RiskMAP
Increasing Resilience Together

Rock River

Rock River and Tributaries Flood Risk Review Meeting
Henry, Rock Island and Whiteside Counties

June 8th and 10th, 2021

FEMA

ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

CTP COOPERATING TECHNICAL PARTNERS

Welcome, Greetings and Optimizing our time

CTP COOPERATING TECHNICAL PARTNERS

- **First, a personal welcome**
- **“Hi My Name is:_____ and I represent _____”**
- **A meeting in two parts**
- **Using the “Chat” window**
- **Break out groups for real dialog, questions and specific review**

Pre-meeting survey

CTP COOPERATING TECHNICAL PARTNERS

Introductions

CTP COOPERATING TECHNICAL PARTNERS

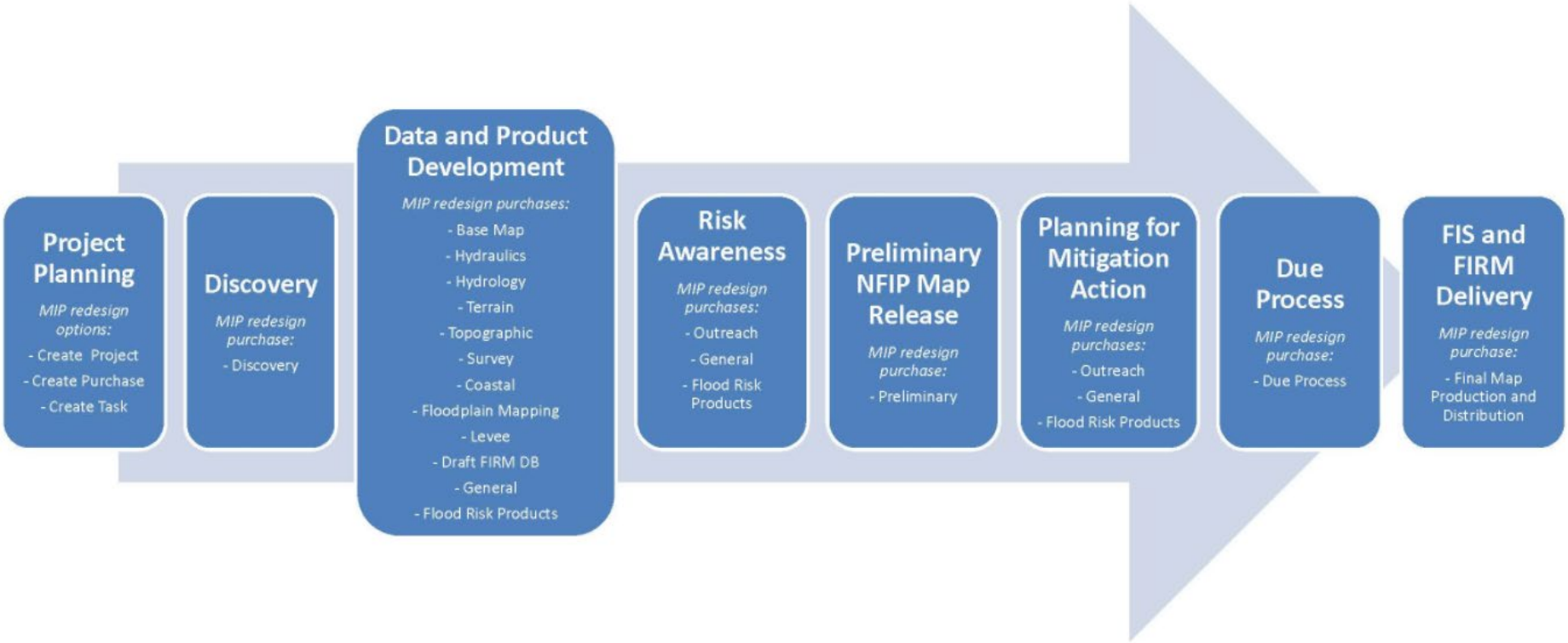
- **ISWS**
  - Glenn Heistand
  - Mary Richardson
  - Brian Chaille
  - James Powell
  - Diana Davisson
  - Ryan Meekma
  - Zoe Zaloudek
  - Marni Law
- **FEMA, Region 5**
  - Ken Hinterlong
  - John Wethington
  - Ashley Reimann
- **FEMA, Regional Service Center (RSC)**
  - Roger Denick
  - Stephanie Nurre
- **IDNR-OWR**
  - Loren Wobig
  - Steve Altman
  - Liana Winsauer
  - Marilyn Sucoe
- **USACE**
  - Kaileigh Scott
  - John Burant

Goals

- **Collaborate to continue to build resilience and develop secure assets along and including the Rock River. Please comment on the webmap!**
- **Review and understand the current and updated flood hazard assessment and floodway analysis**
- **Dialog with community officials and floodplain managers on their comments and technical data**
- **Develop a path forward**

FEMA National Objectives

CTP COOPERATING TECHNICAL PARTNERS



FEMA

ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

RiskMAP
Increasing Resilience Together

Agenda

CTP COOPERATING TECHNICAL PARTNERS

Part 1

Welcome and Introduction

Motivated

Project History, Methodology and Results

Propose a path forward

Break

Part 2

Breakout in Topical Dialog Groups

Levee Discussion

Floodway and Technical Discussion

Using the Web Map to Make Comments

Topic of Your Choice?

CTP COOPERATING TECHNICAL PARTNERS

Motivated

Motivated

CTP COOPERATING TECHNICAL PARTNERS

QCFRA

Quad Cities Flood Resiliency Alliance

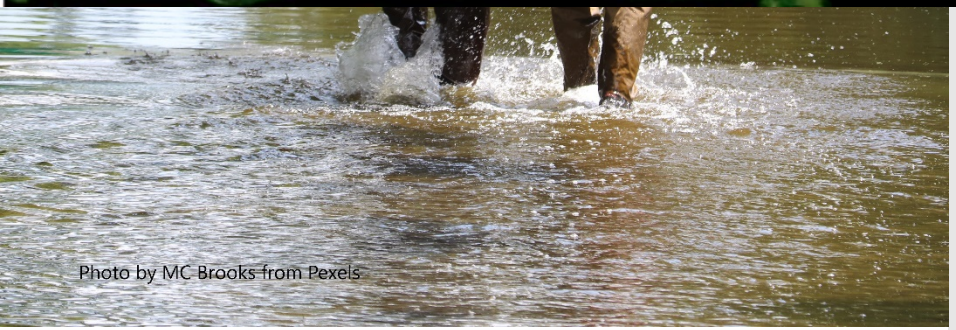
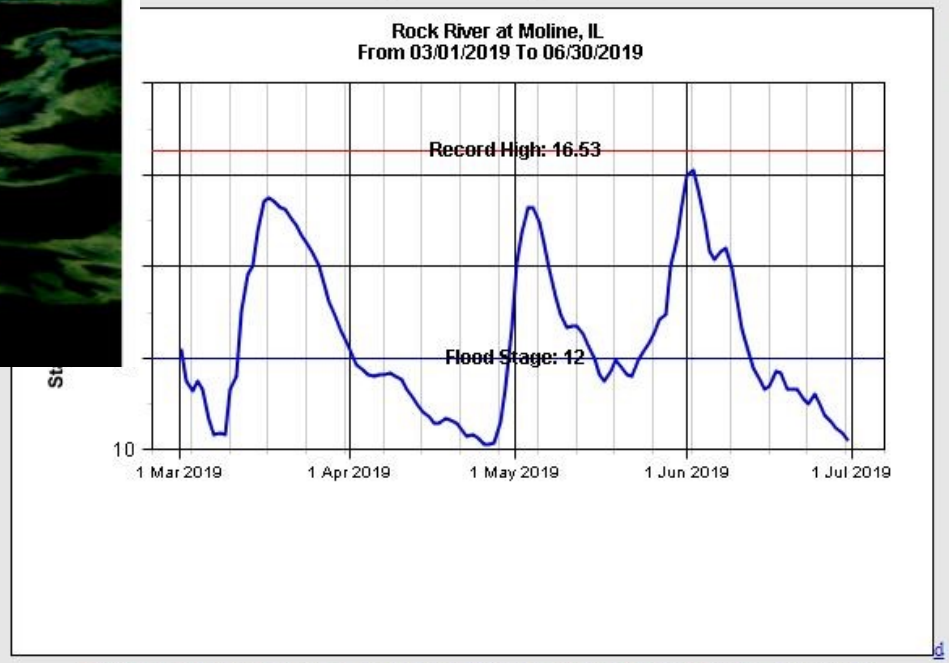


Photo by MC Brooks from Pexels



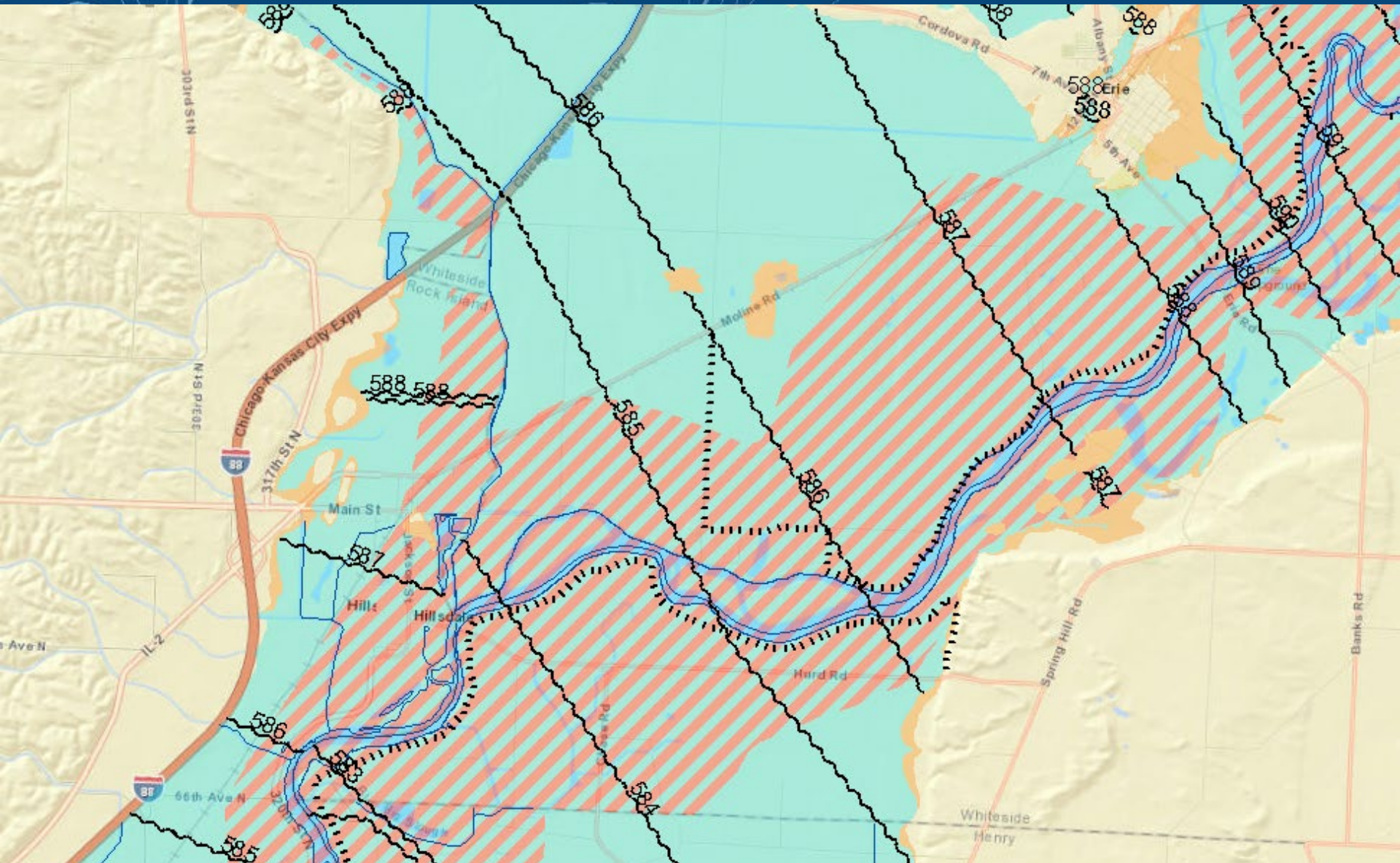
FEMA

ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

RiskMAP
Increasing Resilience Together

Erie/Hillsdale Effective FIRM

CTP COOPERATING TECHNICAL PARTNERS



Special Flood Hazard Area

CTP COOPERATING TECHNICAL PARTNERS

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.

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.

Floodway and Storage

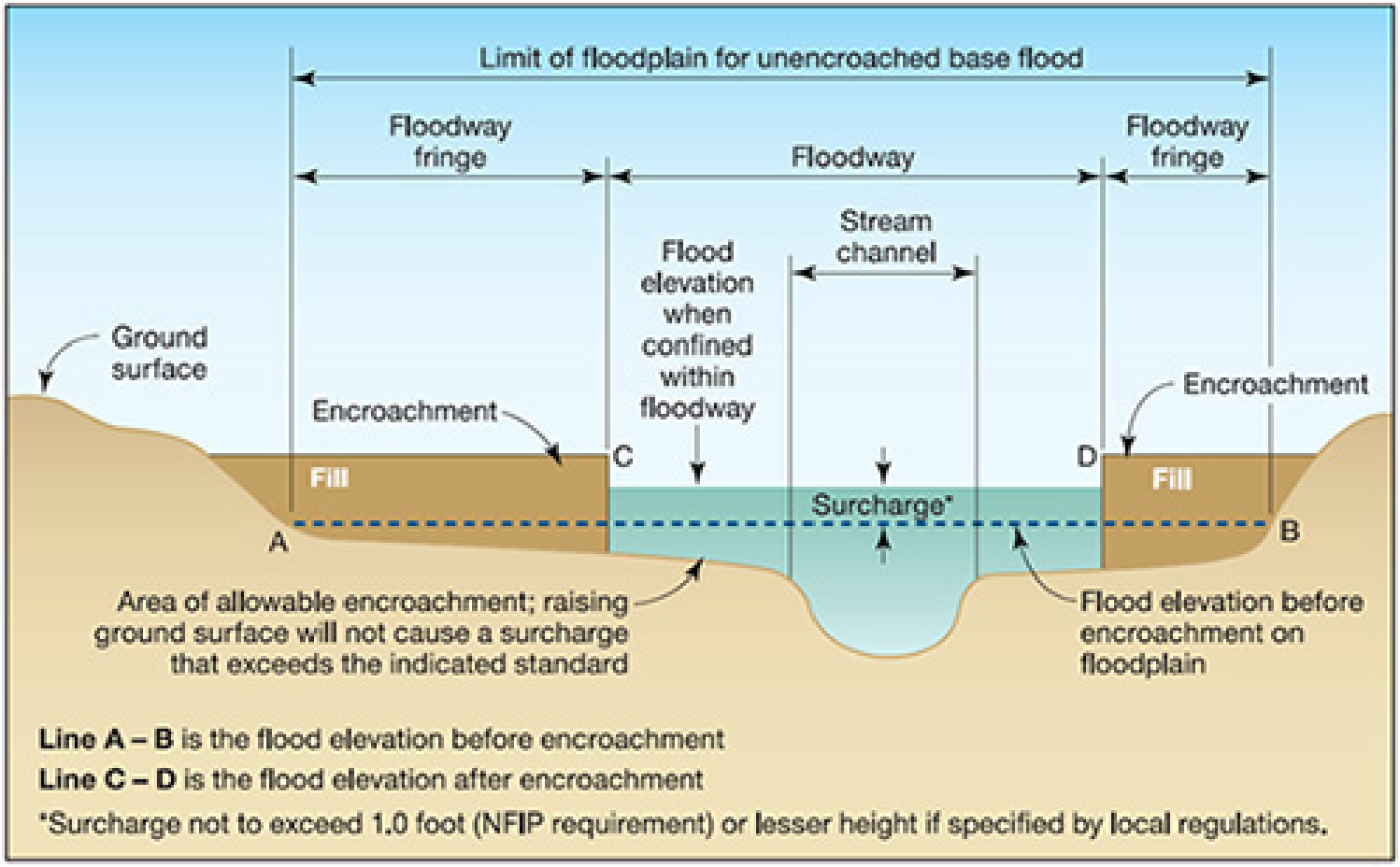


Figure 2-3. Typical riverine floodplain cross section

Photo by Lisa Wall on Unsplash

CTP COOPERATING TECHNICAL PARTNERS

Project History, Methodology and Results

History - Rock River Floodplain Analysis (Rock Island, Henry and Whiteside County)

COOPERATING TECHNICAL PARTNERS

2009
Field Visit

2011
Flood Risk Review

2012
OWR submittal with revisions based on FRR data

2014
OWR submittal with unsteady state floodway

2014
OWR approval of hydrology

2018-19
Re-boot: Zone A Tributaries OWR submittal revised with Added Data

2020
IDNR-OWR Concurrence + Meredosia + Zone A Tributaries

2021
Flood Risk Review

FEMA

ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

RiskMAP
Increasing Resilience Together

2021 Flood Risk Review of FFY17 FEMA Rock River Projects

CTP COOPERATING TECHNICAL PARTNERS

- Rock River Mainstem Zone AE & Floodway Outreach
- Meredosia Ditch Hydraulic Analysis
- Rock River Watershed Zone A Analysis

2021 Flood Risk Review of FFY17 FEMA Rock River Projects

CTP COOPERATING TECHNICAL PARTNERS

- **Rock River Mainstem Zone AE & Floodway Outreach**
- Meredosia Ditch Hydraulic Analysis
- Rock River Watershed Zone A Analysis

Rock River – 2014 & 2019 Analysis

CTP COOPERATING TECHNICAL PARTNERS

2014

OWR submittal with unsteady state floodway

2018-19 Re-boot: Zone A Tributaries OWR submittal revised with Added Data

- **Stream gage based hydrologic analysis of observed records of 89 to 55 years, plus HEC-HMS analysis to verify and fill in, ISWS**
- **Unsteady hydraulic HEC-RAS model, USACE**
- **Model calibration: very close agreement with the 2002 event**
- **Two profiles (natural valley and constricted) to represent risk at levees and allow for calibration of historical events**
- **Unsteady state floodway - including floodway in storage areas based on volume**
- **Additional data: 50 acres filled at I-80 & I-88 and a BNSF siding built since 2018.**

FEMA

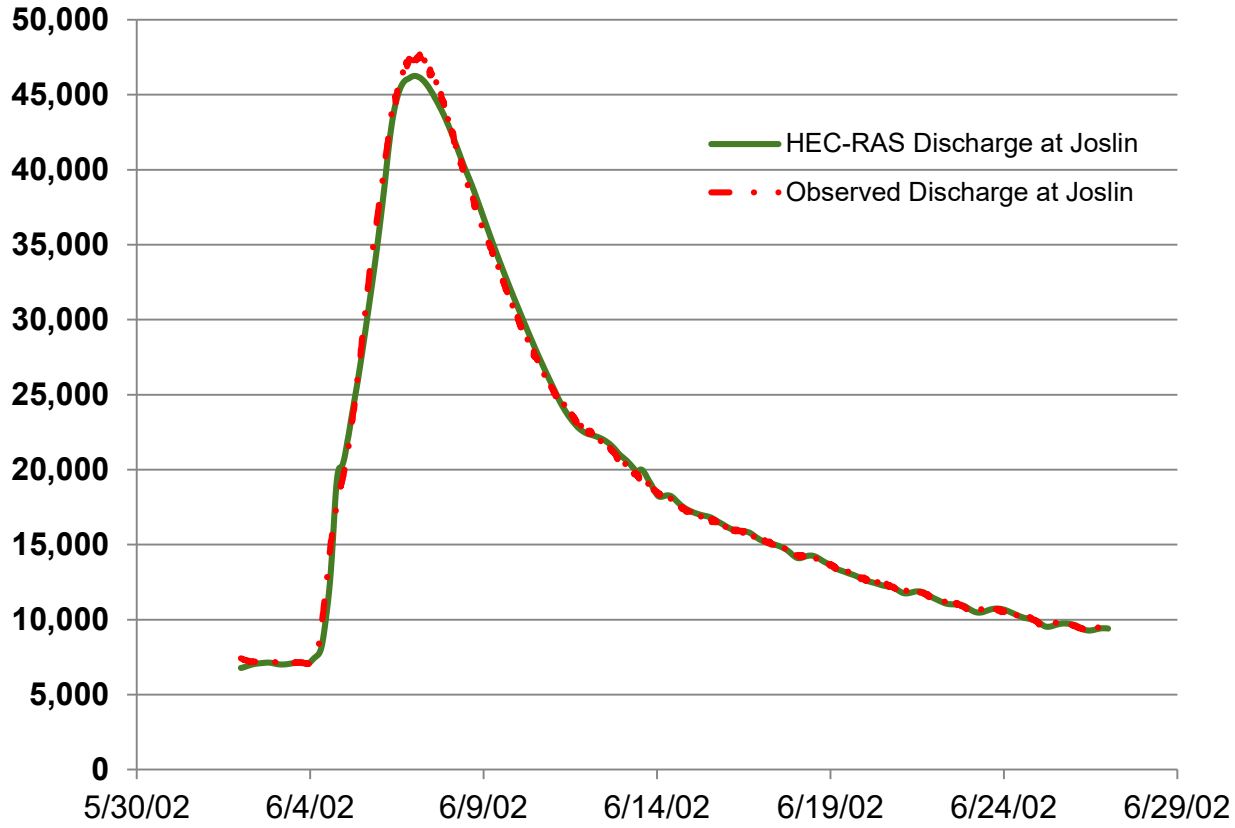
ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

RiskMAP
Increasing Resilience Together

Rock River Hydrology

CTP COOPERATING TECHNICAL PARTNERS

2002 Calibration Discharge Hydrograph Comparison



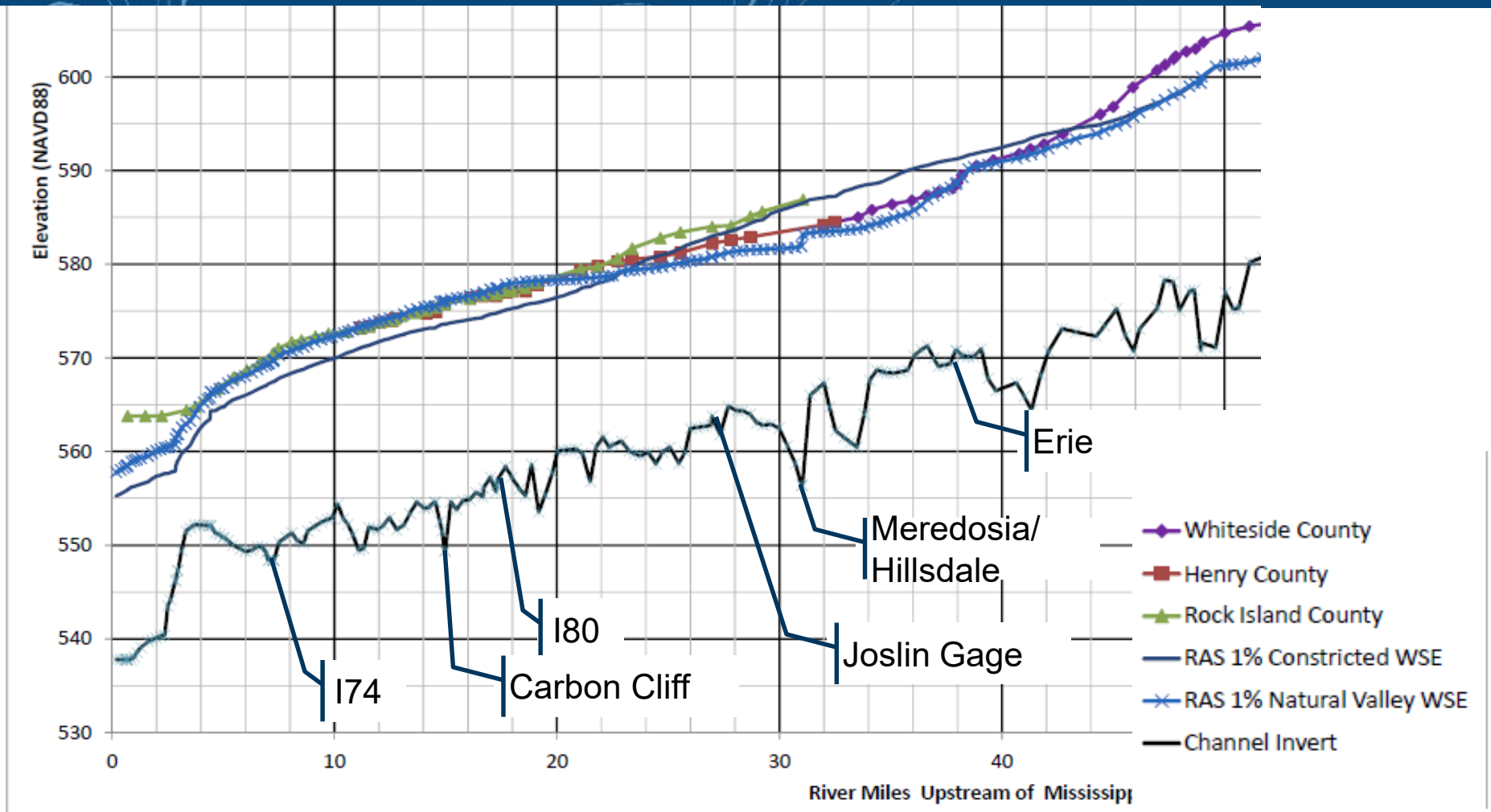
FEMA

ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

RiskMAP
Increasing Resilience Together

2014 Proposed Floodplain

CTP COOPERATING TECHNICAL PARTNERS



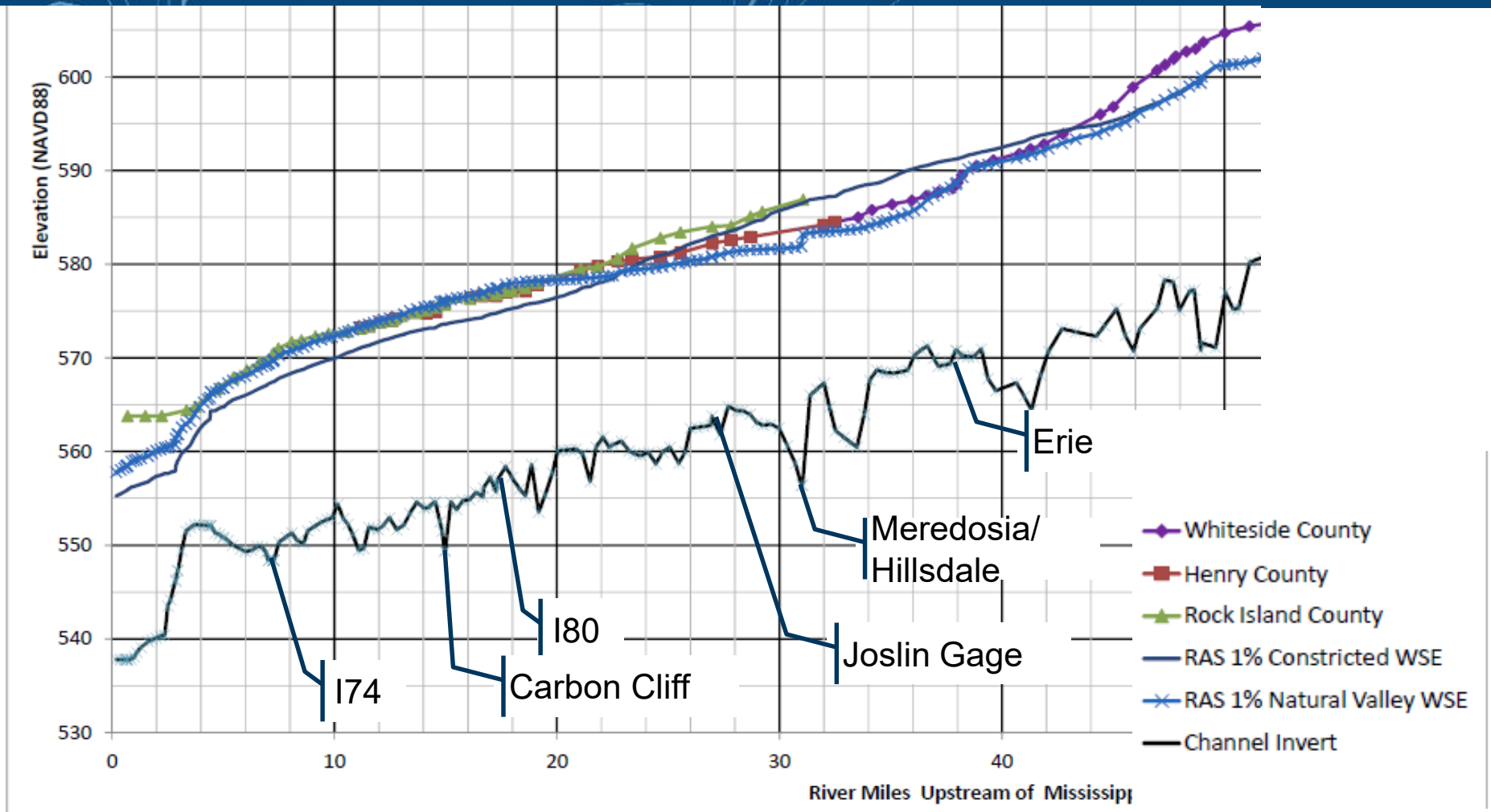
FEMA

ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

RiskMAP
Increasing Resilience Together

2014 Proposed Floodplain

CTP COOPERATING TECHNICAL PARTNERS



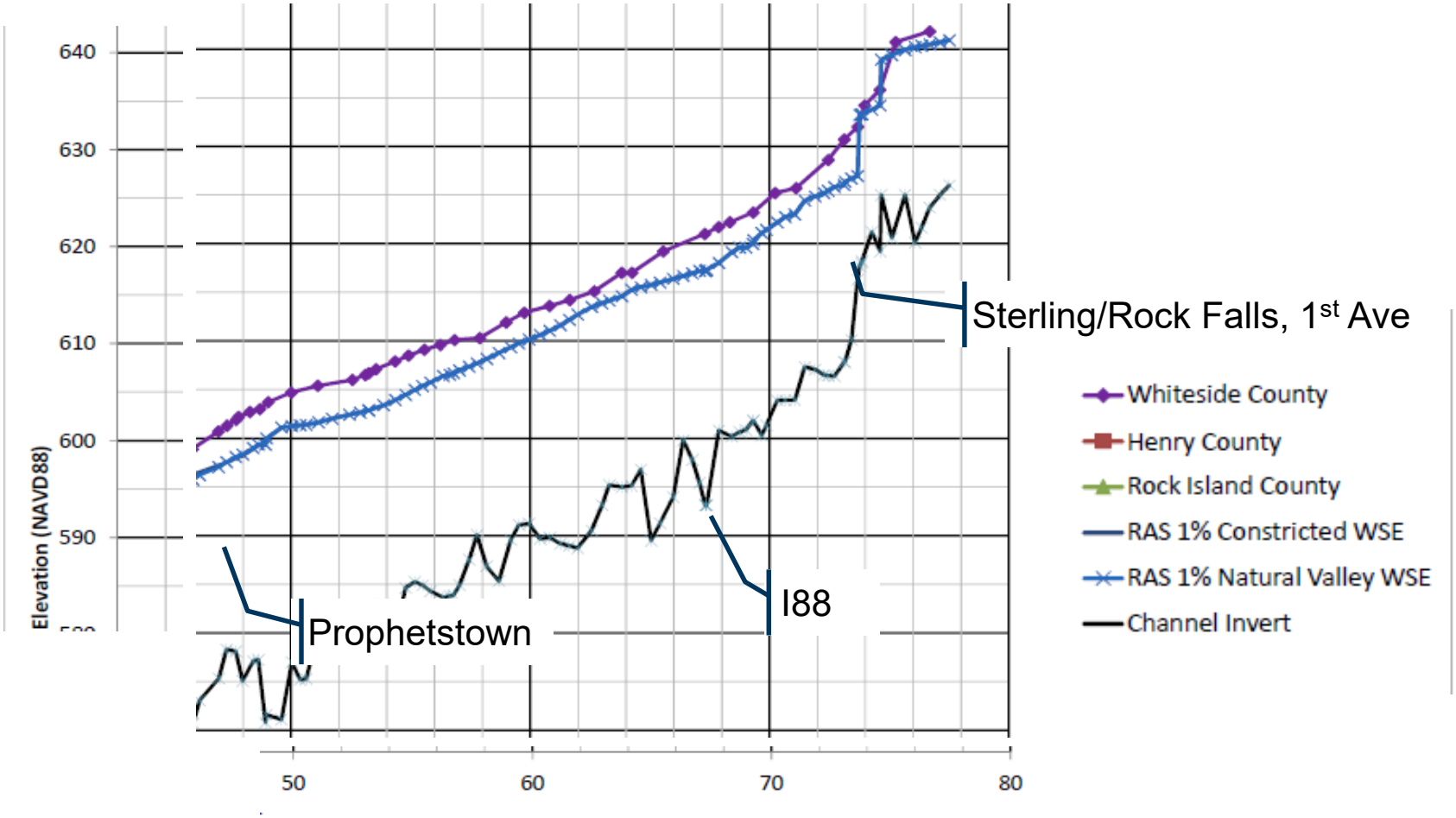
FEMA

ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

RiskMAP
Increasing Resilience Together

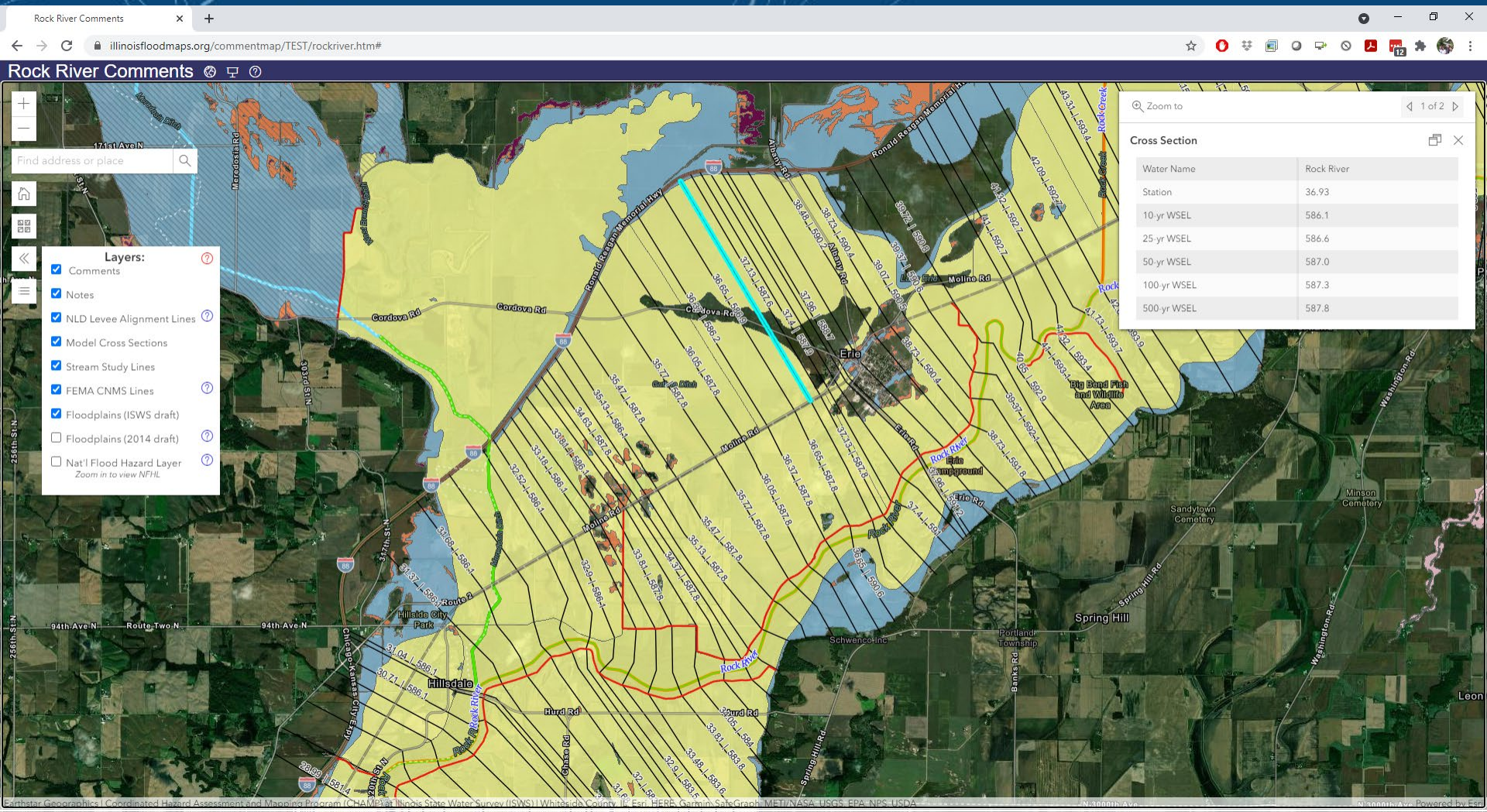
2014 Proposed Floodplain

CTP COOPERATING TECHNICAL PARTNERS



Natural Valley and Constricted Scenarios: Proposed BFE's

CTP COOPERATING TECHNICAL PARTNERS



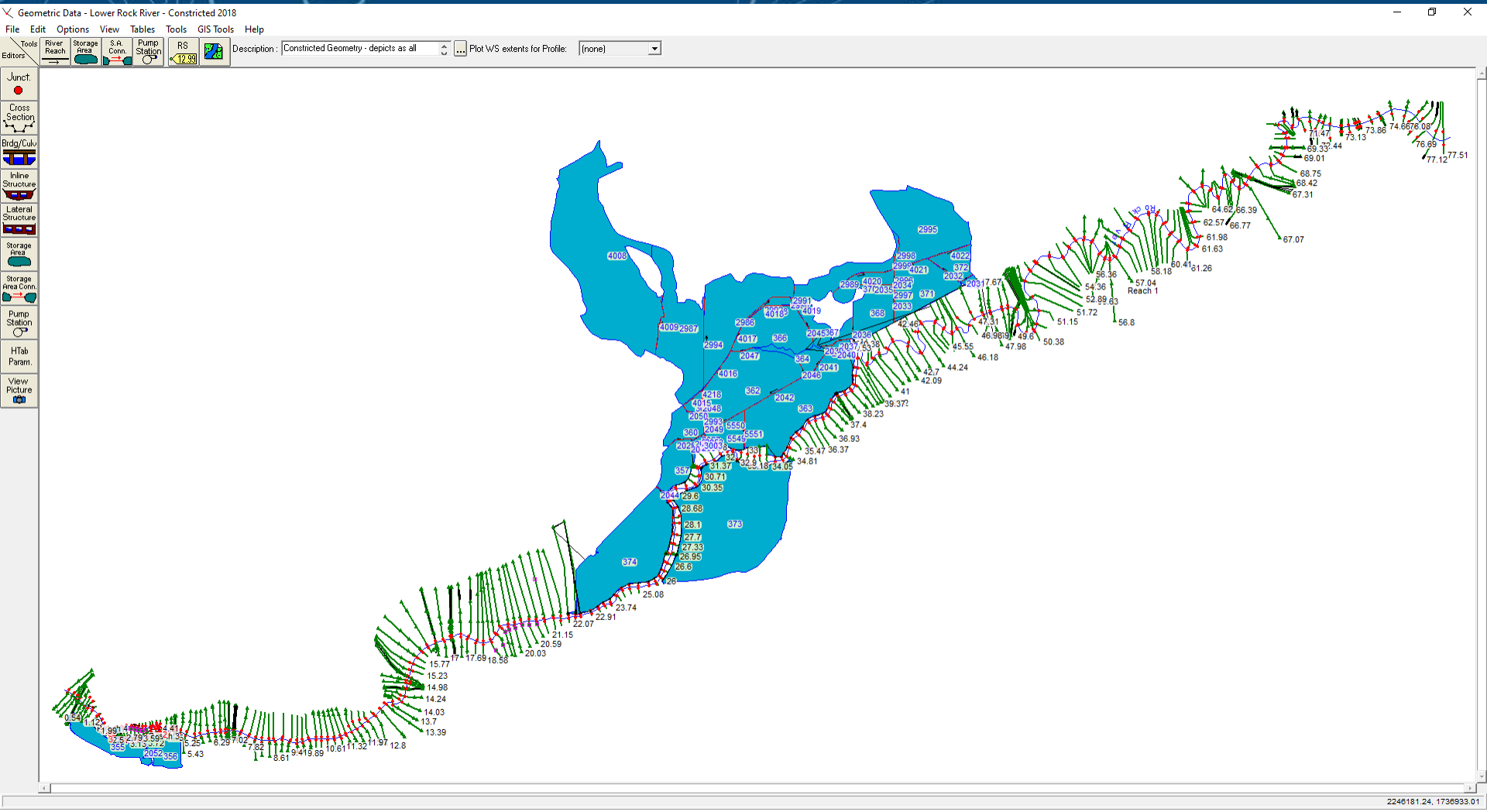
FEMA

ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

RiskMAP
Increasing Resilience Together

Natural Valley and Constricted Scenarios: Proposed BFE's

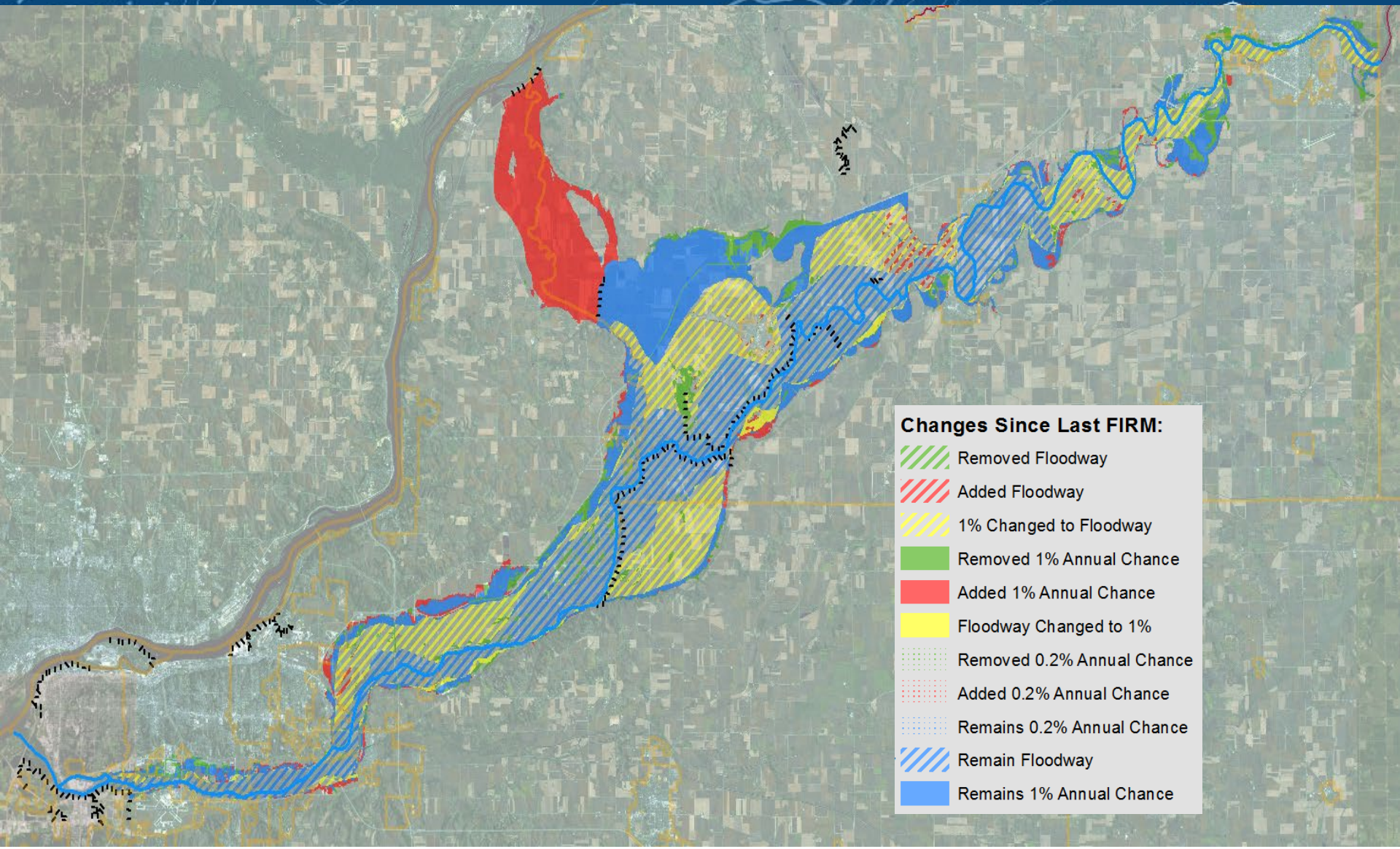
CTP COOPERATING TECHNICAL PARTNERS



FEMA

ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

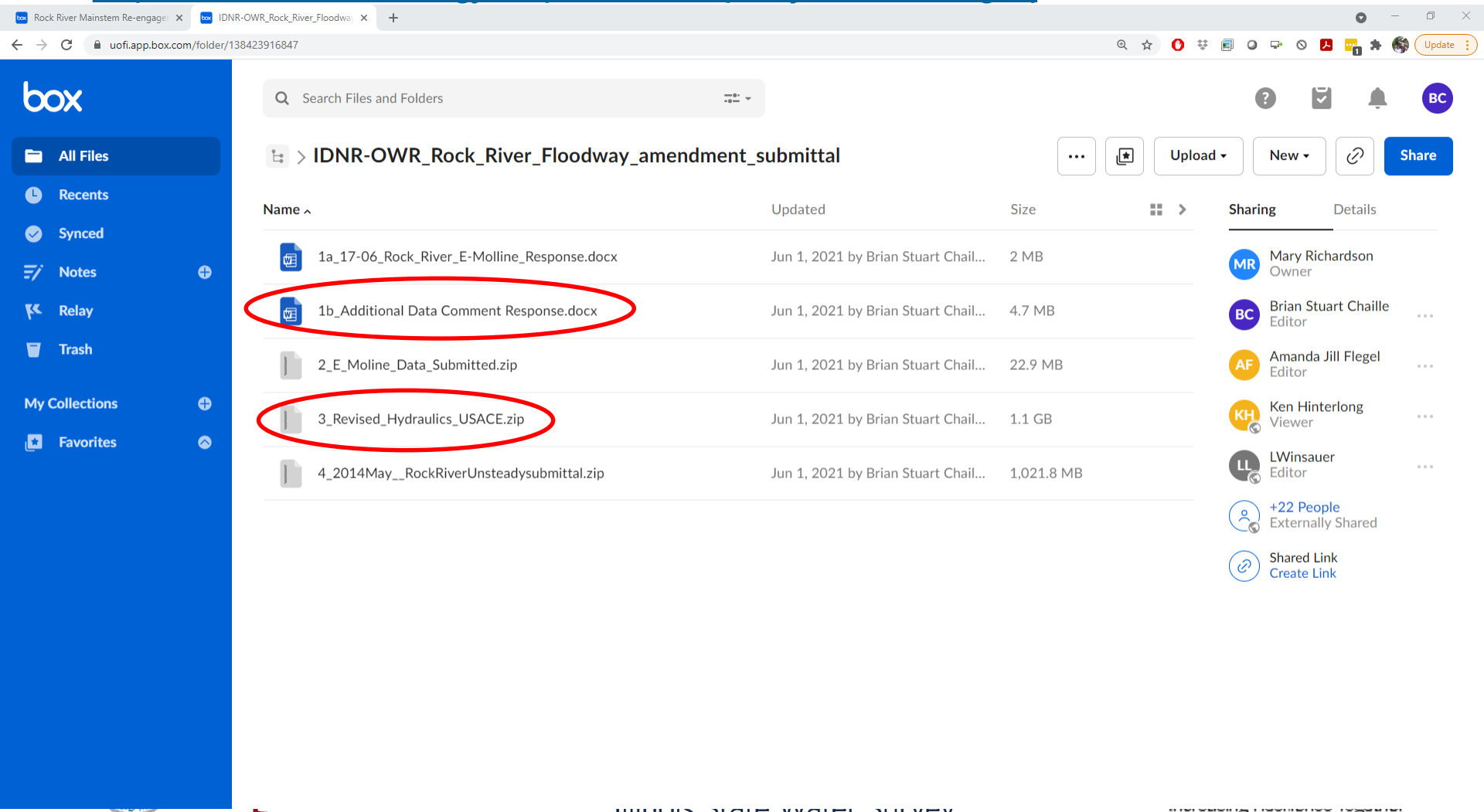
RiskMAP
Increasing Resilience Together


Changes Since Last FIRM:
Removed Floodway
Added Floodway
1% Changed to Floodway
Removed 1% Annual Chance
Added 1% Annual Chance
Floodway Changed to 1%
Removed 0.2% Annual Chance
Added 0.2% Annual Chance
Remains 0.2% Annual Chance
Remain Floodway
Remains 1% Annual Chance

Box Share Site:
Rock River Mainstem Re-engagement_Mtg June 2018

CTP COOPERATING TECHNICAL PARTNERS

https://uofi.box.com/s/gjle8quzu2evra5piecj9hza2azkkgsq



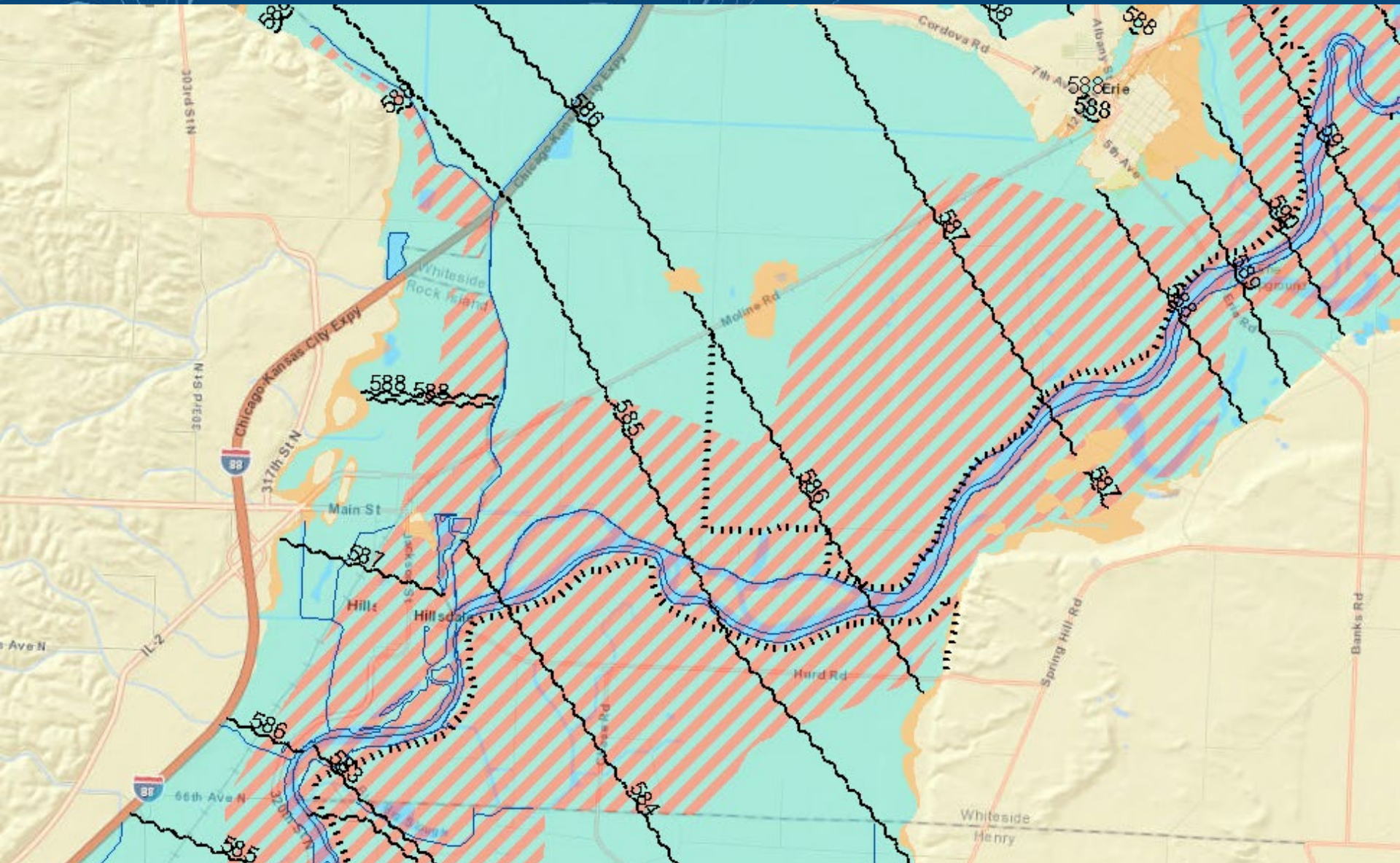
2021 Flood Risk Review of FFY17 FEMA Rock River Projects

CTP COOPERATING TECHNICAL PARTNERS

- Rock River Mainstem Zone AE & Floodway Outreach
- **Meredosia Ditch Hydraulic Analysis**
- Rock River Watershed Zone A Analysis

Meredosia Ditch Analysis

CTP COOPERATING TECHNICAL PARTNERS



Meredosia Ditch Analysis

CTP COOPERATING TECHNICAL PARTNERS

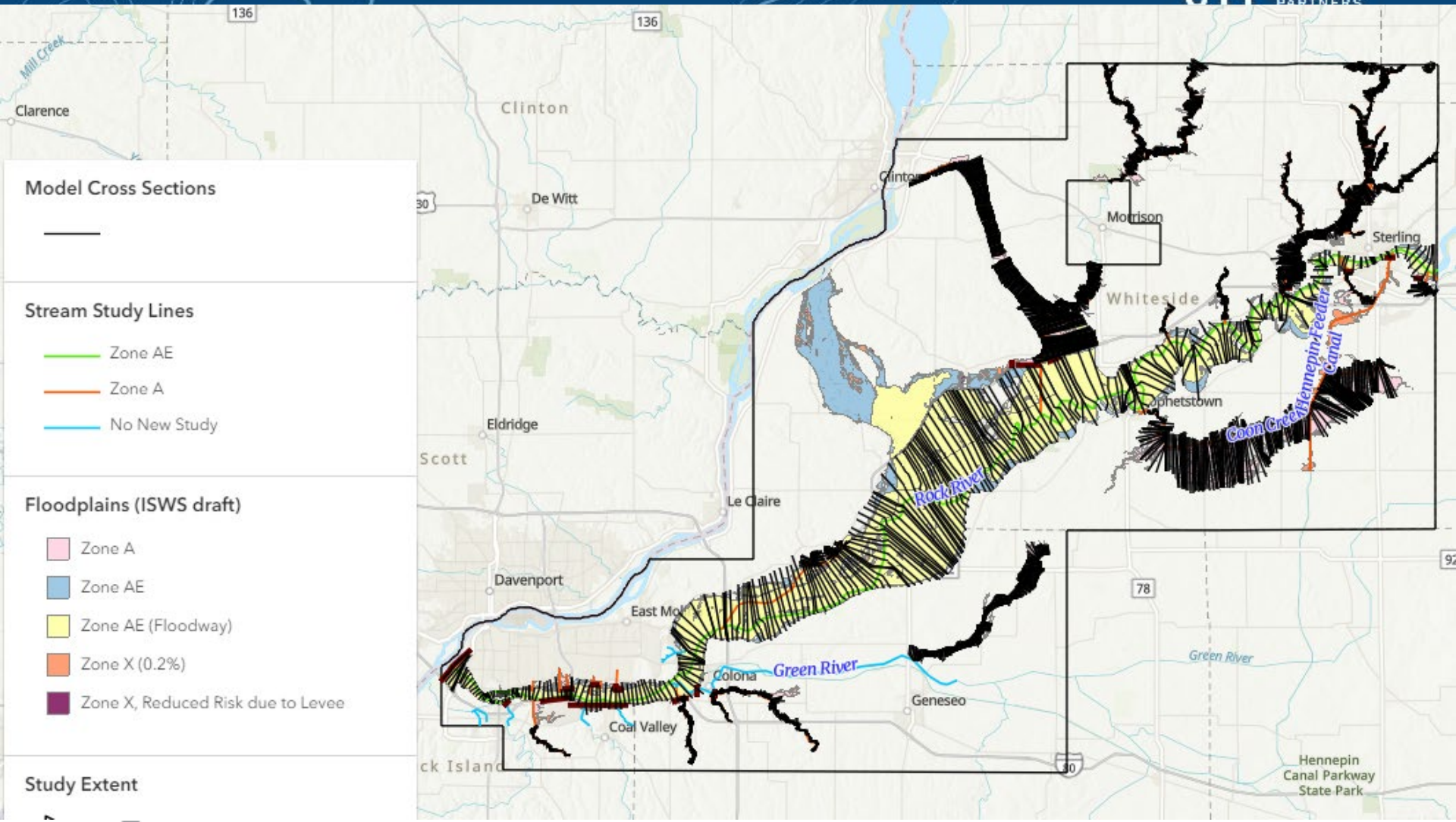
- **Hydrology**
  - No stream gage on Meredosia Ditch
  - HEC-HMS Version 4.2.1 (Same model that was calibrated to gage data from the Rock River and tributaries)
  - Bulletin 70 Rainfall, Huff Distributions
  - Significant Storage due to the gated culverts at the Main Street pump station near Hillsdale.
  - Result: The proposed peak discharge values based on the HEC-HMS model are lower than the effective peak streamflow values.
- **Hydraulics**
  - HEC-RAS version 5.0.6 (Steady Flow)
  - Topographic data same as Rock River
  - Surveyed structures, supplemented by as-built plans and channel data interpolated between structures
  - Normal Depth for downstream starting elevation
  - Result: Meredosia Ditch water surface elevations are **lower** than the proposed analysis of the Rock River
  - The Rock River analysis will establish BFE's and floodway limits and resolve the apparent discrepancy.

2021 Flood Risk Review of FFY17 FEMA Rock River Projects

CTP COOPERATING TECHNICAL PARTNERS

- Rock River Mainstem Zone AE & Floodway Outreach
- Meredosia Ditch Hydraulic Analysis
- **Rock River Watershed Zone A Analysis**

Zone A Models



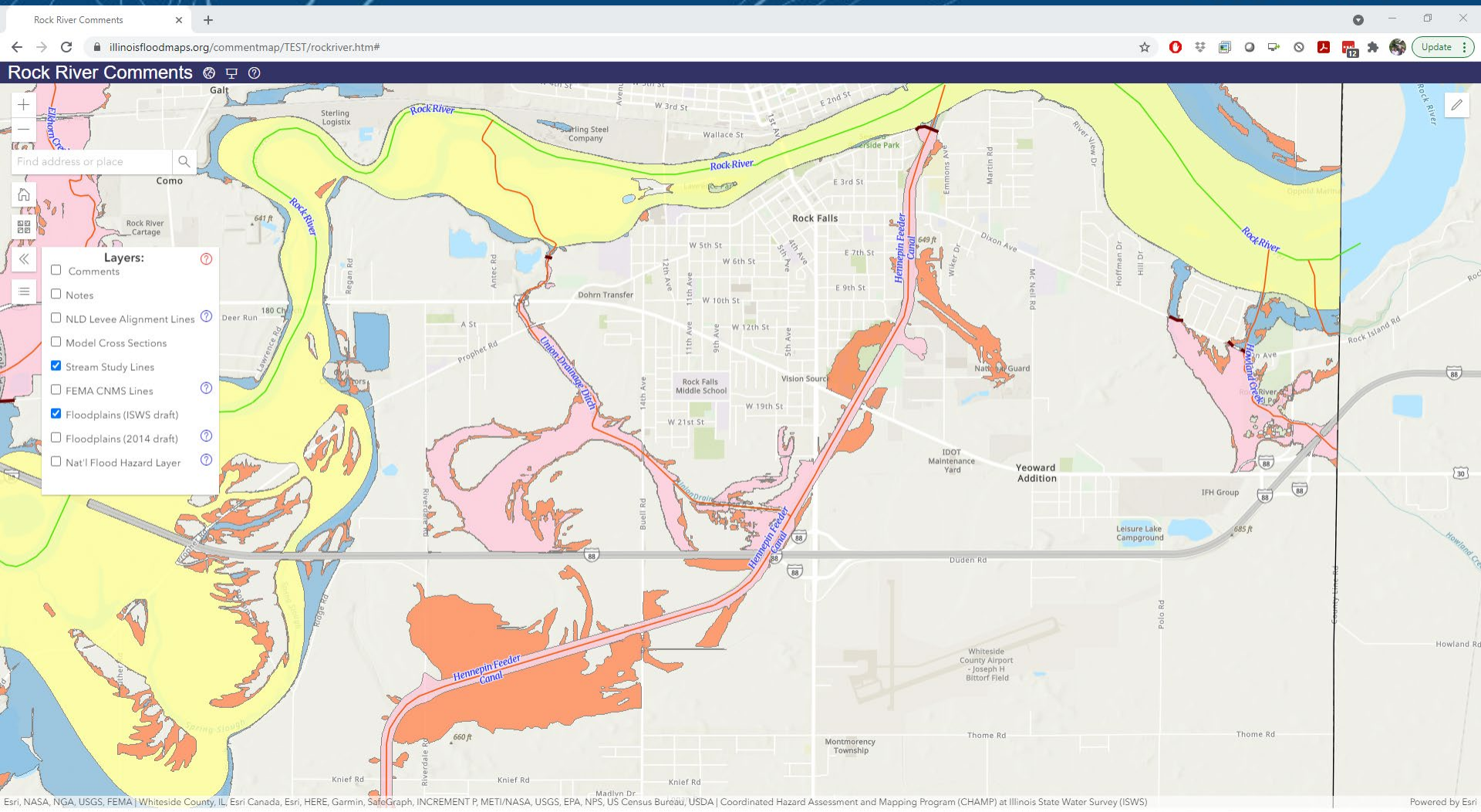
FEMA

ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

RiskMAP
Increasing Resilience Together

Zone A Models

CTP COOPERATING TECHNICAL PARTNERS



FEMA

ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

RiskMAP
Increasing Resilience Together

Zone A Model Methodology

- **Hydrology is based on the current version of Stream Stats**
- **Hydraulic Models comply with FEMA Guidance on Base Level Engineering (BLE) Analyses and Mapping dated February 2018**

Table 1: Hydraulic Analysis Options – Base Level Engineering

Option	Cross Sections	Flow Paths (Left, Right and Channel)	Manning's "n" Values	Structures	Flood Zone
B	Auto-placed and hand adjusted or auto-placed by "intelligent" methods.	Reach lengths computed by offsetting stream centerline.	Overbanks from Land Use Land Cover (LULC) data, channel value estimated separately.	Not included; but cross sections placed appropriately for structure modeling.	A
C	Each section reviewed by engineers.	Reach lengths adjusted based on draft floodplain.	Overbanks LULC data, channel value estimated separately.	Included; structure data from national, state or other data source. Estimated based on topography and aerial photos for those not available	A

Community Participation

CTP COOPERATING TECHNICAL PARTNERS

- **Now is the time to review the draft floodplain mapping for your community!!!**
  - Who's affected?
  - Is the mapping reasonable and/or consistent with 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!
  - Only the Comments that you provide through the Web Map count as official comments! Please make your comments through the web map!

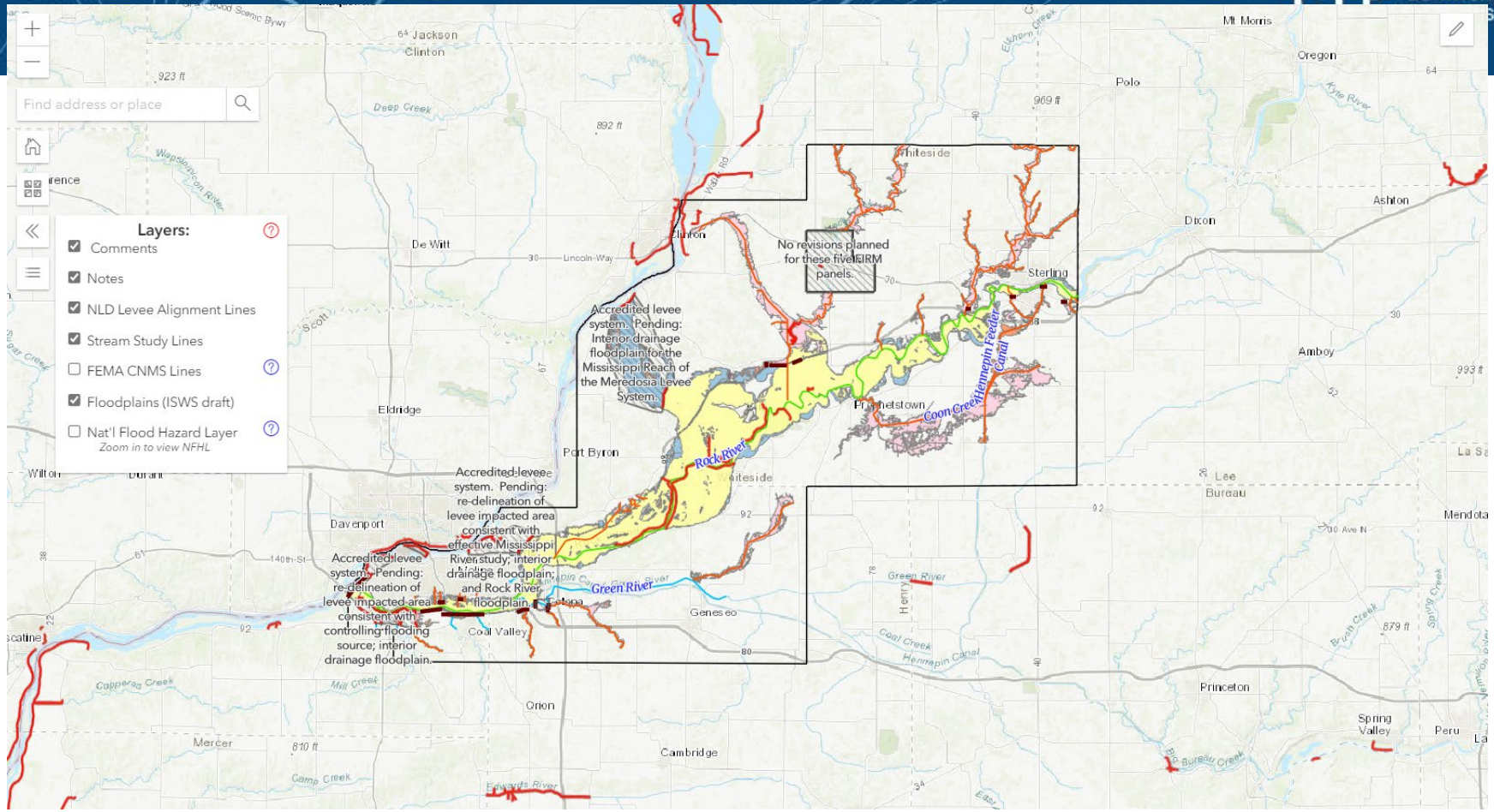
CTP COOPERATING TECHNICAL PARTNERS

Questions?

CTP COOPERATING TECHNICAL PARTNERS

Webmap Results

Web Map Demonstration



https://www.illinoisfloodmaps.org/commentmap/rockriver.htm

Login: watershed **Password: illinoisfloods!123**

FEMA

ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

RiskMAP
Increasing Resilience Together

Web Map Demonstration

CTP COOPERATING TECHNICAL PARTNERS

CTP COOPERATING TECHNICAL PARTNERS

Path Forward Discussion

Communication Plan for current FEMA project

CTP COOPERATING TECHNICAL PARTNERS

- **Proposed Engineering Methods Notification Letters mailed 1/25/2018**
- **Project Re-engagement Meetings held 6/12/2018 in Rock Island and Sterling; included acceptance and follow-up of comments**
- **Flood Risk Review Meeting (Today)**
  - **Associated 30-day comment period starts today**
  - **Comment Period Ends COB Monday, 7/12/2021**
- **Comment resolution and follow-up as necessary**
- **ISWS & FEMA currently in discussions for the next project phase. Includes but not limited to:**
  - **Delineation of levee interior areas**
  - **Re-delineation of select Zone AE streams**
  - **Additional tributary data development in Rock Island County**

Schedule

- **Flood Risk Review Meeting (today)**
- **Comment discussion & resolution (Summer & Fall 2021)**
- **Proposed next phase work including completion of county specific FIRM databases. (To begin in 2022)**
- **Databases provided to each county for review and comment (TBD)**

Community Risk Communication and Mitigation Resources

CTP COOPERATING TECHNICAL PARTNERS

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

- An official site of the National Flood Insurance Program (NFIP)
- IDNR Acting NFIP State Coordinator: Marilyn Sucoe, P.E., CFM Marilyn.Sucoe@Illinois.gov

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.

CTP COOPERATING TECHNICAL PARTNERS

Questions?

Post-meeting survey

CTP COOPERATING TECHNICAL PARTNERS

Contacts

CTP COOPERATING TECHNICAL PARTNERS

ILLINOIS

Illinois State Water Survey

PRAIRIE RESEARCH INSTITUTE

Brian S. Chaille, P.E., CFM bchaille@Illinois.edu

Mary Richardson, CFM mjr@Illinois.edu

www.illinoisfloodmaps.org

FEMA

ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

RiskMAP
Increasing Resilience Together

Agenda

CTP COOPERATING TECHNICAL PARTNERS

Part 1

Welcome and Introduction

Motivated

Project History, Methodology and Results

Propose a path forward

Break

Part 2

Breakout in Topical Dialog Groups

Levee Discussion

Floodway and Technical Discussion

Using the Web Map to Make Comments

Topic of Your Choice?