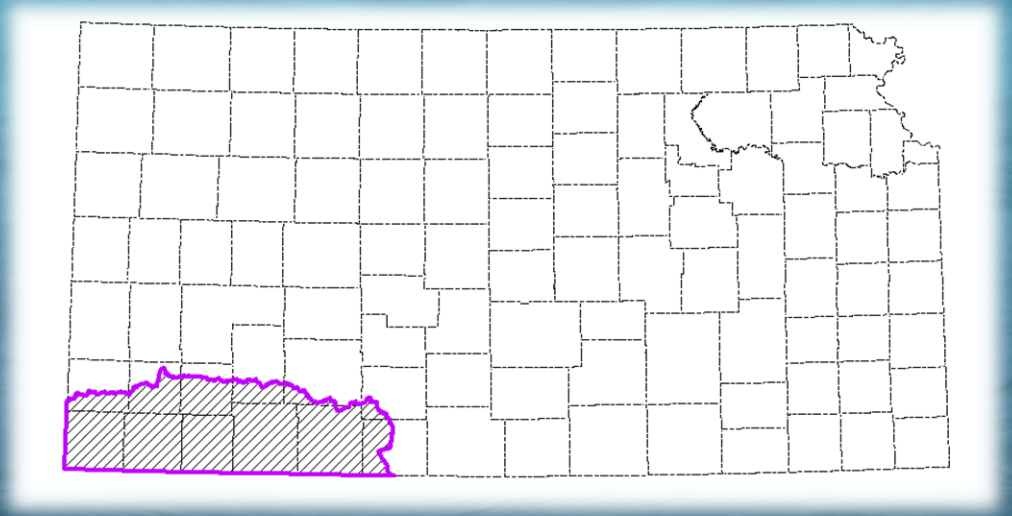
Cimarron Custom Watershed Discovery Meeting



February 24th, 2023

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

FEMA

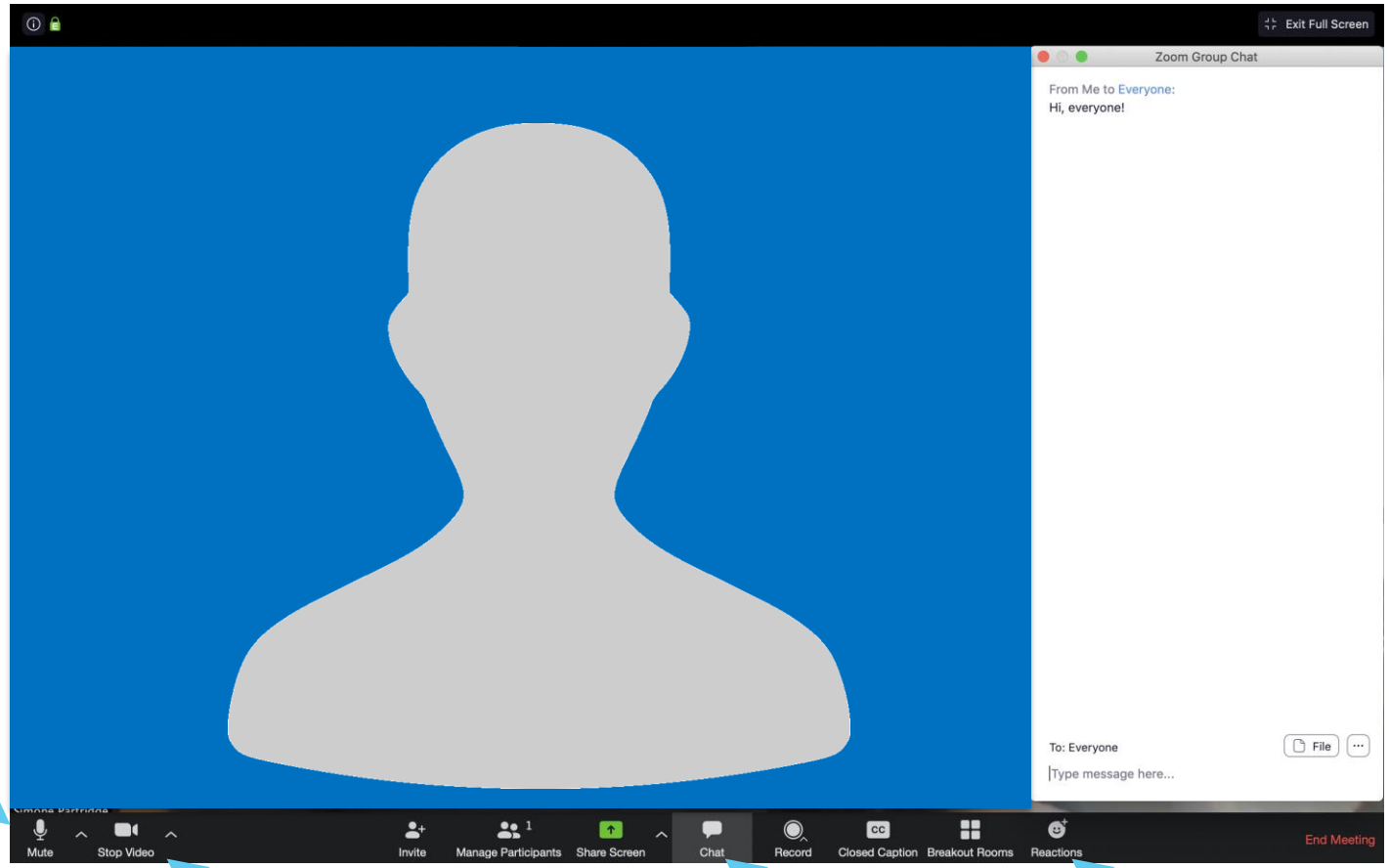
Kansas Department of Agriculture
Division of Water Resources

AECOM

Thank you for joining us today!

Your input is very important to this work.

Zoom Features



Mute / Unmute

Start your Video

Use the Chat Feature

Reactions

Kansas Department of Agriculture
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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.

Kansas Department of Agriculture Division of Water Resources AECOM

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*

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Division of Water Resources

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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

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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, Morton, Stanton, and Stevens Counties
  - Region D: Clark, Ford, Gray, Haskell, Meade, and Seward Counties
  - Region E: Comanche and Kiowa Counties

- Common themes in the regional plans:
  - Some communities are prone to flash flooding during heavy rainfall.
  - Study drainage issues in flood prone areas and make recommendations for flood control measures, flood management procedures, and low-water crossing improvements.
  - Drought and Water Conservation is an important issue

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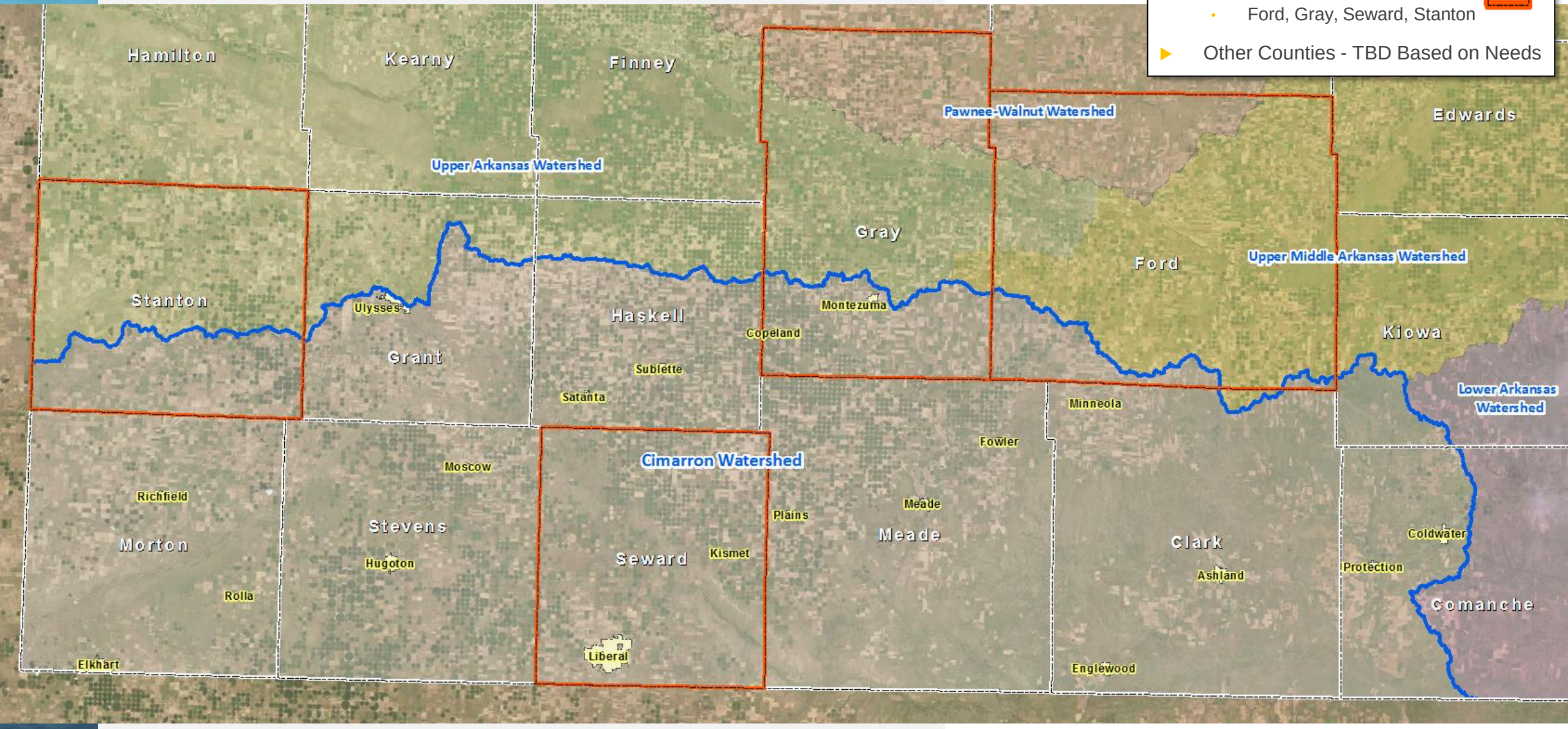
We Can Help with Technical Assistance!

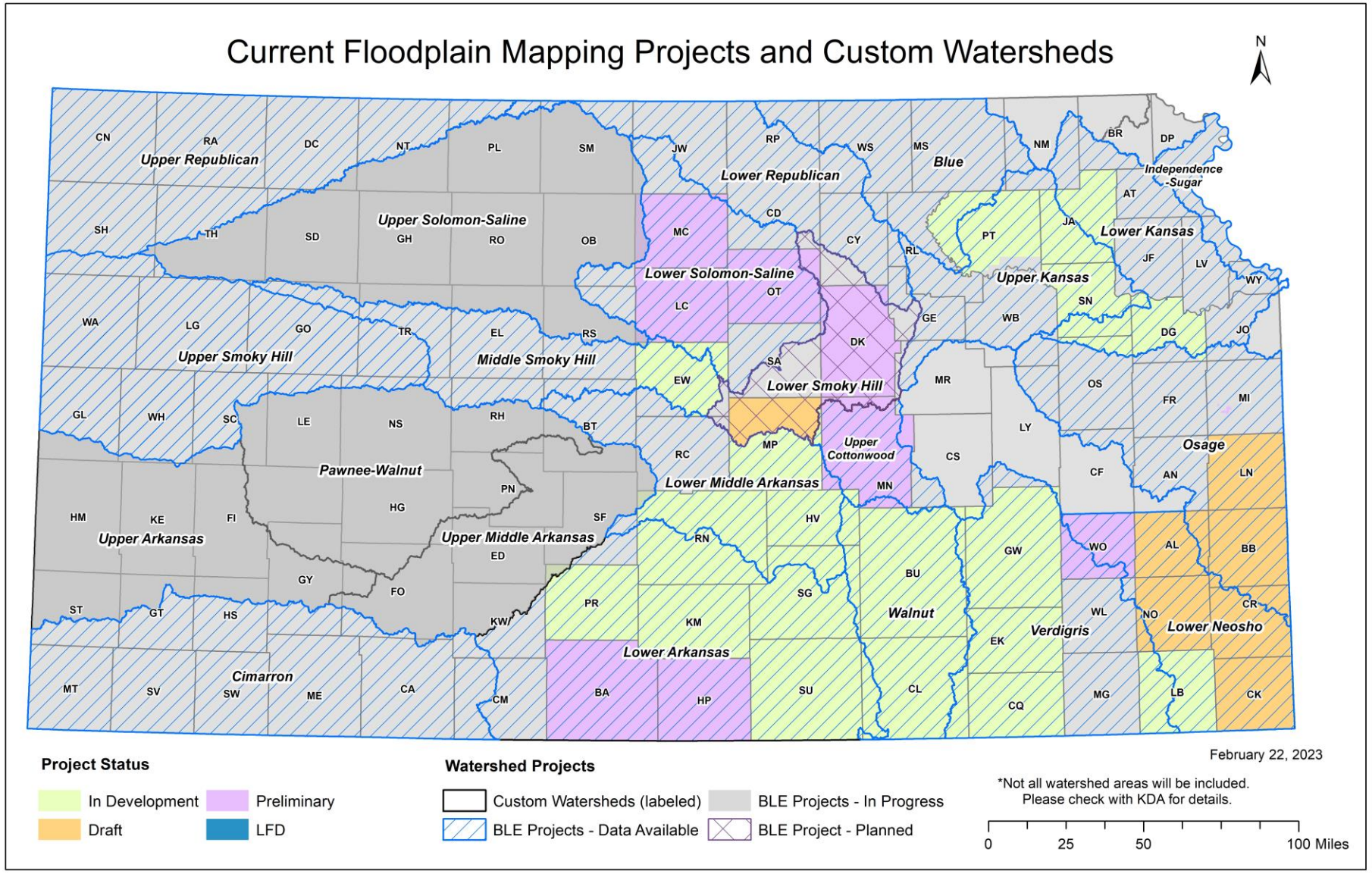
Regulatory FIRM Status

Preview of the Planned Work

- Data Development Phase Anticipated for 2025
  - Ford, Gray, Seward, Stanton
- Other Counties - TBD Based on Needs



We are doing this work across Kansas…



Participation in the National Flood Insurance Program (NFIP)

- Blue = Participates Red = Not Participating

- Cities of Ashland, Coldwater, Copeland, Elkhart, Englewood, Fowler, Hugoton, Kismet, Liberal, Meade, Minneola, Montezuma, Moscow, Plains, Protection, Richfield, Rolla, Satanta, Sublette, and Ulysses

- Clark, Comanche, Ford, Grant, Gray, Haskell, Kiowa, Meade, Morton, Seward, Stanton, and Stevens Counties.

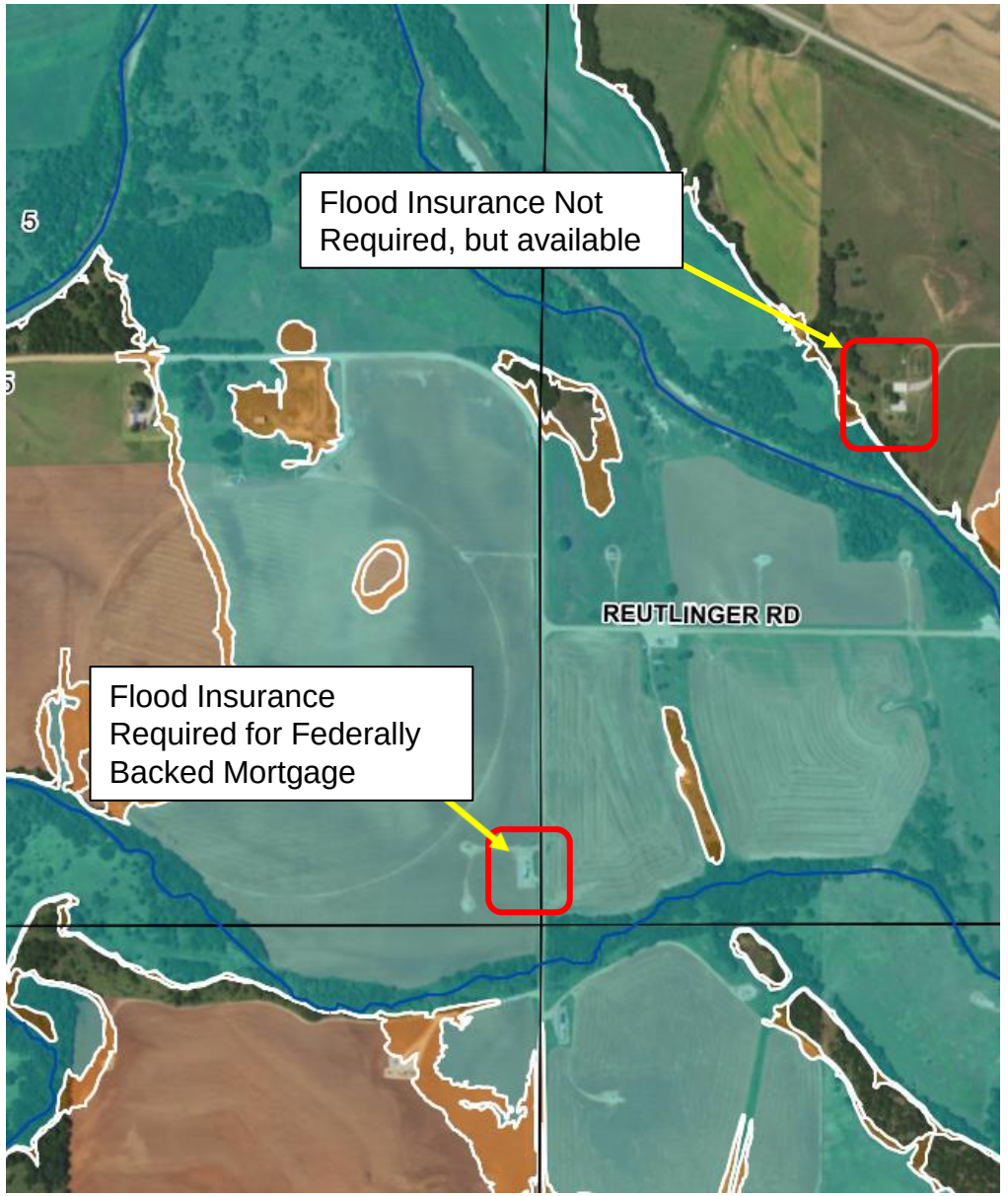
Source: FEMA Community Status Book

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 regulated.
  - Adopt a Resolution for Participating in the NFIP
  - Complete the Application for Participation



NFIP Participation Requirements

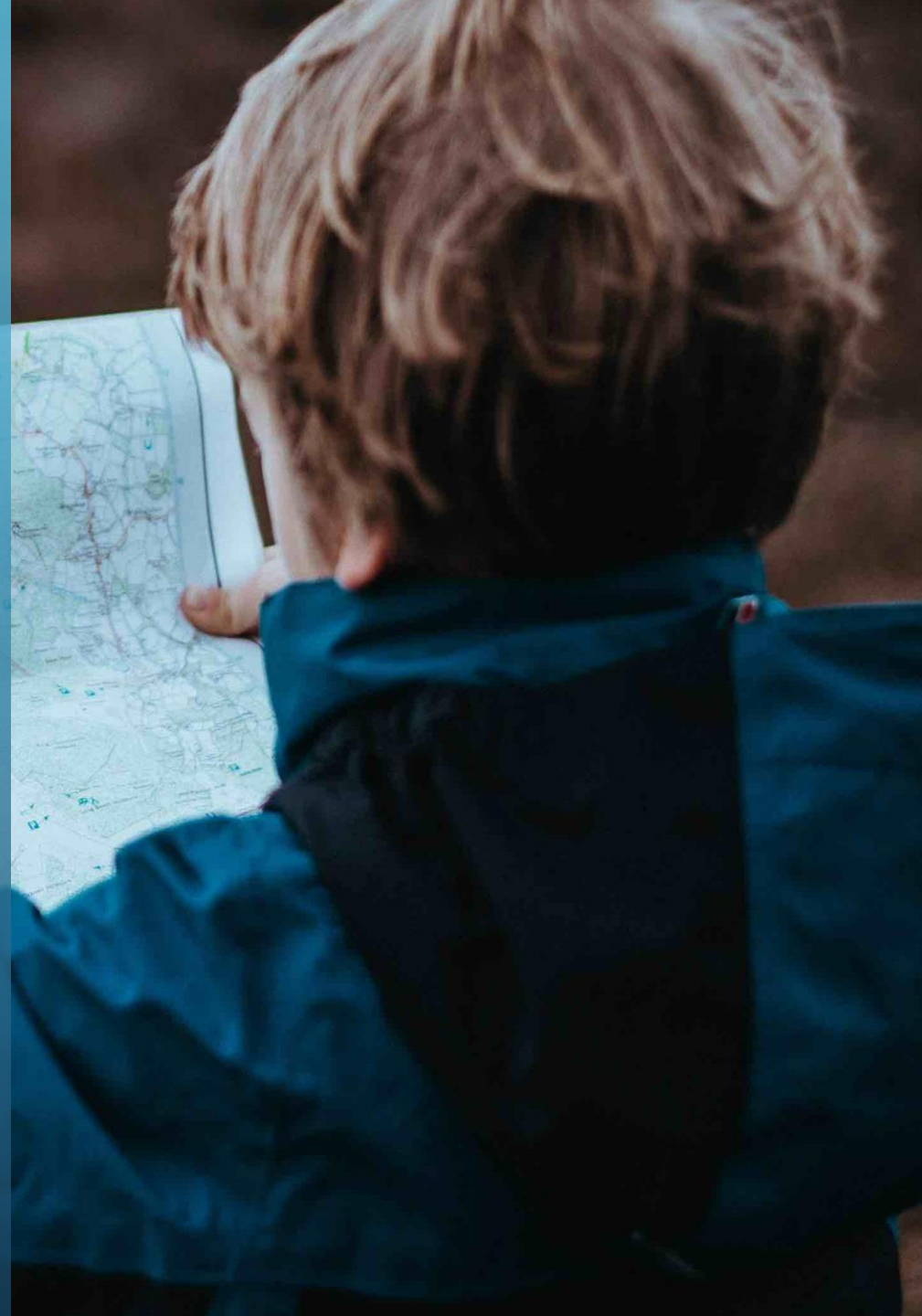
- Adopt and enforce all applicable NFIP regulations
- Require permits for ALL development in the Special Flood Hazard Area (SFHA)
- Obtain proof of compliance with local floodplain management ordinance for all permits
- Maintain Floodplain Management Records
- Helping residents obtain information on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

Number of Flood Insurance Policies

- Comanche County – 0
  - Protection – 1
- Ford County – 31
  - Dodge City* - 9
- Gray County – 0
  - Cimarron* - 1
- Haskell County – 0
  - Satanta - 1
- Kiowa County – 0
  - Greensburg* – 1
- Seward County – 1
  - Liberal - 22
- Counties without Flood Insurance Policies in Force
  - Clark
  - Grant
  - Meade
  - Morton
  - Stanton
  - Stevens

** Community not in Cimarron Watershed*

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



Base Level Engineering (BLE) 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.

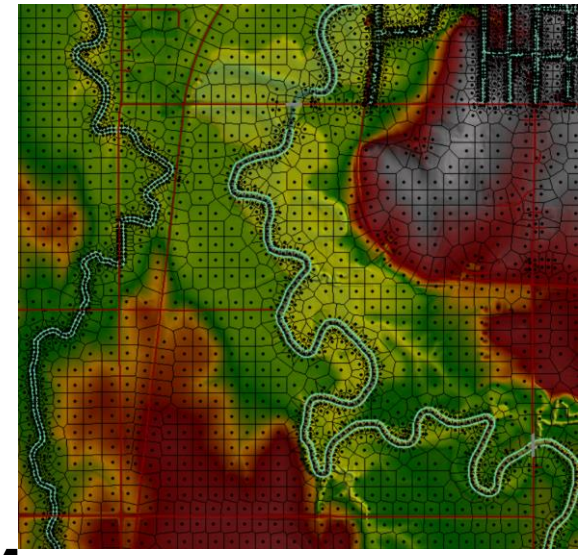
FLOODPLAIN: On the maps we create, the floodplains, also known as Special Flood Hazard Areas (SFHAs), are areas with high flood risk – where a flood of a certain level has a 1-percent chance of happening each year.

We Use 2D Hydraulic Modeling and LIDAR in our BLE

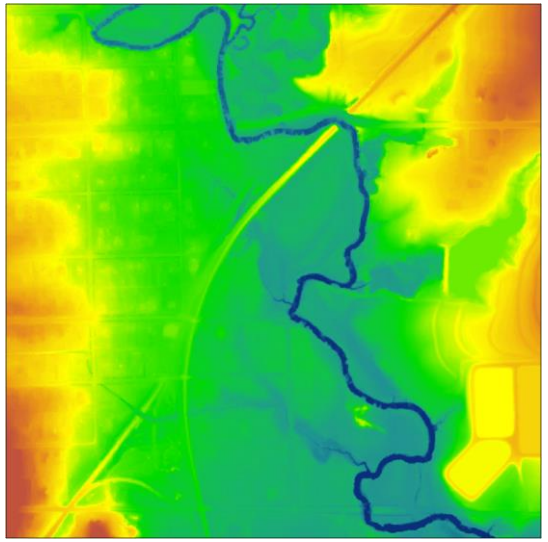
- Most effective maps in Kansas were modeled in one dimension (1D) and are based on 10-meter Digital Elevation Model

- 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

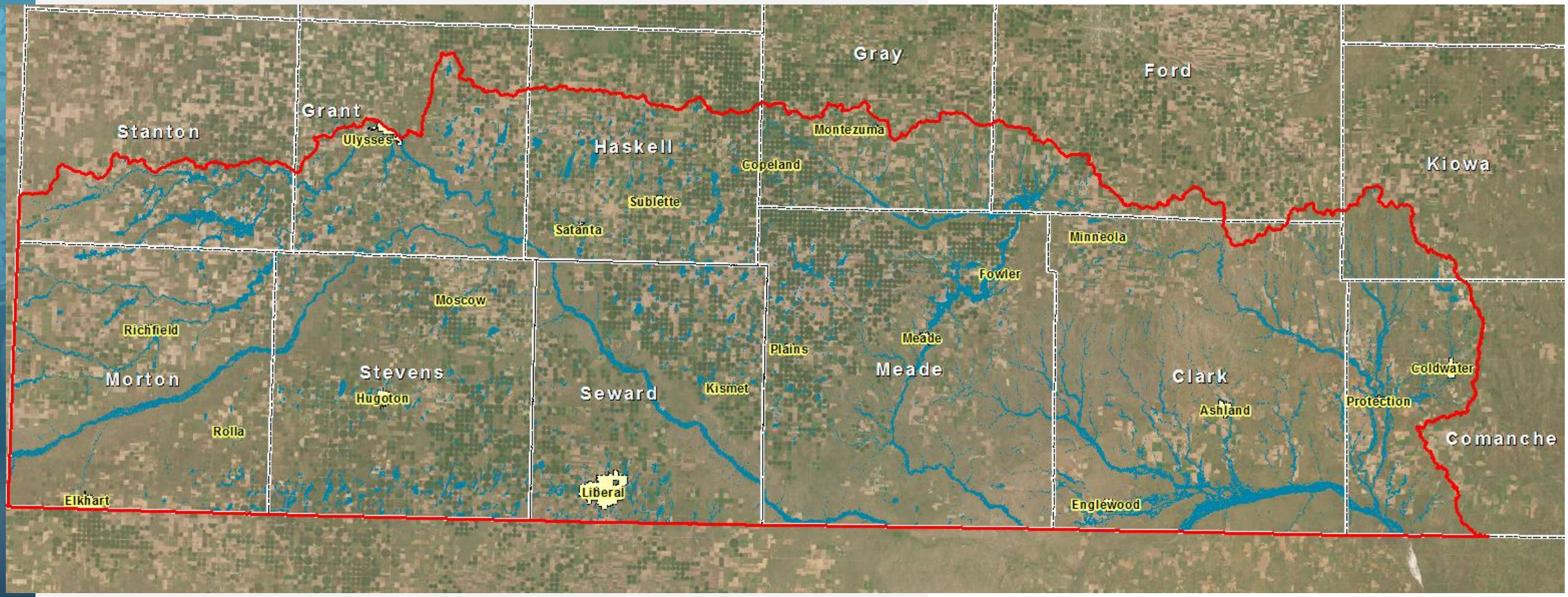


LiDAR



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

Cimarron Custom Watershed

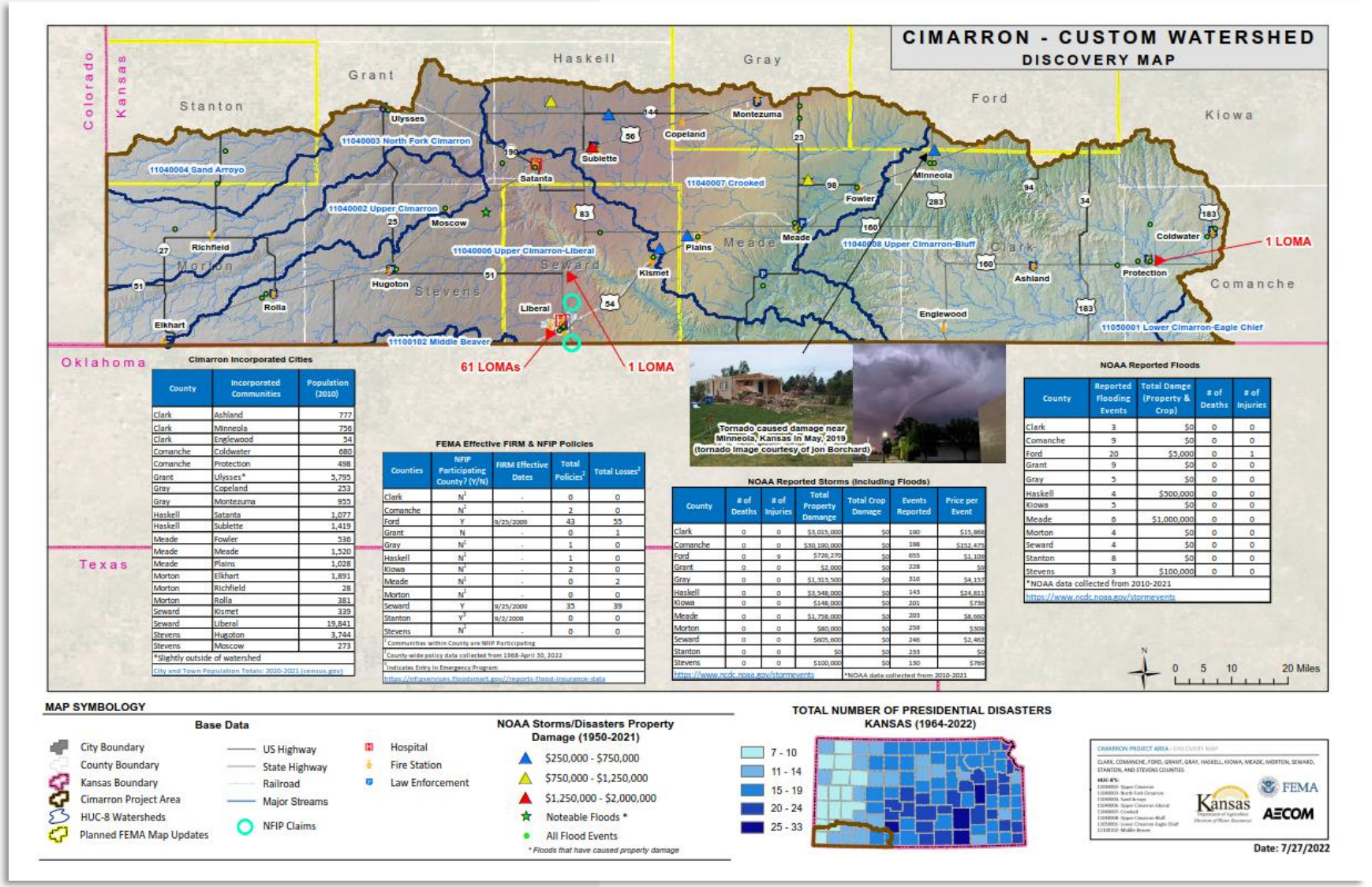
HUCs 11040002, 11040003, 11040004, 11040006, 11040007, 11040008, 11050001, and 11100102

July 2022

MIP Case Number: 20-07-0011S

FEMA

Kansas Department of Agriculture Division of Water Resources

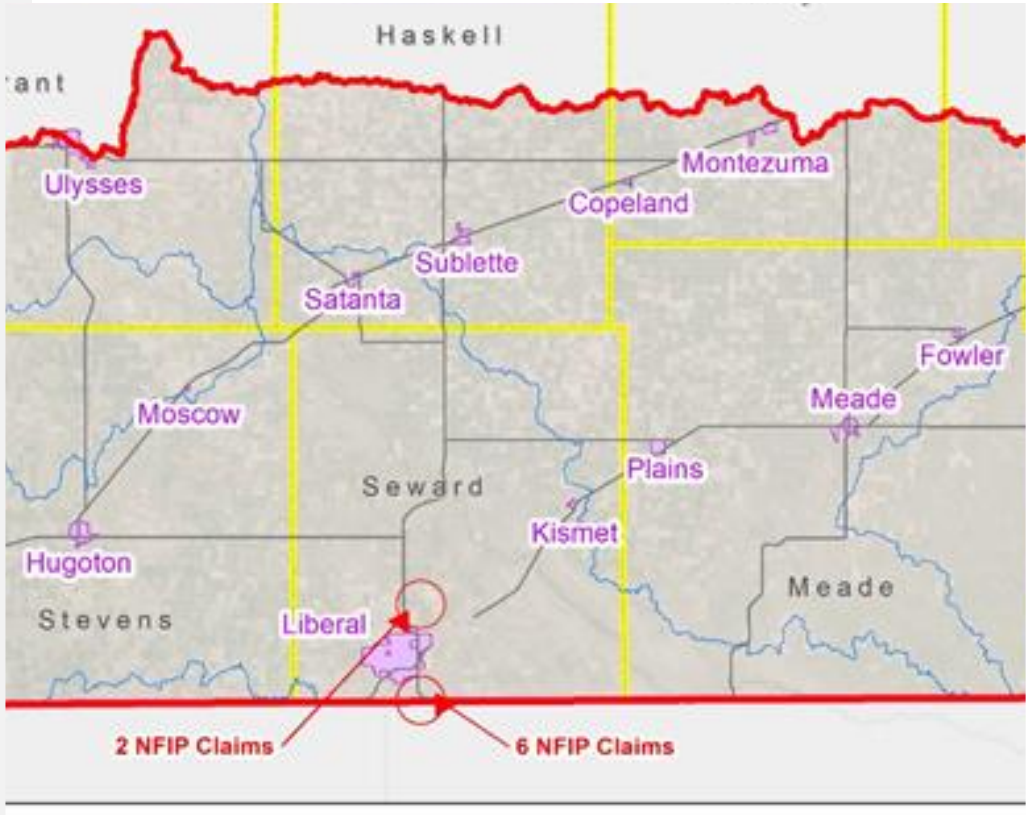


Repetitive Loss Structures

Insurable buildings for which the NFIP paid 2 or more claims of more than $1,000 in a 10-year period.

- 2 Repetitive Loss Clusters near Liberal

NOTE: if you have an area where structures have been repeatedly damaged, we want to know! It's worth taking a closer look, and we might be able to help.



Draft Floodplains

NATIONAL FLOOD INSURANCE PROGRAM

DISCOVERY 2D BLE WORKMAP
Liberal, Kansas
Seward County

FEMA

MAP SYMBOLOGY

SPECIAL FLOOD HAZARD AREAS

- 2D BLE ZONE A
- 1000 — 2D BLE ZONE A - PLAYAS

OTHER FEATURES

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

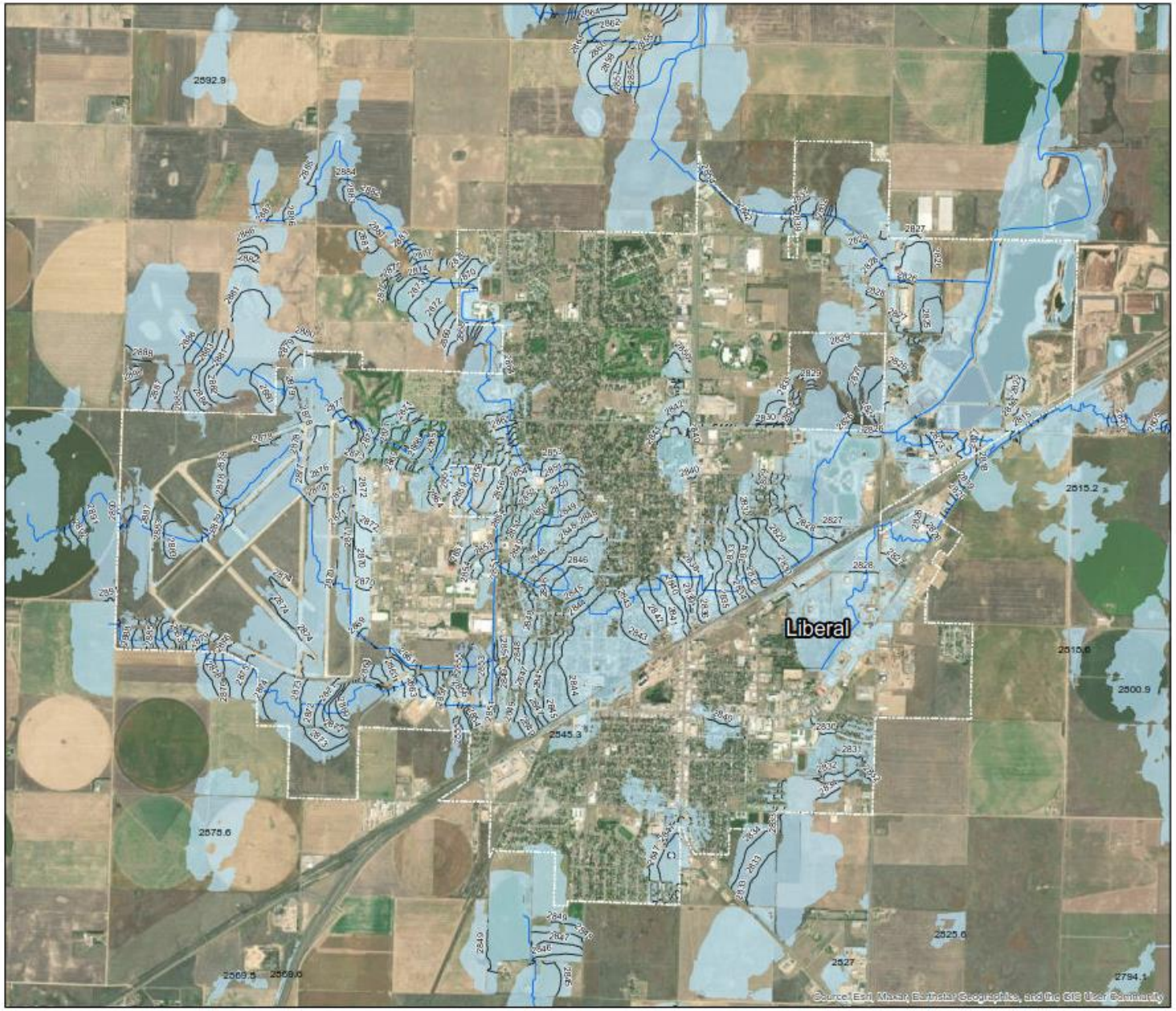
NAD 1983 StatePlane Kansas South FIPS 1502 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 1,312,333.3333
False Northing: 1,312,333.3333
Central Meridian: -98.5000
Standard Parallel 1: 37.2667
Standard Parallel 2: 38.5667
Latitude Of Origin: 36.6667
Units: Foot US

N

1 inch = 2,644 feet

0 1,450 2,900 5,800 8,700 Feet

0 415 830 1,660 2,490 Meters



Draft Floodplains

NATIONAL FLOOD INSURANCE PROGRAM

DISCOVERY 2D BLE WORKMAP

Kismet, Kansas

Seward County

FEMA

MAP SYMBOLOGY

SPECIAL FLOOD HAZARD AREAS

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False Northing: 1,312,333.3333
Central Meridian: -98.5000
Standard Parallel 1: 37.2667
Standard Parallel 2: 38.5667
Latitude Of Origin: 36.6667
Units: Foot US

N

1 inch = 469 feet

0 260 520 1,040 1,560 Feet

0 70 140 280 420 Meters

Changes Since Last Flood Insurance Rate Map (FIRM)

BLE Floodplain compared to Current Effective Floodplain

*Only applies to Seward County, Ford County, Meade, Protection, Fowler, Englewood, and Elkhart

NATIONAL FLOOD INSURANCE PROGRAM

DISCOVERY 2D BLE CSLF WORKMAP

Meade, Kansas
Meade County

FEMA

MAP SYMBOLOGY

SPECIAL FLOOD HAZARD AREAS

- DECREASE
- INCREASE
- NO CHANGE
- NEW DIGITAL

OTHER FEATURES

- Stream lines
- Municipal Boundary
- County Boundary

N

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: 36.6667
Units: Foot US

1 inch = 970 feet

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

0 150 300 600 900 Meters

How We Can Help

"Mitigation Technical Assistance"

Some Ways We Can Help

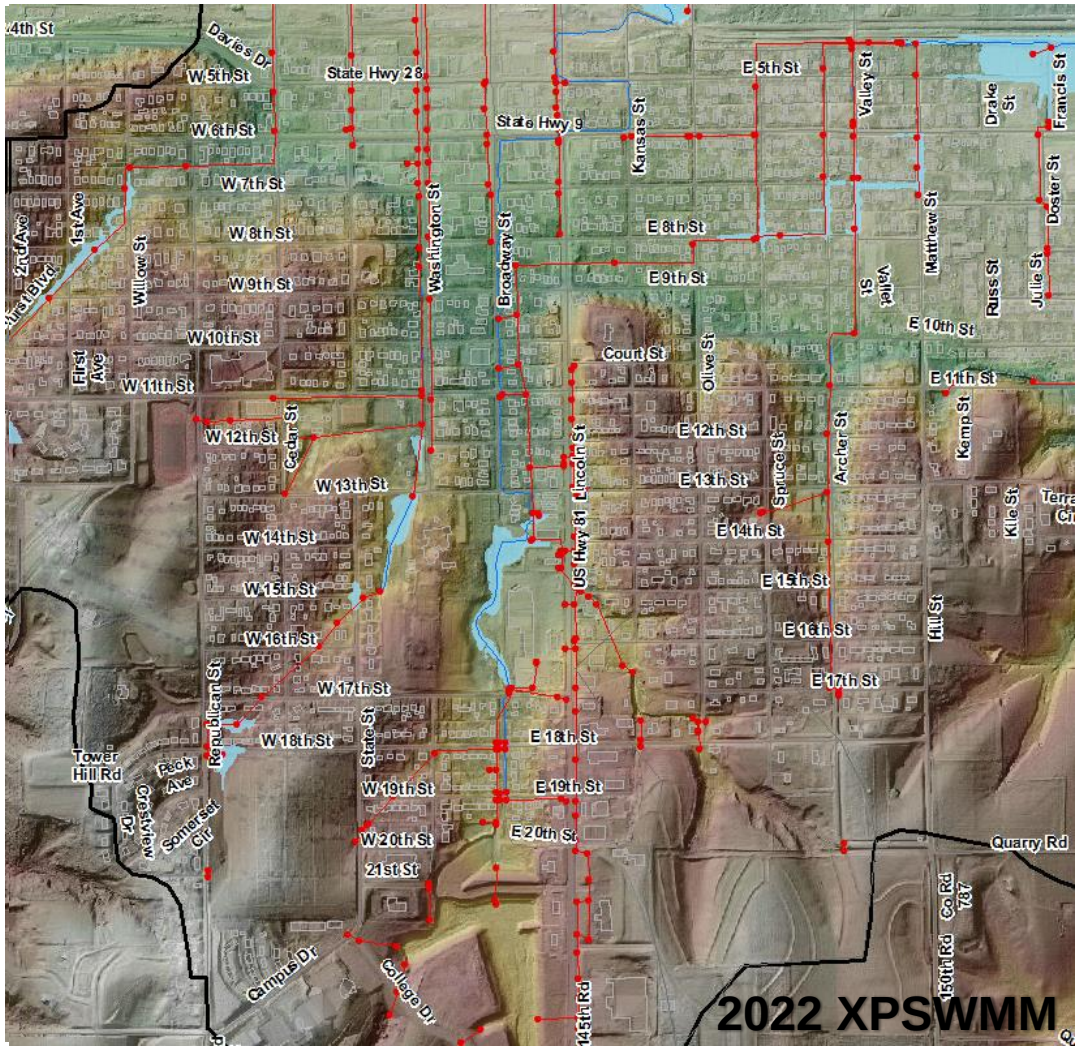
- Provide ideas on how to reduce flooding in trouble spots.
- Provide risk assessments for structures in your community, to help property owners understand the need for flood insurance, or to help you protect important public buildings.
- Use engineering analysis to show you what types of projects could 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.

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 XPSWM 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

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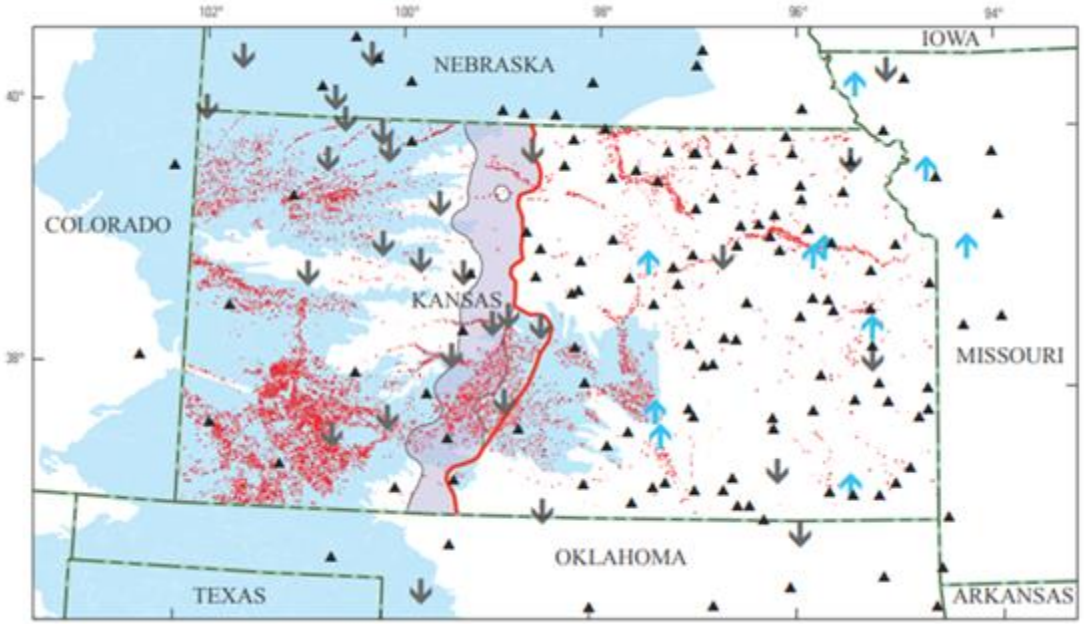
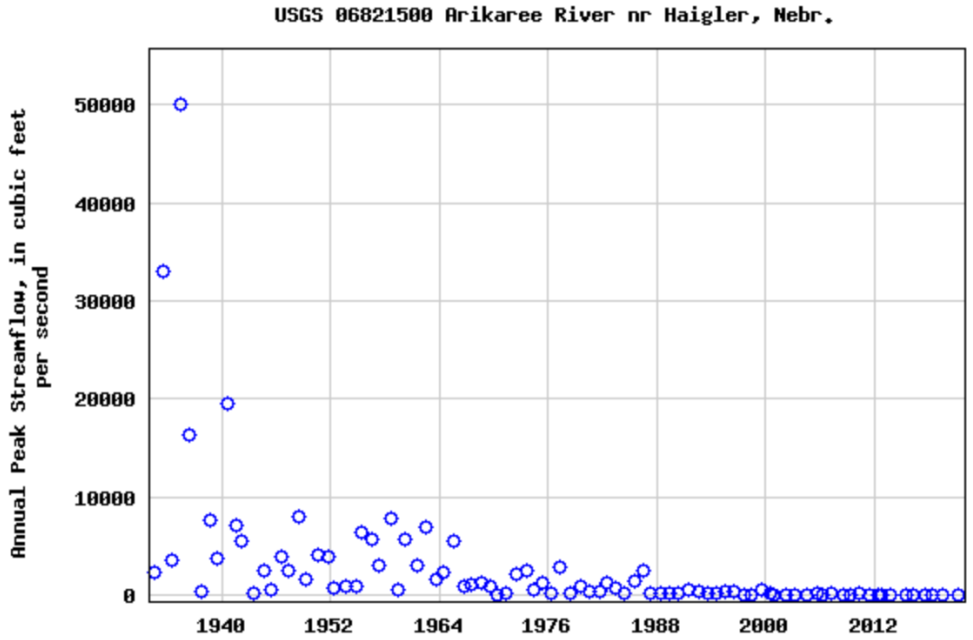
Technical Assistance Project: Western Kansas Hydrology Pilot Study

- 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





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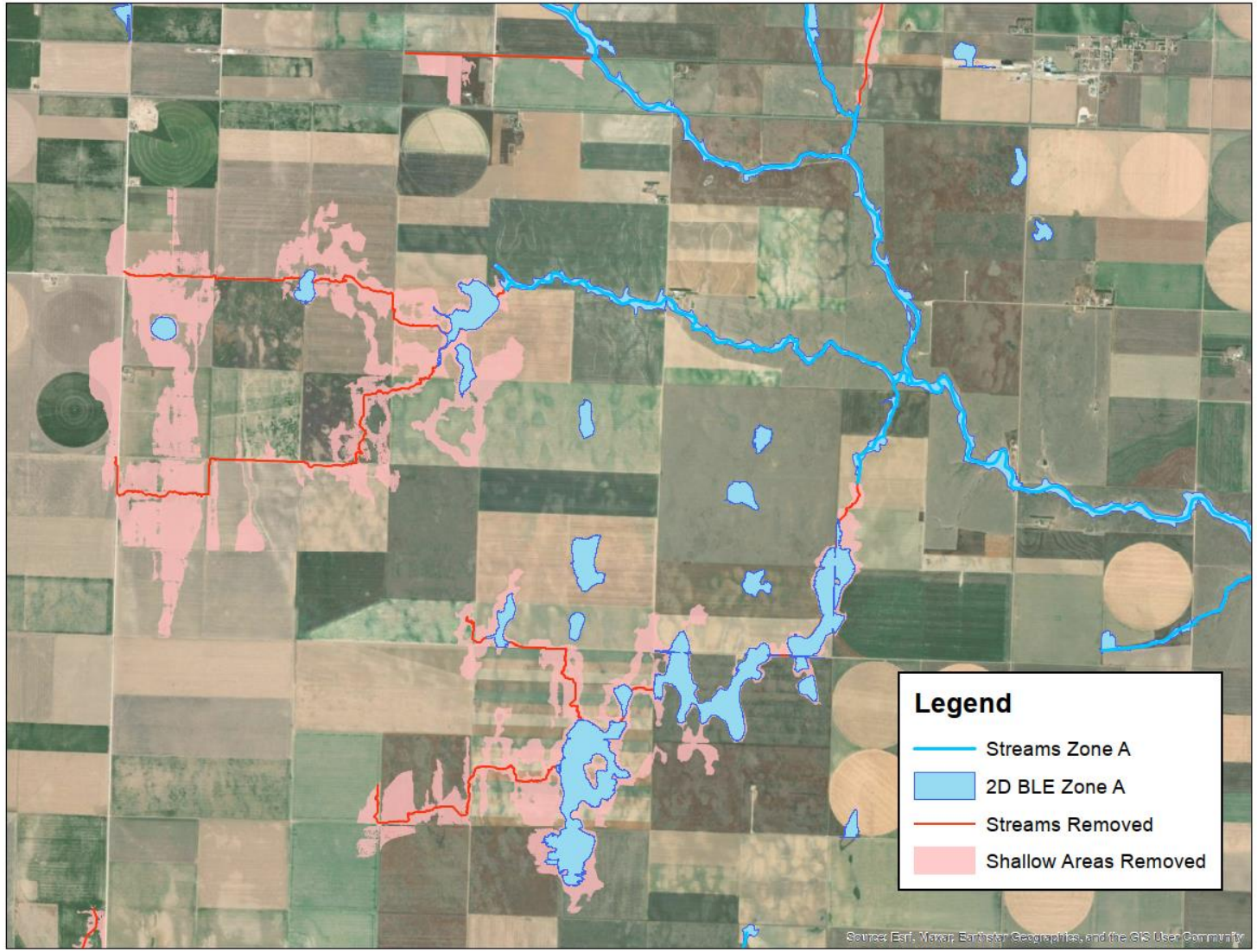
Western Kansas Mapping Challenges

- 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, except in cities
- Playa flooding greater than 1 foot of depth and 5 acres in surface area retained as BLE Zone A



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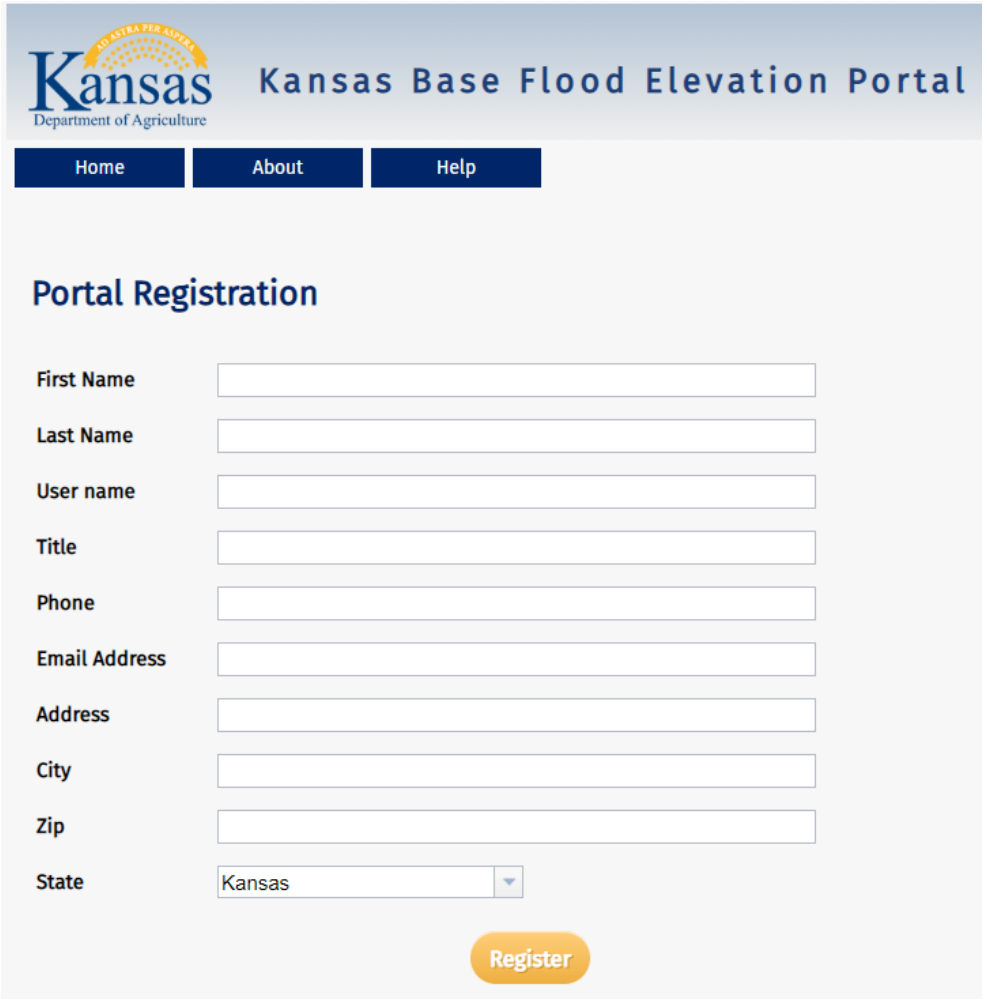
Preview of the Planned Work

Which We Call Our Data Development Scope

BLE Data is Best Available data in this Watershed

- Current Effective Zone A maps exist in Seward County, Ford County, Meade, Protection, Fowler, Englewood, and Elkhart
- 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.

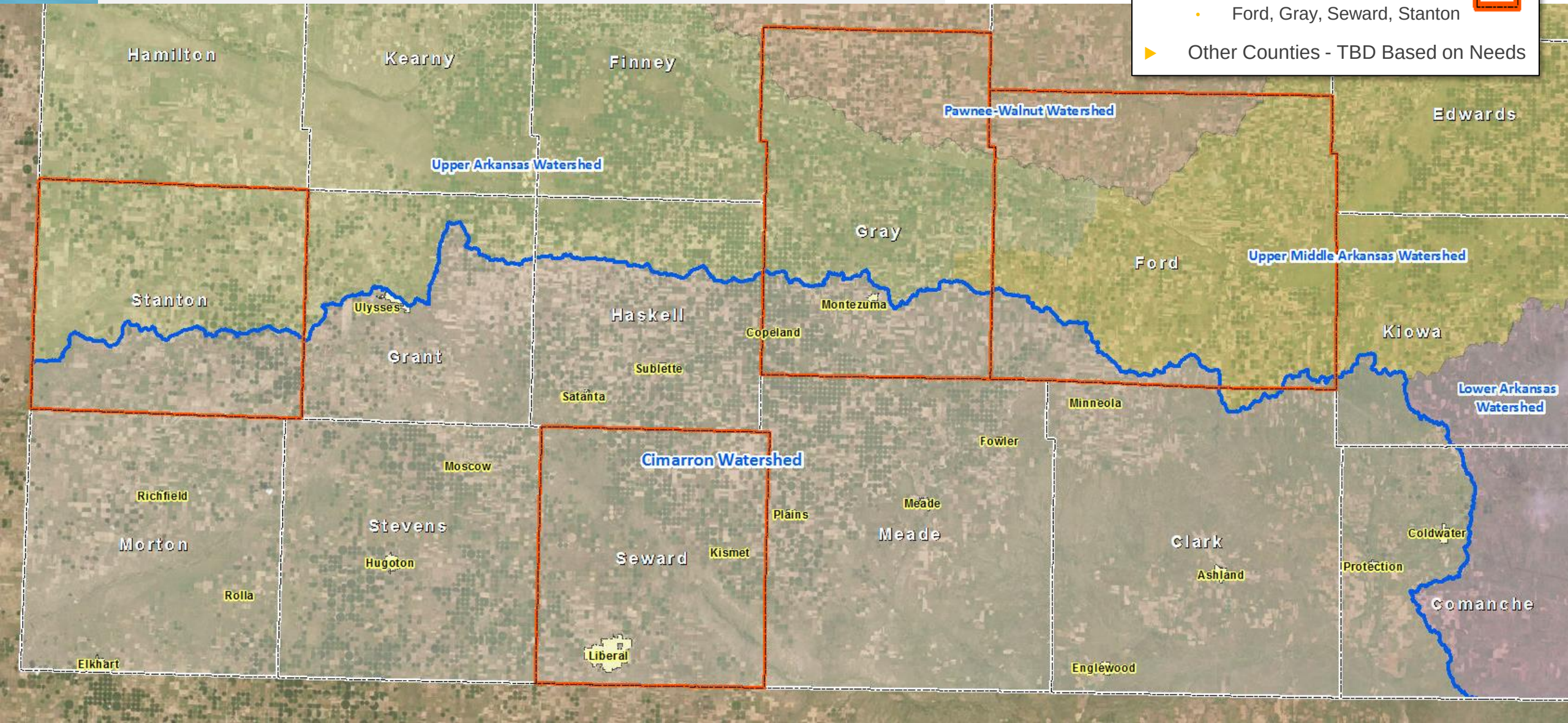
https://maps.kgs.ku.edu/fpm_bfe/login.cfm



Where We Plan to Update Your Map

Preview of the Planned Work

- Data Development Phase Anticipated for 2025
  - Ford, Gray, Seward, Stanton
- Other Counties - TBD Based on Needs



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.

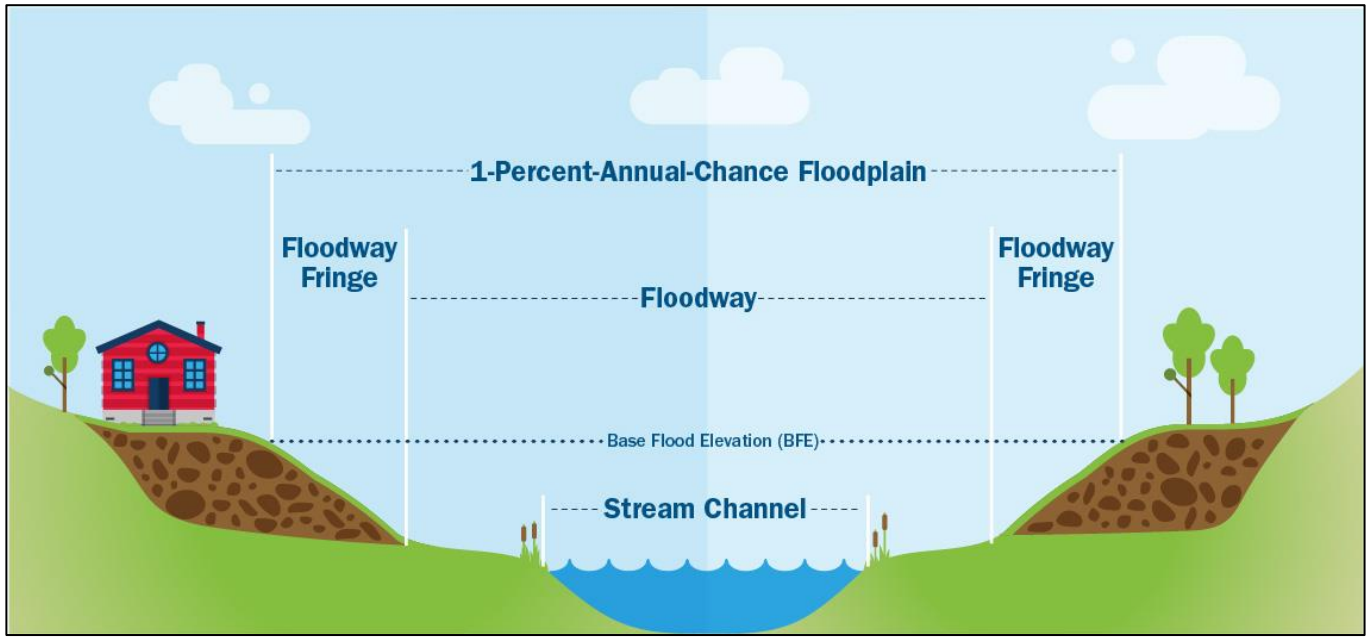
For specific areas identified as needing more detail…

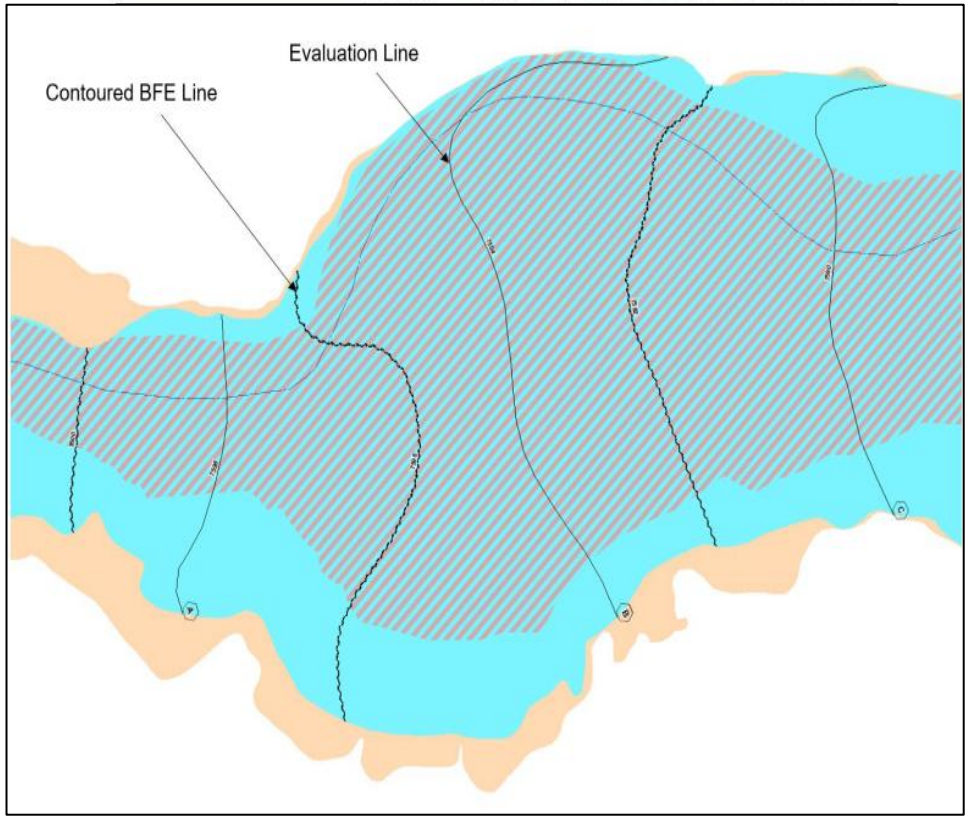
Zone AE

- 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





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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:

- *Seward County (~2025)*
- *Stanton County (~2025)*
- *Gray County (~2025)*
- *Ford County (~2025)*
- *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

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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 3/24/2023 (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/cimarron/
    - This link will not be public facing until the project has been through Data Development
- **Story Maps**
  - "Floodplain Current:" Mapping Process 'Nuts and Bolts'
- **BFE Portal (Zone A or Unmapped Areas)**
  - https://maps.kgs.ku.edu/fpm_bfe/login.cfm

KDA Contact Information

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Floodplain Mapping Specialist

Tara Lanzrath, CFM
Tara.Lanzrath@ks.gov
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State NFIP Coordinator

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NFIP Specialist

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Division of Water Resources

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Engineer

FEMA Contact Information

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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/cimarron/

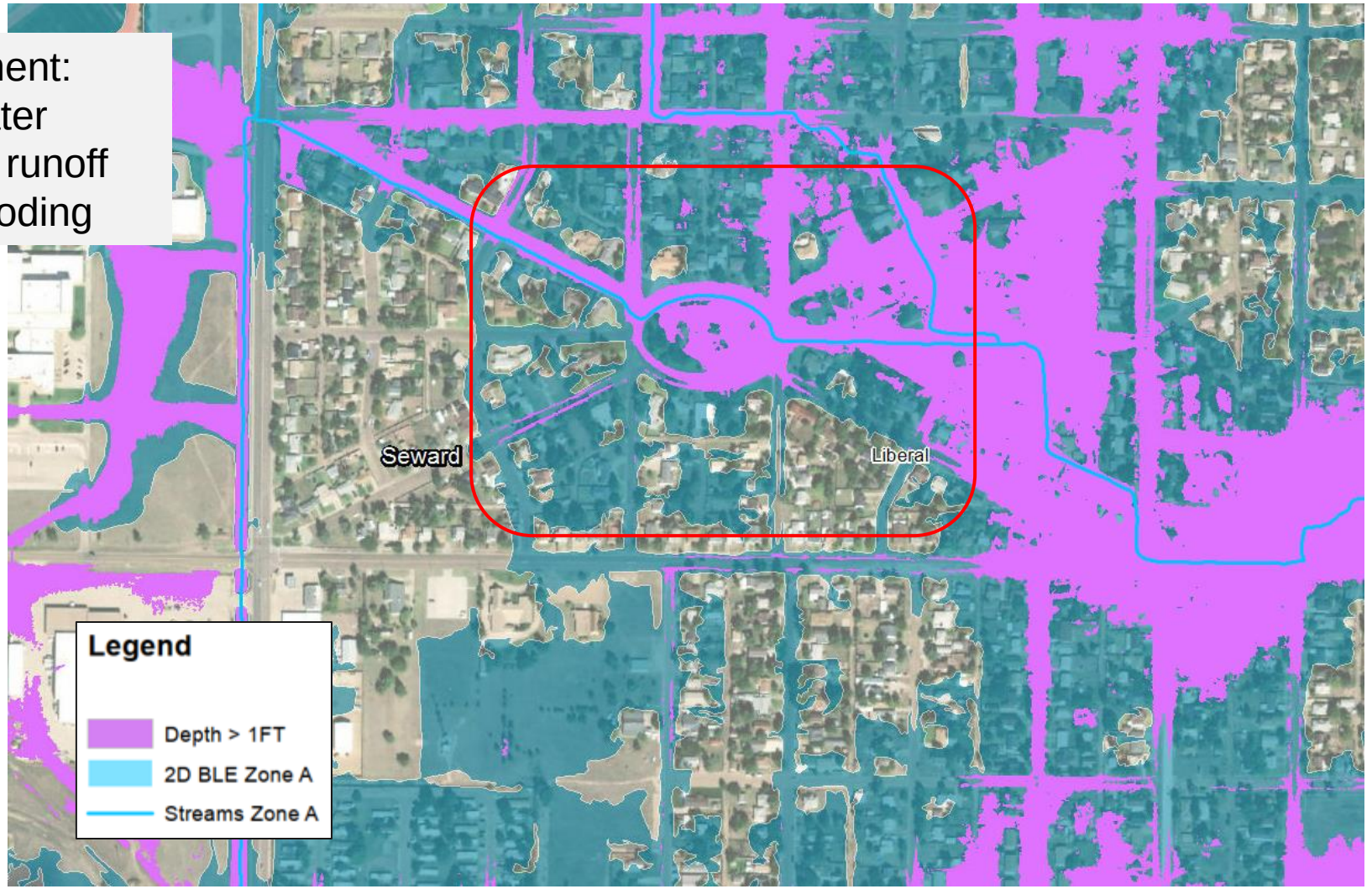
Community Identified Flooding

- Community identified flooding was identified during the Discovery process

- Stated Areas of Past Flooding:
  - Seward County
    - Street Flooding in 2017 near Harrison Circle in Liberal
    - Playa 2 flooding in 2017
  - Comanche County
    - Some Flooding of roads around Lake Coldwater
    - Drainage issues in Protection near Broadway and Maple St.
  - Meade County
    - Portions of southwest Meade City can experience flash flooding
  - Clark County
    - Occasional flooding in Ashland City Park when it rains
    - Surface water flooding in Minneola near intersections of US HWY 54/Poplar and HWY 283/Locust

Seward County – City of Liberal

Kick-off Meeting Comment: Drainage issue with water flowing to the east with runoff from the west. 2017 flooding



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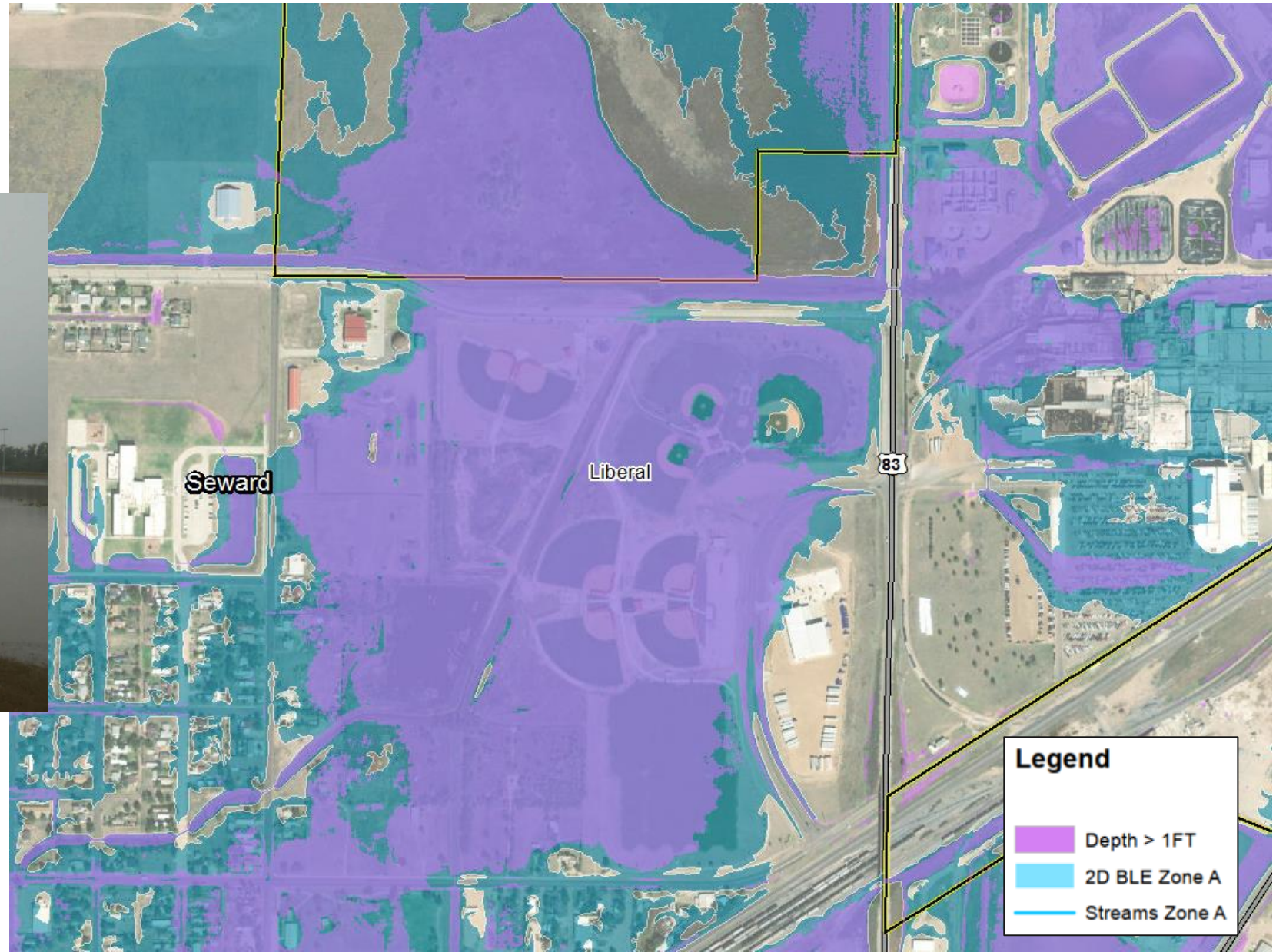
Seward County – City of Liberal

Flooding in Playa 2 in 2017 Storm



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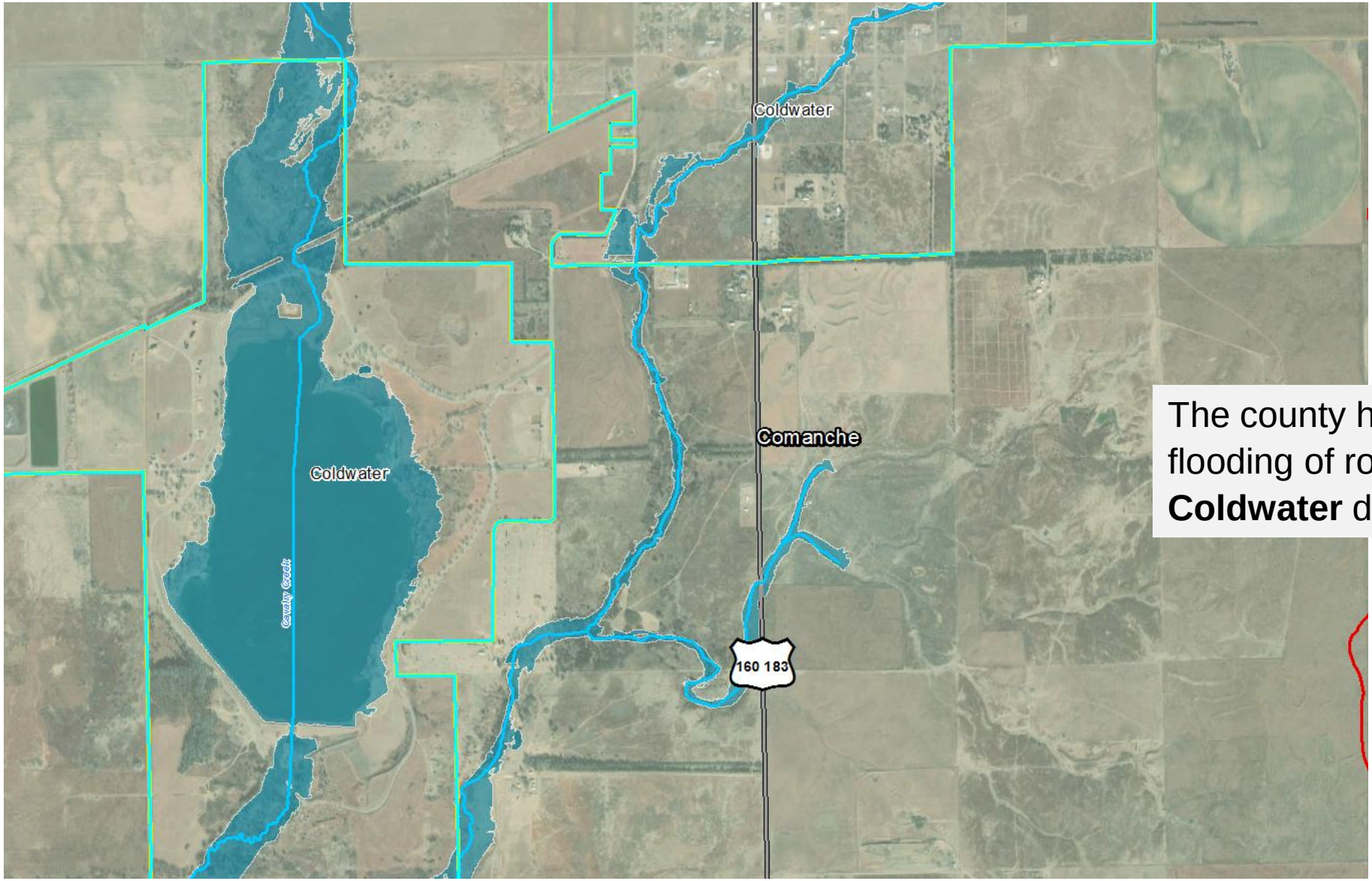
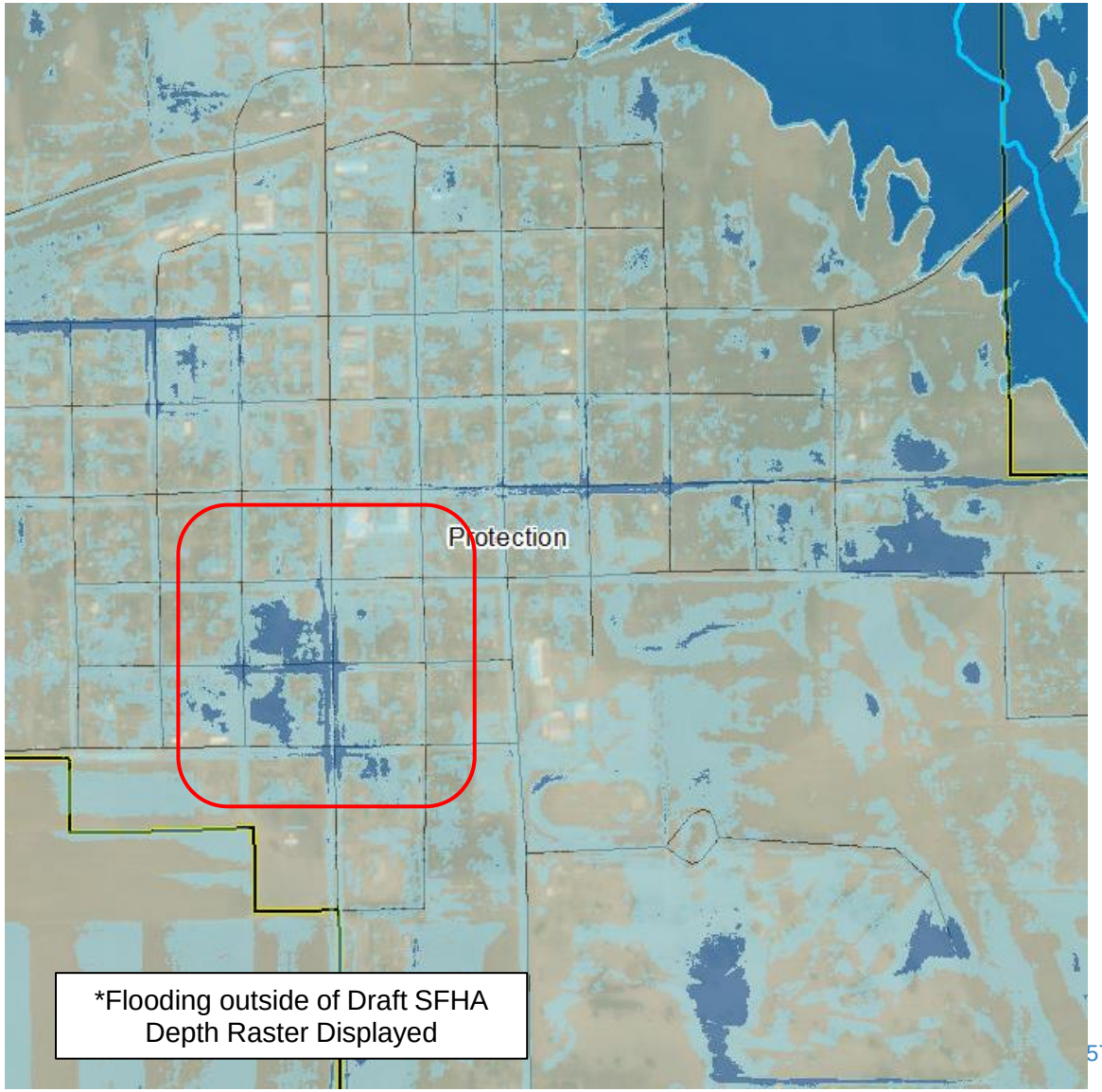
Comanche County – Lake Coldwater



The county has seen some flooding of roads around **Lake Coldwater** during rainfall events

Comanche County - Winona

- There are low lying areas that could be protected more with better roads and road-drainage. One such area is around the intersection of **Broadway and Maple Street**. The city is looking into repaving Broadway to help with this flooding



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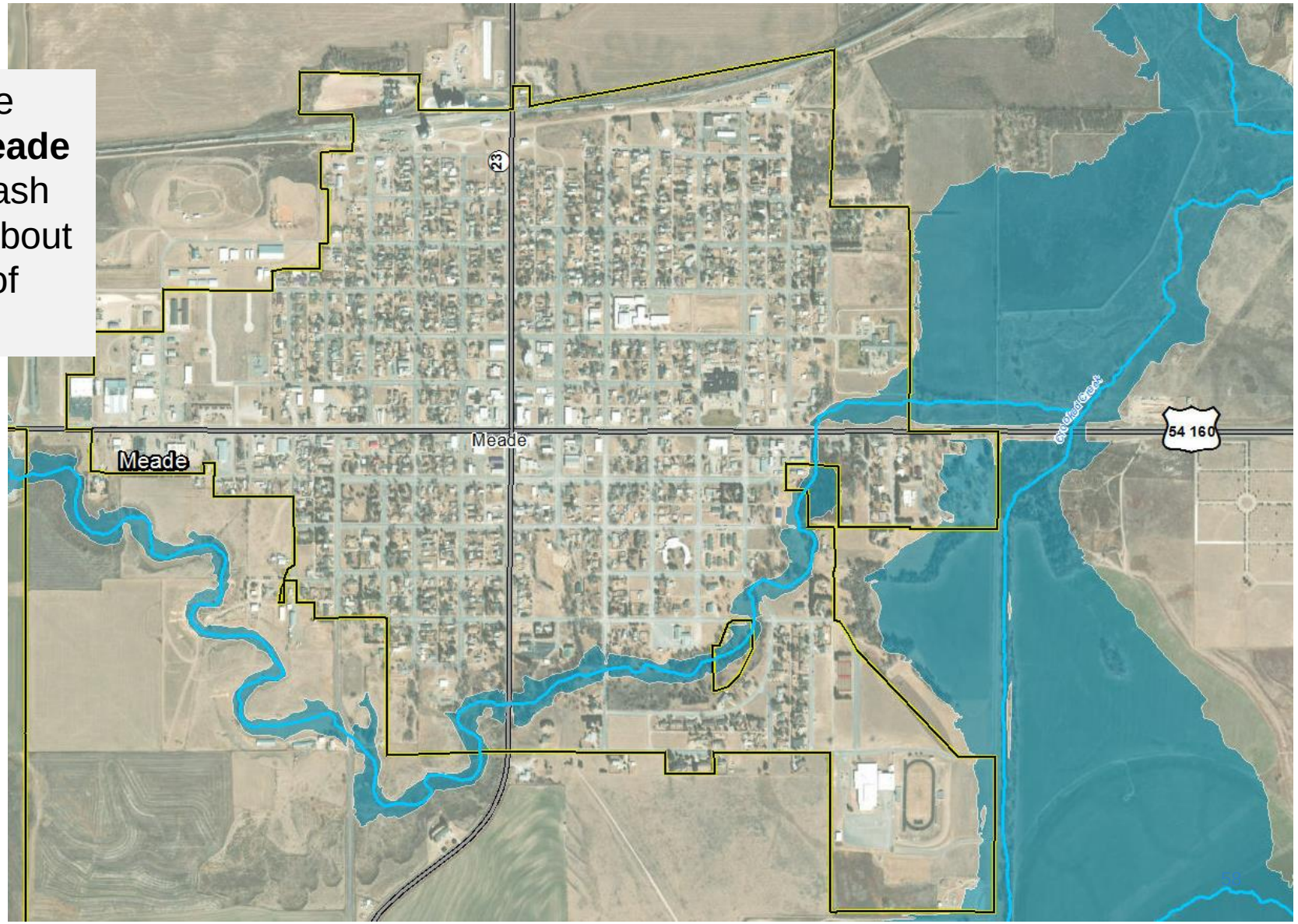
Meade County – City of Meade

When it does rain, there are **portions of southwest Meade City** that can experience flash flooding. Residents know about this however and stay out of the way.



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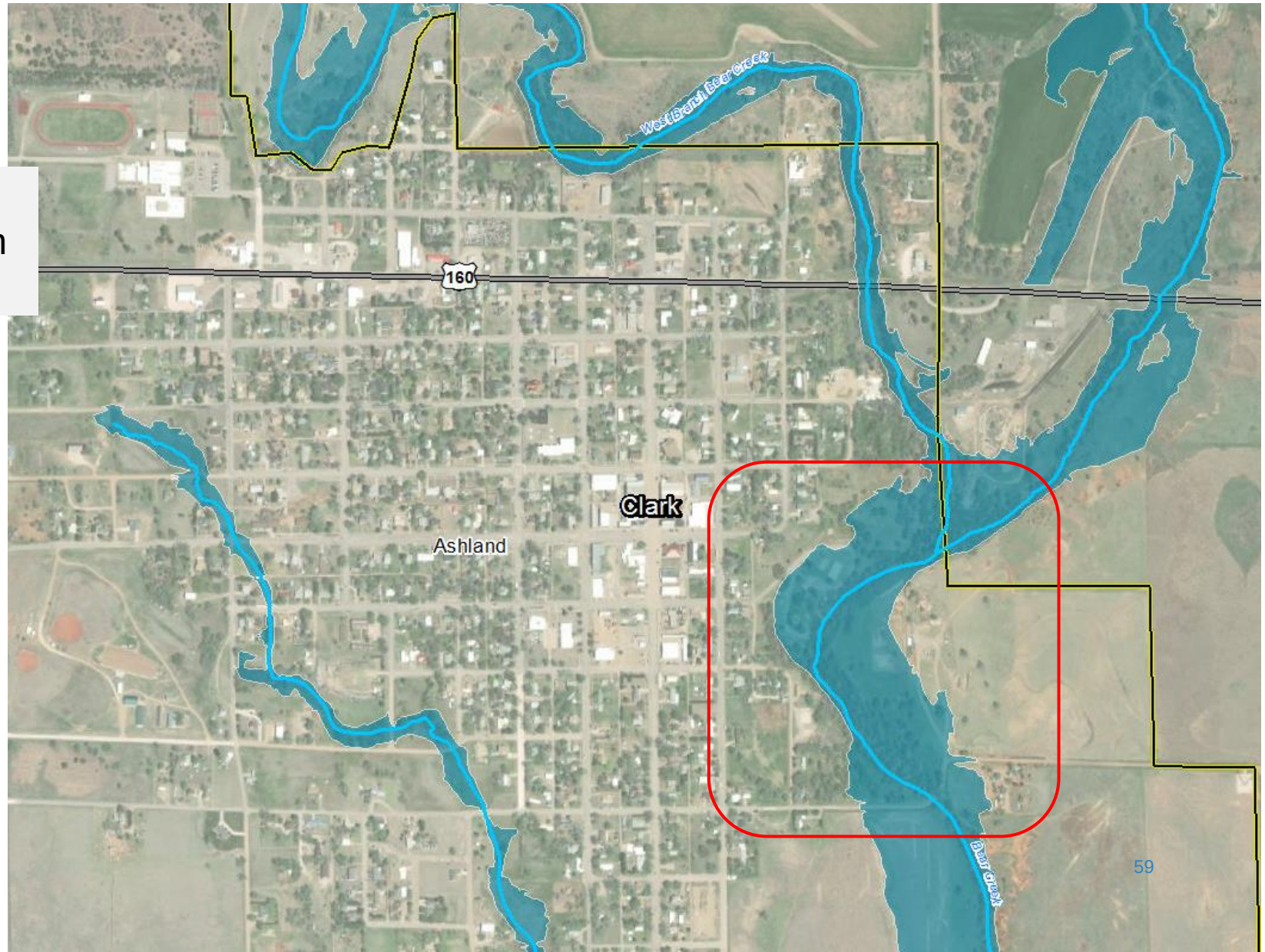
Clark County – Ashland

There is occasional flooding in the **Ashland City's Park** when it rains.



Clark County – Ashland

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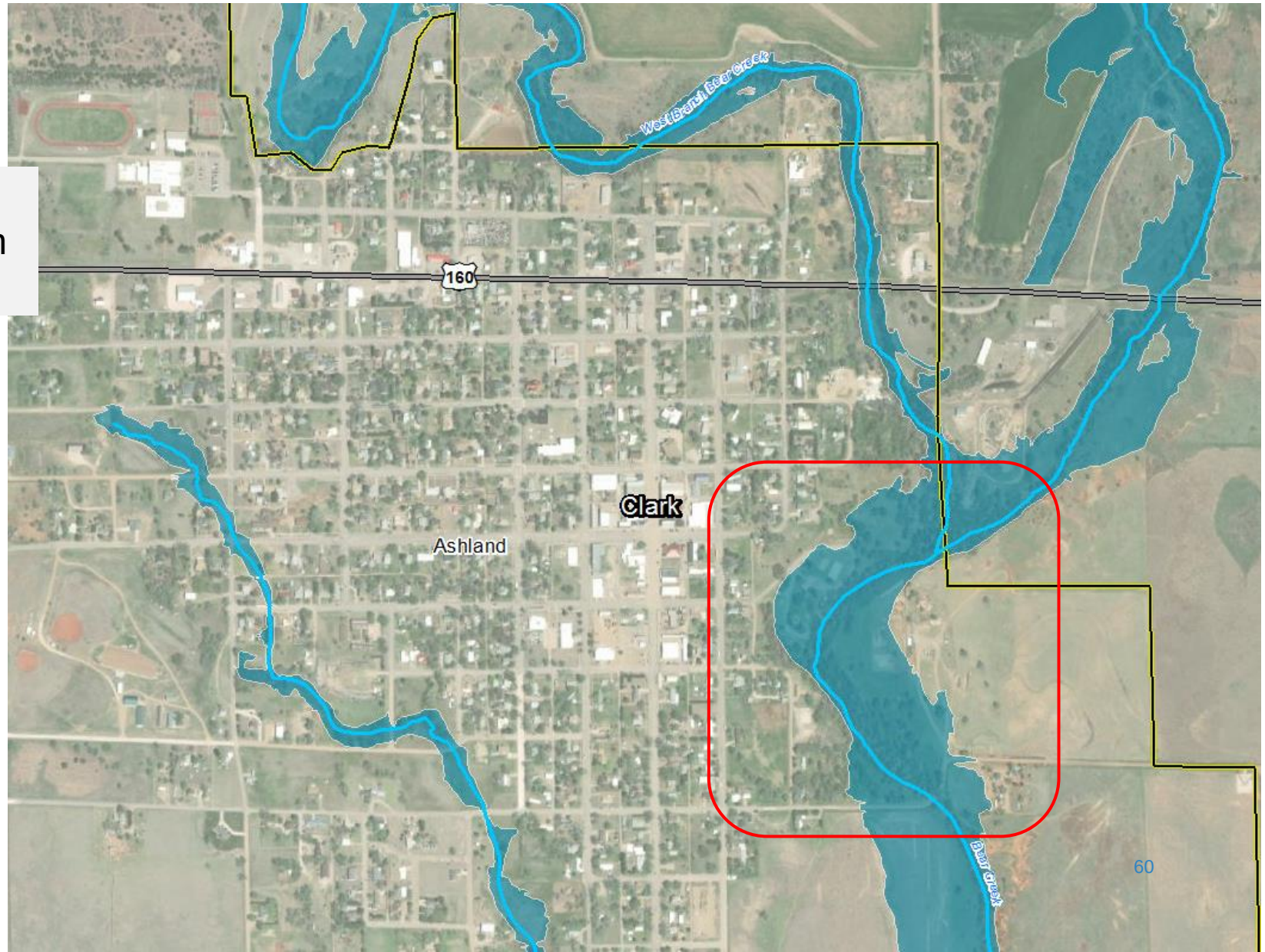
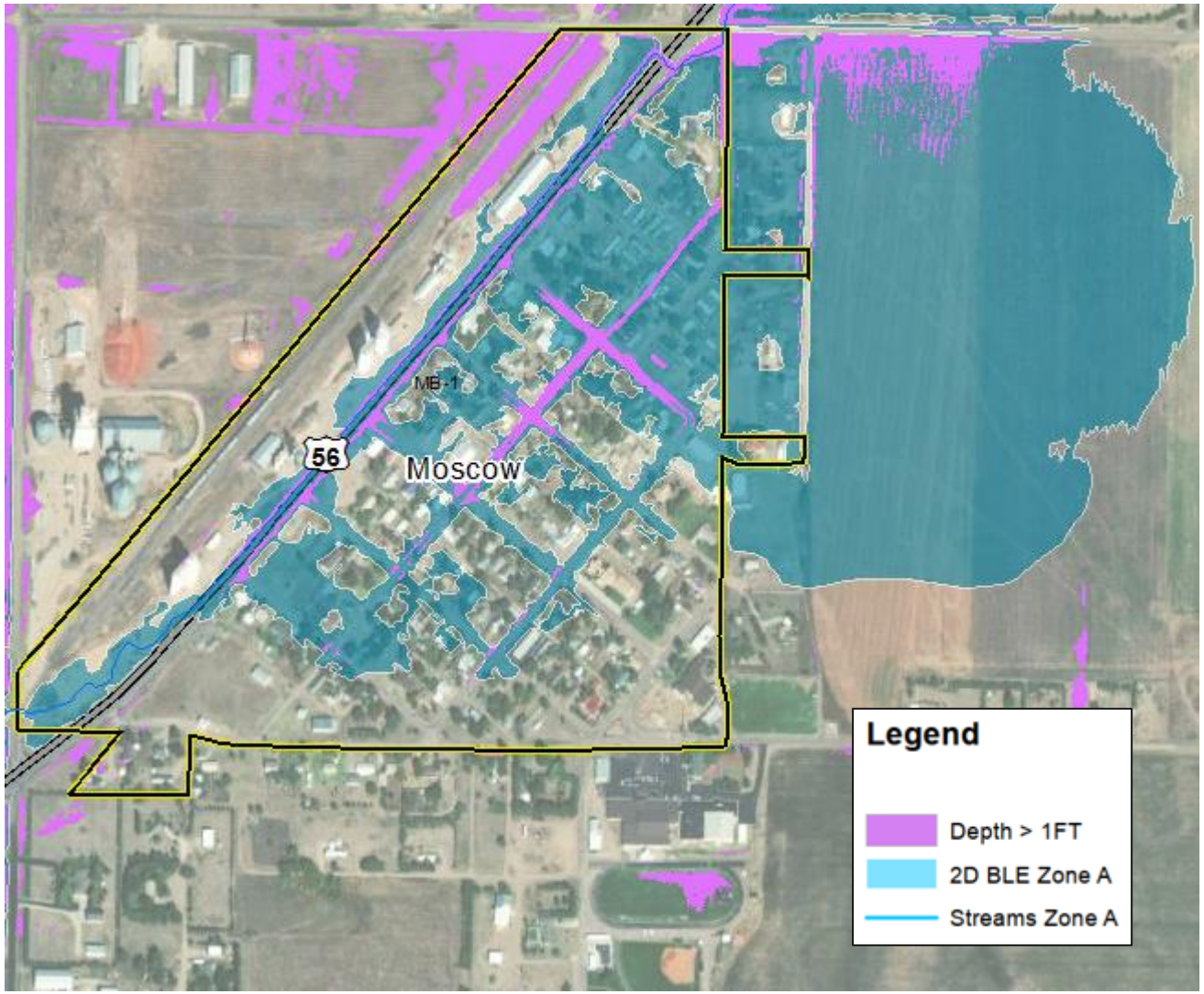


Stevens County – Moscow



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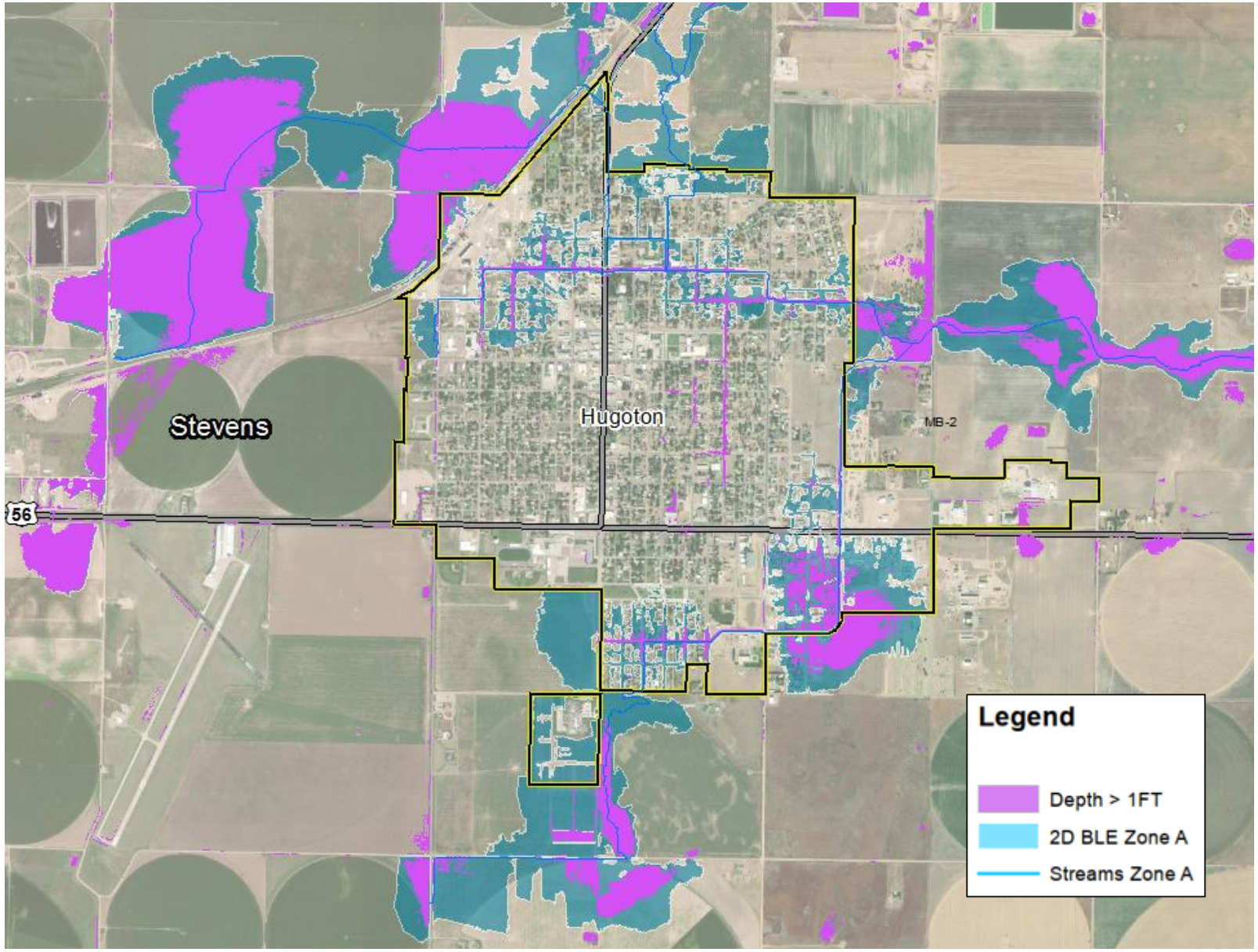
Stevens County – Hugoton



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