



**COLORADO**

Colorado Water  
Conservation Board

Department of Natural Resources

**RiskMAP**  
Increasing Resilience Together

# Lincoln County and Incorporated Communities Flood Risk Study

Flood Risk Review Meeting  
December 17, 2020 – 1:00 to 2:00 PM  
Virtual Zoom Meeting



# Meeting Agenda

- Introductions, Roles, & Responsibilities
- Flood Risk Review Meeting Goals
- Project Scope Review and Timeline
- Risk MAP Phase 2 Details, Draft Results, & Hydraulic Modeling Methodology
- Questions and Discussion



# Introductions



## Community Officials



- Lincoln County
- Town of Limon
- Town of Hugo

## State (CWCB)



- **Terri Fead** – Flood Mapping Program Manager
- **Marta Blanco Castaño** – Flood Mapping Program Assistant
- **Doug Mahan** – Community Assistance Coordinator

## FEMA



- **Christine Gaynes** – FEMA PM
- **Matt Buddie** – NFIP Program Specialist

## CDM Smith



- **Eli Gruber** – Project Manager
- **Joey Machala** – Project Engineer
- **Mike Schultz** – GIS Specialist

# National Flood Insurance Program (NFIP)

**Voluntary  
Program**

Allows homeowners to buy insurance based on Zones and be eligible for federal assistance



## **Federal Program**

- Overseen by FEMA and Partners
- Managed by Communities
- Enforced by lenders

## **Engineers determine risk**

- Used to determine requirements
- Allows discount for less risk



# Flood Risk Review Meeting

- Provides a review of the new engineering analysis results, allowing communities to:
  - Provide insight and input on hydrology and hydraulic results in updated study area
  - Promote local buy-in and review possible use of analysis
  - Identify areas of large changes and potential opportunities for risk reduction
  - Identify risk communications needs and options

# Project Scope Refresher

Develop new Zone AE floodplains and floodways for:

- Big Sandy Creek
- Unnamed Stream
- Unnamed Stream Tribs 1 and 2
- Unnamed Airport Stream
- Unnamed Airport Stream Trib





# Lincoln County Effective Data

- Town of Limon Flood Insurance Study from 1984
- LOMR in 1999 revised Unnamed Streams floodplains based on channelization and culvert replacement project
- Airport Streams not previously studied

# Project Timeline



## Major Project Milestones

Data Development  
2020

Preliminary Maps  
and Appeals  
Mid 2021

Due Process and  
Final Mapping  
Late 2021/Early  
2022

Effective FIRMs  
Early 2023

Review data and  
provide  
concurrence

Communicate Results  
to Public and Receive  
Appeals

Adopt Maps

Manage new  
FIRMs

## Community Responsibilities

# Risk MAP Phase 2 Project Steps



## Field Reconnaissance & Survey

Survey data is used to determine precise elevations and dimensions of portions of the floodplain and to verify and refine topographic data.



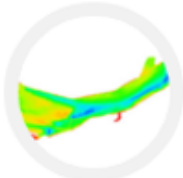
## Topographic Data Development

Topographic data is data used to model the surface of the earth. The study team will leverage existing topography (see lidar availability on the full map page) :



## Hydrology

Hydrology is used to determine the amount of water flow anticipated in each stream. The study team will calculate new peak flood discharges for the 10%, 4%, 2%, 1%, '1% plus' and 0.2% annual chance events



## Hydraulics

Hydraulic models are created to calculate the depth of water anticipated during flood events. Hydrologic results are used along with survey and topographic data to model stream behavior.

## Floodplain Mapping



Flood Hazard Mapping involves plotting the extents of calculated water surface elevations on maps using hydraulic model results and topographic data. These maps can be used by community leaders to identify hazard mitigation opportunities and make development decisions. It's anticipated that this data will eventually be used to update FEMA's Flood Insurance Rate Maps.

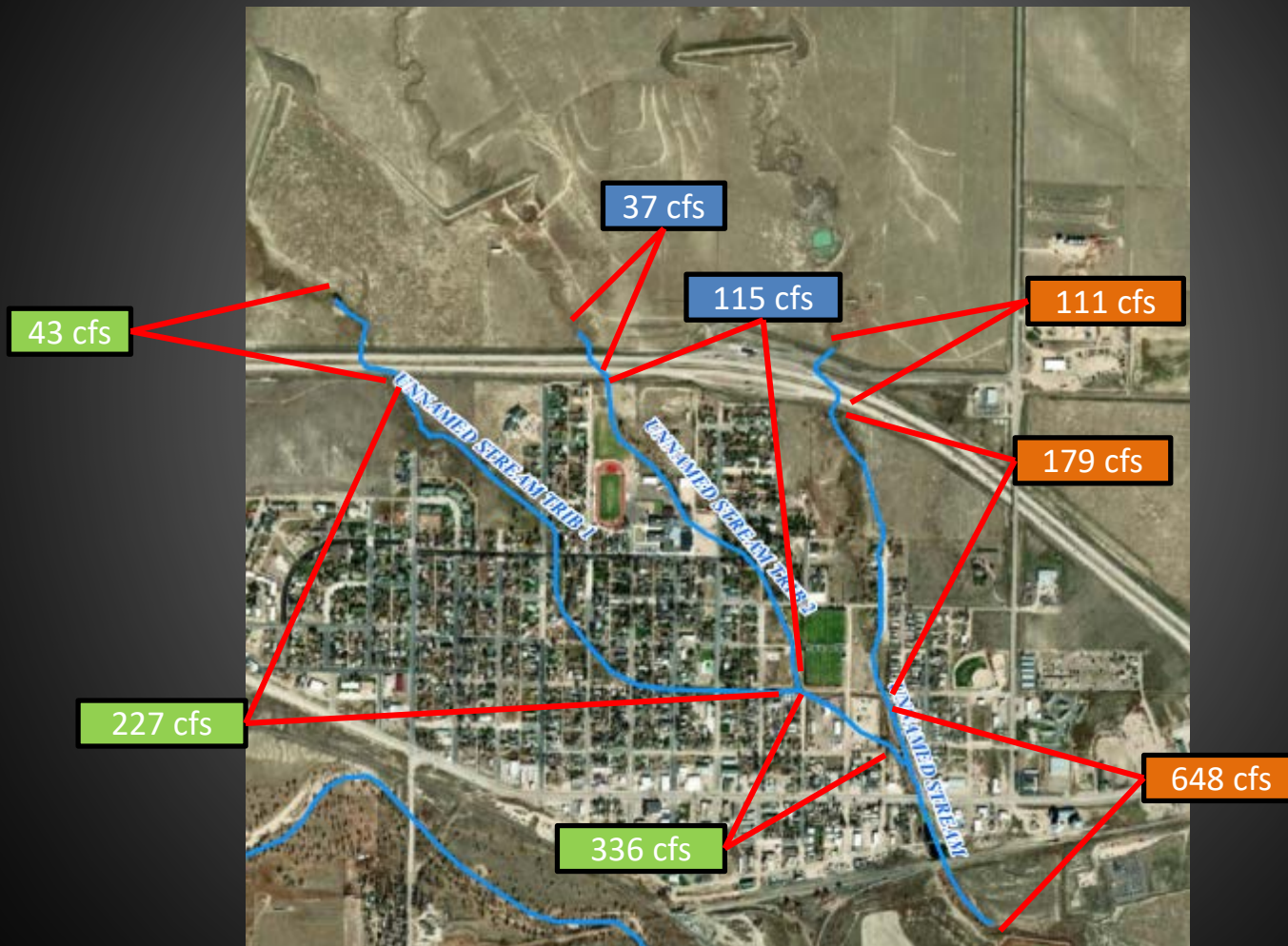
# Hydrology Updates



- Hydrology updated in 2019 using new data and modeling methodology

<u>Stream</u>	<u>100-year Discharge</u> <u>(cfs)</u>		<u>500-year Discharge</u> <u>(cfs)</u>	
	Effective	<b>Updated</b>	Effective	<b>Updated</b>
Big Sandy Creek	42,000	<b>17,700</b>	90,000	<b>33,800</b>
Unnamed Stream	3,740	<b>648</b>	7,320	<b>1,090</b>
Unnamed Stream Tributary 1	755	<b>336</b>	1,260	<b>536</b>
Unnamed Stream Tributary 2	440	<b>115</b>	690	<b>197</b>
Unnamed Airport Stream	NA	<b>4,760</b>	NA	<b>7,840</b>
Unnamed Airport Stream Tributary 1	NA	<b>1,230</b>	NA	<b>2,070</b>

# Hydrology Inputs



# Flood Risk Results Review

- **Live virtual map review**
  - **Changes Since Last Firm**
    - Shows increases and decreases in the 100-year floodplain based on current effective data
  - **Draft workmaps**
    - Draft results for 100- and 500-year Special Flood Hazard Areas (SFHA)
    - Base Floodway Elevations
    - Floodway delineation
- **Feedback**
  - County and community comments by **January 8, 2020**





# Adjourn

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