



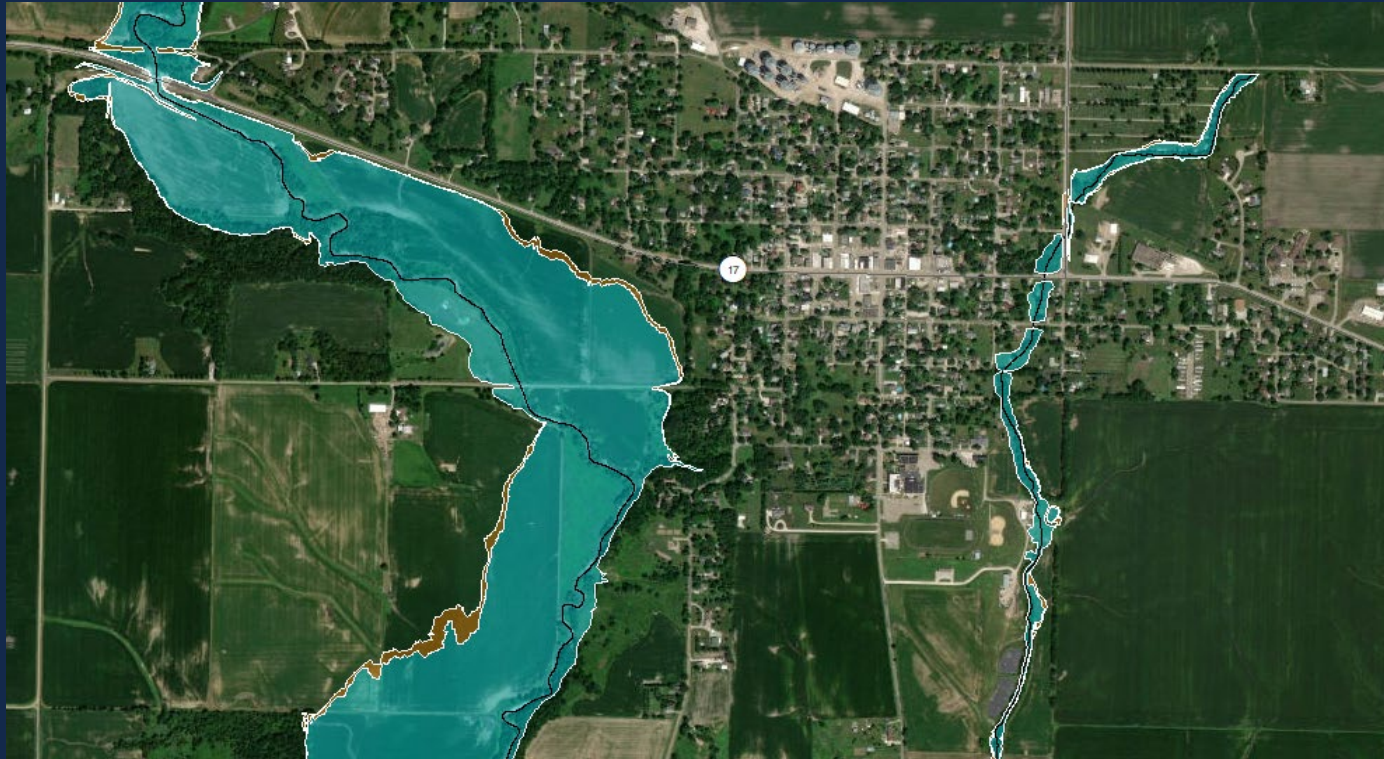
**ILLINOIS**

Illinois State Water Survey

**PRAIRIE RESEARCH INSTITUTE**

# White County Flood Risk Review Meeting

April 20, 2023



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FEMA



Illinois State Water Survey  
PRAIRIE RESEARCH INSTITUTE

## FLOOD RISK REVIEW MEETING – WHITE COUNTY, ILLINOIS

APRIL 20, 2023

### PRE-MEETING SURVEY

1. How much do you know about your community's flood risk?

- a lot
- some
- not much

2. How much do you know about the FEMA Risk Mapping, Assessment and Planning (Risk MAP) process?

- a lot
- some
- not much

3. Are you able to communicate flood risk to your community?

- yes
- no

4. Would you know where to go to get flood mitigation help?

- yes
- no

# Agenda

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Rollcall

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Introduction

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Project Objectives and Goals

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Project Scope

---

Hydrologic Study Methods

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Hydraulic Study Method and Models

---

Web Map Overview and Draft Floodplain Review

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Communication and Estimated Schedule

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Risk Communication & Mitigation

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Community Participation and Open Discussion

# Rollcall

## Communities/County

- Village of Burnt Prairie
- City of Carmi\*<sup>+</sup>
- Village of Crossville\*<sup>+</sup>
- Village of New Haven\*<sup>+</sup> (also in Gallatin Co)
- White County\*<sup>+</sup>

## Others

- FEMA
- IDNR
- IEMA
- GWRPC
- Other Agencies

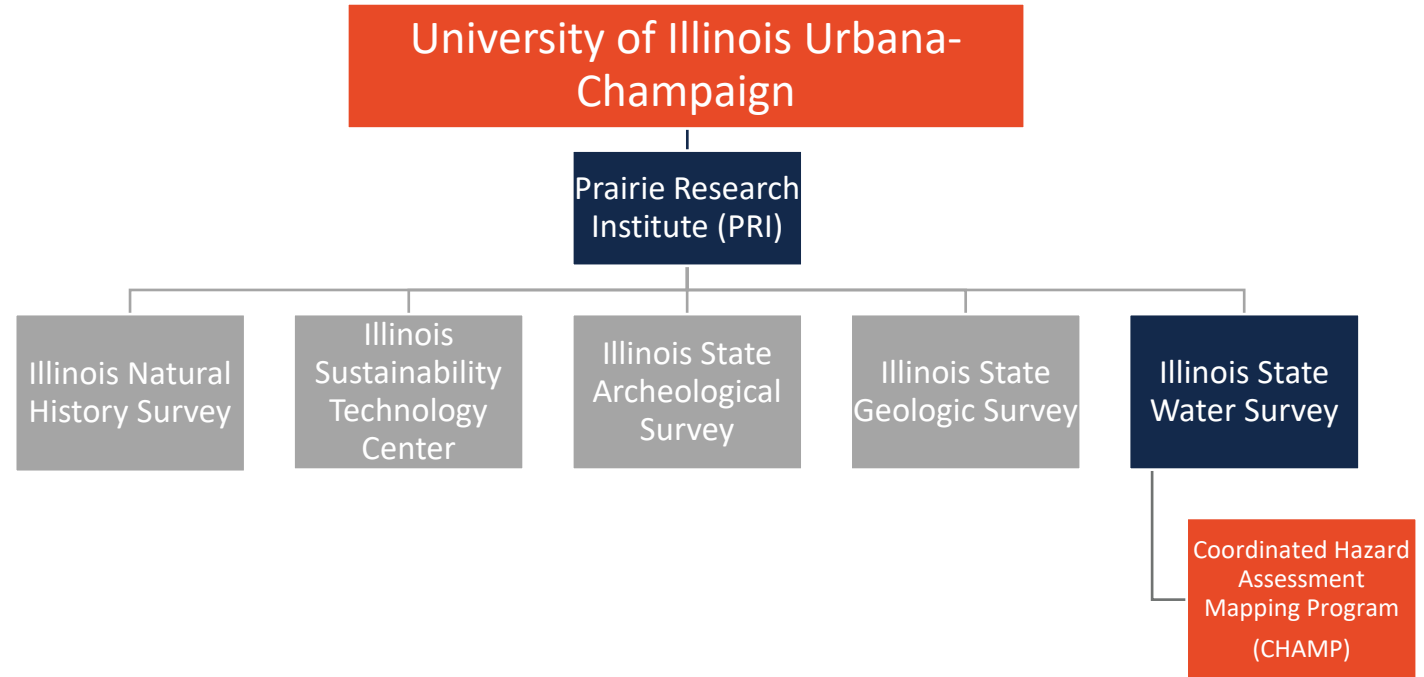
\* Participates in the NFIP

<sup>+</sup> Participates in Multi- Hazard Mitigation Plan

# Introduction

# Introduction

## Who We Are



**I ILLINOIS**  
Illinois State Water Survey  
PRAIRIE RESEARCH INSTITUTE

<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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# Funding Goals and Objectives

# Illinois Countywide Digital FIRM Funding Status

102 Counties

79 effective digital FIRMs ✓

09 funded for mapping

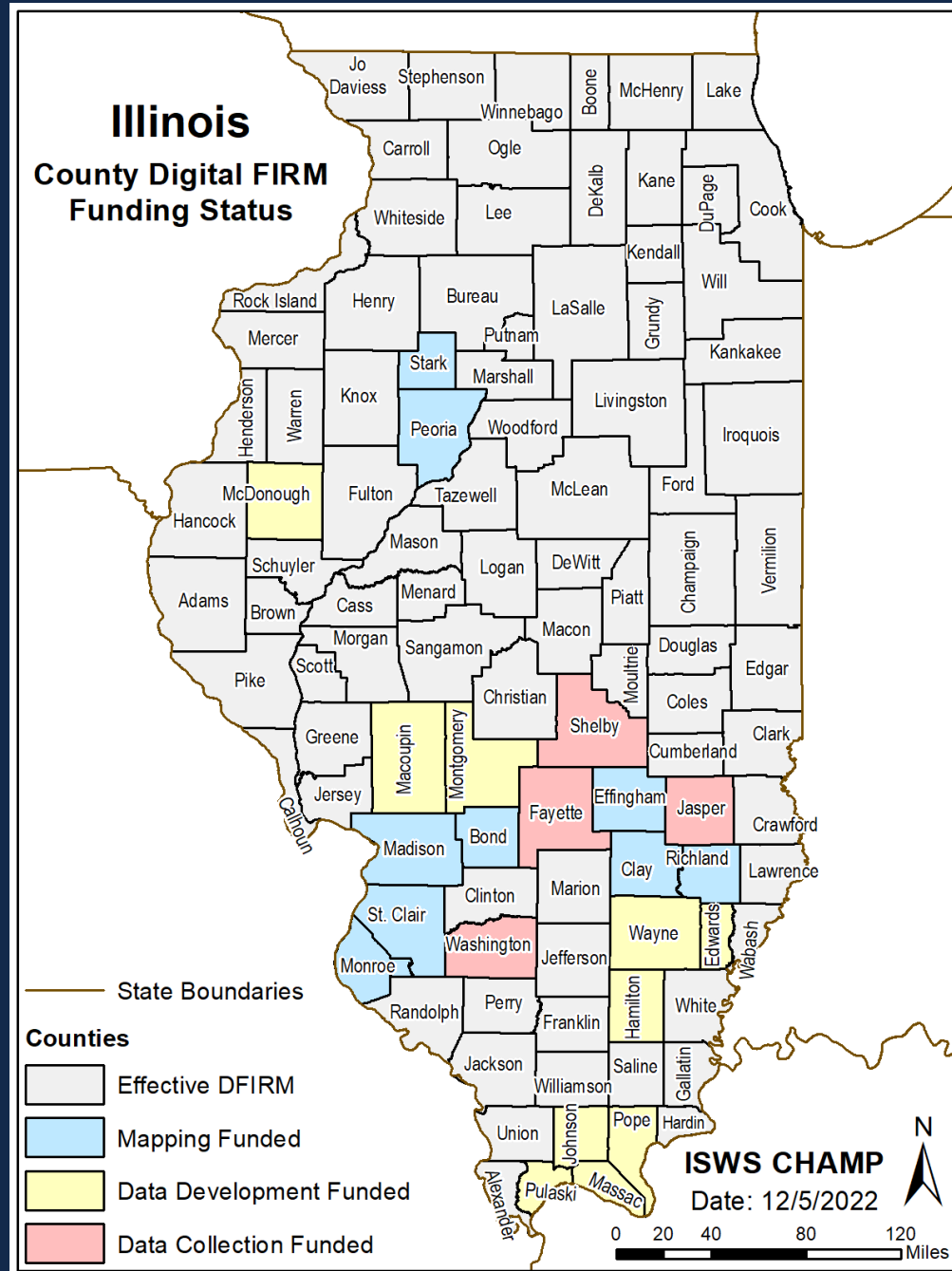
10 funded for data development

04 funded for data collection

Wabash Watershed Counties

In data development phase

Preliminary funding available



# Effective Map & FIS Dates

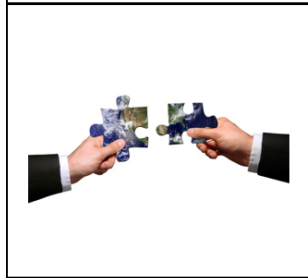
Community Name	Eff Map Date	Eff FIS Date
Village of Burnt Prairie	02/16/2012	02/16/2012
City of Carmi	02/16/2012	02/16/2012
Village of Crossville	02/16/2012	02/16/2012
Village of Enfield	02/16/2012	02/16/2012
City of Grayville	02/16/2012	02/16/2012
Village of Maunie	02/16/2012	02/16/2012
Village of Mill Shoals	02/16/2012	02/16/2012
Village of Norris City	02/16/2012	02/16/2012
Village of Phillipstown	02/16/2012	02/16/2012
Village of Springerton	02/16/2012	02/16/2012
White County Unincorporated	02/16/2012	02/16/2012

# Data Development <-- --> Regulatory Mapping



**Flood Risk Review Meeting**

draft engineering model results and draft floodplain delineations



**End of Data Development**

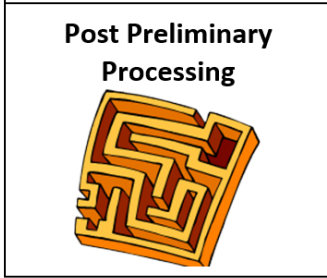
Resolve FRR comments  
If necessary, update the models/delineations/Db  
Issue FEMA "621" letter



**Preliminary Products**

Released as Preliminary Products (FIRM Db, FIRM Panels, FIS)

Plus PSOMA



**Final Products**

Released as Final Products - Pending (FIRM Db, FIRM Panels, FIS)

Plus FSOMA



**Effective Products**

Previously released Final Products are Effective (FIRM Db, FIRM Panels, FIS)

Plus Revalidation Letters



# Project Scope

# What is a Special Flood Hazard Area?

The FEMA Special Flood Hazard Area (SFHA) represents areas mapped as having a 1% annual chance of being inundated by the base flood in any given year.

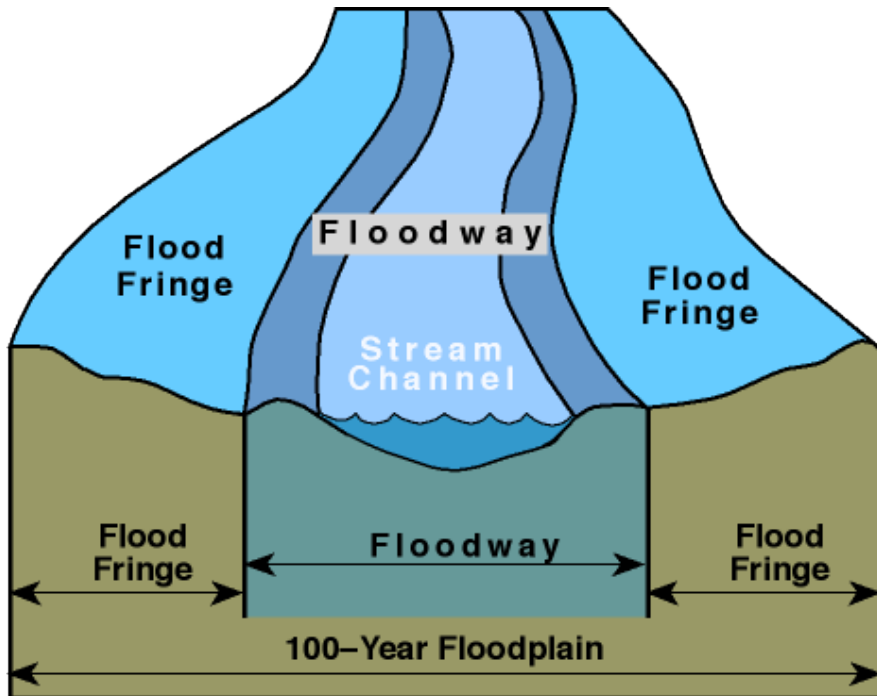
Riverine hydraulic analysis typically results in SFHA designation as Zone A or Zone AE, based on the analysis level deemed appropriate for the study area.

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>

# Floodway

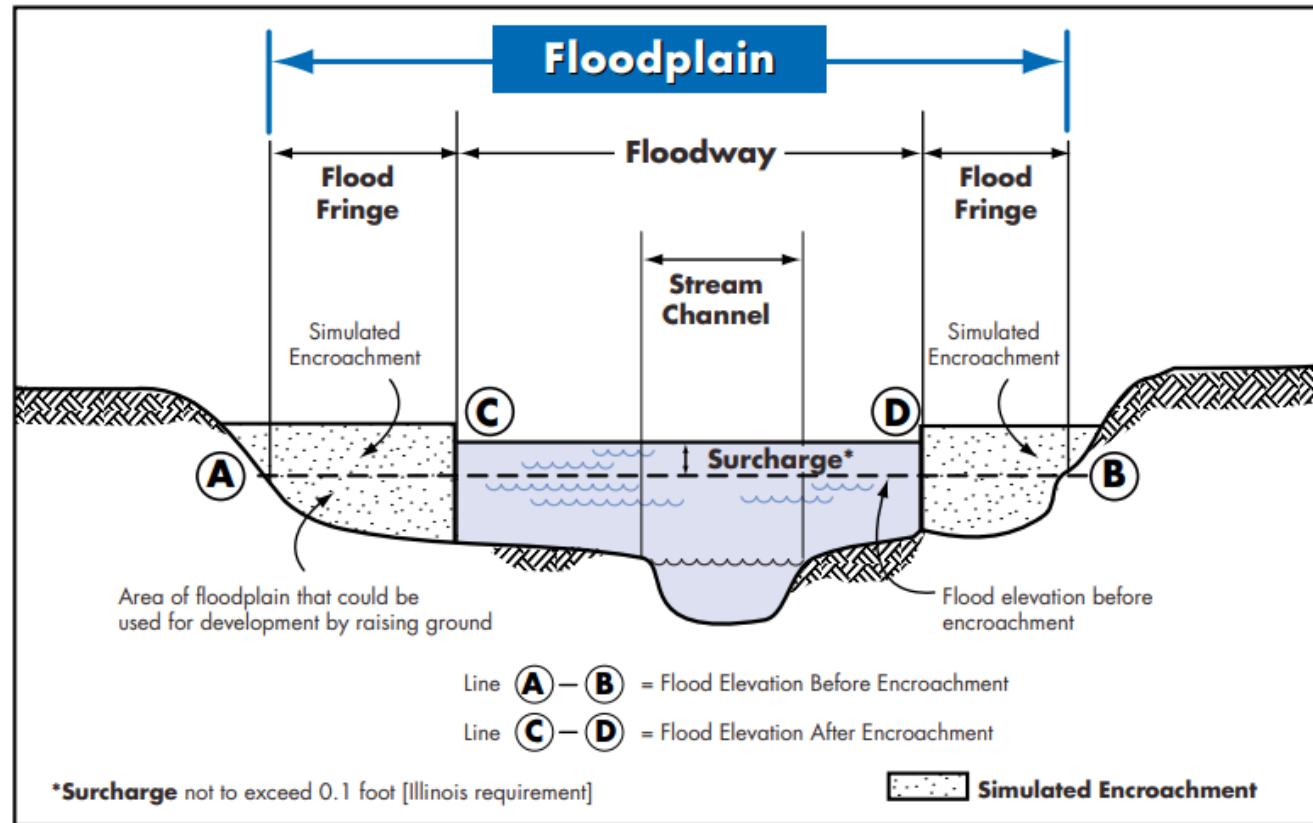
The **floodway** is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



# Floodway

## Illinois Floodways are unique:

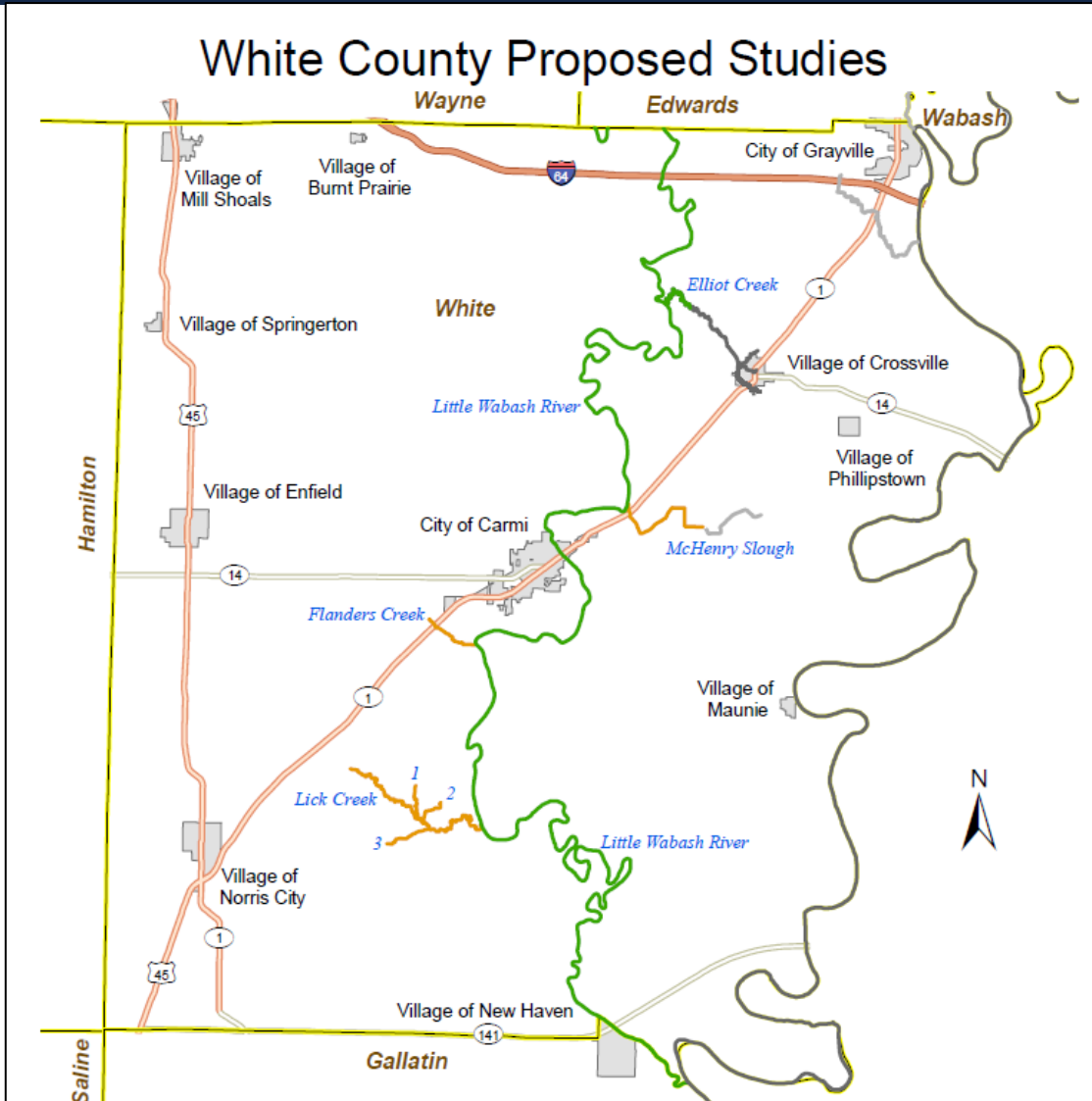
- 0.1-foot maximum surcharge
- Max 10% reduction is storage volume
- Max 10% increase in flow velocity



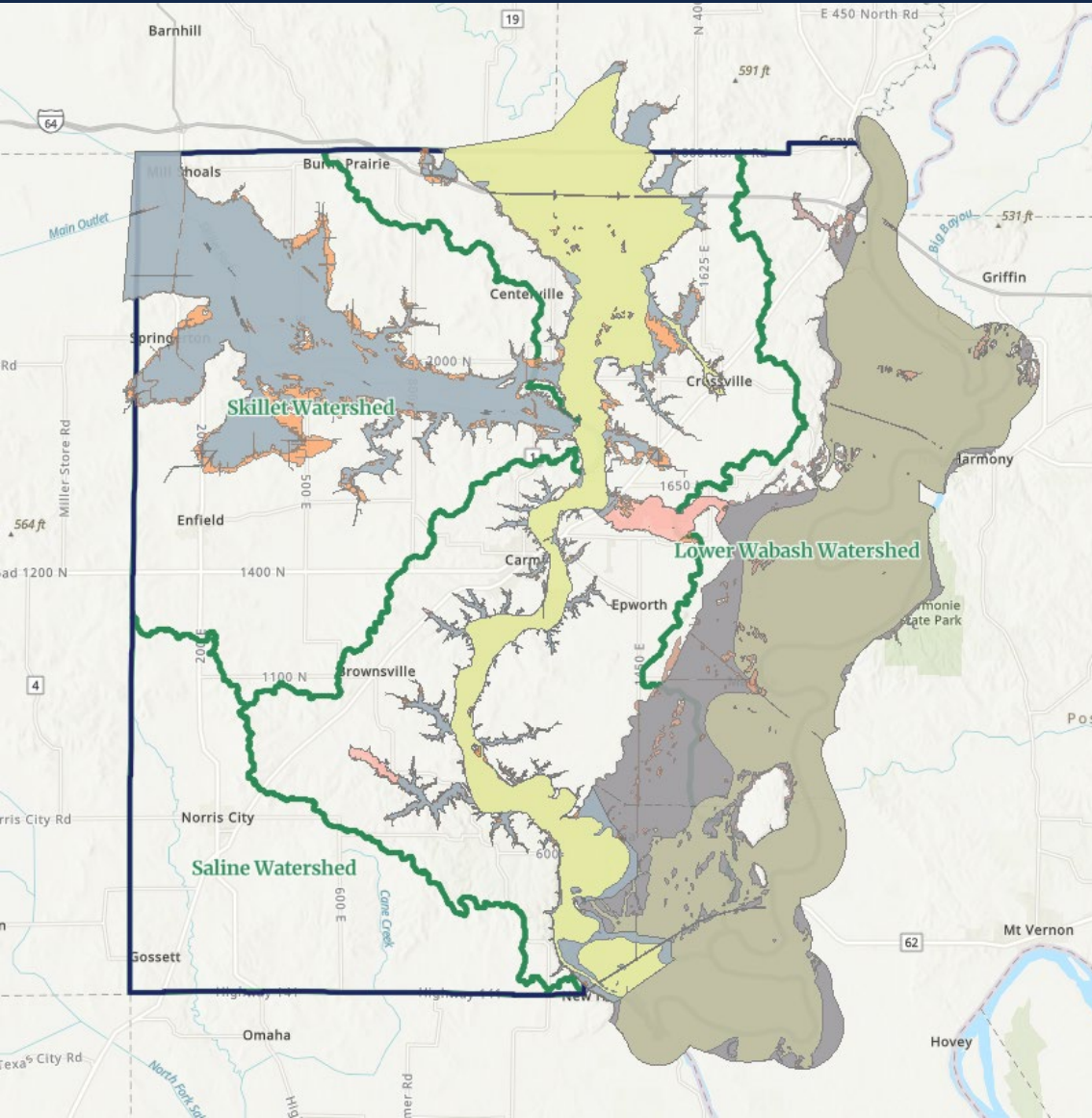
Credit: [https://www2.illinois.gov/dnr/WaterResources/Documents/Resman\\_ILFPMQuickGuide.pdf](https://www2.illinois.gov/dnr/WaterResources/Documents/Resman_ILFPMQuickGuide.pdf)



# Project Scope



# White County-Project History



Today's focus:  
FY19 Little Wabash  
River and select  
tributaries

Yesterday's project:  
FY18 Wabash River  
Watershed

Tomorrow's plan:  
FY20, 21, 22 Skillet  
Fork and Saline  
Watersheds

# Project Milestones

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Project Initiation Coordination Meeting August 17, 2021

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FEMA Standard ID 620 notification letters- emailed September 8, 2021, with 30-day comment period

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**Flood Risk Review Meeting- today**, with 30- day comment period

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State Review and Approval

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Development of Digital Flood Insurance Rate Maps (DFIRMs)

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Release of Preliminary DFIRMs and Public Open House

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DFIRMs become Effective (Future Project Phase)

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# Hydrology Study Methods

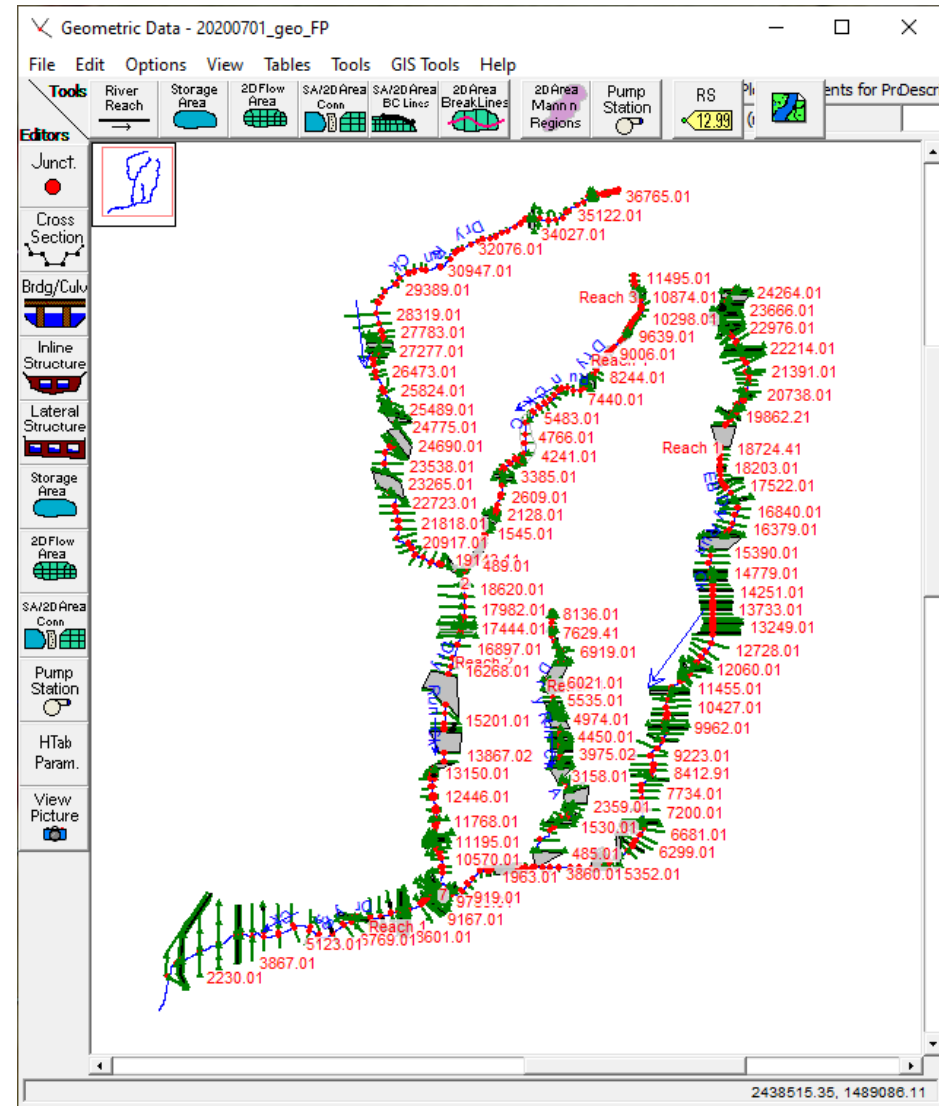
# Hydrology Study Methods

- The Little Wabash River Bulletin 17C gage analysis studied the 10%, 4%, 2%, 1% (base flood), 0.2%, and 1%+ flow frequencies.
- For Lick Creek and Flanders Creek Zone A hydrology USGS StreamStats was used to calculate the 10%, 4%, 2%, 1% (base flood), 0.2%, and 1%+ flow frequencies.
- The McHenry Slough flows were calculated by matching known water surface elevations of the Little Wabash River diversion for the 10%, 4%, 2%, 1% (base flood), 0.2%, and 1%+ flow frequencies.

# Hydraulic Study Methods

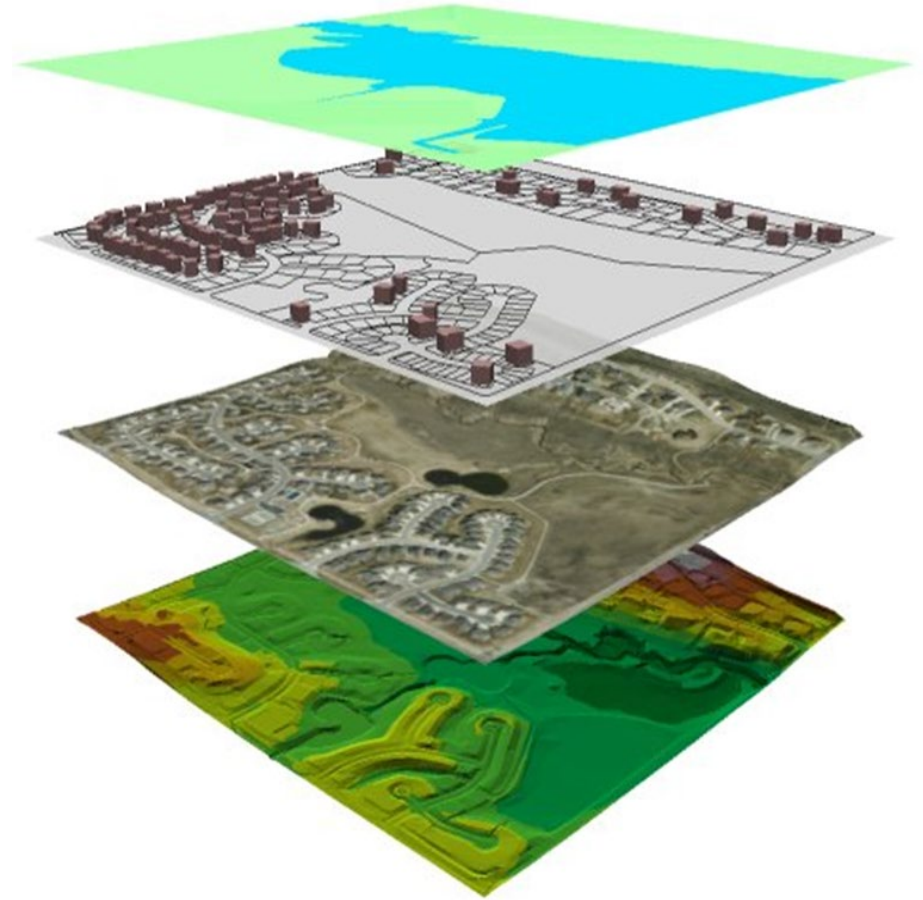
# Hydraulics

- Army Corps of Engineers Hydrologic Engineering Center River Analysis System (HEC-RAS)
- 1D Steady State Analysis (Modeling to all FEMA Standards, Technical References, and Guidelines)



# Hydraulic Data

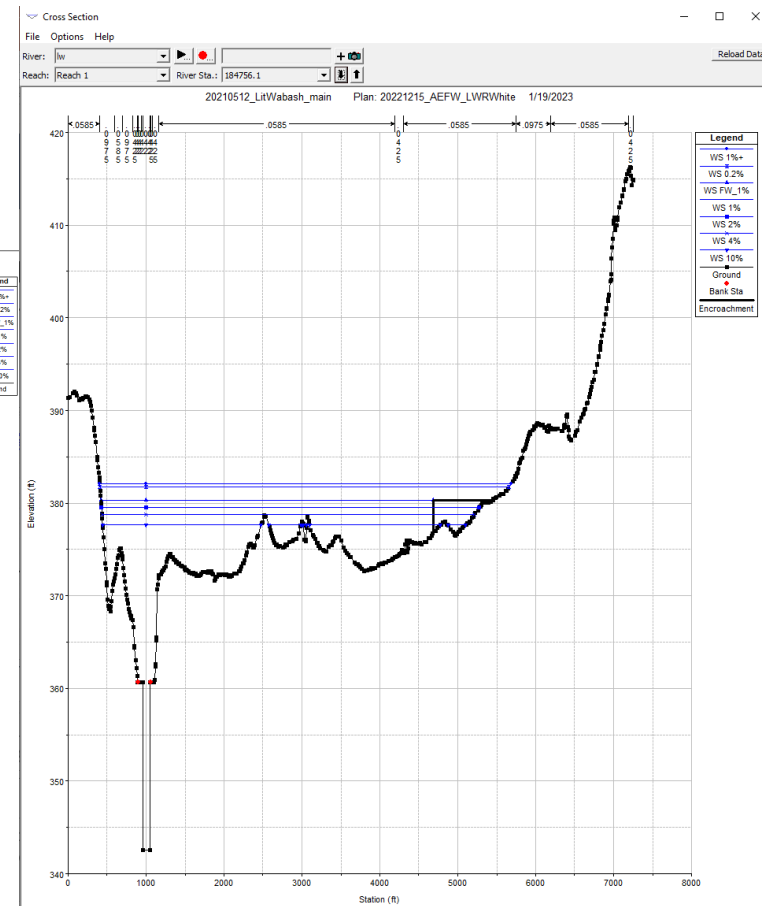
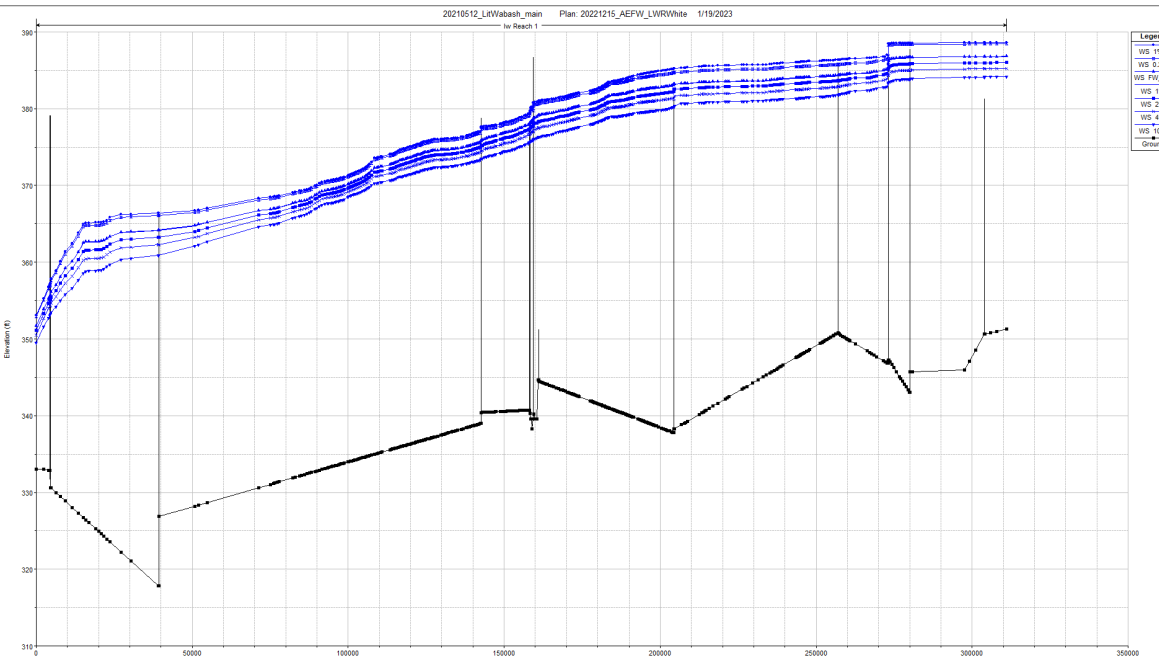
- LiDAR – 2011
- As-built Plans
- Field Survey –  
Collected by IDNR  
OWR
- USGS - National Land  
Cover Database
- Basemap Ortho Photos  
- 2017





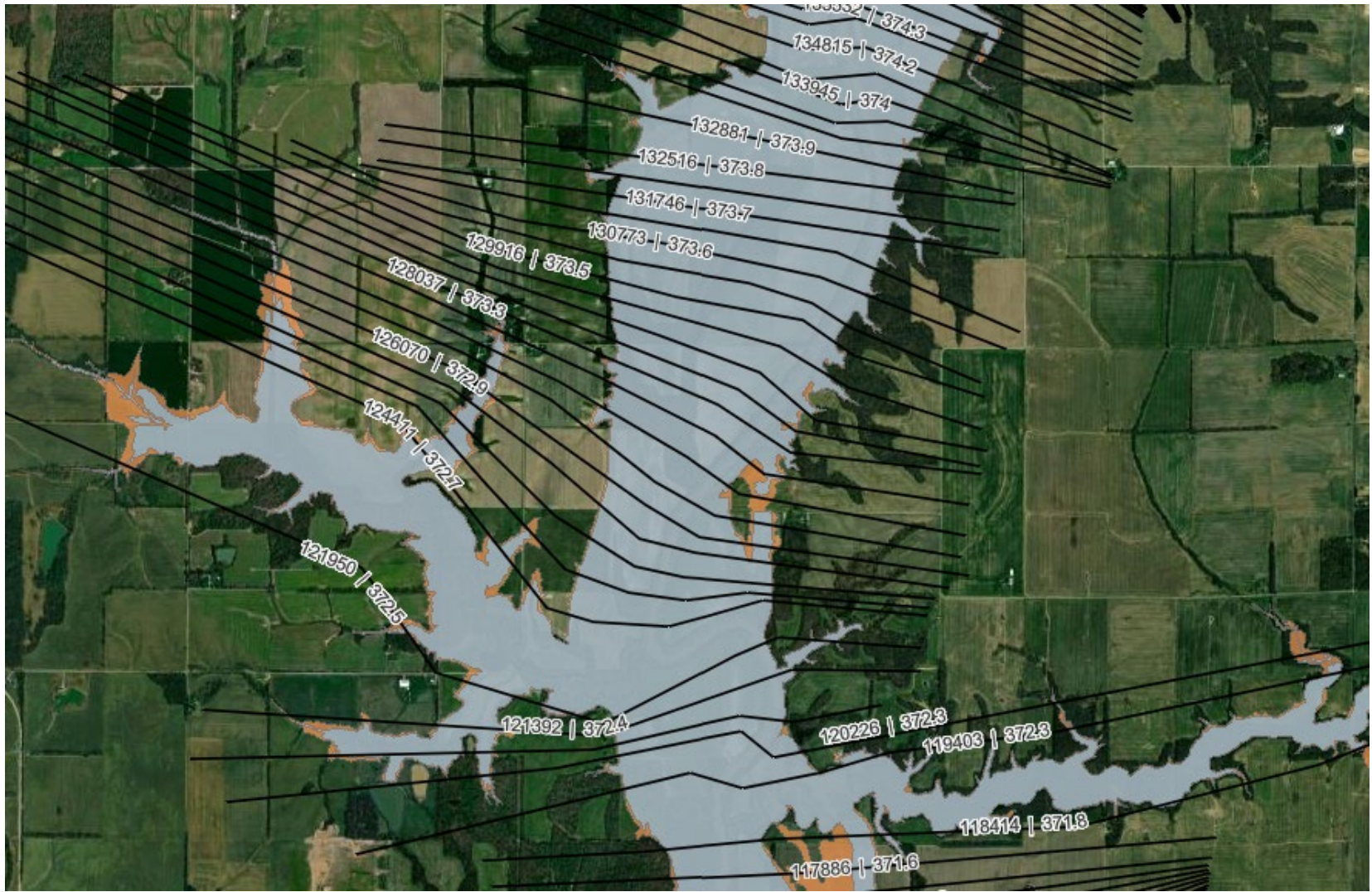
# Hydraulics

- Water Surface Elevations
- Exported to GIS for mapping



# Hydraulics

## Resulting Floodplain



# Webmap Results

# Webmap Demonstration

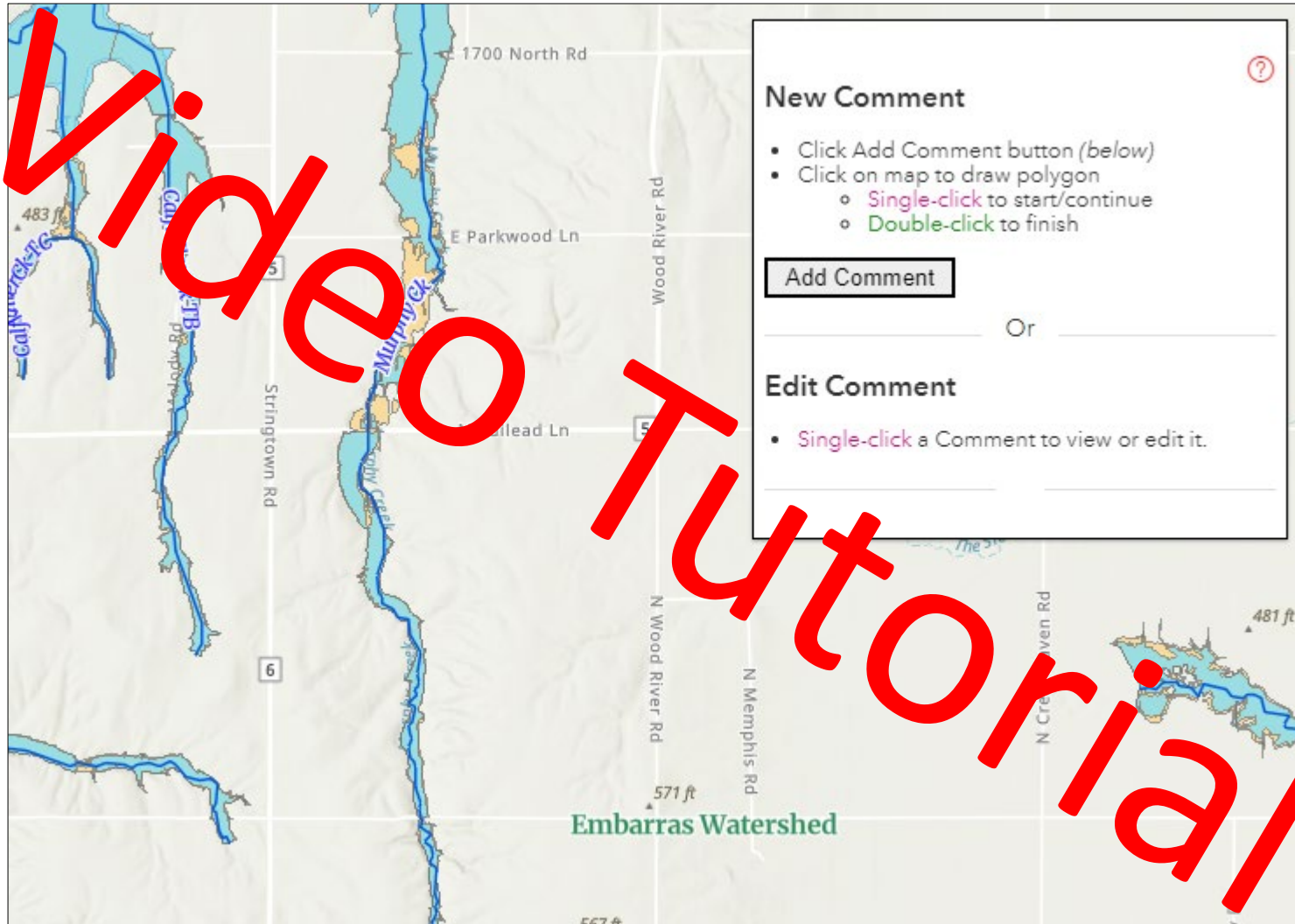
## **Webmap URL:**

<https://go.isws.illinois.edu/white>

Log in: watershed

Password: illinoisfloods!123

# Webmap Comment Feature



**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 view or edit it.

**Embarras Watershed**

Map labels: 1700 North Rd, Wood River Rd, E Parkwood Ln, Stringtown Rd, 6, N Wood River Rd, N Memphis Rd, N Croftaven Rd, 481 ft, 571 ft, 567 ft, 483 ft, 418 ft, 404 ft, 402 ft, 401 ft, 400 ft, 399 ft, 398 ft, 397 ft, 396 ft, 395 ft, 394 ft, 393 ft, 392 ft, 391 ft, 390 ft, 389 ft, 388 ft, 387 ft, 386 ft, 385 ft, 384 ft, 383 ft, 382 ft, 381 ft, 380 ft, 379 ft, 378 ft, 377 ft, 376 ft, 375 ft, 374 ft, 373 ft, 372 ft, 371 ft, 370 ft, 369 ft, 368 ft, 367 ft, 366 ft, 365 ft, 364 ft, 363 ft, 362 ft, 361 ft, 360 ft, 359 ft, 358 ft, 357 ft, 356 ft, 355 ft, 354 ft, 353 ft, 352 ft, 351 ft, 350 ft, 349 ft, 348 ft, 347 ft, 346 ft, 345 ft, 344 ft, 343 ft, 342 ft, 341 ft, 340 ft, 339 ft, 338 ft, 337 ft, 336 ft, 335 ft, 334 ft, 333 ft, 332 ft, 331 ft, 330 ft, 329 ft, 328 ft, 327 ft, 326 ft, 325 ft, 324 ft, 323 ft, 322 ft, 321 ft, 320 ft, 319 ft, 318 ft, 317 ft, 316 ft, 315 ft, 314 ft, 313 ft, 312 ft, 311 ft, 310 ft, 309 ft, 308 ft, 307 ft, 306 ft, 305 ft, 304 ft, 303 ft, 302 ft, 301 ft, 300 ft, 299 ft, 298 ft, 297 ft, 296 ft, 295 ft, 294 ft, 293 ft, 292 ft, 291 ft, 290 ft, 289 ft, 288 ft, 287 ft, 286 ft, 285 ft, 284 ft, 283 ft, 282 ft, 281 ft, 280 ft, 279 ft, 278 ft, 277 ft, 276 ft, 275 ft, 274 ft, 273 ft, 272 ft, 271 ft, 270 ft, 269 ft, 268 ft, 267 ft, 266 ft, 265 ft, 264 ft, 263 ft, 262 ft, 261 ft, 260 ft, 259 ft, 258 ft, 257 ft, 256 ft, 255 ft, 254 ft, 253 ft, 252 ft, 251 ft, 250 ft, 249 ft, 248 ft, 247 ft, 246 ft, 245 ft, 244 ft, 243 ft, 242 ft, 241 ft, 240 ft, 239 ft, 238 ft, 237 ft, 236 ft, 235 ft, 234 ft, 233 ft, 232 ft, 231 ft, 230 ft, 229 ft, 228 ft, 227 ft, 226 ft, 225 ft, 224 ft, 223 ft, 222 ft, 221 ft, 220 ft, 219 ft, 218 ft, 217 ft, 216 ft, 215 ft, 214 ft, 213 ft, 212 ft, 211 ft, 210 ft, 209 ft, 208 ft, 207 ft, 206 ft, 205 ft, 204 ft, 203 ft, 202 ft, 201 ft, 200 ft, 199 ft, 198 ft, 197 ft, 196 ft, 195 ft, 194 ft, 193 ft, 192 ft, 191 ft, 190 ft, 189 ft, 188 ft, 187 ft, 186 ft, 185 ft, 184 ft, 183 ft, 182 ft, 181 ft, 180 ft, 179 ft, 178 ft, 177 ft, 176 ft, 175 ft, 174 ft, 173 ft, 172 ft, 171 ft, 170 ft, 169 ft, 168 ft, 167 ft, 166 ft, 165 ft, 164 ft, 163 ft, 162 ft, 161 ft, 160 ft, 159 ft, 158 ft, 157 ft, 156 ft, 155 ft, 154 ft, 153 ft, 152 ft, 151 ft, 150 ft, 149 ft, 148 ft, 147 ft, 146 ft, 145 ft, 144 ft, 143 ft, 142 ft, 141 ft, 140 ft, 139 ft, 138 ft, 137 ft, 136 ft, 135 ft, 134 ft, 133 ft, 132 ft, 131 ft, 130 ft, 129 ft, 128 ft, 127 ft, 126 ft, 125 ft, 124 ft, 123 ft, 122 ft, 121 ft, 120 ft, 119 ft, 118 ft, 117 ft, 116 ft, 115 ft, 114 ft, 113 ft, 112 ft, 111 ft, 110 ft, 109 ft, 108 ft, 107 ft, 106 ft, 105 ft, 104 ft, 103 ft, 102 ft, 101 ft, 100 ft, 99 ft, 98 ft, 97 ft, 96 ft, 95 ft, 94 ft, 93 ft, 92 ft, 91 ft, 90 ft, 89 ft, 88 ft, 87 ft, 86 ft, 85 ft, 84 ft, 83 ft, 82 ft, 81 ft, 80 ft, 79 ft, 78 ft, 77 ft, 76 ft, 75 ft, 74 ft, 73 ft, 72 ft, 71 ft, 70 ft, 69 ft, 68 ft, 67 ft, 66 ft, 65 ft, 64 ft, 63 ft, 62 ft, 61 ft, 60 ft, 59 ft, 58 ft, 57 ft, 56 ft, 55 ft, 54 ft, 53 ft, 52 ft, 51 ft, 50 ft, 49 ft, 48 ft, 47 ft, 46 ft, 45 ft, 44 ft, 43 ft, 42 ft, 41 ft, 40 ft, 39 ft, 38 ft, 37 ft, 36 ft, 35 ft, 34 ft, 33 ft, 32 ft, 31 ft, 30 ft, 29 ft, 28 ft, 27 ft, 26 ft, 25 ft, 24 ft, 23 ft, 22 ft, 21 ft, 20 ft, 19 ft, 18 ft, 17 ft, 16 ft, 15 ft, 14 ft, 13 ft, 12 ft, 11 ft, 10 ft, 9 ft, 8 ft, 7 ft, 6 ft, 5 ft, 4 ft, 3 ft, 2 ft, 1 ft, 0 ft.

# Communication and Next Steps

# Communication Plan

Project Initiation Community Coordination Meeting- August 17, 2021

Proposed Engineering Methods Notification (FEMA SID 620) Letter-  
September 8, 2021

**Flood Risk Review Meeting (today)**

30-Day Comment Period starts today

Data Submission Notification (FEMA SID621) Letter



# Data Submission Notification Letter FEMA SID 621

Mailed to community CEO's

Informs the communities that the data collection and analysis (Data Development) phase of the project is concluding, and the FIRM database is being validated by FEMA

Gives Communities 30 days to comment on the data in the FIRM database  
30-Day Comment Period starts today



# Schedule

~~Project Initiation Community Coordination meeting August 17, 2021~~

~~FEMA SID 620 Letter September 8, 2021~~

**Flood Risk Review Meeting (today)**

FEMA SID621 Letters once draft database is completed

Submit Flood Studies to IDNR for State review

Complete draft FIRM database to conclude data development phase of this project. Data to be combined with the FY 20, 21 & 22 projects in the Skillet Fork and Saline Watersheds.

Digital Flood Insurance Rate Map (DFIRM) Project to follow pending conclusion of data development of remaining Countywide studies.

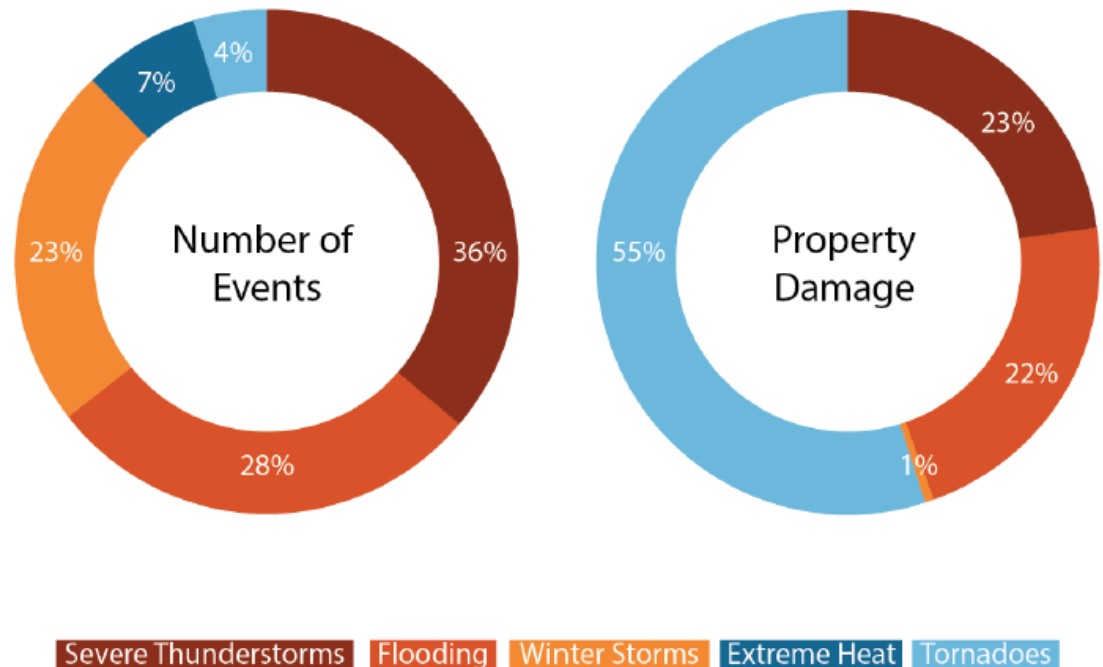
# Risk Communication and Mitigation Actions

# Hazard Mitigation Plans

Table 4-1. Summary of Meteorological Hazards Reported by the NCDL for White County

Hazards	Time Period		Number of Events	Property Damage	Deaths	Injuries
	Start	End				
Severe Thunderstorms	1975	2014	169	\$3,740,000	1	5
Flooding	1996	2014	133	\$3,580,000	0	1
Winter Storms	1996	2014	109	\$100,000	1	5
Extreme Heat	1997	2014	35	\$0	0	0
Tornadoes	1965	2014	21	\$8,970,000	0	6

Figure 4-1. Distribution of NCDL Meteorological Hazards for White County



## White County, Illinois Multi-Hazard Mitigation Plan

A 2017 Update of the 2009 Countywide MHMP



FEMA



SIU  
Southern  
Illinois  
University  
CARBONDALE

# Hazard Mitigation- Declarations 1983-2022

Declaration Type	Date of Declaration	Disaster Description	Type of Assistance
DR-4489-IL	03/26/2020	Biological (COVID-19)	Public Assistance
EM-3435-IL	03/13/2020	Biological (COVID-19)	Public Assistance
DR-1991-IL	06/07/2011	Severe Storms & Flooding	Individual Assistance
EM-3230-IL	09/07/2005	Hurricane Katrina Evacuation	Public Assistance
EM-3199-IL	02/01/2005	Record Snow	Public Assistance
DR-1416-IL	05/21/2022	Severe Storms, Tornadoes & Flooding	Individual Assistance
DR-1112-IL	05/06/1996	Severe Storms & Flooding	Individual and Public Assistance
DR-871-IL	06/22/1990	Severe Storms, Tornadoes & Flooding	Individual Assistance
DR-819-IL	01/13/1989	Severe Storms & Tornadoes	Individual Assistance
DR-684-IL	06/06/1983	Severe Storms & Flooding	Public Assistance

# Risk Communication and Mitigation Actions



FEMA



NATIONAL FLOOD  
INSURANCE PROGRAM

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

<https://www.floodsmart.gov/>

## Floodsmart.gov

- Community Resources
  - Flood Maps
  - Cost of Flooding
  - What is Covered?
  - How to Reduce Your Costs
  - Tools

## FEMA.gov

- National Flood Insurance Program (NFIP)
- Hazard Mitigation Planning
  - Mitigation Best Practices
  - Mitigation Planning and Grants
  - Regulations and Guidance

# Community Participation

# Community Impact

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## Why a New Floodplain Map Can Affect a Community:

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Can affect which residents are required to carry flood insurance


---

Depicts areas of communities which are subject to floodplain management regulations

---

Can affect community planning and flood mitigation

# Community Participation



Now is the time to review the draft floodplain mapping for your community

Who is affected?

Is the mapping reasonable and/or consistent with your community's experience with flooding?

Make comments if something does not look right or make sense.

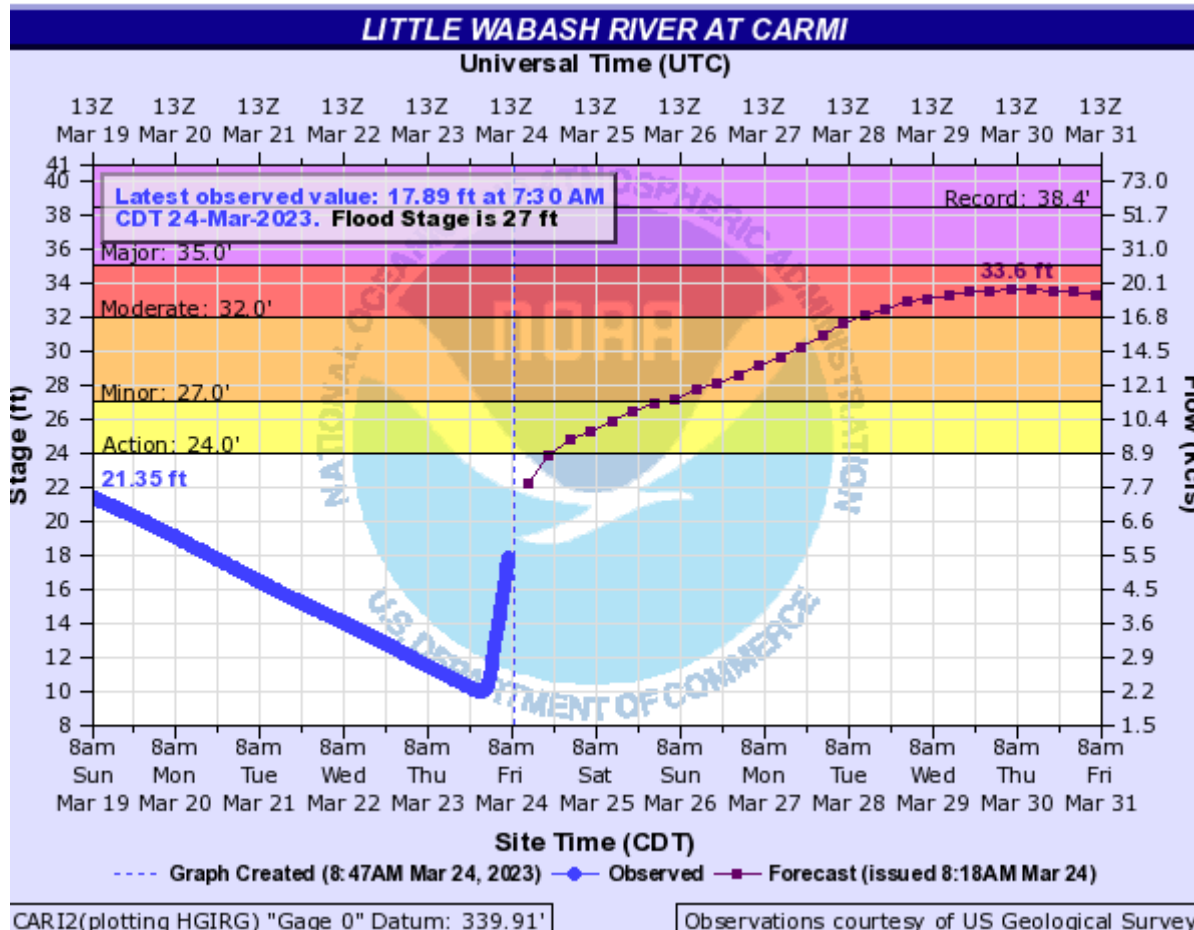
Provide data or information if it could support a change in the draft mapping

Ask questions.



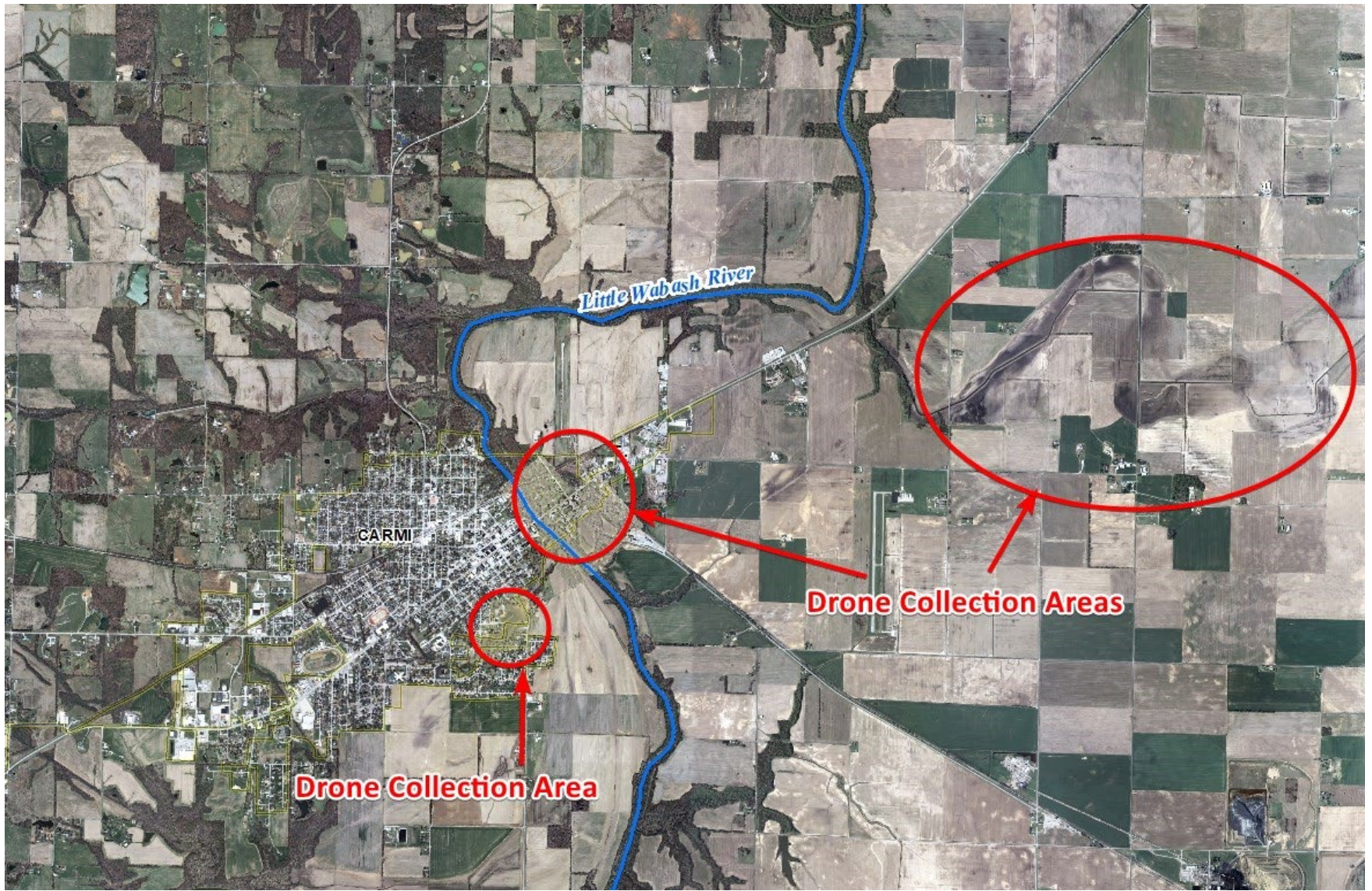
# Community Impact

Recent Event: March 29, 2023



- Forecast for a 5-year flood
- Actual flood at time of capture was less than 2 year flood event

# Community Impact





# Community Impact

## Carmi Ball Field

**\*50% Flood**



# Community Impact

## Carmi Ball Field Zoomed

\*50% Flood

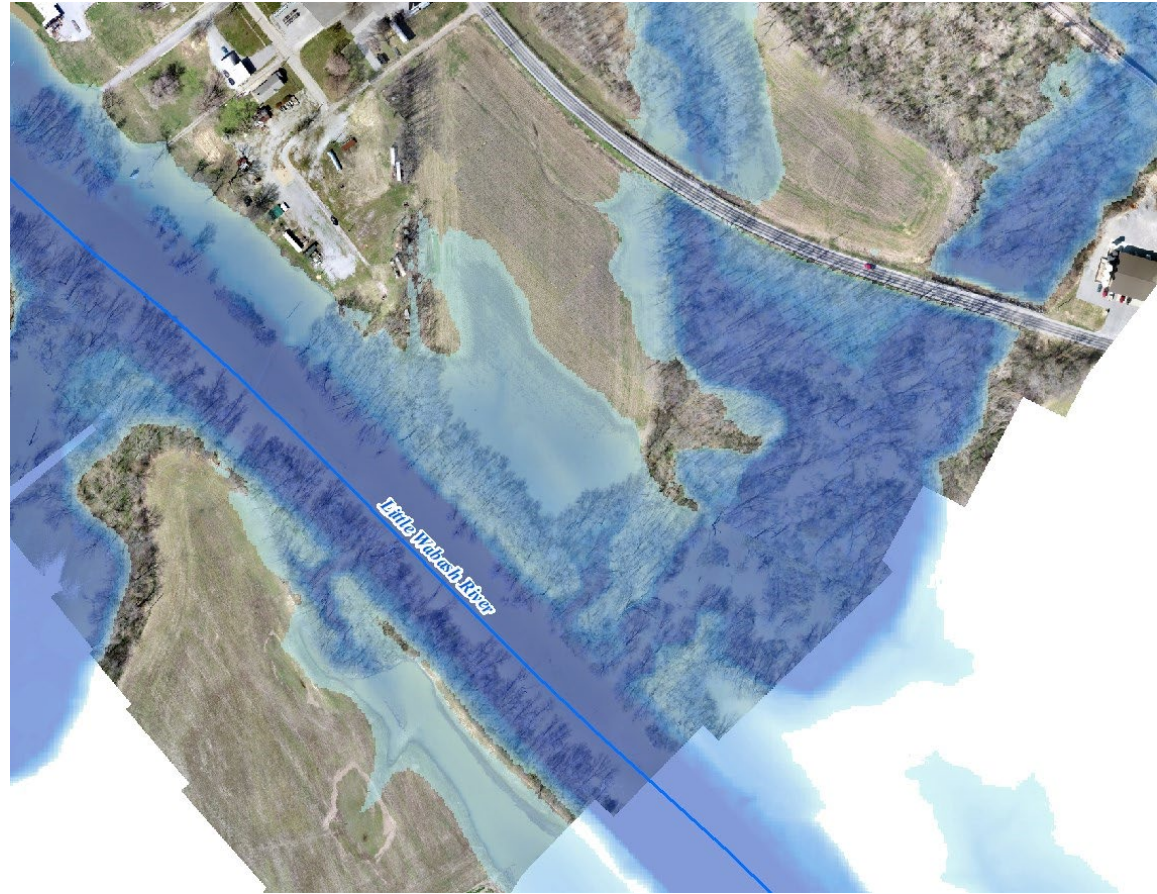




# Community Impact

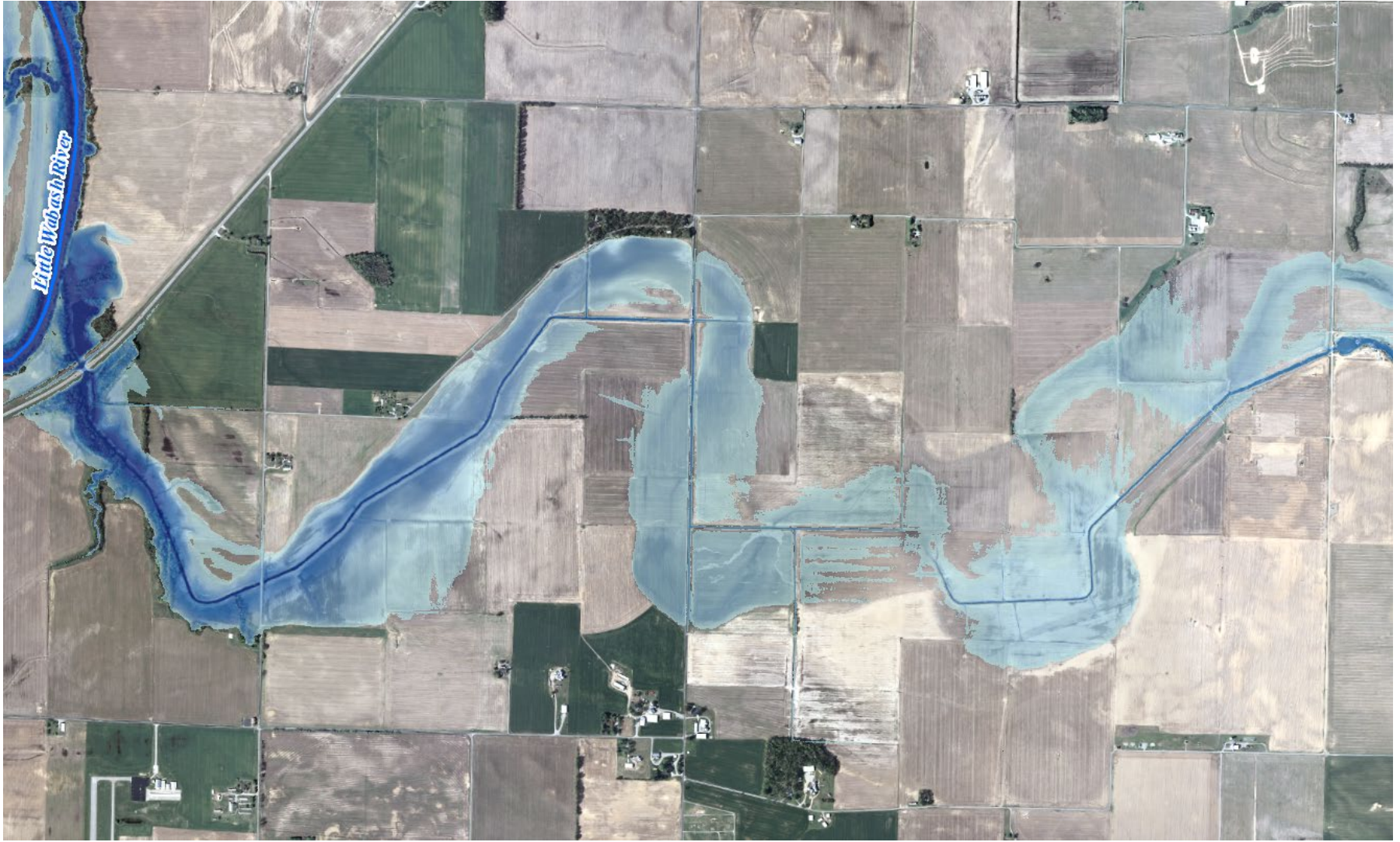
## South of Highway 14

\*50% Flood



# McHenry Slough

\*50% Flood





# McHenry Slough



\*50% Flood



Illinois State Water Survey

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## FLOOD RISK REVIEW MEETING – WHITE COUNTY, ILLINOIS

APRIL 20, 2023

### POST-MEETING SURVEY

1. **After this meeting how much more do you know about your community's flood risk?**
  - a lot
  - some
  - not much
  
2. **After this meeting how much do you know about the FEMA Risk Mapping, Assessment and Planning (Risk MAP) process?**
  - a lot
  - some
  - not much
  
3. **Has this meeting provided new information and resources to help communicate flood risk to your community?**
  - yes
  - no
  
4. **Has this meeting helped you know where to go to get flood mitigation help?**
  - yes
  - no





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Questions?



# ILLINOIS

## Illinois State Water Survey

### PRAIRIE RESEARCH INSTITUTE

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Outreach: Mary Richardson, CFM  
[mjr@Illinois.edu](mailto:mjr@Illinois.edu) – (217) 300-3479

Mitigation: Glenn Heistand, P.E., CFM  
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[www.illinoisfloodmaps.org](http://www.illinoisfloodmaps.org)

# Additional Contacts

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[john.wethington@fema.dhs.gov](mailto:john.wethington@fema.dhs.gov) – (312) 408-5485

Illinois NFIP Coordinator: Erin C. Conley, CFM

[erin.c.conley@Illinois.gov](mailto:erin.c.conley@Illinois.gov) – (217) 782-4428