ILLINOIS

Illinois State Water Survey

PRAIRIE RESEARCH INSTITUTE

Kishwaukee River Watershed Flood Risk Project

Project Initiation Community Coordination Meeting

June 14th, 2022

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ILLINOIS DEPARTMENT OF NATURAL RESOURCES

FEMA

Agenda

- Rollcall
- Introduction
- Project Objectives and Goals
- National Flood Insurance Program / Mitigation
- Project Scope
  - Data Development
  - Communication
  - Schedule
  - Community Participation

Rollcall

Boone County	DeKalb County	Kane County	McHenry County	Ogle County	Winnebago County	Other Agencies
City of Belvidere	Town of Cortland	Village of Algonquin	Village of Algonquin	Village of Creston	Village of Cherry Valley	FEMA
Village of Caledonia	City of DeKalb	City of Burlington	Chemung Township	Village of Davis Junction	City of Rockford	IDNR
Candlewick Lake HOA	City of Genoa	Village of Compton Hills	City of Crystal Lake	Village of Hillcrest	Village of New Milford	IEMA
Village of Capron	Village of Kingston	Village of Elburn	City of Harvard	Village of Monroe Center		R1PC
Village of Garden Prairie	Village of Kirkland	Village of Gilberts	Village of Huntley			Others?
Village of Poplar Grove	Village of Malta	Village of Hampshire	Village of Lake-in-the-Hills			
Village of Timberlane	Village of Maple Park	Village of Huntley	Village of Lakewood			
	Village of Shabbona	Village of Lily Lake	City of Marengo			
	City of Sycamore	Village of Maple Park	Village of Union			
		Village of Pingree Grove	City of Woodstock			
		Village of Virgil				

Introduction

Introduction

Who We Are

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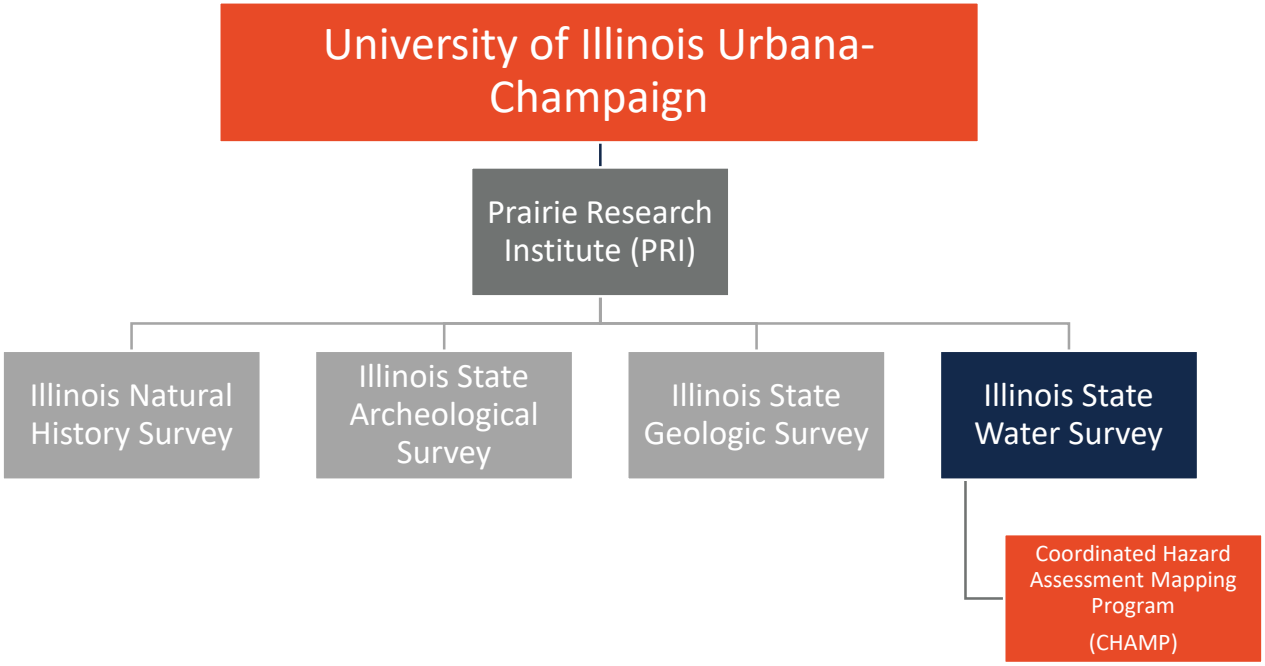

https://www.illinoisfloodmaps.org/

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

Introduction

Our Partners

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FEMA

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

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.

Illinois Department of Natural Resources

Your Community

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

THE CITY OF ROCKFORD ILLINOIS, USA
CITY of BELVIDERE Established 1881 IN GOD WE TRUST ILLINOIS
Village of Cherry Valley
WINNEBAGO COUNTY WINNEBAGO 1634 ILLINOIS
VILLAGE OF POPLAR GROVE
BOONE COUNTY IN GOD WE TRUST ESTABLISHED 1837 ILLINOIS

Introduction

What We Do

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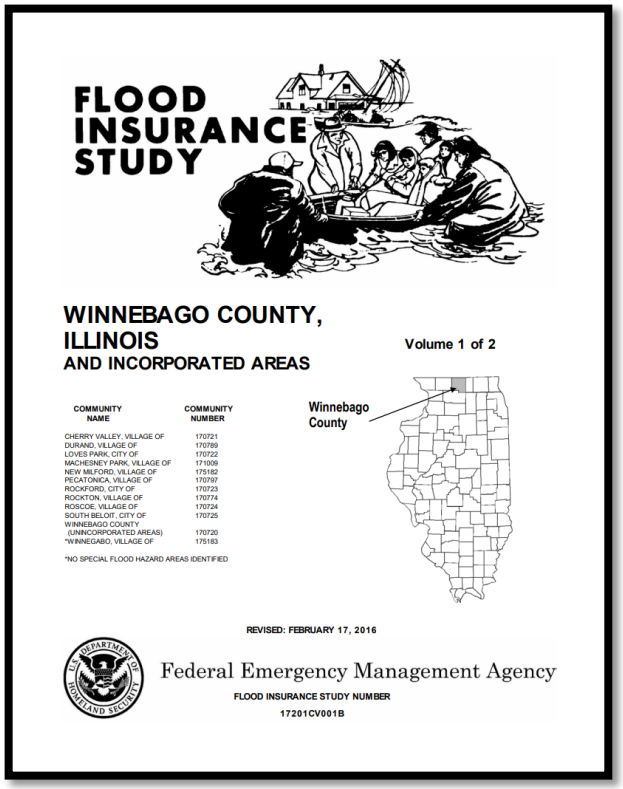
PRODUCE FLOOD STUDIES


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	170797
ROCKFORD, CITY OF	170723
ROCKTON, VILLAGE OF	170774
ROSCOE, VILLAGE OF	170724
SOUTH BELOIT, CITY OF	170725
WINNEBAGO COUNTY (UNINCORPORATED AREAS)	170720
*WINNEGABO, VILLAGE OF	175183

*NO SPECIAL FLOOD HAZARD AREAS IDENTIFIED

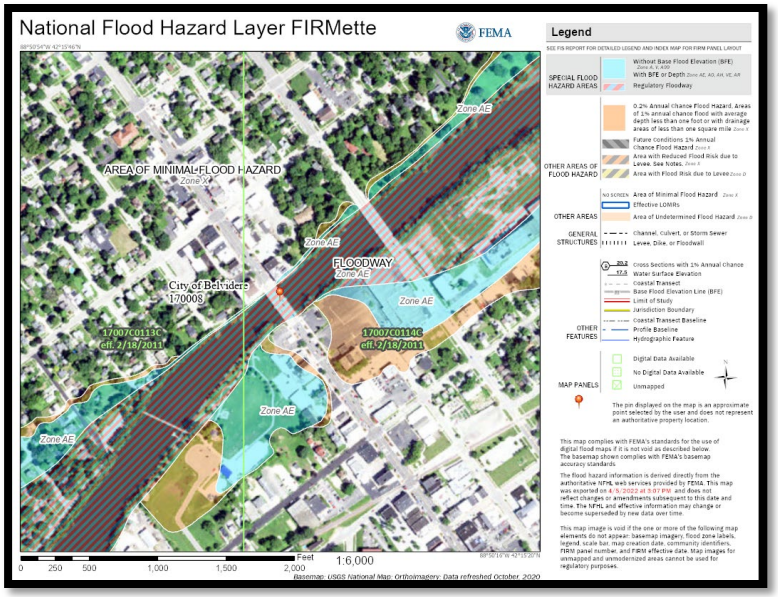
Winnebago County

REVISED: FEBRUARY 17, 2016

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
17201CV001B

GENERATE FLOODPLAIN MAPS



Introduction

How We Are Funded

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NATIONAL FLOOD INSURANCE PROGRAM

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.

FEMA

The Cooperating Technical Partners (CTP) Program

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

Introduction

What We Do

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INFORM RESIDENTS AND COMMUNITIES about flood hazards in their communities.

Introduction

What We Do

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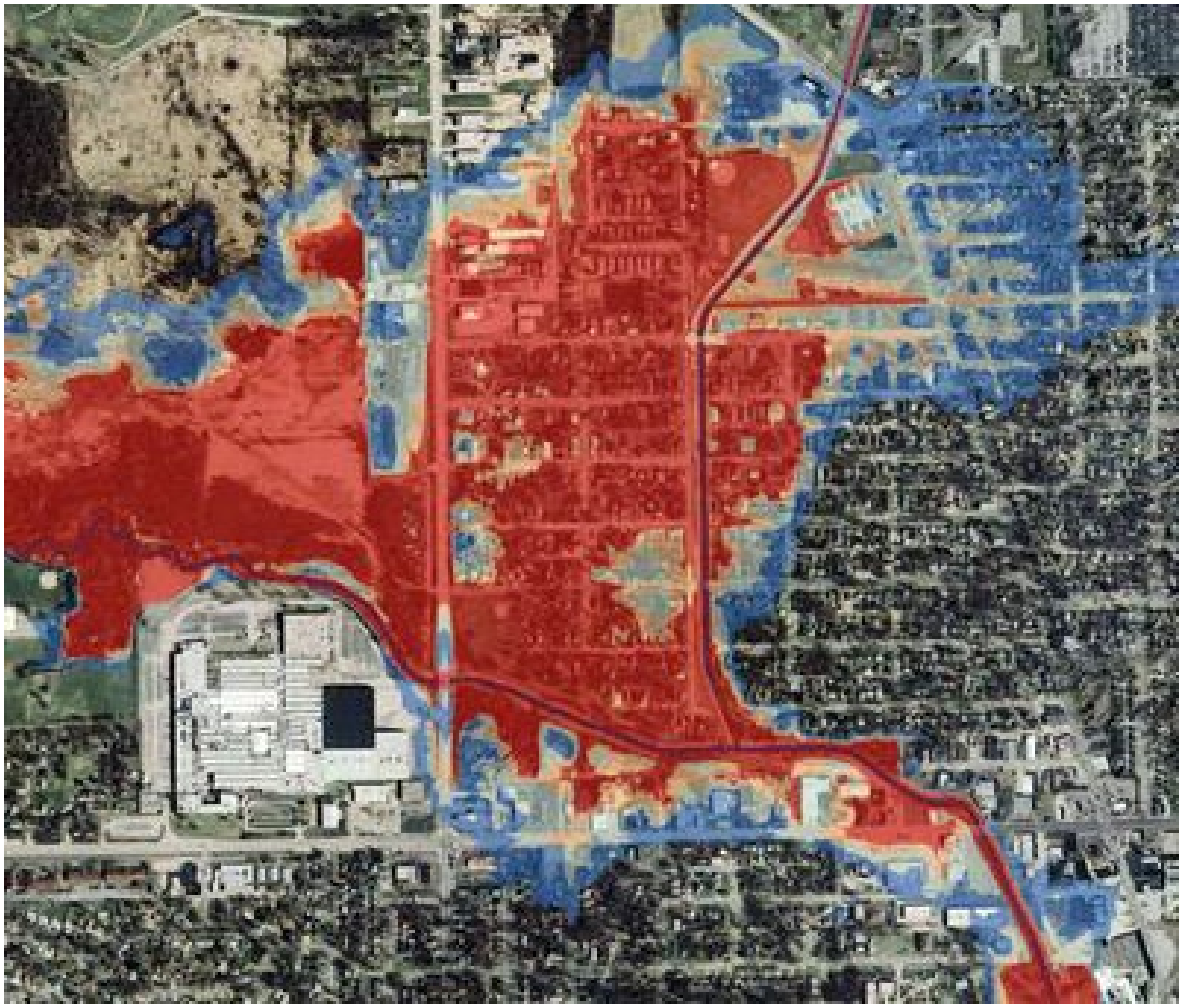
Provide **HAZARD MITIGATION PLANNING SERVICES** for Communities



Introduction

What We Do

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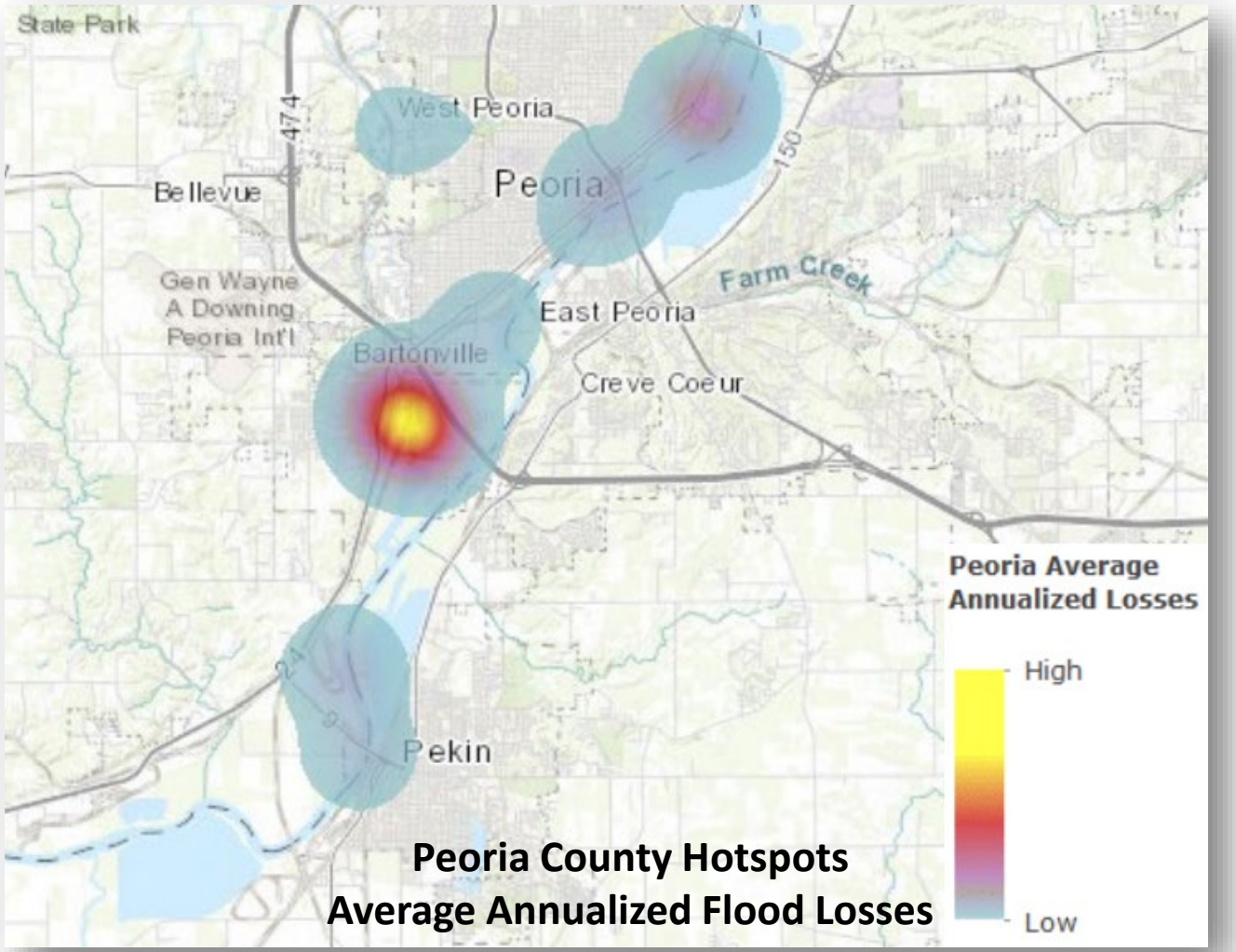
Provide **STRUCTURE SPECIFIC RISK ASSESSMENTS**



Introduction

Kishwaukee Watershed Project Location Map

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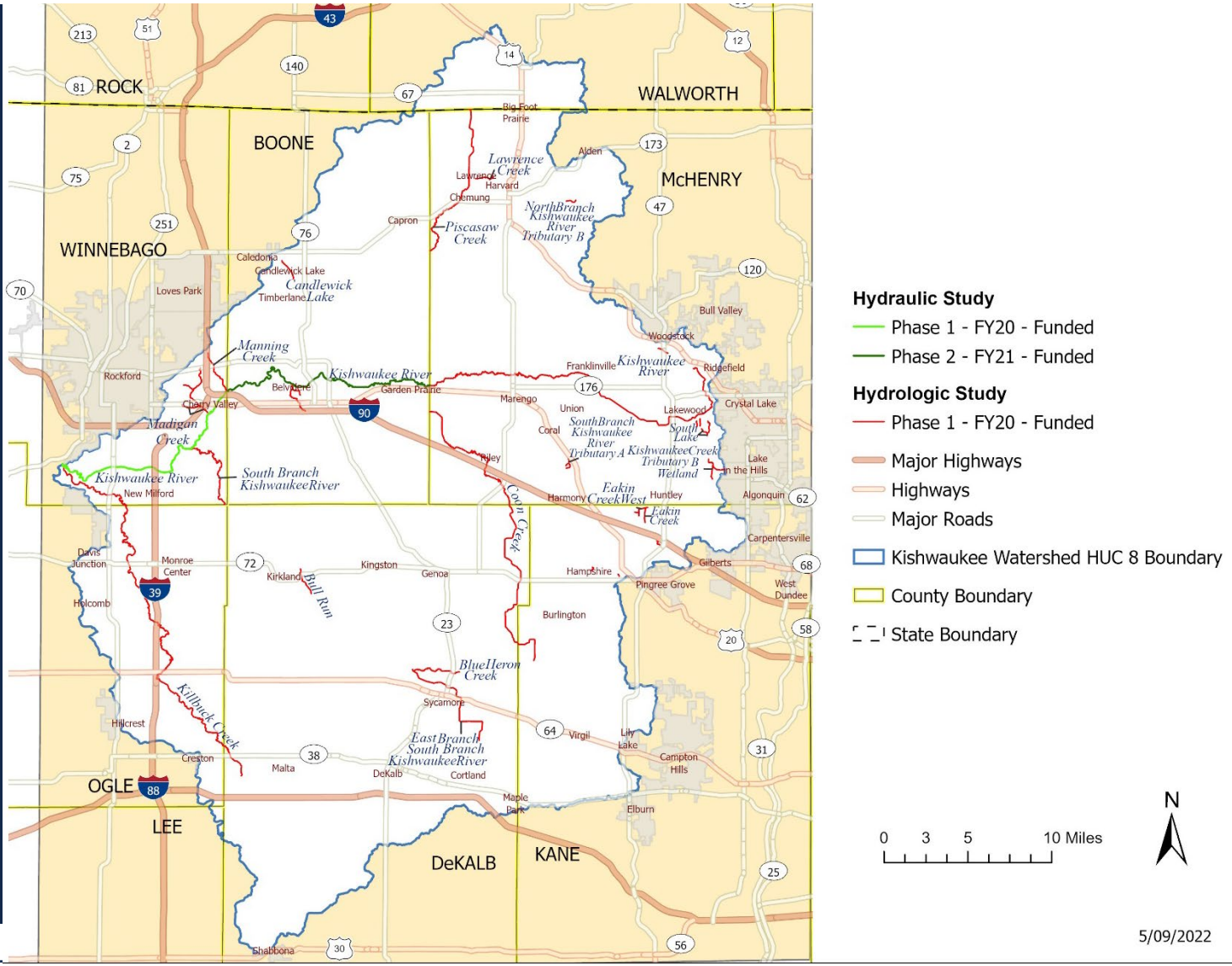
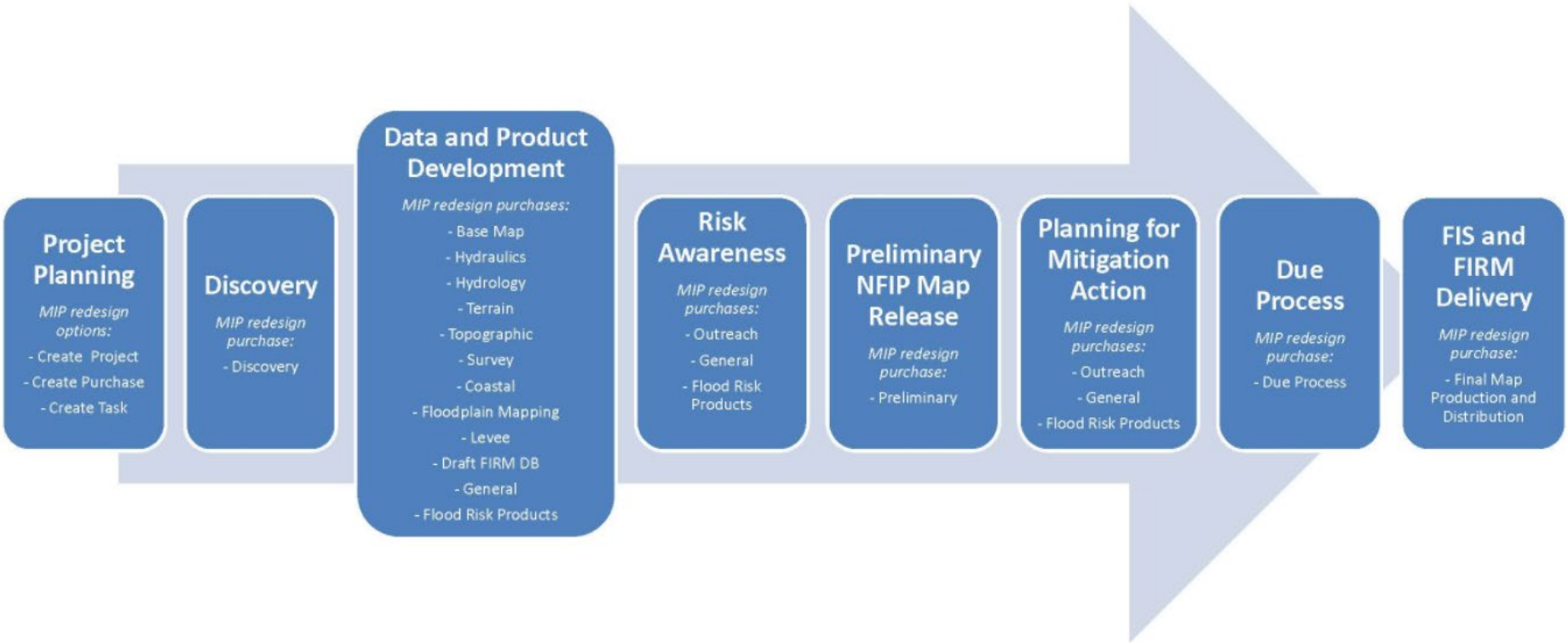


5/09/2022

Project Objectives and Goals

FEMA National Objectives and Goals



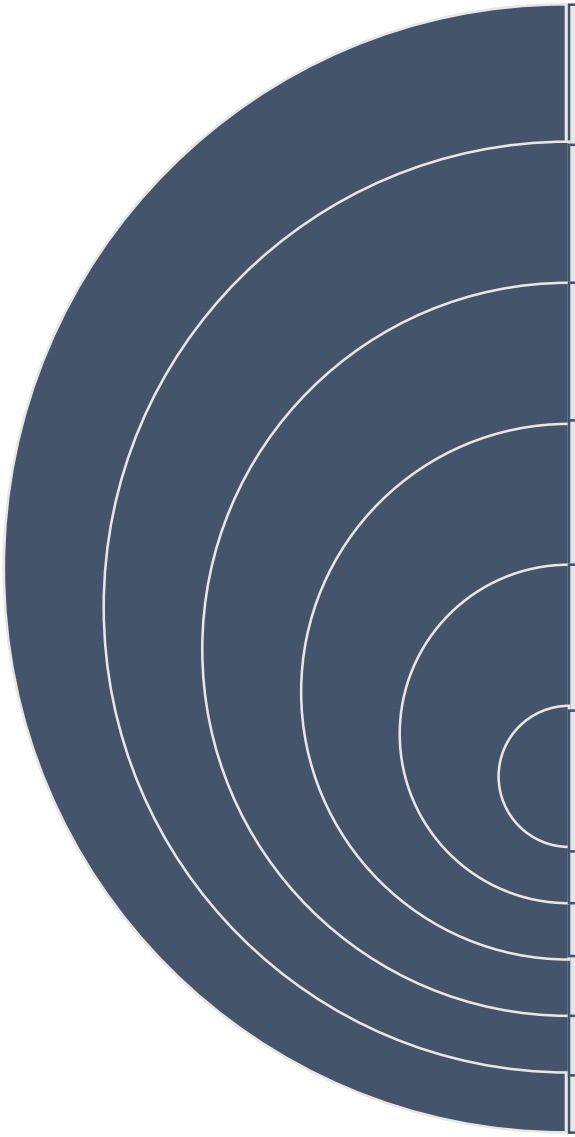
State Objectives and Goals

Update Flood Risk with Hydrologic and Hydraulic Analyses for Select Streams

Update Digital Floodplain Maps

https://www.illinoisfloodmaps.org/

Kishwaukee Watershed Objectives and Goals



Multi-year phased project to develop new floodplain studies for the Kishwaukee River Watershed based on community requests during the Discovery Process.

Currently funded for **Phase I and Phase II** of Data Development.

Phase I consists of **Hydrologic & Hydraulic Studies** for the Kishwaukee River Mainstem in Winnebago and Boone Counties and Hydrology for various tributaries, lakes and ponds throughout the watershed.

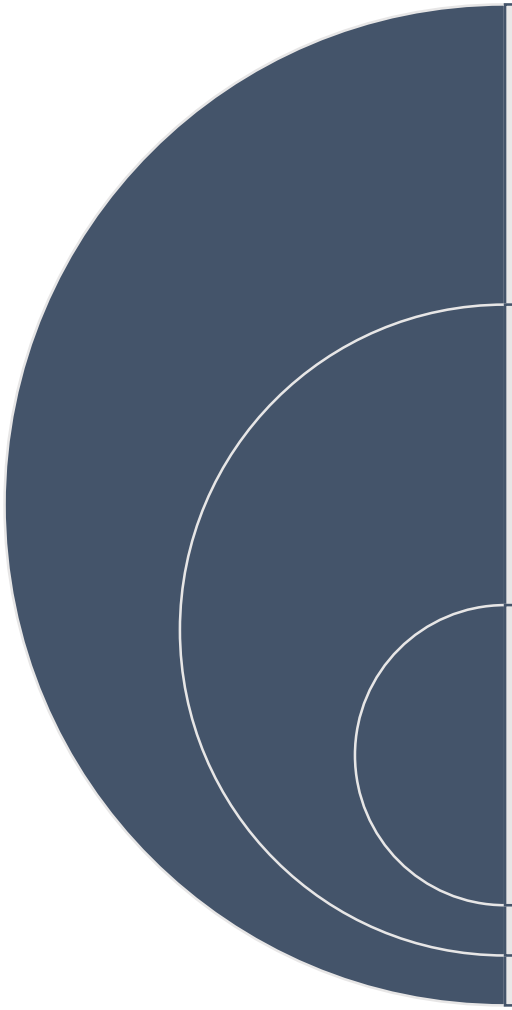
Phase II consists of **Hydraulic Studies** for the Kishwaukee River Mainstem in Boone County.

Future Phases will include **Hydrologic and Hydraulic Studies** for Kishwaukee River in McHenry County and various tributaries throughout the watershed

The **Goal** of this project will be **updated countywide digital Flood Insurance Rate Maps (FIRMs).**

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.

Marilyn Sucoe, IDNR NE IL NFIP Coordinator

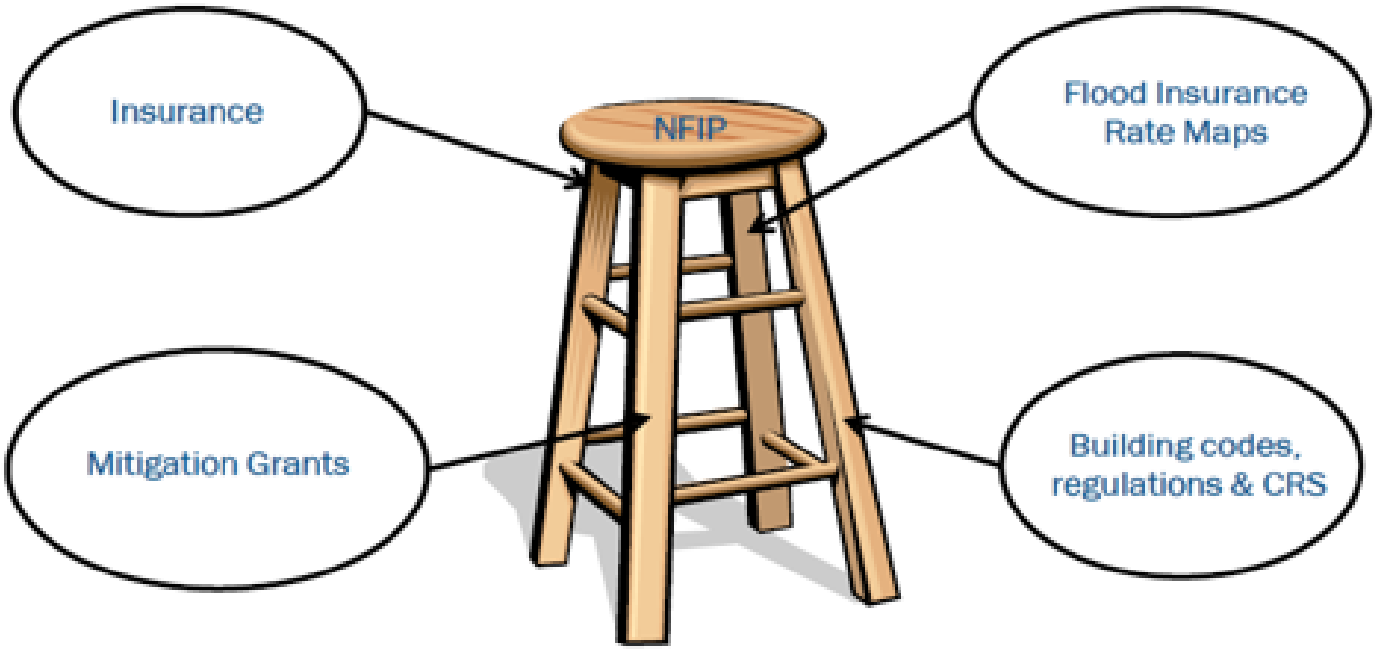
Marilyn.Sucoe@Illinois.gov, 847-608-3181 or 217-782-4428

Steve Altman, Acting NFIP State Coordinator

Steve.Altman@illinois.gov, 217-524-1028

National Flood Insurance Program

Three +1 Related Program Areas



NFIP Participating Communities

https://www.fema.gov/cis/IL.pdf downloaded 5/26/2022

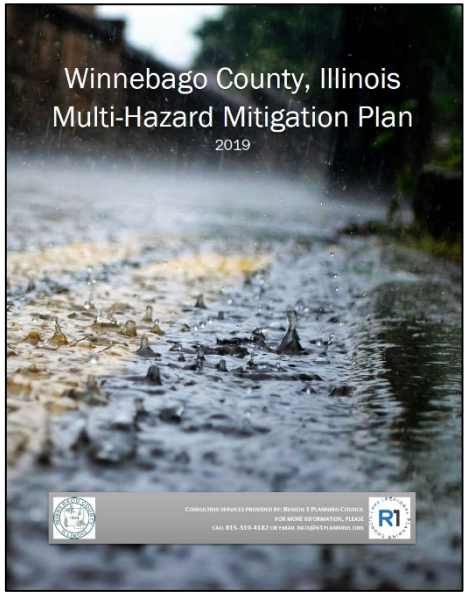
Community	CRS Status	CAC Date	CAV Date	No. Flood Policies	Total Coverage, $	Total Claims Since 1978	Total Paid Since 1978, $	Rep Loss Structures+	Total Rep Loss, $
Boone County*		12/17/1993	4/21/2011	**20**	**$4,933,500**	**24**	**$211,424**	**8**	**$49,452**
Belvidere		11/01/1994	08/30/2006	43	$7,102,800	33	$160,605	3	$49,452
Dekalb County*		-	09/15/2003	**43**	**$10,846,700**	**96**	**$1,514,027**	**26**	**$843,060**
Kirkland		06/29/1993	03/22/2012	11	$1,581,300	24	$330,961	0	$0
Sycamore	7	-	12/09/2015	24	$5,179,700	96	$689,016	14	$430,402
Kane County*		-	1/17/2013	**186**	**$44,873,900**	**204**	**$2,828,205**	**14**	**$1,476,709**
Burlington		-	03/29/2007	0	$0	0	$0	0	$0
Hampshire	7	11/23/1999	09/02/2009	6	$1,748,400	8	$28,331	1	$6,476
Huntley[1]	7	04/19/2016	06/21/2017	17	$5,377,000	3	$713	0	$0
McHenry County*	7	-	4/15/2010	**420**	**$83,888,400**	**467**	**$3,719,316**	**14**	**$189,798**
Crystal Lake	7	09/12/1996	08/11/2009	33	$7,995,800	35	$311,787	3	$260,590
Harvard		10/27/1999	01/29/2004	15	$3,965,100	9	$19,984	2	$7,989
Lake in the Hills	5	09/01/1992	05/30/2006	36	$8,136,800	37	$173,366	4	$58,842
Lakewood		04/28/2019	04/15/2004	5	$1,650,000	3	$39,536	0	$0
Marengo		07/27/2016	07/26/2007	73	$11,623,100	21	$30,427	2	$9,508
Woodstock		08/28/1996	09/01/2009	15	$3,505,800	18	$182,322	3	$44,282
Ogle County*	7	-	-	**92**	**$17,276,100**	**229**	**$2,391,069**	**52**	**$1,435,534**
Winnebago County*		-	8/13/1998	**119**	**$20,234,800**	**394**	**$3,748,454**	**76**	**$2,341,455**
Cherry Valley[2]		09/12/1997	05/10/2016	7	$1,790,600	7	$27,573	0	$0
New Milford		-	-	2	$340,400	1	$3,149	0	$0
Rockford	7	-	04/04/2018	274	$43,491,600	620	$10,278,026	172	$8,167,344

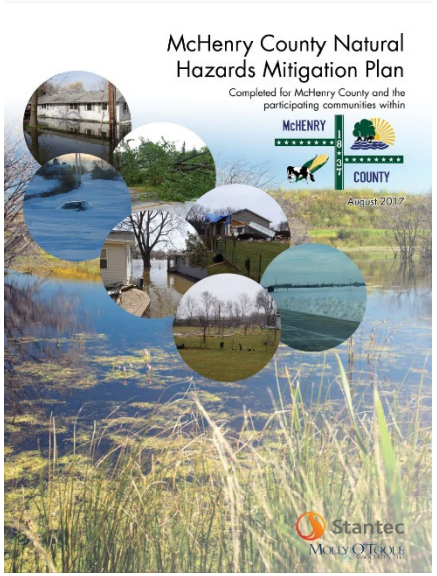
[1]Also in McHenry County *[2]Also in Boone County* **unincorporated* *+may include structures that have been demolished or elevated*

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

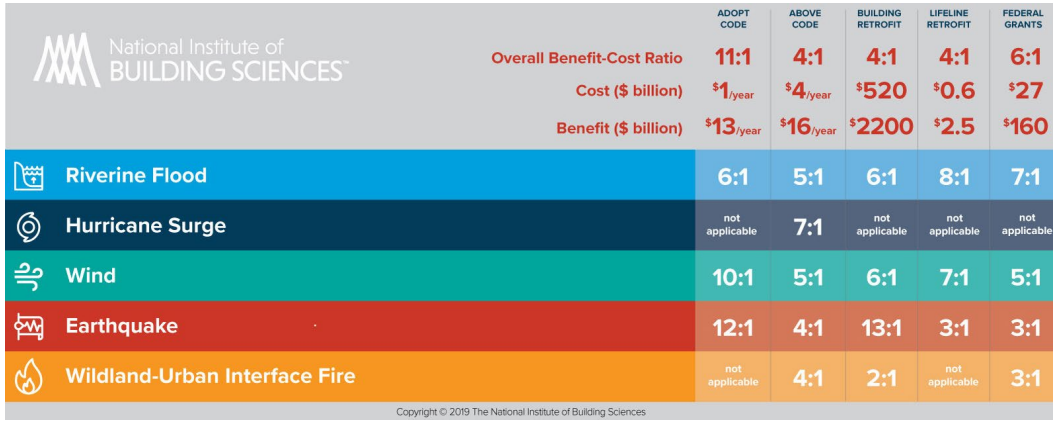




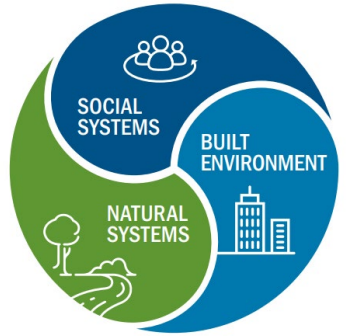
Hazard Mitigation Plans

County	Plan Approval	Plan Expiration
Boone	TBD*	TBD
DeKalb	2021	2026
Kane	2015	2020
McHenry	2017	2022
Ogle	2020	2025
Winnebago	2020	2025

*created 2020, pending approval



County	Flood Risk (IL State Hazard Mitigation Plan)	Flood Mitigation Plan Action Items
Boone	Medium	• Continue stormwater management • Study road elevation • Install pumping stations
DeKalb	Medium	• Continue stormwater management • Develop zoning ordinances and land use plans that prevent floodplain development • Ensure mobile homes are not in floodplains and are protected from flooding • Implement structural flood control projects (e.g., improve bridges, culverts)
Kane	Medium	• Continue stormwater management • Improve code enforcement for flood protection • Implement structural flood control projects (e.g., improve bridges, culverts)
McHenry	Medium	• Continue stormwater management • Replace or repair public infrastructure vulnerable to flooding • Continue NFIP compliance
Ogle	Medium	• Continue code enforcement for flood protection • Continue stormwater management • Make FIRMs accessible and educate public about NFIP
Winnebago	Medium	• Acquire or remove of properties with repeated flood damage • Continue NFIP compliance • Continue stormwater management • Limit or restrict development in floodplain



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.

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

What is a Special Flood Hazard Area?

Project Scope

Project Scope

1. Develop New Floodplain Studies (PH I & PH II)

Hydrologic Studies - HEC-HMS and Gage Analysis
Hydraulic Studies - 32.4 miles Zone AE with BFE and Floodway along Kishwaukee River Mainstem in Winnebago and Boone Counties

2. Future Engineering Phases

- PH III - Survey
- PH IV - Kishwaukee River in McHenry County
- PH V – Various Tributaries throughout the watershed

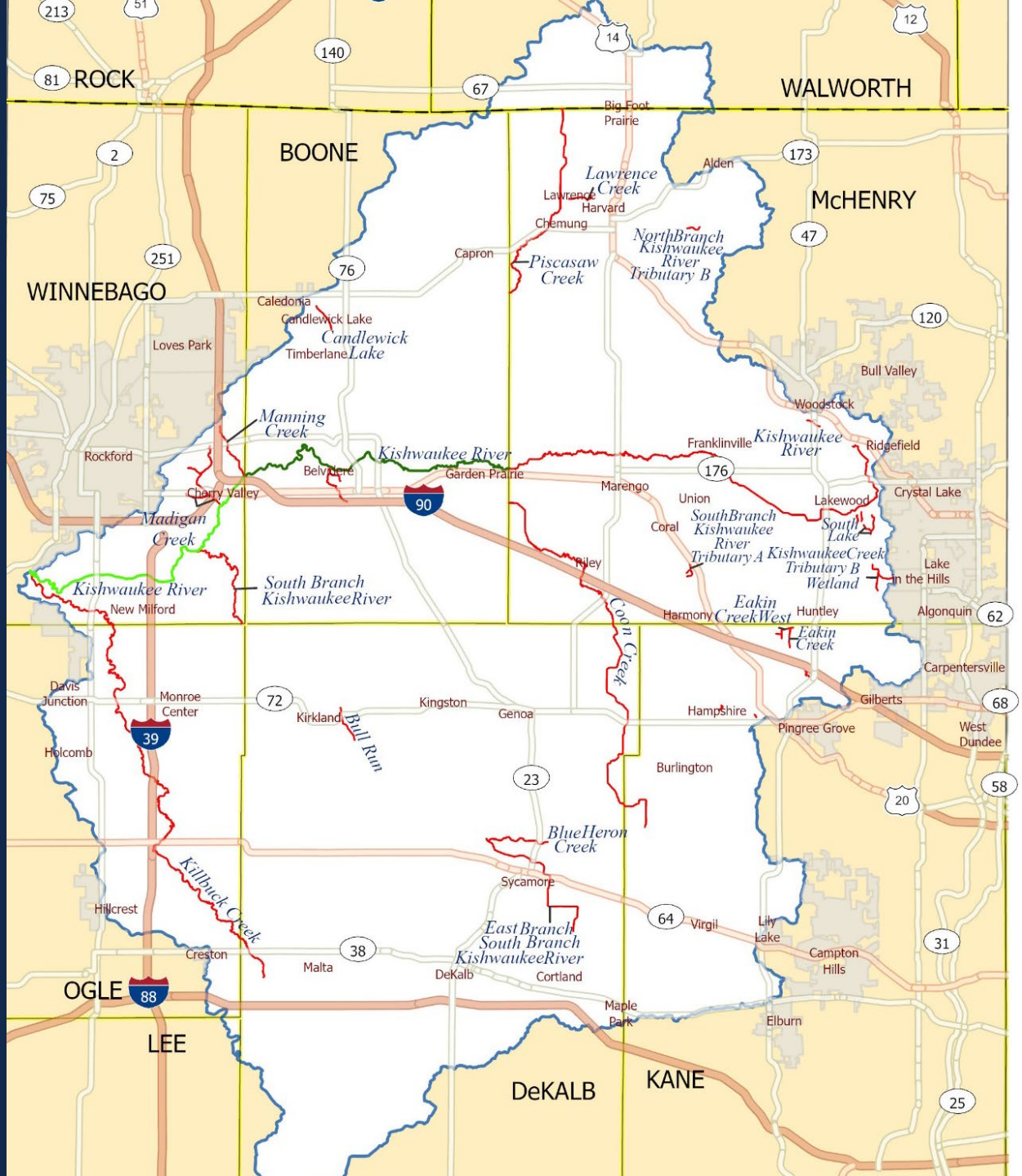
3. Develop Draft Floodplain Mapping

4. Community Outreach and Engagement

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

Data Development Phase

Phased Stream Studies Map



Hydraulic Study

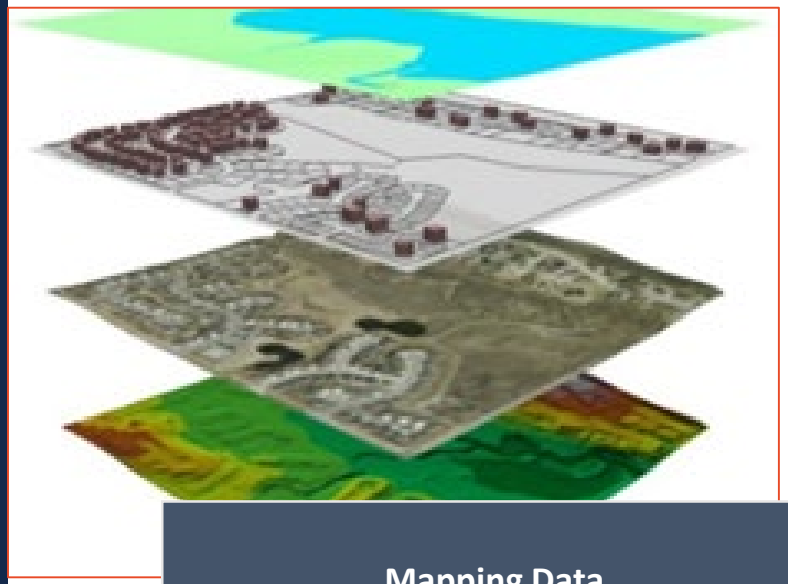
- Phase 1 - FY20 - Funded
- Phase 2 - FY21 - Funded

Hydrologic Study

- Phase 1 - FY20 - Funded
- Major Highways
- Highways
- Major Roads
- Kishwaukee Watershed HUC 8
- County Boundary
- State Boundary

0 3 5 10 Miles

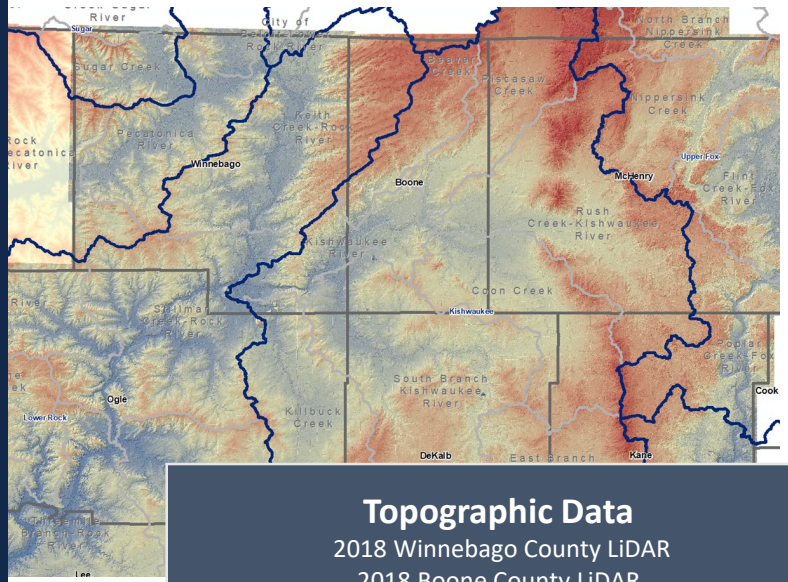
Mapping Data



Mapping Data

Orthophotos

IDOT 2014 Orthophoto &
USGS National Map Orthophoto



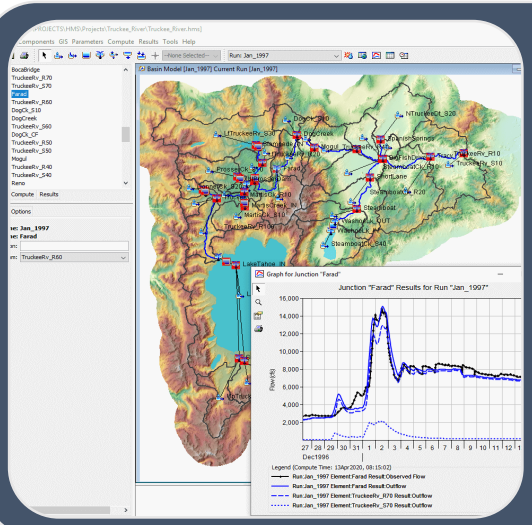
Topographic Data

2018 Winnebago County LiDAR
2018 Boone County LiDAR

Survey

Survey was collected at bridge crossings throughout Winnebago County and is ongoing through Boone County

Proposed Engineering Methods

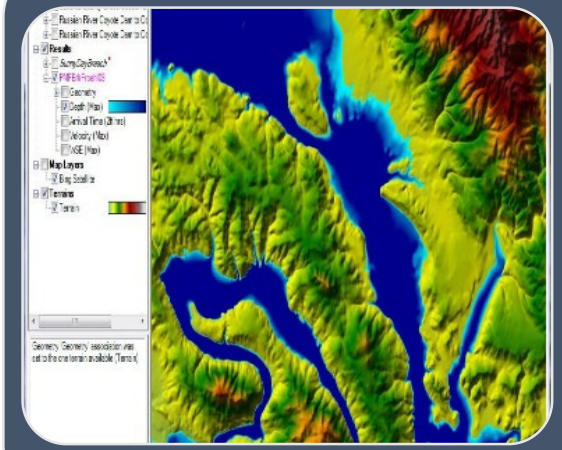


Hydrologic Studies

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

- USGS Bulletin 17C Gage Analysis

- Army Corps of Engineers **HEC-HMS H**ydrologic Runoff **M**odeling **S**ystem



Hydraulic Studies

Determine 100-Year flood **Elevations** using Army Corps of Engineers
- **HEC-RAS 1D R**iver **A**nalysis **S**ystem Hydraulic Model

Proposed H & H Models

USGS Bulletin 17C Gage Analysis

- Kishwaukee River at Belvidere (05438500)
- Kishwaukee River near Perryville (05440000)
- Kishwaukee River near Huntly (05437950)
- Piscasaw Creek near Walworth, WI (05438283)
- Killbuck Creek near Monroe Center (05440500)
- South Branch Kishwaukee near Fairdale (05439500)
- South Branch Kishwaukee at Dekalb (05439000)
- Coon Creek at Riley (05438250

HEC-HMS Rainfall Runoff Modeling

Winnebago County
- Madigan Creek Zone AE
- Manning Creek Zone AE

Boone County
- Kishwaukee River Tributary A in Belvidere Zone AE
- Kishwaukee River Tributary A Stormwater Diversion Zone AE
- Candlewick Lake Zone A

Kane County
- Hampshire Creek Trib1 (White Oak Ponds Detention Basin)
- Hampshire Creek (Briar Road Farm Pond) Zone A
- Kishwaukee River (Rush)
- I-90/IL-47 Farm Pond* Zone AE
- Eakin Creek, Eakin Creek West, Eakin Creek West Trib A (Dell Web Sun City Development)

McHenry County
- Lawrence Creek Trib A (Oak Grove Crossings Detention Pond in Harvard) Zone A
- SB Kishwaukee River Trib A & Trib A3 (Blackstone Golf Ponds) Zone A
- South Lake, South Lake 2, Bonnie Lake*, Kishwaukee River Tributary 3 (Turnberry Golf Club Ponds) Zone A
- North Branch Kishwaukee River Tributary B Pond Zone A
- Kishwaukee Creek Tributary B* (Exner Marsh Conservation Pond) Zone AE

DeKalb County
- Bull Run Zone AE
- East Branch South Branch Kishwaukee Zone AE
- Blue Heron Creek Zone AE

Ogle County
- Killbuck Creek Zone AE

**Tributary names may change for the Engineering Methods Letter*

HEC-RAS Hydraulic Models

Winnebago County
- Kishwaukee River Mainstem
- 15 miles Zone AE with FW

Boone County
- Kishwaukee River Mainstem
- 17.4 miles New Zone AE with BFE and FW

Winnebago County Studies

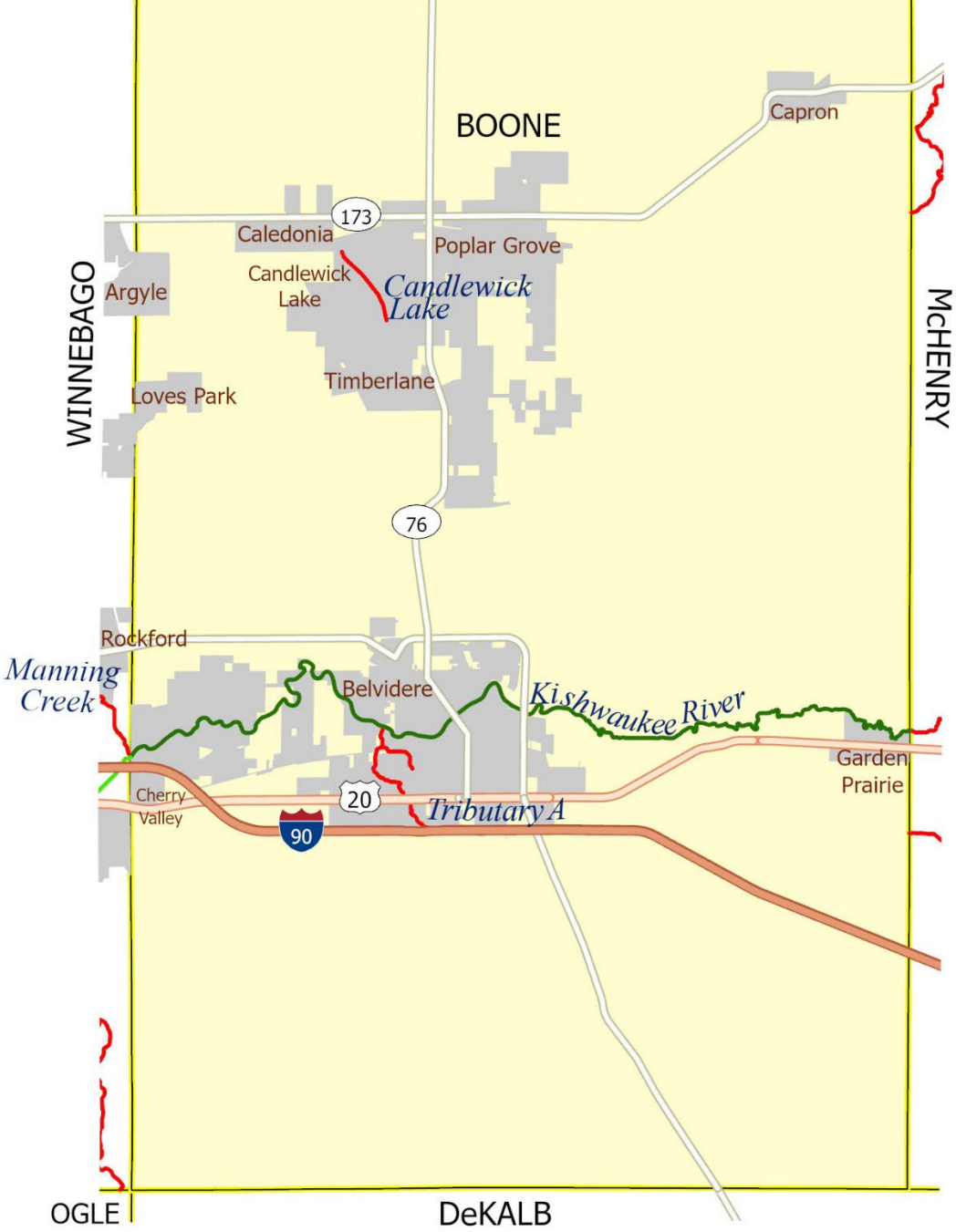
Hydraulic Study

- Phase 1- FY 20 -
- Phase 2 - FY21 -

Hydrologic Study

- Phase 1- FY 20 -
- Major Highways
- Highways
- Major Roads
- County Boundary
- State Boundary

Boone County Studies



Hydraulic Study

- Phase 1- FY 20 - Funded
- Phase 2 - FY21 - Funded

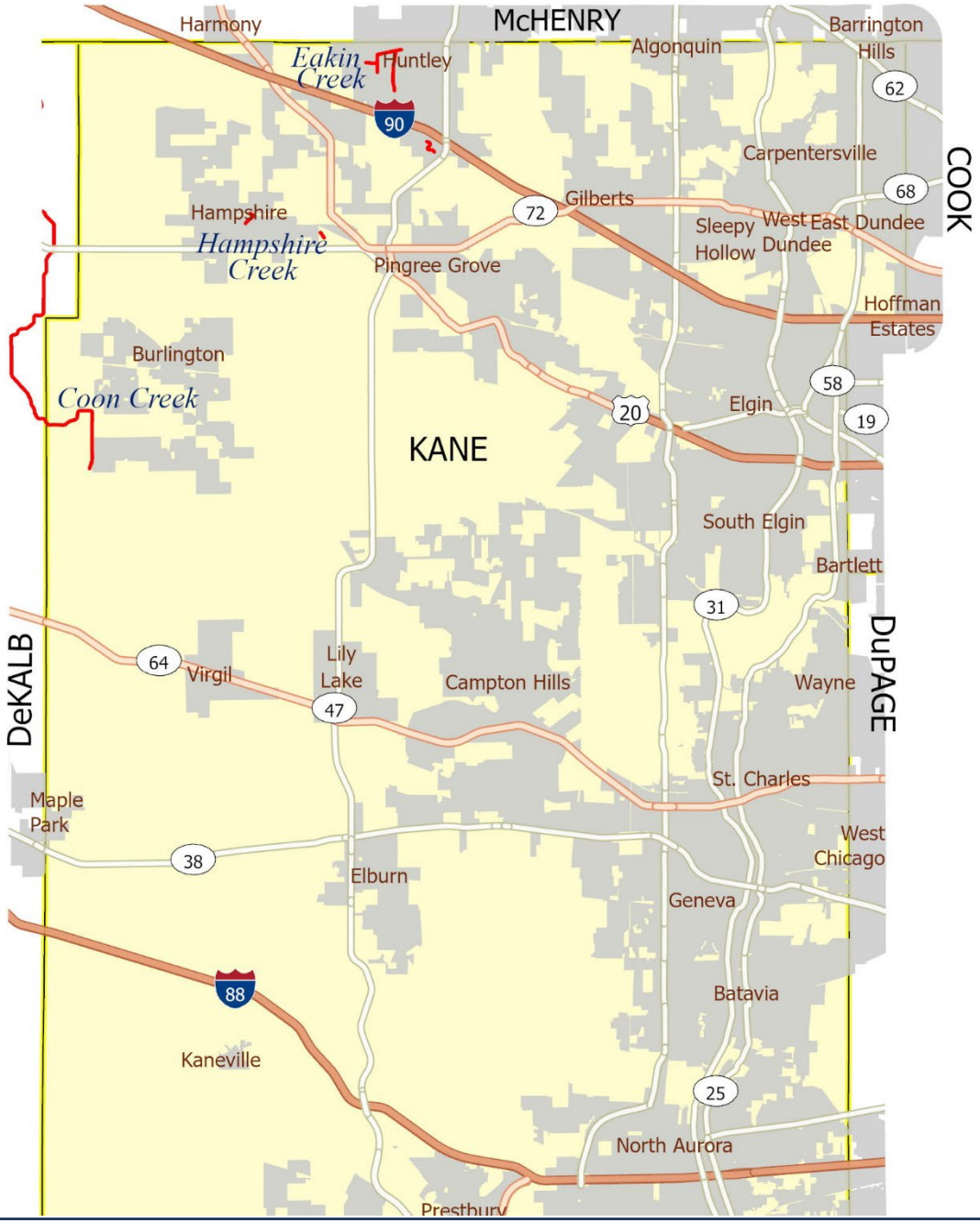
Hydrologic Study

- Phase 1- FY 20 - Funded
- Major Highways
- Highways
- Major Roads
- County Boundary
- State Boundary

N

0 1 2 4 Miles

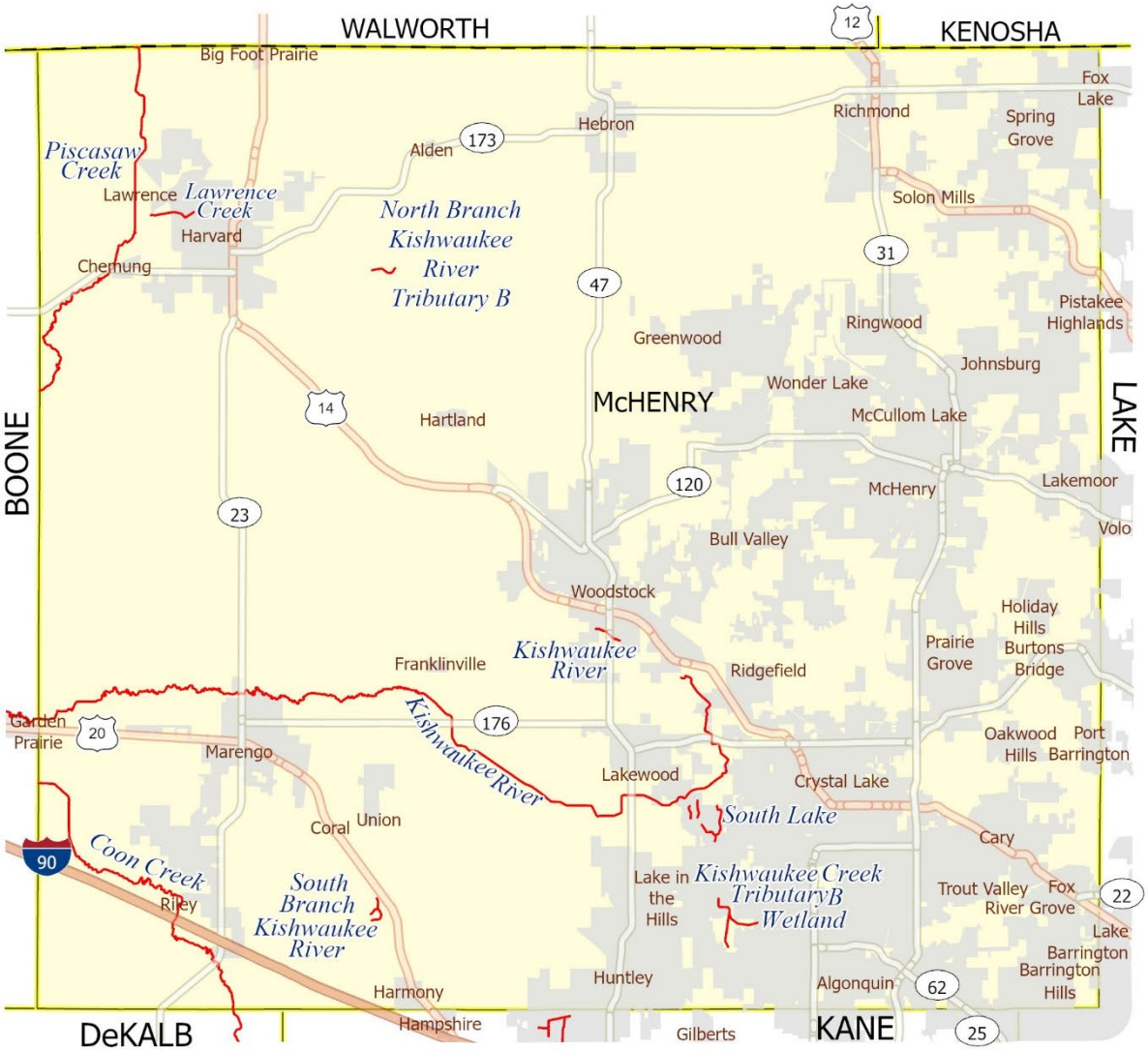
Kane County Studies



Hydrologic Study

- Phase 1- FY 20 - Funded
- Major Highways
- Highways
- Major Roads
- County Boundary

McHenry County Studies



Hydraulic Study

- Phase 1 - FY20- Funded
- Phase 2 - FY21- Funded

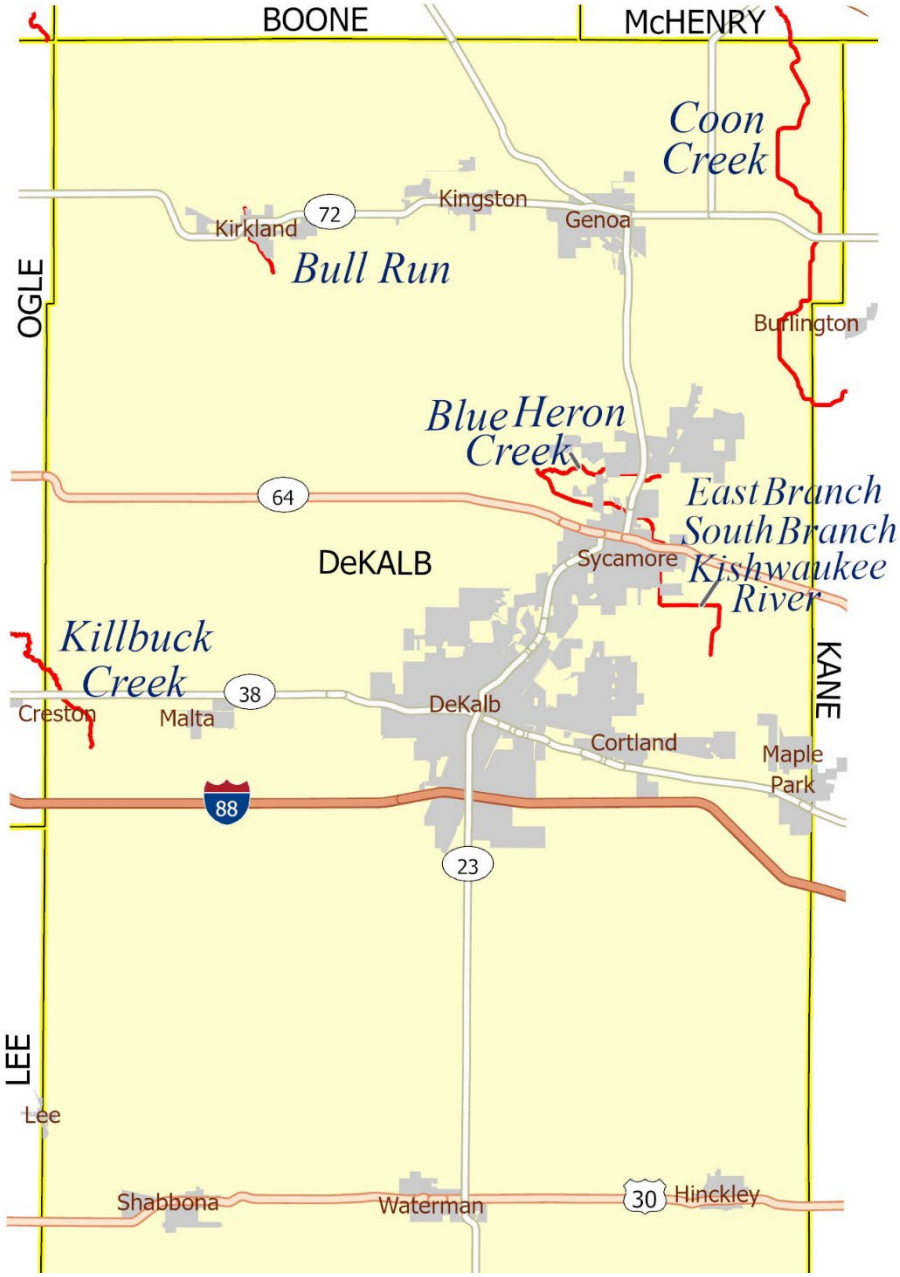
Hydrologic Study

- Phase 1 - FY20 -Funded
- Major Highways
- Highways
- Major Roads
- County Boundary
- State Boundary

0 1 2 4 Miles

N

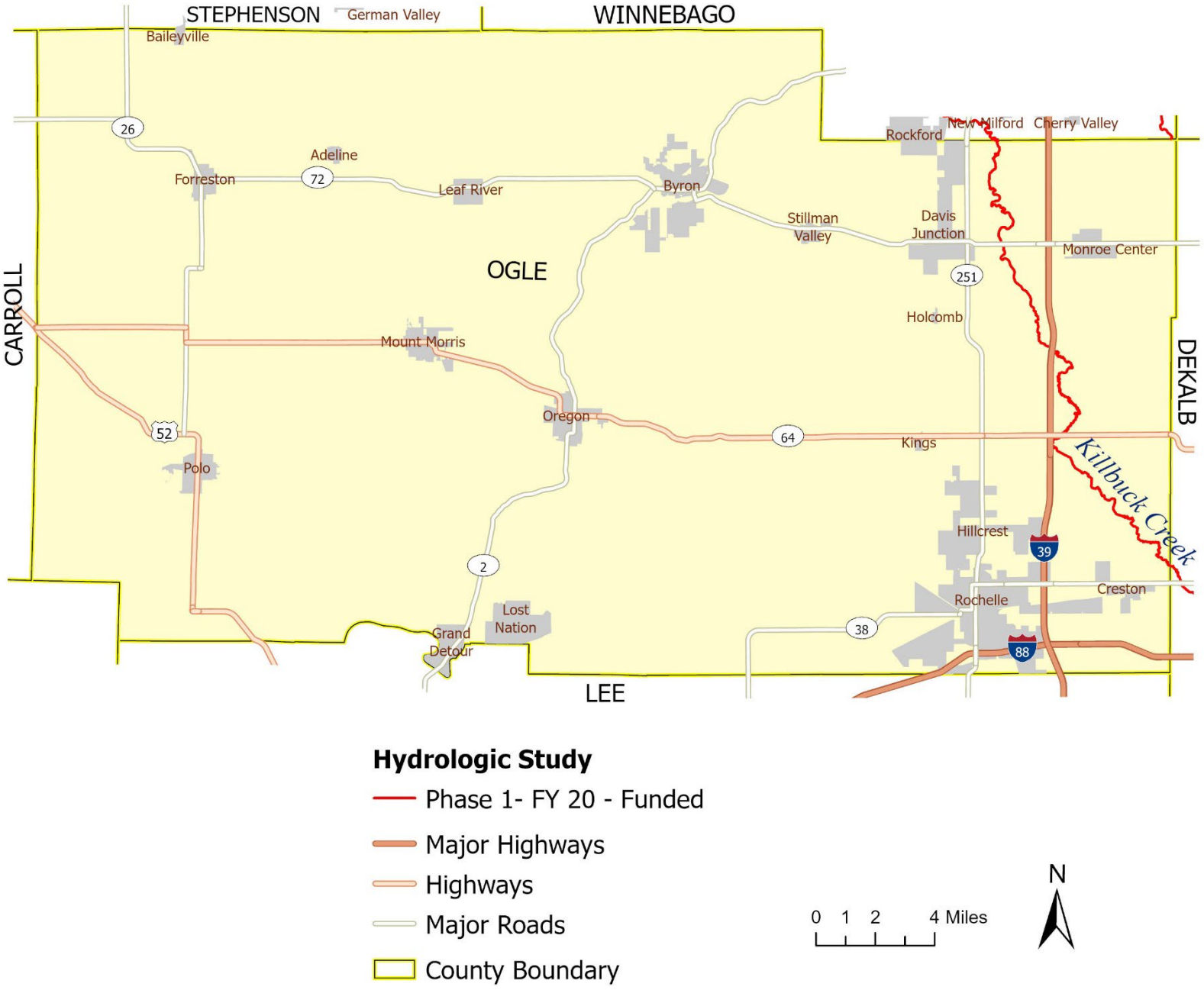
DeKalb County Studies



Hydrologic Study

- Phase 1- FY 20 - Funded
- Major Highways
- Highways
- Major Roads
- County Boundary

Ogle County Studies



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**

Communication and Outreach

Proposed Engineering Methods Letter

FEMA Standard ID 620

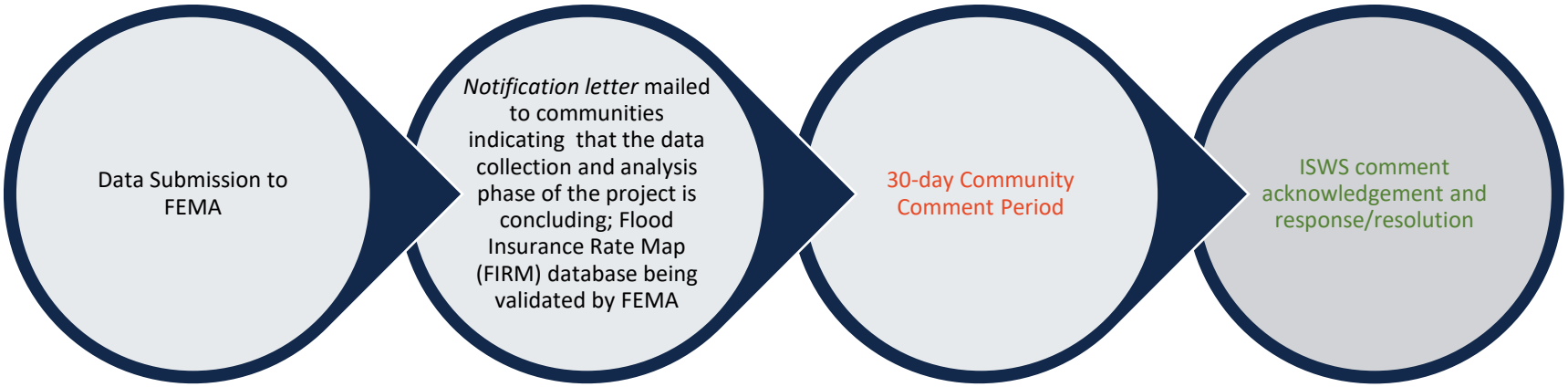
Communication and Outreach

Flood Risk Review Meeting

Communication and Outreach

Data Submission Notification

FEMA Standard ID 621



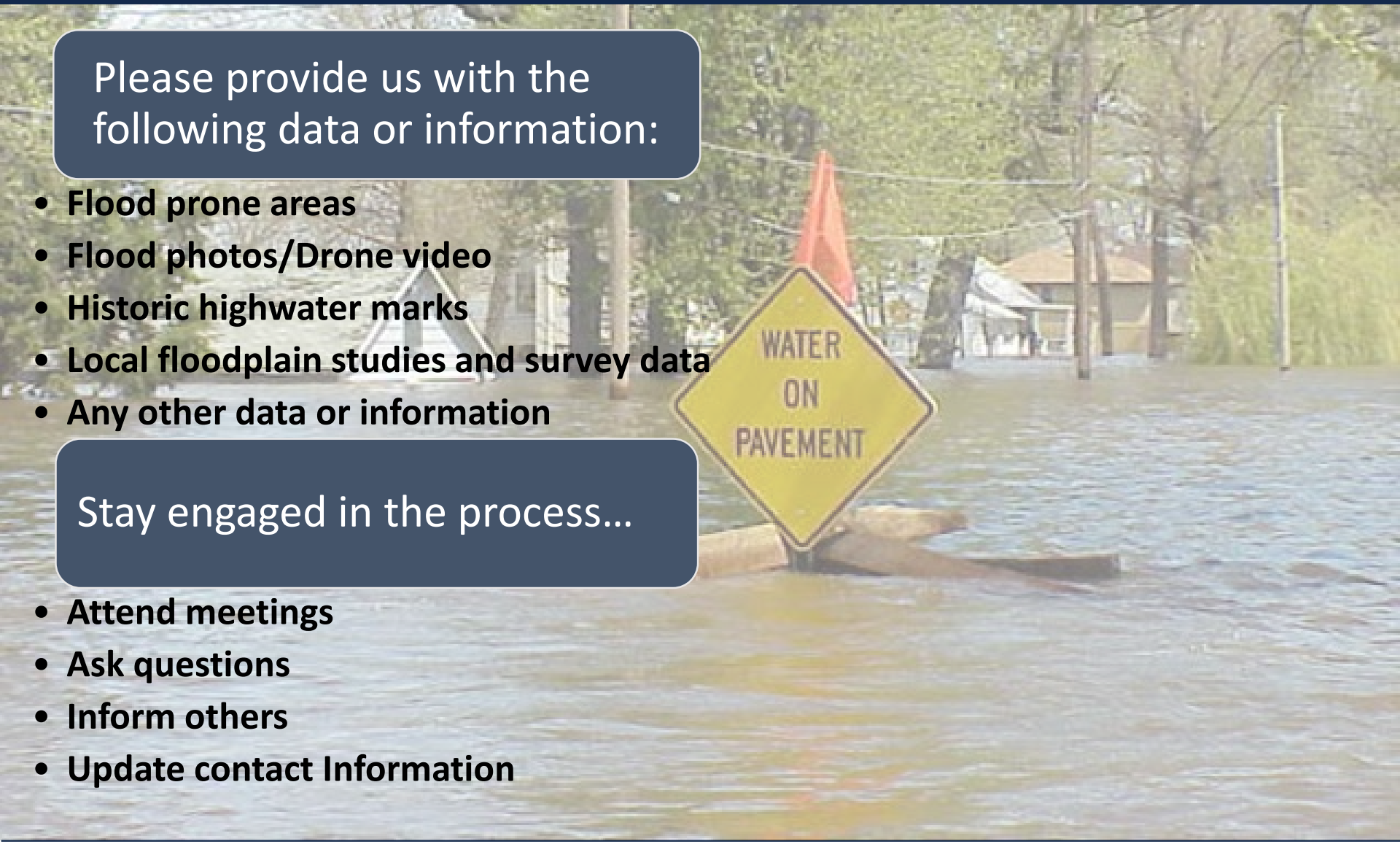
Project Schedule

Project Schedule (PH 1/PH II)

- **Project Initiation and Community Coordination Meeting**
  - **Today**
- **Engineering Methods Letters to communities**
  - ***Later this month (June 2022)***
- **ISWS to finish Mainstem Kishwaukee in Winnebago and Boone**
  - ***End of Year (December 2022)***
- **Complete all other PH I / PH II Hydrologic Studies**
  - **Next Summer (June 2023)**
- **Submit Funded Flood Studies to IDNR for State review**
  - **January 2024**
- **Future Hydrologic and Hydraulic Studies**
  - ***Future Phase (***To Be Determined)
- **Complete draft FIRM database to conclude data development phase of project**
  - ***Future Phase (***To Be Determined)
- **Flood Risk Review Meeting – Mainstem Kishwaukee in Winnebago and Boone**
  - ***Future Phase (***To Be Determined)
- **Digital Flood Insurance Rate Map Project to follow pending conclusion of data development**
  - ***Future Phase (***To Be Determined)

Community Participation

Community Participation



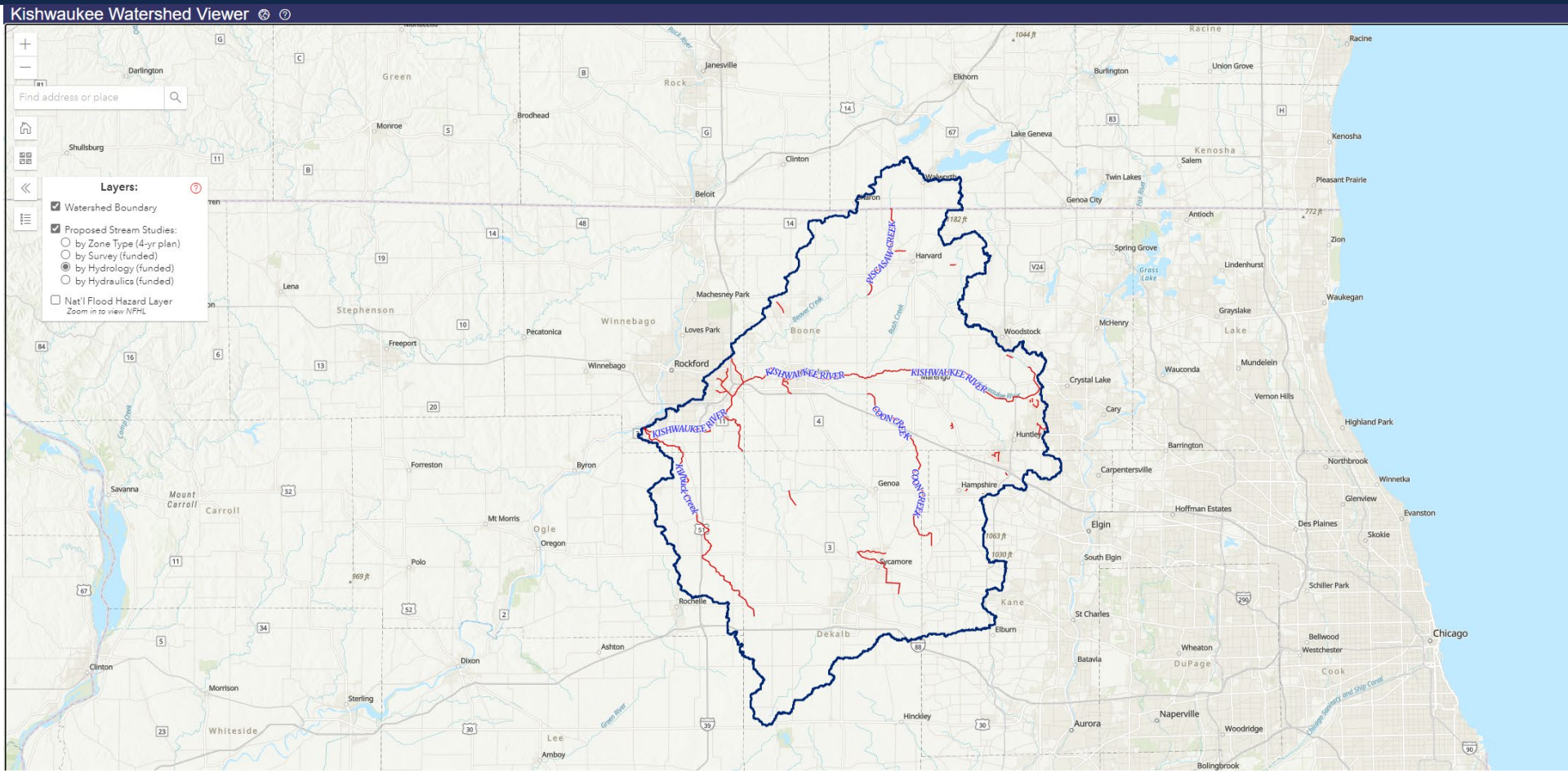
Please provide us with the following data or information:

- **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



https://www.illinoisfloodmaps.org/commentmap/kishwaukee.htm

log in: watershed

password: illinoisfloods!123

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 in the Kishwaukee River Watershed • 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

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