



ILLINOIS

Illinois State Water Survey

PRAIRIE RESEARCH INSTITUTE

Kishwaukee River Tributary Flood Risk Project DeKalb, Kane, & McHenry Counties, Illinois

Status Update Meeting

September 12th, 2024



FEMA

Agenda

Rollcall

Introduction

Project Objectives and Goals

National Flood Insurance Program / Mitigation

Review of Definitions

Project Status Update

Future Data Development Phases

Project Timeline

Community Participation

Questions?

Rollcall

DeKalb County

Town of Cortland
City of DeKalb
City of Genoa
Village of Kirkland
Village of Kingston
Village of Malta*
Village of Shabbona
City of Sycamore
Village of Maple Park

* does not participate in NFIP

¹ also in Kane Co

Kane County

Village of Burlington
Village of Campton Hills
Village of Carpentersville
Village of Elburn
Village of Gilberts
Village of Hampshire
Village of Lily Lake
Village of Pingree Grove
Village of Virgil

McHenry County

Village of Algonquin*¹
City of Crystal Lake
City of Harvard
Village of Huntley¹
Village of Lake in the Hills
Village of Lakewood
City of Marengo
Village of Union
City of Woodstock

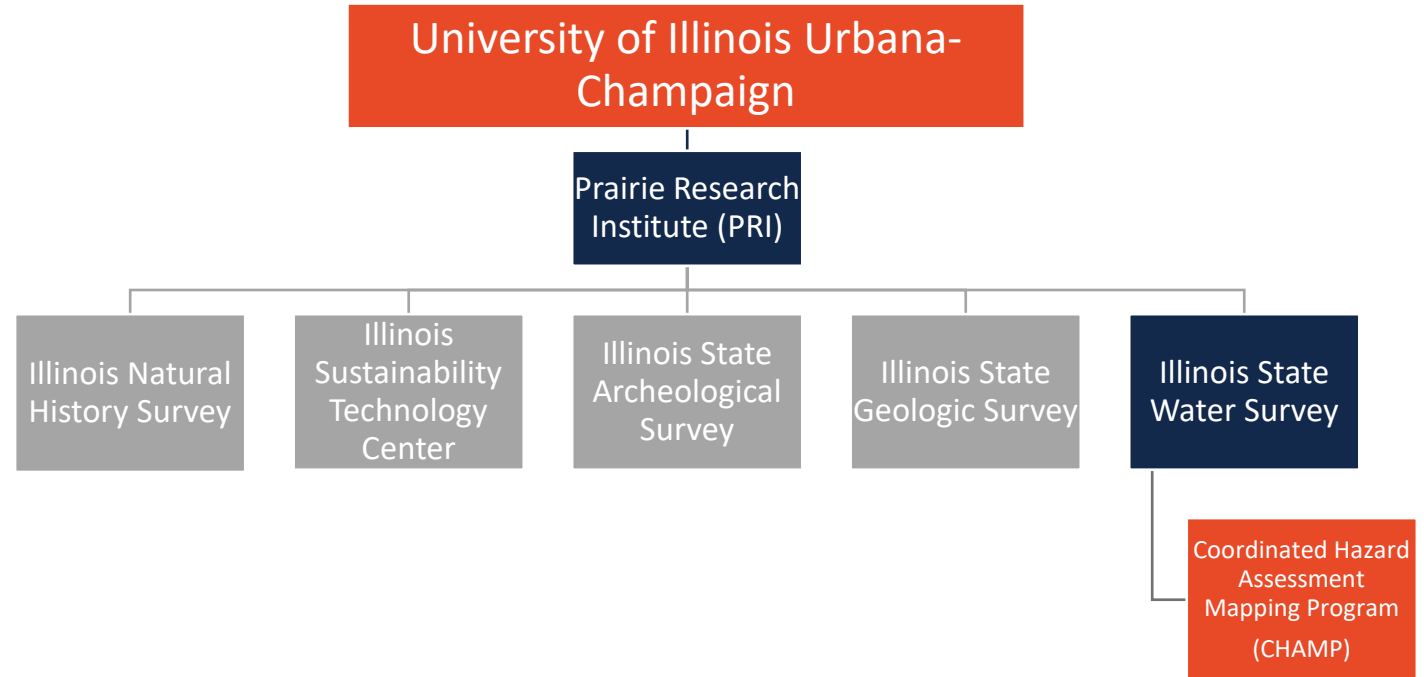
Other Agencies

FEMA - IDNR - IEMA – others

Introduction

Introduction

Who We Are



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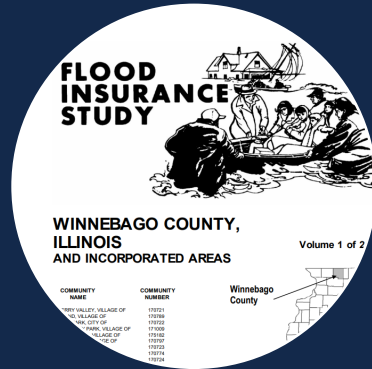
<https://www.illinoisfloodmaps.org/>

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

Introduction

What We Do

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Produce Flood Studies



Generate Floodplain Mapping



Inform Communities of Flood Risk



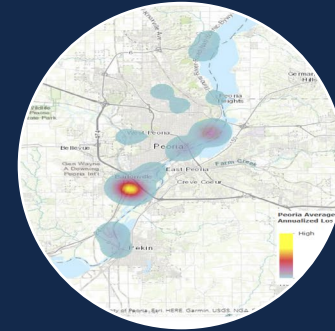
Introduction

What We Do

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Provide Hazard
Mitigation Plans



Provide Structure
Specific Risk
Assessments



Introduction

Our Partners

FEMA

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



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.



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.



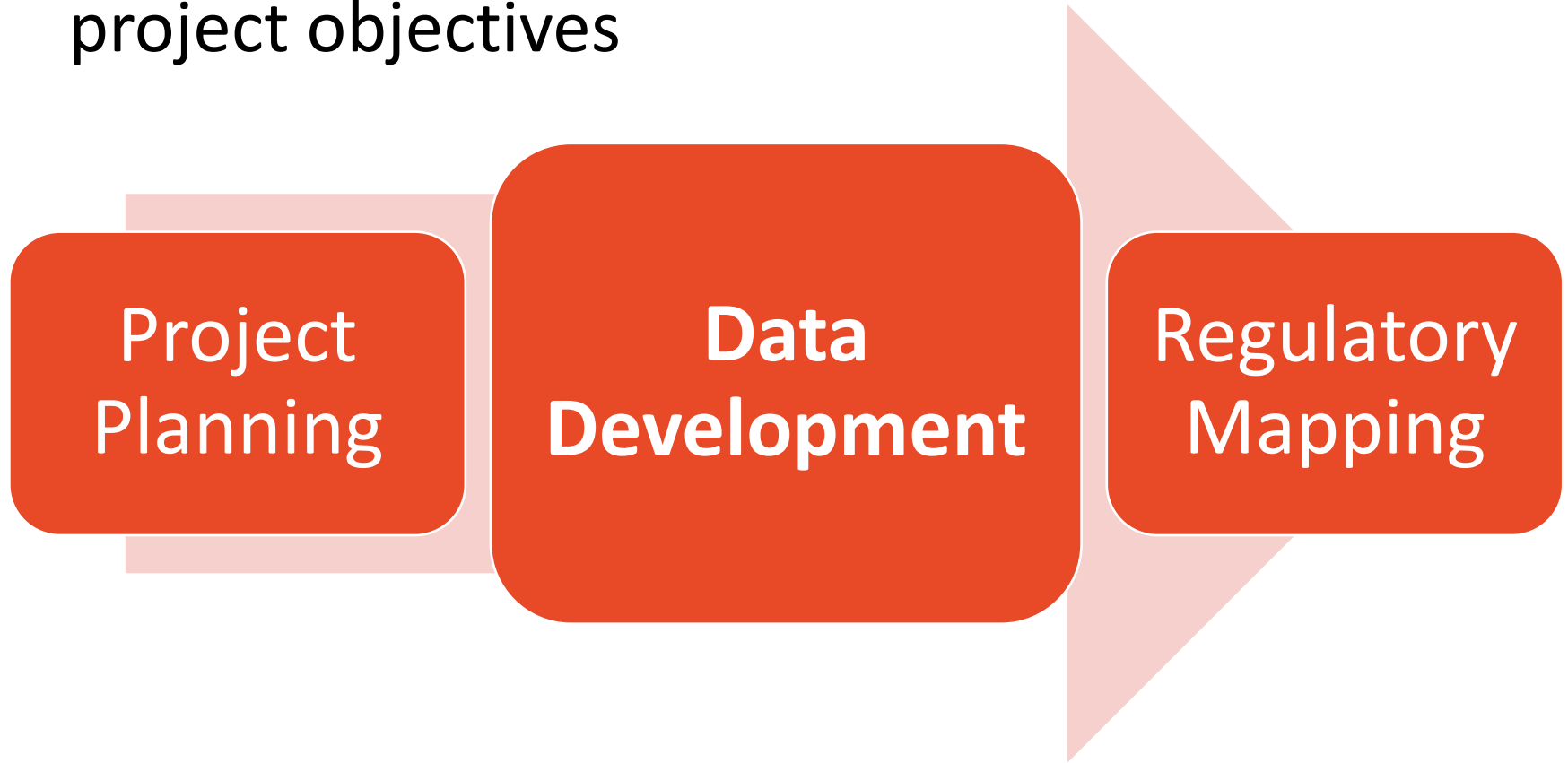
FEMA provides grants to CTP's to complete Risk MAP work.



Project Objectives and Goals

Project Objectives

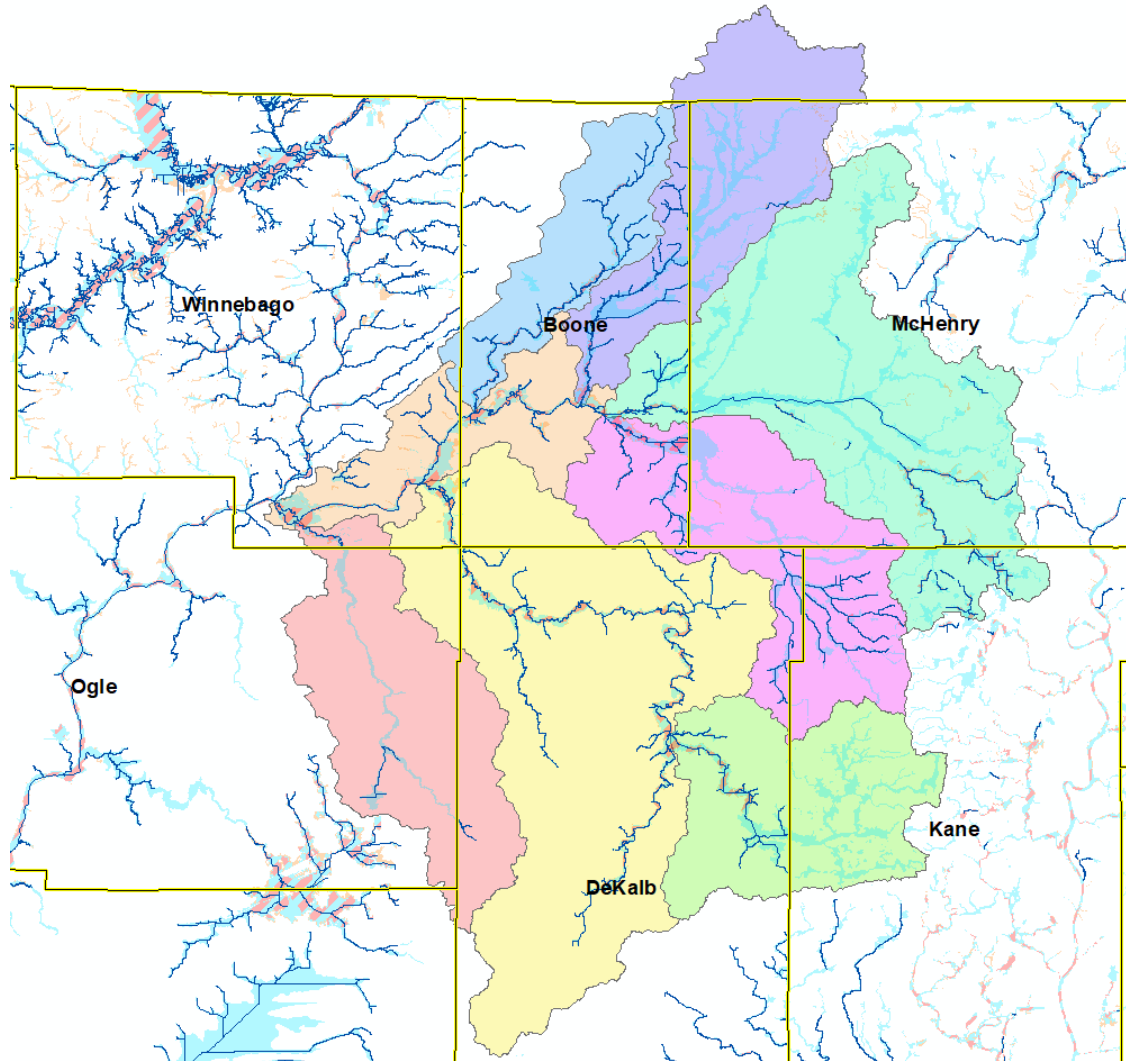
Several project phases comprise the overall project objectives



State Objectives and Goals

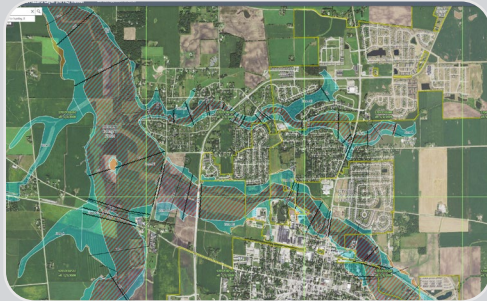
Objective: Update Flood Risk with Hydrologic and Hydraulic Analyses for Select Streams

Goal: Update Digital Floodplain Maps



Update Study Data used to Produce FIRMs

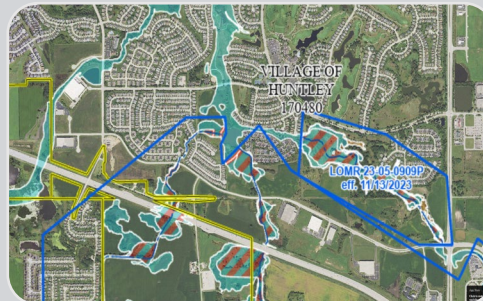
Effective Digital FIRM's Dates Do Not Necessarily Reflect Study Dates



DeKalb County

Effective FIRM:
1/2/2009

Studies: Late 1970s
to 2000s



Kane County

Effective FIRM:
8/3/2009,
7/12/2012, 6/2/2015,
and 7/20/2021

Studies: Late 1970s to
late 2010s



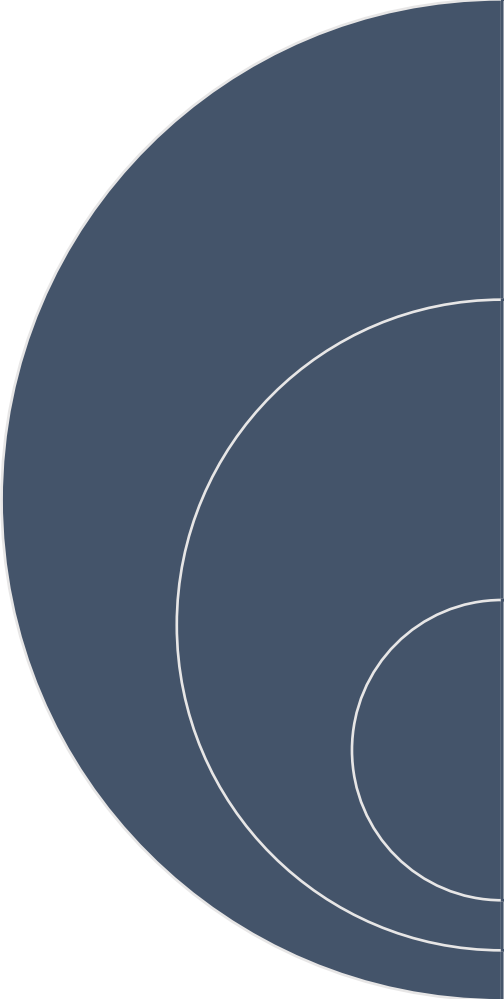
McHenry County:

Effective FIRM:
11/16/2006

Studies: Late 1970s
to early 2000s

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.

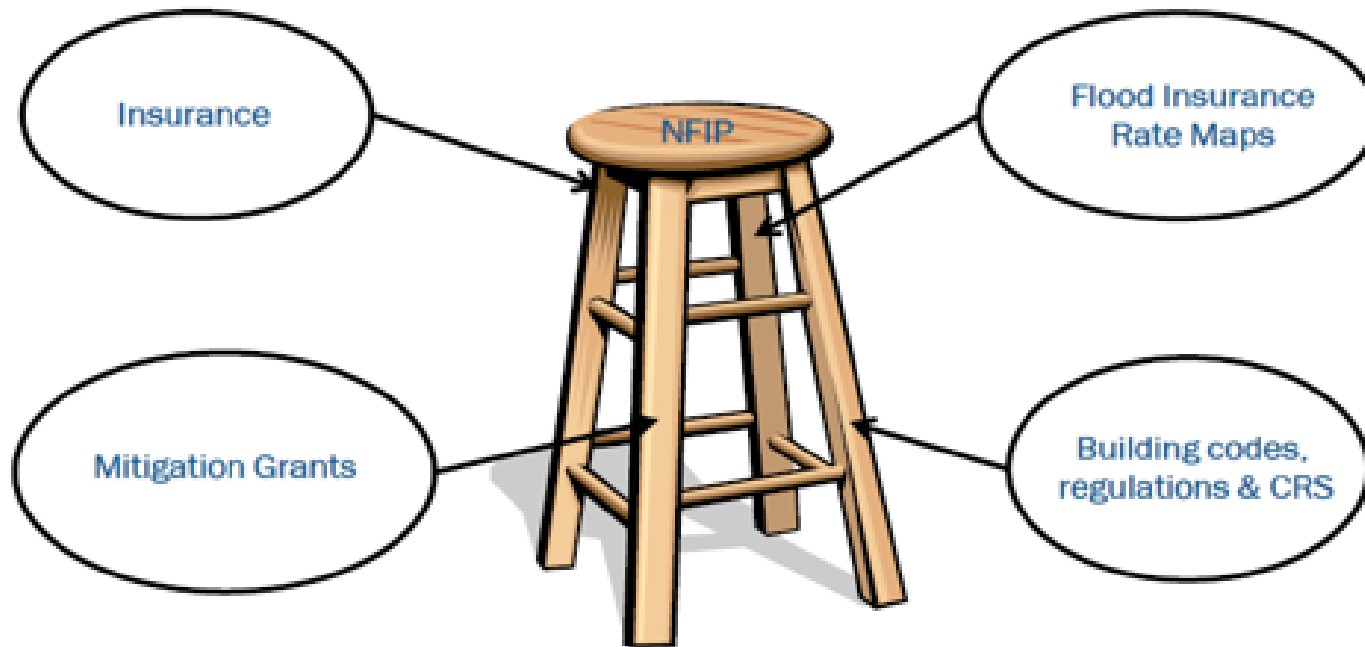
In exchange for adopting and enforcing a floodplain management ordinance, Federally-backed flood insurance is made available to property owners throughout the community.

Erin Conley, NFIP State Coordinator

erin.c.conley@Illinois.gov

National Flood Insurance Program

Three +1 Related Program Areas



NFIP Participating Communities

<https://www.fema.gov/cis/> downloaded 08/14/2024

Community	CRS Status	CAC Date	CAV Date	No. Flood Policies	Total Coverage, \$	Total Claims Since 1978	Total Paid Since 1978, \$	Rep Loss Structures ⁺
DeKalb County*	-	-	09/15/2003	0	\$9,249,000	96	\$1,514,028	35
Cortland	-	-	-	35	\$0	1	\$78,505	0
DeKalb	Yes		08/24/2011	58	\$14,184,000	180	\$1,947,814	0
Genoa	-	09/12/1997	-	4	\$1,239,000	0	\$0	0
Kingston	-	08/12/1998	-	7	\$175,000	0	\$0	0
Kirkland	-	06/29/1993	-	1	\$1,300,000	24	\$330,961	0
Malta	-	-	-	-	-	-	-	0
Maple Park	-		10/30/2006	-	-	-	-	0
Shabbona	-	07/01/1993	-	3	\$249,000	2	\$7,032	2
Sycamore	Yes	-	12/09/2015	13	\$3,584,000	96	\$689,016	25

*unincorporated

NFIP Participating Communities

<https://www.fema.gov/cis/> downloaded 08/14/2024

Community	CRS Status	CAC Date	CAV Date	No. Flood Policies	Total Coverage, \$	Total Claims Since 1978	Total Paid Since 1978, \$	Rep Loss Structures ⁺
Kane County*	-	-	01/17/2013	137	\$32,522,000	205	\$2,828,205	52
Burlington	Yes	-	03/29/2007	0	-	-	-	0
Campton Hills	-	-	-	-	\$2,807,000	1	\$0	0
Carpentersville	-	09/05/1997	07/03/2018	8	\$1,804,000	11	\$16,707	0
Elburn	-	08/19/1996	12/18/2002	3	\$728,000	1	\$163,966	0
Gilberts	-	12/17/1997	12/17/2003	2	\$396,000	2	\$9,788	2
Hampshire	Yes	11/23/1999	09/02/2009	6	\$1,781,000	8	\$28,331	2
Huntley ¹	-	-	-	12	\$4,485,000	3	\$713	0
Lily Lake	-	-	-	1	\$350,000	0	\$0	0
Pingree Grove	-	-	-	-	\$100,000	0	\$0	0
Virgil	-	-	12/09/2003	0	-	-	-	0

*unincorporated; ¹Also in McHenry County;

NFIP Participating Communities

<https://www.fema.gov/cis/> downloaded 08/14/2024

Community	CRS Status	CAC Date	CAV Date	No. Flood Policies	Total Coverage, \$	Total Claims Since 1978	Total Paid Since 1978, \$	Rep Loss Structures ⁺
McHenry County*	Yes	-	04/15/2010	298	\$60,625,000	469	\$3,719,316	181
Algonquin ²	-	-	-	41	\$9,701,000	70	\$371,159	20
Crystal Lake	Yes	09/12/1996	08/11/2009	22	\$5,249,000	36	\$311,787	16
Harvard	-	10/27/1999	01/29/2004	10	\$3,246,000	9	\$19,984	3
Huntley ²	-	-	-	12	\$4,485,000	3	\$713	0
Lake in the Hills	Yes	09/01/1992	05/30/2006	25	\$5,411,000	37	\$173,366	11
Lakewood	-	04/28/2019	04/15/2004	4	\$1,400,000	3	\$39,536	0
Marengo	-	07/27/2016	07/26/2007	53	\$8,858,000	21	\$30,427	3
Union	-	09/25/1998	01/27/2004	9	\$1,616,000	1	\$31,481	9
Woodstock	Yes	08/28/1996	09/01/2009	7	\$1,579,000	16	\$182,322	5

*unincorporated; ² also in Kane County

Hazard Mitigation- FEMA Disaster Declarations

2002 to present

<https://www.fema.gov/disaster>

Date of Declaration	Disaster Number	Disaster Description	Type of Assistance	Designated Counties
2001-01-17	EM-3161-IL	ILLINOIS WINTER SNOWSTORMS	PA-B	Kane and McHenry
2005-09-07	EM-3230-IL	HURRICANE KATRINA EVACUATION	PA-B	DeKalb, Kane and McHenry
2006-12-29	EM-3269-IL	SNOW	PA-B	DeKalb and McHenry
2007-09-25	DR-1729-IL	SEVERE STORMS AND FLOODING	IA & PA	DeKalb and Kane
2008-03-13	EM-3283-IL	RECORD SNOW AND NEAR RECORD SNOW	PA-B	McHenry
2008-10-03	DR-1800-IL	SEVERE STORMS AND FLOODING	IA	DeKalb and Kane
2011-03-17	DR-1960-IL	SEVERE WINTER STORM AND SNOWSTORM	DeKalb & Kane-PA & PA-B McHenry- PA	DeKalb, Kane and McHenry
2013-05-10	DR-4116-IL	SEVERE STORMS, STRAIGHT-LINE WINDS, AND FLOODING	IA	DeKalb, Kane and McHenry
2020-03-13	EM-3435-IL	COVID-19	PA	DeKalb, Kane and McHenry
2020-03-26	DR-4489-IL	COVID-19 PANDEMIC	IA & PA	DeKalb, Kane and McHenry

Hazard Mitigation


Protects the lives, health, and safety of the people (and animals) in the County from the dangers of natural hazards.

Educates people about natural and man-made hazards in their communities.

Provides **Planning** to protect people, their homes, and businesses from hazards

Designs infrastructure to be **Resilient** to the impacts of natural and man-made hazards.

Hazard Mitigation Plans



**DeKalb County
All Hazards Mitigation**

Update of the January 2008 DeKalb County
All Natural Hazards Mitigation Plan

DeKalb County Hazard Mitigation
Planning Committee

October 2019



Kane County, Illinois



Natural Hazard Mitigation Plan

2024



**McHenry County Natural
Hazards Mitigation Plan**

Completed for McHenry County and
participating communities



July 2023

Definitions

What is a Special Flood Hazard Area?

The FEMA Special Flood Hazard Area (SFHA) is the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year.

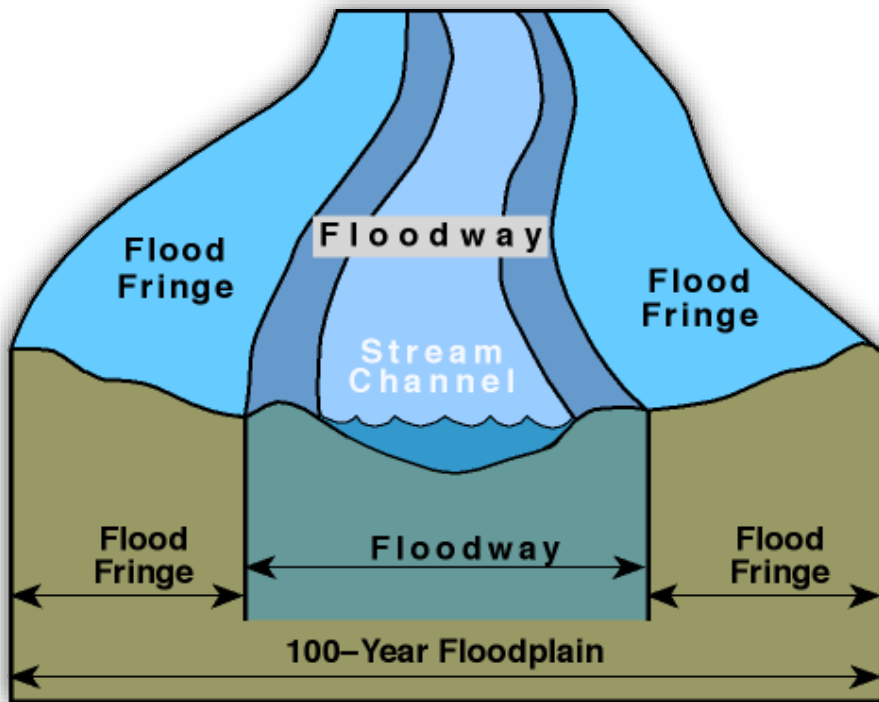
The Base Flood Elevation (BFE) is the elevation of surface water resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year.

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.

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.
Redelineation	Change in floodplain mapping utilizing higher resolution terrain data. No changes to base flood elevations , but the limits of the floodplain may change.

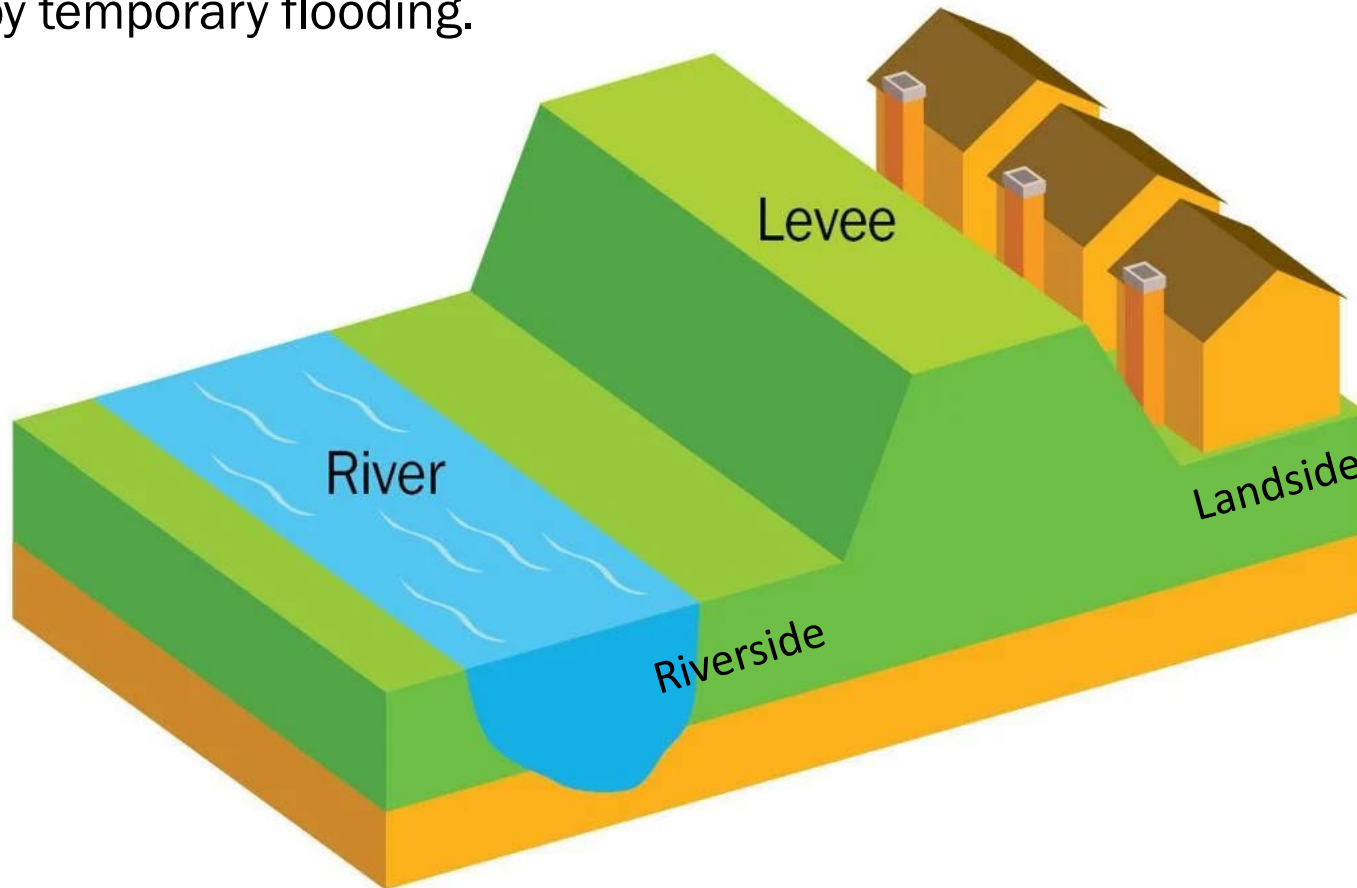
Floodway

The **Floodway** is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



Levee - Definition

Per 44 CFR 59.1, a **levee** is a manmade structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water to reduce flood hazards posed by temporary flooding.



Levees - Accreditation

An **Accredited Levee System** is a system that FEMA has determined meets requirements of the NFIP regulations as cited in the Code of Federal Regulations (CFR) at Title 44, Chapter 1, Section 65.10 (44 CFR 65.10) and that FEMA has recognized on a FIRM as reducing the flood hazards posed by a base (1-percent-annual-chance) flood.

This determination is based on the submittal of data and documentation as required by 44 CFR 65.10. The area landward of an accredited levee system is shown as Zone X (shaded) on the FIRM except for areas of residual flooding, such as ponding areas, which are shown as SFHA.



Project Status Update

Completed Studies

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

DeKalb County

- **Bull Run Zone AE**
- **East Branch South Branch Kishwaukee & Tributaries Zone AE**
- **Blue Heron Creek & Tributaries Zone AE**

Kane County

- **Hampshire Creek Tributary No. 1** (White Oak Ponds Detention Basin)
- **Hampshire Creek** (Briar Road Farm Pond) Zone A
- **Kishwaukee River** (including Rush Creek /Coon Creek /Kishwaukee Creek)
- **Eakin Creek South, I-90/IL-47 Farm Pond*** Zone AE
- **Eakin Creek, Eakin Creek West, Eakin Creek West Trib A** (Dell Web Sun City Development)
- **East Branch South Branch Kishwaukee Tributaries** (including Union Ditch No 1 & No 3 and Virgil Ditch No. 1 & No. 3 and associated Tributaries) Zone A/Zone AE

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

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**

HYDROLOGIC REPORT PROVIDED UPON REQUEST

Future Data Development Phases

Proposed Stream Studies Map

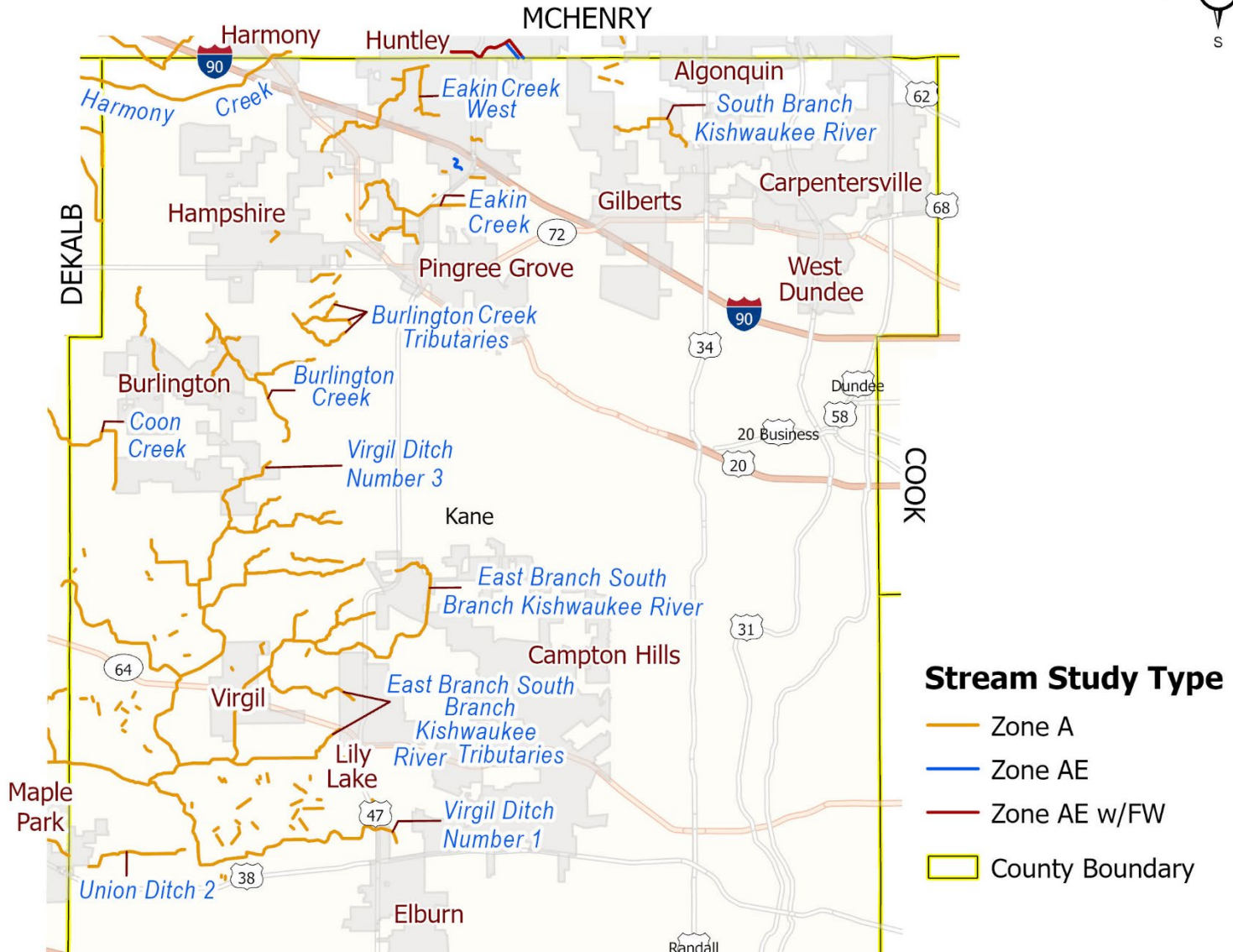
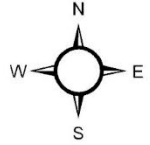


DeKalb County Studies Map

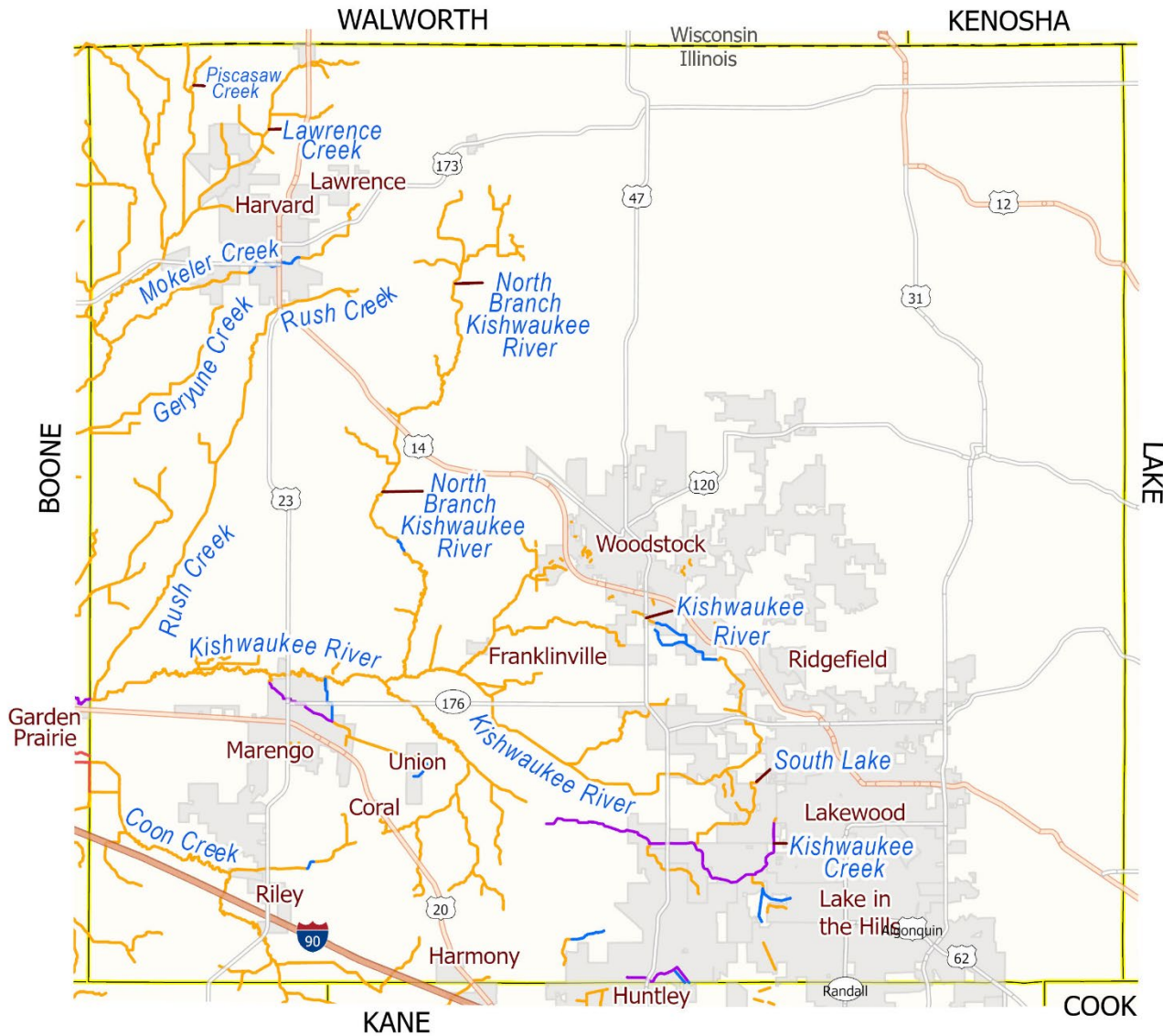
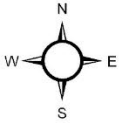


Kane County Studies Map

Proposed Stream Studies in Kane County



Proposed Stream Studies in McHenry County



Stream Study Type

- Zone A
- Zone AE
- Zone AE w/FW
- Redelineation
- County Boundary
- State Boundary



Project Timeline

Projected Schedule



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 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

PRAIRIE RESEARCH INSTITUTE

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