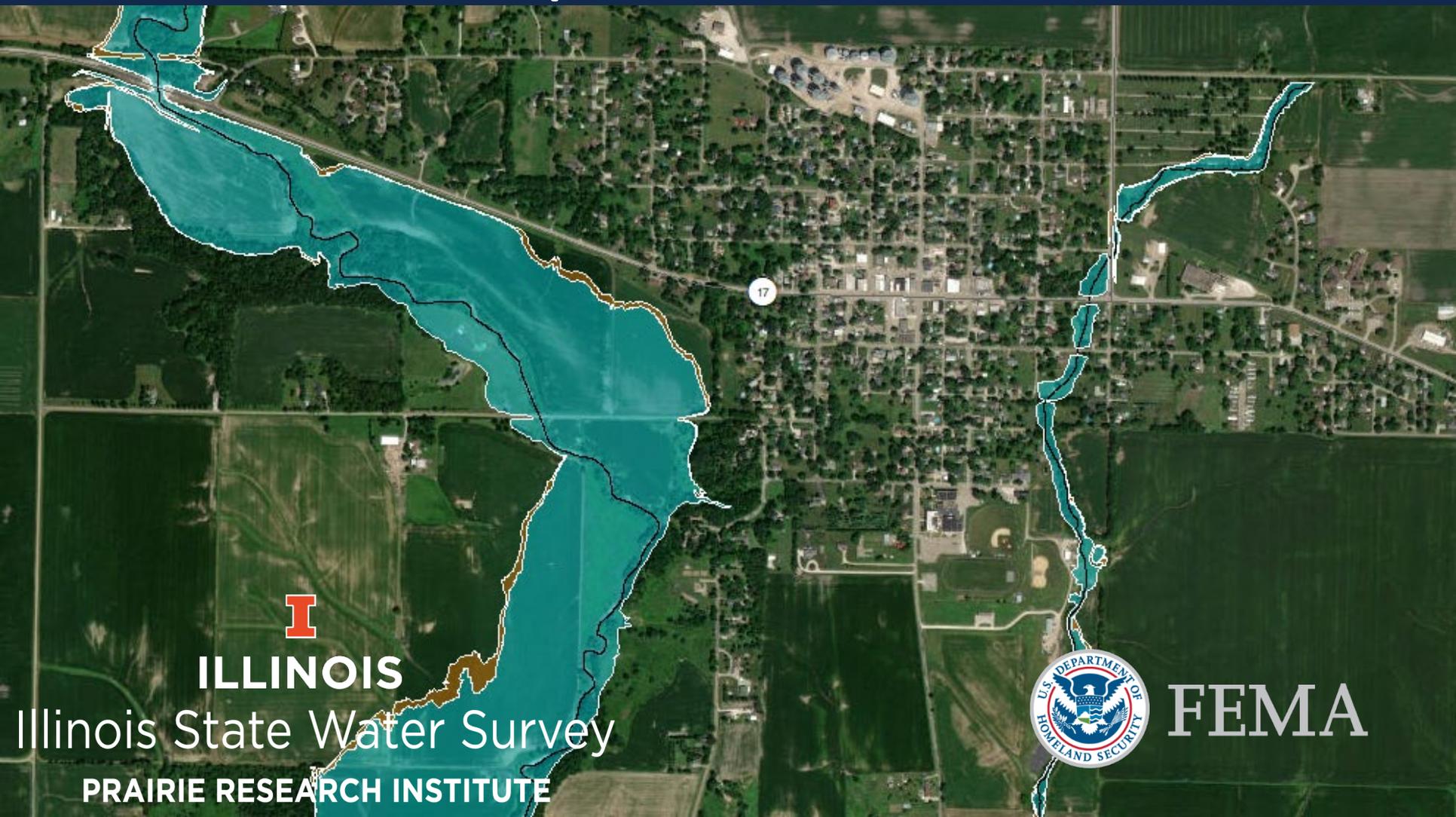




Stark County Flood Risk Review Meeting September 16, 2021



ILLINOIS

Illinois State Water Survey

PRAIRIE RESEARCH INSTITUTE



FEMA



Stark County Flood Risk Review Meeting

Agenda

- Roll Call
- Project Objectives & Scope
- Hydrologic & Hydraulic Study Methods & Models
- Web Map Overview & Draft Floodplain Review
- Estimated Schedule
- Risk Communication & Mitigation
- Discussion

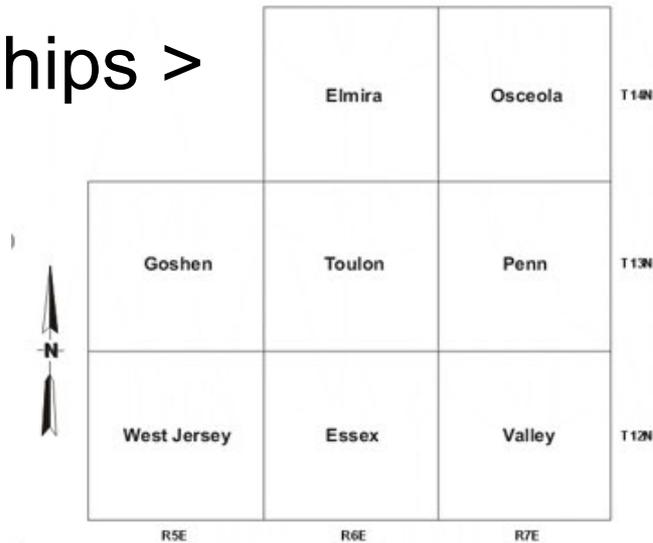


Pre-meeting Survey



Roll Call

- Village of Bradford
- Village of La Fayette
- City of Toulon
- City of Wyoming
- Unincorporated Stark Co.
- Townships >
- Regional ESDA
- County EMA
- Other Local Stakeholders
- FEMA
- IDNR
- IEMA
- ISWS
- Other Agencies



Introduction

- The Illinois State Water Survey (**ISWS**) is a Cooperating Technical Partner with FEMA
- ISWS also partners with IDNR to help prioritize Illinois Floodplain Mapping Projects



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 and 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.
- FEMA Risk Mapping, Assessment, and Planning (**Risk MAP**) is the process used to implement National Flood Insurance Program (**NFIP**) floodplain studies and mapping projects.

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.

IDNR Acting NFIP State Coordinator: Marilyn Sucoe, P.E., CFM
Marilyn.Sucoe@Illinois.gov



Project Objectives & Scope



Project Scope

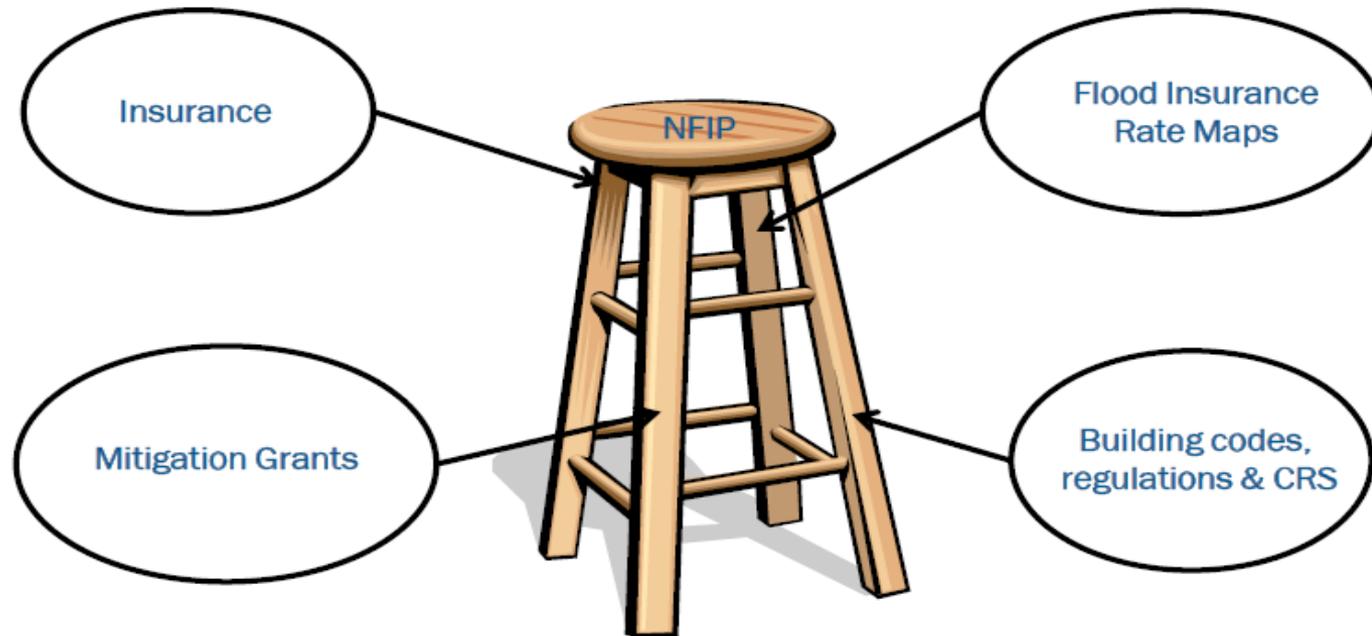
Phase 1 – Data Development & Draft Map

- Project Initiation Meeting and Community Input
- Develop New Floodplain Studies
- Develop Draft Floodplain Mapping
- Flood Risk Review and Community Comment

Phase 2 – Due Process & Regulatory Map

- Produce countywide digital products (FIRM, FIS, Db)
- Release preliminary products for public review & comment
- Implement due process procedures
- Provide for community ordinance and map adoption

National Flood Insurance Program



- Insure homes and businesses against flood-related losses
- Identify and map flood hazards
- Mitigate to reduce flood impacts
- Adopt and enforce floodplain management regulations



Community Impact

New floodplain maps:

- Can affect which residents are required to carry flood insurance
- Depict areas of the community which are subject to floodplain management regulations
- Can affect community planning and flood mitigation

Paper Map to Digital Map





Project Milestones

- Project Initiation meeting (July 22, 2020) ✓
- Develop new floodplain studies ✓
- Develop draft floodplain mapping ✓
- Flood Risk Review meeting - **Today**
- Community review & comment (**until Oct. 16**)
- Comment review & response (Nov & Dec)



Hydrologic & Hydraulic Study Methods

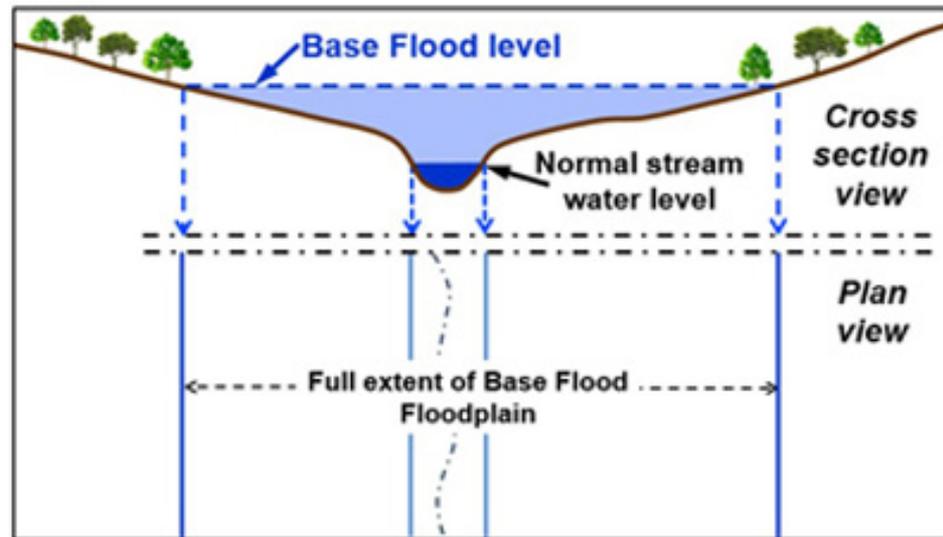
Special Flood Hazard Area

- Flood hazard areas identified on the Flood Insurance Rate Map (**FIRM**) as Special Flood Hazard Area (**SFHA**) are defined as the areas that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded, **in any given year**.
- A flood event of this magnitude is also known as the base flood or the 100-year flood.



Base Flood Elevation

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





SFHA Zone Designation

The SFHA zone designation shown on the FIRM is related to the method and level of hydraulic analysis.

- Zone AE methods often utilize ground survey data for the channel and significant hydraulic structures, in addition to airborne remote sensing survey data (LiDAR). This is appropriate in high-density urbanized areas.
- Zone A methods often utilize only LiDAR derived survey data and typically do not include hydraulic structures in the model. This is appropriate in low-density residential and rural areas.



SFHA Zone Designation

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.

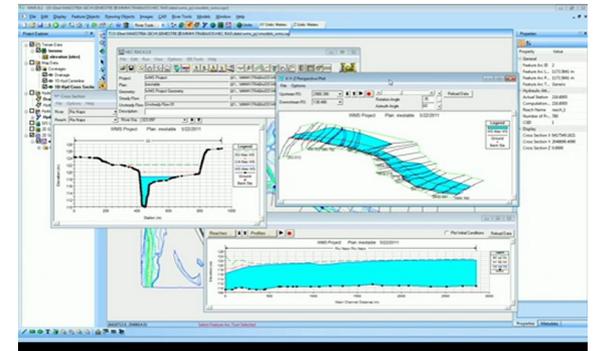
Zone A methods were used for Stark County

Stark County Study Areas By Watershed



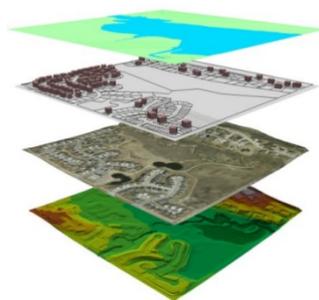
Engineering Methods and Models

- **Hydrology** – Determines 1% Annual Chance Stream Flows
 - USGS Regression Equations
- **Hydraulics** – Determines 1% Annual Chance Flood Elevations
 - USACE HEC-RAS Hydraulic Models
 - One-dimensional steady flow



Floodplain Mapping

- **Floodplain Mapping** – Determines 1% Annual Chance Flood Extents
 - Utilized a Digital Terrain Model derived from LiDAR.
 - LiDAR data was acquired in 2012.
- **Base Map Photo**
 - 2014 Illinois Department of Transportation imagery.



Stark County Proposed Studies



1. West Fork Spoon River Tributary E
2. East Fork Spoon River
3. East Fork Spoon River Tributary C1
4. East Fork Spoon River Tributary C
5. West Fork Spoon River Tributary A
6. East Fork Spoon River Tributary B
7. East Fork Spoon River Tributary A
8. Coopers Defeat Creek Tributary A
9. Indian Creek
10. Indian Creek Tributary E
11. Indian Creek Tributary D
12. Spoon River Tributary J1
13. Spoon River Tributary J
14. Spoon River Tributary H
15. Spoon River Tributary I

Proposed Stream Study Type

- Zone A
- Major Highways
- Highways
- Major Roads
- County Boundary



January 9, 2020



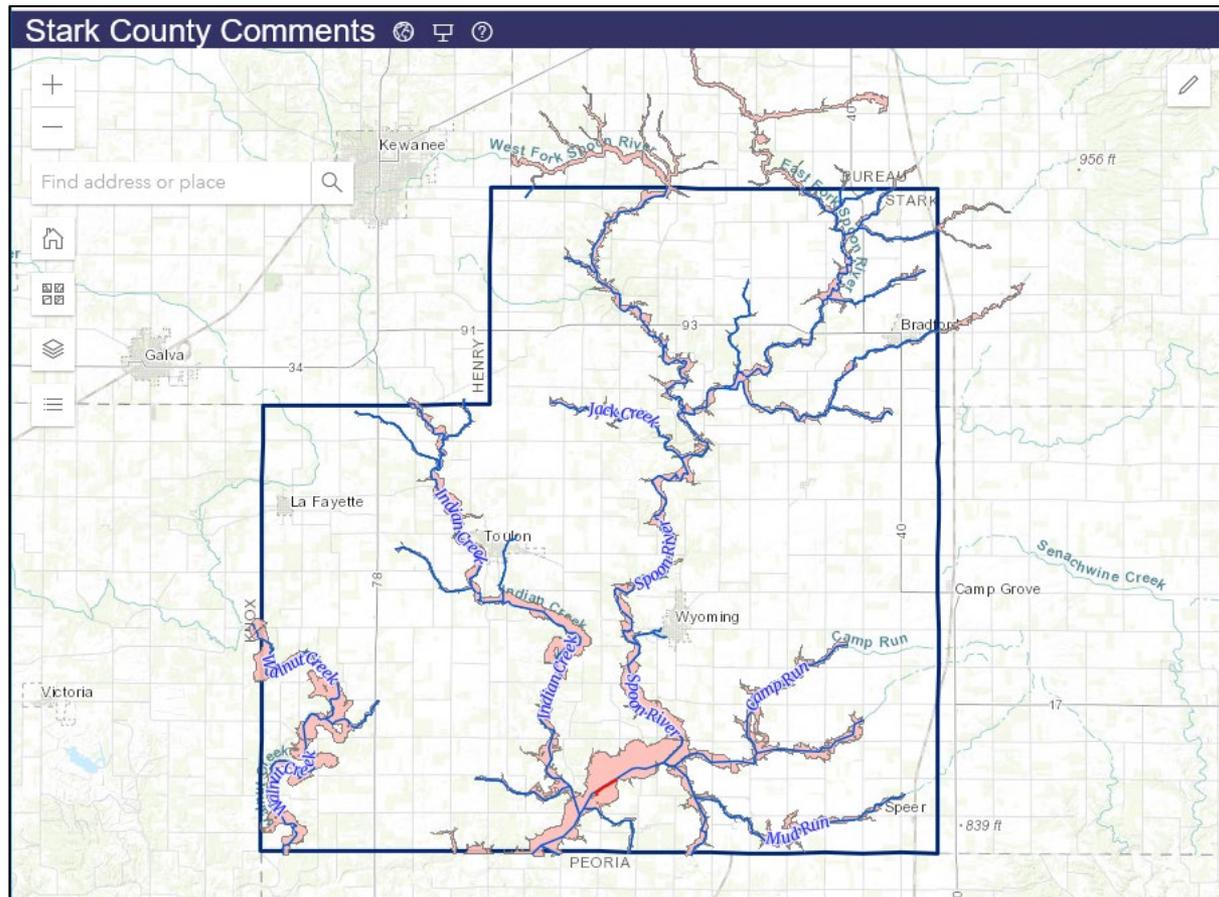
Draft Map Review and Comment





Web Map Overview & Draft Floodplain Review

Web Map Demonstration Video



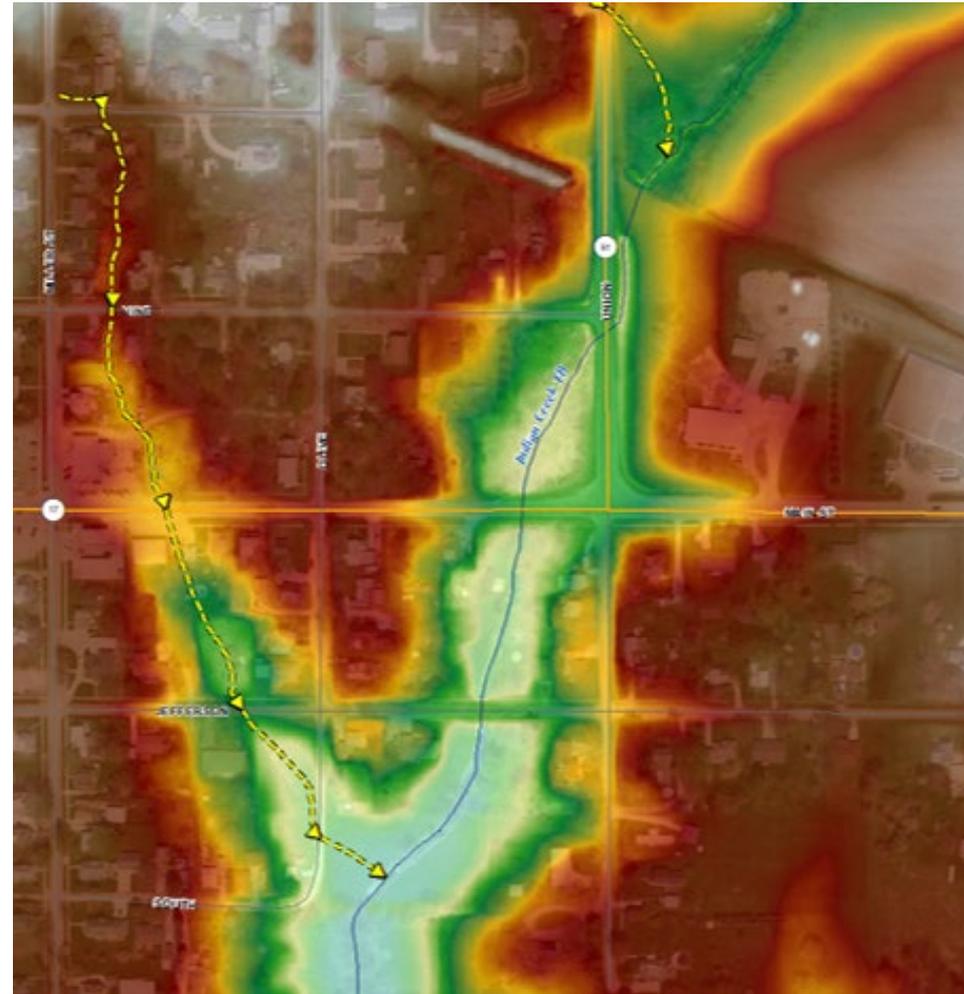
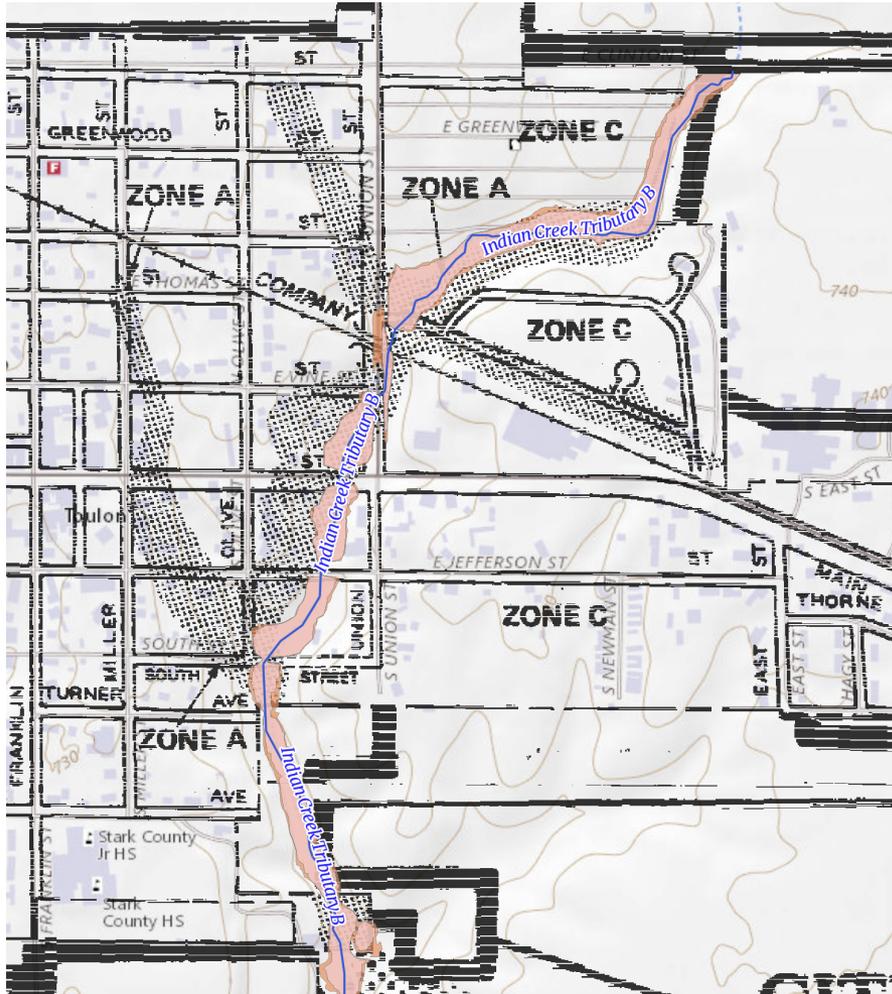
<https://www.illinoisfloodmaps.org/commentmap/stark.htm>

Login: watershed

Password: illinoisfloods!123

Draft Floodplain Overview - Toulon

Indian Creek Tributary B with contributing flow paths





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 the community's experience with flooding?
- Make comments if something doesn't look right or make sense.
- Provide data or information if it could support a change to the draft mapping.
- Ask questions.



Estimated Schedule

Estimated Schedule

- Community Review & Comment on draft maps (thru Oct 16th)
- ISWS Review & Response to draft comments (Nov-Dec 2021)
- Complete draft FIRM database and provide to the county and each community for review, allowing a 30-day comment period (early to mid 2022) [[FEMA Standard ID 621 letter](#)]

FEMA recently funded the regulatory phase of this project.

- Prepare Preliminary Products (mid/late 2022)
- Release Preliminary Products (early/mid 2023)
- Estimated Effective Date (late 2024)



Data Submission Notification

FEMA Standard ID 621 letter



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

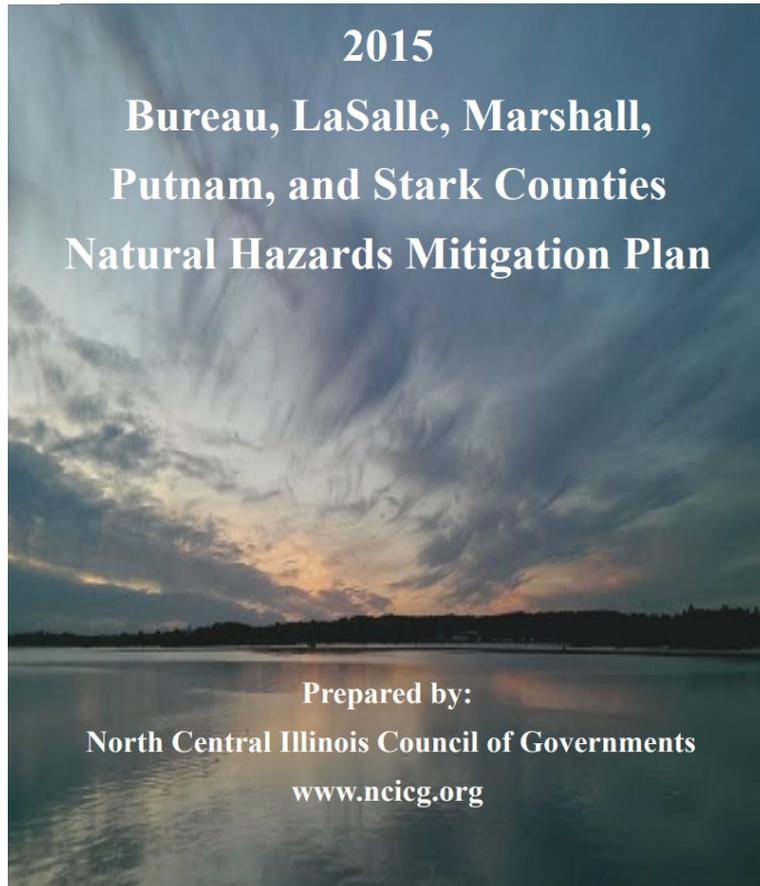


Risk Communication & Mitigation



2015 Hazard Mitigation Plan (HMP)

Risk Awareness



2015
**Bureau, LaSalle, Marshall,
 Putnam, and Stark Counties
 Natural Hazards Mitigation Plan**

Prepared by:
 North Central Illinois Council of Governments
www.ncicg.org

Stark County Risk Assessment								
Communities	Tornadoes	Floods	Winter Storms	Extreme Temps.	Dangerous Winds	Lightning	Drought	Hail
Stark County	Guarded	Elevated	High	Elevated	High	Guarded	Elevated	Elevated
Bradford	Guarded	Guarded	High	Elevated	Elevated	Guarded	Elevated	Guarded
Lafayette	Guarded	Guarded	High	Elevated	Elevated	Guarded	Elevated	Guarded
Toulon	Guarded	Guarded	High	Elevated	High	Guarded	Elevated	Elevated
Wyoming	Guarded	Guarded	High	Elevated	Elevated	Guarded	Elevated	Guarded

Natural Risks- NOAA Storm events 12/31/1964-12/31/2014
<https://www.ncdc.noaa.gov/stormevents/>

Floods					
12/31/1964 to 12/31/2014					
County	Quantity	Deaths	Injuries	Property Damage	Crop Damage
Bureau	24	0	0	485K	0
LaSalle	69	1	5	86.9M	20K
Marshall	24	0	0	14M	0
Putnam	11	0	0	60K	0
Stark	20	0	0	14M	0
Total	148	1	5	116M	20K

FEMA Community Information System Data

accessed 09/2021

CID	Community Name	Total Premium, \$	No. Policies	Total Coverage Since 1979, \$	Total Claims Since 1978, \$	Total Paid Since 1978, \$	Rep Loss	CAC Date	CAV Date	FIRM Date
170745	Bradford, Village of	1,663	1	113,500	0	0	0	9/25/2000	-	9/4/1986
170759	LaFayette, Village of	0	0	0	0	0	0	-	-	-
170613	Stark County	3,626	5	640,100	0	0	0	5/18/2007	-	12/21/1984
170779	Toulon, City of	5,731	8	298,500	0	0	0	9/28/1994	-	6/18/1987
170615	Wyoming, City of	278	1	22,300	0	0	0	-	-	3/10/1978
	County Total	11,298	15	1,074,400	1	0	0	--		

Community Risk Communication & Mitigation Resources

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

- An official site of the National Flood Insurance Program (NFIP)

FEMA Hazard Mitigation Planning: <https://www.fema.gov/emergency-managers/risk-management/hazard-mitigation-planning>

- Help with identifying disaster risks and vulnerabilities, and developing mitigation plans to break the cycle of disaster damage and reconstruction.

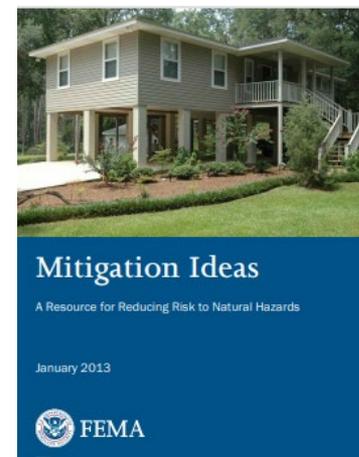
FEMA Mitigation Ideas: https://www.fema.gov/sites/default/files/2020-06/fema-mitigation-ideas_02-13-2013.pdf

- A resource for reducing risk to natural hazards

IEMA Mitigation Plans and Grants:

<https://www2.illinois.gov/iema/Mitigation/Pages/default.aspx>

- A resource for Hazard Mitigation Plans and Grants



Community Risk Communication & Mitigation Contacts

National Flood Insurance Program (NFIP):

Illinois Department of Natural Resources (IDNR) Acting NFIP State Coordinator -
Marilyn Sucoe, PE, CFM Marilyn.Sucoe@Illinois.gov

FEMA Hazard Mitigation Planning:

FEMA Region 5 Hazard Mitigation Planning Specialist -
Lorena Reyes, CFM Lorena.reyes@fema.dhs.gov

Illinois Emergency Management (IEMA):

State Hazard Mitigation Officer: Sam Al-Basha – sam.m.al-basha@illinois.gov
Emergency Management Agency Director for Stark and Henry Counties, IL -
Mat Schnepple Schnepple@EMA-HC.com



Post-meeting Survey





Questions





ILLINOIS

Illinois State Water Survey

PRAIRIE RESEARCH INSTITUTE

Diana Davisson, CFM, EIT

dianad@Illinois.edu – (217) 244-3464

James Powell, PE

powell@illinois.edu – (217) 300-8956

Mary Richardson, CFM

mjr@Illinois.edu – (217) 300-3479

www.illinoisfloodmaps.org