Kansas Department of Agriculture
Division of Water Resources

FEMA

wood.

Cowley County

Floodplain Mapping Project
Data Development Kickoff Meeting

June 15, 2022

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!

Kansas
Department of Agriculture
Division of Water Resources

Introductions

Kansas Department of Agriculture

Tara Lanzrath, CFM
Floodplain Mapping Coordinator

Steve Samuelson, CFM
State NFIP Coordinator

Cheyenne Sun Eagle
NFIP Specialist

Joanna Rohlf, CFM, GISP
Floodplain Mapping Specialist

William Pace, CFM
Floodplain Mapping Specialist

FEMA – Region VII

Dawn Livingston
Regional Project Officer

Wood Environment & Infrastructure Solutions

Larry Sample, PE, CFM
Project Manager

Erika Stanley
Sr. GIS Analyst

Kansas
Department of Agriculture
Division of Water Resources

Today's Goals

Share details on the mapping project

Get initial feedback on modeling methods

Review future steps

Background

Background

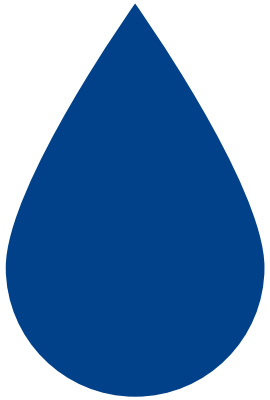
- Walnut Custom Watershed BLE Project
  - *Kick-off Meeting: December 12, 2019*
  - *Discovery Meeting: March 4, 2020*
- Lower Arkansas Custom Watershed BLE Project
  - *Kick-off Meeting: March 5-6, 2019*
  - *Discovery Meeting: February 26-27, 2020*
- Verdigris Custom Watershed BLE Project
  - *Kick-off Meeting: January 28, 2020*
  - *Discovery Meeting: April 21, 2020*

Background

- Cowley County Effective Mapping
  - Effective mapping is October 19, 2010.
  - Through the Discovery process and conversations with county stakeholders, it was determined that certain streams in Cowley County warranted new modeling.
  - Better elevation data and 2D modeling techniques will improve the accuracy of the mapping.

Review of the Work Ahead and How We Propose Doing It

Definitions



Hydrology

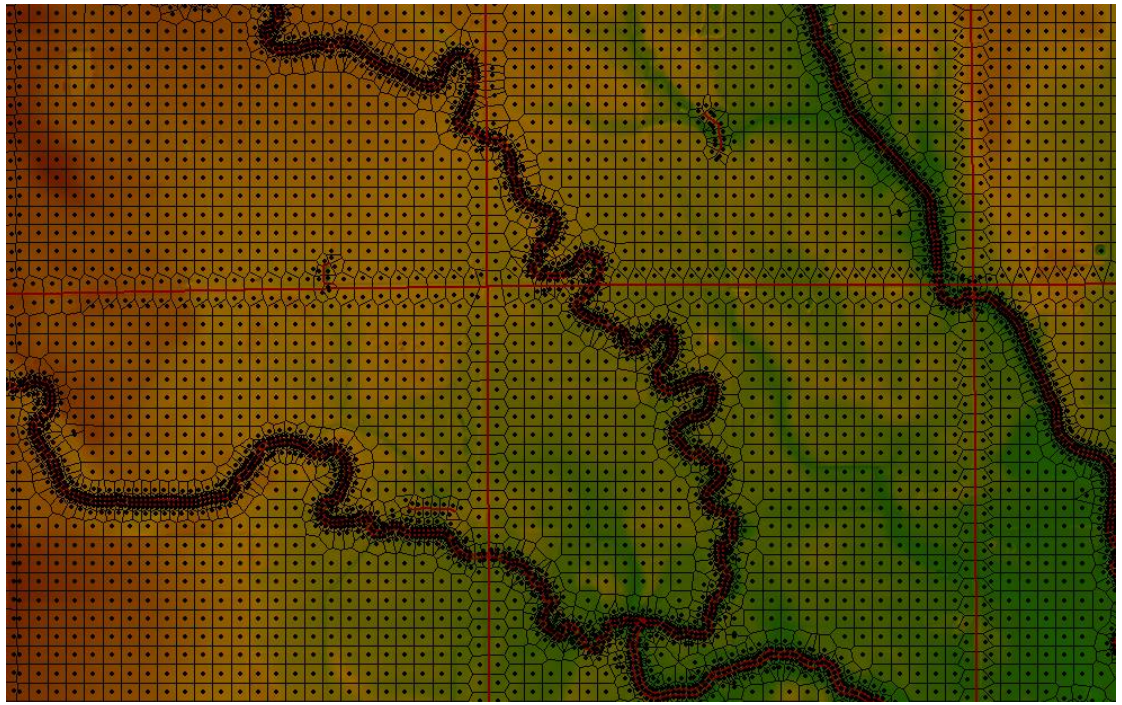
How Much Water?

Hydraulics

How High Will Water Get?

Kansas
Department of Agriculture
Division of Water Resources

2D Modeling is being used



Kansas Department of Agriculture
Division of Water Resources

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 landuse refinements.

Kansas Department of Agriculture
Division of Water Resources

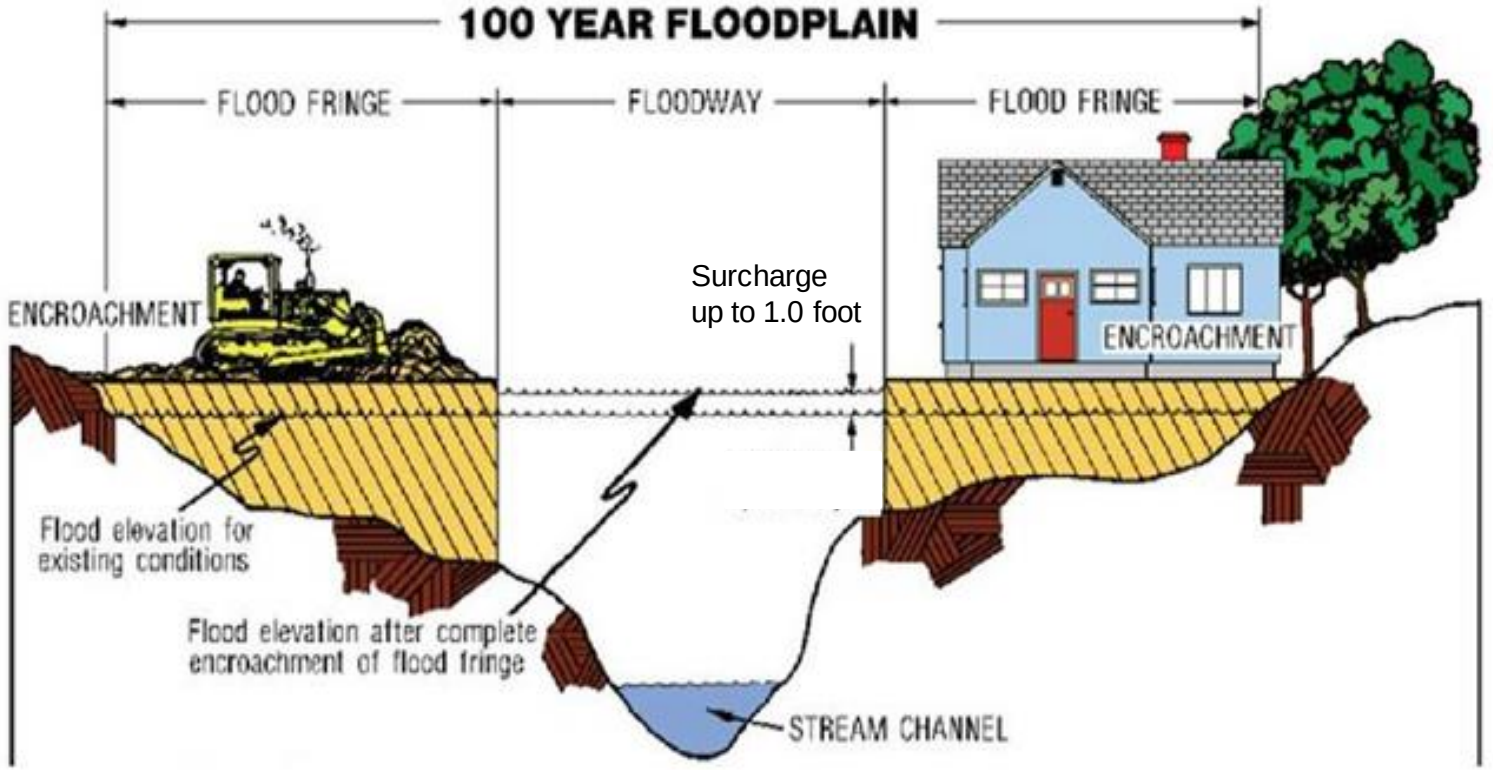
Model Enhancements

- 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

Kansas
Department of Agriculture
Division of Water Resources

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.



Cowley County 2021 Proposed Mapping Updates

Scoped Studies

New Zone A - Gage Analysis
New Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology calibrated to Gage Analysis Flows, and 2D Hec-Ras hydraulics.

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.

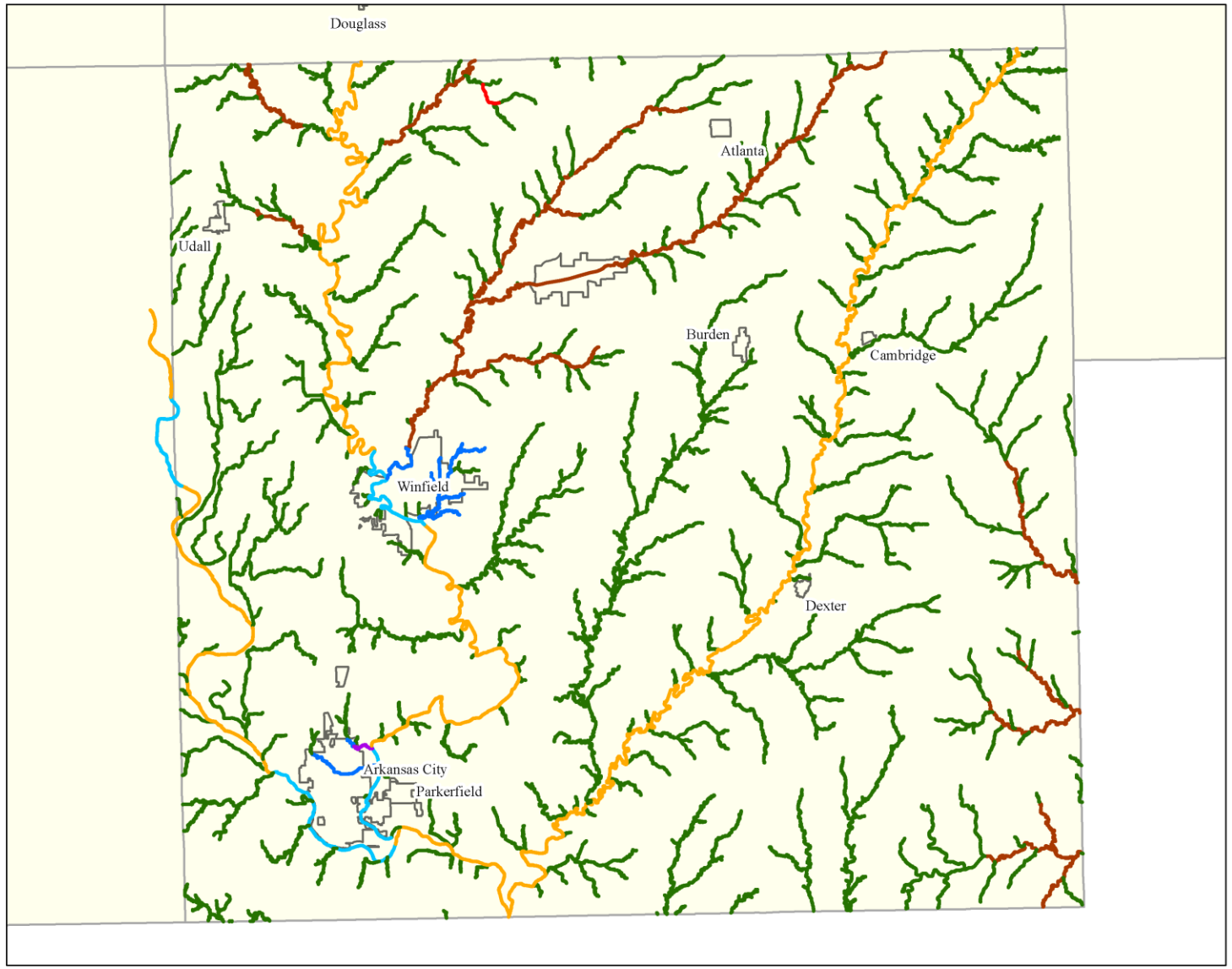
New Enhanced Zone A - Excess Rainfall on Grid
New Enhanced Zone A studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology and 2D Hec-Ras hydraulics. Floodways will not be developed. Field measured structure data will be incorporated into the modeling.

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

New Zone AE with Floodway - Gage Analysis
New Zone AE studies will be developed for these streams using 2D "excess rainfall-on grid" hydrology calibrated to Gage Analysis Flows, and 2D Hec-Ras hydraulics. Floodways will be developed. Field measured structure data will be incorporated into the modeling. BFEs will be shown on the maps.

New Zone AE - Excess Rainfall on Grid
New Zone AE 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. Floodways will not be developed. BFEs will be shown on the maps.

New Static Zone AE
New Static Zone AE studies will be developed for these streams using statistical frequency analysis.



Kansas
Department of Agriculture
Division of Water Resources

New Zone AE with Floodway

- Arkansas River
- Black Crook Creek
- Black Crook Creek Tributary 2
- Black Crook Creek Tributary 3
- Black Crook Creek Tributary 5
- C Street Canal
- Middle Branch Black Crook Creek
- North Creek
- Timber Creek
- Walnut River
- West Branch Black Crook Creek

Kansas
Department of Agriculture
Division of Water Resources

New Zone AE without Floodway

- Acker Creek
- Bear Creek
- Cedar Creek
- Cedar Creek Tributary
- Dutch Creek
- Lower Dutch Creek
- North Cedar Creek
- Otter Creek
- Polecat Creek
- Richland Creek
- Rock Creek
- Rock Creek Tributary
- Stewart Creek
- Timber Creek

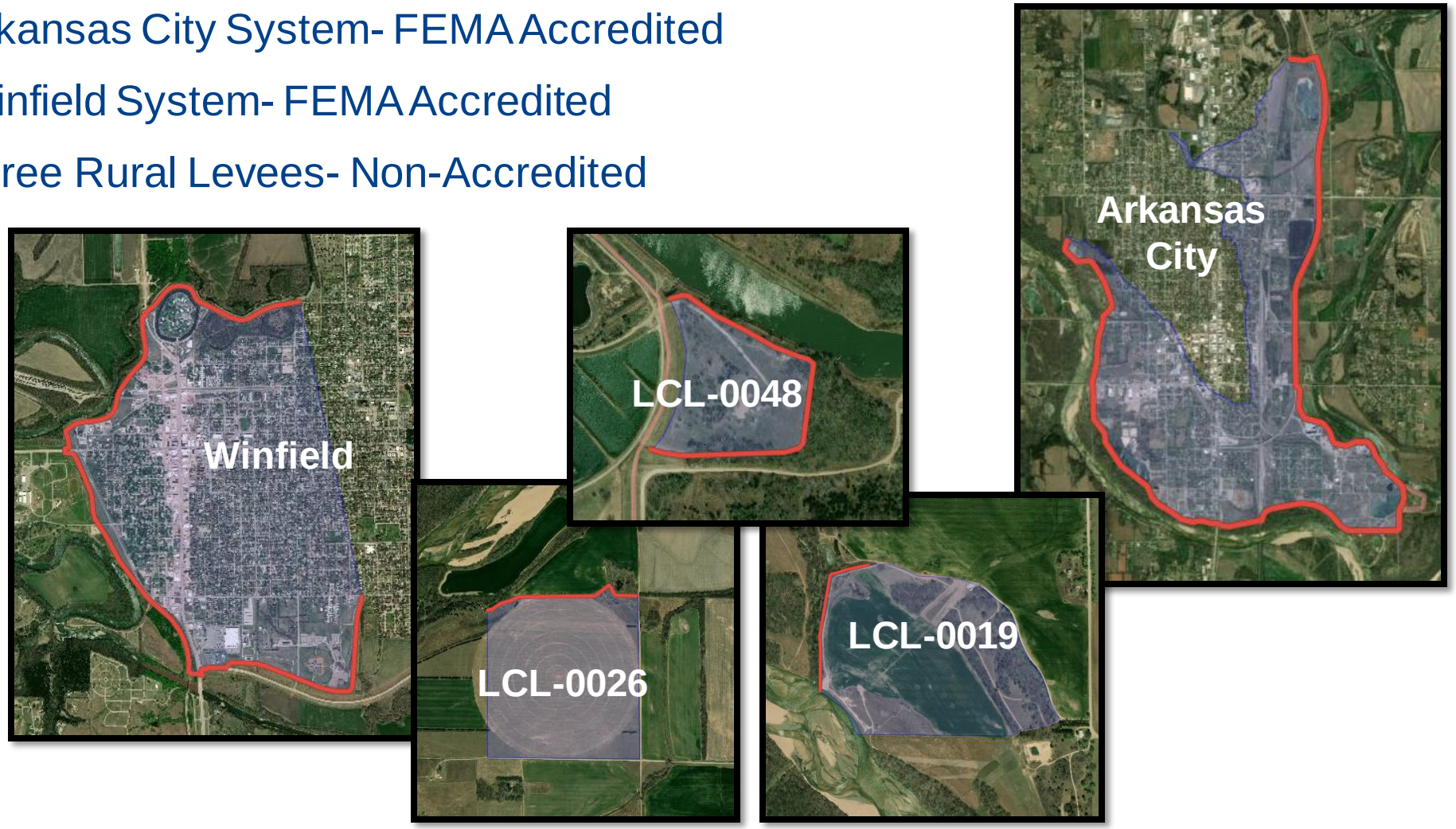
Kansas Department of Agriculture
Division of Water Resources

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
  - USGS is currently awaiting corrections for data approval

Levee Discussion

- There are 4 Levee Systems in Cowley County
  - Arkansas City System- FEMA Accredited
  - Winfield System- FEMA Accredited
  - Three Rural Levees- Non-Accredited



Kansas
Department of Agriculture
Division of Water Resources

Levee Discussion

- Each Levee will be further evaluated during Data Development:
  - Meetings will be scheduled to discuss the options for each Levee.
  - Both Arkansas City and Winfield Levees may require updated Levee Certification, under 44 CFR 65.10, to maintain Accreditation Status.
  - Path forward will be determined when revised BFE is established.

Kansas
Department of Agriculture
Division of Water Resources

Levee Options

1. PAL Agreement:
   - PAL is agreement with levee sponsors, those who benefit from the levee impacts (city and county) and FEMA, allowing sponsor 2-yrs from signature to complete levee certification
   - PAL Agreement needs to be signed prior to maps going preliminary

2. Complete Levee Recertification per 65.10 requirements

3. Levee remains Certified per 65.10 requirements

Kansas
Department of Agriculture
Division of Water Resources

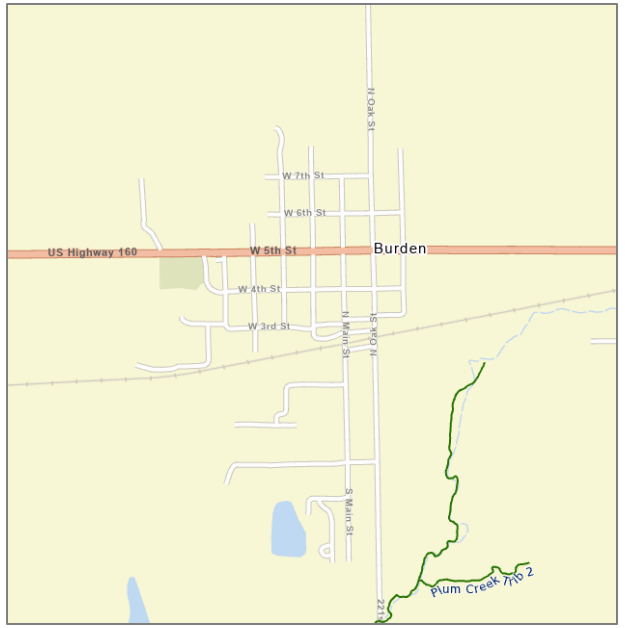
Arkansas City Updates

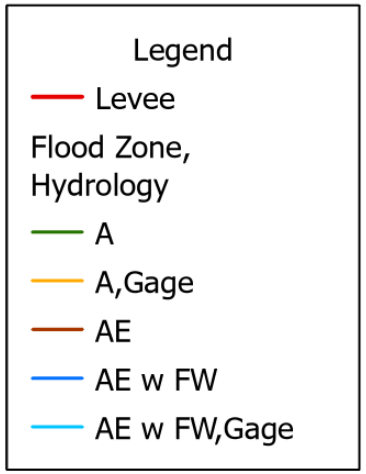
Kansas
Department of Agriculture
Division of Water Resources

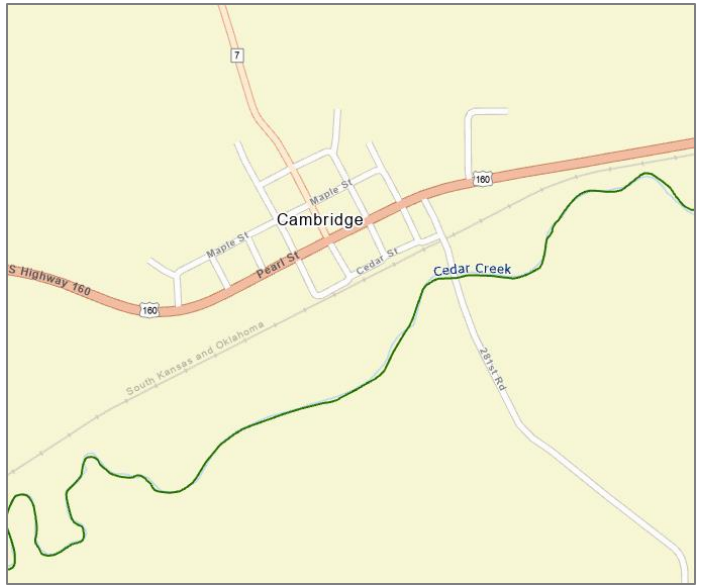
Winfield Updates

Kansas Department of Agriculture
Division of Water Resources

Atlanta, Burden,& Cambridge Updates

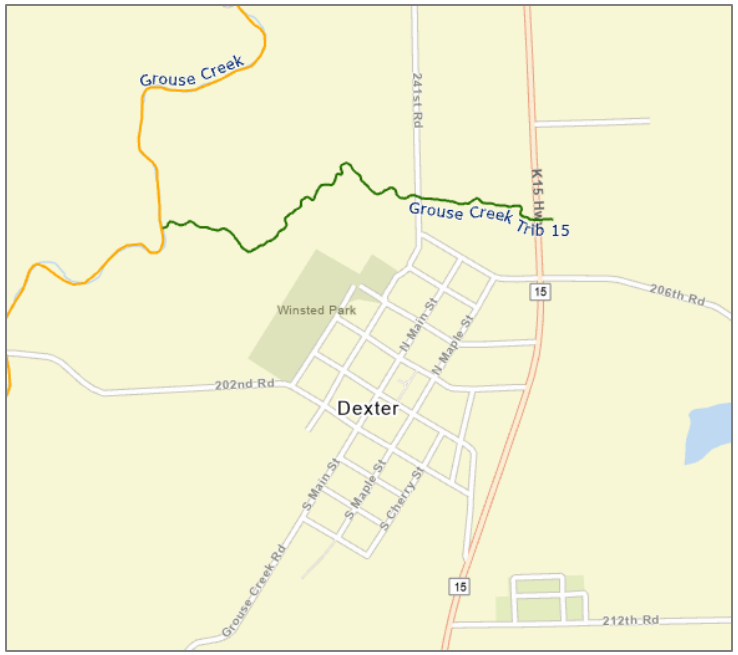


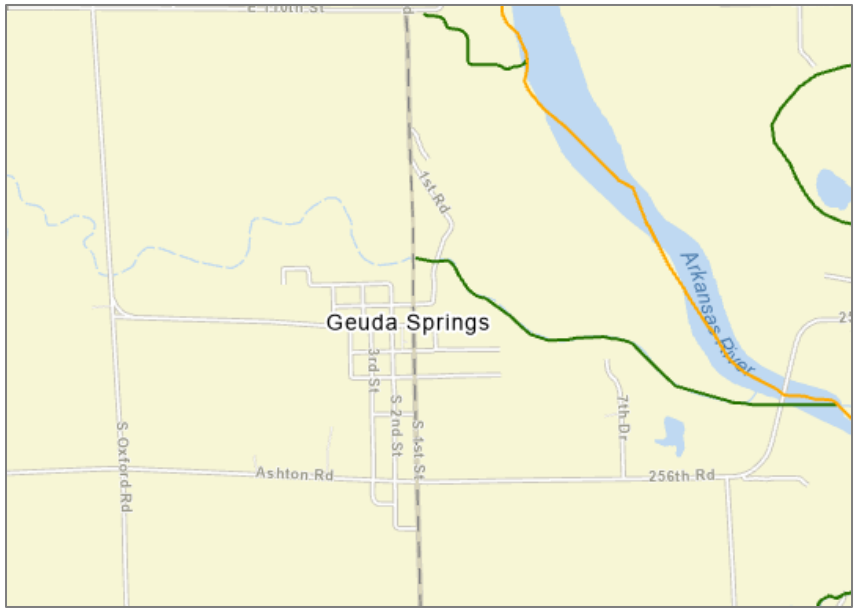


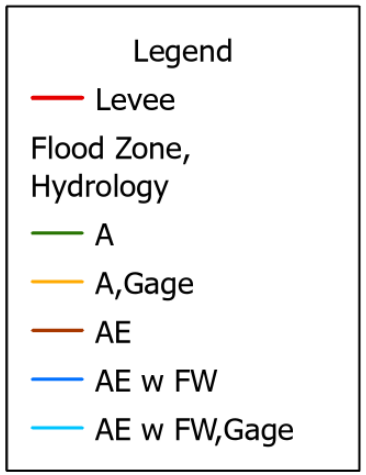


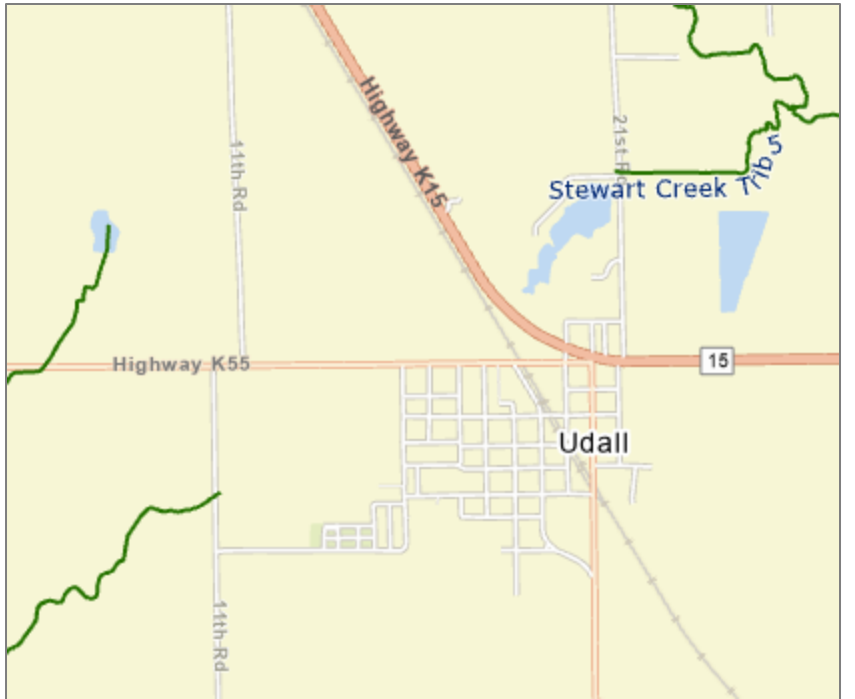
Kansas Department of Agriculture
Division of Water Resources

Dexter, Geuda Springs, & Udall Updates

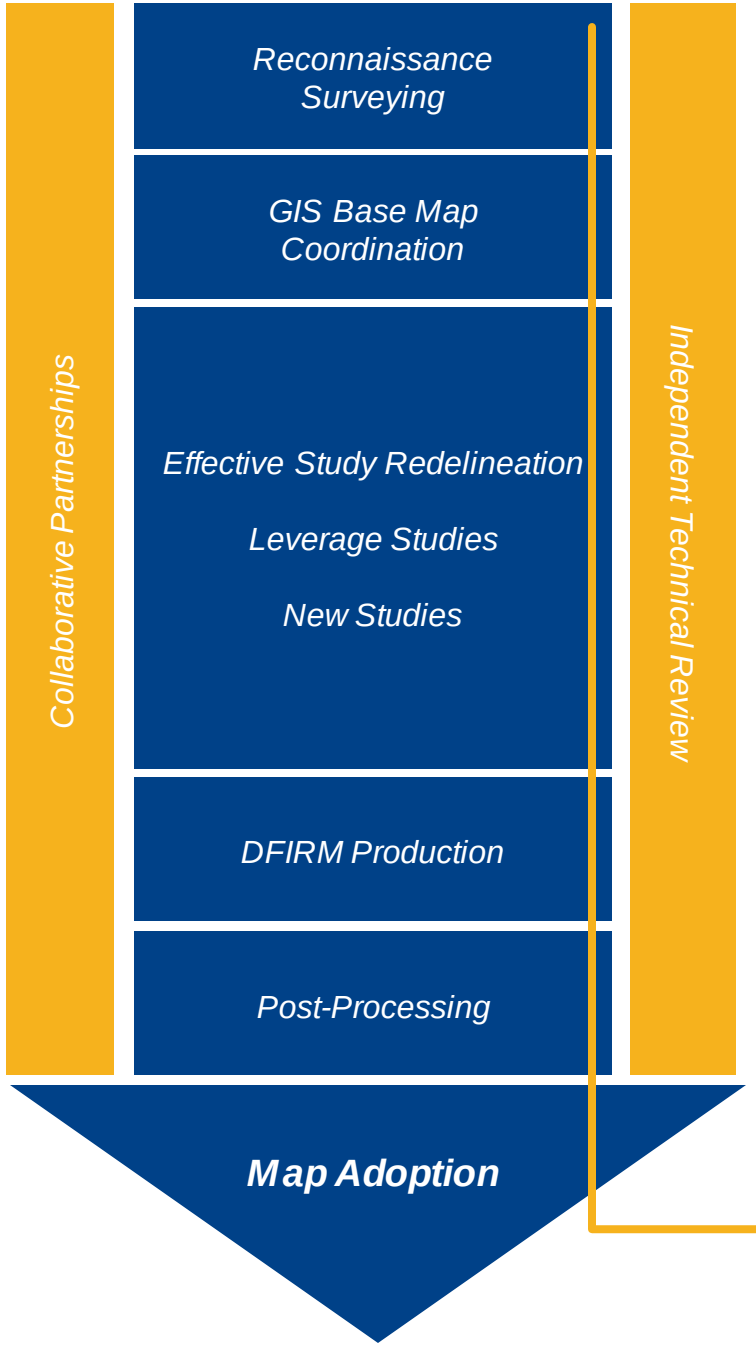








Next Steps



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

Kansas
Department of Agriculture
Division of Water Resources

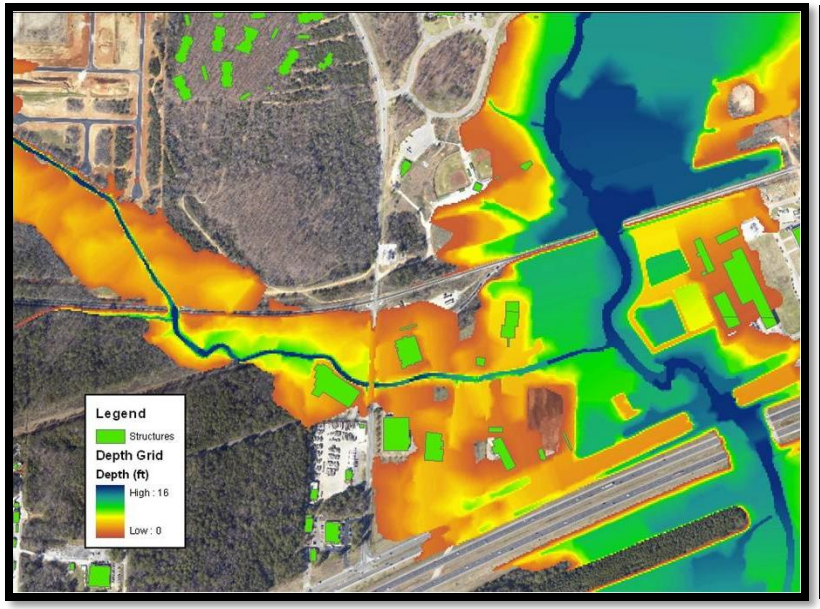
Our Next Steps:

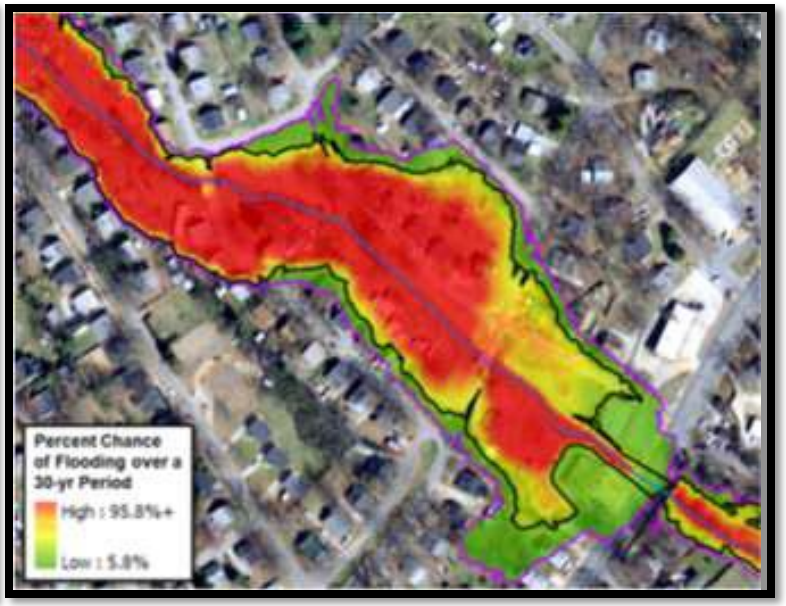
- We will complete the engineering analysis
- We will develop your draft regulatory floodplain maps.
  - Also known as your Flood Insurance Rate Map (FIRM)
- We will develop your draft Flood Insurance Study (FIS).
- We will have a community review period and a public review period

Kansas Department of Agriculture
Division of Water Resources

Our Next Steps:

- We will also be developing flood risk products for all of Cowley 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**

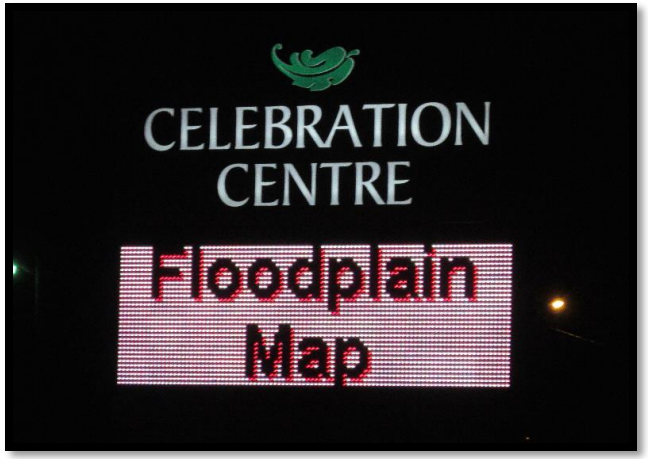
Public review of the draft maps

- *Includes Public Open House*

Preliminary Map Products

- *Preliminary DFIRM Community Coordination Meeting*

Post-Preliminary Processing



Kansas
Department of Agriculture
Division of Water Resources

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?