



Macoupin County, Illinois

FEMA Risk MAP

Project Initiation Community Coordination Call

March 2, 2021





Macoupin County Floodplain Mapping Project Initiation Meeting

Agenda

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



Rollcall

- Village of Benld*
- Village of Brighton + *
- City of Bunker Hill + *
- City of Carlinville + *
- Village of Chesterfield
- Village of Dorchester
- Village of Eagarville+
- Village of East Gillespie
- City of Gillespie + *
- City of Girard*
- Village of Hettick
- Village of Lake Ka-Ho
- Village of Medora
- Village of Modesto
- Village of Mount Clare
- City of Mount Olive*
- Village of Nilwood
- Village of Palmyra
- Village of Royal Lakes*
- Village of Sawyerville
- Village of Scottville
- Village of Shipman
- Village of Standard City
- City of Staunton + *
- City of Virden + *
- Village of White City
- Village of Wilsonville*
- **Macoupin County** + *
- IDNR/OWR
- FEMA
- IEMA
- Anyone else

+ Community participates in NFIP

- Participating Jurisdictions represented in 2019 HMP

N.B. only Gillespie and Wilsonville are the only participating communities approved in the HMP as of 03/02/2021

Introduction

- The Illinois State Water Survey (**ISWS**) is a division of the Prairie Research Institute (**PRI**) at the University of Illinois.
- The Coordinated Hazard Assessment and Mapping Program (**CHAMP**) is a section within ISWS.



The staff of the Coordinated Hazard Assessment and Mapping Program which includes 18 Certified Floodplain Managers (CFM), seven Professional Engineers (PE), and seven Geographic Information Systems Professionals (GISP)

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



Introduction

- ISWS & Illinois Department of Natural Resources (**IDNR**) are Cooperating Technical Partners (**CTP**) with the Federal Emergency Management Agency (**FEMA**). CHAMP staff perform floodplain studies, mapping, mitigation planning, and related activities for Illinois communities through this partnership.
- ISWS also partners with the Illinois Department of Natural Resources Office of Water Resources (**IDNR-OWR**) to help prioritize Illinois floodplain studies and mapping projects.
- Risk Mapping, Assessment, and Planning (**Risk MAP**) is the FEMA process used to implement the National Flood Insurance Program (**NFIP**) floodplain studies and mapping projects.



Project Objectives and Goals

FEMA National Objectives





Macoupin Project Objectives

Develop Coordinated Floodplain Study

- Approximately 195 miles Updated Effective Zone A studies;
- Approximately 162 miles New Zone A studies;
- Approximately 16 miles New Zone AE studies.

Streams will be studied using detailed methods

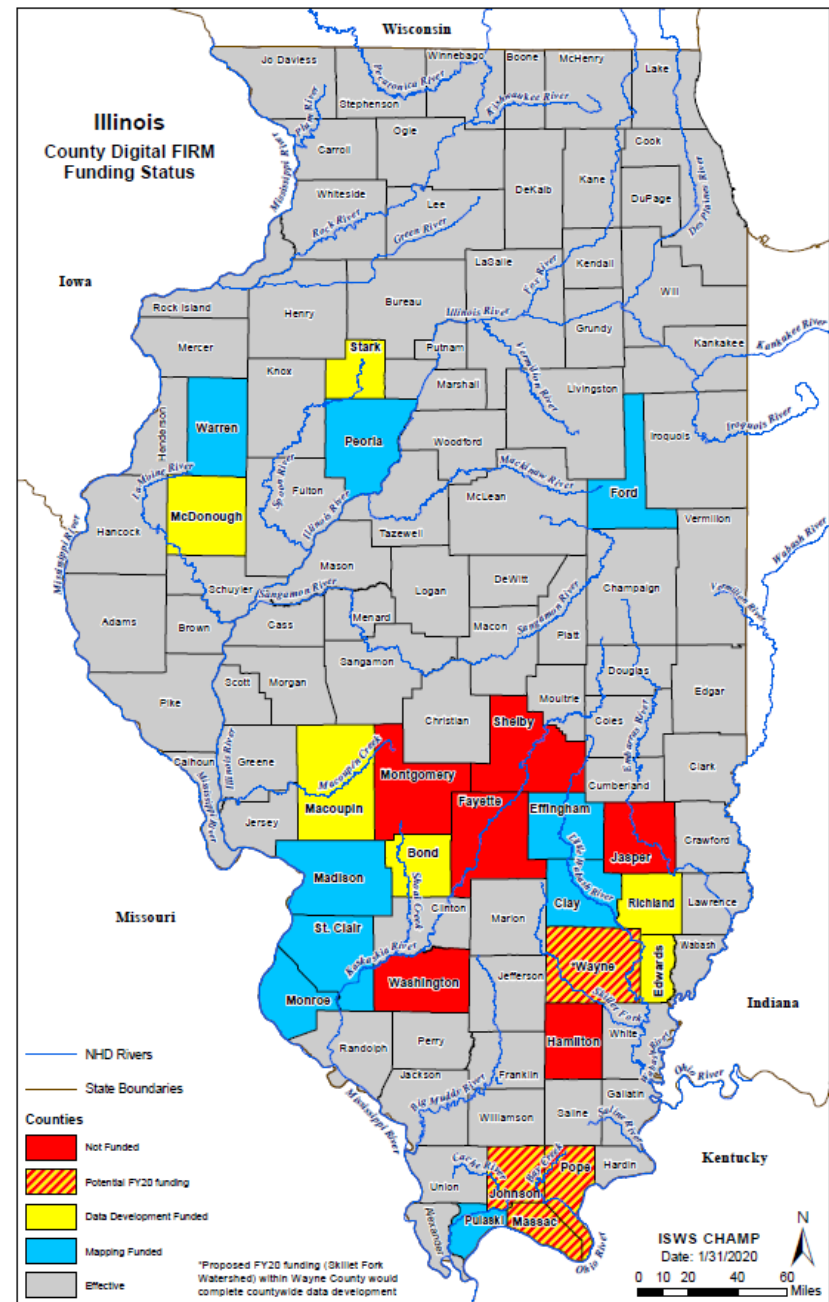
- Draft model and workmap.

For the next phase, to incorporate resulting floodplain delineations into a countywide digital Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS)

Illinois Countywide Digital FIRM Status

102 Counties

- 77 effective ✓
- 9 mapping funded
- 6 data development
- 4 proposed funding
- 6 not yet funded





Future Digital Maps

Macoupin County

Effective Community-based

No FIS reports

No FIRM Databases

- Unincorporated: 8 Panels

Flood Hazard Boundary Map
(FHBM) 01/06/1978

- Community: 4 Panel

Carlinville, Gillespie,
Staunton and Virden

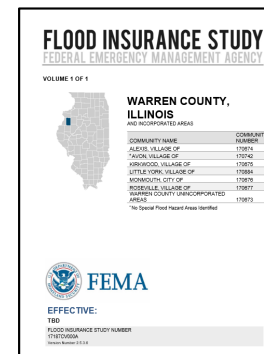
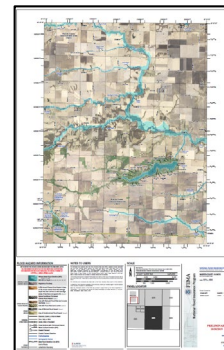
Future County-based

Countywide FIS report

Countywide FIRM Database

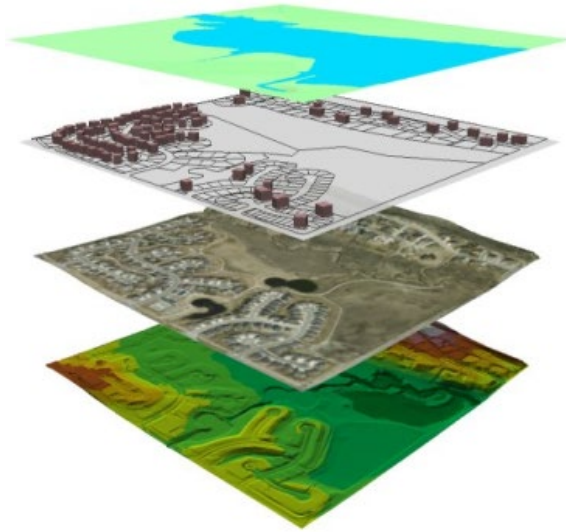
Digital FIRMs:

- 1 Countywide map set





Digital Maps



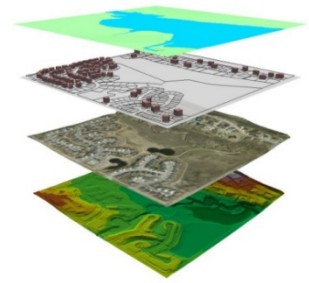
- 1. Floodplain delineation**
- 2. Roads**
- 3. Orthophotos (aerials)**
- 4. Topography**

Advantages

- Cartographically accurate
- Easier and faster to update
- Can be used with local digital data (parcel layer, zoning layer)
- Serve as a tool for floodplain management



Proposed Data

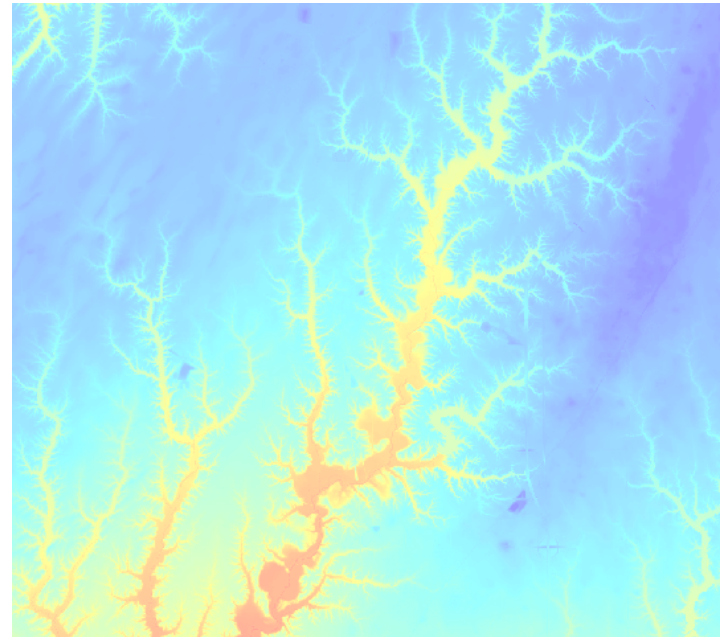


Orthophoto: 2017 IDOT



https://data.isgs.illinois.edu/arcgis/services/Imagery/IDOT_2017/ImageServer/Imagery/IDOT_2017

Topographic Data: 2017 Illinois Height Modernization LiDAR acquisition of Greene, Macoupin, and Montgomery Counties



<http://clearinghouse.isgs.illinois.edu/data/elevation/illinois-height-modernization-ilhmp-lidar-data>



Special Flood Hazard Area

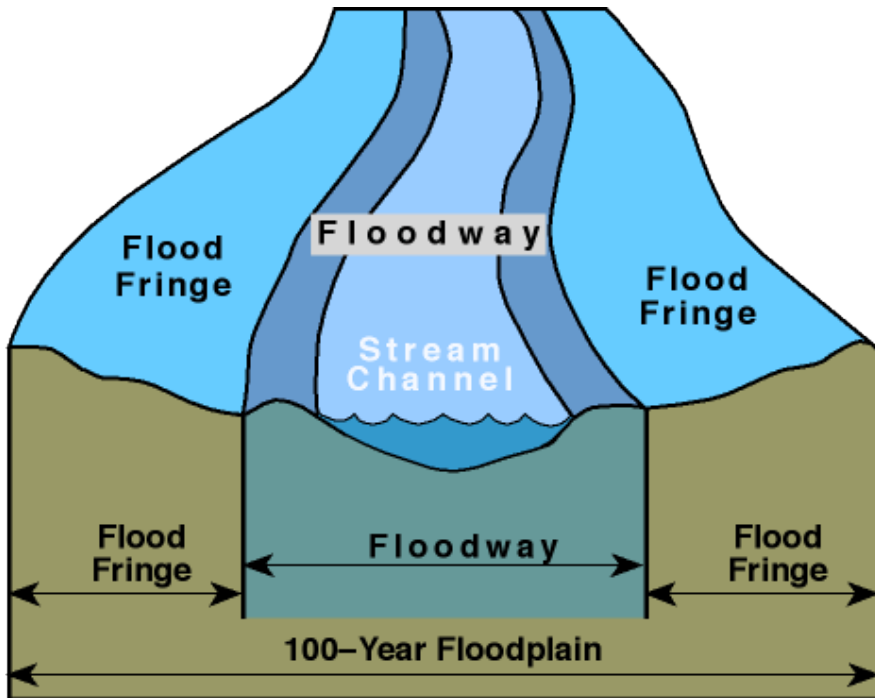
The FEMA Special Flood Hazard Area (**SFHA**) zone type designation is related to the method and level of hydraulic analysis performed.

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.

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.

Floodway Zone AE

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 the flood heights.





National Flood Insurance Program (NFIP)



The National Flood Insurance Program (NFIP)

- 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, P.E., CFM, Acting NFIP State Coordinator, Illinois Department of Natural Resources Marilyn.Sucoe@Illinois.gov



FEMA.gov Flood Risk tools

- **Flood Risk Communication Toolkit for Community Officials**

<https://www.fema.gov/media-library/assets/documents/179697>

- **Flood Risk Communication YouTube Videos**

https://www.youtube.com/playlist?list=PL720Kw_OojIIUiWw2bDc-On5MjQw13E6e

Flood Insurance and Communities:

https://www.youtube.com/watch?v=0CxDqBy3sN0&list=PL720Kw_OojIIUiWw2bDc-On5MjQw13E6e&index=2

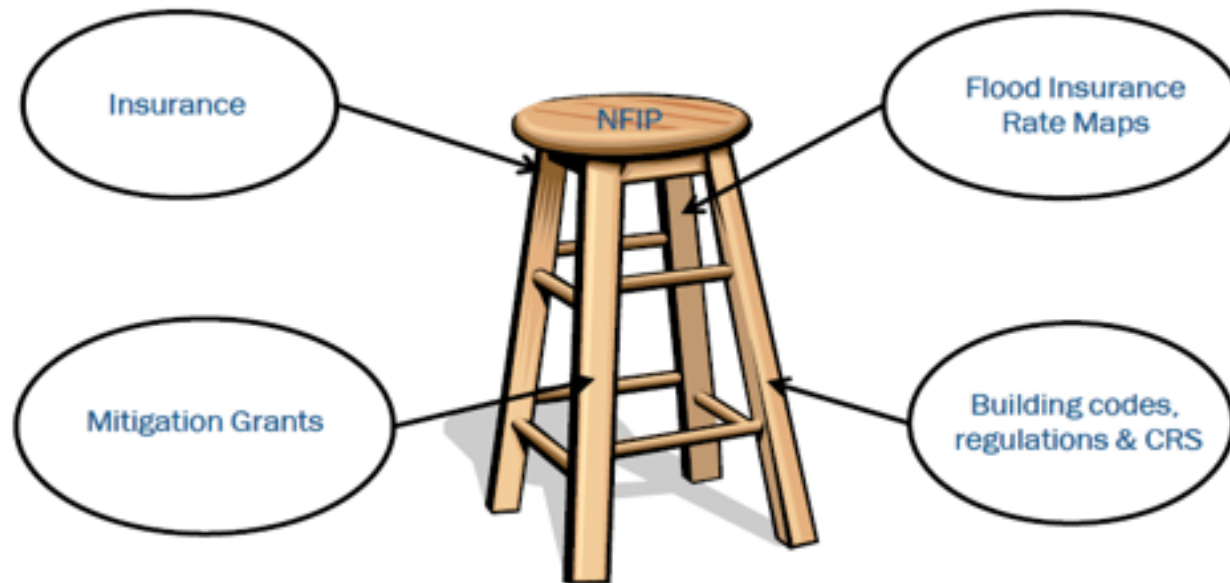


NFIP Participating Communities Macoupin County

<https://www.fema.gov/cis> downloaded 02/02/2021

CID	Community Name	County	NFIP Participation	FIRM Status	FIRM Date	FHBM Status	FHBM date
171168	BRIGHTON, VILLAGE OF	JERSEY	PARTICIPATING	ALL ZONE C&X PUBLISHED FIRM	04/02/09	NEVER MAPPED	
171221	BUNKER HILL, CITY OF	MACOUPIN	PARTICIPATING				
170431	CARLINVILLE, CITY OF	MACOUPIN	PARTICIPATING	ALL ZONE A, C AND X - NO ELEVATION DETERMINED	09/04/86	SUPERCEDED BY FIRM	06/14/74
170433	GILLESPIE, CITY OF	MACOUPIN	PARTICIPATING	ALL ZONE A, C AND X - NO ELEVATION DETERMINED	08/04/87	SUPERCEDED BY FIRM	06/07/74
170930	MACOUPIN COUNTY	MACOUPIN	PARTICIPATING	NEVER MAPPED		ORIGINAL	01/06/78
170434	STAUNTON, CITY OF	MACOUPIN	PARTICIPATING	ALL ZONE A, C AND X - NO ELEVATION DETERMINED	07/17/81	SUPERCEDED BY FIRM	05/17/74
170435	VIRDEN, CITY OF	MACOUPIN	PARTICIPATING	ALL ZONE C&X PUBLISHED FIRM	05/03/04	RESCINDED	11/21/75

National Flood Insurance Program Three +1 Related Program Areas



MACOUPIN COUNTY Multi-Jurisdictional All Hazards Mitigation Plan



PARTICIPANTS

Benld, City of
Brighton, Village of
Bunker Hill, City of
Carlinville, City of
Gillespie, City of
Girard, City of

Macoupin County
Mount Olive, City of
Royal Lakes, Village of
Staunton, City of
Virden, City of
Wilsonville, City of

FEBRUARY 2019

The five year update of this Plan must be completed on or before December 23, 2024

Paragraph 3.5 FLOODS

- Riverine Flooding
- Shallow Flooding
- Flash Flooding.

Flood Fast Facts – Occurrences

Number of General Floods Reported (1982 – 2017): 6

Number of Flash Floods Reported (1998 – 2017): 25

Most Likely Month for Flash Floods to Occur: *May*

Most Likely Time for Flash Floods to Occur: *Evening*

Number of Federally-Declared Disasters Related to General/Flash Flooding: 4

Flood Fast Facts – Impacts/Risk

General Flood Impacts

- ❖ Total Property Damage: *n/a*
- ❖ Infrastructure/Critical Facilities Damage*: *n/a*
- ❖ Total Crop Damage: *n/a*
- ❖ Injuries: *n/a*
- ❖ Fatalities: *n/a*

Flash Flood Impacts

- ❖ Total Property Damage: *\$5,000*
- ❖ Infrastructure/Critical Facilities Damage*: *n/a*
- ❖ Total Crop Damage: *\$5,000*
- ❖ Injuries: *n/a*
- ❖ Fatalities: *n/a*

Flood Risk/Vulnerability to:

- ❖ Public Health & Safety – General Flooding: *Low*
- ❖ Public Health & Safety – Flash Flooding: *Medium*
- ❖ Buildings/Infrastructure/Critical Facilities: *Medium/High*

* Infrastructure/Critical Facilities Damage totals are included in the Total Property Damage amounts.



Mitigation actions relating to flooding by community

Figs. 103-125

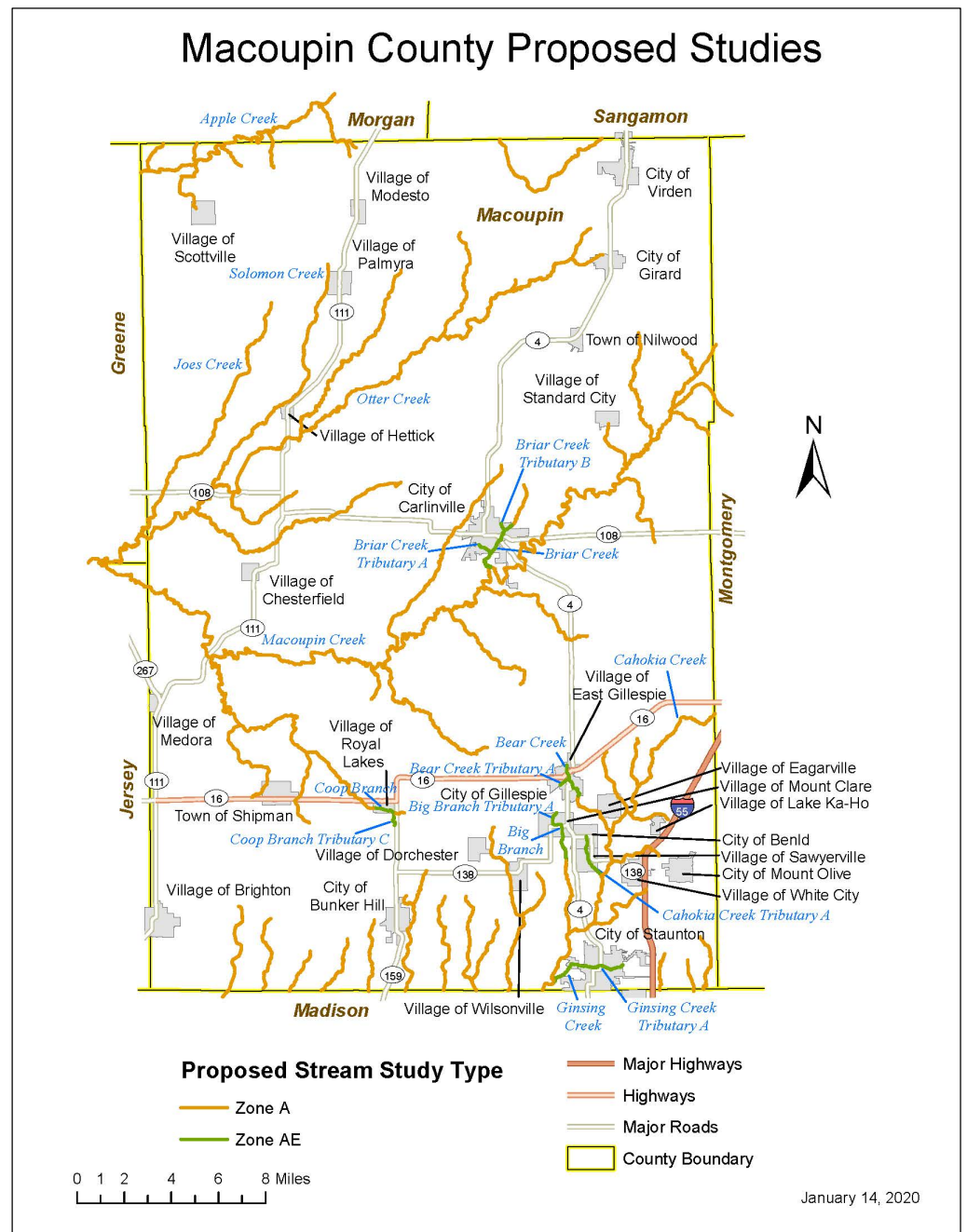
Action/Project	Community	Status
Replace/upsized roadway culverts; reshape/regrade waterways- to alleviate drainage issues and prevent roadway overtopping and subsequent roadway failures	Benld, Bunker Hill, Gillespie, Staunton	New
Upgrade the drainage system throughout the County	Countywide	In progress (2010)
Develop DFIRMs for entire County	Countywide	New

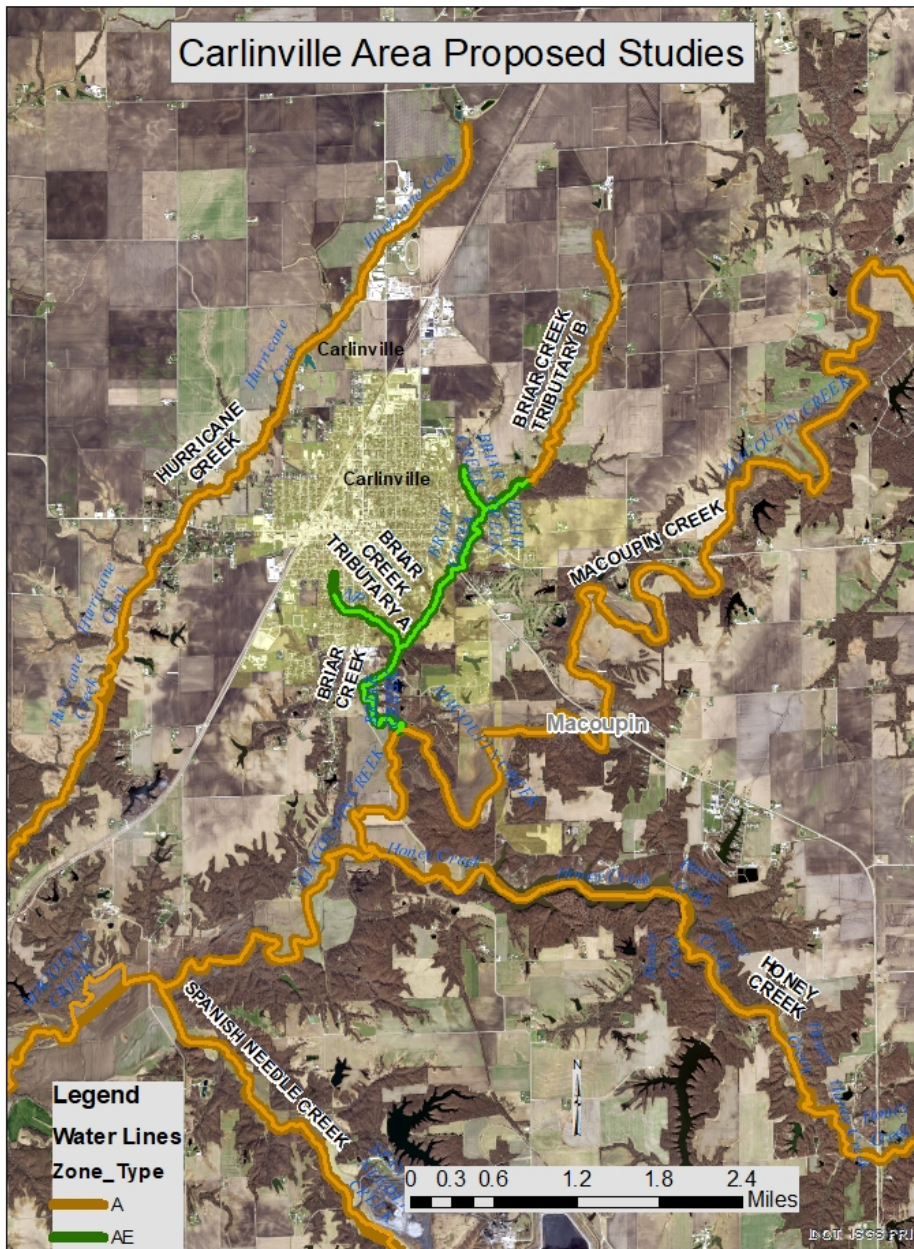
2018 Macoupin County Multi-Hazard Mitigation Plan



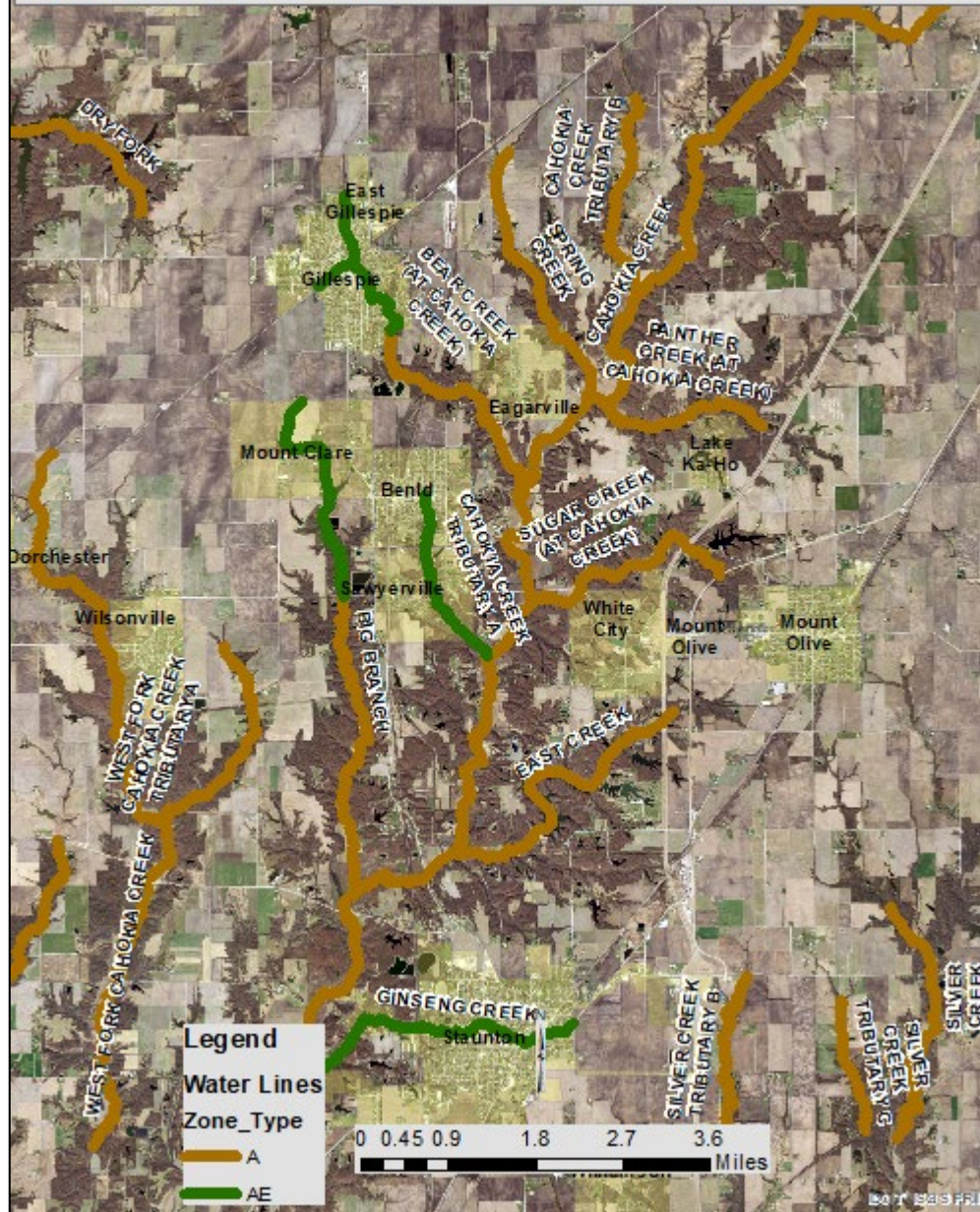
Project Scope Data Development Phase

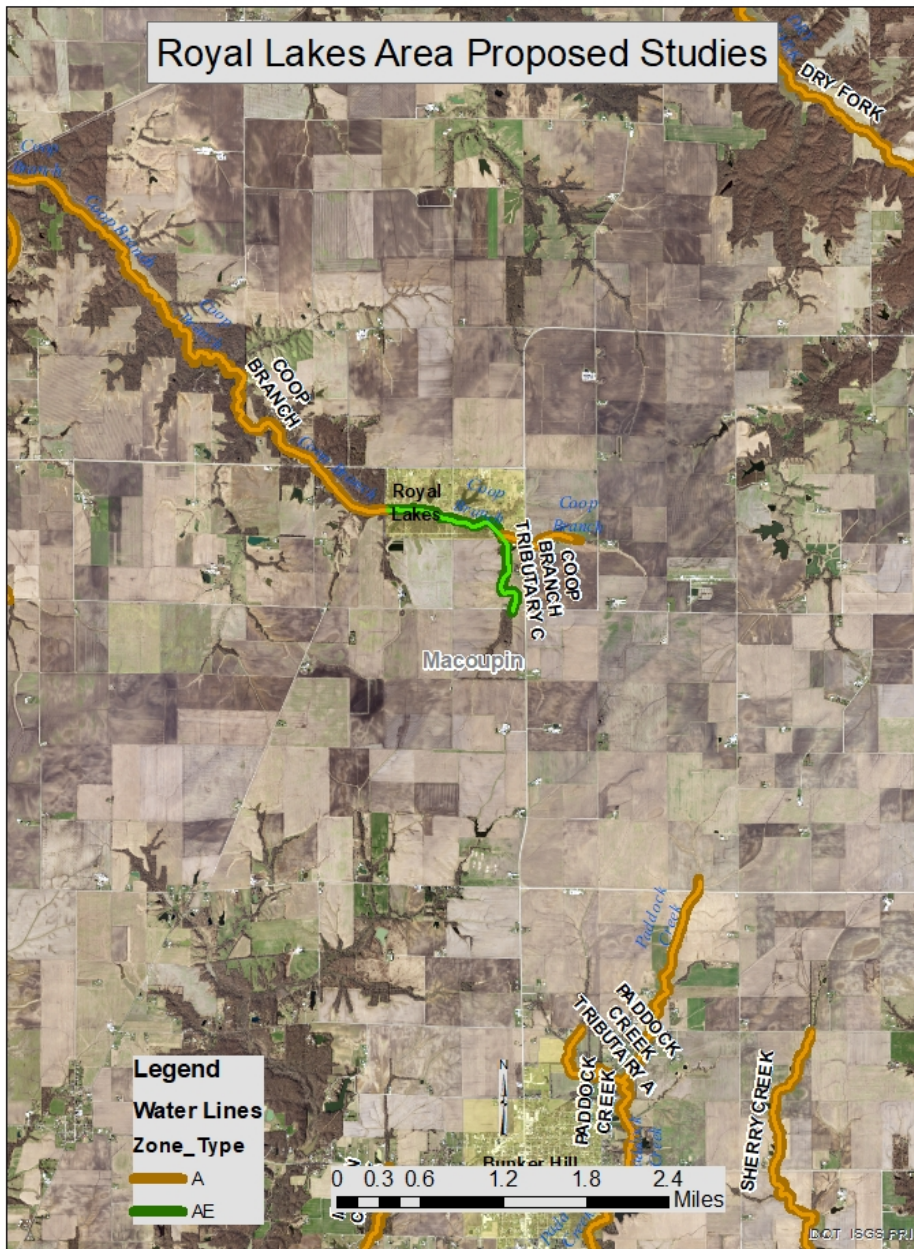
Floodplain Studies Overview- Proposed Study

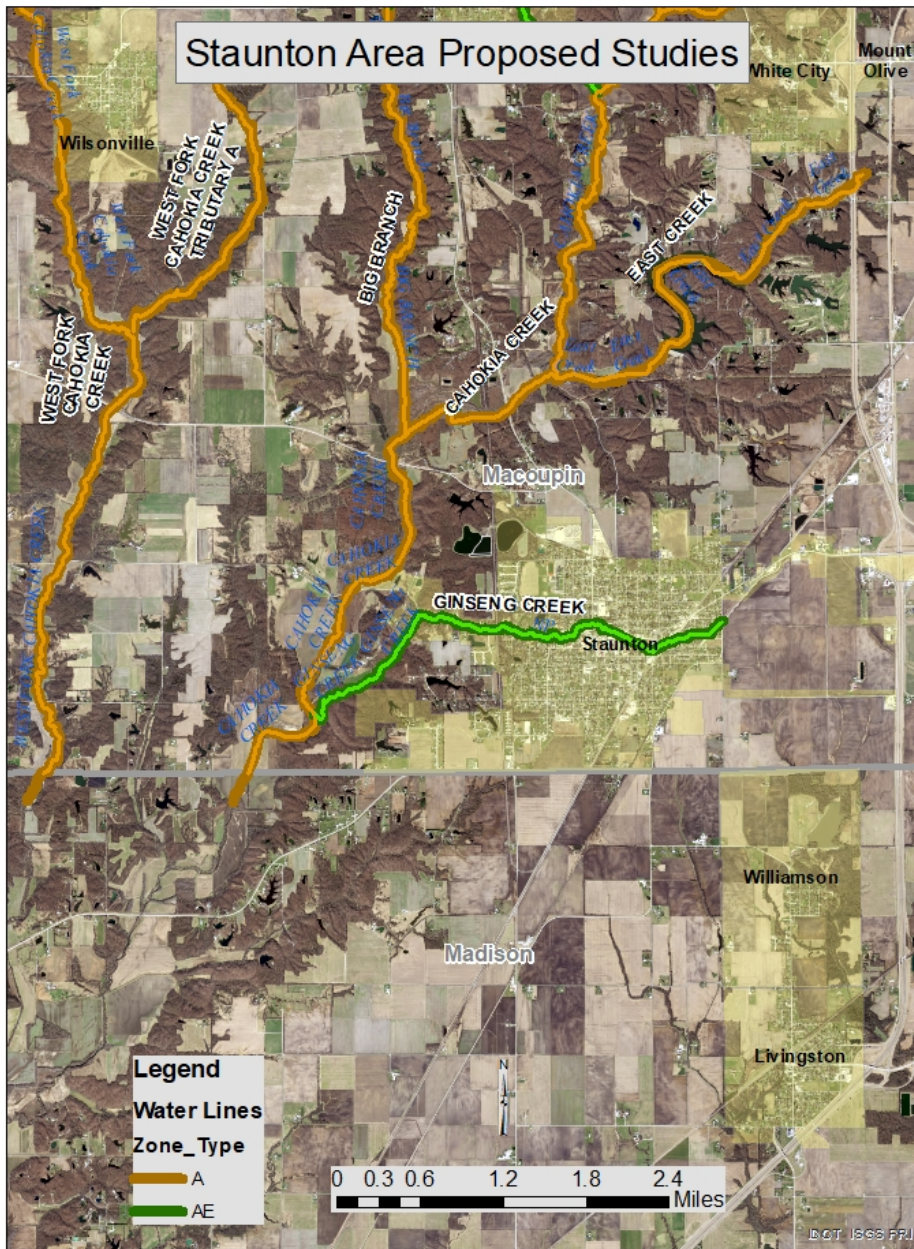




East Gillespie, Gillespie, Eagarville, Bend, Sawyerville and Mount Clare Area Proposed Studies









Project Communication Data Development Phase



Communication Plan

- Project Initiation Coordination Call (today)
- Proposed Engineering Methods Notification Letter (SID 620)
 - 30-Day Comment Period
- Flood Risk Review Meeting
 - 30-Day Comment Period
- Draft Data Submission Notification Letter (SID 621)
 - 30-Day Comment Period



Proposed Engineering Methods Letter FEMA Standard ID 620

- Mailed to community CEOs, Floodplain Administrator, Community Engineer
- Details the streams to be studied in community and proposed engineering methods used to study each stream
- Informs community about 30-day period to provide comments on the proposed engineering methods for the study stream



Proposed Engineering Methods

Hydrology – Determine 1% Annual Chance (100-Year) stream **flows**

- USGS Regression Equations
- HEC-HMS Rainfall Runoff Modeling

Hydraulics – Determines 1% Annual Chance (100-Year) flood **elevations**

- Zone AE: HEC-RAS Hydraulic Models
- Zone A: HEC-RAS Hydraulic Models



Flood Risk Review Meeting

- A technical meeting to review *draft* workmaps with community officials, engineers, and floodplain managers. Public meetings will be held later in the project.
- The meeting initiates a 30-day comment period for communities to provide feedback on the *draft* floodplain mapping.



Data Submission Notification

FEMA Standard ID 621

- Mailed to community CEOs, Floodplain Administrator, Community Engineer
- Makes community aware the data collection and analysis phase of the project is concluding, and Flood Insurance Rate Map (FIRM) database is being validated by FEMA
- Gives communities 30 days to comment on the data in the FIRM database



Project Schedule

Data Development Phase



Estimated Schedule

- Engineering Notification Letters to communities likely by
 - Emailed within 2 weeks from March 2, 2021
- Additional field survey work required?
 - **Survey Complete**
- ISWS to finish Zone A & AE floodplain studies by
 - **Fall 2021**
- Flood Risk Review Meeting likely
 - **Winter 2021 / Early Spring 2022**
- Submit Flood Studies to IDNR for State review
 - **Submit Spring 2022**
- Complete draft FIRM database to conclude data development phase of project by
 - **Fall 2022**

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



Data Development Phase



Data Development Community Participation

- Do you have data or information that we can use for the floodplain studies?
 - Flood prone areas
 - Flood photos/Drone video
 - Historic highwater marks
 - Local floodplain studies and survey data
 - Any other data or information
- Stay engaged and in the process...
 - Attend meetings
 - Ask questions
 - Inform others
 - Update contact information

Community Participation

Macoupin County Comments

Find address or place

New Comment

- Click Add Comment button (below)
- Click on map to draw polygon
 - Single-click to start/continue
 - Double-click to finish

Add Comment

Or

Edit Comment

- Single-click a Comment to edit or delete it.

Email:

Name:

Organization:

Category:

Water Name:

Comment:

<https://www.illinoisfloodmaps.org/commentmap/macoupin.htm>

log in: watershed

password: illinoisfloods!123



Project Modeling & Mapping History

Study Objective:

Digital Maps, Incorporating

Updated Rainfall Data

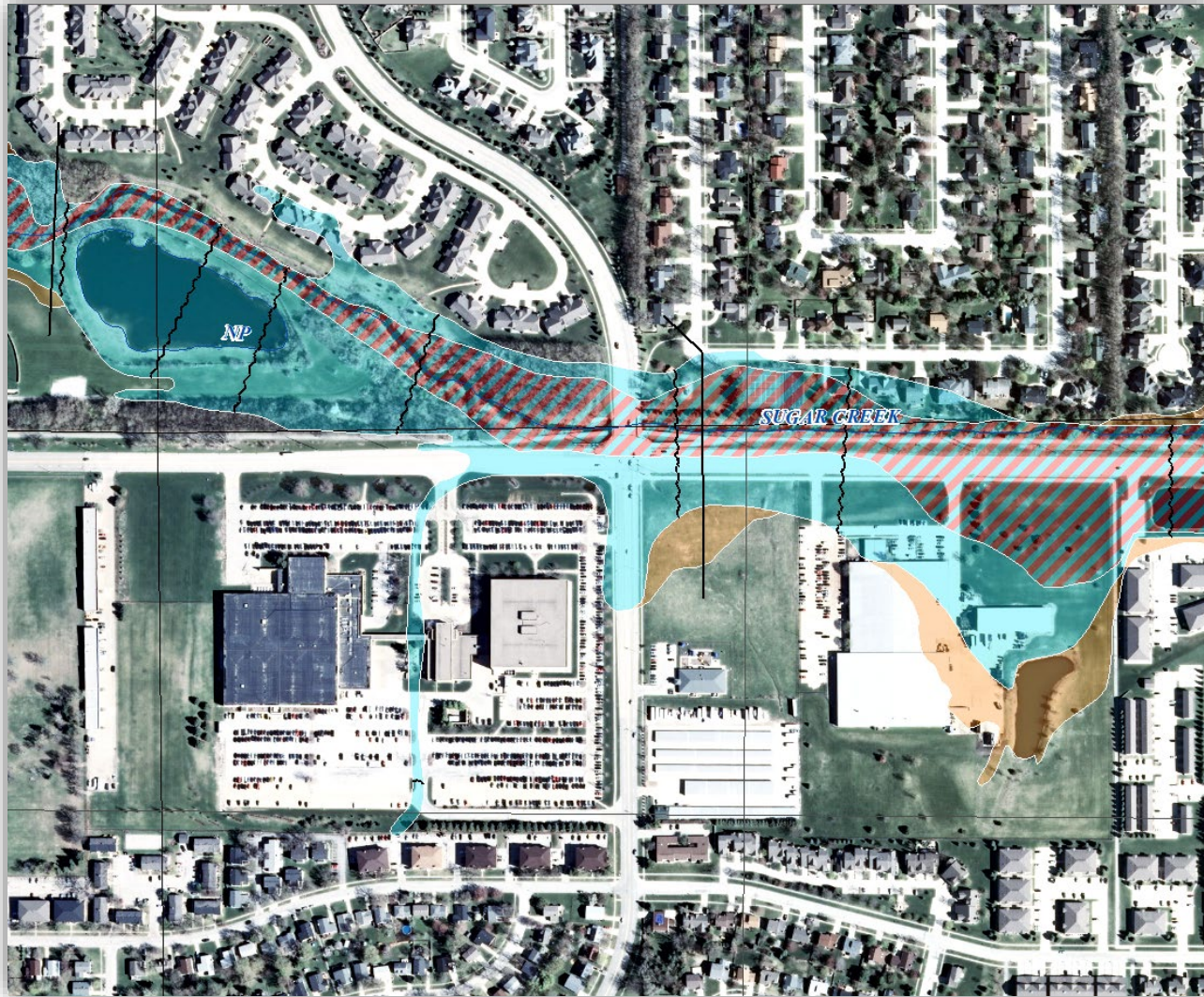
Updated Topographic Information

Recent Aerial Photography

Detailed Analysis / Zone AE

Standard Engineering Methods, Zone A

Ultimate Goal! An Updated Digital Map





ILLINOIS

Illinois State Water Survey

PRAIRIE RESEARCH INSTITUTE

Project Manager	Jimmy Powell, P.E., CFM	powell@illinois.edu
Outreach:	Mary Richardson, CFM	mjr@illinois.edu
Mitigation Planning:	Rebecca Leitschuh, AICP	rleits@Illinois.edu

www.illinoisfloodmaps.org