

March 14, 2023



UPDATE OF SILVER JACKETS PROJECTS

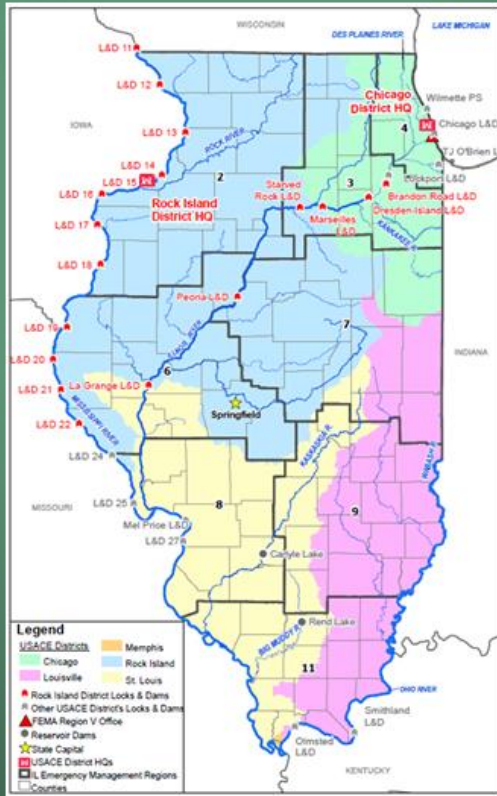
TERRA MCPARLAND, P.E., CFM
IL Department of Natural Resources –
Office of Water Resources

MATTHEW JONES
US Army Corps of Engineers –
St. Louis District



2023

PRESENTATION OVERVIEW



USACE Silver Jackets Overview

- Program History
- Summary

Completed Projects

- Structures at Flood Risk (SAFR)
- Copperas Creek, Sid Simpson (Rock Island)
- Dogtooth Bend, Big Five Levee Plan, Lower Wood River Plan (St. Louis)

Ongoing and Future Projects

SILVER JACKETS ?

No single agency has all the answers, but leveraging multiple programs and perspectives can provide a cohesive solution

- Started in 2006
- Teams in All States
- Project Focus
 - Flood Hazard
 - Risk Communication
- Multi-Agency Collaboration
 - Technical Expertise
 - Share Data
 - Optimize Funding
 - Reduces Redundant Work
- USACE provides Annual Funding
- Selective Proposal Process



<https://silverjackets.nfrmp.us/>

SILVER JACKETS PARTNERS

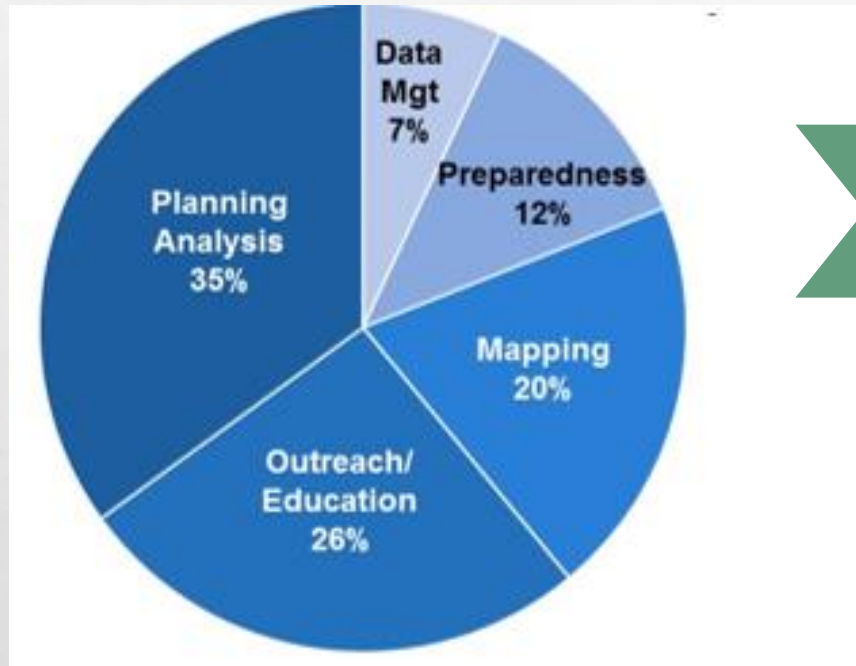


I ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE



SILVER JACKETS SUMMARY

Goal: Through interagency action, progress from risk assessment and awareness to risk reduction or management



Project Types (2011-2018)

**365
projects**

**Raise Flood Risk
Awareness**

25% projects

**Prompt flood
risk action**

41% projects

**Reduce or
manage flood
risk**

32% projects

Non-structural techniques:

- Relocation
- Acquisition
- Flood proofing
- Flood preparedness/warning/response
- Public education

- SILVER JACKETS HOME
- STATE TEAMS
- RESOURCES
- CONTACT

FRM Buzz Newsletters



Risk Communication Resources



Silver Jackets Webinars



Nonstructural Interagency Efforts



Federal FRM Resources Web Tool



Training Seminars and Workshops



Silver Jackets

Learning from History: How a Multi-Agency Silver Jackets Team Conducted a Successful Outreach Campaign Around Hurricane Agnes

Silver Jackets Webinar
September 28, 2022

Stacey Underwood
Silver Jackets Coordinator
U.S. Army Corps of Engineers
Baltimore District

Maggie Dunn
Outreach Coordinator
Federal Emergency Management Agency
Region 3

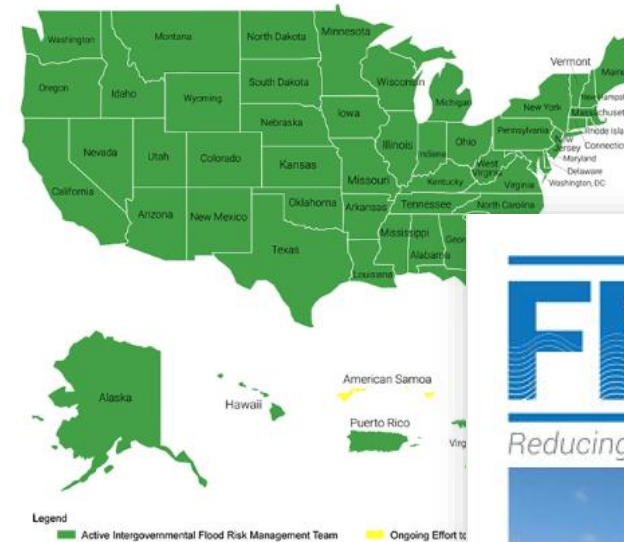
Rob Shedd
Service Coordination Hydrologist
NWS/Middle Atlantic River
Forecast Center



Newsroom

- ☐ USACE Program and Flood Plain Management Services (FPMS) Webinar
- ☐ Flooding and Insurance Webinar

State Teams



A total of 54 intergovernmental flood risk management teams have been formed and are represented on the map in green.

Silver Jackets are Interagency Teams that Facilitate Collaborative Flood Risk Management and State Flood Risk Priorities

State-led Silver Jackets teams exist in all states and serve as a platform for bringing together multiple state, federal, and sometimes tribal partners to learn from one another and work together to address flood risk.

<https://www.iwr.usace.army.mil/Silver-Jackets/Resources/Newsletters/>

FRM BUZZ NEWSLETTER

Volume 5 No. 2 Sept. 2022

Reducing Flood Risk: Many Partners, One Team



Healthy Kansas Watersheds – the benefits of regenerative agricultural practices for reducing flood risks [p.10](#)

Changing leadership:
A welcome and a farewell
Christy Jones is the new USACE deputy chief, Office of Homeland Security and director of the National Flood Risk Management Program. [p.1](#)

New guide for risk reduction on alluvial fans benefits Utah communities
The Utah Silver Jackets' recently published guide detailing risk reduction on alluvial fans is proof that good things come in sets of three. [p.4](#)



WEBSITE/RESOURCES

NATIONWIDE PROJECTS

FRM Buzz Newsletters



Review current and past newsletters that share news for and by the flood risk management community, including Silver Jackets teams.

Silver Jackets Webinars



Browse recorded monthly Silver Jackets webinars, sharing Silver Jackets teams' success stories and overviews of agency programs and resources.

Risk Communication Resources



Download resources that focus on risk communication to reach socially vulnerable populations, including a risk communication principles guide, annotated bibliography, and a series of worksheets to apply the principles.

Federal Flood Risk Management Resources Web Tool



Search and filter a list of eleven Federal agency resources available to support flood risk management priorities and goals.

Interagency Nonstructural Flood Risk Management Efforts



Browse through a searchable table of interagency nonstructural flood risk management efforts completed collaboratively by state Silver Jackets teams.

Training Seminars and Workshops




The USACE National Flood Risk Management Program hosts interagency trainings and workshops to showcase and promote integrated and collaborative flood risk management efforts and solutions. Agendas and slide presentations from these efforts are available for download.

ADAPTATION AND RESILIENCE

Alaska Adaption Strategies for the Y-K Delta Region



Project Description

is affecting the Yukon-Kuskokwim (Y-K) Delta, from fish and to access to subsistence foods, to the stability of the ground ways and buildings with changes likely to continue and intensify designed to help build Y-K Delta resources and to depend on them by sionally-driven group of munity leaders, regional individuals, researchers ource managers to ical adaptation strategies Aug 2019, Bethel Alaska; la Report




Flood Risk Reduction Outcomes

- Identified Steering Committee and developed practical adaptation actions to respond and mitigate for current and future changes regarding community infrastructure, subsistence resources, harvest practices and trails and transportation
- Prioritized actions and identified 1-3 year project timelines; identified key stakeholders and funding sources per item and approximate cost efforts and outcomes of implementation
- Phase 2 Interagency Non-structural Proposal (tentative March 2020): Producing Education Material for FRM Response and Recovery and Youth Engagement in Community Flood Resiliency



Challenges Overcome / Continuing Challenges

re communities hievable scope in the 1 allotted munities to take an active role in ns ant parties were able to attend w and publishing of a multi- r level final report




Partners and Project Cost

| Agency | Investment |
|--------------------------|-------------------------------|
| Denali Commission | \$615K cash |
| NOAA NWS | \$20K in-kind |
| USACE | ~\$144K cash, returned ~\$20K |
| State of Alaska, SHMO | \$20K in-kind |
| Western Alaska LCC | \$90K cash |
| State of Alaska, RiskMAP | \$20K in-kind |
| TOTAL: | \$889K |

Successes/Best Practices

- Develop a better understanding and focus on actionable strategies (collaborative approach to identify and address environmental changes affecting people, cultural and natural resources in the Y-K Delta region)
- Identify specific threats and opportunities for sustaining natural and cultural resources for community resilience
- Effective communication with stakeholders and the ability to develop a regionally-driven group of tribal and community leaders



Point of Contact

Amber Metallo, SJ Coordinator and Planner
Alaska District

Kentucky City of Liberty Flood Mitiga

Project Description

- Perform an analysis of the recent flooding in Liberty, KY
- Develop some alternatives that local officials could implement
- Assist local officials with development of a community resilience plan

Challenges Overcome / Continuing Challenges

- Changing personnel and work reassignments was a challenge for USACE

Partners and Project Cost

| Agency | Investment |
|---|----------------|
| Kentucky Division of Water | \$35K in-kind |
| Kentucky Division of Geographic Information | \$134K in-kind |
| City of Liberty | \$15K in-kind |
| USACE | \$70K |
| TOTAL: | \$254K |

Local busi understand

- Instead of wanted to planning ar
- Local lead better com with the KY modificatio Section 205

Silver Jackets / Resources / Interagency Nonstructural Efforts

- SILVER JACKETS HOME
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Interagency Nonstructural Flood Risk Management Efforts

Silver Jackets teams have completed hundreds of interagency nonstructural flood risk management efforts, with each agency using its own funds and programs to contribute to the effort. Below is a searchable list of efforts in progress or completed since 2011. Poster summaries of a representative sample of more recent interagency efforts are organized by State [pdf, 25.6 MB] and by Topic [pdf, 46.6 MB].

Browse records in that [Search](#) [Reset Search](#)

| State | Partners | Name | Description |
|-------|-------------------------------------|---|---|
| IL | USACE, State, Local | Illinois River Inundation Mapping and Risk Assessment | Develop structure based flood risk assessments for Illinois River communities to address the economic consequences of flood loss. This tool will empower communities to make data-driven decisions about mitigation strategies. |
| IL | FEMA, USACE, State | Coordination of Illinois Flood Risk Information Development, Utilization and Communication with the National Levee Database (NLD) | - |
| IL | FEMA, NOAA-NWS, USACE, State, Local | Mobile Information Collection Application IL Demonstration Project - Phase I | Establish a standard operating procedure (SOP) to provide the Illinois Emergency Management Agency (IEMA) and the Department of Natural Resources, Office of Water Resources (IDNR-OWR) personnel log-in access to MICA (mobile information collection application). Project will be able to identify lead times, evacuation plans, quantities, equipment, materials, and personnel to respond to a flood event thereby shifting limited resources from planning to implementation. |
| IL | FEMA, USACE, State, Local | Jersey County, Illinois Loss Avoidance Study | Develop Loss Avoidance Study to document the monetary and social benefits of strong floodplain management program. |
| IL | State, Local, USACE, NOAA | NWS Flood Stage and Flood Impacts Update Pilot | Update flood stage categories for Illinois River near Havana, IL and Illinois River at Peoria gages. The flood categories determine when community members receive warnings; and if warnings are issued too often, residents may not react when the forecast is anticipated to impact life safety. |

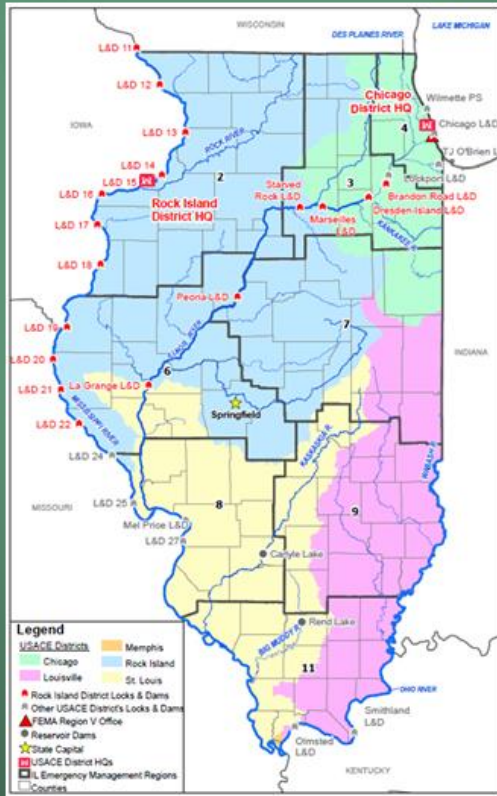
IL PROJECTS

| Yr | Partners | Project Name |
|----------|-------------------------------------|---|
| Pre FY16 | USACE, State, Local | Flood Response Map Book |
| Pre FY16 | FEMA, USACE, Local | Small Communities Flooding Operations Planning, (Barstow and Carbon Cliff, IL) |
| Pre FY16 | FEMA, NOAA NWS, USACE, State, Local | Mobile Information Collection Application IL Demonstration Project - Phase I |
| Pre FY16 | USACE, Local | Cal-Sag Channel Non-Structural Flood Risk Management Study Proposal |
| FY16 | FEMA, USACE, State, Local | Alexander County, Cairo, IL Risk Communication |
| FY16 | USACE, State, Local | Alexander County and Cairo, IL, Area Levee Breach Analysis for Risk and Evacuation Planning |
| FY16 | FEMA, USACE, State | Coordination of Illinois Flood Risk Information Development, Utilization and Communication with the National Levee Database (NLD) |
| FY16 | FEMA, NOAA NWS, USACE, State, Local | Mobile Information Collection Application - Phase II |
| FY16 | EPA, FEMA, USACE, State, Local | Helping Communities Get Rain Ready, Chicago Region |
| FY16 | USACE, State, Local | NEPA Fast-Track of Borrow Areas for Non-Federal Levees on the Upper Mississippi (FCCE) |
| FY17 | FEMA, USACE, State, Local | Flood Zone Alliance |
| FY17 | USACE, State, Local | City of Rock Island Structural Flood Damage Assessments |
| FY17 | USACE, Local | Flood Risk Preparedness Communication Rock Island Levee Breach Analysis |
| FY17 | FEMA, NOAA NWS, USACE, State | Mobile Information Collection Application Phase III |
| FY17 | USACE, State, Local | Des Plaines River Flood Inundation Mapping Analysis & Resilient Project Planning |

| Yr | Partners | Project Name |
|------|---|---|
| FY18 | FEMA, USACE, State, Local | Flood Risk Preparedness Sid Simpson Levee System |
| FY18 | USACE, State, Local | Rock Island Co. Structural Flood Damage Assessments |
| FY18 | FEMA, USACE, State, Local | Jersey County, Illinois Loss Avoidance Study |
| FY19 | USACE, State, Local | Levee Breach Preparedness Sid Simpson Levee System |
| FY19 | USACE, State, Local | Middle Mississippi Flood Prone Structure Inventory, Ph 1 |
| FY19 | USACE, State, Local, University, Wood River Drainage and Levee District | Lower Wood River Levee Evacuation & Emergency Action Plan |
| FY19 | USACE, State, University, Local | IDNR UMR Inundation Mapping and Risk Assessment Project |
| FY21 | USACE, State, Local | Illinois River Inundation Mapping and Risk Assessment |
| FY21 | EPA, USACE, State | Copperas Creek-Rock Island County Watershed Risk Assessment |
| FY21 | FEMA, USACE, State, Local | Big Five Levee System Emergency and Evacuation Plan |
| FY21 | USACE, State, Local | Middle Mississippi Floodprone Structure Inventory-Phase 2 |
| FY22 | USACE, State, USDA, Local | Dogtooth Bend Nonstructural Mitigation Plan |
| FY22 | USACE, State, Local | Middle Fork Structure Flood Damage Assessment |

<http://silverjackets.nfrmp.us/Resources/Interagency-Projects>

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Ongoing and Future Projects

FLOODPRONE STRUCTURE RISK ASSESSMENT



Define Hazard

Studies

LiDAR

Depth Grids



Define Assets

Building Inventory

Assessor's data

Survey data



Estimate Losses



SAFR

Structures at Flood Risk

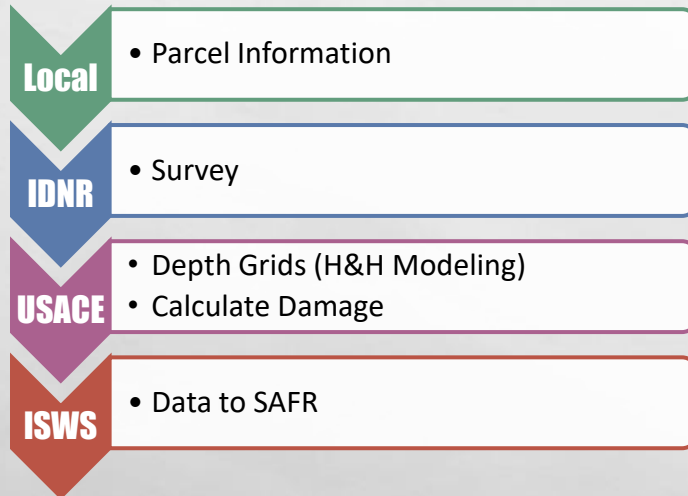
- ▶ Interactive Web Viewer (ISWS Developed)
 - ▶ Structure Inventory
 - ▶ Flooding and Damages Information
 - ▶ Downloadable Information



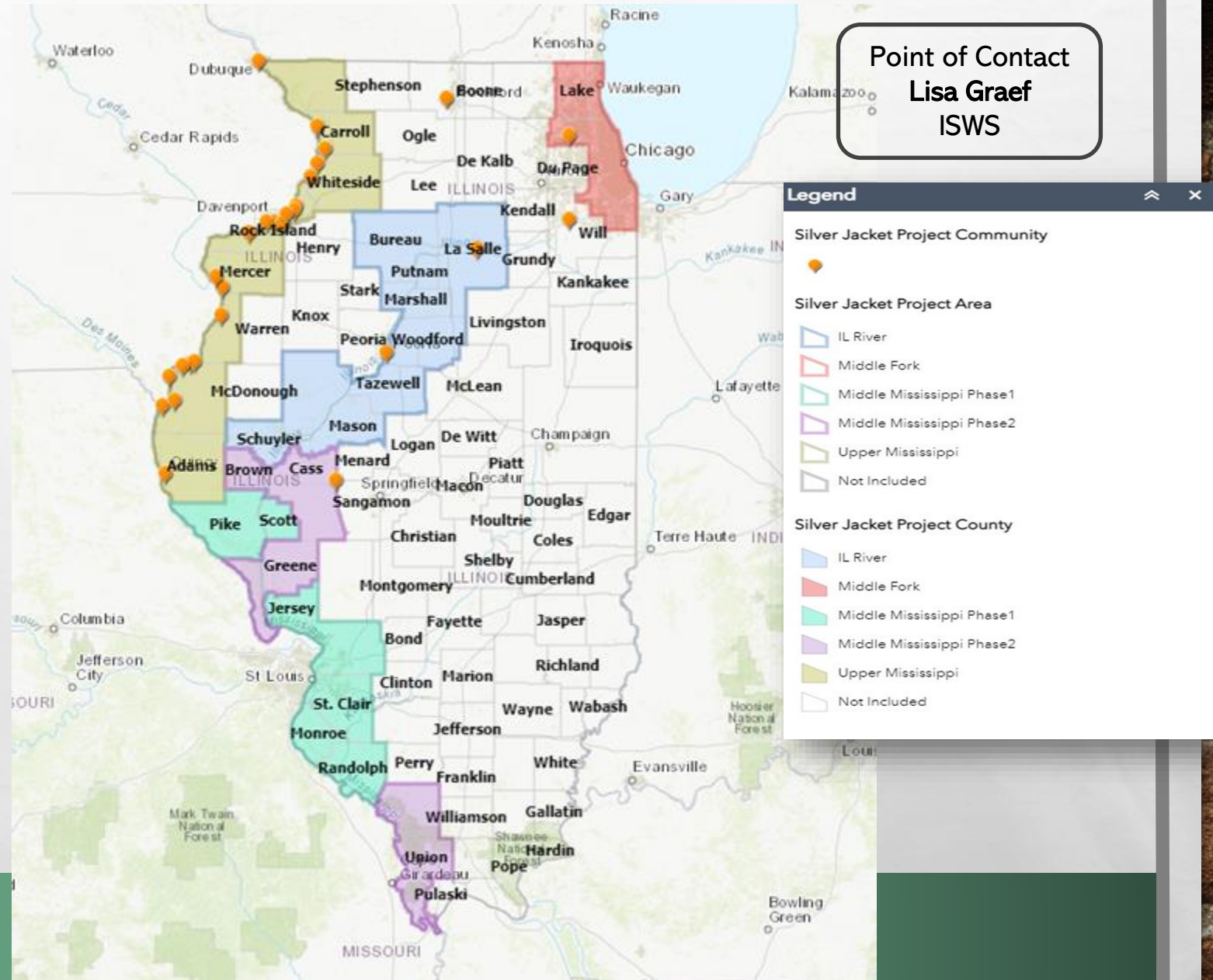
Communities Make Informed Decisions!

SAFR PROJECT STATUS

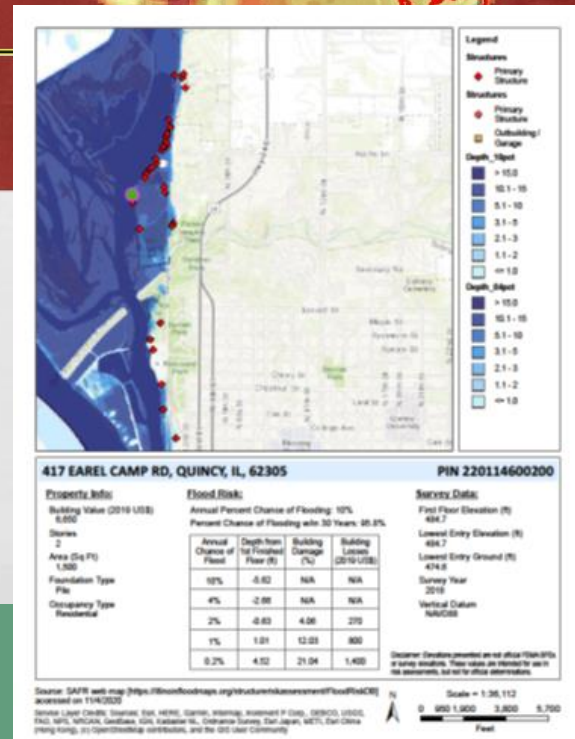
1. Upper MS River – Rock Island
2. Middle MS River Ph 1 – St. Louis
3. Middle MS River Ph 2 – St. Louis
4. Illinois River – Rock Island
5. Middle Fork – Chicago

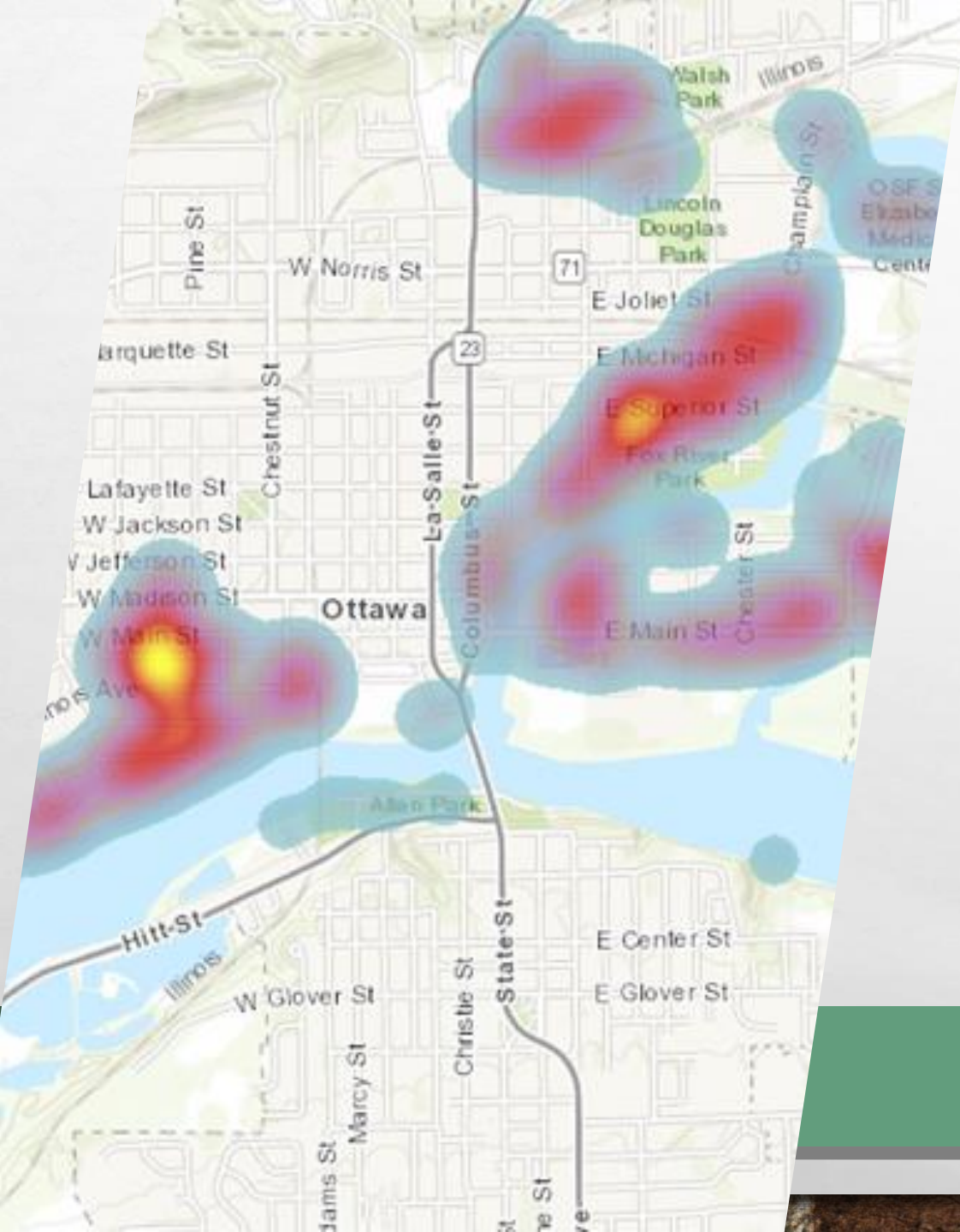


Teamwork



- ▶ Economic Losses
 - ▶ Buildings
 - ▶ Contents
 - ▶ Inventory
- ▶ Mapping Results
 - ▶ % Annual Chance of Flooding
 - ▶ % Chance of Flooding over a 30-year period
 - ▶ Inundation Maps
- ▶ Reports
 - ▶ Individual or community wide
 - ▶ Downloadable Data





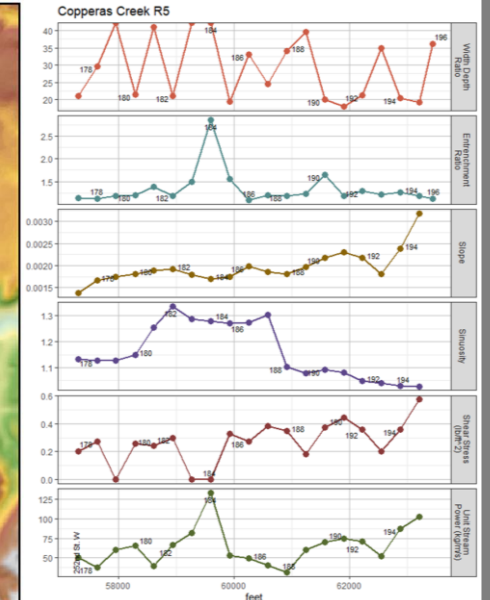
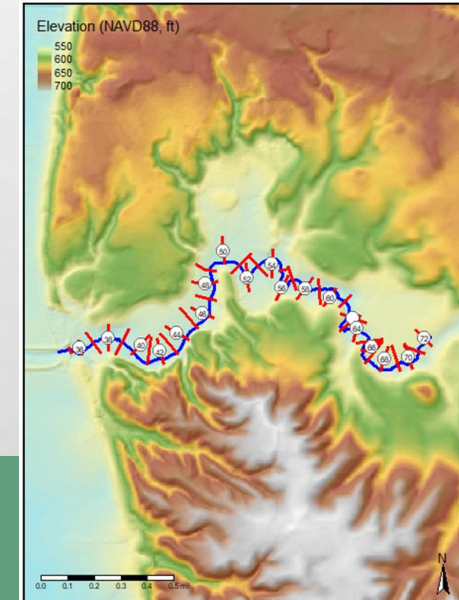
APPLICATION OF DATA

- Target Mitigation Efforts
- Identify and quantify potential losses
- Hot Spot Analysis
- Prioritize Buyouts
- Hazard Mitigation Plans
- Community Flood Mitigation Planning
- Future Land Use Planning

COPPERAS CREEK

Watershed Risk Assessment

- **Sponsor: Rock Island County Soil and Water Conservation District; 100 sq. mile Copperas Creek watershed**
- Developed detailed identification and mapping of culverts, bridges, and roadways to identify the most susceptible infrastructure based on the geomorphic analysis.
- Project provided quality planning data for possible mitigation and emergency management preparation. Maps identified high risk areas based on potential for geomorphic channel changes affecting the existing infrastructure.
- Assisted mitigation efforts by providing State, county, and local community officials access to enhanced geomorphic channel data.
- Copperas Creek channel locations that affect public egress and regress to areas within the watershed.
- County and Townships is supporting discussions on long-term non-structural and structural mitigation strategies.

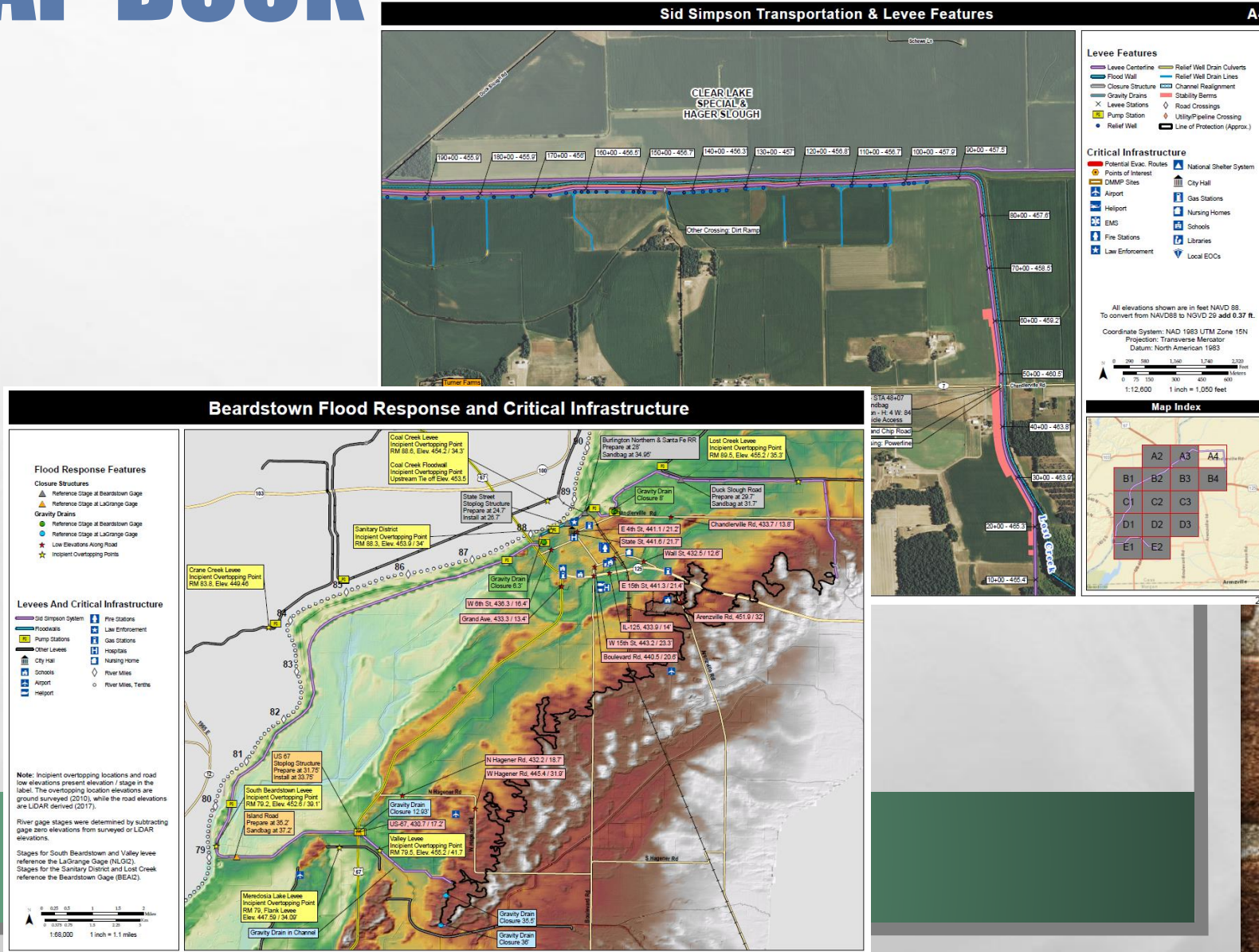


Point of Contact
Chris Haring
USACE Rock Island District

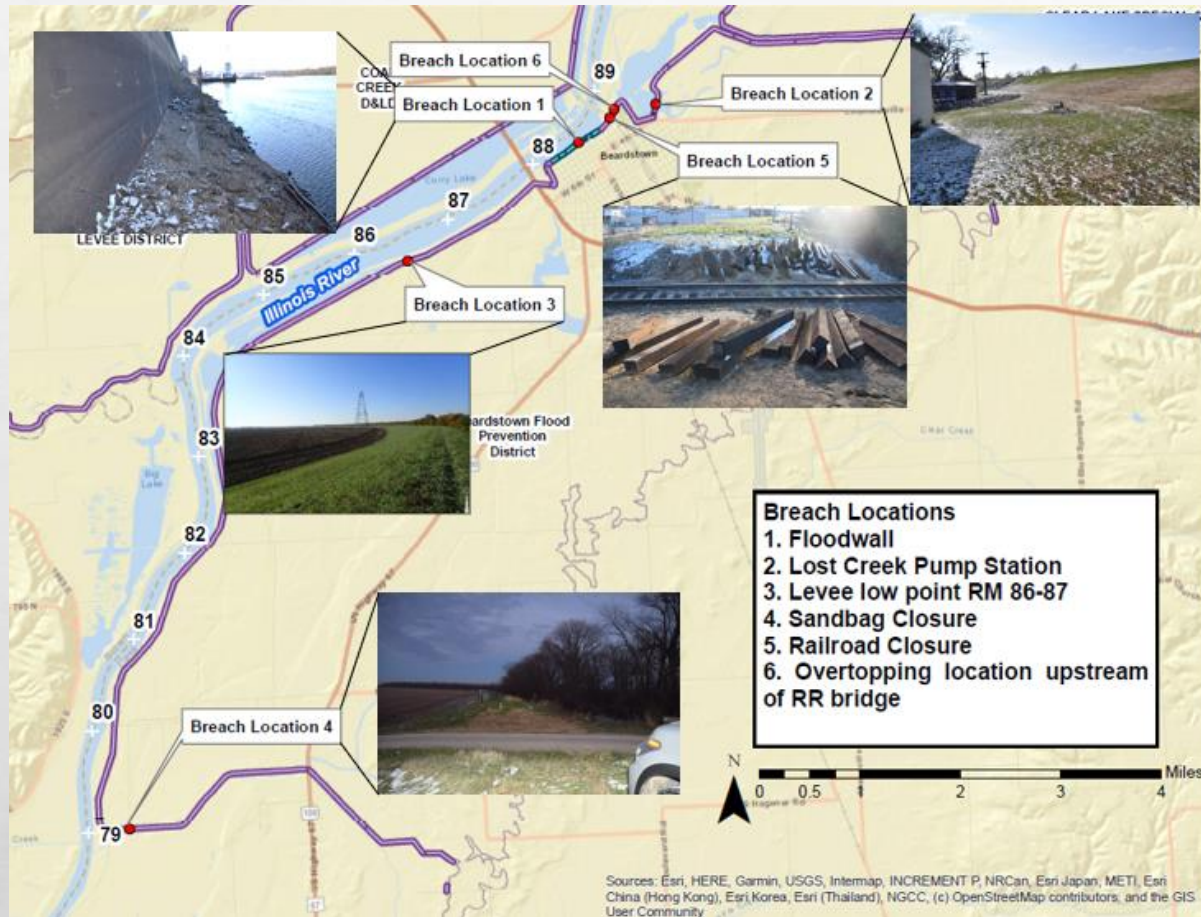
SID SIMPSON MAP BOOK

- Quick flood response reference guide for technical system information
- Shared resource for stakeholders, risk communication tool, digital format
- Template for other systems
- Information included in Map Book:
 - Project features (levees, floodwalls, relief wells, etc.)
 - Critical infrastructure locations
 - Elevation data
 - Contact list of local officials
- Partners: IEMA, IDNR, Sid Simpson Levee District

Point of Contact
Elizabeth Bruns
USACE Rock Island District



SID SIMPSON LEVEE BREACH PREPAREDNESS



- Hydraulic modeling and levee breach inundation mapping
- The study simulated levee breaches at different locations
- Leveraged relationships built during Sid Simpson Map Book Project.
- Workshop by the community has educated the public:
 - flood risk awareness
 - life safety
 - resiliency benefits now and into the future

- Successes
 - SJ study assisted in providing evacuation information to ensure life safety and reduce property loss.
 - Levee System and County are partnering with IL DNR to update the Cass County Hazard Mitigation Plan based on SJ project deliverable products.
- Challenges Overcome
 - Issues with adequately modeling breaches at closures due to breach parameters and hydrologic loadings selected

Breach 5
Water over W 6th Street
blocking access to HWY 67
4 hours

Depth (ft)

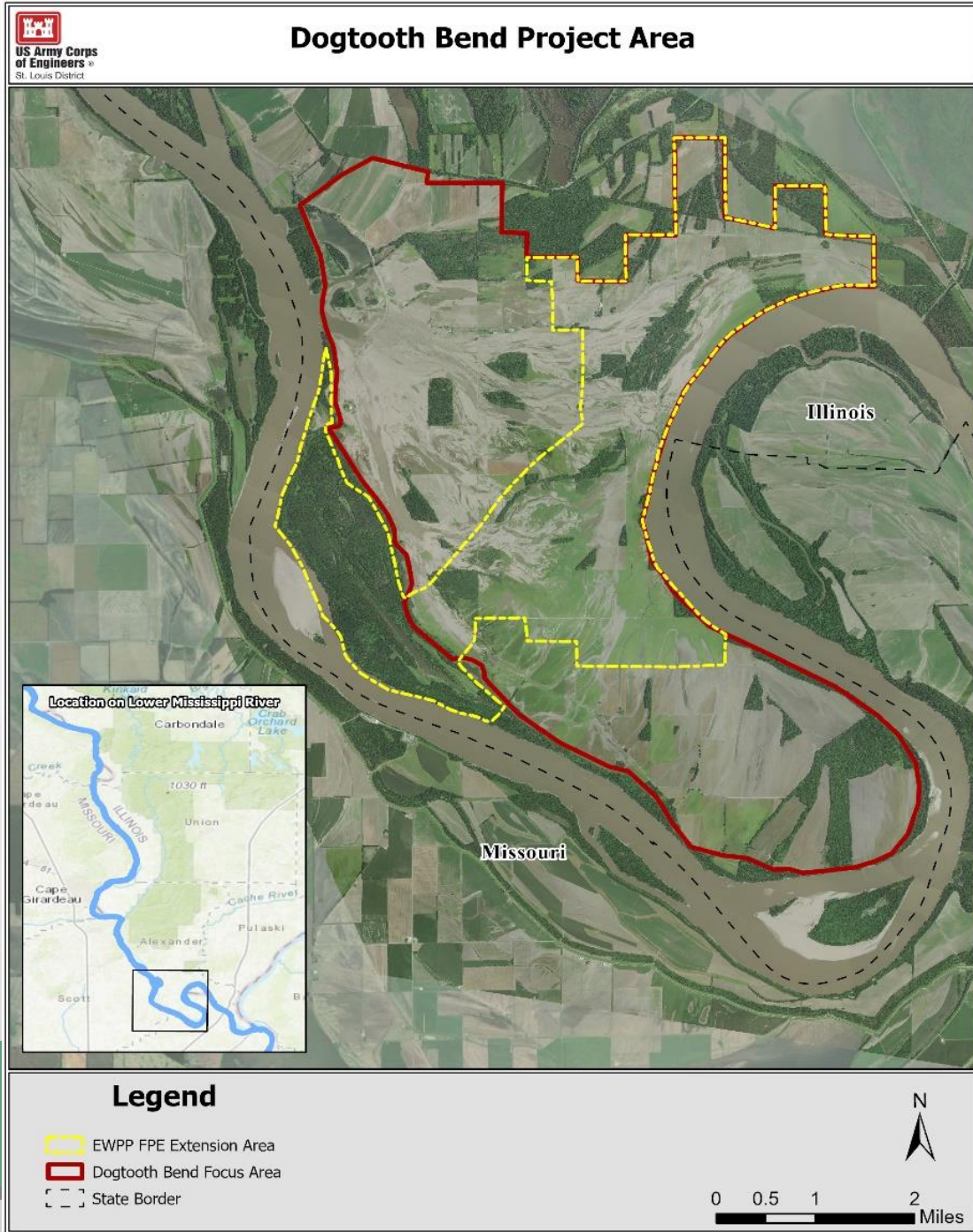
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- 2-4
- 4-6
- 6-8
- 8-10
- >10

DOGTOOTH BEND

Non-Structural Mitigation Plan FY22 SJ (Interagency Non-structural) Project

- Non-fed levee breach repair could not be economically justified.
- Approximately 17K acres of farmland and 53 structures.
- Considered various non-structural mitigation techniques (structure acquisition, floodproofing, elevating and water diversion)
- Water diversion techniques (various alignments and placement options, potential impacts)
- Floodplain Restoration (\$38M NRCS)
- Flood-prone Structure Inventory
- Potential future Nonstructural project evaluation under USACE PL84-99 Program

Point of Contact
Shawn Sullivan
USACE St. Louis District



LOWER WOOD RIVER

Emergency Action Plan and Evacuation Plan (March 2021)

- Roles and Responsibilities of Partners
- Outlined preparedness and response actions
- Inundation scenarios and maps (with breach)
- Activation sequences for gravity drains, pump stations, and closure structures.
- Levee Patrol Checklists
- Emergency Service Announcements
- Resource Contacts with names and phone numbers
- Sandbagging Techniques
- Supplement to Madison County Emergency Operations Plan (Annex F)
- Evacuation Routes and Procedures (LifeSim Modeling)
- Destination Locations

Point of Contact
Hal Graef
USACE St. Louis District



BIG FIVE

Levee System Emergency and Evacuation Plan (July 2022)

- Flood Monitoring
- Evacuation Simulations
- Life Loss Scenarios and Modeling (areas of concern)
- Critical Infrastructure impacts (school system)
- Student Outreach to increase flood awareness
- Public meetings
- Tabletop Exercise with Partners/Officials

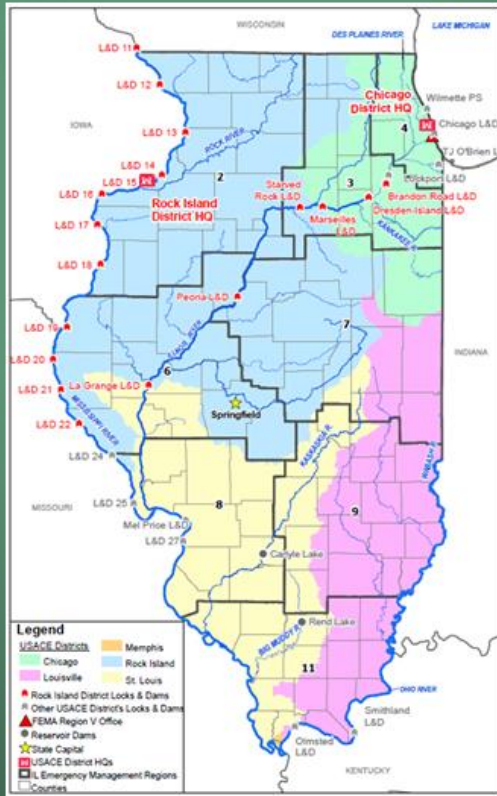
Table 2 – Population and Property Risk

| | Under 65 | Over 65 | Total |
|------------|----------|---------|-------|
| Daytime | 683 | 287 | 970 |
| Nighttime | 1,167 | 290 | 1,457 |
| Structures | | | 460 |

Point of Contact
Hal Graef
USACE Rock Island District



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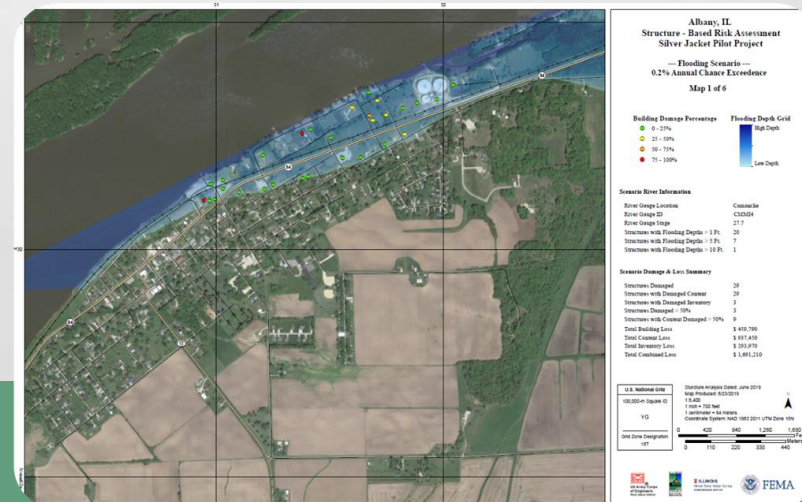
Ongoing and Future Projects

ONGOING AND FUTURE PROJECTS

- **FY23** (Started Oct 2022)
 - E. Peoria SAFR (MVR)
 - E. Peoria Map book (MVR)
 - IL River Gauges (MVR)
- **FY24** (Apply 3/2023, Approved 7/2023, Starts 10/2023)
 - Des Plaines SAFR (LRC)
 - Rock River SAFR (MVR)
 - Middle MS Ph 3 SAFR (MVS)
 - SAFR Roadshow (MVR, MVS, LRC)

Note: Federal FY = Oct 1 to Sept 30

- Future
 - Fox, Cache SAFR
 - Urban Flood Warning Systems
 - Ice Jam Application
 - **Your Project Here!**





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CAP/FPMS/PAS/SJ Program
Manager

