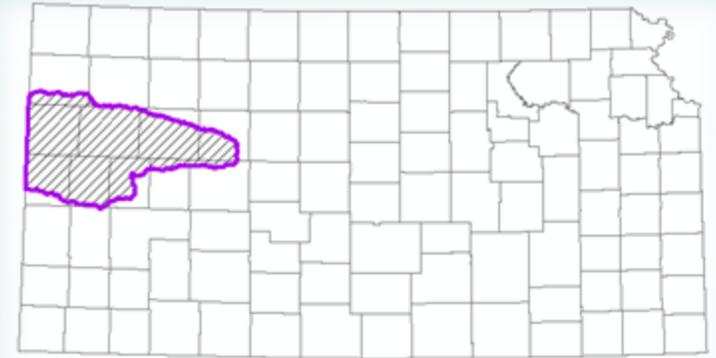


Upper Smoky Hill Custom Watershed Discovery Meeting

November 4th, 2022



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



FEMA



AECOM

*Thank you for
joining us today!*

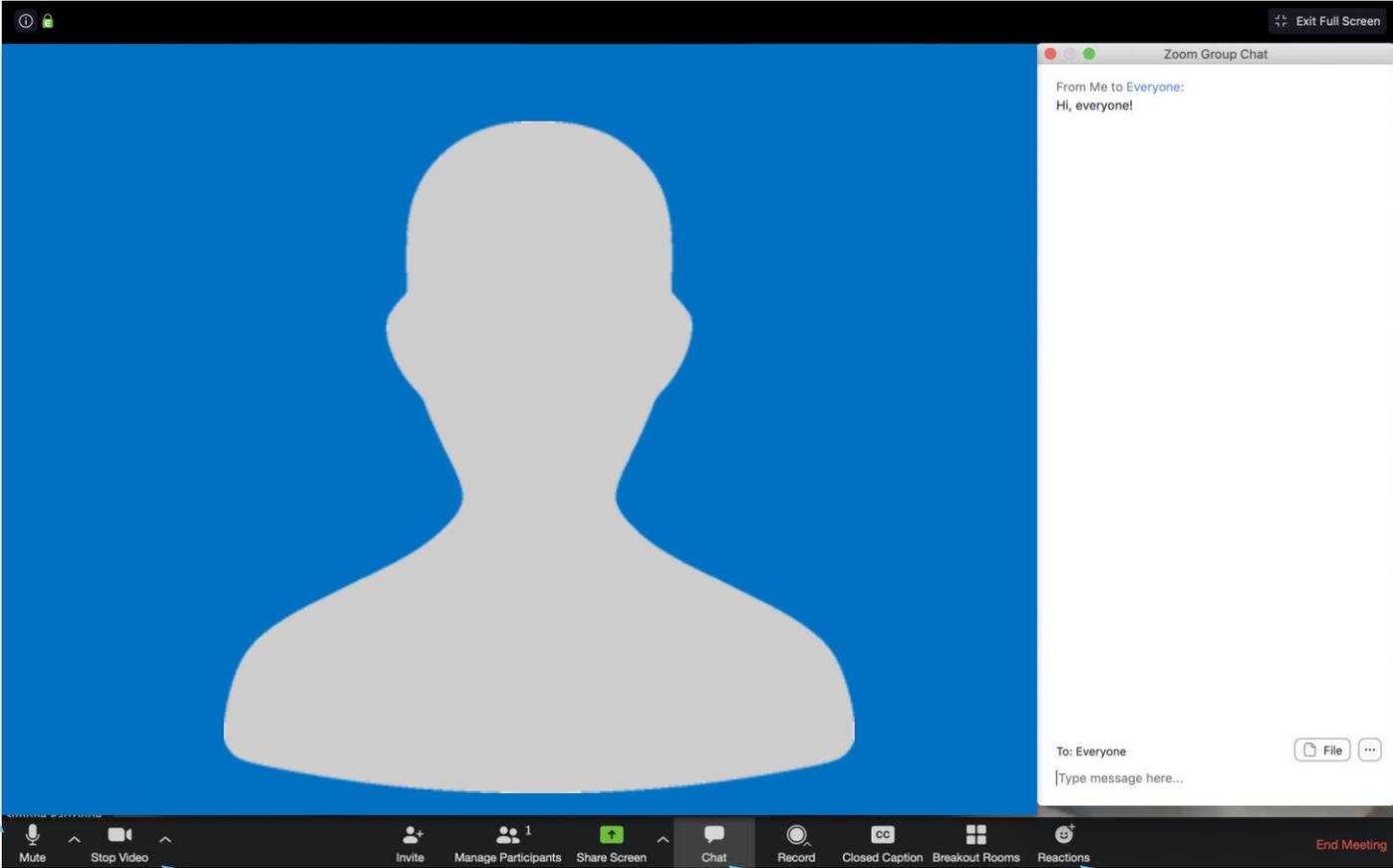
**Your input is very
important to this
work.**

A close-up photograph of a yellow sign with the words "THANK YOU" written in large, bold, black, sans-serif capital letters. The sign is mounted on a dark surface, and the background is slightly out of focus, showing a textured grey surface above and below the sign.

**THANK
YOU**

Zoom Features

*Mute /
Unmute*



Start your Video

*Use the Chat
Feature*

Reactions

Rules of the Road

- Attendees may 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 and unmute the lines at various stopping points.
- 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, *GISP, CFM*
Floodplain Mapping Coordinator

William Pace, *CFM*
Floodplain Mapping Specialist

Patrick Bonine
Floodplain Mapping Specialist

Tara Lanzrath, *CFM*
State NFIP Coordinator

Cheyenne Sun Eagle, *CFM*
NFIP Specialist



AECOM Technical Services, Inc.

Katie Ringland, *PE, CFM*
Project Manager

Hayden Edwards,
Engineer

FEMA Region VII

Dawn Livingston, *Regional Project Officer*

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

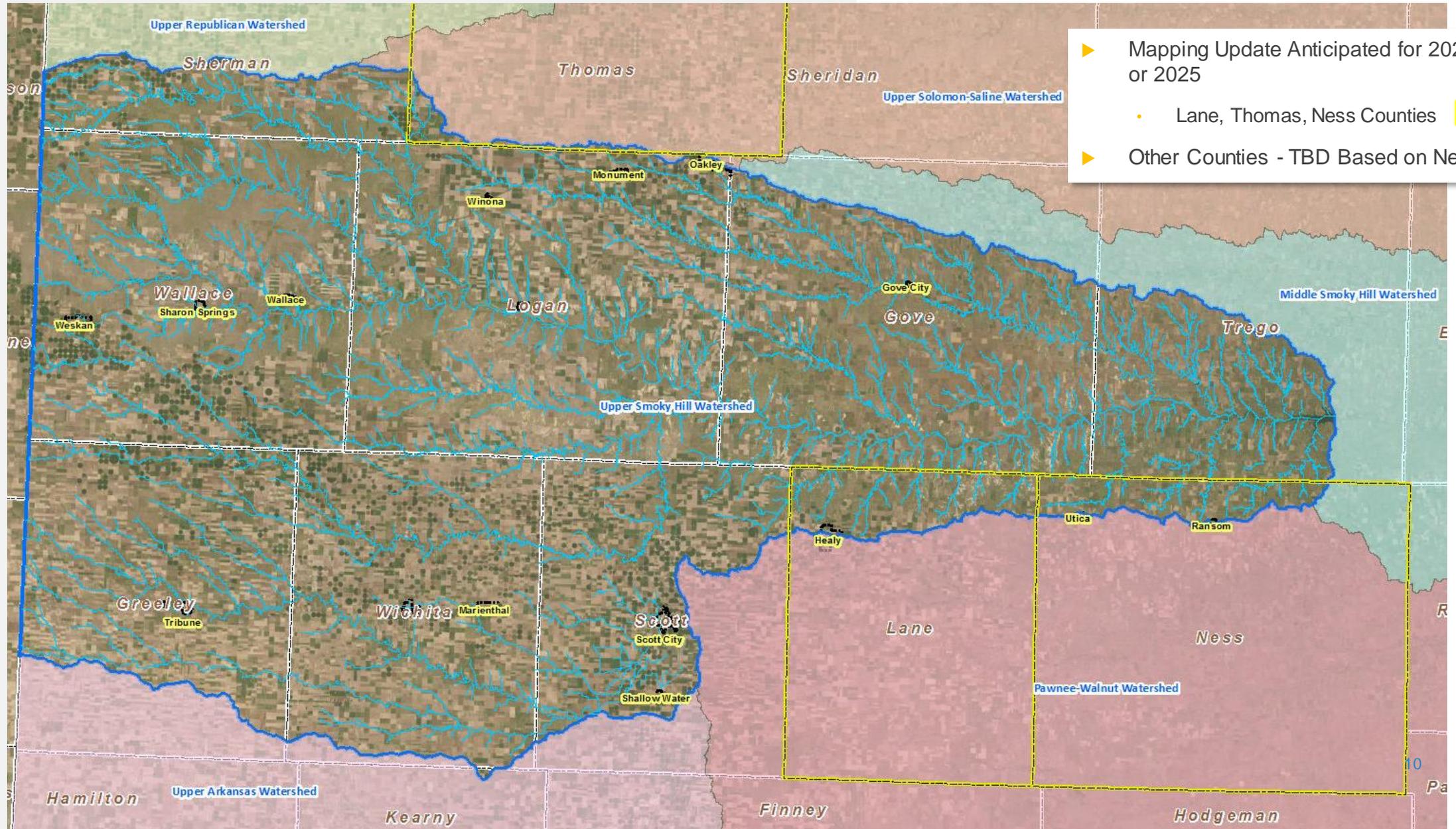
Planning: The “P” in Risk MAP

- The flood risk data from this work can – and should – inform your regional Hazard Mitigation Plan (HMP).
 - Region A: Cheyenne, Decatur, Rawlins, Sheridan, Sherman, and Thomas Counties
 - Region B: Norton and Philips Counties
- Common themes in the regional plans:
 - Many incorporated communities located along major rivers/creeks with SFHA Zone A and some AE.
 - Study drainage issues in flood prone areas and make recommendations for flood control measures, flood management procedures, and low-water crossing improvements.

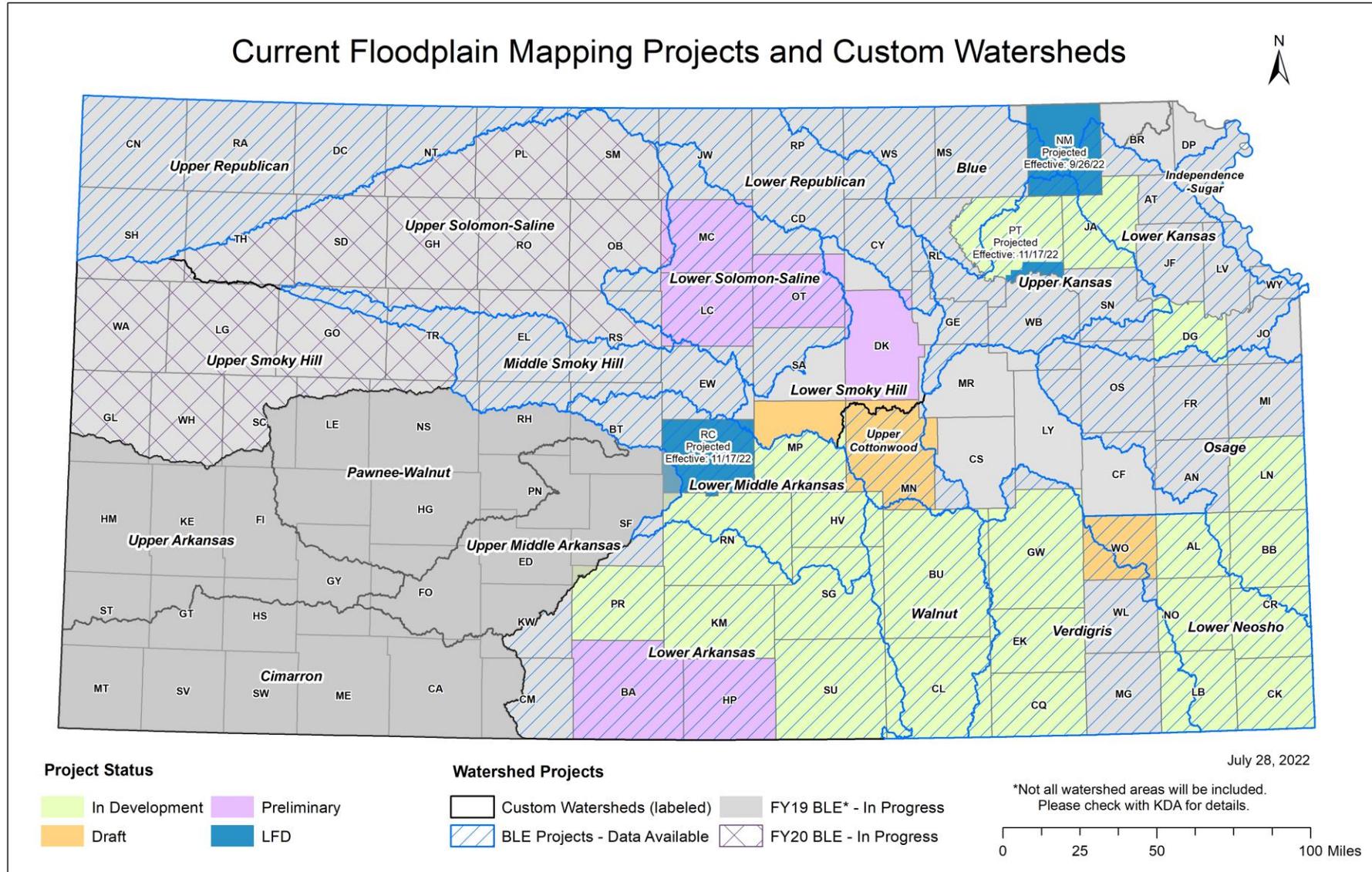


Regulatory FIRM Status

Preview of the Planned Work



We are doing this work across Kansas...



Participation in the National Flood Insurance Program

- Blue = Participates Red = Not Participating
- Cities of Gove City, Healy, Horace, Leoti, Marienthal, Oakley, Ransom, Russell Springs, Scott City, Sharon Springs, Tribune, Utica, Winona.
- Gove, Greeley, Lane, Logan, Ness, Scott, Sherman, Trego, Wallace, and Wichita Counties.

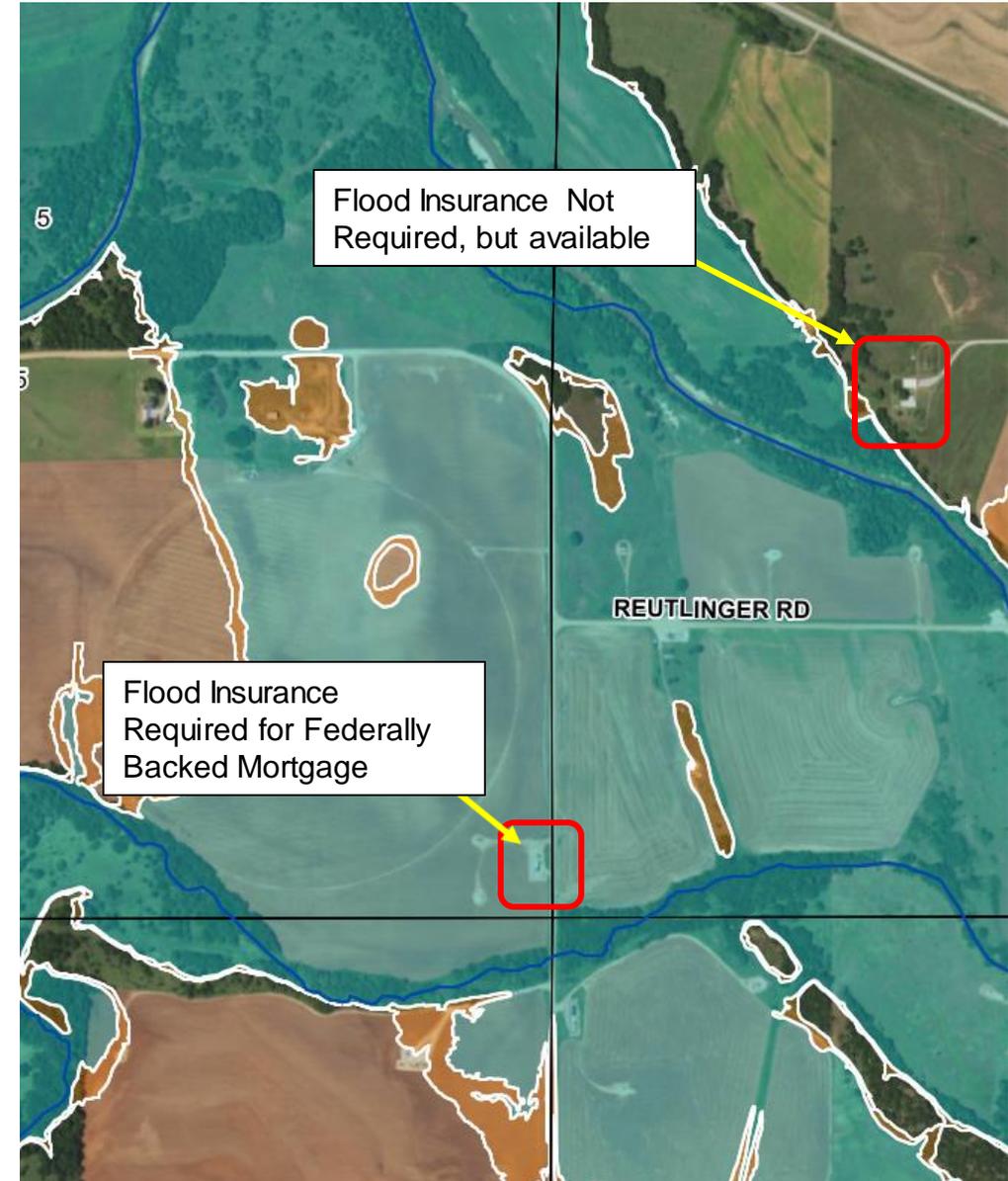
Benefits of joining the NFIP!

- Any 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

- What is the NFIP Definition of a community?
 - A political entity that has the authority to adopt and enforce floodplain ordinances for the area under its jurisdiction.
 - city, county, Indian tribe, or authorized tribal organization
- NFIP Participation is voluntary. To participate a community must:
 - Adopt a Floodplain Management Ordinance for regulating development in the floodplain
 - 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 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

Number of Flood Insurance Policies

- Gove County – 0
 - Gove City – 0
- Greeley County – 0
 - Horace - 0
 - Tribune - 0
- Lane County – 0
- Logan County – 0
 - Oakley - 0
 - Russell Springs – 0
 - Winona
- Ness County – 0
 - Ransom - 0
 - Utica - 0
 - Bazine* - 6
- Scott County – 0
 - Scott City – 2
- Sherman County – 0
 - Kanorado* - 0
 - Goodland* – 2
- Thomas County – 0
 - Gem* - 0
 - Colby* – 2
 - Brewster* – 0
 - Levant* – 0
- Trego County – 0
- Wallace County – 0
 - Sharon Springs – 0
 - Wallace – 0
- Wichita County – 0
 - Leoti – 0
 - Marienthal – 0

* Community not in Upper Smoky Hill Watershed

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 shows various geographical features and lines. The background is a blurred outdoor setting. The text is overlaid on the left side of the image.

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

Base Level Engineering is Complete

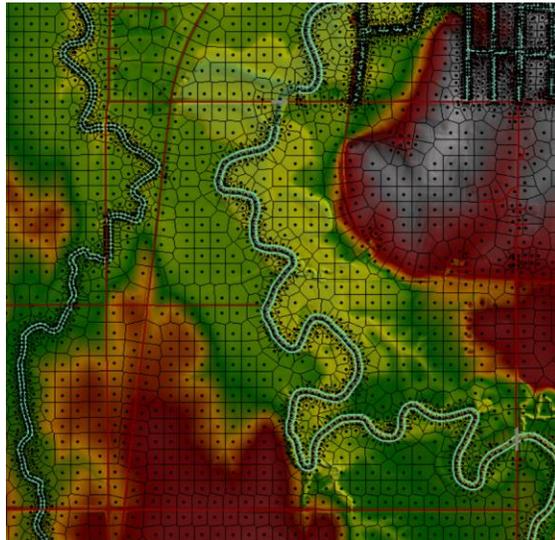
- BLE is an engineering approach that provides an initial high-level (or “base line”) understanding of flood hazards, with enough information for us to draft initial floodplain designations.
- We’re starting to develop and share this initial data because we’ve learned that the earlier we start partnering with you, the more accurate the map.
- The BLE data is **not regulatory** but could lead to regulatory maps if that path is pursued.

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.

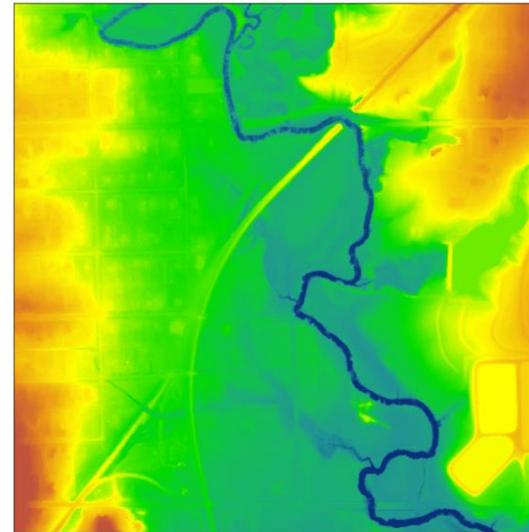
We Use 2D Hydraulic Modeling and LIDAR in our BLE

- Most effective maps in Kansas 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

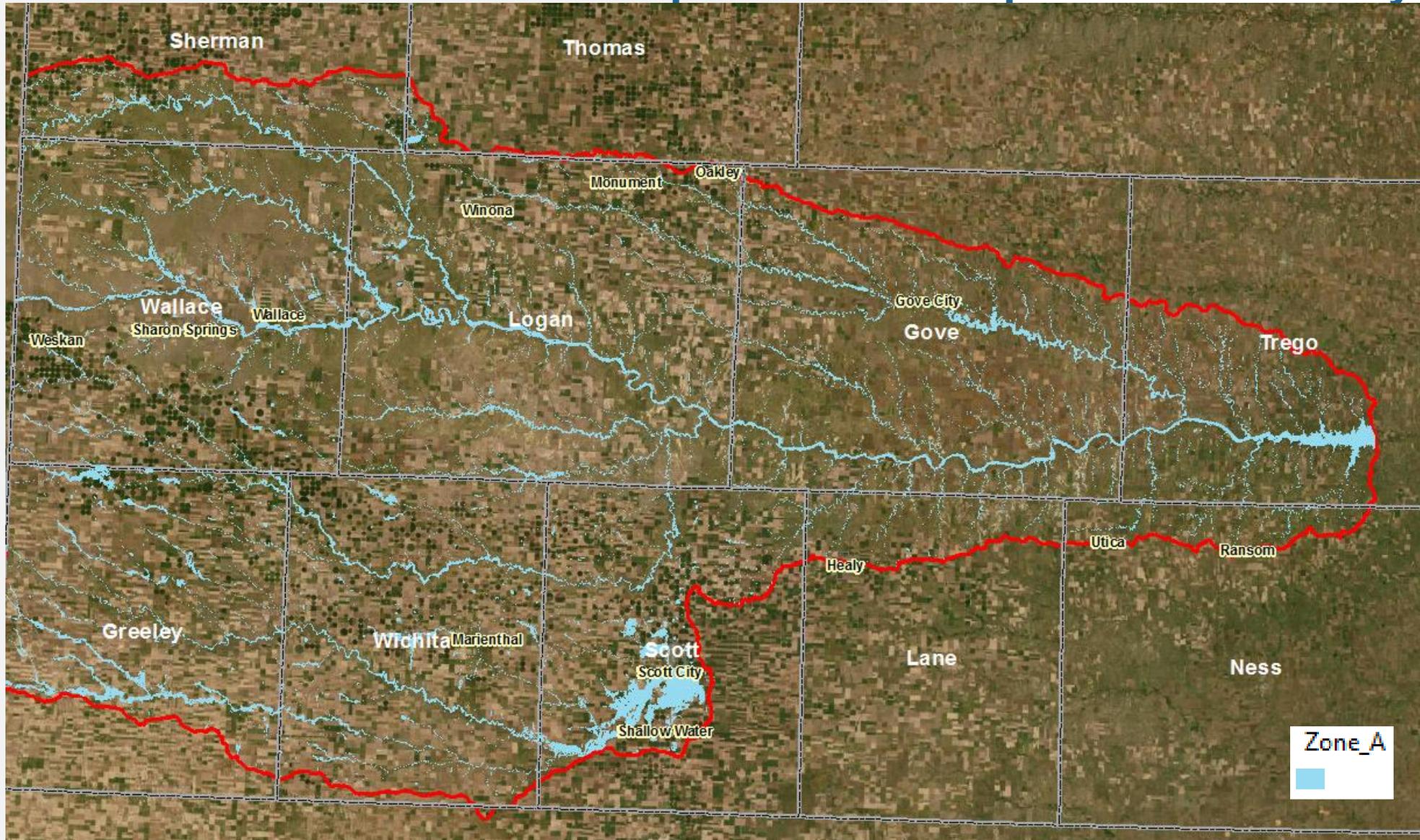


LiDAR



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
- Certified Levees are not accurately modeled because closure structures are not included into the model to prevent backwater

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 interest in moving forward with regulatory mapping and what 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.

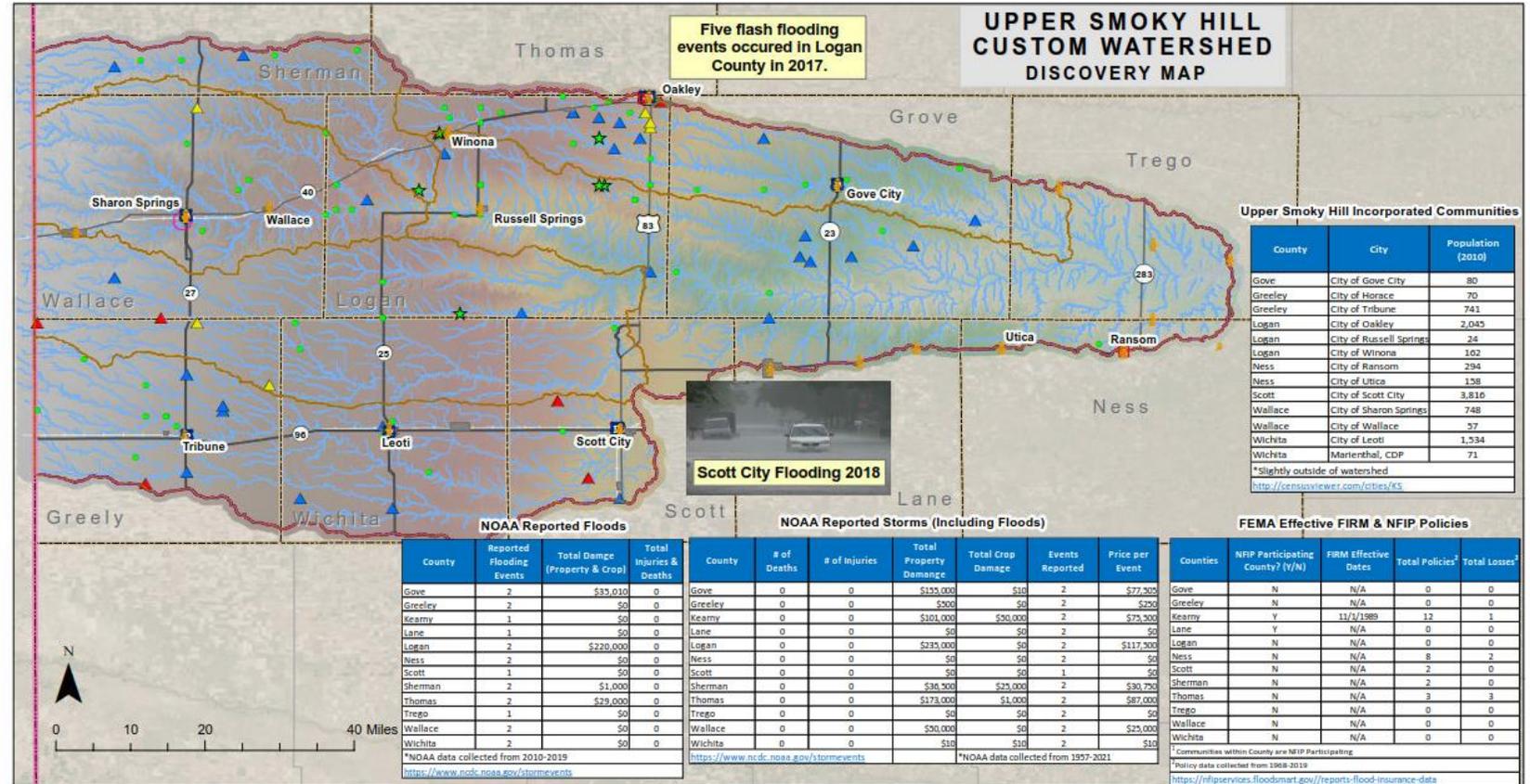
Discovery Reports and Maps



Discovery Report

Upper Smoky Hill Custom Watershed
 HUCs 10250001, 10260002, 10260003, 10260004, 10260005, and 11030002

June 2022
 MIP Case Number: 20-07-00175



Draft Floodplains

Where We Are Now

NATIONAL FLOOD INSURANCE PROGRAM

DISCOVERY 2D BLE WORKMAP
Scott City, Kansas
Scott County



MAP SYMBOLOLOGY

SPECIAL FLOOD HAZARD AREAS

- 2D BLE ZONE A
- 2D BLE ZONE A - PLAYAS

OTHER FEATURES

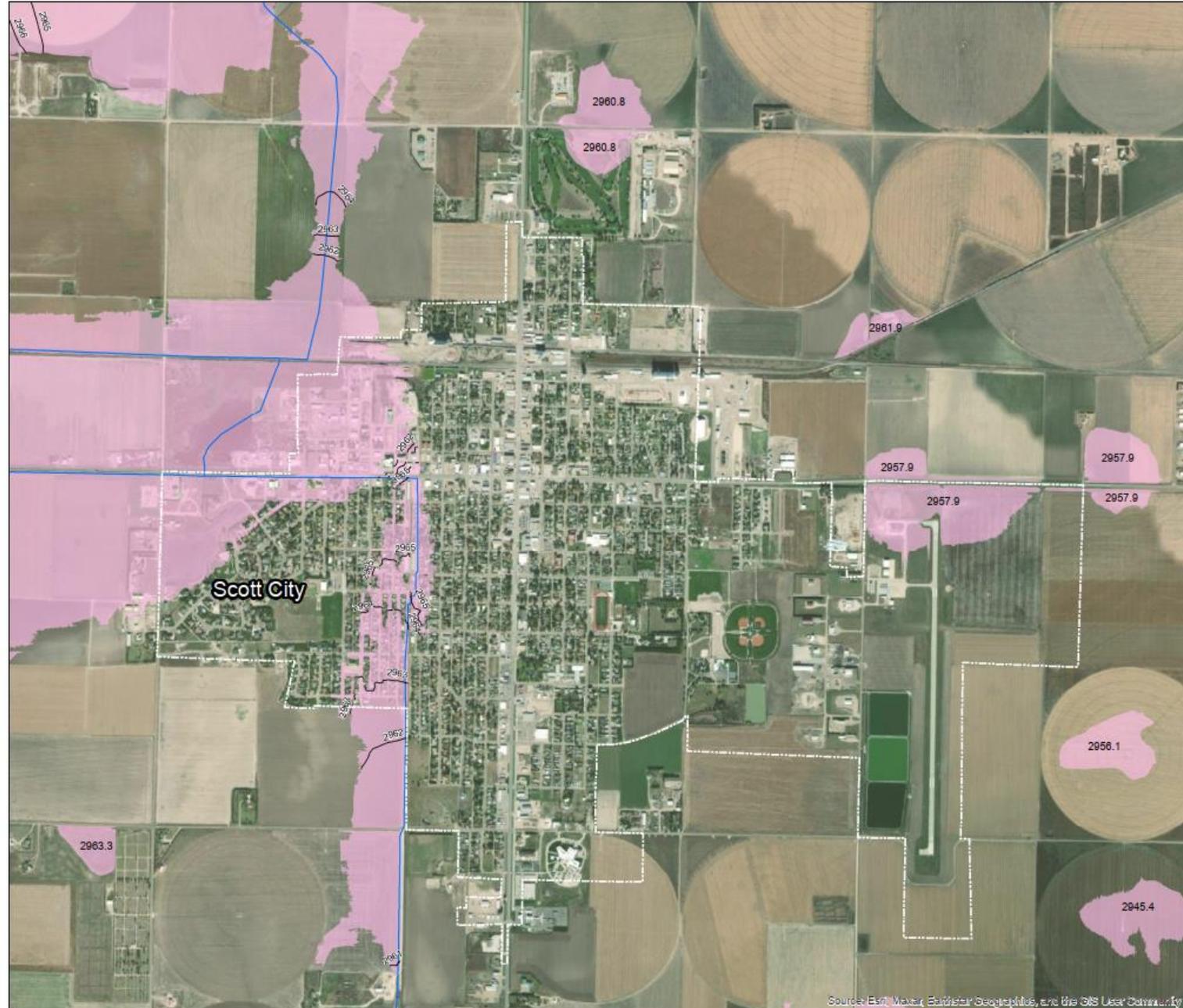
- 100 Zone A Base Flood Elevation
- Stream lines
- Municipal Boundary
- County Boundary

NAD 1983 StatePlane Kansas South FIPS 1502 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 1,312,333.3333
False Northing: 1,312,333.3333
Central Meridian: -98.5000
Standard Parallel 1: 37.2667
Standard Parallel 2: 38.5667
Latitude Of Origin: 36.8667
Units: Foot US

1 inch = 1,443 feet

0 800 1,600 3,200 4,800 Feet

0 225 450 900 1,350 Meters



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Draft Floodplains

Where We Are Now

NATIONAL FLOOD INSURANCE PROGRAM

DISCOVERY 2D BLE WORKMAP

Leoti, Kansas
Wichita County



MAP SYMBOLOLOGY

SPECIAL FLOOD HAZARD AREAS

-  2D BLE ZONE A
-  2D BLE ZONE A - PLAYAS

OTHER FEATURES

-  100 Zone A Base Flood Elevation
-  Stream lines
-  Municipal Boundary
-  County Boundary

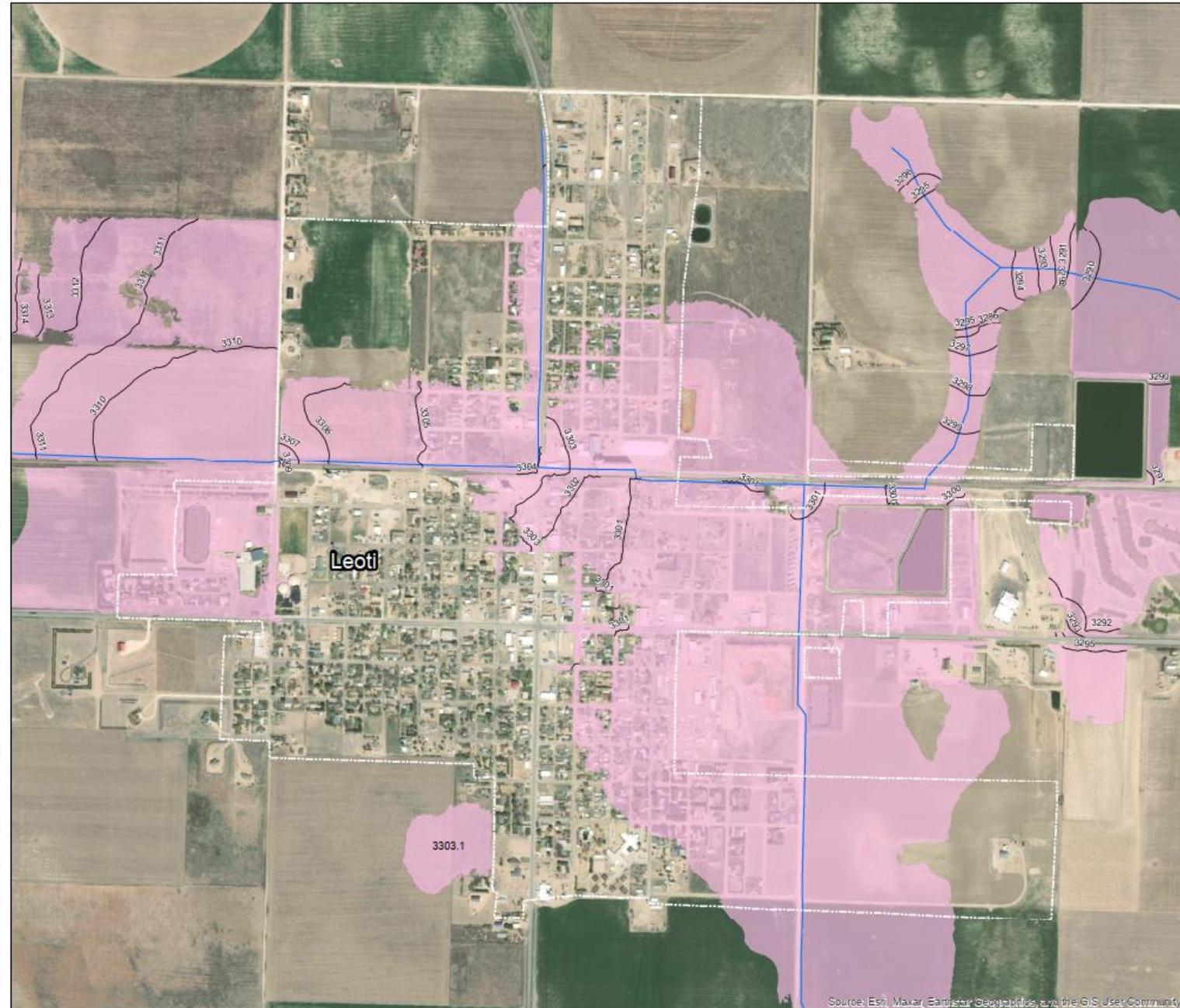
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Central Meridian: -98.5000
Standard Parallel 1: 37.2667
Standard Parallel 2: 38.5667
Latitude Of Origin: 36.6667
Units: Foot US



1 inch = 950 feet

0 500 1,000 2,000 3,000 Feet

0 150 300 600 900 Meters



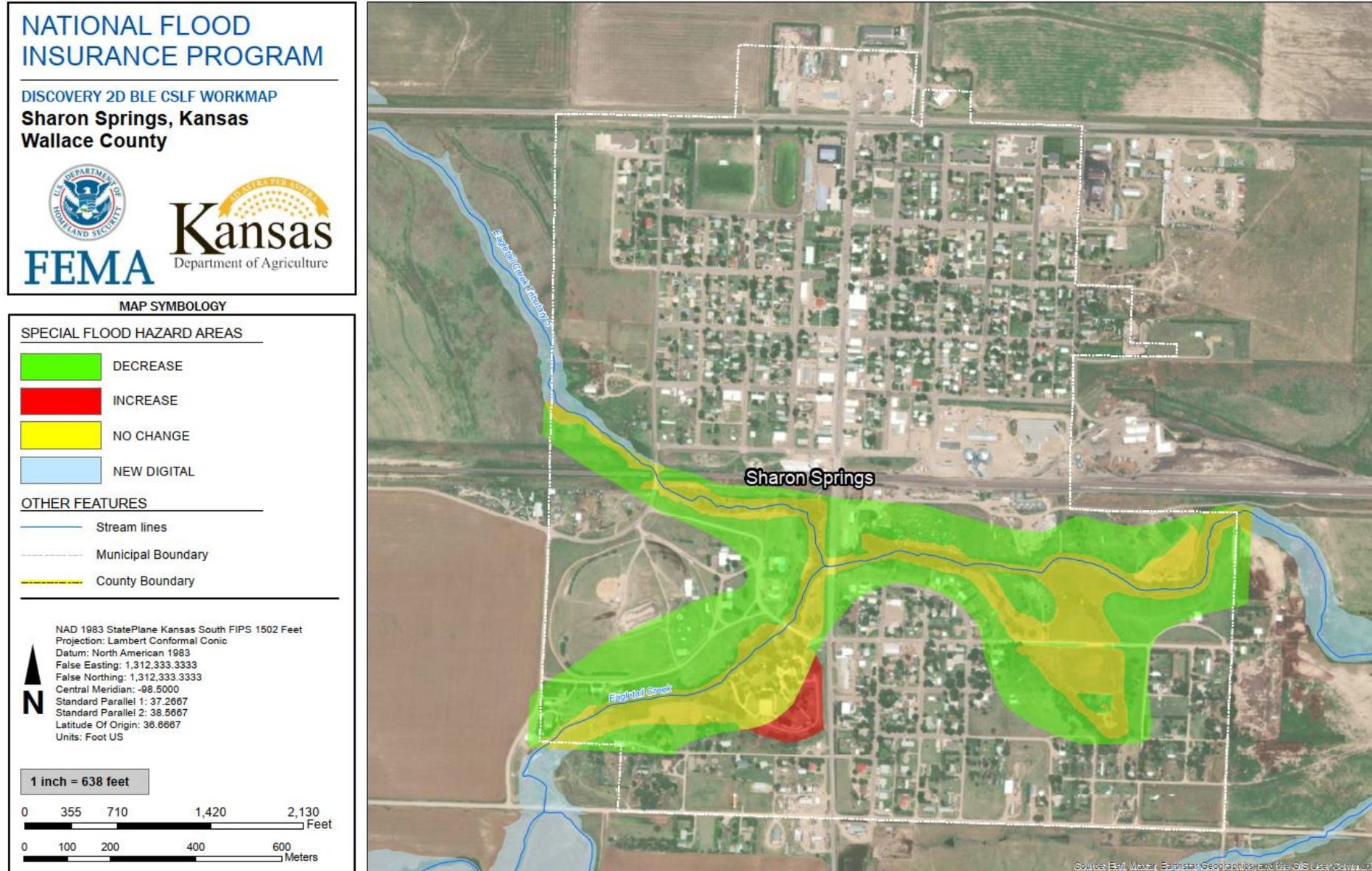
Source: Esri, Maxar, Earthstar, GeoAnalytics, and the GIS User Community

Changes Since Last Flood Insurance Rate Map (FIRM)

Where We Are Now

BLE Floodplain compared to Current Effective Floodplain

*Only applies to Sharon Springs, Oakley, and Ransom



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](#)

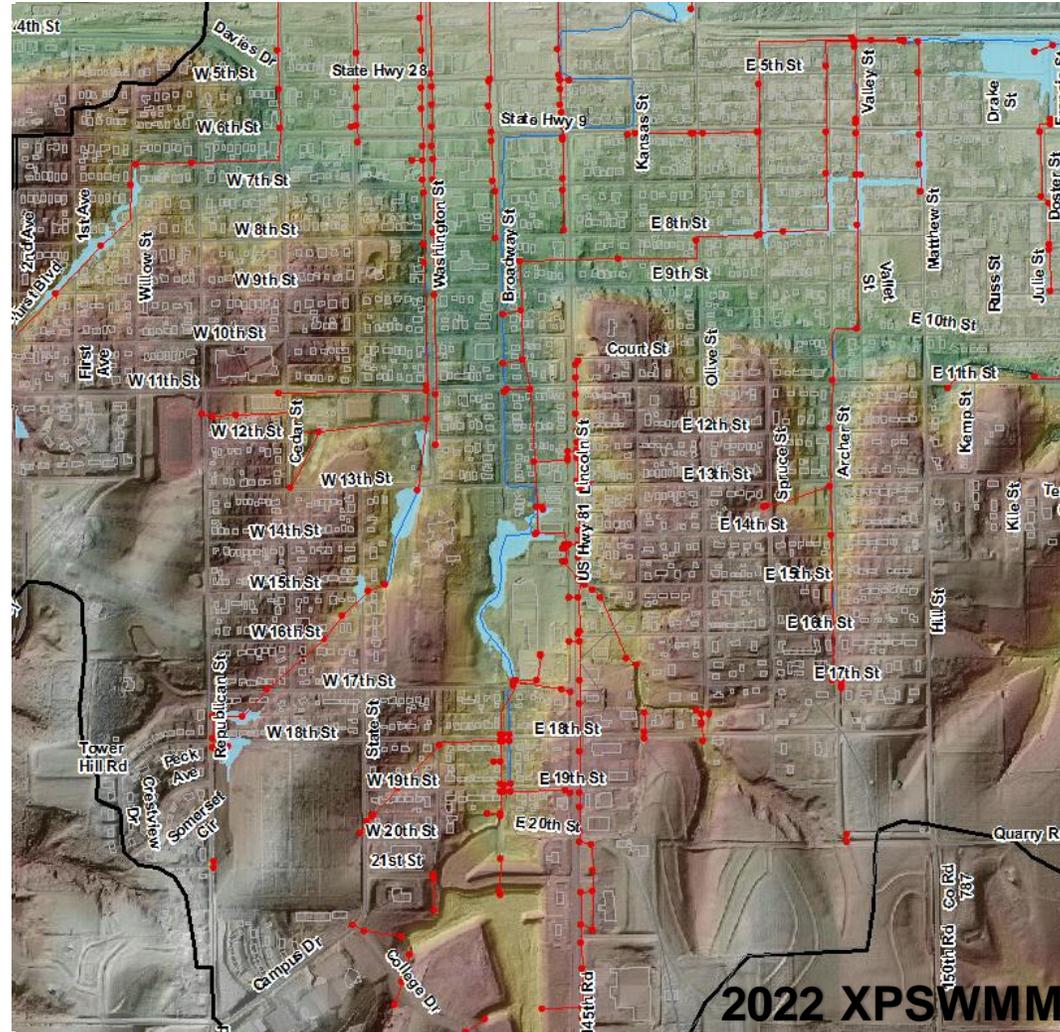
You can visit the KDA website for more information, including a link to a fillable request form:

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

City of Concordia Technical Assistance Project

21st Dam and City Storm Sewer Model

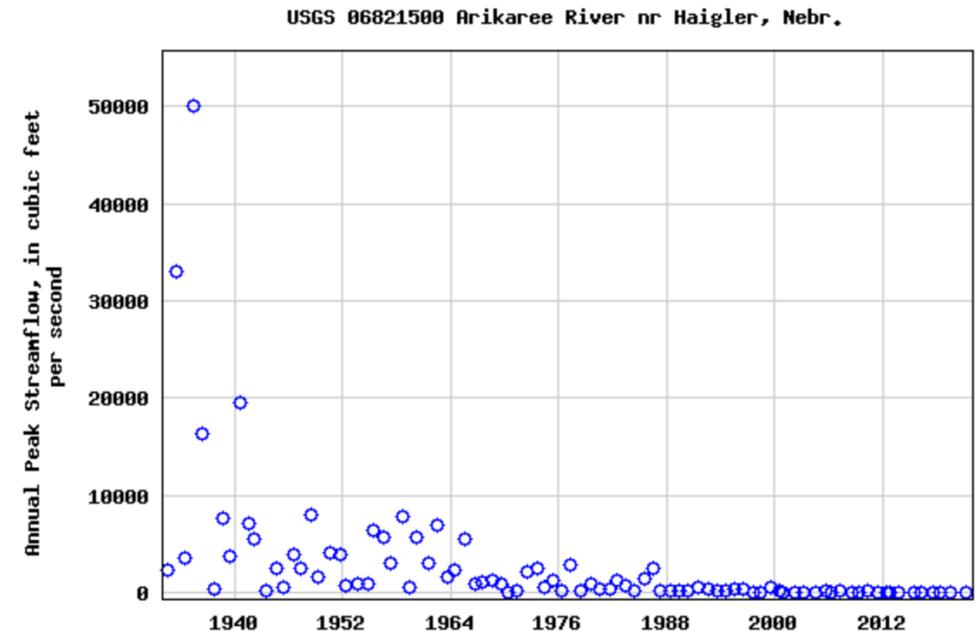
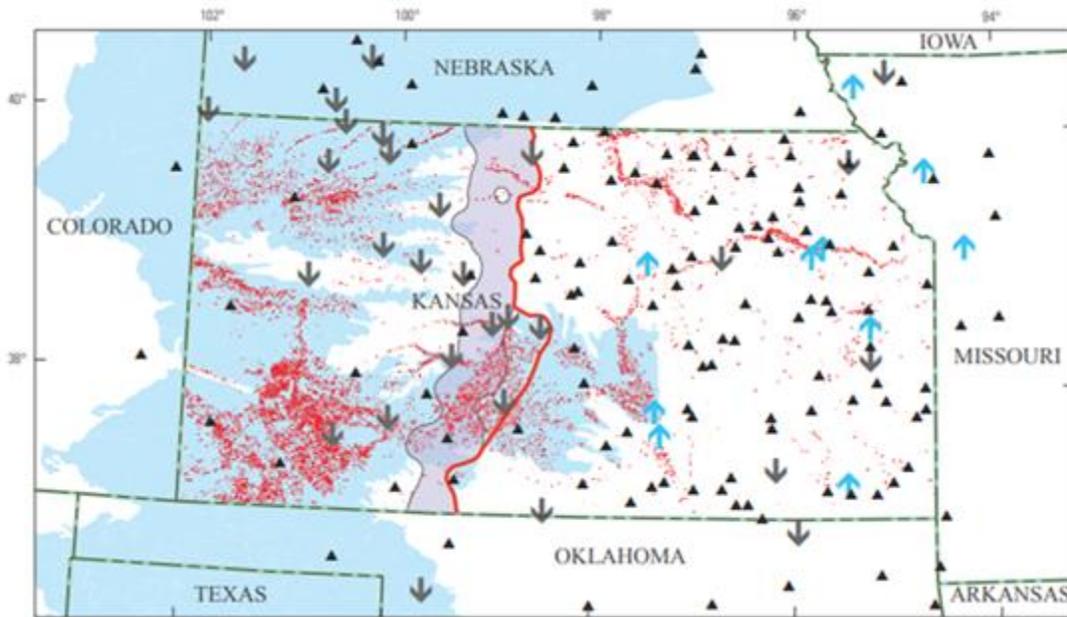
Using XPSWMM to model the City of Concordia sub-surface storm sewer system and 21st Street and Plum Road Dams resulted in lower water surface elevations compared to the 2D BLE study and the Effective FIRM.



Model Scenario	Structures in SFHA
2D BLE Zone A	248
XPSWMM 1D/2D (Depths Greater than 0.5 ft)	35

Technical Assistance Project: Western Kansas Hydrology Pilot Study

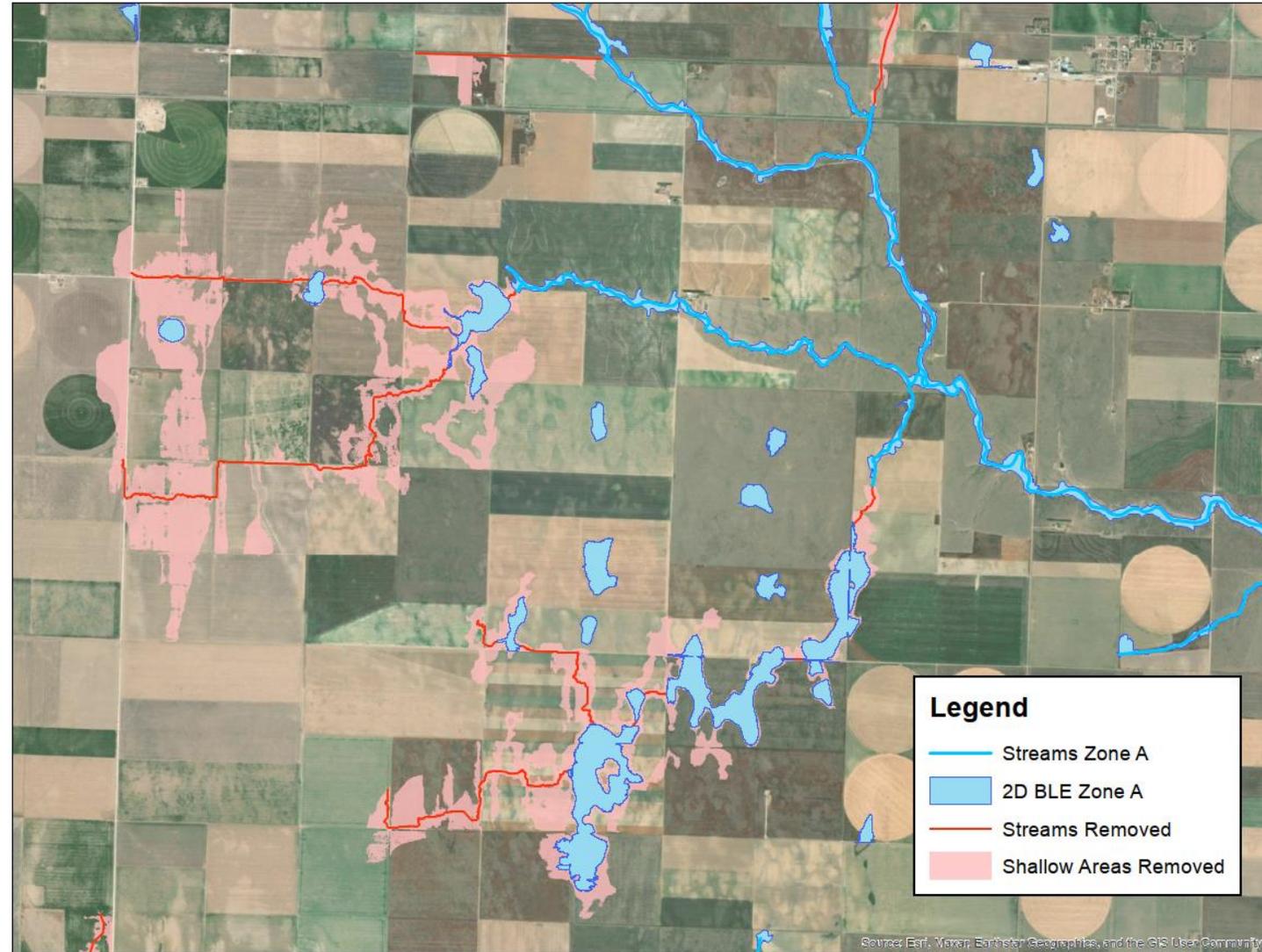
- Groundwater Irrigation has caused streamflow to decline since 1978
- Challenges encountered due to discrepancies in Model Calibration Data
- Technical Assistance Study performed to analyze hydrology scenarios
 - Mixed Population Gage Analysis
 - Methodology updated to represent streamflow loss



Western Kansas

Mapping Challenges

- Due to flat terrain and playa basins, streams were picking up shallow rainfall flooding using standard mapping procedures
- Streamlines were trimmed to represent defined channels
- Shallow flooding areas less than 1 Foot of depth removed
- Playa flooding greater than 1 Foot of depth and 5 acres in surface area retained as BLE Zone A



Preview of the Planned Work

Which We Call Our Data
Development Scope



BLE Data is Best Available data in this Watershed

- Current Effective Zone A maps exist in Sharon Springs, Oakley, and Ransom
- This BLE Data can be used to determine Base Flood Elevations (BFE's) that supersede previous Zone A floodplains
- You can request BFE data from the BFE Portal. Keep in mind, BLE data is subject to change if a regulatory project is decided to move forward.

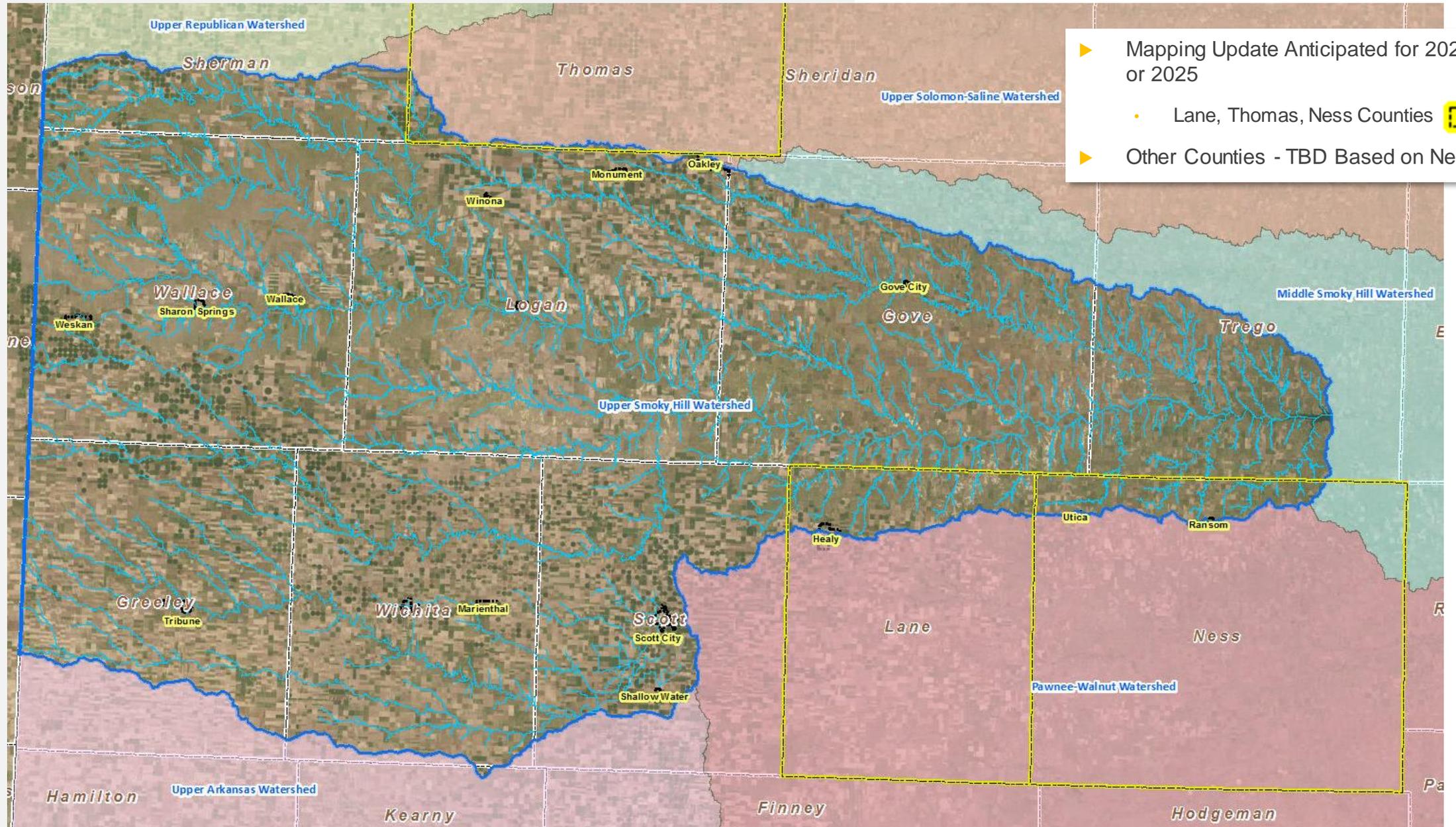
https://maps.kgs.ku.edu/fpm_bfe/login.cfm



The screenshot shows the 'Kansas Base Flood Elevation Portal' registration page. At the top left is the Kansas Department of Agriculture logo with the motto 'AD VASTRA PER ASPERA'. To the right of the logo is the text 'Kansas Base Flood Elevation Portal'. Below this is a navigation bar with three 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', and 'State'. The 'State' dropdown menu is currently set to 'Kansas'. A yellow 'Register' button is located at the bottom right of the form.

Where We Plan to Update Your Map

Preview of the Planned Work



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

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*

Data Development Work:

- *Ness County (~2025)*
- *Lane County (~2025)*
- *Thomas County (~2024)*
- *Additional Interested Counties*

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.

** Updates to the BLE Maps will only be made if a county project is taken through data development and regulatory mapping.*

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 12/4/2022 (More time can be provided if needed)

Key Takeaways

- 2D BLE and Discovery projects are nearing the completion of the timeline
- If the regulatory project is selected to move forward, the full 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/>
- **Web Review Map**
 - Review of BLE data
 - https://gis2.kda.ks.gov/gis/upper_smoky/
 - 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 left is the Kansas Department of Agriculture logo with the motto "19 ASTRA PER ARTEM". To the right of the logo is the text "Kansas Base Flood Elevation Portal". Below this is a navigation bar with three buttons: "Home", "About", and "Help". The main heading is "Portal Registration". The form contains the following fields: "First Name", "Last Name", "User name", "Title", "Phone", "Email Address", "Address", "City", "Zip", and "State". The "State" field is a dropdown menu currently set to "Kansas". At the bottom right of the form is a yellow "Register" button.

KDA Contact Information

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Patrick Bonine

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Floodplain Mapping Specialist

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Tara.Lanzrath@ks.gov

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State NFIP Coordinator

Cheyenne Sun Eagle, CFM

Cheyenne.SunEagle@ks.gov

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NFIP Specialist

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Project Manager

Hayden Edwards

hayden.edwards@aecom.com

O: 816-561-4443

Engineer

FEMA Contact Information

Dawn Livingston

Dawn.Livingston@fema.dhs.gov

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

Regional Project Officer

Any Questions?

Interactive Map Review and Discussion

Web Map Link:

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

Community Identified Flooding

- Community identified flooding was identified during the Discovery process
- Stated Areas of Past Flooding:
 - Wallace County
 - Eagle Trail Creek near the south side of Sharon Springs
 - Along HWY 27 and CR-22 near Jackrabbit Rd
 - HWY 40 East of Wallace
 - Logan County
 - Surface Water drainage in City of Winona
 - Scott County
 - Scott City drainage, near old railroad
 - White Woman Creek Basin near HWY 83

Wallace County – Sharon Springs

Eagle Trail Creek runs through Sharon Springs then to the East into the Smoky Hill River and can flood where it runs into the park in the south corner of Sharon Springs.



Wallace County

HWY 40 East of Wallace
around Mile Marker 30
is also an area of concern.



Wallace County



Areas along CR and HWY 27 near Jackrabbit Road that experience roadway overtopping during larger storms

Logan County - Winona

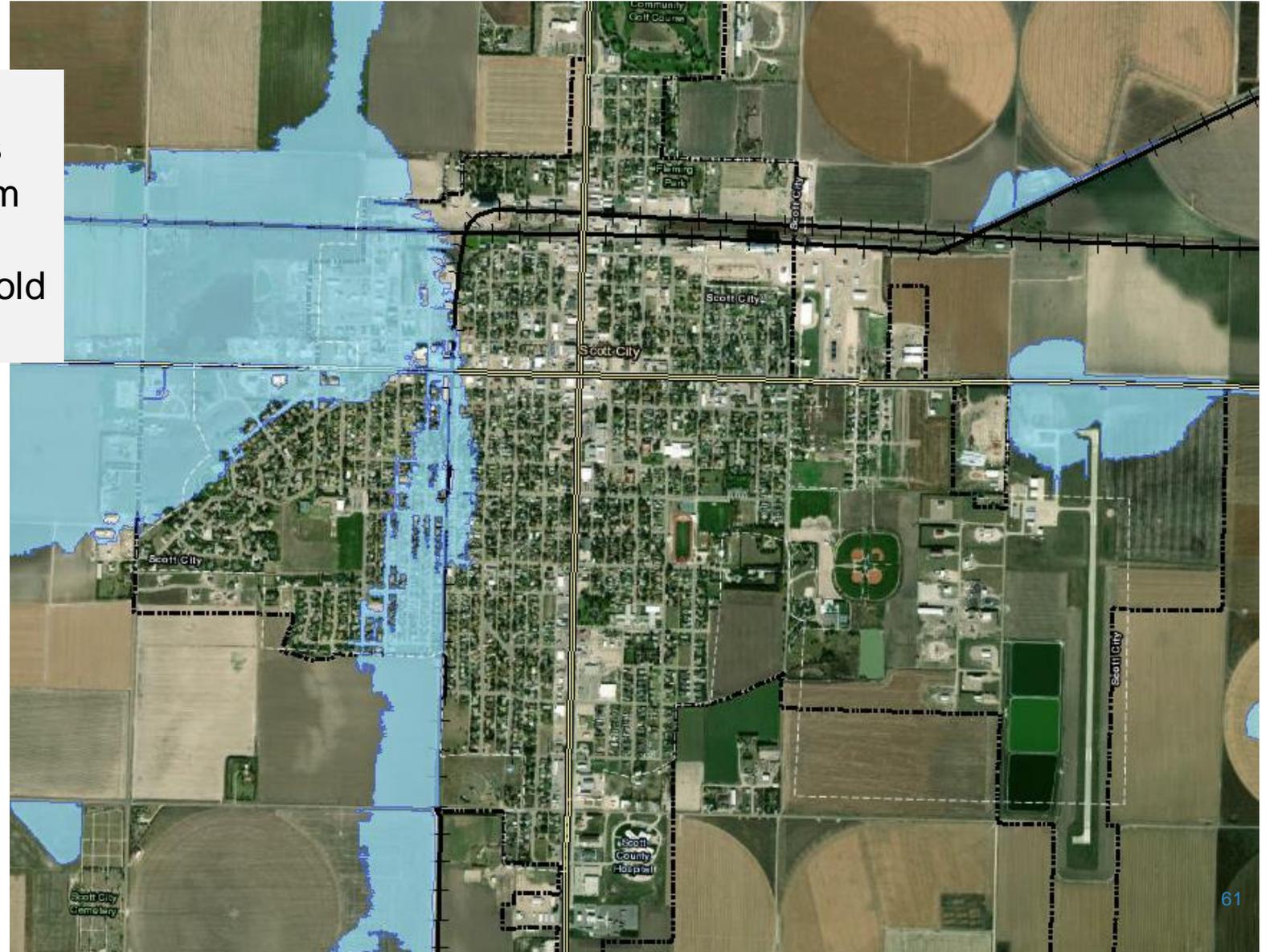
- **City of Winona** occasionally has issues with surface water drainage, but there is little to no riverine flooding.
- There have been several mitigation efforts completed to enhance drainage through Winona including culvert maintenance and enhancements.



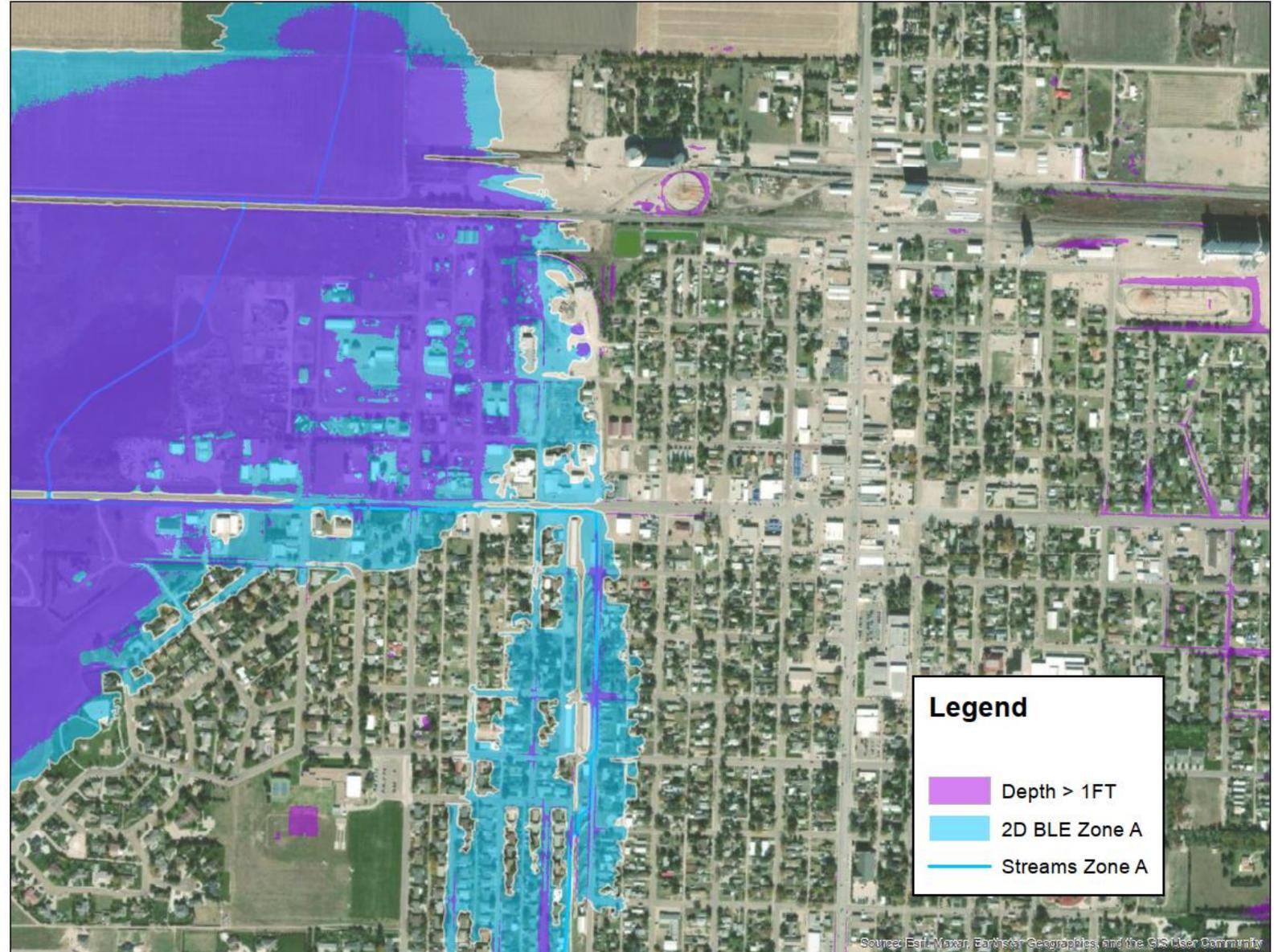
*Flooding outside of Draft SFHA
Depth Raster Displayed

Scott County – Scott City

Scott City has some areas with ongoing drainage issues related to an insufficient storm water system. One area affected by this is next to an old railroad right-of-way.

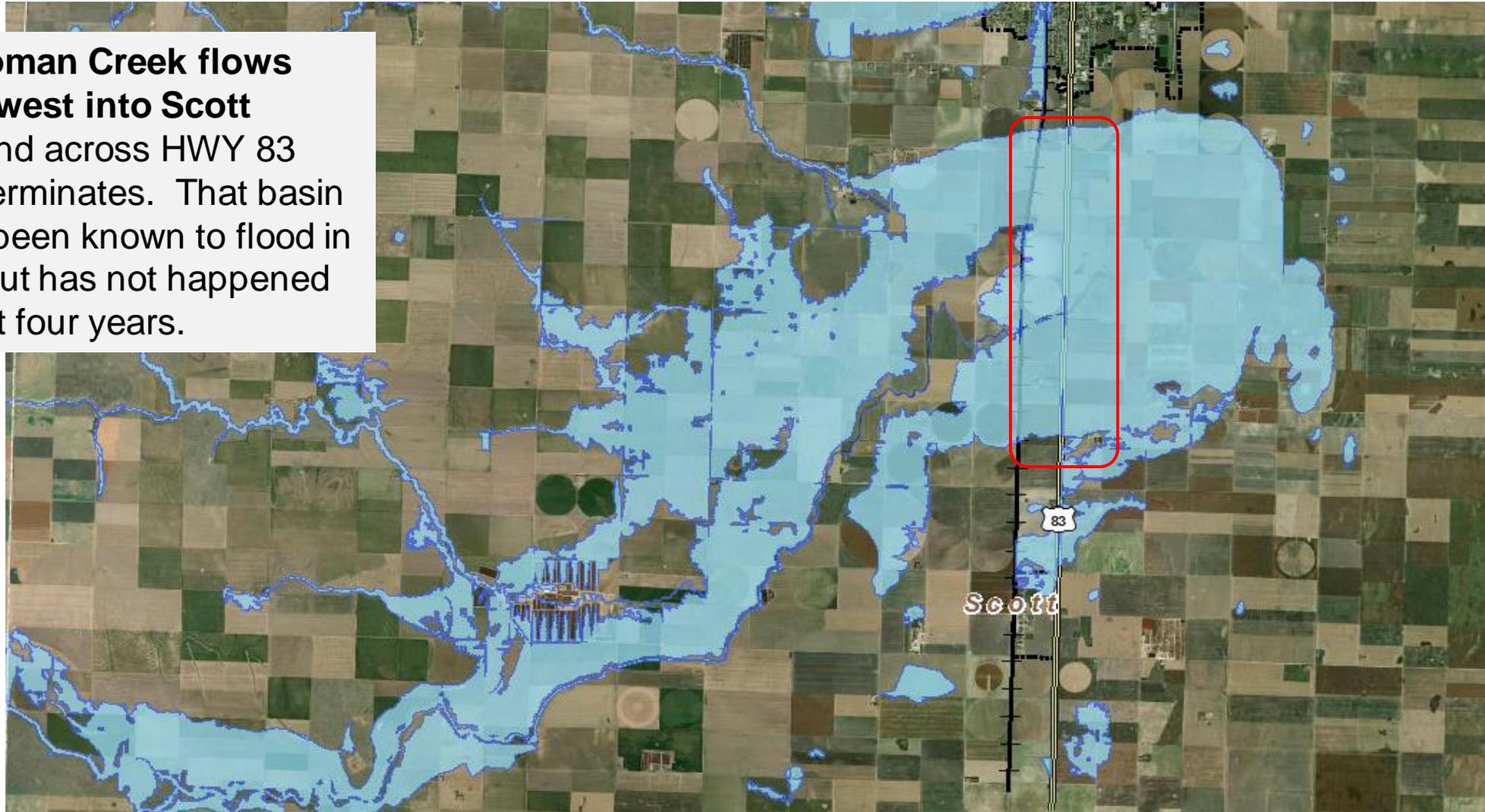


Scott County – Scott City

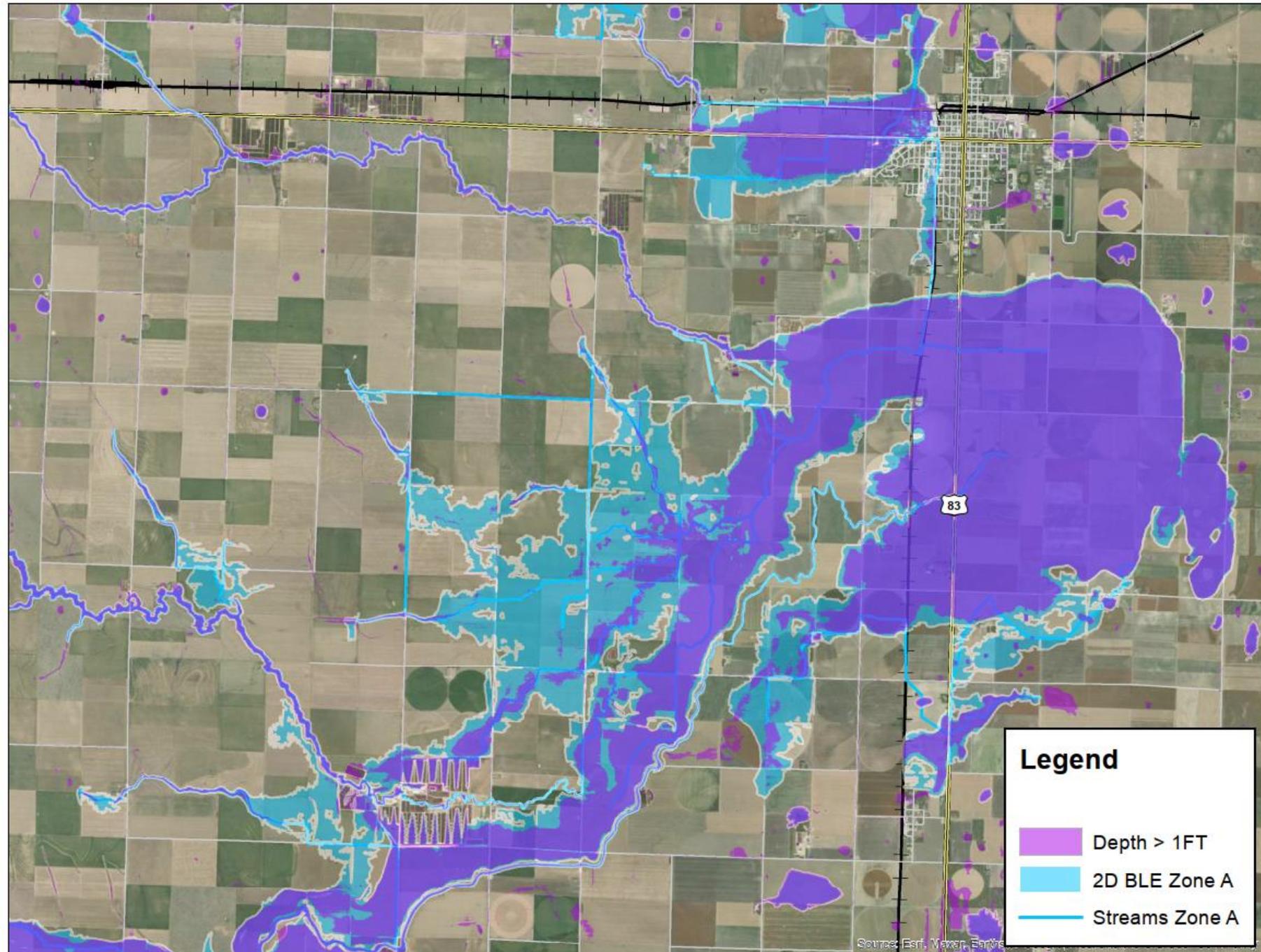


Scott County

White Woman Creek flows from the west into Scott County and across HWY 83 where it terminates. That basin area has been known to flood in the past but has not happened in the past four years.



Scott County



Trego County

Areas along **Big Creek**, the **Smoky Hill River**, and the **Saline River** can flood mostly during larger, flashy storms



Leoti Wichita County

