

Upper Arkansas Custom Watershed Discovery Meeting

December 2023

While we are waiting, please enter your name
and community in the chat box!



FEMA

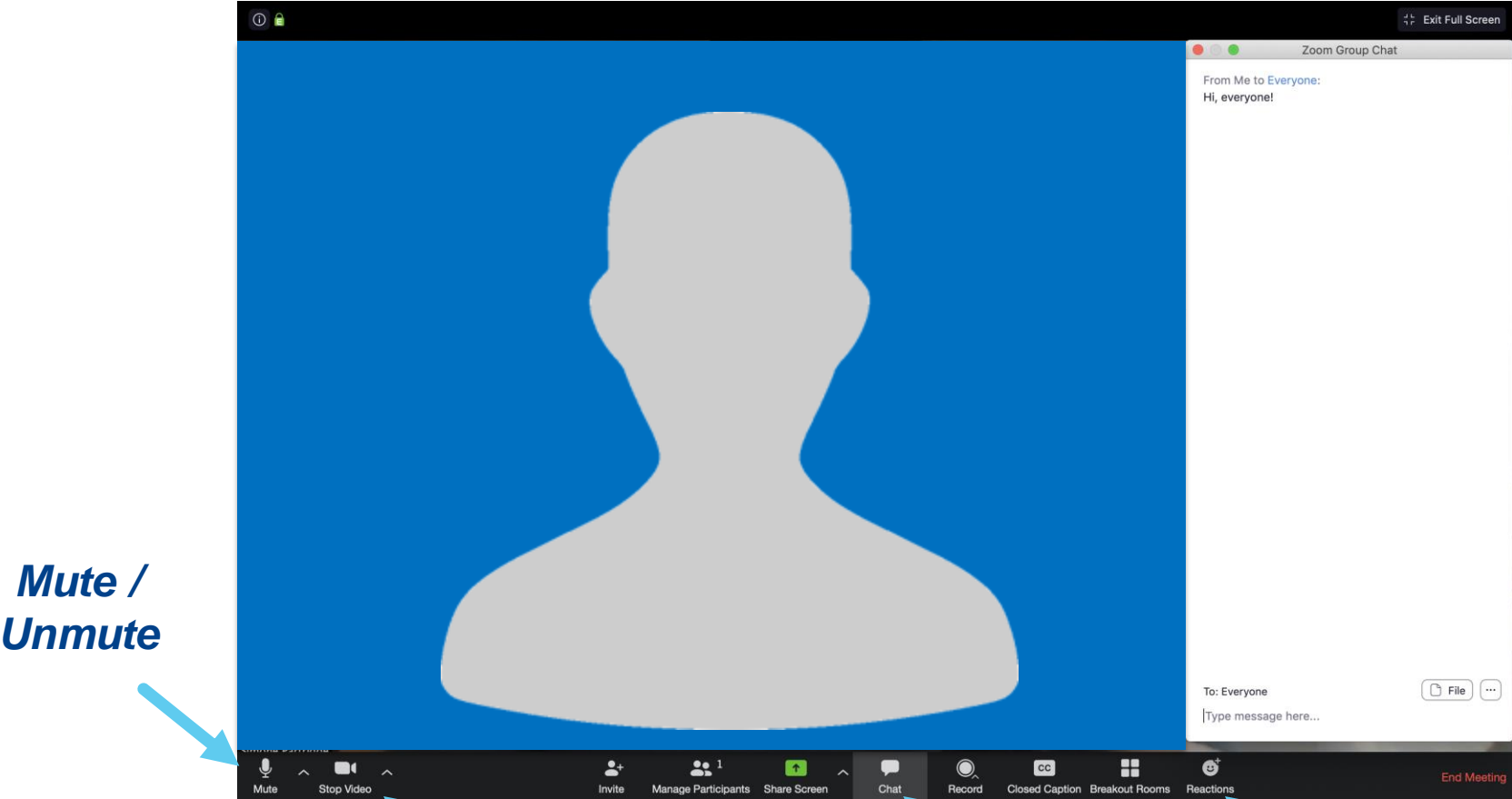


*Thank you for
joining us today!*

**Your input is very
important to this
work.**

A photograph of a yellow wall with the words "THANK YOU" written in large, bold, black, sans-serif capital letters. The text is arranged in two lines: "THANK" on the top line and "YOU" on the bottom line. The wall has a slightly textured appearance and is set against a dark background.

Zoom Features



**Mute /
Unmute**

Start your Video

**Use the Chat
Feature**

Reactions

Rules of the Road

- Attendees will be muted during the presentation, to help eliminate background noise.
- Check out the chat to ask questions during the presentation! Or feel free to “raise your hand.” We will pause for questions at various stopping points and have several poll questions.
- If you want to share your video, please do!
- For technical difficulties: send a private chat to Bill Pace or email william.pace@ks.gov.
- We’ll be recording this webinar for those who aren’t able to attend today.

Introductions

Kansas Department of Agriculture

Joanna Rohlf, *CFM, GISP*
Floodplain Mapping Coordinator

William Pace, *CFM*
Floodplain Mapping Specialist

Tara Lanzrath, *CFM*
State NFIP Coordinator

Cheyenne Sun Eagle, *CFM*
NFIP Specialist

Angi Goetze
Floodplain Outreach Specialist



WSP – Mapping Contractor

Matt Long, *PE, CFM*
Lead Engineer

Lisa Tuckwin, *CFM, GISP*
GIS Manager

FEMA Region VII

Dawn Livingston, *Project manager*

Today's Goals

Review

Review WHY WE DO THIS WORK



Share

Share WHERE WE ARE NOW & what the data is telling us about flood risk



Discuss

Discuss how WE CAN HELP



Preview

Preview the PLANNED WORK AHEAD and how we propose doing it.



Next Steps

Discuss Next Steps and YOUR ROLE in the Process

Why We Do This Work



FEMA Floodplain Mapping Program

- Risk Mapping, Assessment, and Planning (Risk MAP).
- Performed on a watershed basis.
- Consists of both Regulatory & Non-Regulatory Products.
- Through Risk MAP, we provide updated floodplain maps, as well as other (free!) data and tools that can help you plan to reduce your community's risk.

RiskMAP
Increasing Resilience Together

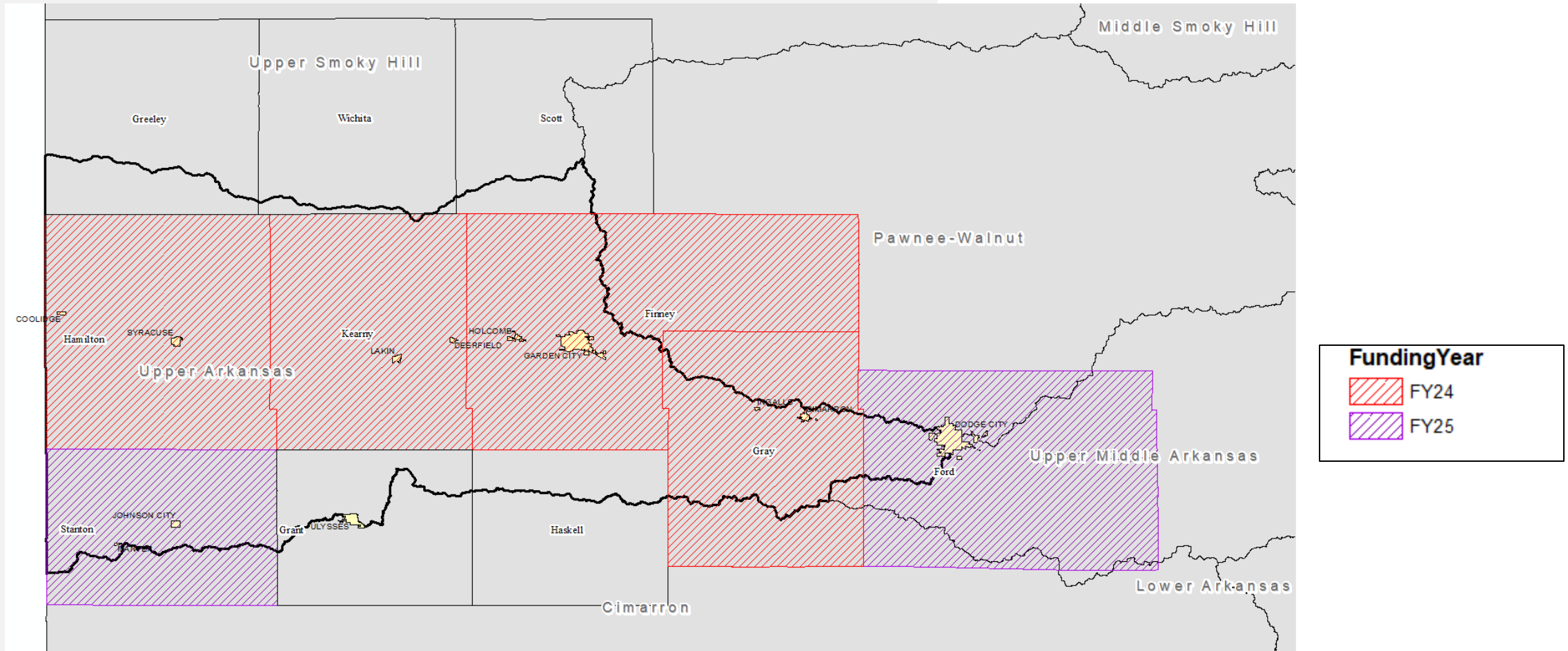
Planning: The “P” in Risk MAP

- The flood risk data from this work can – and should – inform your regional Hazard Mitigation Plan (HMP).
 - Region C: Grant, Greeley, Hamilton, Kearny, Scott, Stanton, and Wichita Counties
 - Region D: Finney, Gray, and Haskell Counties
- Common themes in the regional plans:
 - Identify and seek additional methods of financial and technical assistance for hazard mitigation projects.
 - Acquire or conduct structural remediation of floodprone properties.
 - Study and implement drainage issues in floodprone areas and make recommendations for flood control measures, flood management procedures, and low-water crossing improvements.



Where We Plan to Update Your Map

Preview of the Planned Work



Finney County-

- Anticipated for 2024

Ford County-

- Anticipated for 2025

Gray County-

- Anticipated for 2024

Hamilton County-

- Anticipated for 2024

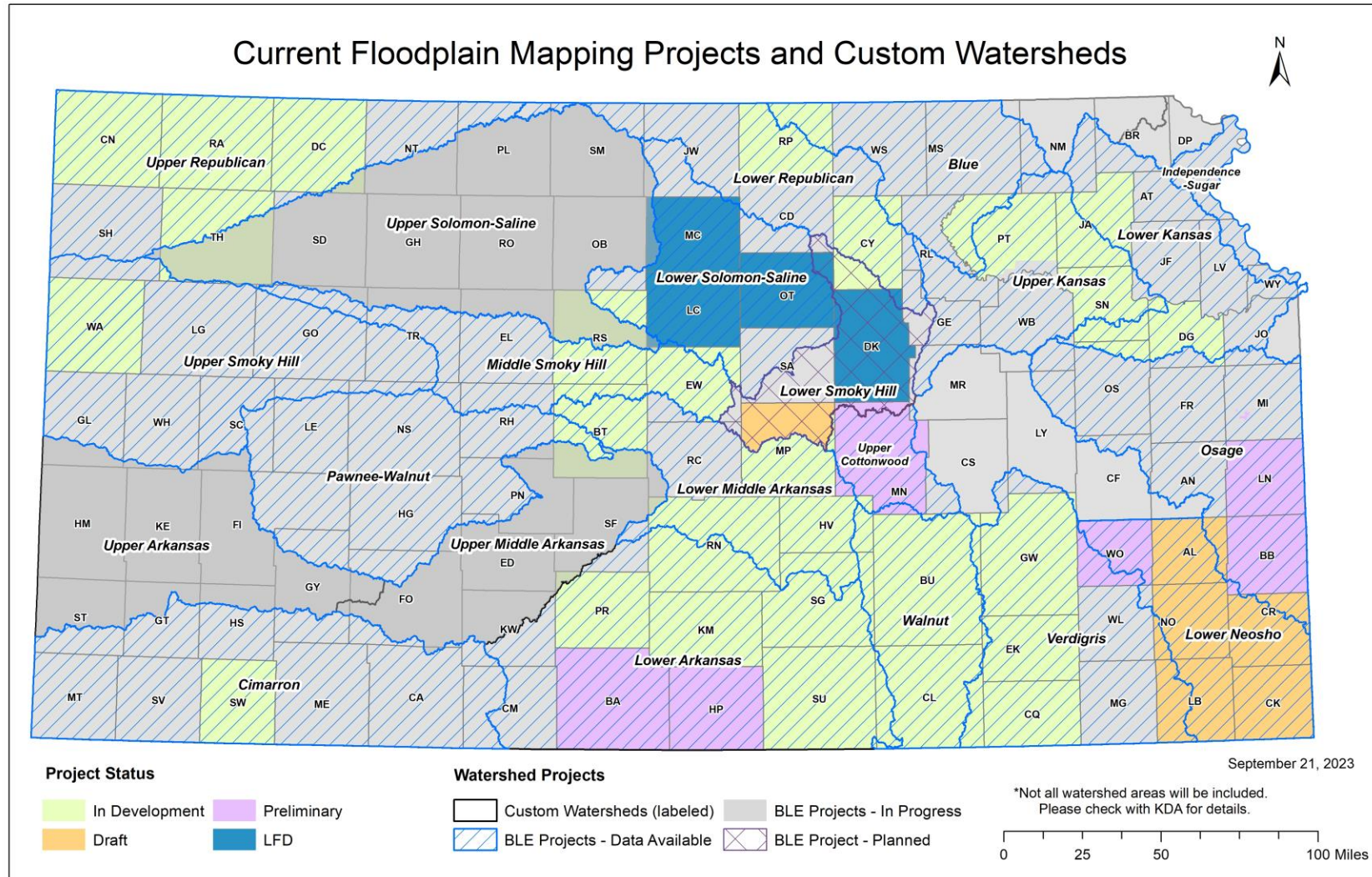
Kearny County-

- Anticipated for 2024

Stanton County-

- Anticipated for 2025

We are doing this work across Kansas...



Participation in the National Flood Insurance Program

- Blue = Participates Red = Not Participating
- Cities of Cimarron, **Coolidge**, Deerfield, Dodge City, Garden City, Holcomb, **Ingalls**, Johnson, Lakin, Manter, Syracuse, **Ulysses**
- Finney, **Grant**, **Gray**, **Greeley**, Hamilton, **Haskell**, Kearny, **Scott**, Stanton, **Wichita** Counties

Number of Flood Insurance Policies

- Finney County- 9
 - Garden City-13
 - Holcomb- 4
- Ford County- 29
 - Dodge City- 8
- Grant County – NP
 - Ulysses- NP
- Gray County- NP
 - Cimmaron- 1
 - Ingalls- NP
- Greeley County- NP
- Hamilton County- 3
 - Coolidge- NP
 - Syracuse- 6
- Haskell County- NP
- Kearny County- 3
 - Deerfield- 0
 - Lakin- 5
- Scott- NP
- Stanton County- 0
 - Johnson- 0
 - Manter- 0
- Wichita County- NP

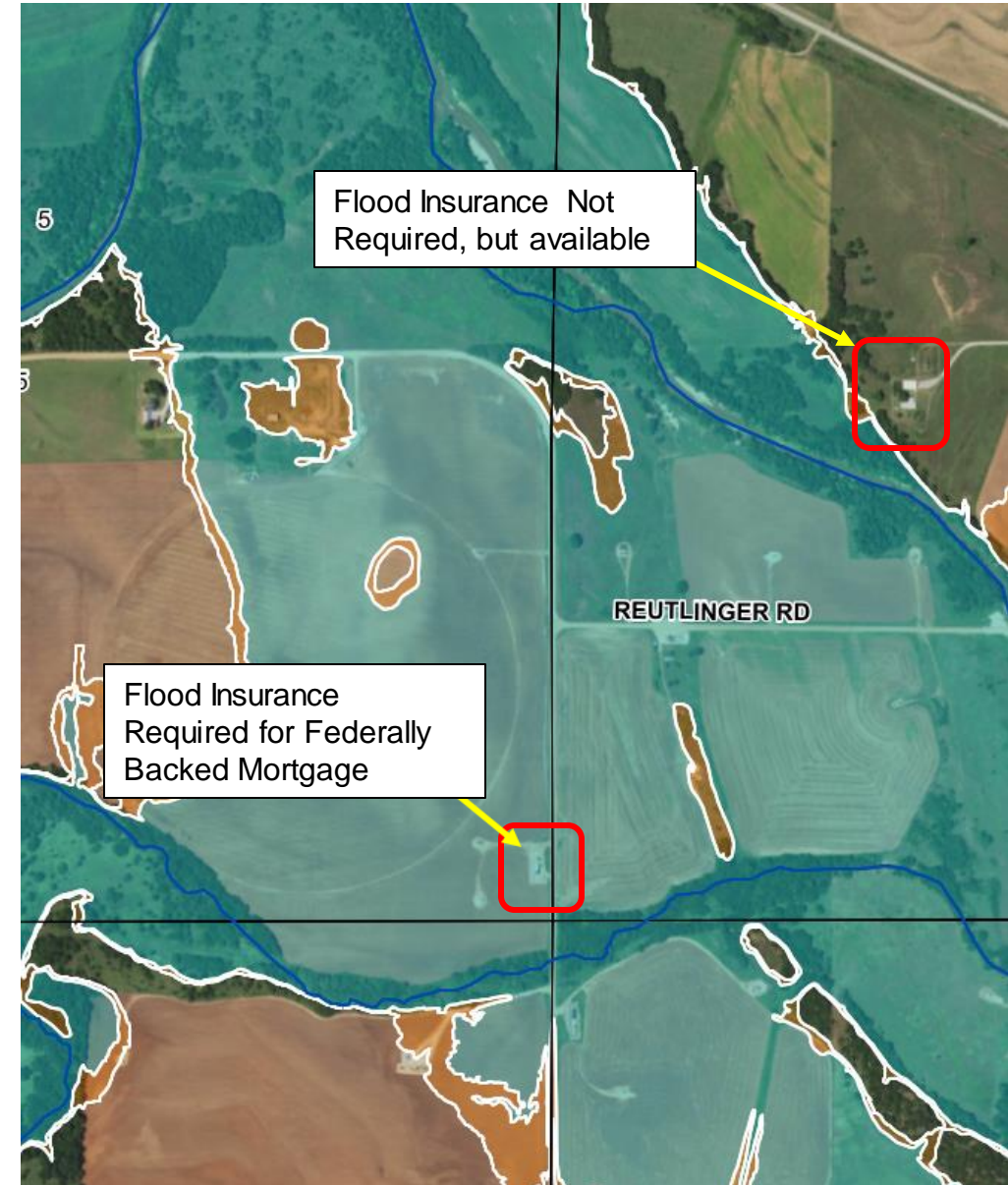
Benefits of joining the NFIP!

- Property owners would be able to insure against flood losses (in or outside of the regulatory SFHA)
- Qualify for federal grants or loans for development
- Qualify for federal disaster assistance for damages caused by a flood
- Adoption of a floodplain management ordinance leads to smart development against flood risk



Participation in the NFIP

- NFIP Participation is voluntary. To participate a community must:
 - Adopt a Floodplain Management Ordinance and regulate development in the floodplain
 - The community designates a floodplain administrator, which often have other roles in the community (i.e. city clerk, engineer, planner).
 - The flood zone determines the locations that need to be regulated.
 - Adopt a Resolution for Participating in the NFIP
 - Complete the Application for Participation



NFIP Participation Requirements

- Adopt and enforce all applicable NFIP regulations
- Require permits for ALL development in the Special Flood Hazard Area (SFHA)
- Obtain proof of compliance with local floodplain management ordinance for all permits
- Maintain Floodplain Management Records
- Helping residents obtain information on flood hazards, floodplain map data, flood insurance and proper construction measures

A person with long, wavy brown hair, wearing a blue jacket, is seen from behind, looking at a map. The map is held open, and the person's hands are visible at the edges. The background is a blurred outdoor setting. The image is split into two vertical panels: the left panel has a blue overlay with white text, and the right panel shows the person and map in natural lighting.

Where We Are Now & What the Early Flood Risk Data is Telling Us

Base Level Engineering is Complete

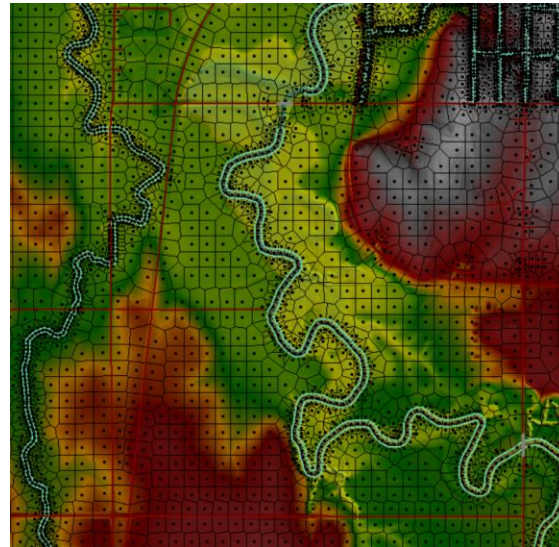
- BLE is an engineering approach that provides an initial high-level (or “base line”) understanding of flood hazards, with enough information for us to draft initial floodplain designations.
- We're starting to develop and share this initial data because we've learned that the earlier we start partnering with you, the more accurate the map.

FLOODPLAIN: On the maps we create, the floodplains, also known as Special Flood Hazard Areas (SFHAs), are areas with high flood risk – where a flood of a certain level has a 1-percent chance of happening each year.

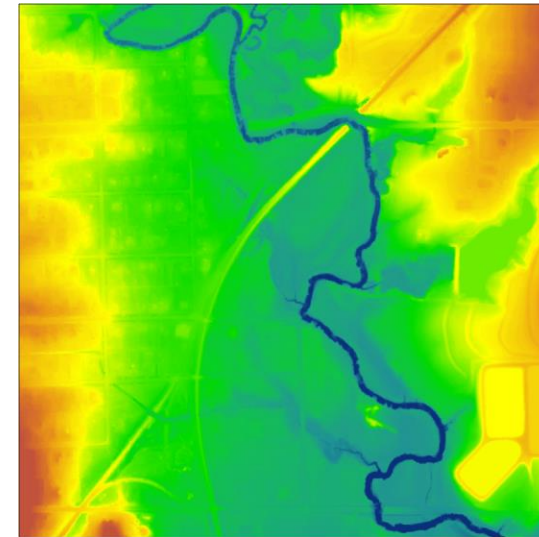
We Use 2D Hydraulic Modeling and LIDAR in our BLE

- Your current maps are done in one dimension (1D) and are based on 10-meter Digital Elevation Model
- Two-dimensional (2D) modeling and LIDAR- enhanced maps provide greater resolution and the ability to analyze how water moves across land using elevations and depth grids

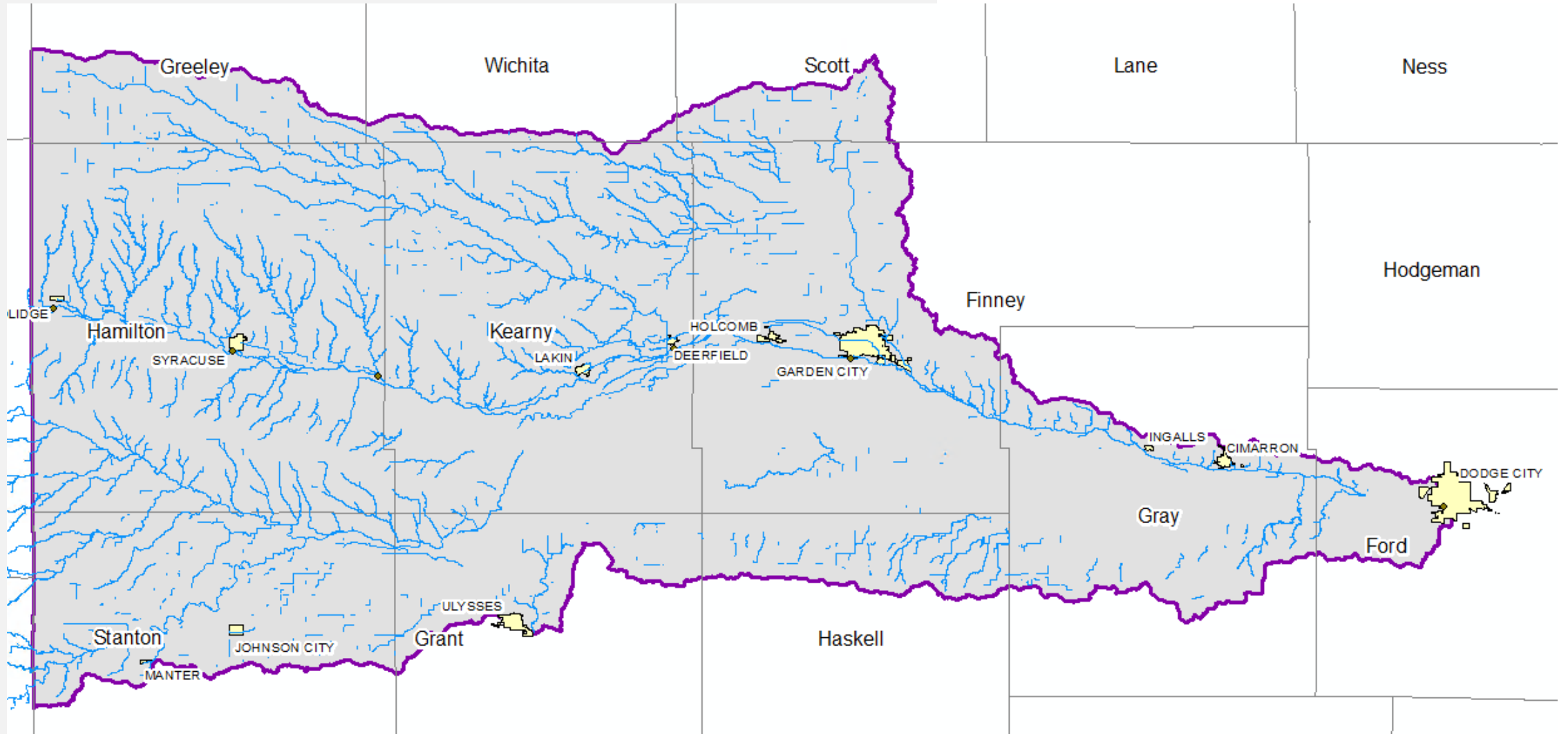
2D



LiDAR



BLE Study Area



BLE floodplains are complete for this study area

Limitations of BLE Modeling

- Hydraulic structures, such as culvert and bridge openings, are not included
- Storm sewer networks in communities are not included
- Levees are not accurately modeled because closure structures are not included into the model to prevent backwater

Identified Flood Risk Areas

- Sedimentation and debris jams leading to reduced channel capacity
- Shallow flooding areas due to water not being able to move
- Lack of defined overflow channels or outlets during large floods
- Levees offer flood protection, but there is also a level of risk.

Where We Are Now: DISCOVERY

This is one of the most important phases of our work, where we:

- Review the flood risk information together and get your feedback;
- Identify the new data we might need to accurately update your flood risk; and
- Determine, with you, where mitigation (taking steps to reduce risk) makes sense for your community.

Discovery Report and Map

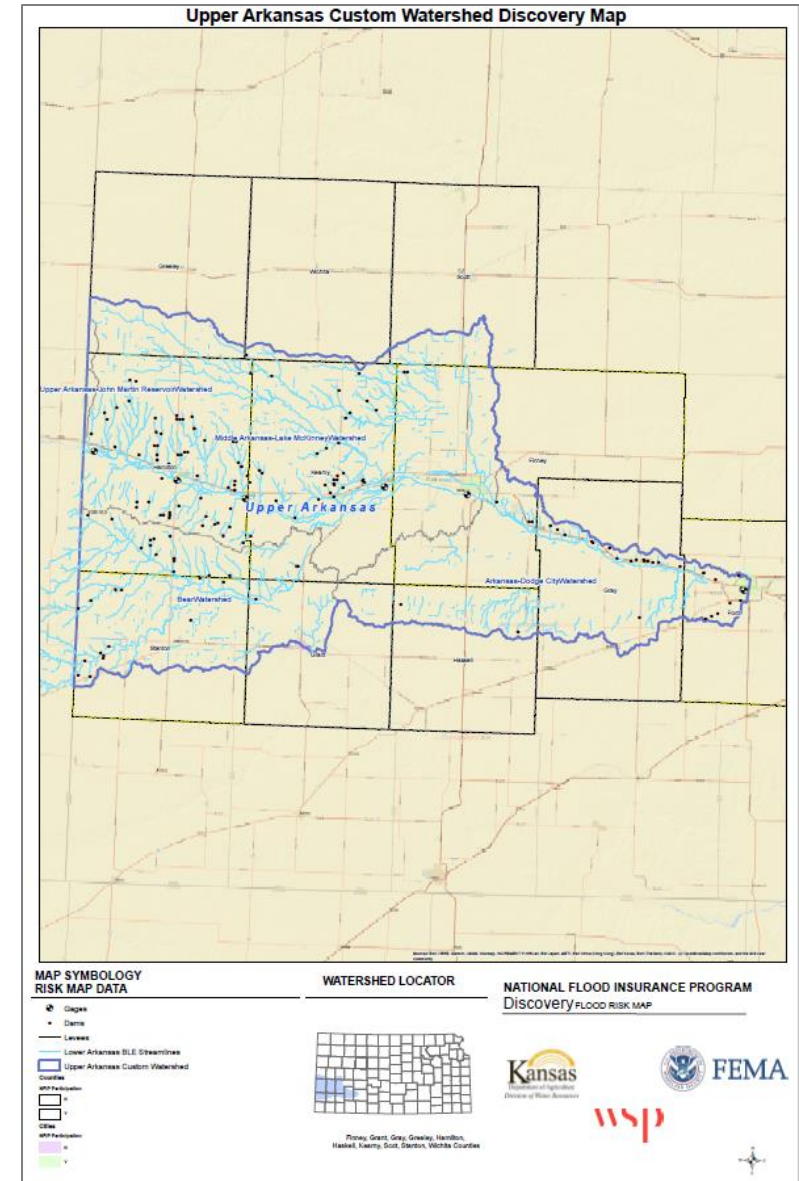
Discovery Report

Upper Arkansas Custom Watershed
HUCS 11020009, 11030001, 11030003, 11040005

Cities of Cimarron, Coolidge, Deerfield, Dodge, Garden City, Holcomb, Ingalls, Johnson, Lakin, Manter, Syracuse, Ulysses

Finney, Ford, Grant, Gray, Greeley, Hamilton, Haskell, Kearny, Scott, Stanton, Wichita Counties

Report Number 01
DRAFT



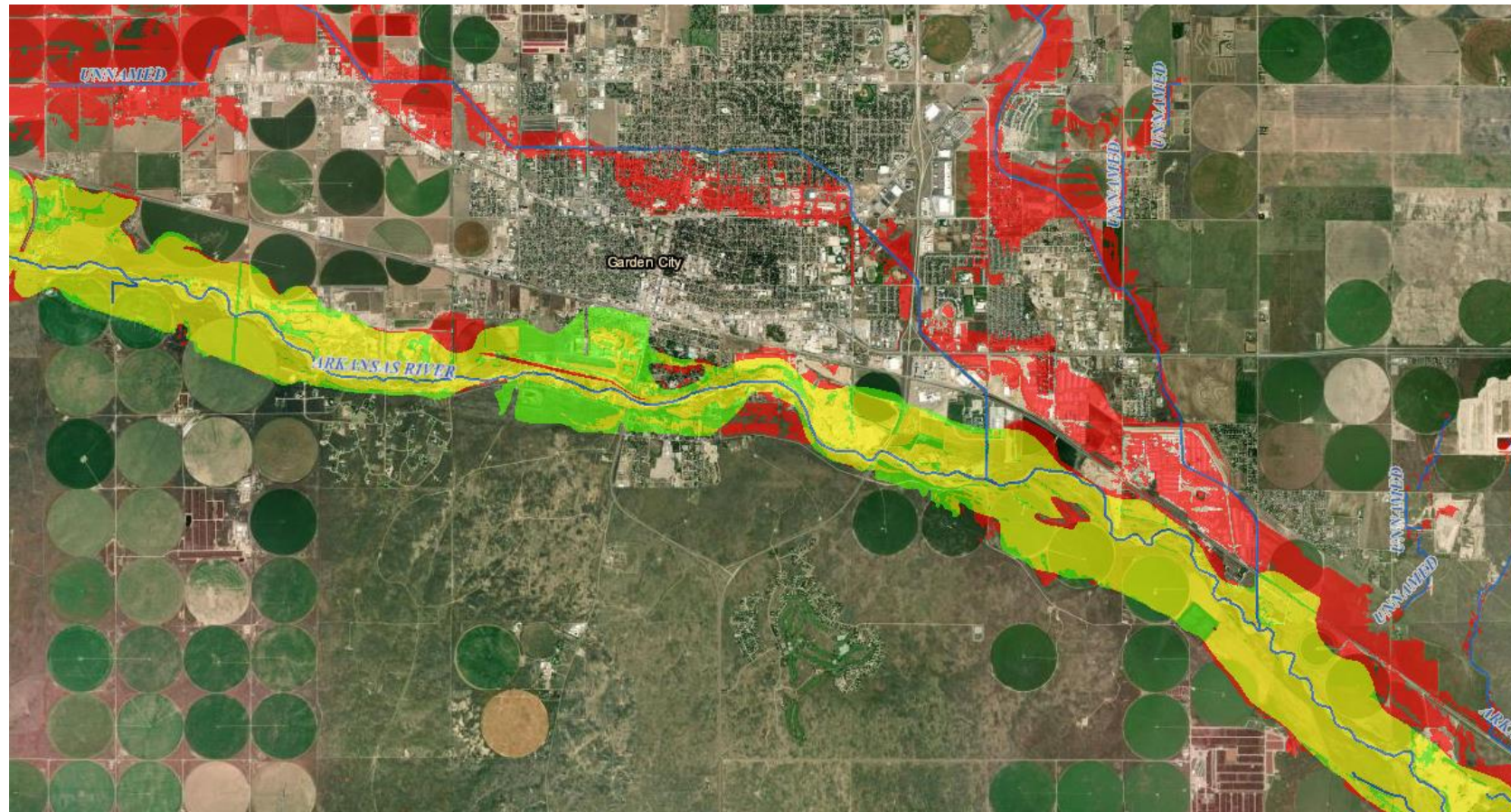
Draft Floodplains

BLE Floodplain



Changes Since Last Flood Insurance Rate Map (FIRM)

BLE Floodplain compared to Current Effective Floodplain



Yellow: Same

Red:
New SFHA

Green:
Removed SFHA

How We Can Help

“Mitigation Technical Assistance”



Some Ways We Can Help

- Provide ideas on how to reduce flooding in trouble spots.
- Provide risk assessments for structures in your community, to help property owners understand the need for flood insurance, or to help you protect important public buildings.
- Use engineering analysis to show you what types of projects could reduce the impacts in floodprone areas.
- Assist with the Benefit-Cost Analysis if you are putting together a grant application.
- Support your participation in the Community Rating System.
- Help you explain flood risk and what it means to your community members.

Technical Assistance

TECHNICAL ASSISTANCE PROJECTS

- Hoisington
- South Hutchinson
- Solomon
- Topeka
- Gypsum
- Osawatomie
- Sun City
- Winfield
- Dodge City
- Upper Republican
- Garden Plain

TECHNICAL ASSISTANCE INFORMATION

FEMA Funds for technical assistance projects have come available in recent Cooperating Technical Partner (CTP) funding cycles. These projects do not include funding for construction of projects, but they can be utilized for modeling mitigation scenarios for possible projects. These funds can be applied for grant-related purposes, ordinance or code support, engineering and analysis, planning, outreach and education. Communities within Kansas can apply for Technical Assistance support through KDA, though priority will be given where there are active [mapping projects](#). For questions, please contact Tara Lanzrath, by phone at 785-296-2513 or [email](#).

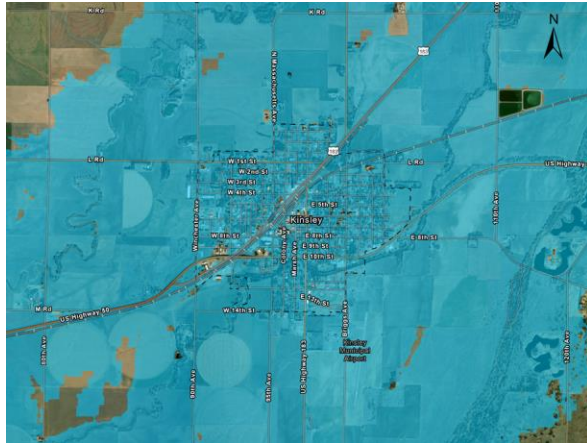
[Technical Assistance Request Fillable Form](#)

You can visit the KDA website for more information, including a link to a fillable request form:

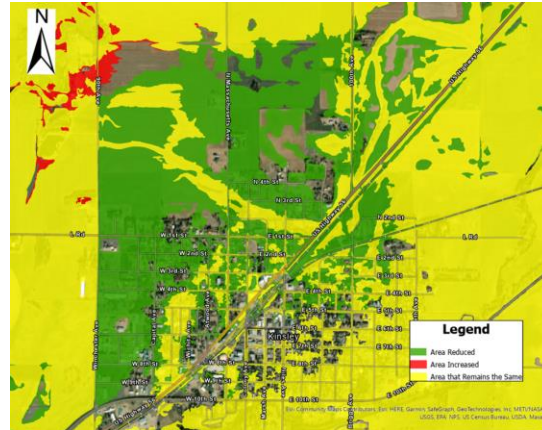
<https://www.agriculture.ks.gov/divisions-programs/dwr/floodplain/mapping/technical-assistance>

City of Kinsley Technical Assistance Project

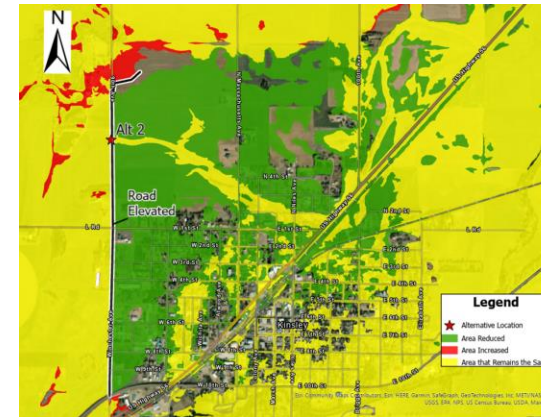
- 2D HEC-RAS modeling to evaluate three mitigation scenarios compared to the 2D BLE study



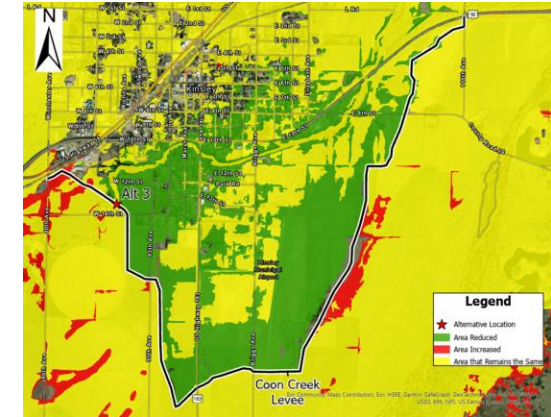
Existing Conditions Model



Alternative 1 – implementation of dry dam located northwest of 20th Avenue and M Road on Little Coon Creek.



Alternative 2 – elevate Winchester Avenue and 90th Avenue from US-50 to approximately 1.3 miles north.



Alternative 3 – levee diverting flow along Coon Creek along US HWY 56 to Kinsley Municipal Airport then back to intersection of US-50 and 110th Ave.

City of Lakin Technical Assistance Project

- 2D HEC-RAS modeling to evaluate three mitigation scenarios compared to the 2D BLE study



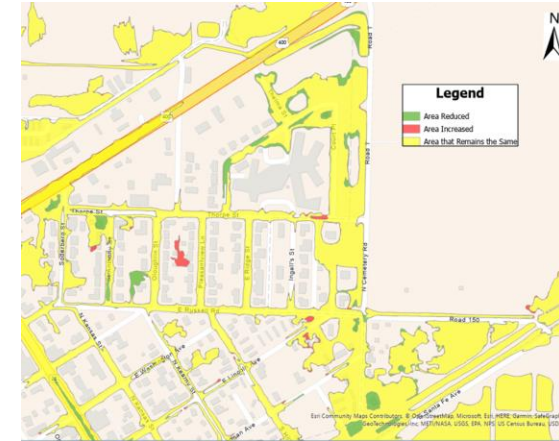
Existing Conditions Model



Alternative 1 – modification of the existing culvert S10, located north of the intersection of Russel Road and North Cemetery Road.



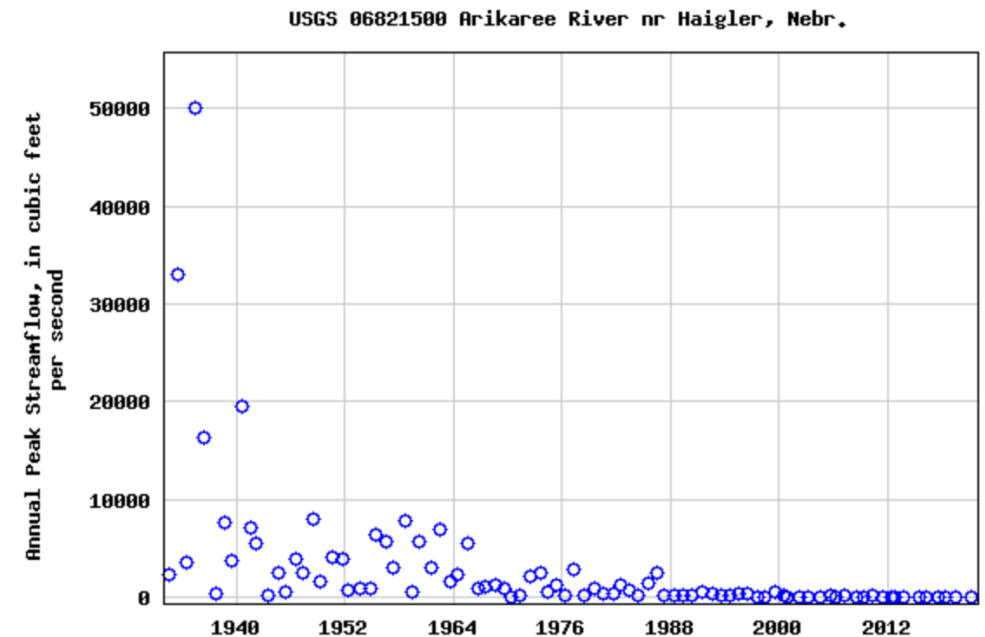
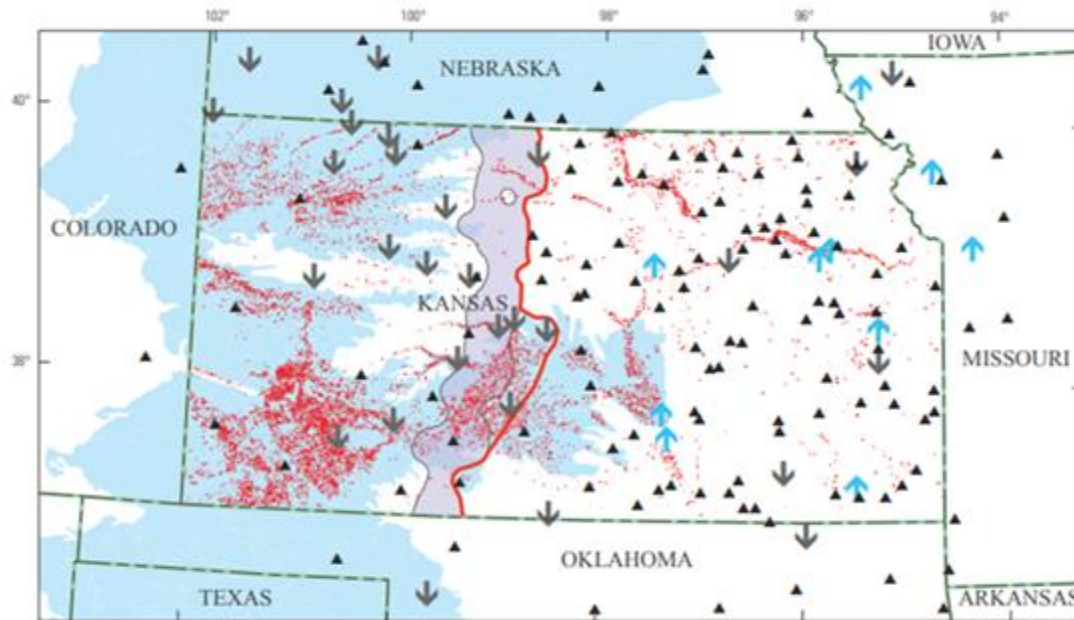
Alternative 2 – adding detention basins west of KS-25 and northwest of the intersection of US-50 and Road T.



Alternative 3 – adding inlets near the intersections of Harolds Place and Court Place and Thorpe Street and Court Place.

Technical Assistance Project: Western Kansas Hydrology Pilot Study

- Groundwater Irrigation has caused streamflow to decline since 1978
- Challenges encountered due to discrepancies in Model Calibration Data
- Technical Assistance Study performed to analyze hydrology scenarios
 - Mixed Population Gage Analysis
 - Methodology updated to represent streamflow loss



Preview of the Planned Work

Which We Call Our Data
Development Scope



Data Development Scope

Proposed scope if a county projects moves forward with data development and regulatory maps

For most of the countywide footprint...

Zone A

- Developed from 2D BLE Models and Mapping updated with Feedback from Discovery
- No Base Flood Elevations (BFEs) on the regulatory map, but available
- Water Surface Elevation and Depth Grids generated
- 2D Zone A BLE is easily scalable to enhanced Zone AE.

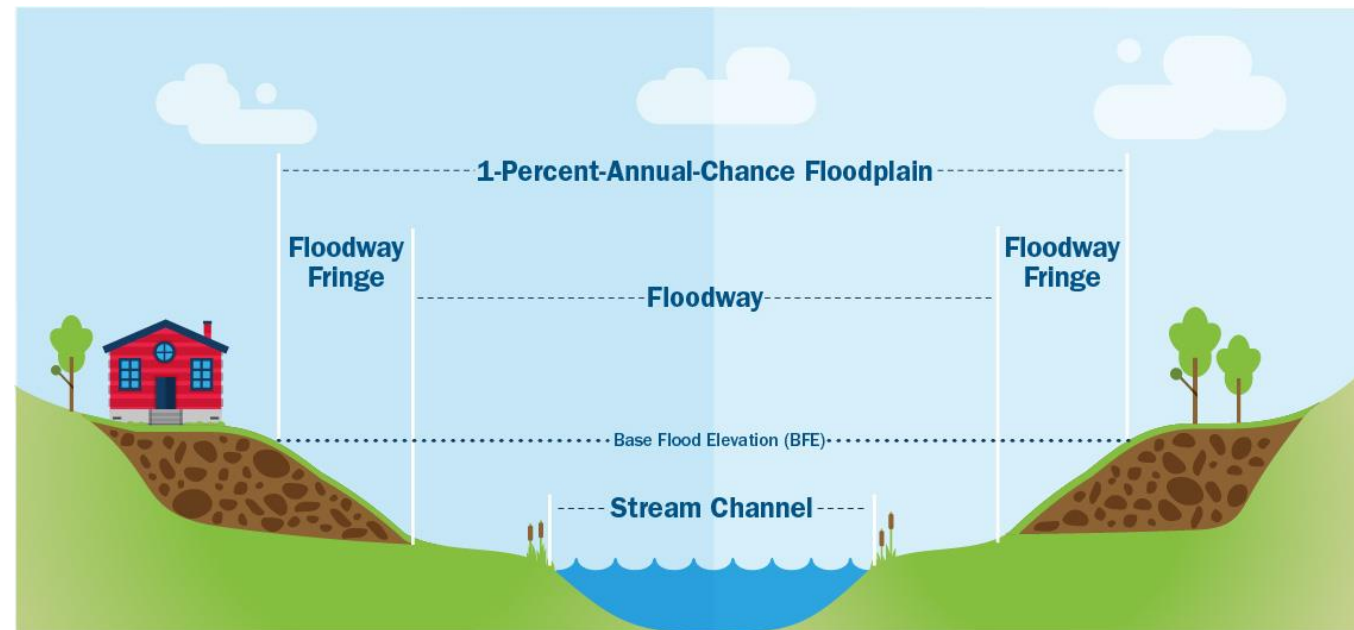
For specific areas identified as needing more detail...

Zone AE

- Culvert and bridge openings are included in the modeling
- Added detail to breaklines and land cover data in the modeling
- Additional Hydrology Calibration
- May have a floodway
- Base Flood Elevations (BFEs) will be shown on the regulatory map
- Water Surface Elevation and Depth Grids will be generated

What is a Floodway?

- Zone AE: with or without a floodway
 - If there is a floodway on the current map, the new map must have a floodway
 - If there is not a current floodway, a floodway is optional



Next Steps and Your Role in the Process



Project Timeline

Discovery Meeting: Today!

- *What data could contribute to making the map as accurate as possible?*
- *Revisit what flood risk reduction steps you are considering and how we can help!*
- *Provide feedback on data development scope, and mapping needs by 10/15/2021*

Data Development Work:

- *Finney County
(anticipated for 2024)*
- *Ford County
(anticipated for 2025)*
- *Gray County
(anticipated for 2024)*
- *Hamilton County
(anticipated for 2024)*
- *Kearny County
(anticipated for 2024)*
- *Stanton County
(anticipated for 2025)*

Your review and feedback on the draft maps

Project Timeline, continued

Once **feedback is received**, there is a public review of the draft maps

- *We'll need your help in getting the word out to your residents*

**Preliminary
Map
Products**

**Post-
Preliminary
Processing**



STEP ONE: Provide Feedback on the BLE Maps

We want to incorporate your feedback into our work ahead.
This could include:

- Review BLE floodplains and comment
- Review stream extents and comment
- Provide information on community needs or areas of specific concern.
 - Intersections that often flood and stop traffic
 - Drainage problems
 - Parts of town where homes or businesses have flooded

How?

- Provide comments directly on the map (we'll show you how in a minute)
- Email this team
- Call one of us!

STEP TWO: Provide Insight and Data

Provide information that would be useful for our mapping team to be aware of.

- Are there areas of recent construction/development?
- Are there plans for new construction/development?
- Are there tricky areas that may require a closer look?
- Do you have projects underway, related to flooding, that we could help with?
- Do you have information you have about past flooding, such as high water marks?
- Do you have updated Aerial Imagery (We typically use the latest imagery from NAIP)?
- Do you have survey or as-built plan information (culverts, bridge openings, channel geometry)?
- Are there any revision approved for your previous map (Letters of Map Revision or Amendments)?

STEP THREE: Review Modeling Approach

Provide input on our proposed approach for the Data Development that will inform your regulatory map (also known as your Flood Insurance Rate Map, or FIRM)

- Comment period goes until 1/15/2024 (More time can be provided if needed)

Key Takeaways

- This process is going to take time.
- Your involvement will help us produce better maps!
 - Get the word out and encourage participation in this project.
 - Review information as it becomes available.

DON'T HESITATE TO CALL; WE ARE AVAILABLE.

Stay Informed

- Email List
 - Get us names, addresses, and titles
 - Will be main source of project updates
- Project Updates
 - When important milestones are reached
 - When action is necessary (reminders)
- Meetings
 - Five planned meetings
 - **For BLE/Discovery:** Kickoff (**DONE**), Discovery Meeting (**Today!**)
 - **For Regulatory Updates:** Flood Risk Review, Open House, Post-Preliminary CCO meeting
 - Others, as needed

Resources and Contact Information


Online Project Information

- **Project Website**
 - Scoping Maps, Project Timeline, Meeting Presentations, Newsletters, Technical Reports, Web Review Map
 - <https://agriculture.ks.gov/divisions-programs/dwr/floodplain/mapping/mapping-projects/lists/mapping-projects/upper-arkansas-custom-watershed>
- **Web Review Map**
- Review of BLE data
 - https://gis2.kda.ks.gov/gis/upper_ark/
 - This link will not be public facing until the project has been through Data Development
- **Story Maps**
 - Project Info
 - “Floodplain Current:” Mapping Process ‘Nuts and Bolts’

Base Flood Elevation Portal

For Zone A floodplains, you can request BFE data. Keep in mind, BLE data is subject to change.

https://maps.kgs.ku.edu/fpm_bfe/login.cfm



The screenshot shows the registration page for the Kansas Base Flood Elevation Portal. At the top, there is a header with the Kansas Department of Agriculture logo and the text "Kansas Base Flood Elevation Portal". Below the header are three navigation buttons: "Home", "About", and "Help". The main content area is titled "Portal Registration" and contains a form with the following fields:

- First Name
- Last Name
- User name
- Title
- Phone
- Email Address
- Address
- City
- Zip
- State (a dropdown menu currently showing "Kansas")

At the bottom right of the form is a yellow "Register" button.

KDA Contact Information

Joanna Rohlf, CFM, GISP

Joanna.Rohlf@ks.gov

D: 785-296-7769

Floodplain Mapping Coordinator

William Pace, CFM

William.Pace@ks.gov

D: 785-296-5440

Floodplain Mapping Specialist

Angi Goetze

Angi.Goetze@ks.gov

D: 785-296-4662

Floodplain Outreach Specialist

Tara Lanzrath, CFM

Tara.Lanzrath@ks.gov

D: 785-296-2513 M: 785-276-9359

State NFIP Coordinator

Cheyenne Sun Eagle

Cheyenne.SunEagle@ks.gov

D: 785-296-0854

NFIP Specialist

WSP Contact Information

Matt Long, PE, CFM

Matt.long@wsp.com

O: 785-272-6830 M: 913-461-5664

Lead Engineer

Lisa Tuckwin, CFM, GISP

Lisa.tuckin@wsp.com

O: 785-272-6830 M: 785-806-8391

GIS Manager

FEMA Contact Information

Dawn Livingston

Dawn.Livingston@fema.dhs.gov

O: 816-283-7055 M: 816-810-1609

Project Manager | Mitigation Division

Any Questions?

Interactive Map Review and Discussion

Web Map Link:




https://gis2.kda.ks.gov/gis/upper_ark/

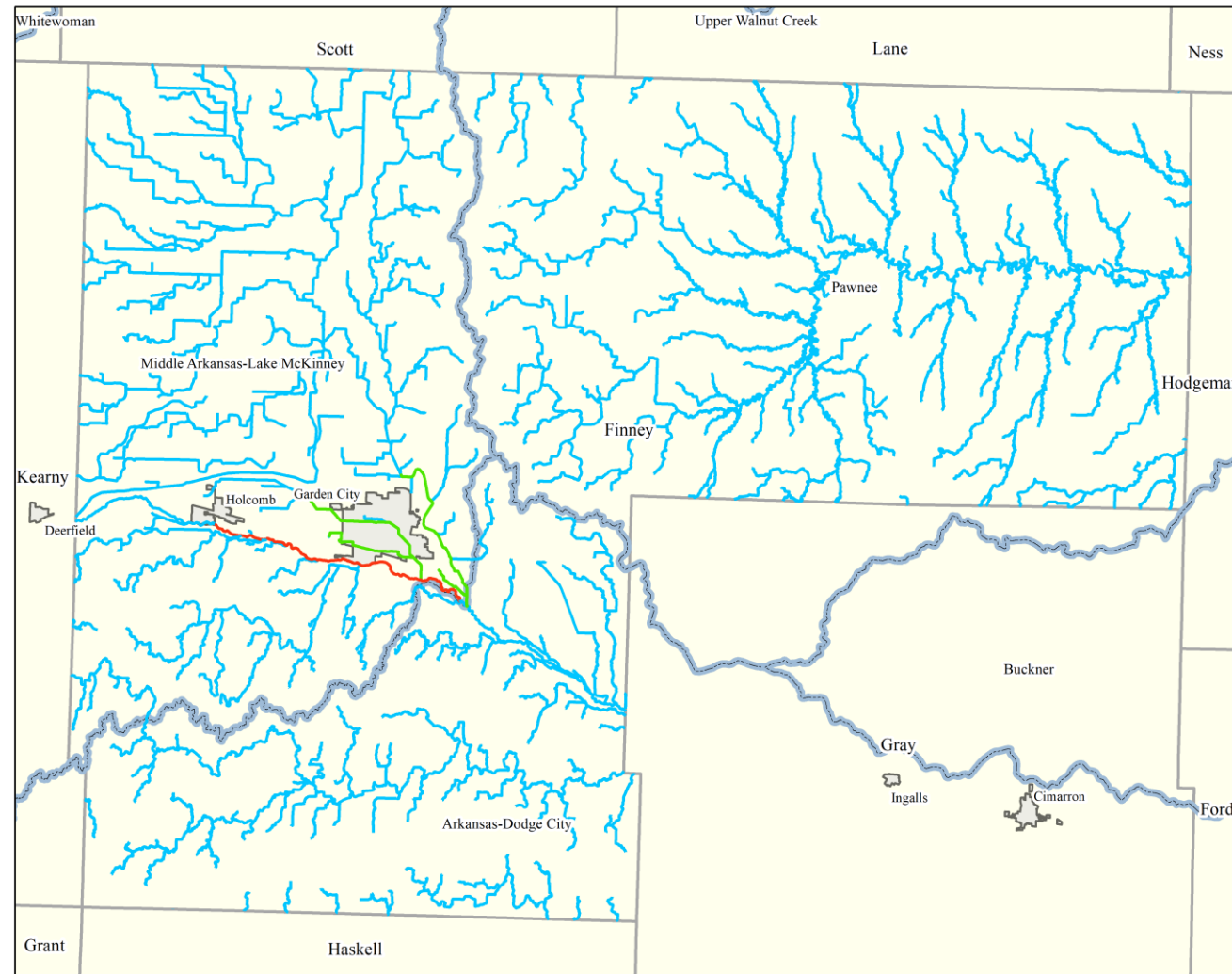
Where We Plan to Update Your Map

Preview of the Planned Work

Finney County 2024 Proposed Mapping Updates

Scoped Studies

-  **New Zone A - Excess Rainfall on Grid**
New Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology and 2D Hec-Ras hydraulics.
-  **New Enhanced Zone A - Excess Rainfall on Grid**
New Enhanced Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology and 2D HEC-RAS hydraulics. Field measured structure data will be incorporated into the modeling.
-  **New Zone AE with Floodway - HEC-HMS**
New Zone AE studies will be developed for these streams using 2D HEC-RAS hydraulics and hydrology calibrated to HEC-HMS model flows. Floodways will be developed. Field measured structure data will be incorporated into the modeling. BFEs will be shown on the maps.





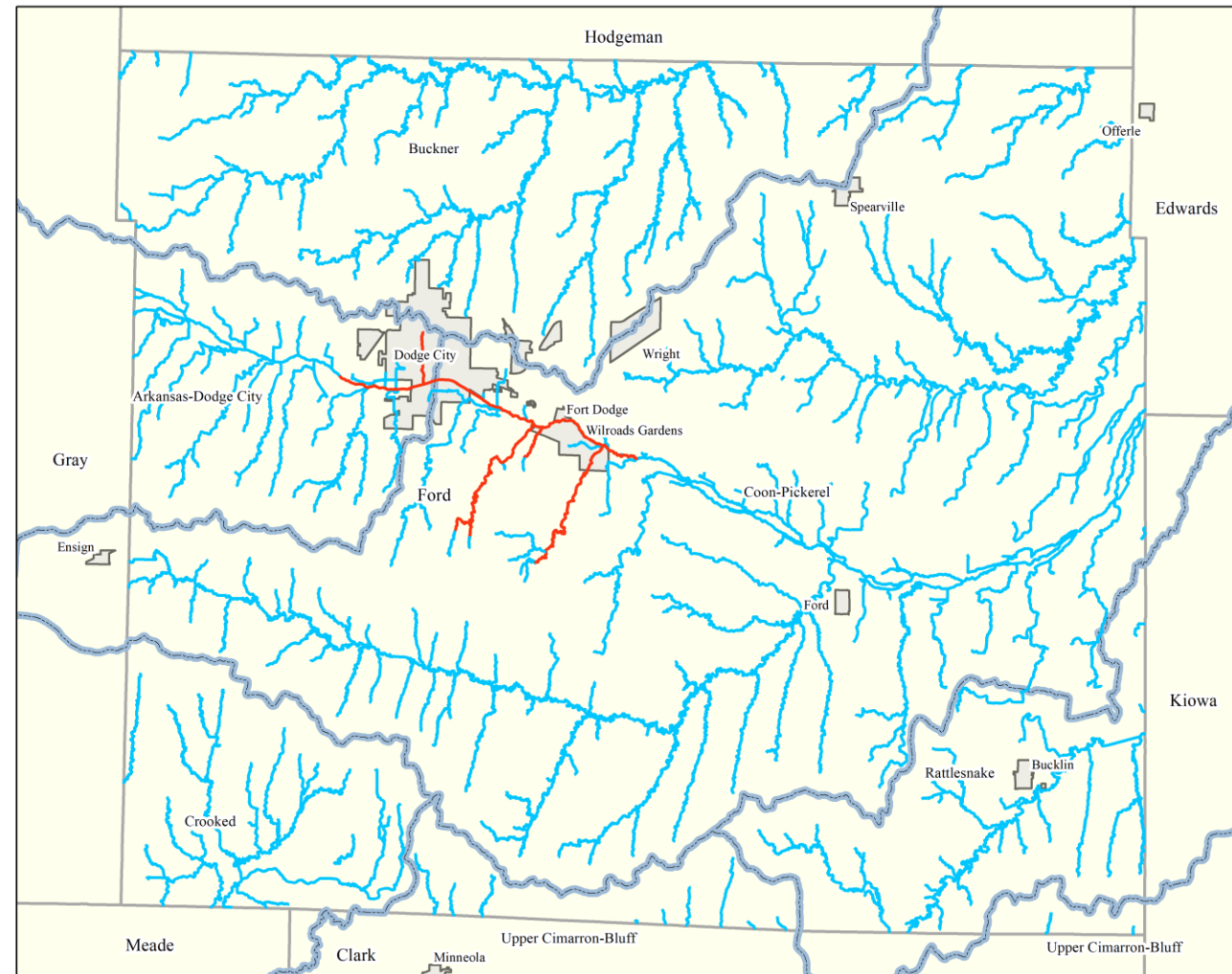
Where We Plan to Update Your Map

Preview of the Planned Work

Ford County 2025 Proposed Mapping Updates

Scoped Studies

-  **New Zone A - Excess Rainfall on Grid**
New Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology and 2D Hec-Ras hydraulics.
-  **New Zone AE with Floodway - HEC-HMS**
New Zone AE studies will be developed for these streams using 2D HEC-RAS hydraulics and hydrology calibrated to HEC-HMS model flows. Floodways will be developed. Field measured structure data will be incorporated into the modeling. BFEs will be shown on the maps.



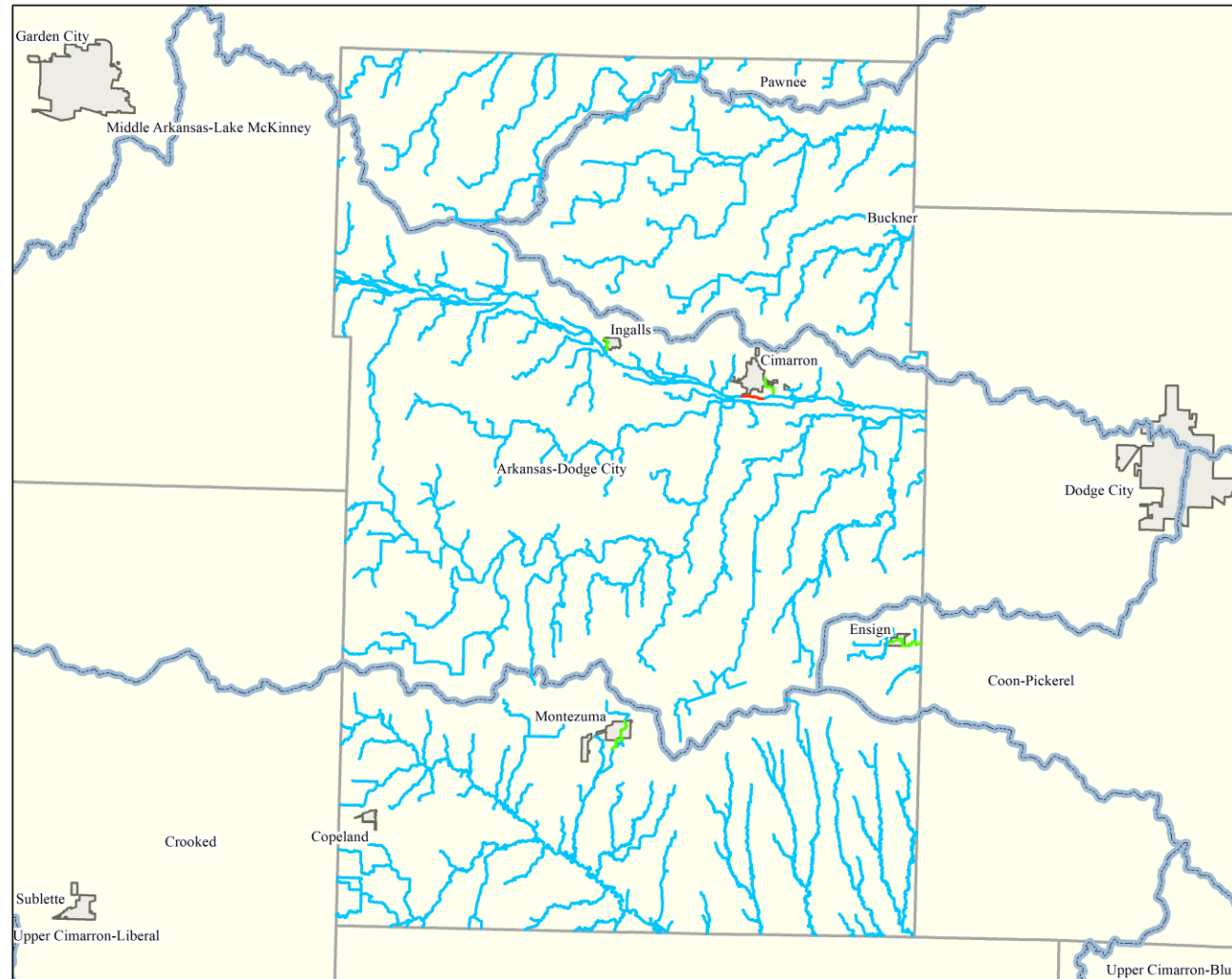
Where We Plan to Update Your Map

Preview of the Planned Work

Gray County 2024 Proposed Mapping Updates

Scoped Studies

- New Zone A - Excess Rainfall on Grid**
New Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology and 2D Hec-Ras hydraulics.
- New Zone AE with Floodway - HEC-HMS**
New Zone AE studies will be developed for these streams using 2D HEC-RAS hydraulics and hydrology calibrated to HEC-HMS model flows. Floodways will be developed. Field measured structure data will be incorporated into the modeling. BFEs will be shown on the maps.
- New Enhanced Zone A - Excess Rainfall on Grid**
New Enhanced Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology and 2D HEC-RAS hydraulics. Field measured structure data will be incorporated into the modeling.







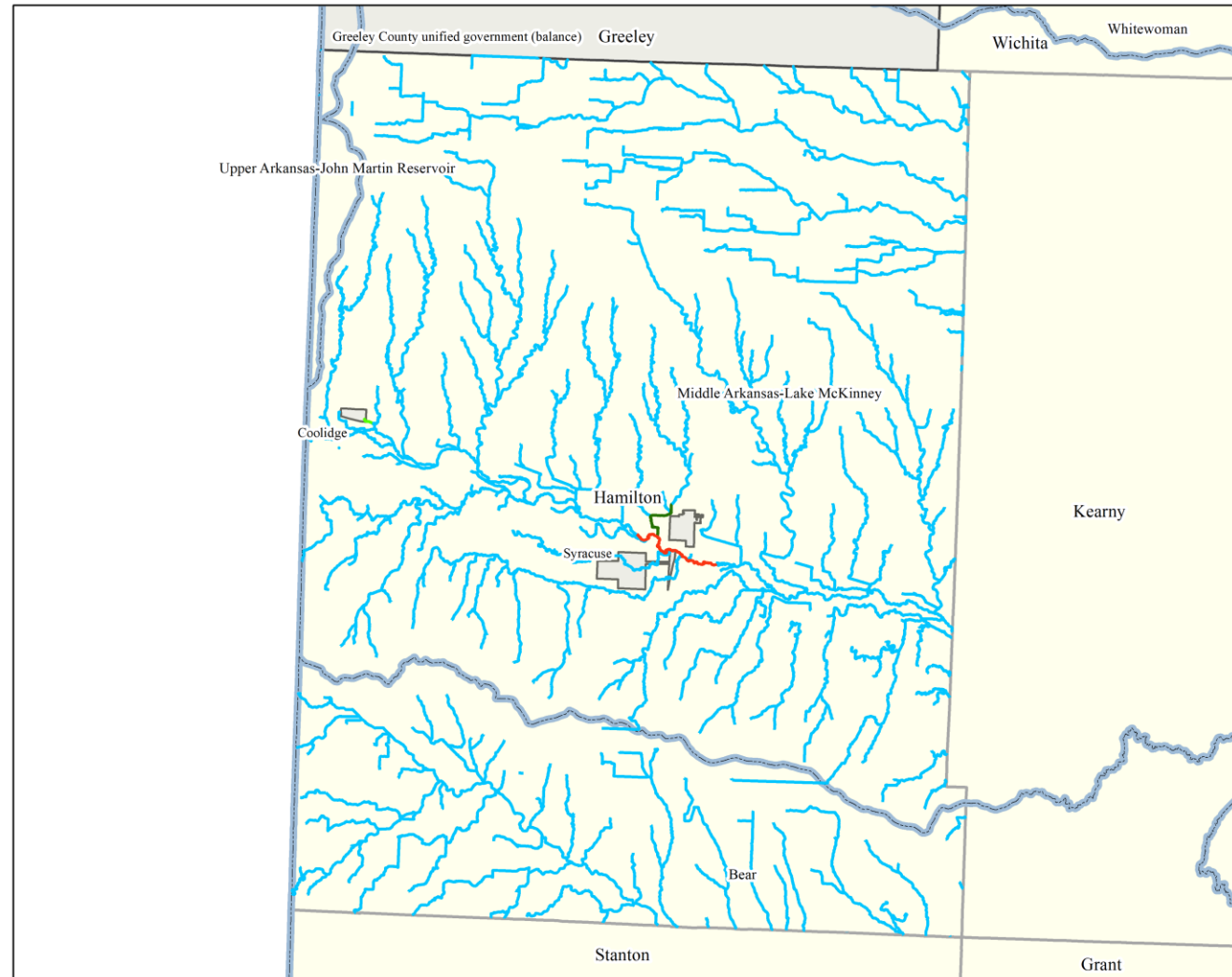
Where We Plan to Update Your Map

Preview of the Planned Work

Hamilton County 2024 Proposed Mapping Updates

Scoped Studies

-  **New Zone A - Excess Rainfall on Grid**
New Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology and 2D Hec-Ras hydraulics.
-  **New Enhanced Zone A - Excess Rainfall on Grid**
New Enhanced Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology and 2D HEC-RAS hydraulics. Field measured structure data will be incorporated into the modeling.
-  **New Zone AE with Floodway - HEC-HMS**
New Zone AE studies will be developed for these streams using 2D HEC-RAS hydraulics and hydrology calibrated to HEC-HMS model flows. Floodways will be developed. Field measured structure data will be incorporated into the modeling. BFEs will be shown on the maps.
-  **New Zone AE without Floodway - HEC-HMS**
New Zone AE studies will be developed for these streams using 2D HEC-RAS hydraulics and hydrology calibrated to HEC-HMS model flows. Floodways will NOT be developed. Field measured structure data will be incorporated into the modeling. BFEs will be shown on the maps.





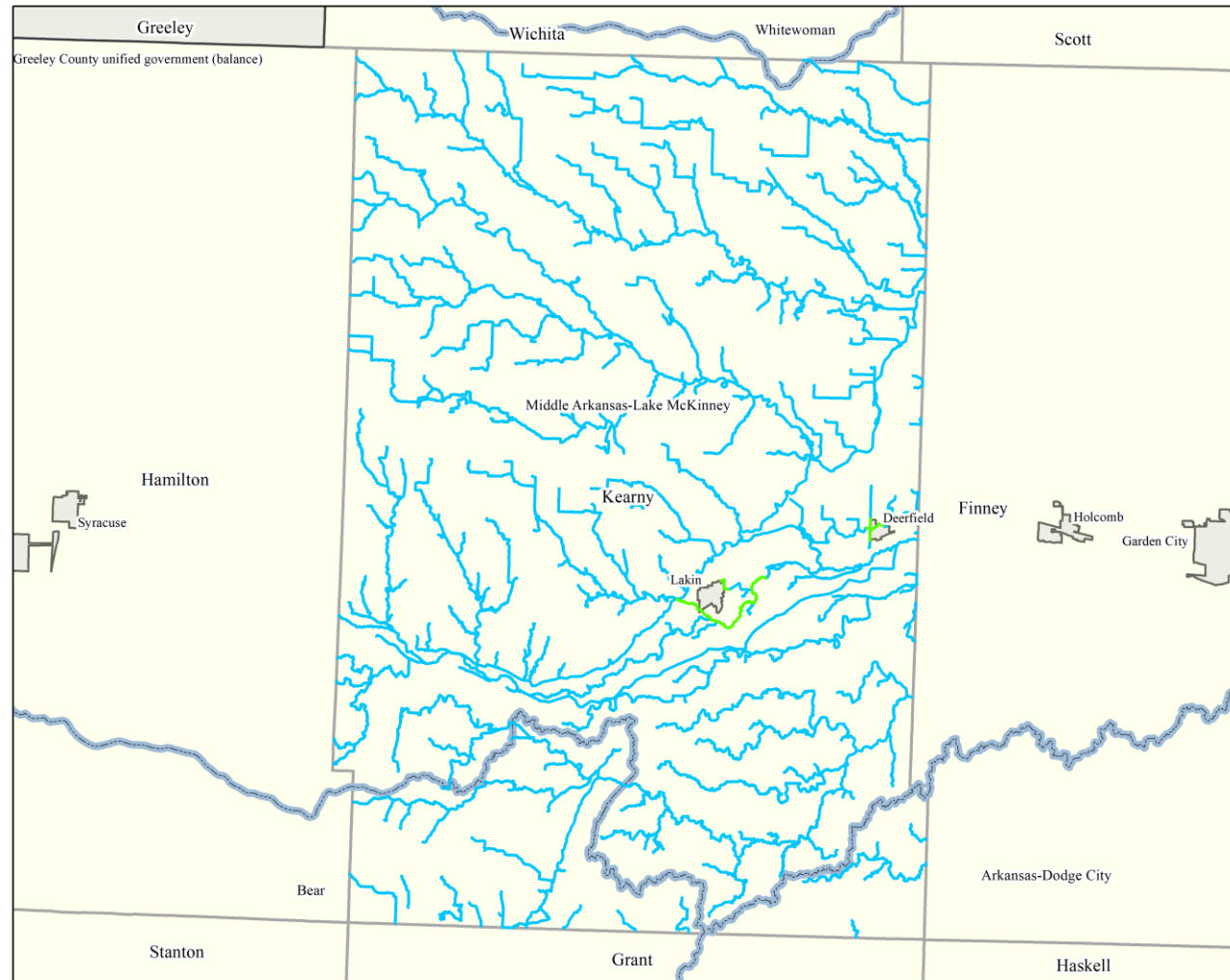
Where We Plan to Update Your Map

Preview of the Planned Work

Kearny County 2024 Proposed Mapping Updates

Scoped Studies

-  **New Zone A - Excess Rainfall on Grid**
New Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology and 2D Hec-Ras hydraulics.
-  **New Enhanced Zone A - Excess Rainfall on Grid**
New Enhanced Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology and 2D HEC-RAS hydraulics. Field measured structure data will be incorporated into the modeling.





Where We Plan to Update Your Map

Preview of the Planned Work

Stanton County 2025 Proposed Mapping Updates

Scoped Studies

-  **New Zone A - Excess Rainfall on Grid**
New Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology and 2D Hec-Ras hydraulics.
-  **New Enhanced Zone A - Excess Rainfall on Grid**
New Enhanced Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology and 2D HEC-RAS hydraulics. Field measured structure data will be incorporated into the modeling.

