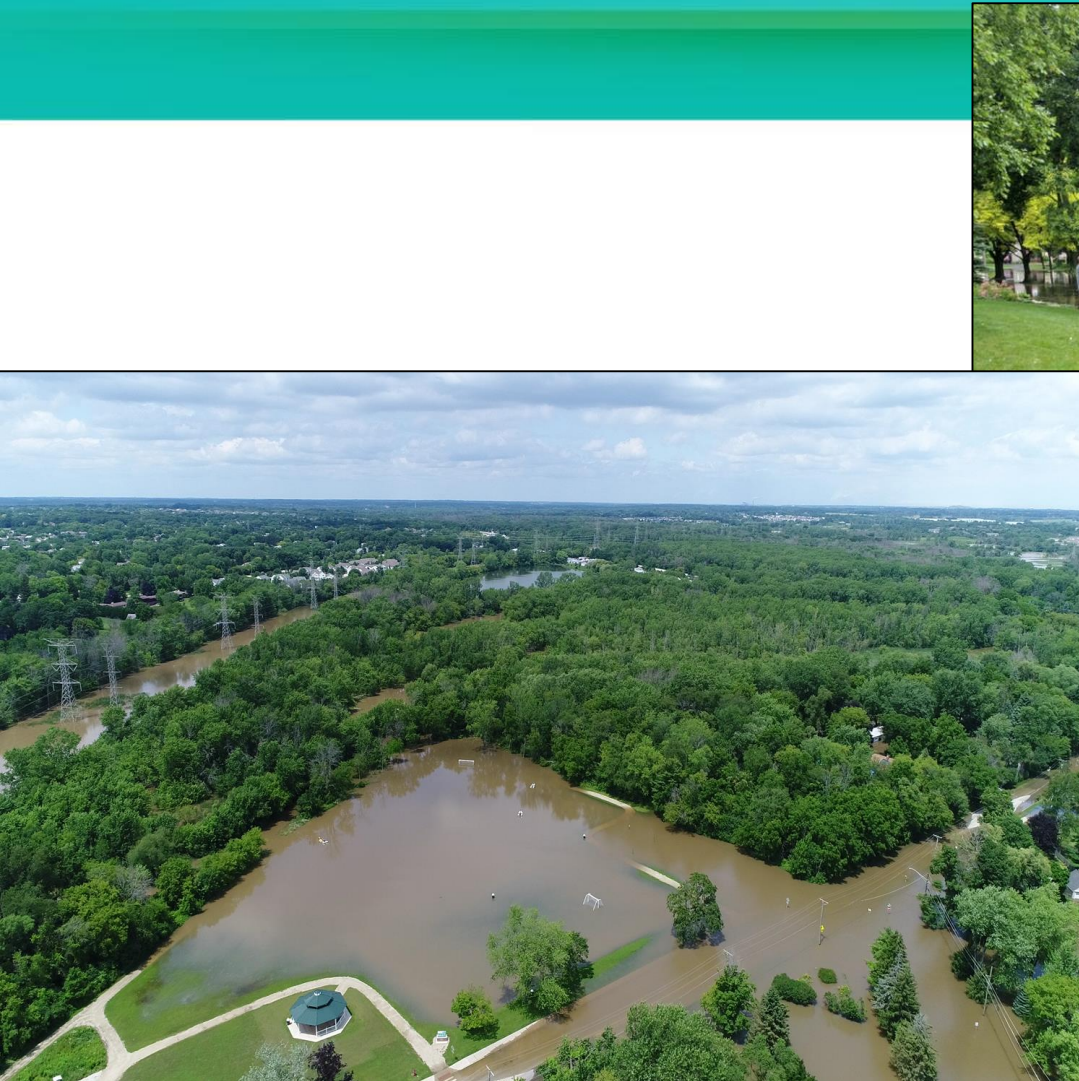


Action Plan

- Partners
- Programmatic Actions
- Site-Specific Actions
- Web Mapping Application

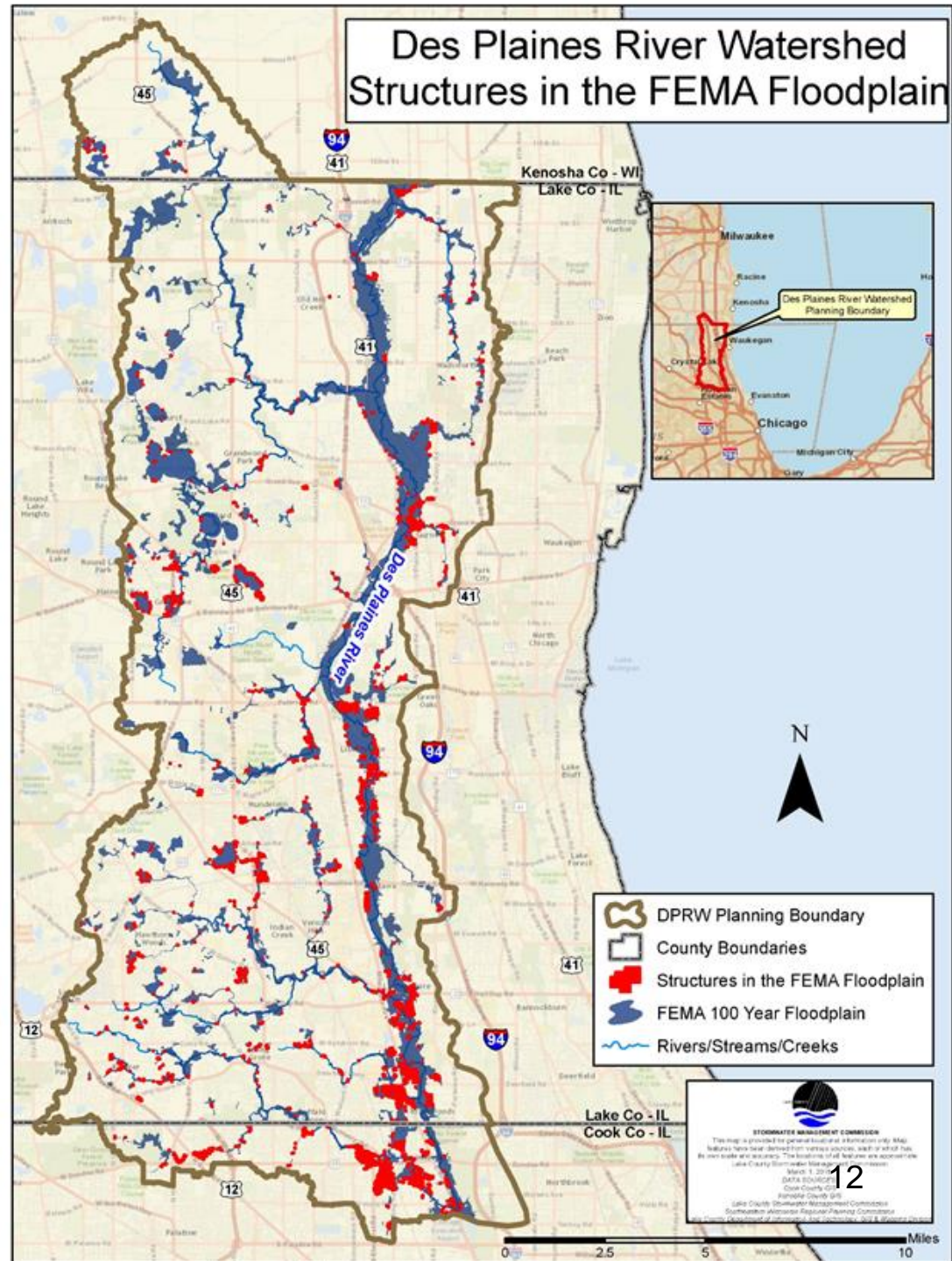


Flood Problem Assessment



Structures in the SFHA

- >4,900 structures on >4,500 parcels
- Many are accessory buildings
- >500 LOMA/LOMRs in Planning Area



Flood Problem Area Inventory

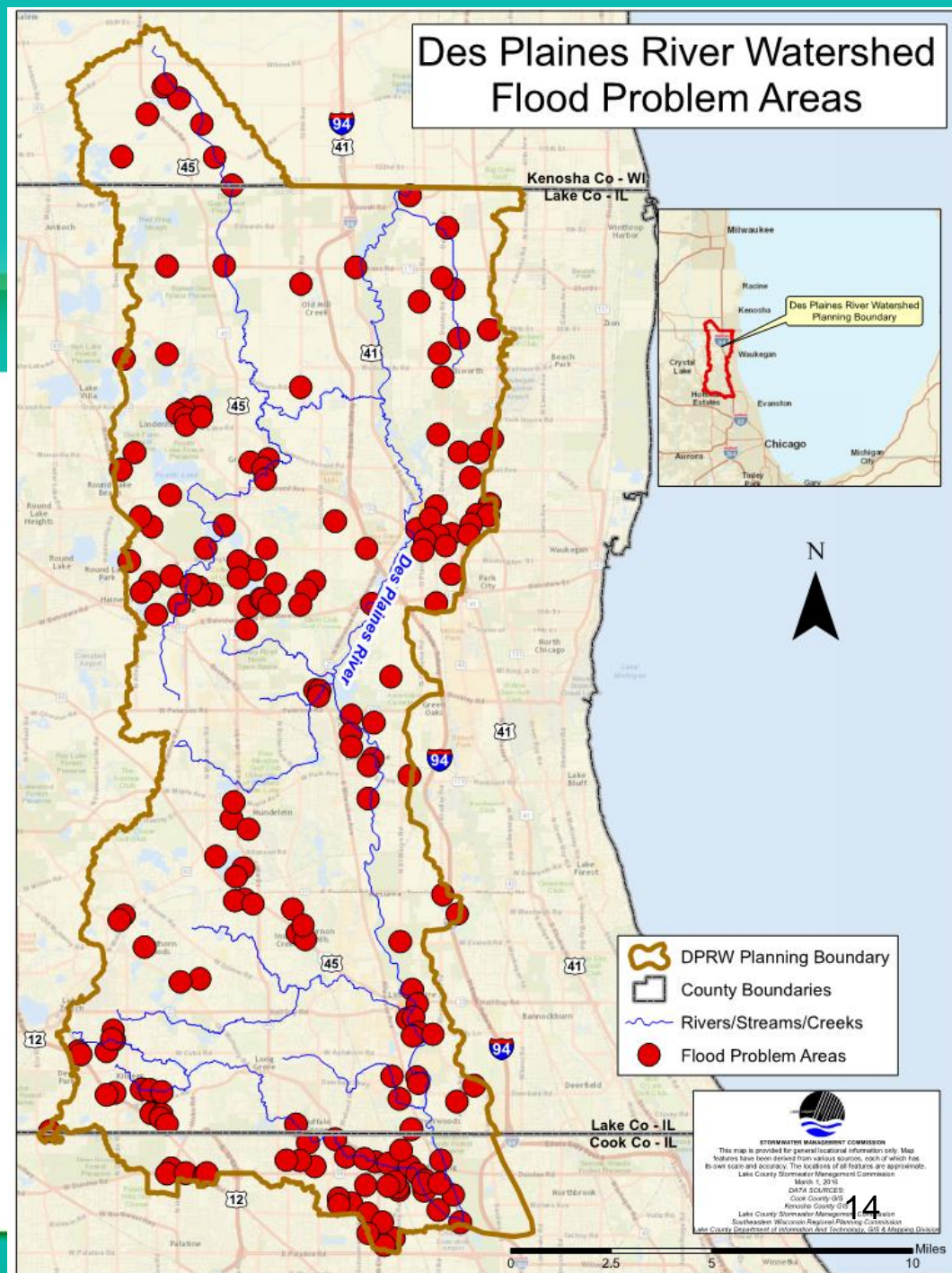
- Completed 1995; updated 2002
- Subsequent updates with watershed plans
- Types of Flood Problem Areas:
 - Depressional areas
 - Erosion Problem areas
 - Local Drainage Problems
 - Overbank Flooding
 - Sanitary Sewer/Septic Failure
 - *Stream Maintenance Issues*



Flood Problem Area Inventory

2016 Des Plaines Update:

- 44 jurisdictions sent survey
- 30 responses
- 171 FPAs increased to 236



Flood Problem Areas by Type

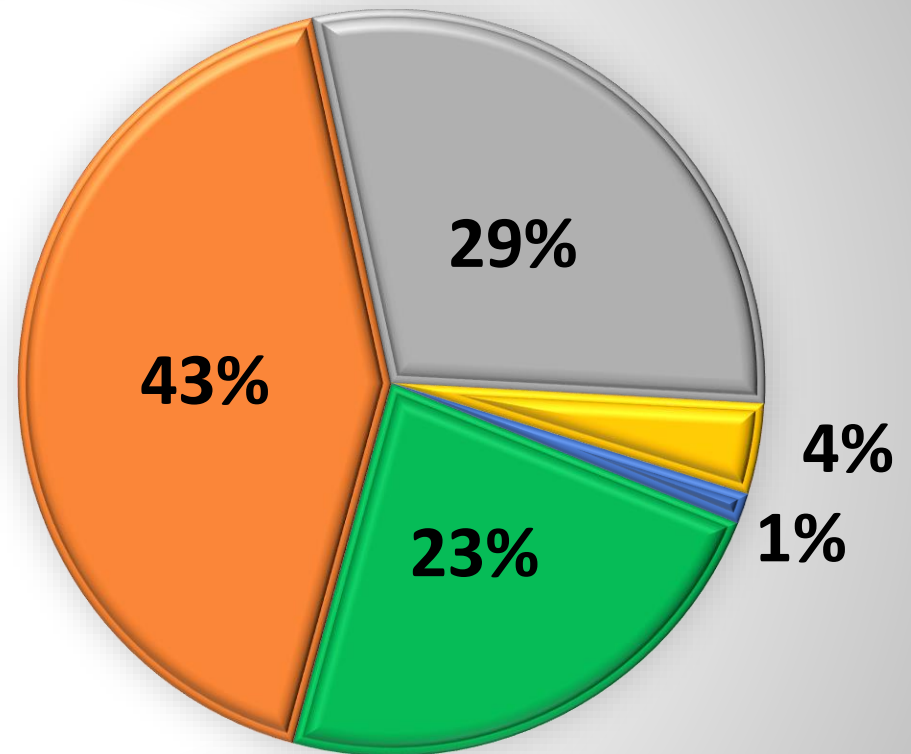
■ Depressional Storage Flooding

■ Local Drainage Problems

■ Overbank Flooding

■ Sanitary Sewer/Septic

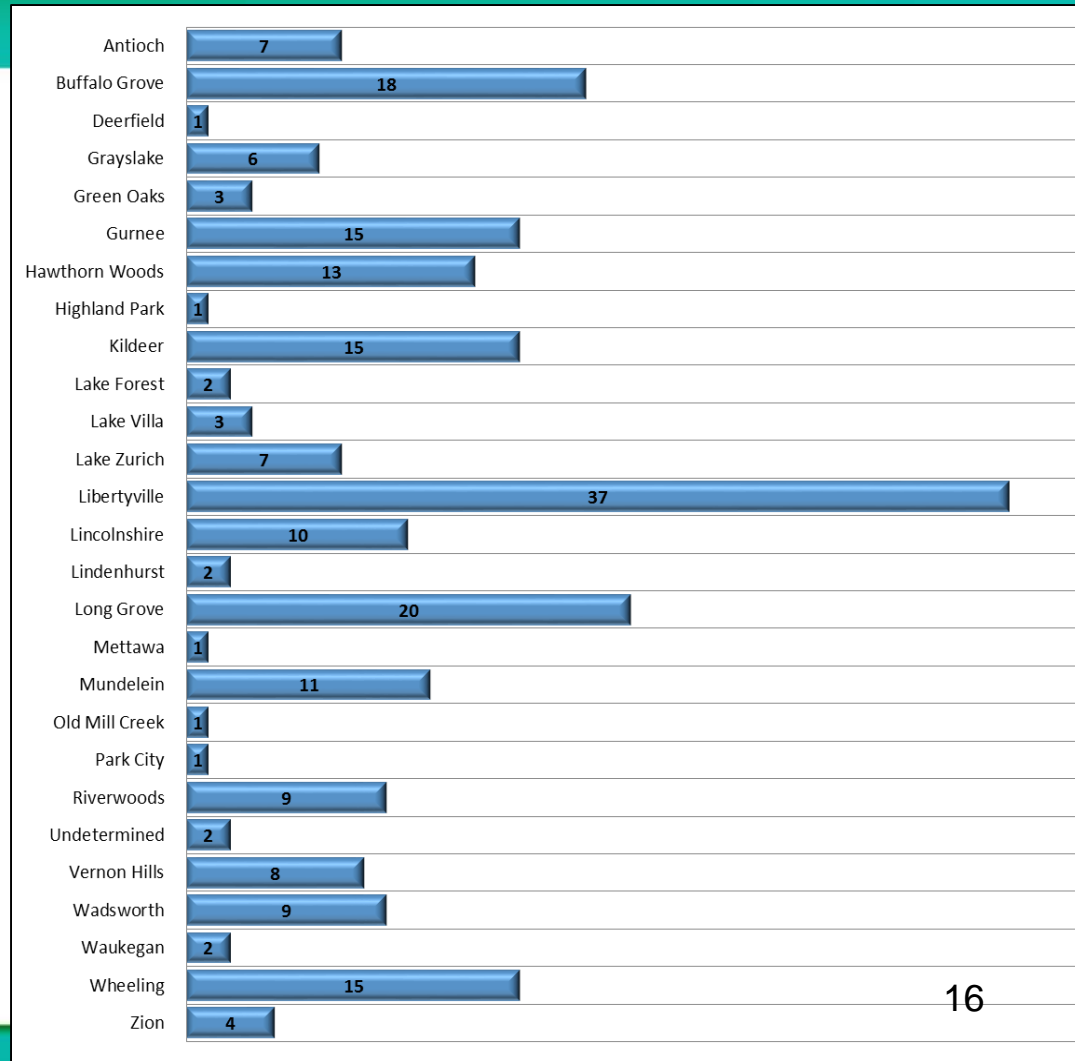
■ Erosion Problems



Flood & Stormwater Questionnaire

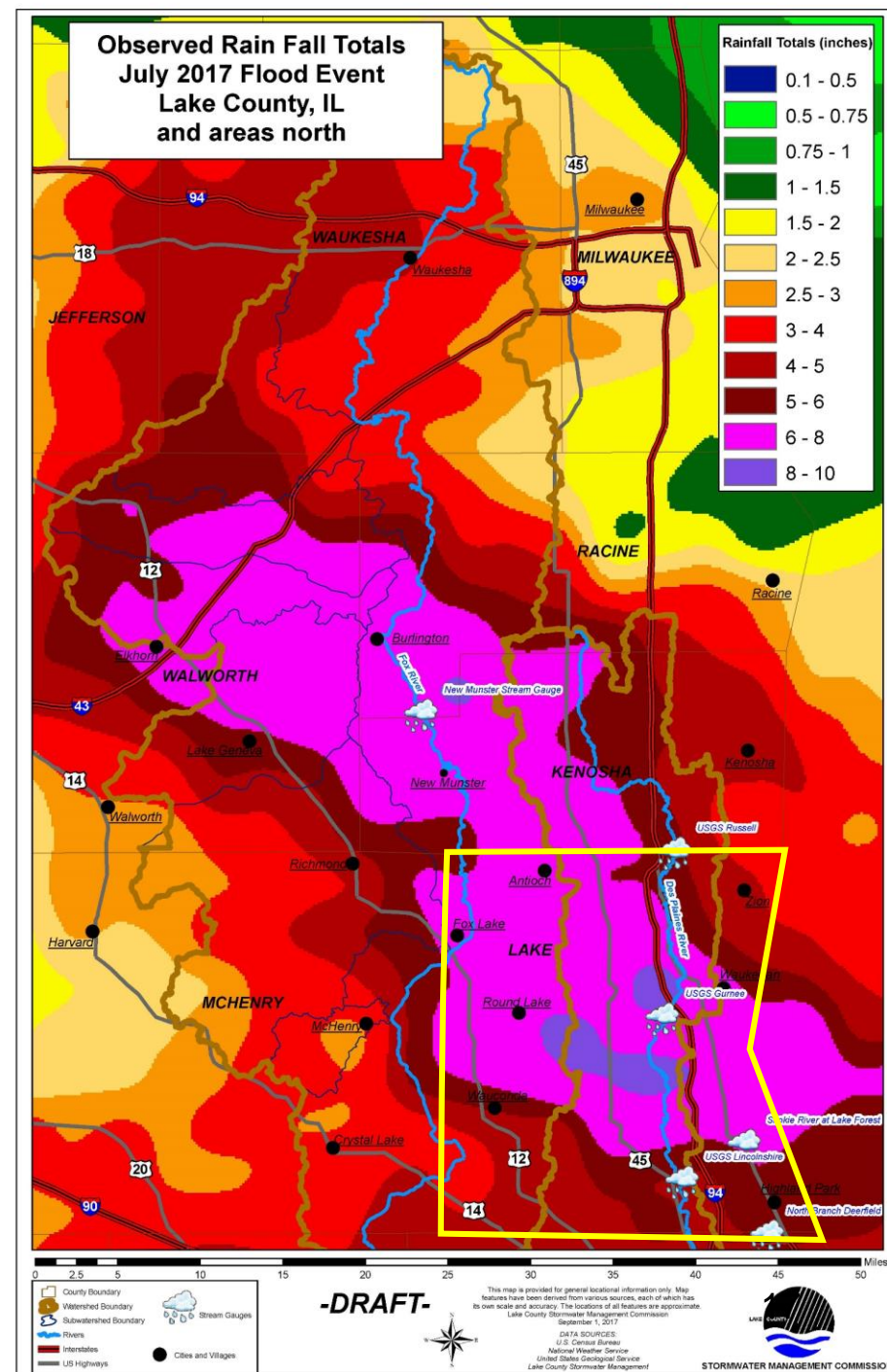
- >7,800 surveys to owners in SFHA & Flood Problem Areas
- 3% Response rate
- Largely single-family respondents

*Number of responses by
community*



2017 Flood Event

- 6"-10" of rainfall over much of planning area
- July 2017 record crest on Des Plaines River (Gurnee)
- Desire to incorporate data into plan



2017 Flood Event Reporting



Home Alerts Threads Rooms Start a Room



Lake County IL, EMA[ORG]/LC Stormwater Management[GROUP]/July 12, 2017 Flash Flood Event[ROOM]/Partner Information[SIDE ROOM]/

FOR GIS: Lake County IL July 2017 Flood Impact Report (with lat long)[FORM]



Map

Create New Entry

Draw Filter Box



Other Tools

Edit Form

Edit Custom Actions

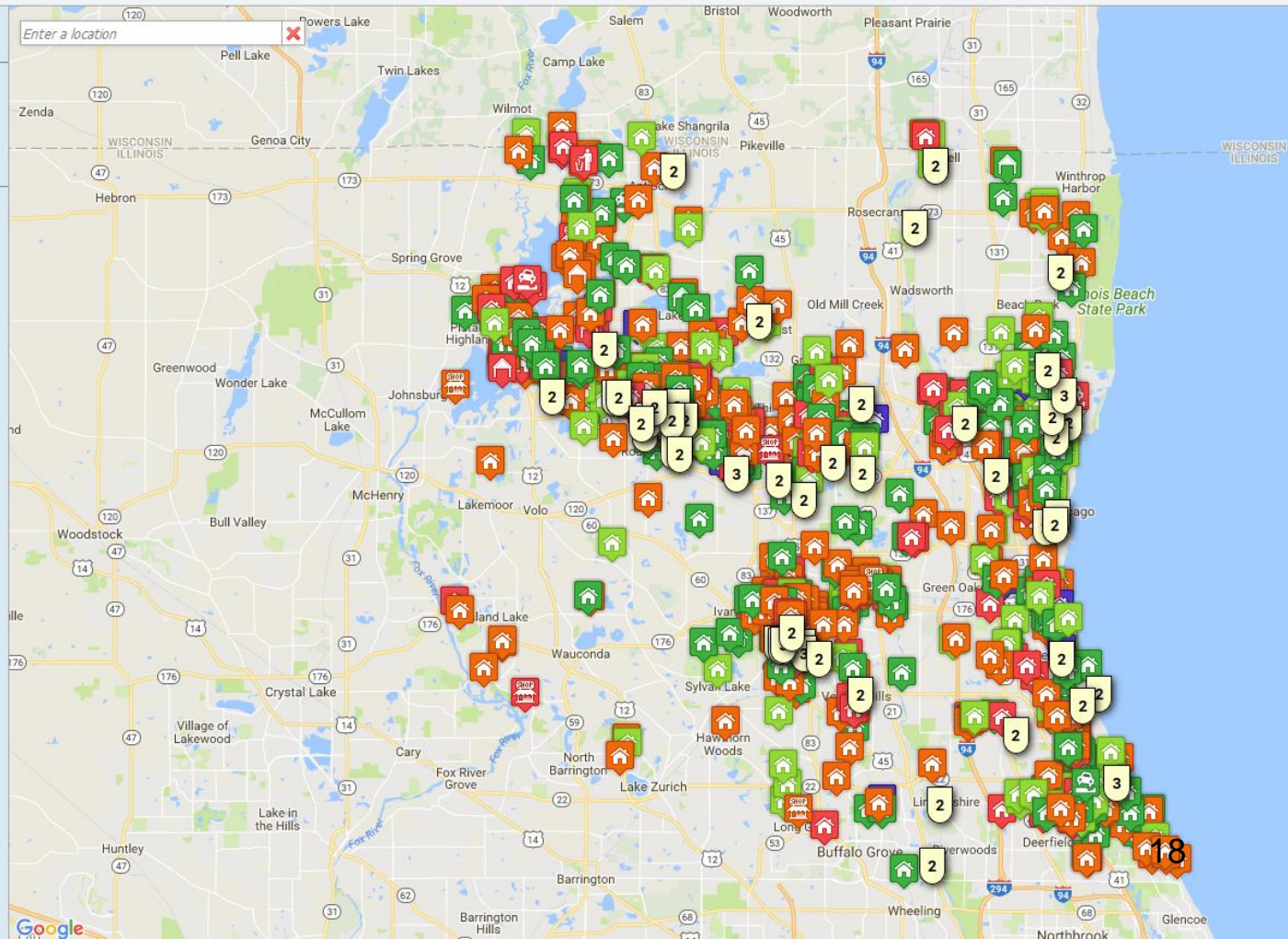
Schedule Review

View Room Dashboard

Export Data to Excel

Export Data to PDF

View All Forms



2017 Flood Event Data

TYPE OF FLOODING	NUMBER OF FPAS	NUMBER OF IMPACTED PROPERTIES
Sewer Backup	14	15
Street/Yard/Driveway Flooding	75	75
Structure Flooding	378	2,124
Structural Damage from Flooding	19	19
Total	486	2,233

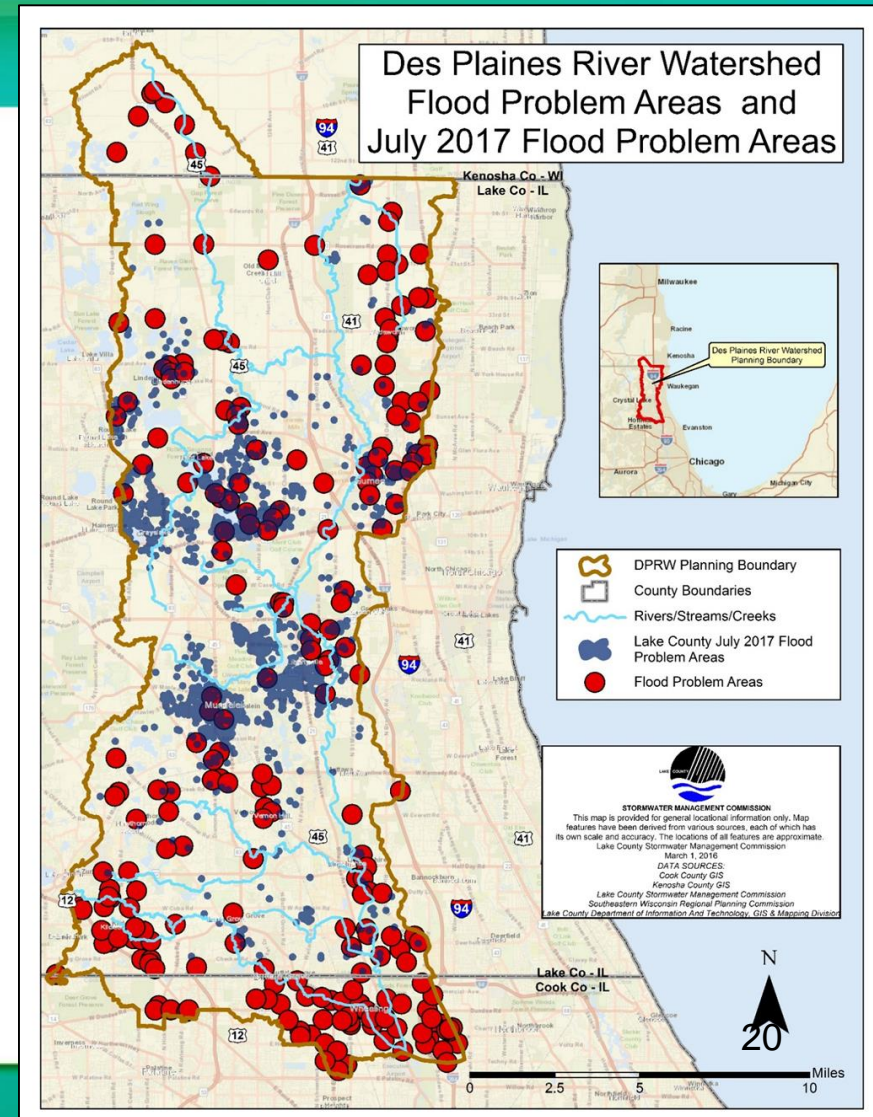
2017 flood areas and number of impacted properties in DPR Watershed

2017 Flood reports in Des Plaines watershed:

- 85% Pre-WDO (constructed 1992 & earlier)
- 15% Post-WDO (constructed 1993 & later)

Flood Problem Assessment

- 236 Flood Problem Areas reported by communities prior to July 2017 Flood
- 486 Flood Problems reported in relation to July 2017 Flood
- ~29 FPAs and 2017 Event areas overlap
- 176 “high priority” locations identified based on number of structures potentially affected



Floodplain Buyouts

High-priority Programmatic Action

Countywide Buyouts:

- 221 buyouts, to-date
- 59 statements of interest
- 22 buyouts in “grant pipeline”

Des Plaines Watershed

- 417 “high priority” properties identified (GIS analysis), est. ~\$22M



Web Mapping Application

SITE-SPECIFIC ACTION PLAN RECOMMENDATIONS FOR THE VILLAGE OF LIBERTYVILLE

PLAN ID	BMP TYPE	QUANTITY	UNIT	AREA BENEFITED	UNIT 2	SUBWATERSHED	ACTION	LATITUDE	LONGITUDE	PRIORITY	TIME FRAME	PLAN GOALS ASSESSED	LEAD PARTNERS	SUPPORTING PARTNERS
DL20	Lake Shoreline Stabilization	67	ft	67	ft	Lower Des Plaines River	Stabilize lake shorelines	42.29176092	-87.94791112	H	S	1, 2	PR/RL	M, LA, SMC
DSTFP04	N/A	1	ea.	N/A	N/A	Indian Creek	Libertyville Highlands Subdivision Interim Stormwater Improvements Project	42.27969067	-87.96417267	H	S	3, 4	M	WPC, DH, SMC, DOT
DSTFP06	N/A	1	ea.	N/A	N/A	Upper Des Plaines River	West Ellis Ave. Detention Basin/East Ellis Storm Sewer Enlargement Project.	42.29360907	-87.95524026	H	S	1, 3, 4	M, DOT	DH, HOA/POA

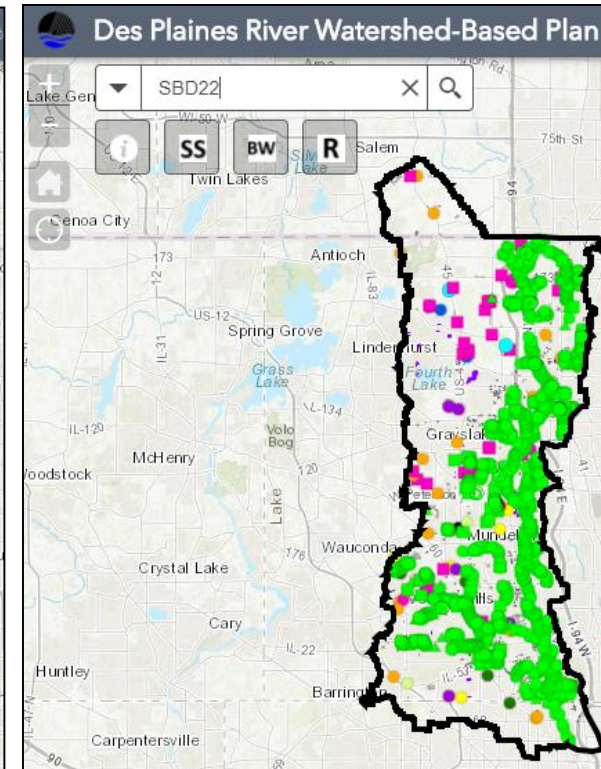
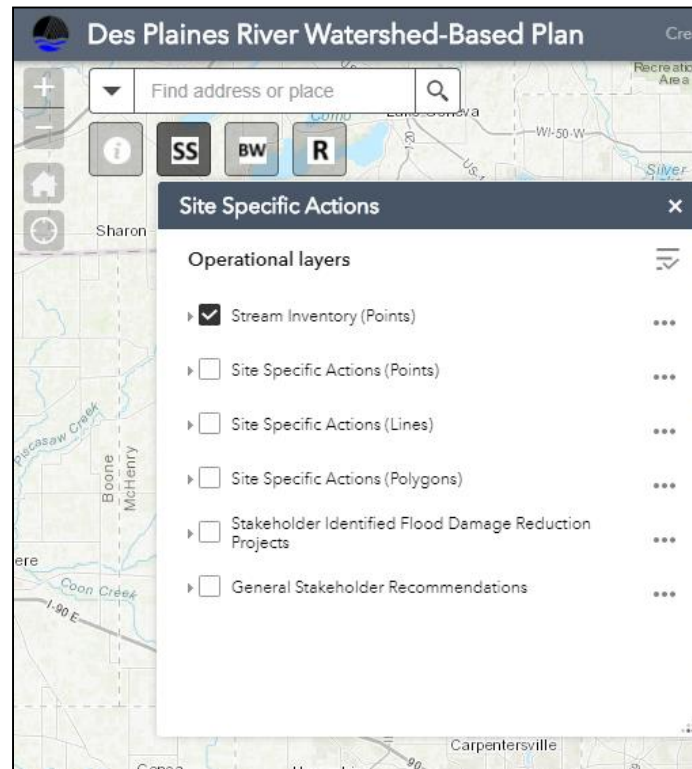
Web Mapping Application displays all action plan items

Web Mapping Application

Select desired layers in the WebApp using the SS, BW and R buttons

Enter Plan ID into search bar and click magnifying glass

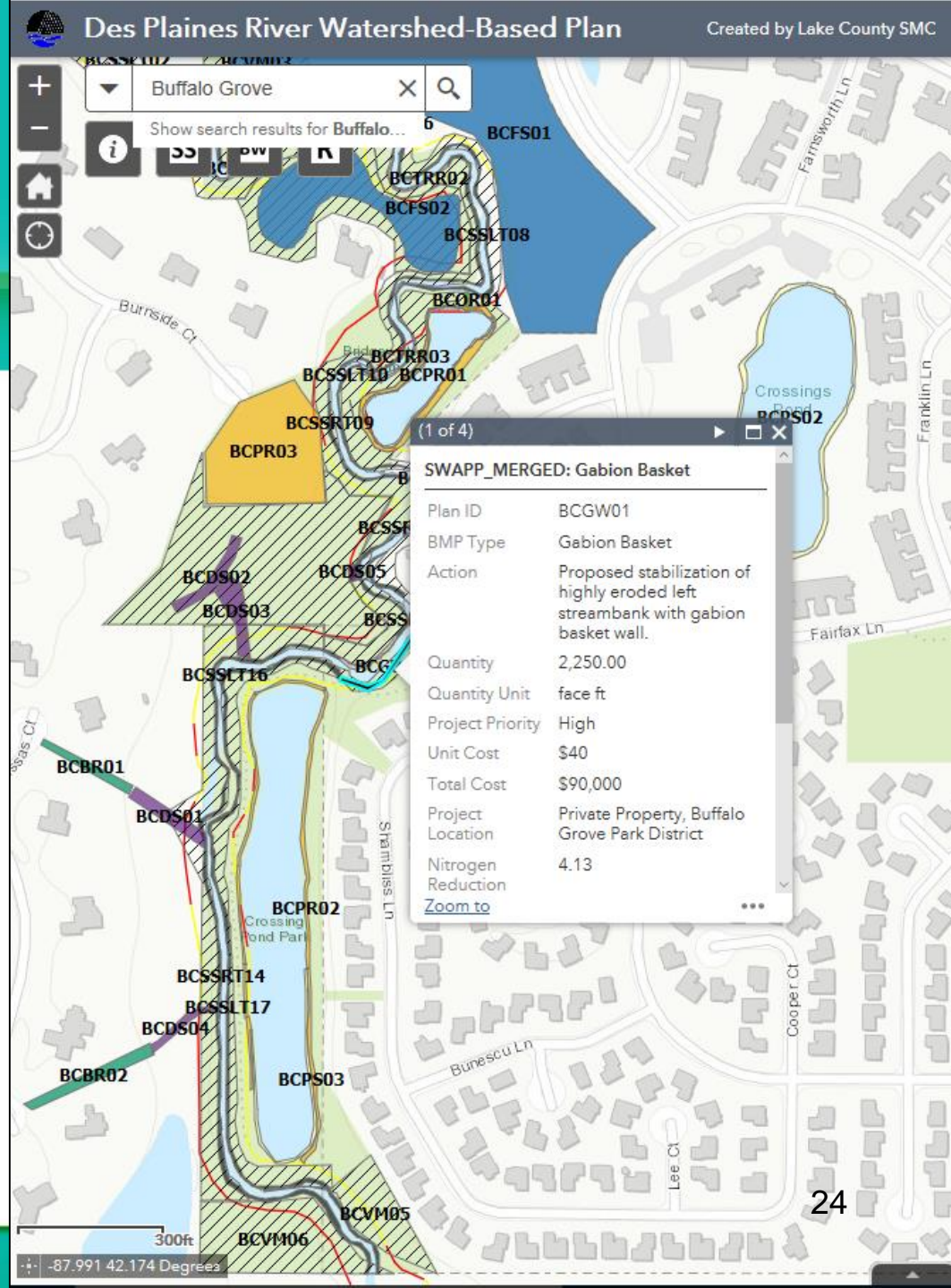
Or navigate on your own



[Web Mapping Application](#)

Stream Maintenance

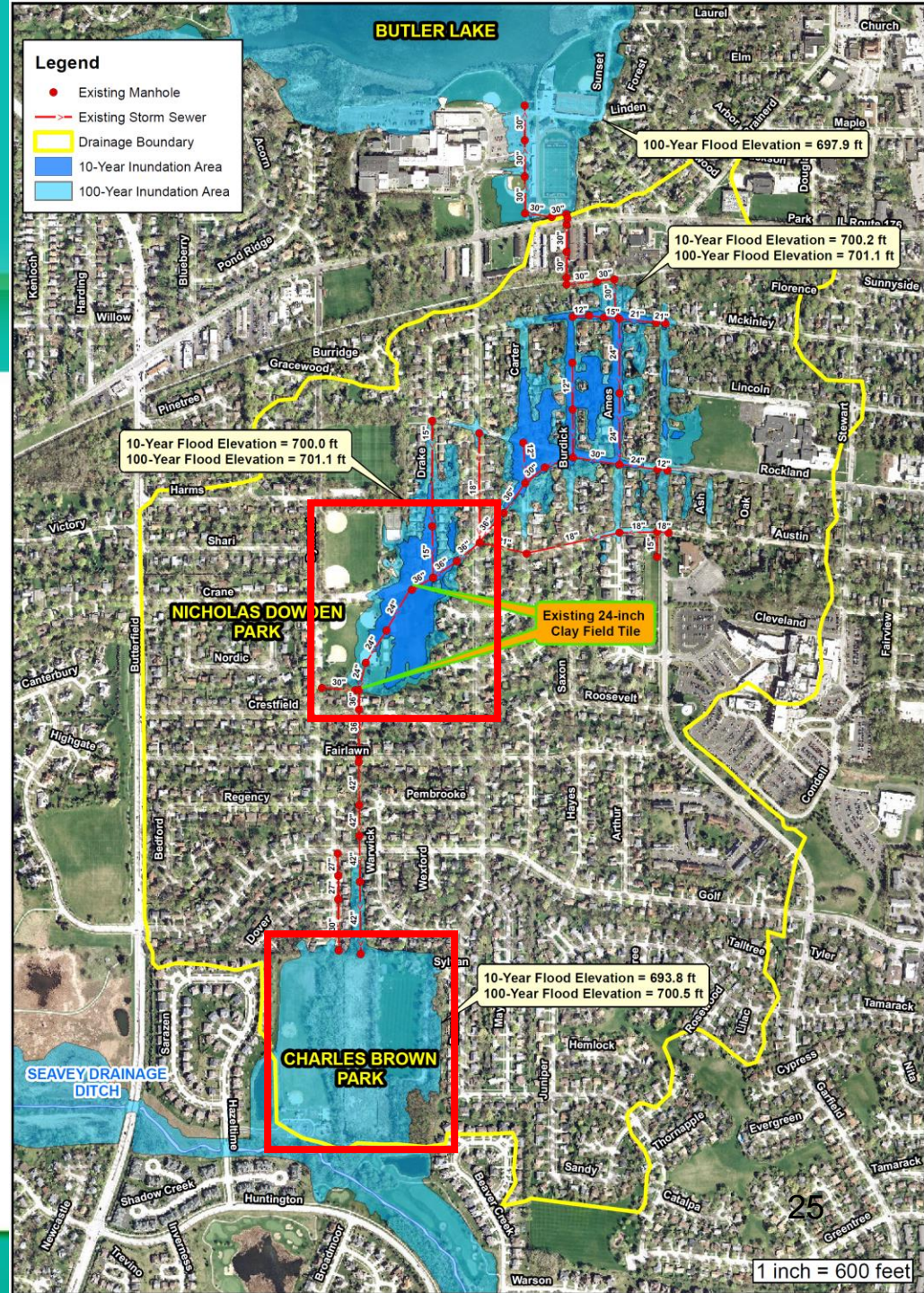
- Identified 15 mi. of “most eroded” streambanks
- Crossings Park (Buffalo Grove Park District)
- SMC funding portion of \$75,000 project



Stormwater Projects

Village of Libertyville stormwater projects

- 48-inch relief storm sewer
- Charles Brown Park wetland detention improvements
- SMC partnering with 2 different funding sources



Plan Implementation

1. Plan Adoption in 2018 by SMC and County Board
2. Community adoption/support (2019)
3. Planning council, monitoring, projects (2018-2028)



Conclusions

- High level of effort
- More efficient than producing multiple subwatershed plans
- Technology aids analysis **AND** outreach
- Utility beyond water quality elements

Thank You!



STORMWATER MANAGEMENT COMMISSION

Plan & Mapping Application at:

<https://www.lakecountyil.gov/2387/Des-Plaines-River-Watershed-Plan>

Questions & Comments:

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Mike Prusila mprusila@lakecountyil.gov

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