



**ILLINOIS**

Illinois State Water Survey

**PRAIRIE RESEARCH INSTITUTE**

# Skillet Fork, Wayne and Hamilton County Flood Risk Project

Project Initiation Community Coordination Meeting

July 26<sup>th</sup>, 2022



FEMA

# Agenda

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Rollcall

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Introduction

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Project Objectives and Goals

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National Flood Insurance Program / Mitigation

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Project Scope

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Data Development

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Communication

---

Schedule

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Community Participation

# Rollcall

## Wayne County

City of Fairfield\*  
Village of Sims  
Village of Wayne City  
Wayne County

## Hamilton County

Town of Bell Prairie  
Village of Broughton\*  
Village of Dahlgren  
City of McLeansboro\*  
Village of Macedonia  
Hamilton County

## White County

Village of Mill Shoals  
White County\*

## Marion County

Marion County

## Other Agencies

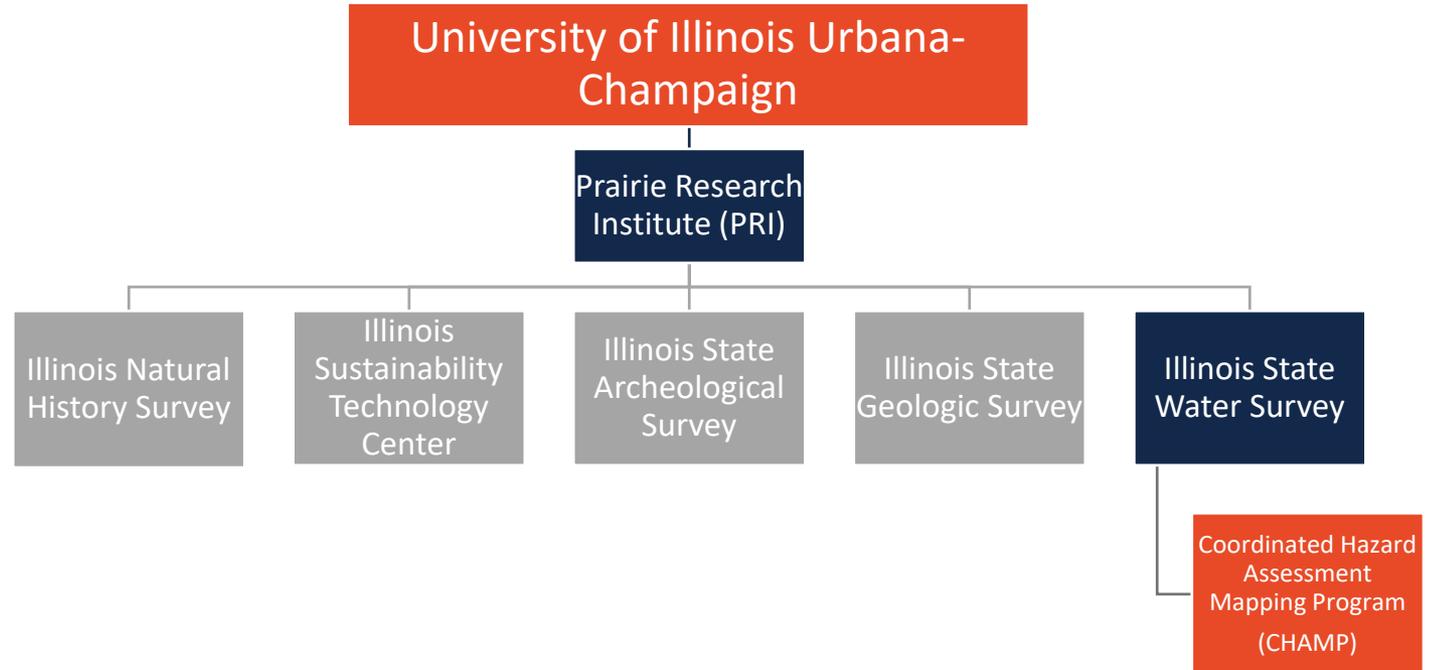
FEMA  
IDNR  
IEMA  
R1PC  
Others?

\* National Flood Insurance Program (NFIP) participants

# Introduction

# Introduction

## Who We Are



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<https://www.illinoisfloodmaps.org/>

<https://www.isws.illinois.edu/champ>

# Introduction

## Our Partners

### FEMA

ISWS is a Cooperating Technical Partner (CTP) with the Federal Emergency Management Agency (FEMA)



The Cooperating  
Technical Partners (CTP)  
Program

### IDNR-OWR

ISWS partners with The Illinois Department of Natural Resources-Office of Water Resources (**IDNR-OWR**). Together we prioritize Illinois floodplain studies and mapping projects.



### Your Community

ISWS provides ongoing engagement with state and local officials and watershed stakeholders to reduce flood risk.

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# Introduction

## What We Do

### PRODUCE FLOOD STUDIES



## FLOOD INSURANCE STUDY

**WINNEBAGO COUNTY, ILLINOIS AND INCORPORATED AREAS**

Volume 1 of 2

COMMUNITY NAME	COMMUNITY NUMBER
CHERRY VALLEY, VILLAGE OF	170721
DURAND, VILLAGE OF	170789
LOVES PARK, CITY OF	170722
MACHESNEY PARK, VILLAGE OF	171009
NEW MILFORD, VILLAGE OF	175182
PECATONICA, VILLAGE OF	170787
ROCKFORD, CITY OF	170523
ROCKTON, VILLAGE OF	170774
ROSDALE, VILLAGE OF	170724
SOUTH BELLEVUE, CITY OF	170725
WINNEBAGO COUNTY (UNINCORPORATED AREAS)	170720
WINNEBAGO, VILLAGE OF	175183

\*NO SPECIAL FLOOD HAZARD AREAS IDENTIFIED

Winnebago County





**Federal Emergency Management Agency**

FLOOD INSURANCE STUDY NUMBER  
17201CV001B

REVISED: FEBRUARY 17, 2016

### GENERATE FLOODPLAIN MAPS

#### National Flood Hazard Layer FIRMette

WINNEBAGO COUNTY, ILLINOIS





**Legend**

SEE THE REPORT FOR DETAILED LEGEND AND INDEX MAP FOR PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**

- Without Base Flood Elevation (BFE) WITH DEPTH (200-100, 40-10, 4-1)
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**

- 0.2% Annual Chance Flood Hazard: Areas of 1% areal chance flood with average depth less than one foot or with drainage areas of less than one square mile (Zone X)
- Areas designated as Annual Chance Flood Hazard (Zone X)
- Area with Modified Flood Risk due to Levees. See Notes. (Zone F)
- Area with Flood Risk due to Levees (Zone F)

**OTHER AREAS**

- Area of Minimal Flood Hazard (Zone A)
- Effective Levees
- Area of Undetermined Flood Hazard (Zone U)

**OTHER AREAS**

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**GENERAL STRUCTURES**

- Cross Sections with 2% Annual Chance Water Surface Elevation
- Coastal Traverses
- Base Flood Elevation Line (BFE)
- Lines of Study
- Jurisdiction Boundary
- Coastal Traverses Baseline
- Profile Baseline

**OTHER FEATURES**

- Hydrographic Feature

**MAP PANELS**

- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not used as described below. This disclaimer complies with FEMA's minimum accuracy standards.

The flood hazard information is derived directly from the authoritative FEMA web services provided by FEMA. This map was prepared as of 10/13/2016 at 10:17:01 AM and does not reflect changes or amendments subsequent to this date and time. The NPLs and effective information may change or become superseded by new data over time.

This map image is void if the use or reuse of the following map elements do not appear: (background images, flood zone labels, legend, scale bar, map creation date, community identifier, FEMA panel number, and FEMA effective date. Map images for unmapped and unreviewed areas cannot be used for regulatory purposes.

Basemap: 10016 National Map, Orthorectified, Data as of 06/01/2016

# Introduction

## How We Are Funded

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FEMA administers the National Flood insurance Program (NFIP).



The Risk Mapping, Assessment, and Planning (Risk MAP) Program is the FEMA process used to implement NFIP floodplain studies and mapping projects.



## The Cooperating Technical Partners (CTP) Program

FEMA provides grants to Cooperating Technical Partners to complete Risk MAP work.

# Introduction

**INFORM RESIDENTS AND COMMUNITIES** about flood hazards in their communities.

What We Do



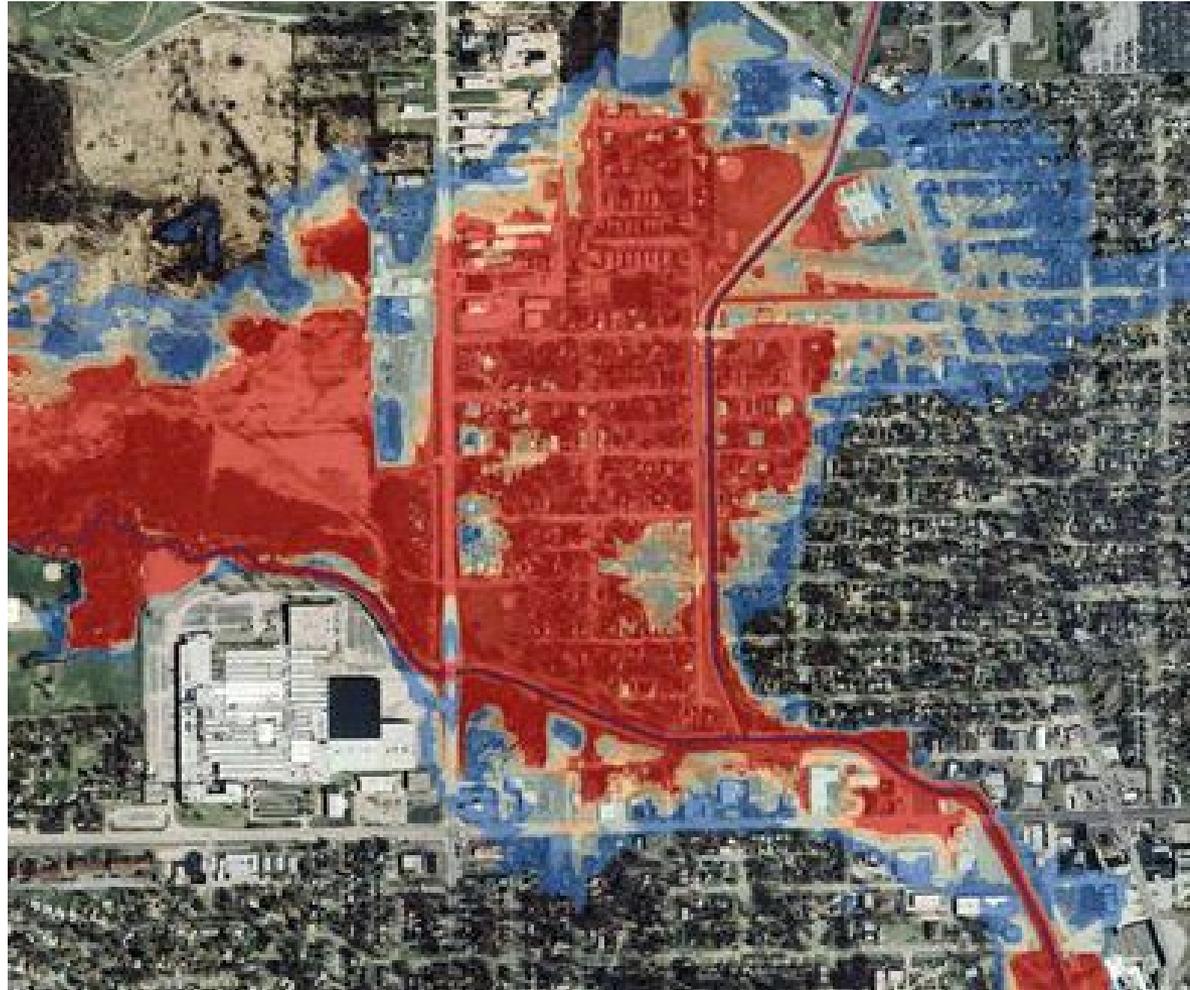
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# Introduction

Provide HAZARD MITIGATION PLANNING SERVICES for Communities

What We Do

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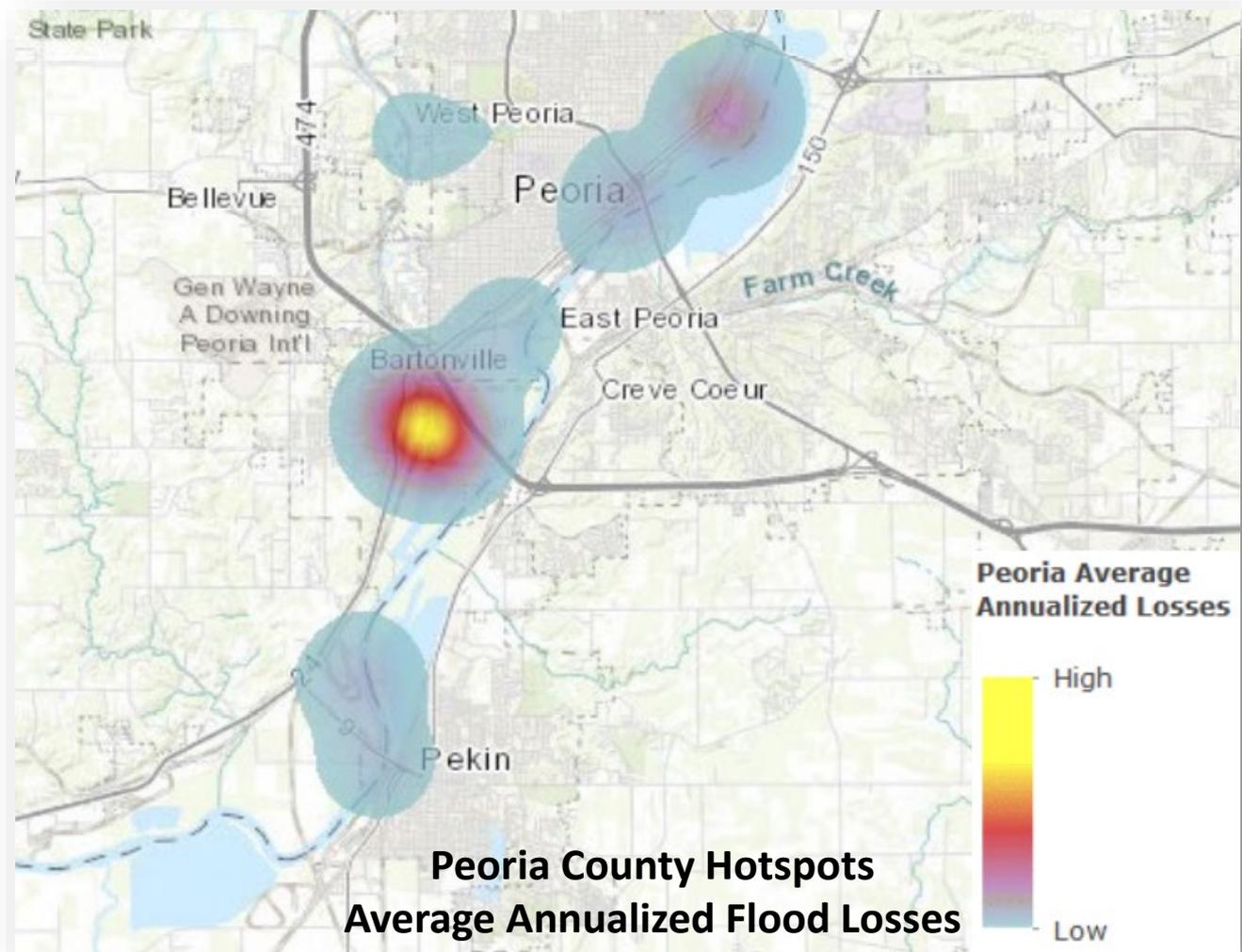


# Introduction

## What We Do

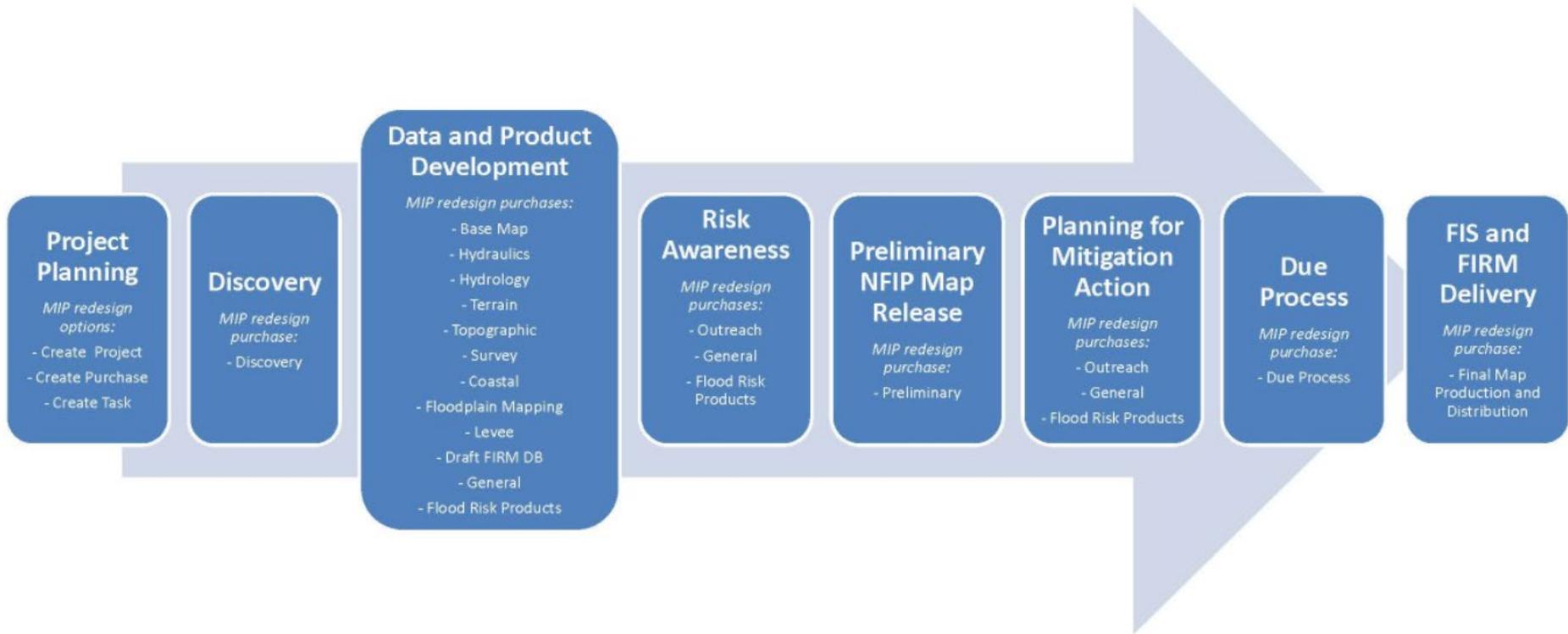
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Provide **STRUCTURE SPECIFIC RISK ASSESSMENTS**



# Project Objectives and Goals

# FEMA National Objectives and Goals



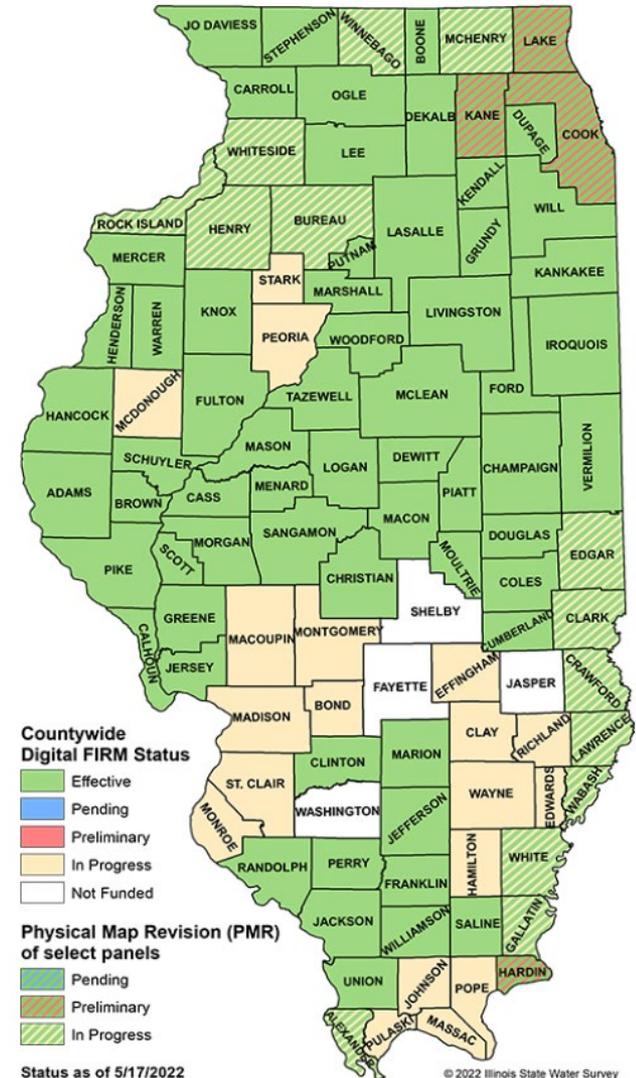
# State Objectives and Goals

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Update Flood Risk with Hydrologic and Hydraulic Analyses for Select Streams

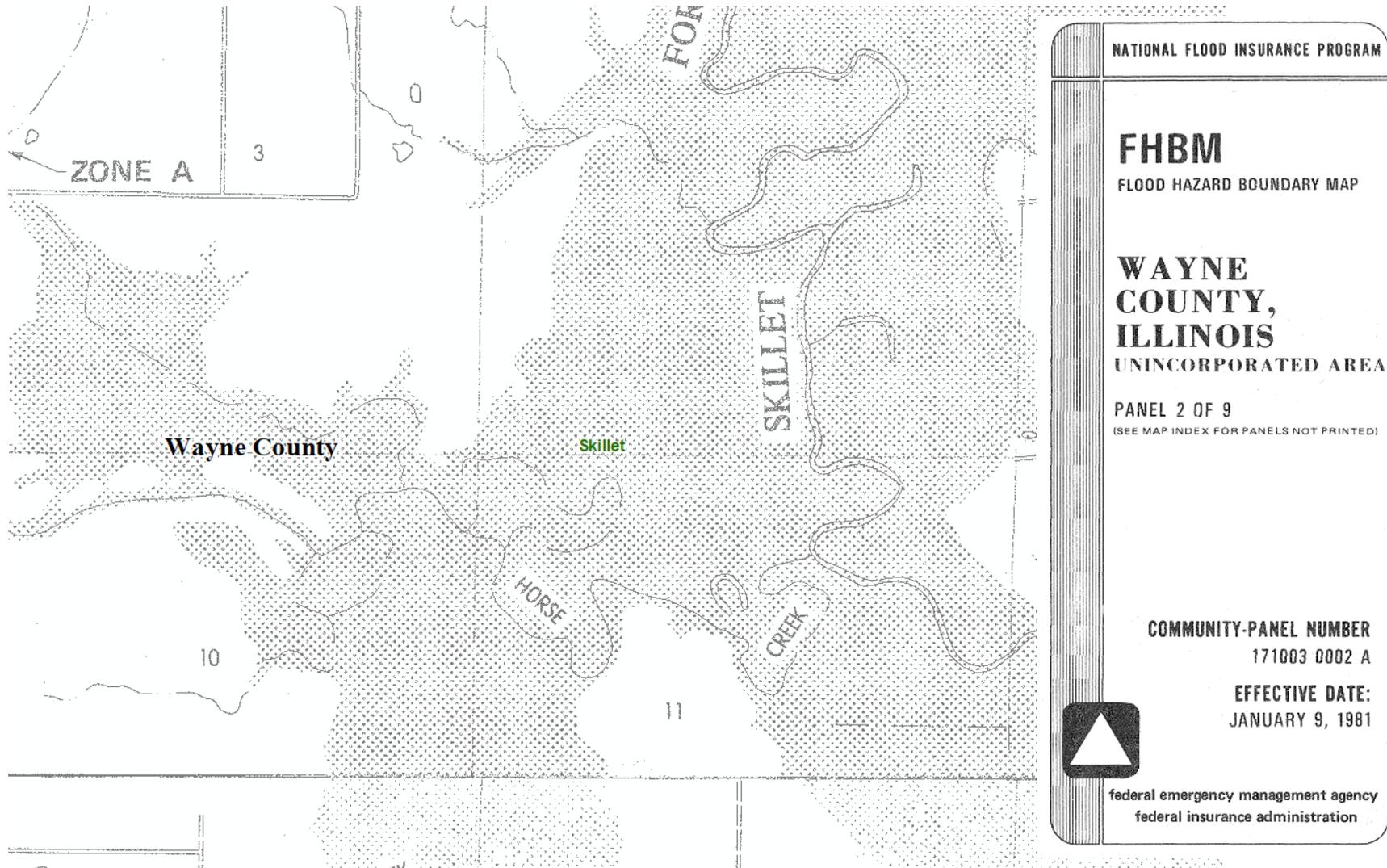
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Update Digital Floodplain Maps



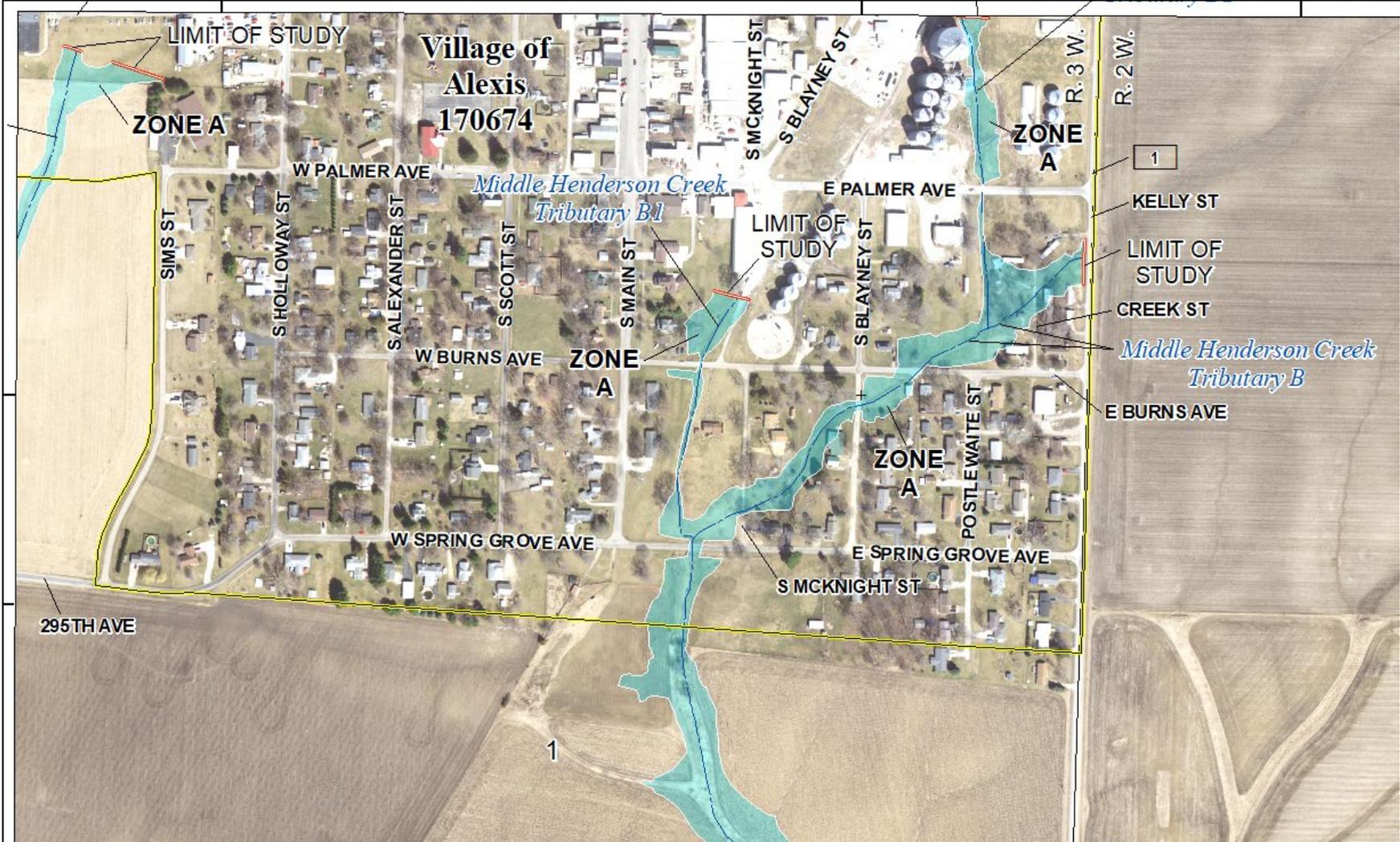
<https://www.illinoisfloodmaps.org/>

# Objectives and Goals

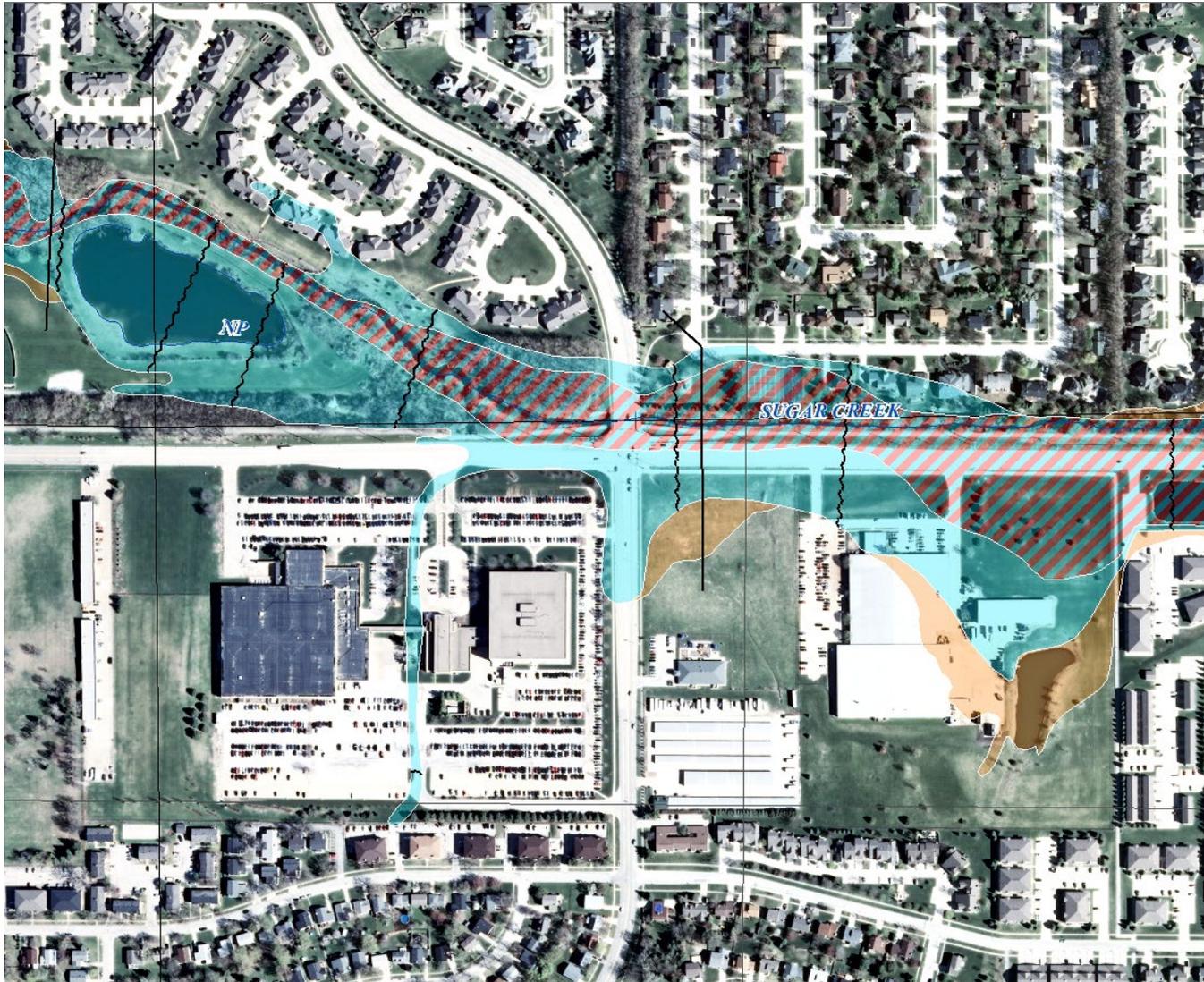




# Paper Map to Digital Map

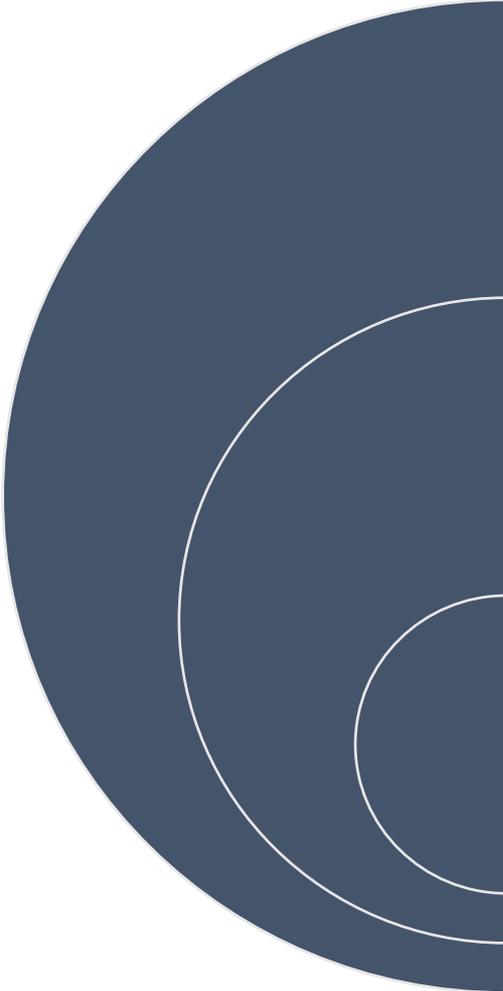


# Paper Map to Digital Map



# National Flood Insurance Program

# National Flood Insurance Program



The NFIP is a voluntary program based on a mutual agreement between the Federal government and a community.

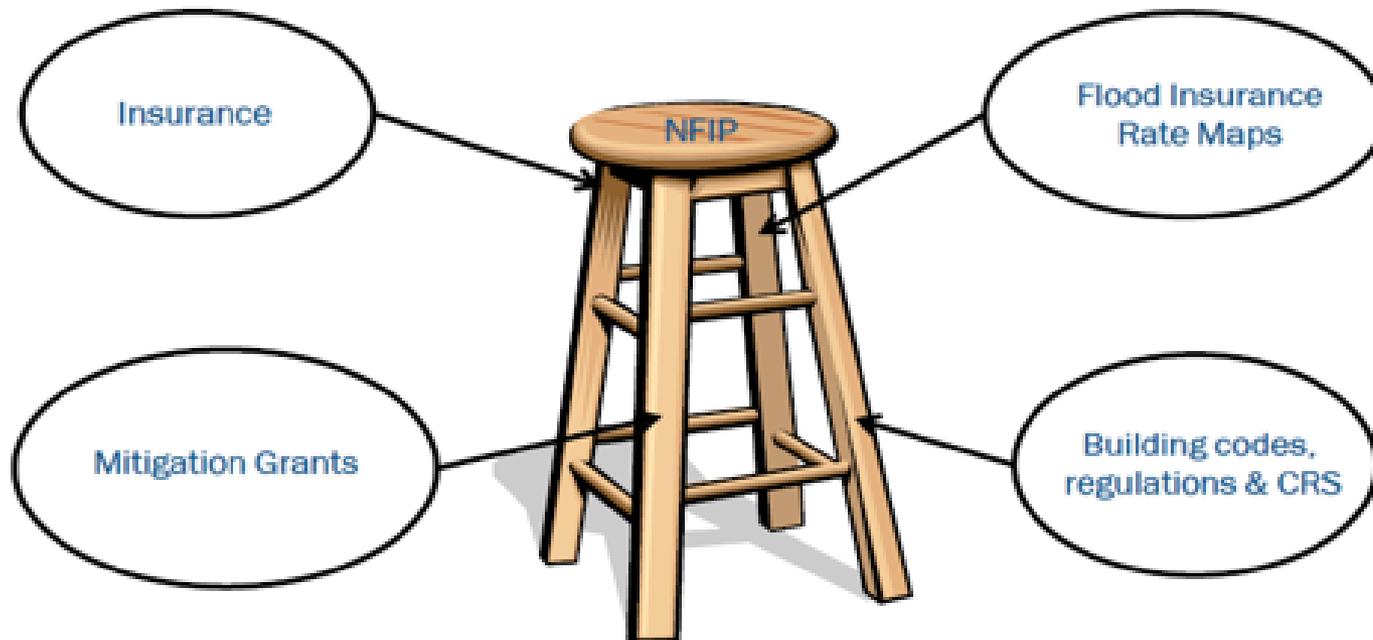
In exchange for adopting and enforcing a floodplain management ordinance, Federally-backed flood insurance is made available to property owners throughout the community.

**Erin Conley, NFIP State Coordinator**

[erin.c.conley@Illinois.gov](mailto:erin.c.conley@Illinois.gov)

# National Flood Insurance Program

## Three +1 Related Program Areas



# NFIP Participating Communities

<https://www.fema.gov/cis/IL.pdf> downloaded 7/15/2022

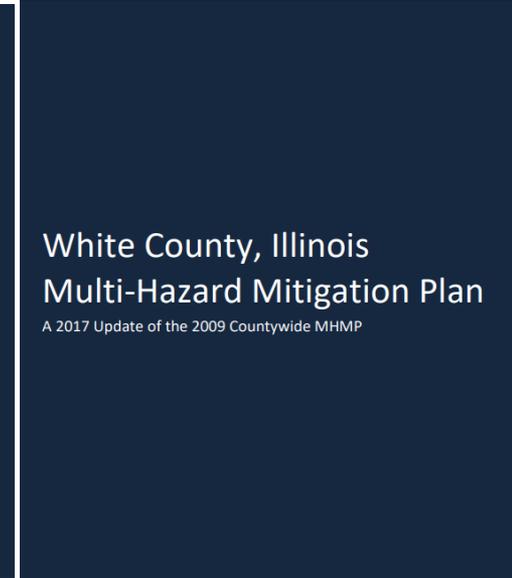
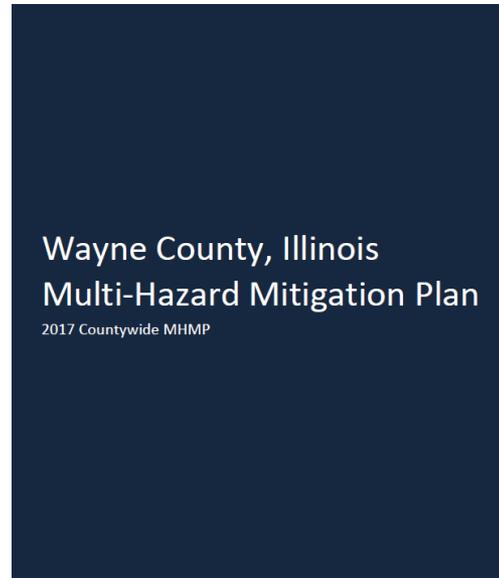
Community	CRS Status	CAC Date	CAV Date	No. Flood Policies	Total Coverage, \$	Total Claims Since 1978	Total Paid Since 1978, \$	Rep Loss Structures+	Total Rep Loss, \$
<b>Wayne County</b>									
City of Fairfield	n/a	n/a	n/a	17	\$1,359,300	11	\$68,425	3	\$51,118
<b>Hamilton County</b>									
Village of Broughton	n/a	09/29/2000	n/a	0	\$0	0	\$0	0	\$0
City of McLeansboro	n/a	n/a	n/a	0	\$0	1	\$0	0	\$0
<b>White County</b>									
White County*	n/a	12/09/2014	04/06/2006	27	\$3,654,900	24	\$776,207	3	\$237,302
<b>Marion County</b>									

\*unincorporated

# Hazard Mitigation

## Natural Hazard priorities

- Thunderstorms (including lightning, hail, wind)
- Winter Storms
- **Floods** (flash flooding and riverine flooding)
- Earthquakes
- Drought
- Extreme temperatures (heat and cold)
- Tornadoes
- Mine subsidence



## Hazard Mitigation Plans

County	Plan Approval	Plan Expiration
Hamilton	2021	2026
Marion	n/a	n/a
Wayne	2018	2023
White	2017	2022

	ADOPT CODE	ABOVE CODE	BUILDING RETROFIT	LIFELINE RETROFIT	FEDERAL GRANTS
<b>Overall Benefit-Cost Ratio</b>	<b>11:1</b>	<b>4:1</b>	<b>4:1</b>	<b>4:1</b>	<b>6:1</b>
<b>Cost (\$ billion)</b>	<b>\$1/year</b>	<b>\$4/year</b>	<b>\$520</b>	<b>\$0.6</b>	<b>\$27</b>
<b>Benefit (\$ billion)</b>	<b>\$13/year</b>	<b>\$16/year</b>	<b>\$2200</b>	<b>\$2.5</b>	<b>\$160</b>
Riverine Flood	6:1	5:1	6:1	8:1	7:1
Hurricane Surge	not applicable	7:1	not applicable	not applicable	not applicable
Wind	10:1	5:1	6:1	7:1	5:1
Earthquake	12:1	4:1	13:1	3:1	3:1
Wildland-Urban Interface Fire	not applicable	4:1	2:1	not applicable	3:1

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[http://2021.nibs.org/files/pdfs/ms\\_v4\\_overview.pdf](http://2021.nibs.org/files/pdfs/ms_v4_overview.pdf)

# Terminology

# What is a Special Flood Hazard Area?

The FEMA Special Flood Hazard Area (SFHA) zone type designation is related to the method and level of hydraulic analysis performed.

Riverine hydraulic analysis typically results in SFHA designation as Zone A or Zone AE, based on the analysis level deemed appropriate for the study area.

The Base Flood Elevation (BFE) is the elevation of surface water resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year.

<b>Zone A</b>	Areas subject to inundation by the 1-percent-annual-chance flood event. <b>NO Base Flood Elevations are shown.</b>
<b>Zone AE</b>	Areas subject to inundation by the 1-percent-annual-chance flood event. <b>Base Flood Elevations ARE shown.</b>

# What is a Special Flood Hazard Area?



# Project Scope

# Project Scope

## 1. Hydrology

HEC-RAS Rain-On-Grid Skillet Fork using ISWS Bulletin 75  
USGS Bulletin 17-C Gage analysis of Skillet Fork  
USGS StreamStats

## 2. Hydraulics

- HEC-RAS 2D Skillet Fork and tributaries 165 square miles
- HEC-RAS 1D 377 miles of streams to be studied

## 3. Develop Draft Floodplain Mapping

## 4. Community Outreach and Engagement

## 5. Complete Digital Flood Insurance Rate Maps (Future Phase)

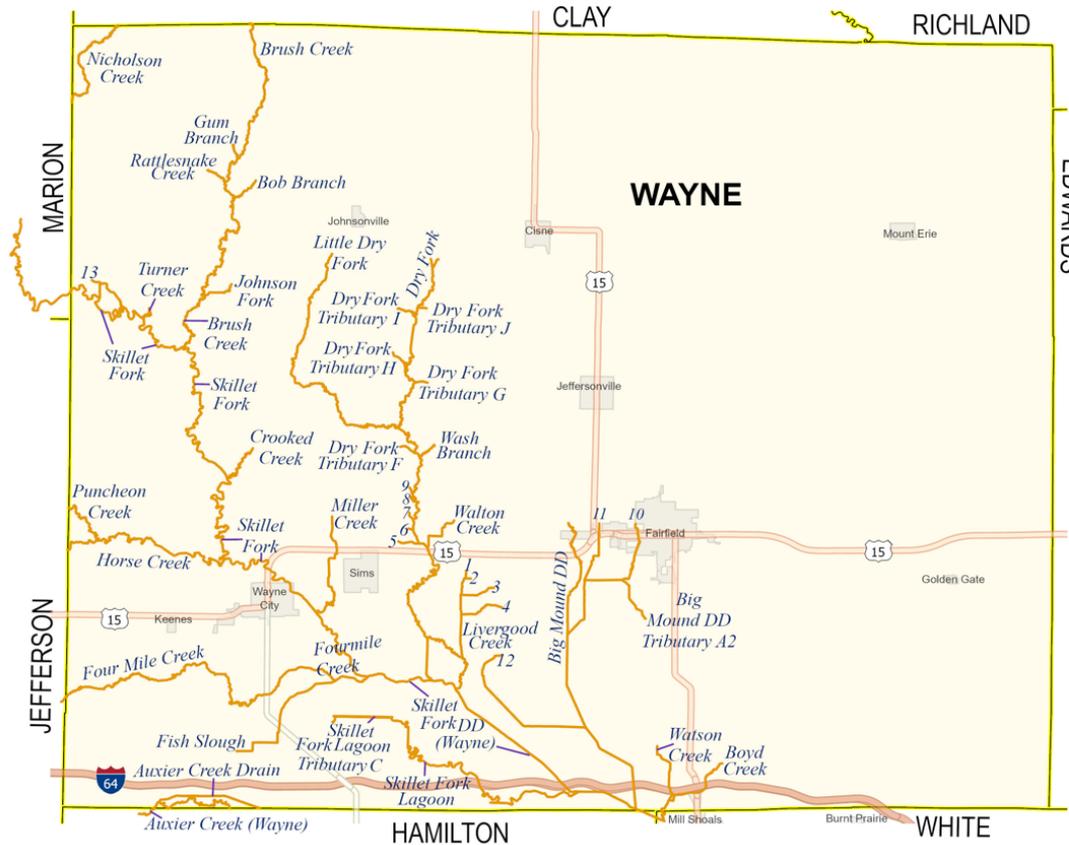
# Project Scope

## Wayne County Project Location Map



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### Wayne County Proposed Stream Studies



1. Livergood Creek
2. Livergood Creek Tributary C
3. Livergood Creek Tributary B
4. Livergood Creek Tributary A
5. Dry Fork Tributary A
6. Dry Fork Tributary B
7. Dry Fork Tributary C
8. Dry Fork Tributary D
9. Dry Fork Tributary E
10. Big Mound DD Tributary A1
11. Big Mound DD Tributary A
12. East Slough DD
13. Skillet Fork Tributary A



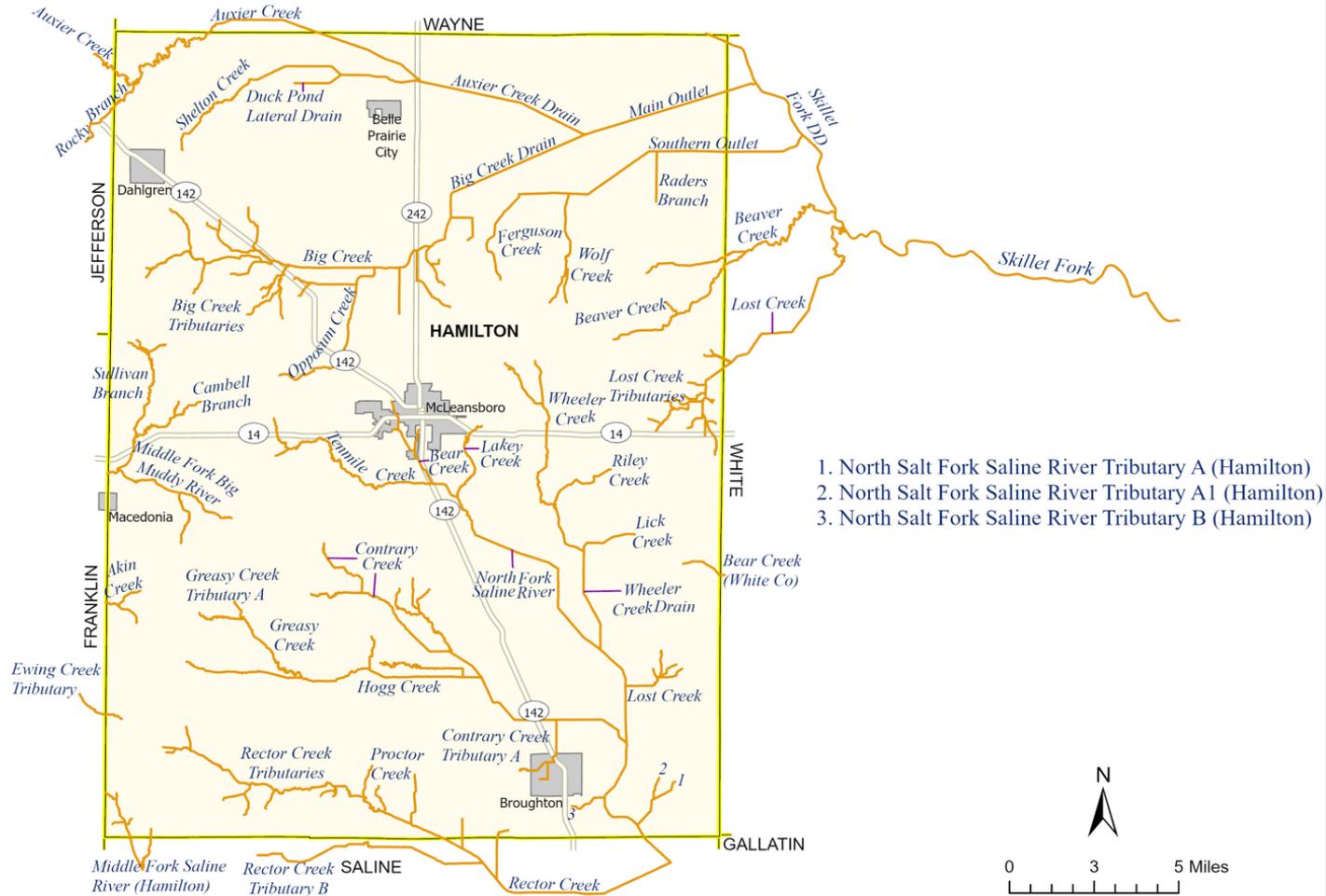
# Project Scope

## Hamilton County Project Location Map

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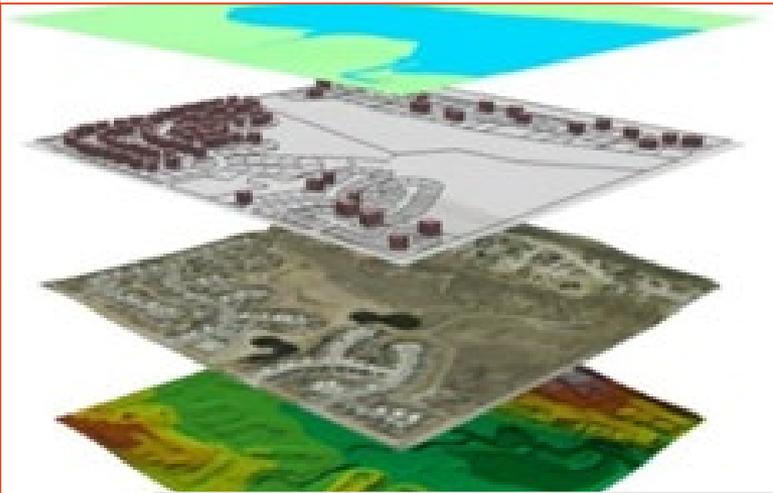
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### Hamilton County Proposed Stream Studies

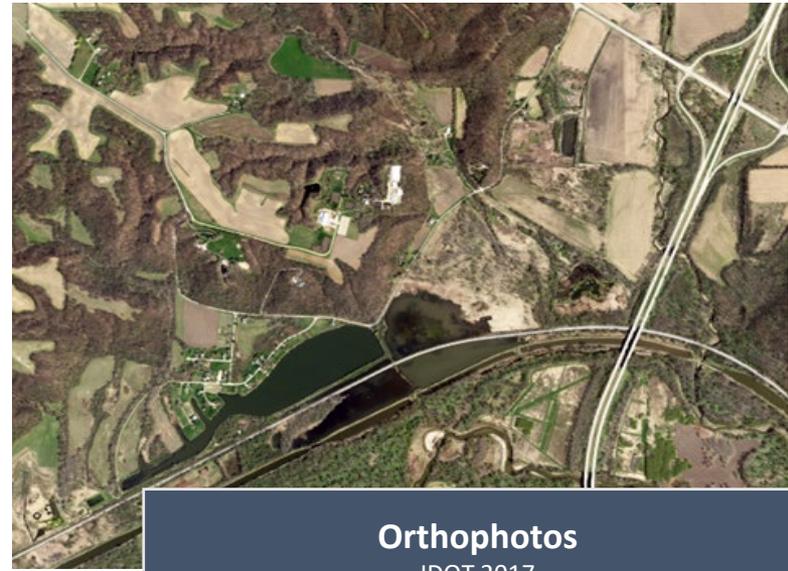


# Data Development Phase

# Mapping Data

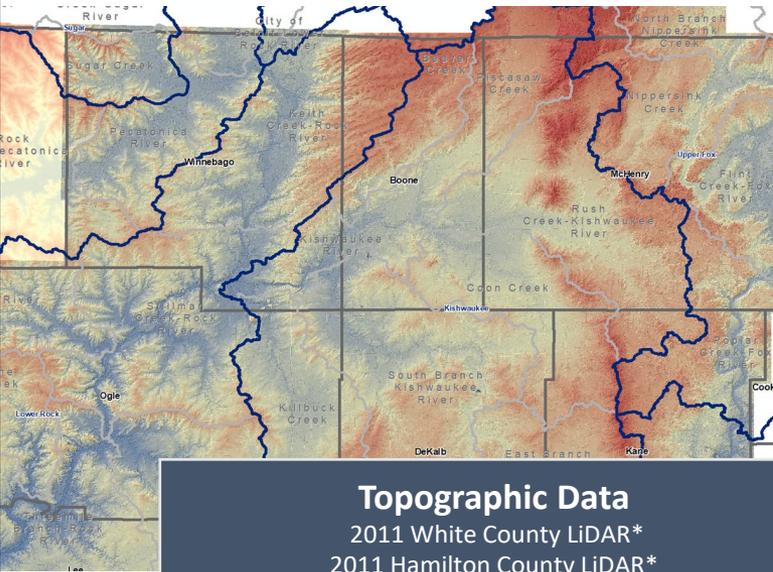


Mapping Data



Orthophotos

IDOT 2017  
USGS National Map



Topographic Data

2011 White County LiDAR\*  
2011 Hamilton County LiDAR\*  
2011 Wayne County LiDAR\*



Survey

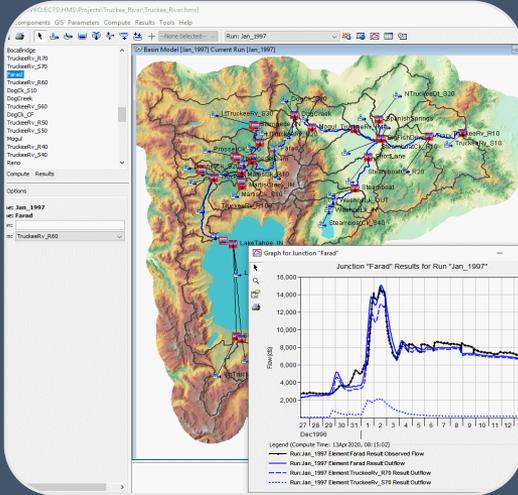
As-Built plans for structures along the Skillet Fork channel

# Proposed Engineering Methods

## Hydrologic Studies

Determine 100-Year stream **Flows** using:

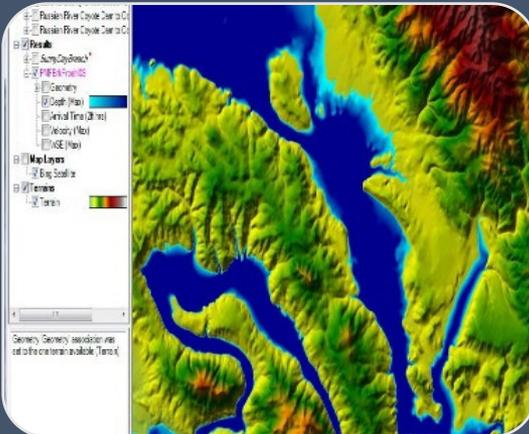
- USGS Bulletin 17C Gage Analysis
- USGS StreamStats Online Application
- Army Corps of Engineers HEC-RAS 2D Rain-On-Grid
- 10%, 4%, 2%, 1%, 0.2% and 1%+ annual chance storm events



## Hydraulic Studies

Determine 100-Year flood **Elevations** using Army Corps of Engineers

- **HEC-RAS 6.2 River Analysis System Hydraulic Model**
- Skillet Fork floodplain will utilize 2D modeling capabilities
- Upstream portions of Skillet Fork and remaining streams will be modeled with 1D methodology



# Communication and Outreach

# Communication and Outreach

Communication Plan

Project Initiation Community Coordination Meeting (today)

Proposed Engineering Methods Notification Letter

- 30-Day Comment Period

Flood Risk Review Meeting

- 30-Day Comment Period

Data Submission Notification Letter

- 30-Day Comment Period

Please reach out to **Mary Richardson** at [mjr@illinois.edu](mailto:mjr@illinois.edu)

# Communication and Outreach

## Proposed Engineering Methods Letter

FEMA Standard ID 620



# Communication and Outreach

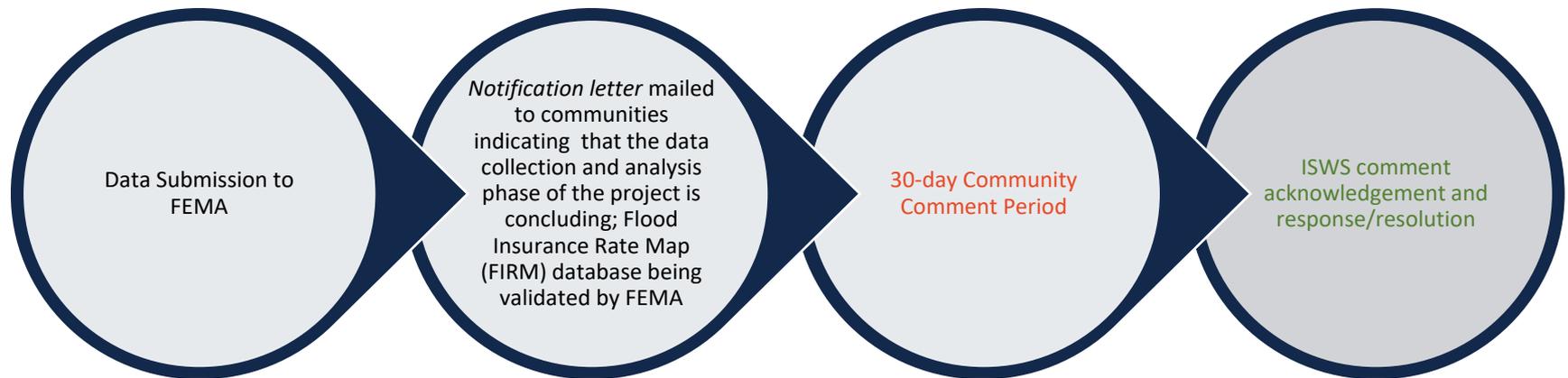
## Flood Risk Review Meeting



# Communication and Outreach

## Data Submission Notification

FEMA Standard ID 621



# Project Schedule

# Project Schedule

## Project Initiation and Community Coordination Meeting

- **Today**

## Engineering Methods Letters to communities

- **August 2022**

## Complete all Hydrologic Studies

**Spring 2023**

## Complete all Hydraulic Studies

- **Summer 2023**

## Submit Funded Flood Studies to IDNR for State review

- **Spring 2024**

## Flood Risk Review Meeting

- **Spring 2024**

## Digital Flood Insurance Rate Map Project to follow pending conclusion of data development

- **Future Phase (To Be Determined)**

# Community Participation

# Community Participation

Please provide us with the following data or information:

- Flood prone areas
- Flood photos/Drone video
- Historic highwater marks
- Local floodplain studies and survey data
- Any other data or information

Stay engaged in the process...

- Attend meetings
- Ask questions
- Inform others
- Update contact Information

# Community Participation

## In Summary

**Local Partners are critical to the project**

- Best understand their community needs
- Can provide critical information to enhance the studies with local knowledge

**Our goal is to make managing and mitigating flood risk easier for our local partners**

- Use the latest data to understand flood risk
- Utilize the tools and mapping available to assist communities in administering the NFIP locally

**Please ask questions and share your concerns**

- Communicating early and often ensures the flood risk products capitalize on local knowledge and best address local needs

# Questions?

## Illinois State Water Survey

### PRAIRIE RESEARCH INSTITUTE

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Project Engineer: Addison Jobe, EIT, CFM

[asjobe@illinois.edu](mailto:asjobe@illinois.edu)

Outreach: Mary Richardson, CFM

[mjr@illinois.edu](mailto:mjr@illinois.edu)

Mitigation Planning: Lisa Graff, GISP, CFM

[lgraff@illinois.edu](mailto:lgraff@illinois.edu)

[www.illinoisfloodmaps.org](http://www.illinoisfloodmaps.org)