



Reno County



FEMA

*Floodplain Mapping Project
Data Development Kickoff Meeting*

June 23, 2022

wood.

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



***Your engagement
in this process is
important to the
success of this
project, so thank
you for taking the
time to be here
today!***



**THANK
YOU**



Introductions

Kansas Department of Agriculture

Tara Lanzrath, CFM
*Floodplain Mapping
Coordinator*

**Joanna Rohlf, CFM,
GISP**
*Floodplain Mapping
Specialist*

William Pace, CFM
*Floodplain Mapping
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Wood Environment & Infrastructure Solutions

Larry Sample, PE
Project Manager

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State NFIP Coordinator

Cheyenne Sun Eagle
NFIP Specialist

FEMA – Region VII

Dawn Livingston
Regional Project Officer

Erika Stanley
Sr. GIS Analyst





Today's Goals

Share details on the mapping project

Get initial feedback on modeling methods

Review future steps

Background

Background

- Lower Arkansas Custom Watershed BLE Project
 - *Kick-off Meetings: March 5 & 6, 2019*
 - *Discovery Meetings: February 26 & 27, 2020*
- Lower Middle Arkansas Custom Watershed BLE Project
 - *Kick-off Meeting: October 27, 2020*
 - *Discovery Meeting: January 13, 2021*

Discovery Report

Lower Middle Arkansas Watershed
HUCS 11030010, 11030011, 11030012

Cities of Abbyville, Alden, Bel Aire, Bentley, Buhler, Burrton, Bushton, Canton, Chase, Claflin, Frederick, Galva, Geneseo, Halstead, Haven, Hesston, Hoisington, Hutchinson, Inman, Kechi, Little River, Lyons, Maize, McPherson, Moundridge, Mount Hope, Newton, Nickerson, North Newton, Olmitz, Park City, Sedgwick, South Hutchinson, Stafford, Sterling, Susank, Valley Center, Walton, Wichita, Willowbrook, Windom

Barton, Ellsworth, Harvey, Marion, McPherson, Reno, Rice, Rush, Sedgwick, Stafford Counties

Report Number 01
April 2021



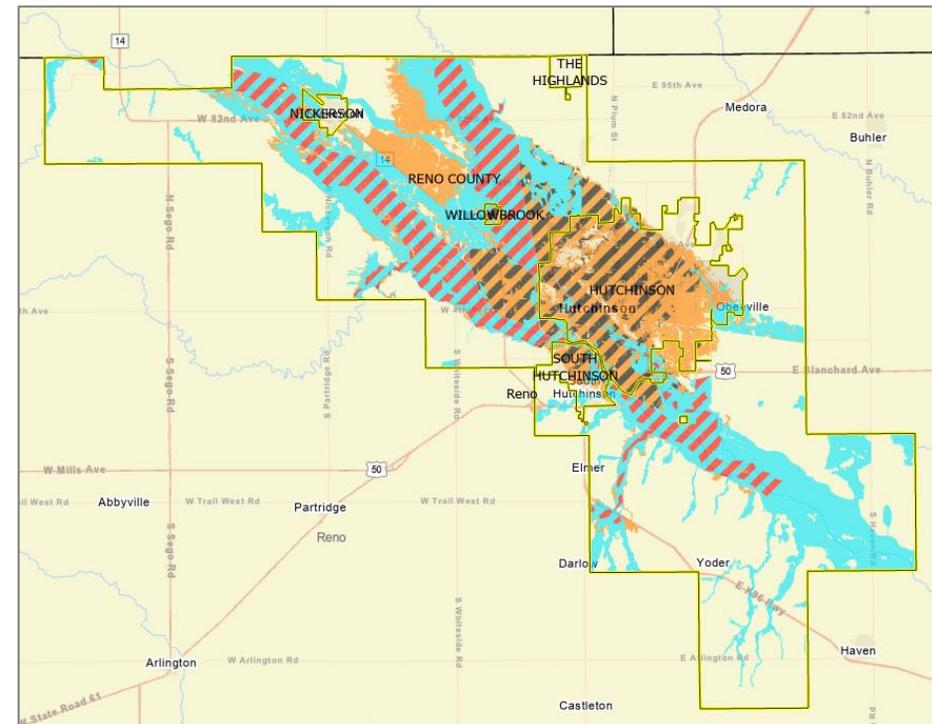
Background



- Reno County Effective Mapping
 - PMR completed January 29, 2021
 - Rest of County is January 6, 2010
 - Through the Discovery process and conversations with county stakeholders, it was determined that certain streams in Reno County warranted new modeling.
 - Better elevation data and 2D modeling techniques will improve the accuracy of the mapping.

Background

- Recent Physical Map Revision (PMR) Project for Reno County (Effective January 29, 2021)
 - Established Base Flood Elevations (BFEs) to use for Levee Certification efforts
 - Detailed Zone AE studies for:
 - Arkansas River
 - Cow Creek
 - Cow Creek Old Channel
 - GVI Drainage Ditch
 - Harsha Canal
- Zone AH interior ponding areas



Review of the Work Ahead and How We Propose Doing It

Definitions



Hydrology
How Much Water?



Hydraulics
How High Will Water Get?



Model Enhancements

- Enhancements will be made to the BLE modeling that was performed.
 - New Lidar, flown in 2018, will be incorporated.
 - Comments made and additional information gathered during the Discovery phase will be used to enhance the modeling.
 - Additional review/refinement of mesh will be done to improve accuracy of modeling.
 - Enhanced Zone A and Zone AE streams will include field measured structure data, as-built survey plan and additional land-use refinements.



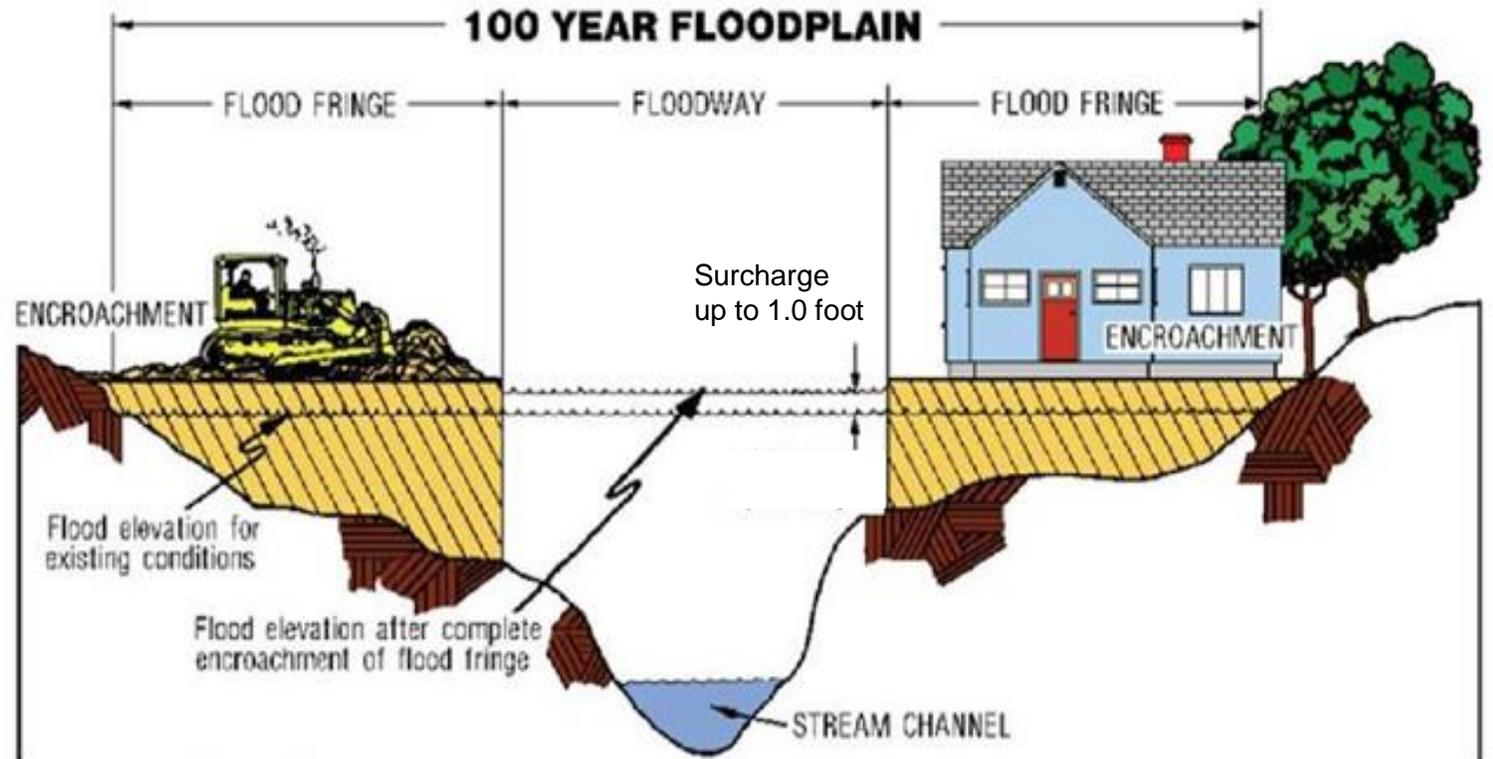
Model Enhancements

- The hydrology is built into the RAS modeling platform using excess rainfall-on-grid methodology.
- This will be calibrated to statistical gage analysis and HEC-HMS (rainfall-runoff) model flows, developed as part of this project



A portion of the Zone AE modeling includes the development of a floodway

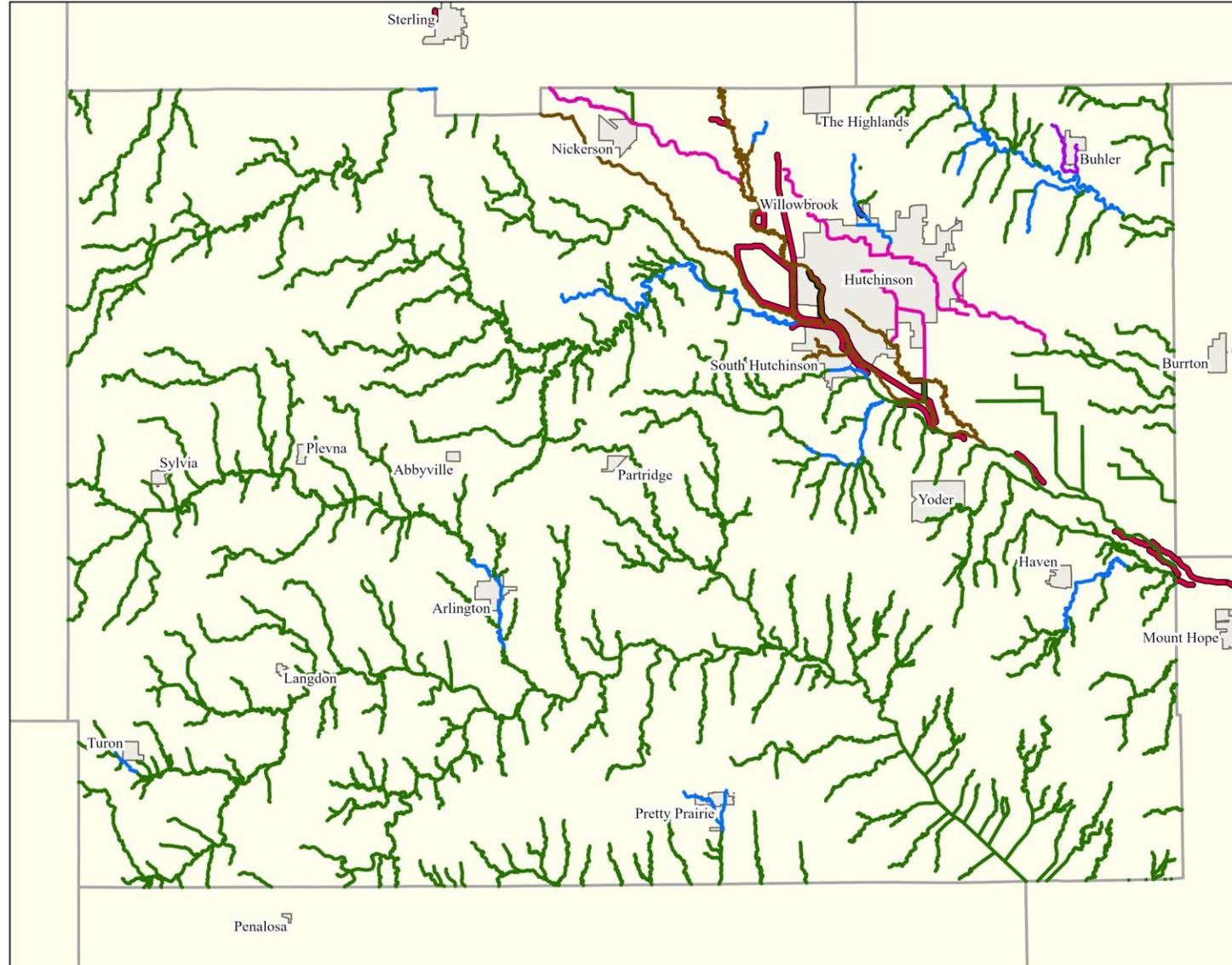
A Floodway is the area within the floodplain that must be reserved in order to discharge the base flood without cumulatively increasing the WSE by more than 1.0 foot.



Reno County 2021 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 - Excess Rainfall on Grid**
 New Zone AE studies will be developed for these streams using 1D or 2D Hec-Ras hydraulics and "excess rainfall-on-grid" hydrology. Floodways will be developed. Field measured structure data will be incorporated into the modeling. BFEs will be shown on the maps.
- **New Zone AH - Gage Analysis**
 New Zone AH studies will be developed for these streams using 2D Hec-Ras hydraulics and hydrology calibrated to gage analysis flows. 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.
- **Incorporation of Existing Flood Studies**





New Zone AE with Floodway

- Arkansas River
- Cow Creek Tributary C
- Gar Creek
- Little Arkansas River
- Little Arkansas River Tributary A
- Little Arkansas River Tributary B
- North Fork Ninnescah River
- Plum Creek
- Plum Creek Tributary
- Salt Creek
- Salt Creek Tributary B
- Sand Creek
- Silver Creek Tributary
- Smoots Creek
- Smoots Creek Tributary
- Unnamed Tributary to Sand Creek



New Zone AH

- Bull Creek
- Cow Creek Tributary A
- East Side Storm Drain
- Kisiwa Creek
- Kisiwa Creek Tributary
- Plum Creek



Zone A Updates

- Enhancements will be made to the 2D BLE modeling that was already performed
 - Comments made and additional information gathered during the Discovery phase will be used to enhance the modeling
- The modeling will utilize the 2018 LiDAR data set



Levees

- Accredited Levees
 - Hutchinson Levee - Levee F-Ring Levee (Willowbrook)
 - Hutchinson Levee - Levee C
 - Hutchinson Levee - Levee A & D - Arkansas NW Bank
 - Hutchinson Levee - Levee A & E - Arkansas NE Bank
 - Hutchinson Levee - Levee B -Arkansas South Bank (South Hutch)

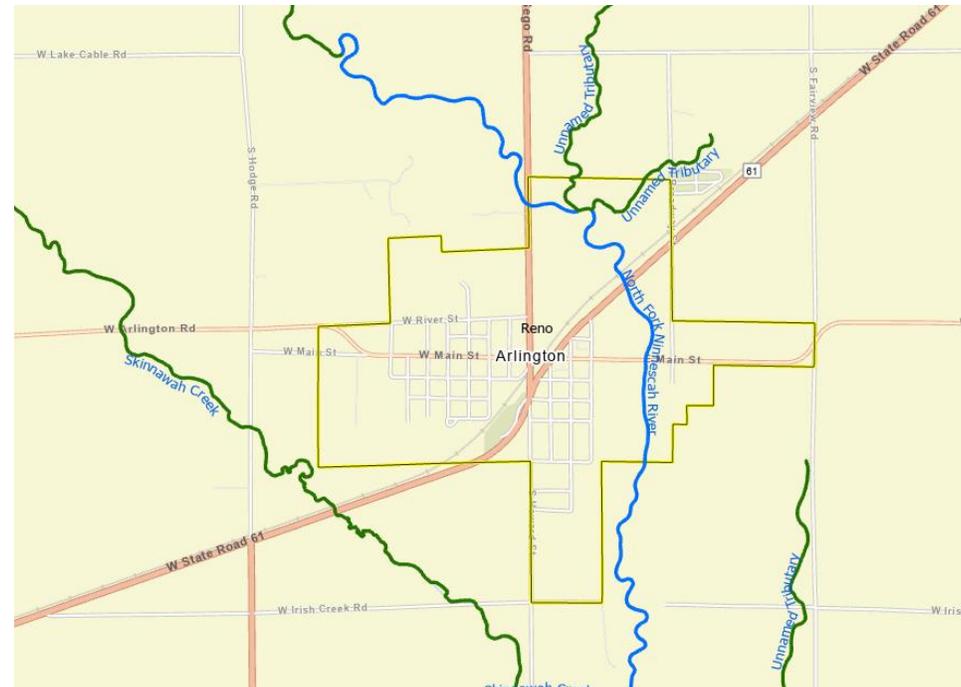
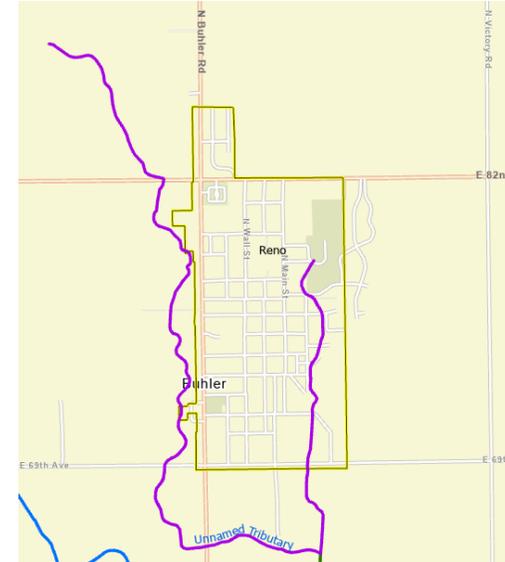


Levees

- Non-accredited Levees
 - Ark River North Bank
 - Arkansas River North Bank Levee 6 (Mount Hope)
 - Arkansas River South Bank Levee 3 (Mount Hope)
 - LRN-0004 (Haven)
 - LRN-0005 (Yoder)
 - LRN-0012 (Yoder)
 - LRN-0024 (Nickerson)
 - LRN-0029 (Hutchinson)
 - LRN-0073-S (Hutchinson)
- Will be mapped as hydraulically insignificant



Abbyville, Arlington, Buhler, Haven & Langdon Updates

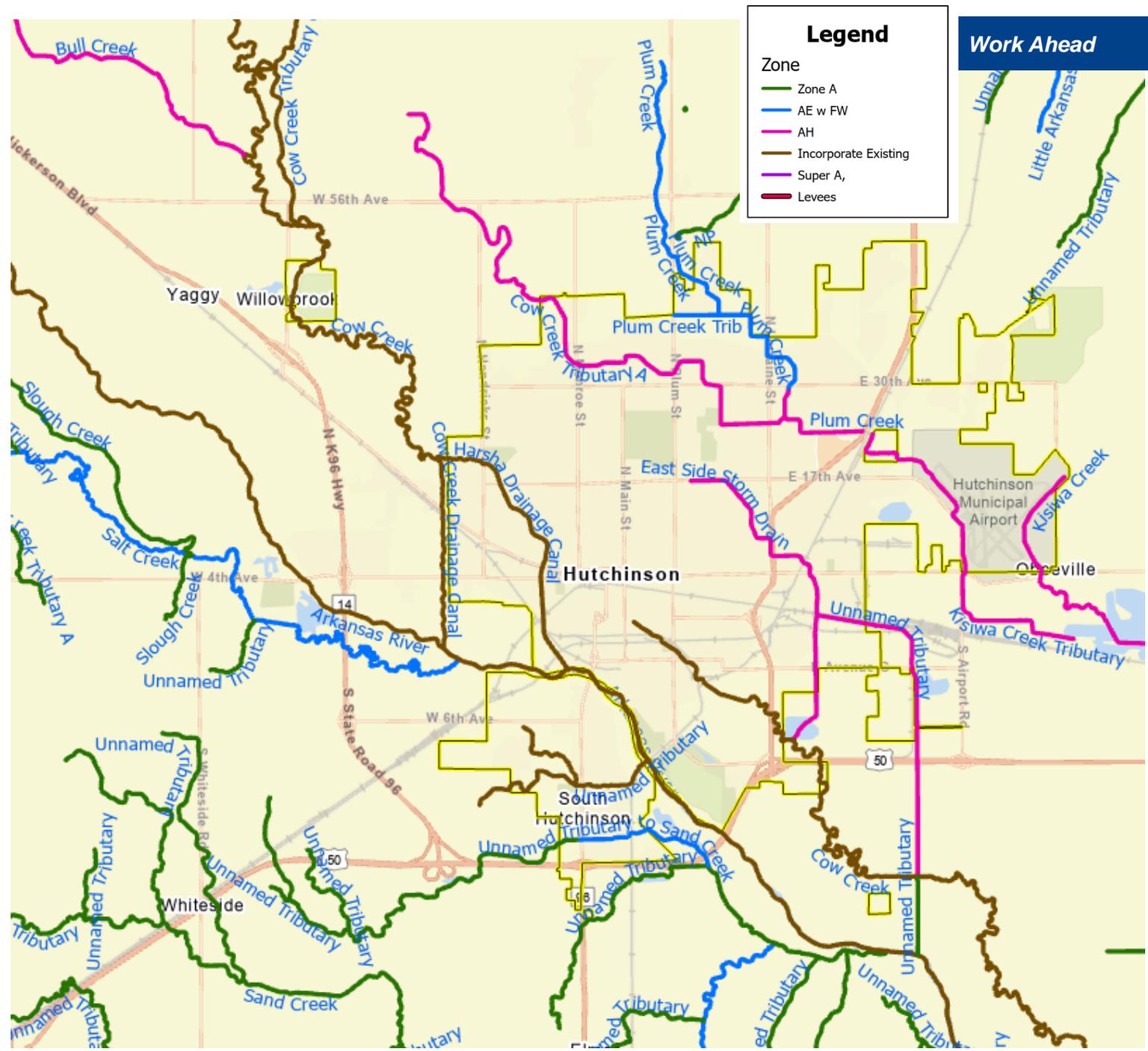


Legend

Zone

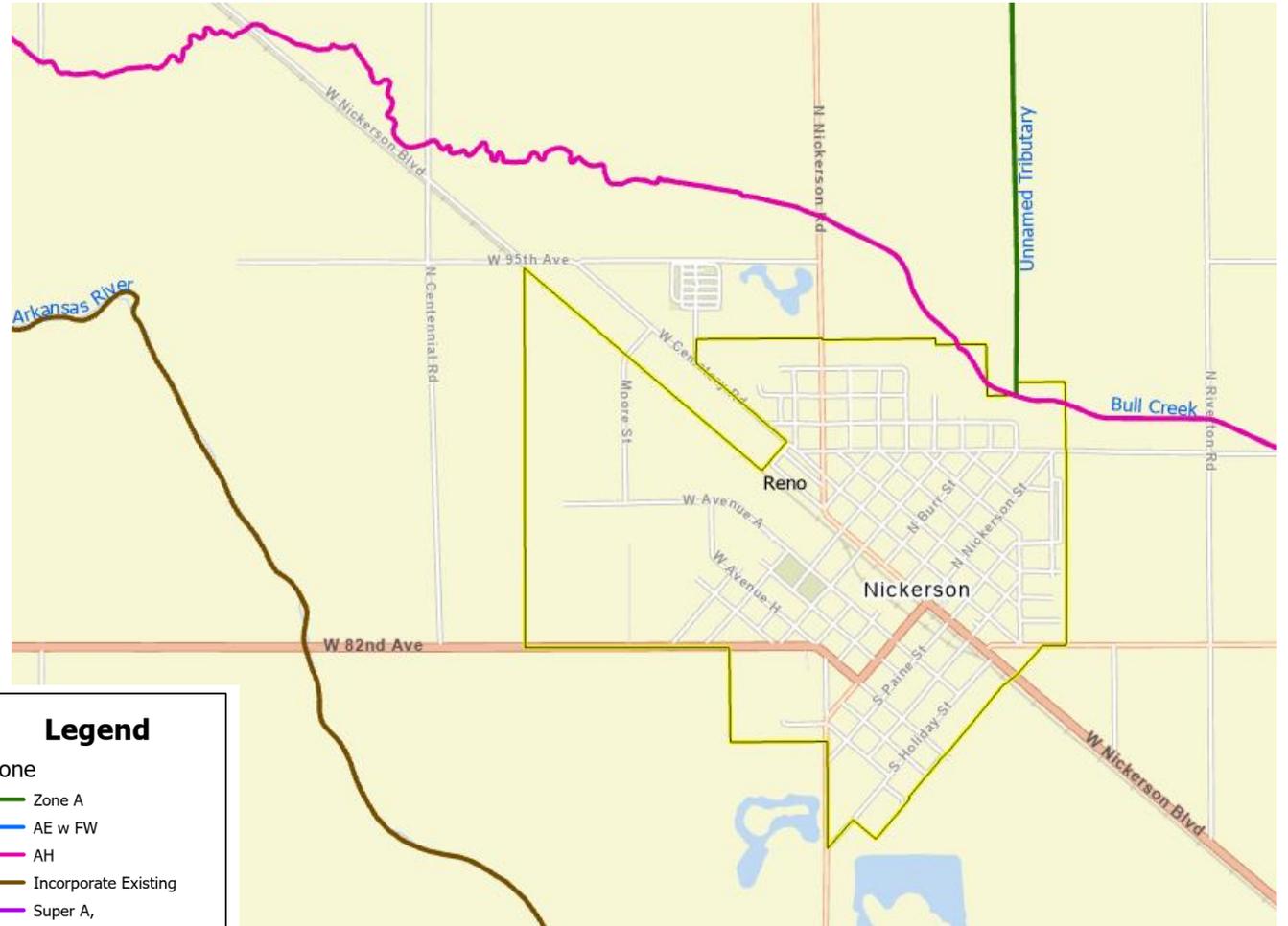
- Zone A
- AE w FW
- AH
- Incorporate Existing
- Super A,
- Levees

Hutchinson Updates

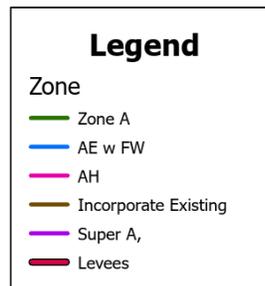
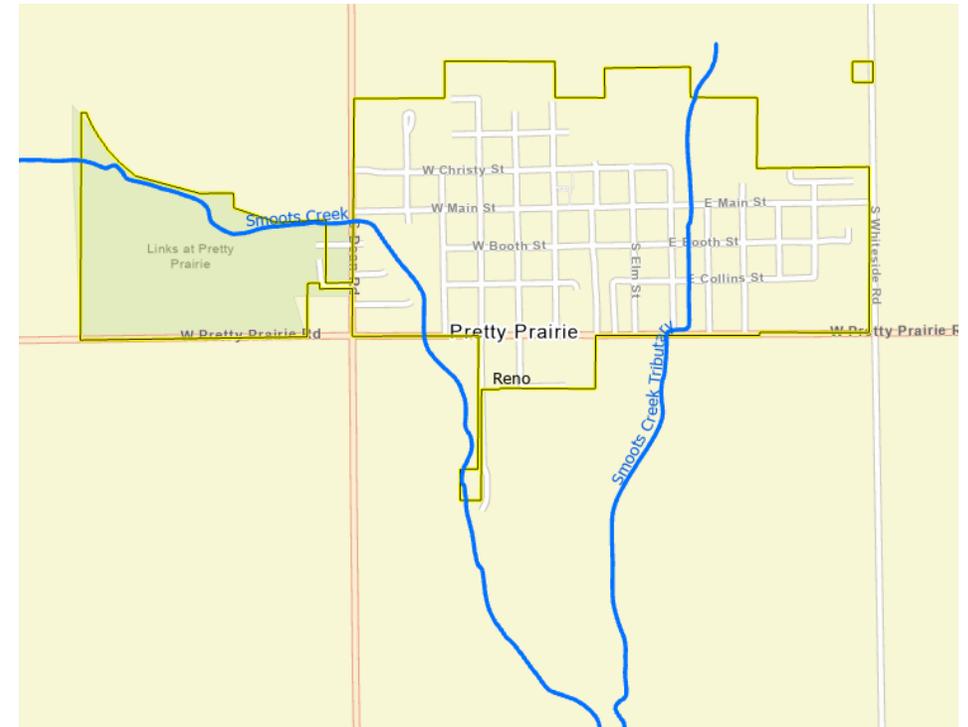
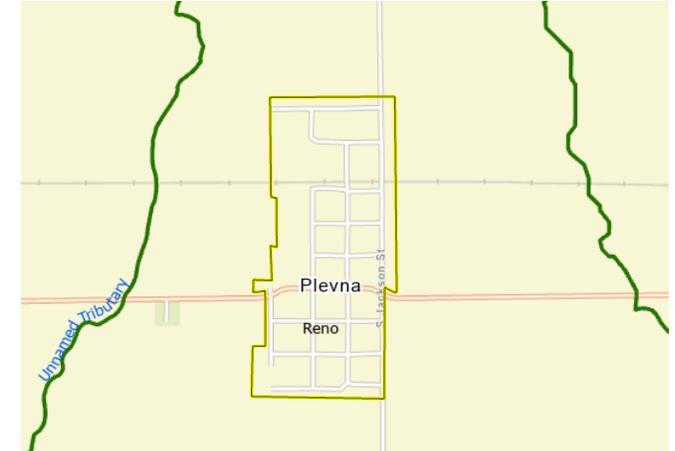




Nickerson Updates

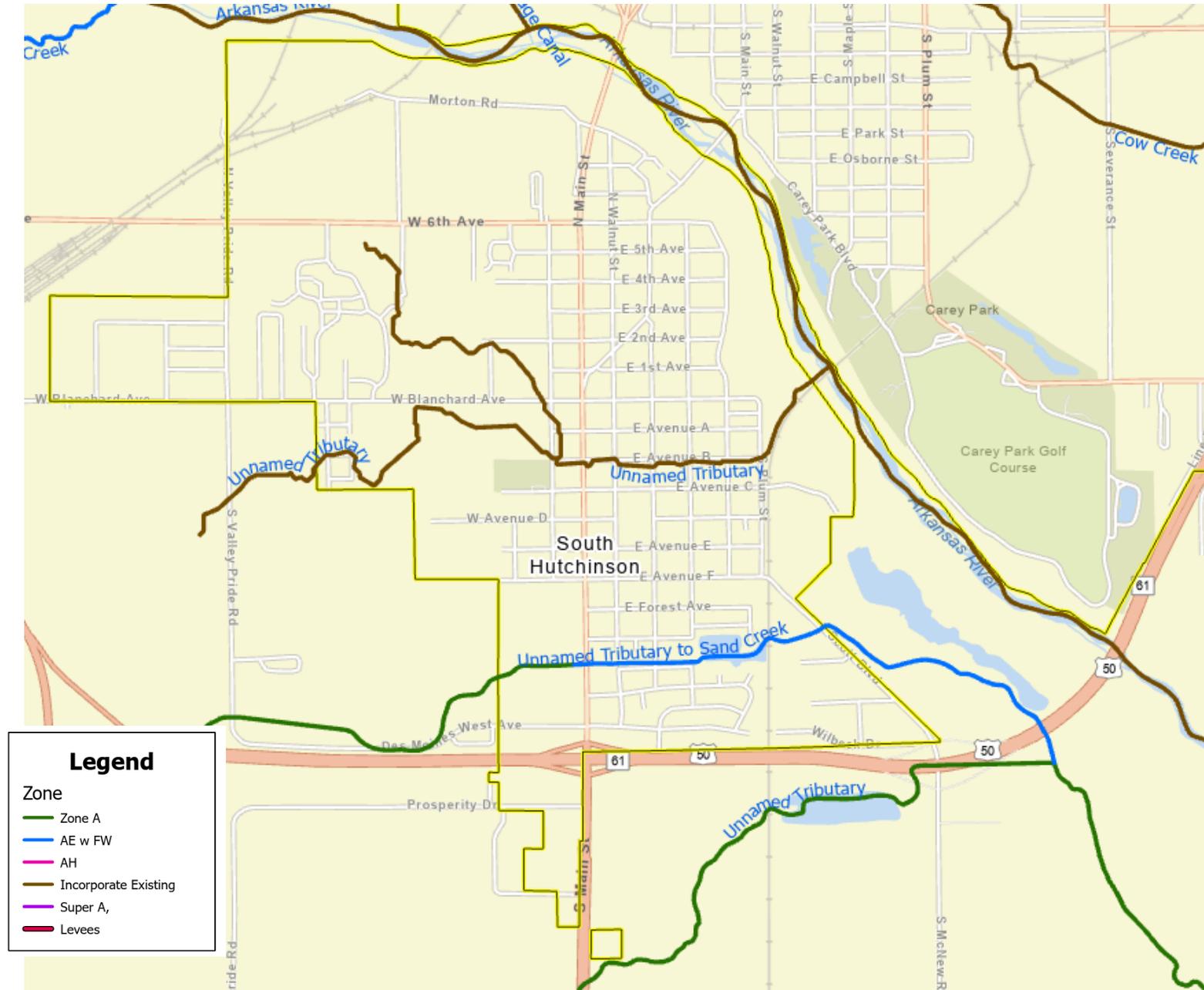


Partridge, Plevna, & Pretty Prairie Updates

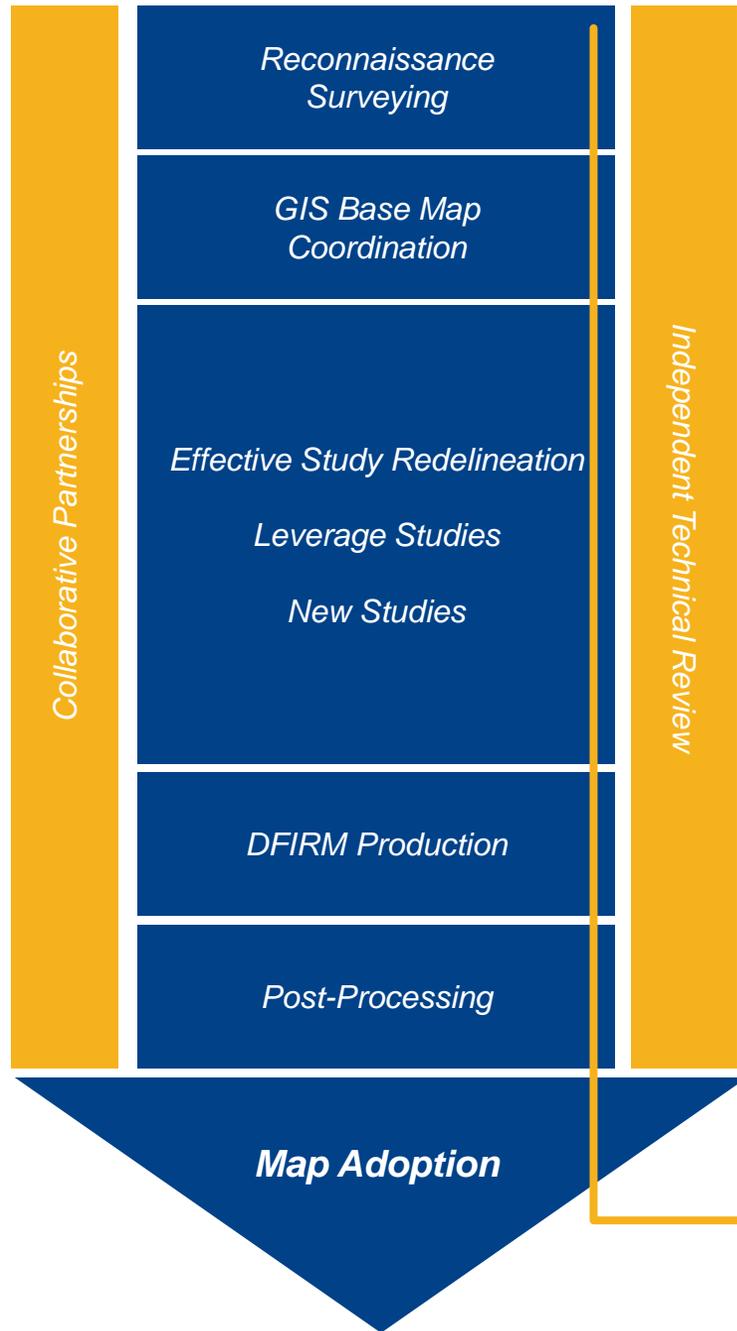




South Hutchinson Updates



Next Steps



Project Tasks

1. Discovery
2. Base Map Preparation
3. Survey and Topography
4. New Studies
5. DFIRM and FIS Production
6. Post-Preliminary

We are at the beginning of data development



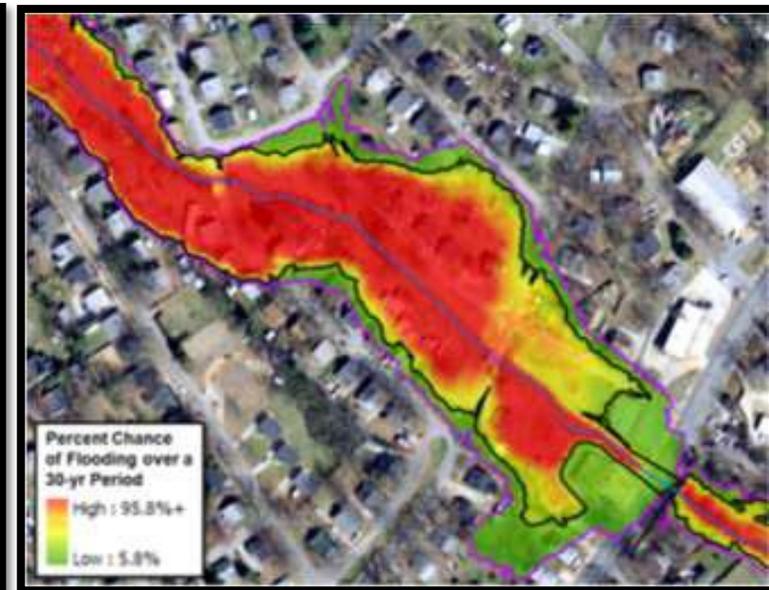
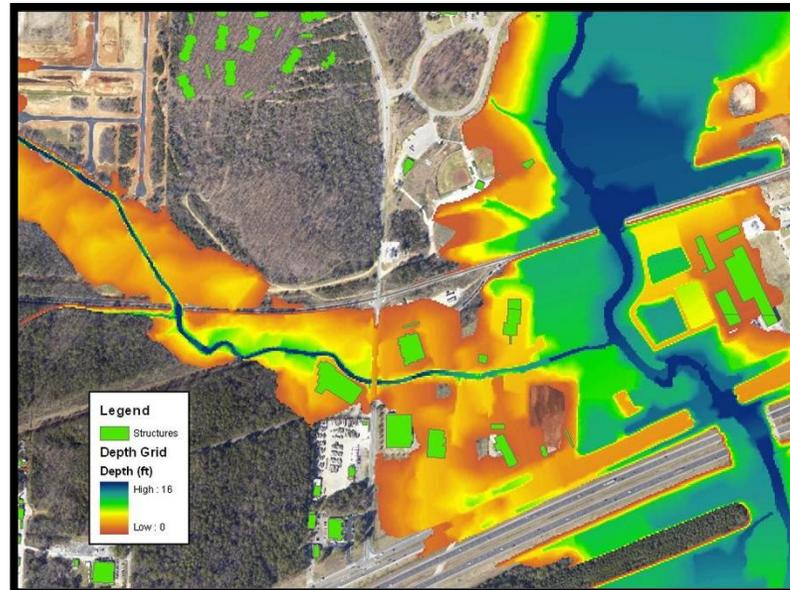
Our Next Steps:

- We will complete the engineering analysis
- We will develop your draft regulatory floodplain maps.
 - Also known as your Flood Insurance Rate Map (FIRM)
- We will develop your draft Flood Insurance Study (FIS).
- We will have a community review period and a public review period



Our Next Steps:

- We will also be developing flood risk products for updated portions of Reno County as part of this project.



Project Timeline



**Kick-off Meeting and
Initial Community
Feedback:**
[TODAY!]

Data Development Work:
[Now until early 2023]

- *Base Map*
- *Topographic Data*
- *Field Survey*
- *Develop Hydrologic and Hydraulic Models*
- *Floodplain Mapping*

**Flood Risk Review
Meeting:**

[~February 2023]

- *Your **review** and **feedback** on the draft maps*

Project Timeline, continued

Community
**comments will
be addressed**

**Public review of
the draft maps**

- *Includes Public
Open House*

**Preliminary Map
Products**

- *Preliminary DFIRM
Community
Coordination Meeting*

**Post-
Preliminary
Processing**





Technical Assistance



Depending on how and where your community is being impacted by flooding, we might be able to help.

- Technical Assistance is available within for communities within Kansas.
- Technical Assistance has been provided or is planned for:
 - South Hutchinson
 - Hutchinson
 - Pretty Prairie



Key Takeaways

Floodplain Mapping Projects take time

Your involvement in this process will result in better flood information for your community

While we are working in your community, we also want to help you with your work to reduce flood risk

***DON'T HESITATE TO CALL,
WE ARE HERE TO HELP***

Resources

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

- Provide comments on areas impacted by past floods, community needs, etc.
- Review of floodplain data

Story Maps

- Project Info
- “Floodplain Current”: Mapping Process ‘Nuts and Bolts’

Any Questions?
