Pre-Wildfire Planning for Better Post-Fire Recovery

ATF
After the Flames

Matrix

Pre-Wildfire Planning for Better Post-Fire Recovery

Healthy Watersheds

- **Maintain flow regimes** (magnitude, frequency, duration, timing/seasonality)

- **Resilient**: Resist and Recover from Natural Hazards

- **Preserve Natural Ecosystems** like Riparian Areas, Wetlands, and Connected Floodplains
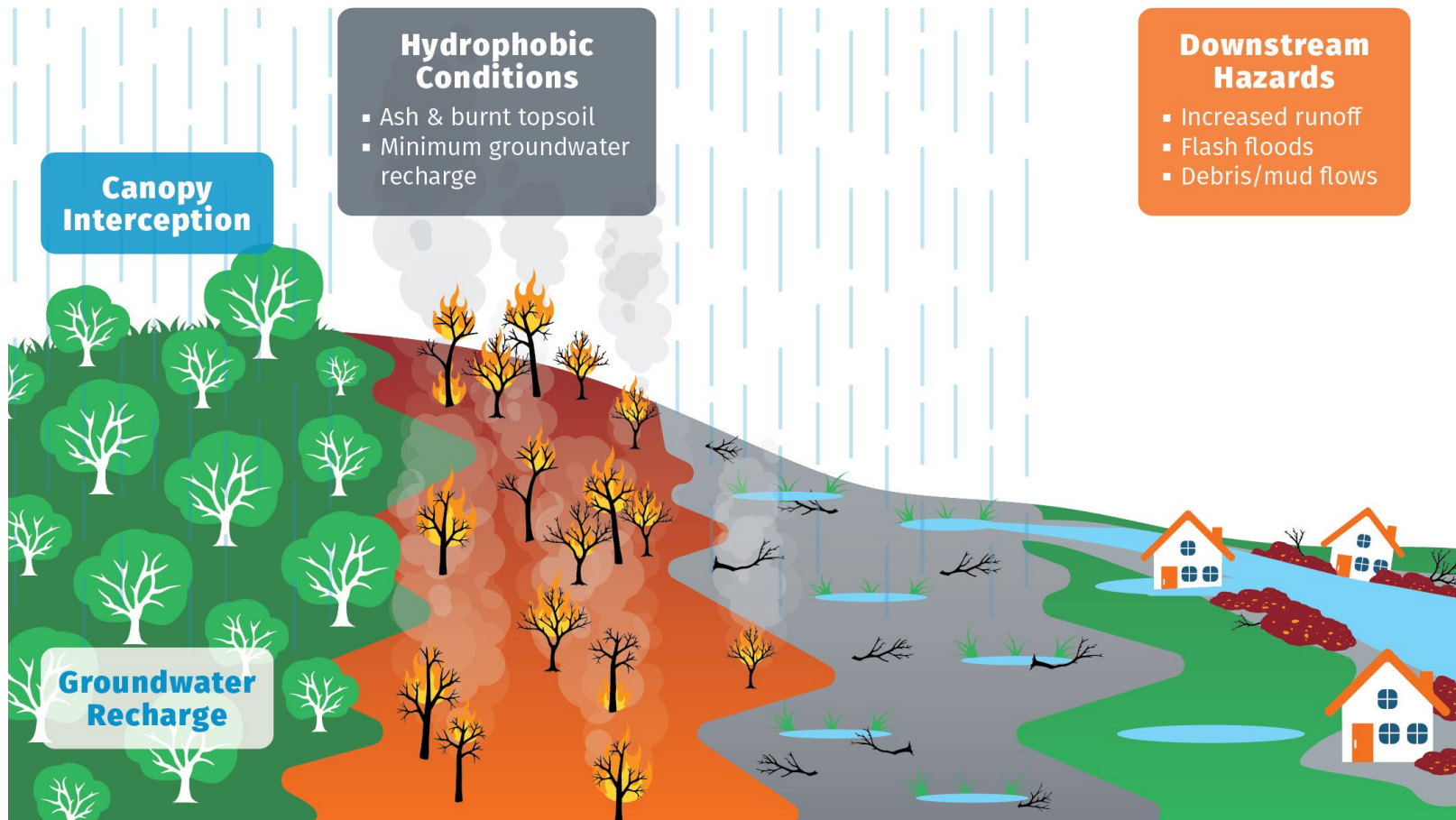
- **Support Biodiversity**: Flora and Fauna

Matrix

Pre-Wildfire Planning for Better Post-Fire Recovery

Wildfire Impacts on Environment

PRE   **DURING**   **POST**

Canopy Interception

Groundwater Recharge

Hydrophobic Conditions
- Ash & burnt topsoil
- Minimum groundwater recharge

Downstream Hazards
- Increased runoff
- Flash floods
- Debris/mud flows

Matrix

Pre-Wildfire Planning for Better Post-Fire Recovery
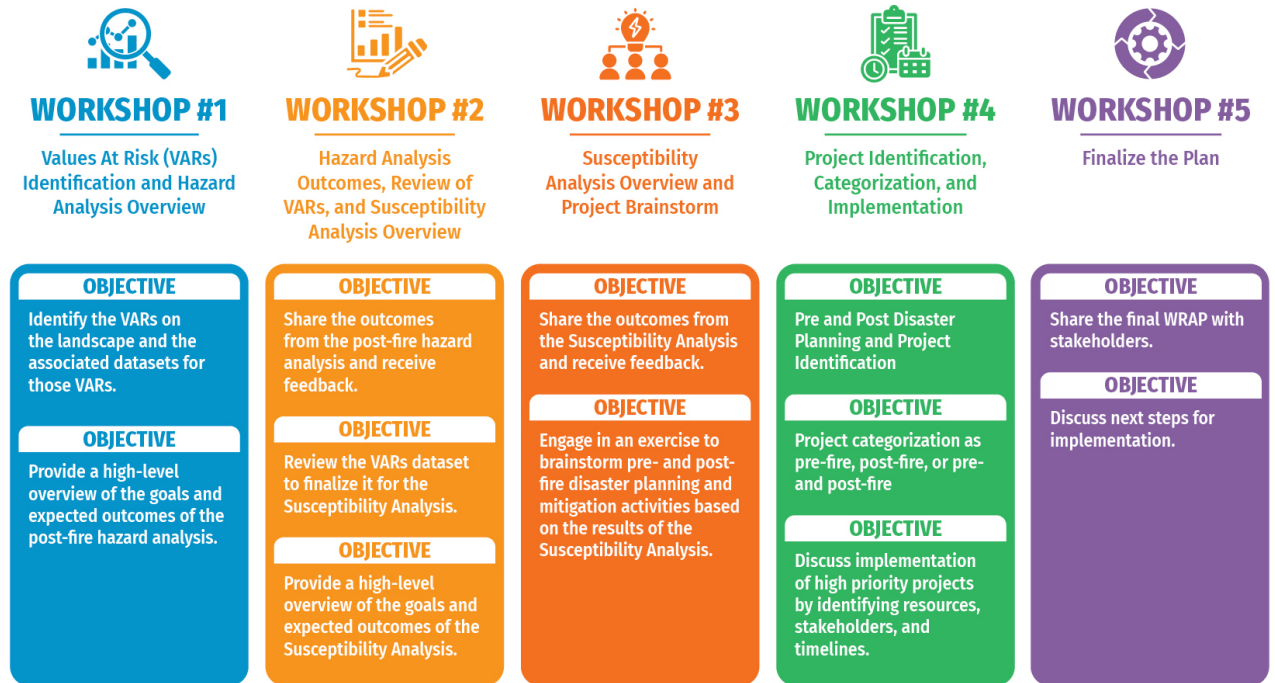
Framework for Communities
Vision and Establishment of Goals and Objectives

- Identify Key Partners and Stakeholders

- Overall Vision for the Project

- Goals and Objectives

- Project Charter

- Agreements or MOUs with Partners and Stakeholders

Matrix

Pre-Wildfire Planning for Better Post-Fire Recovery

Framework for Communities
Stakeholder Collaboration and Community Outreach

- Regular Communication
- Workshops and Outreach Events

WORKSHOP #1

Values At Risk (VARs) Identification and Hazard Analysis Overview

OBJECTIVE
Identify the VARs on the landscape and the associated datasets for those VARs.

OBJECTIVE
Provide a high-level overview of the goals and expected outcomes of the post-fire hazard analysis.

WORKSHOP #2

Hazard Analysis Outcomes, Review of VARs, and Susceptibility Analysis Overview

OBJECTIVE
Share the outcomes from the post-fire hazard analysis and receive feedback.

OBJECTIVE
Review the VARs dataset to finalize it for the Susceptibility Analysis.

OBJECTIVE
Provide a high-level overview of the goals and expected outcomes of the Susceptibility Analysis.

WORKSHOP #3

Susceptibility Analysis Overview and Project Brainstorm

OBJECTIVE
Share the outcomes from the Susceptibility Analysis and receive feedback.

OBJECTIVE
Engage in an exercise to brainstorm pre- and post-fire disaster planning and mitigation activities based on the results of the Susceptibility Analysis.

WORKSHOP #4

Project Identification, Categorization, and Implementation

OBJECTIVE
Pre and Post Disaster Planning and Project Identification

OBJECTIVE
Project categorization as pre-fire, post-fire, or pre- and post-fire

OBJECTIVE
Discuss implementation of high priority projects by identifying resources, stakeholders, and timelines.

WORKSHOP #5

Finalize the Plan

OBJECTIVE
Share the final WRAP with stakeholders.

OBJECTIVE
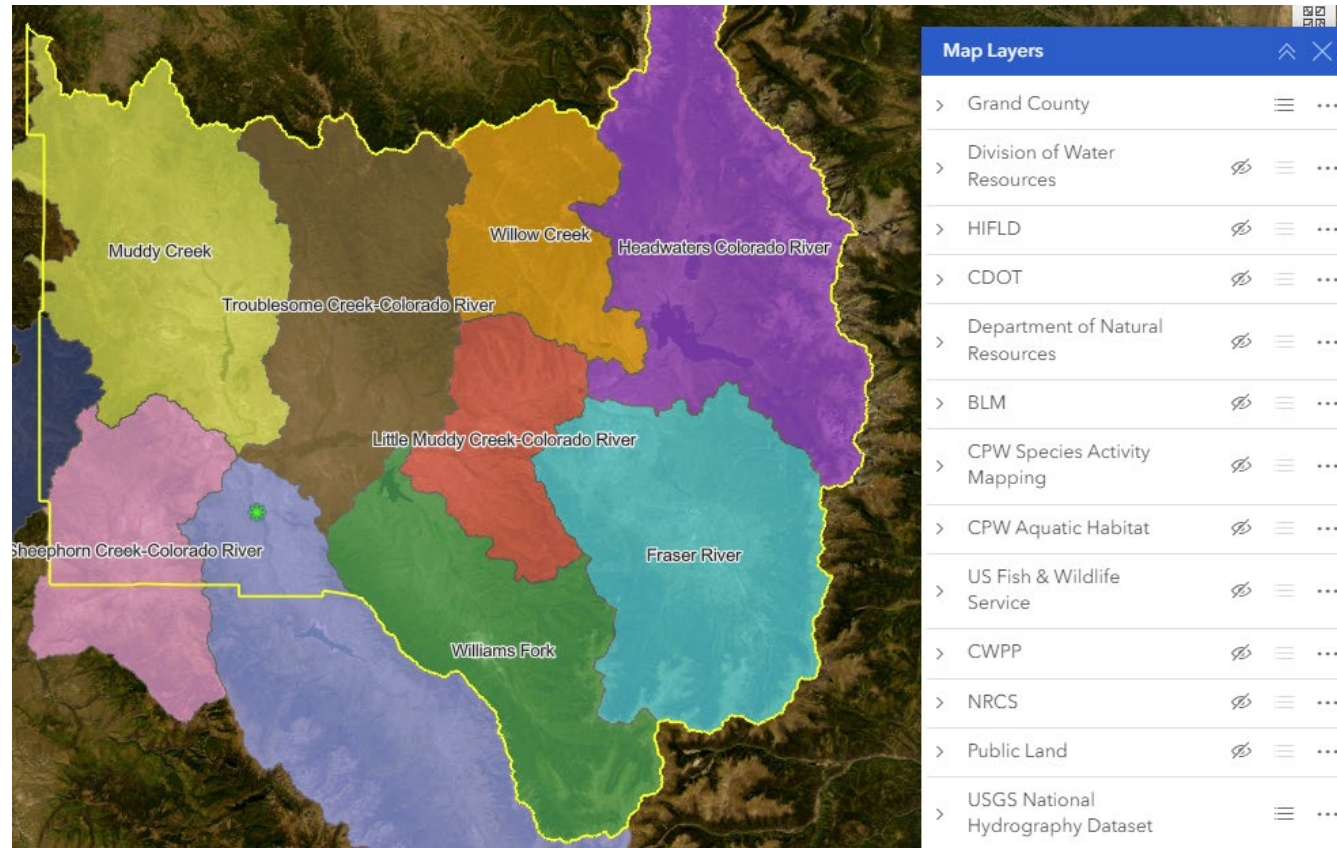Discuss next steps for implementation.

Matrix

Pre-Wildfire Planning for Better Post-Fire Recovery

Framework for Communities
Stakeholder Collaboration and Community Outreach

- Website Creation with Regular Updates
  on Project Milestones

Matrix

Pre-Wildfire Planning for Better Post-Fire Recovery

Framework for Communities
Data Collection and Gap Analysis
- Foundational/Base Datasets
- Values-At-Risk Datasets
- Statewide
- National: Infrastructure

CDPHE_SWAP_Datasets
- Town_of_Fraser_Groundwater_Wells
- Grand_County_Water_and_Sanitation_District_Surface_Water_Intakes

CRWA_VAR_Datasets
- Drowsy_Water_Ranch
- Three_Lakes_WSD
- Winter_Park_WSD

Denver_Water
- Canals_and_Ditches
- Dams
- Moffat_System_Diversion_Points
- Pipeline

Grand_County_CWPP
- Health_and_Medical_Lifeline_Location
- Potential_Operational_Delinieation_PODs
- Route_Risk_Analysis

Northern_Water
- C_BT_Infrastructure_Pipelines_Tunnels
- C_BT_Infrastructure_Pump_Plants
- C_BT_Infrastructure_Reservoirs
- Other_Pipeline_Tunnels
- Other_Pump_Plants
- Other_Reservoirs

Matrix

Pre-Wildfire Planning for Better Post-Fire Recovery

Framework for Communities
Data Collection and Gap Analysis

Values at Risk:
- Municipal Water Intakes
- Agriculture Water Infrastructure
- Reservoir and Dams
- Roadway Crossings, bridges, culverts
- Natural Ecosystem
- Life and Property

Matrix

Pre-Wildfire Planning for Better Post-Fire Recovery

Framework for Communities
Data Collection and Gap Analysis

- Colorado Department of Public Health & Environment (CDPHE) – Source Water Assessment and Protection (SWAP) Program
- Colorado Rural Water Association (CRWA) – Water Infrastructure Datasets

Pre-Wildfire Planning for Better Post-Fire Recovery

Framework for Communities
Post-Fire Hazard Analysis

- Hydrology
- Hydraulics
- Debris Flow
- Fluvial Hazard Zones (FHZ)
- Sedimentation/Gully Erosion
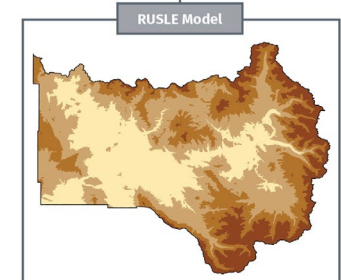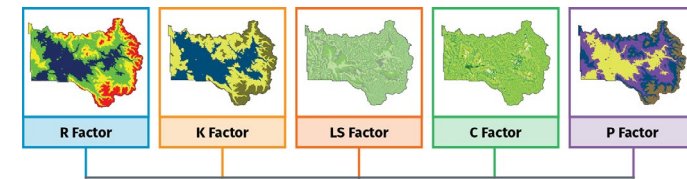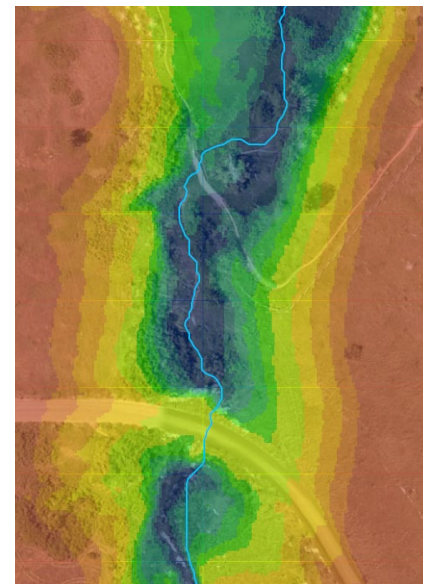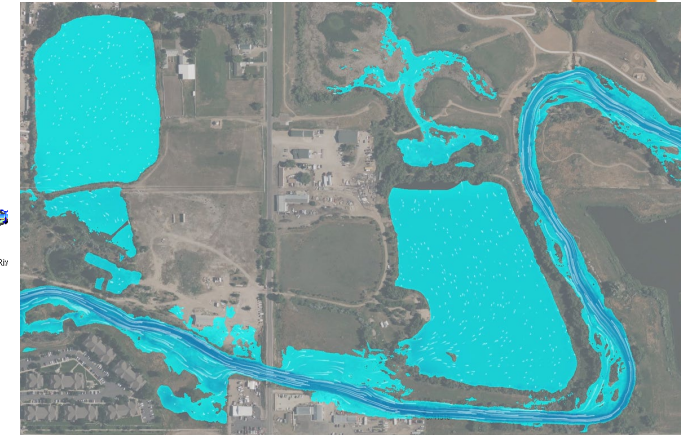
Pre-Wildfire Planning for Better Post-Fire Recovery

Framework for Communities
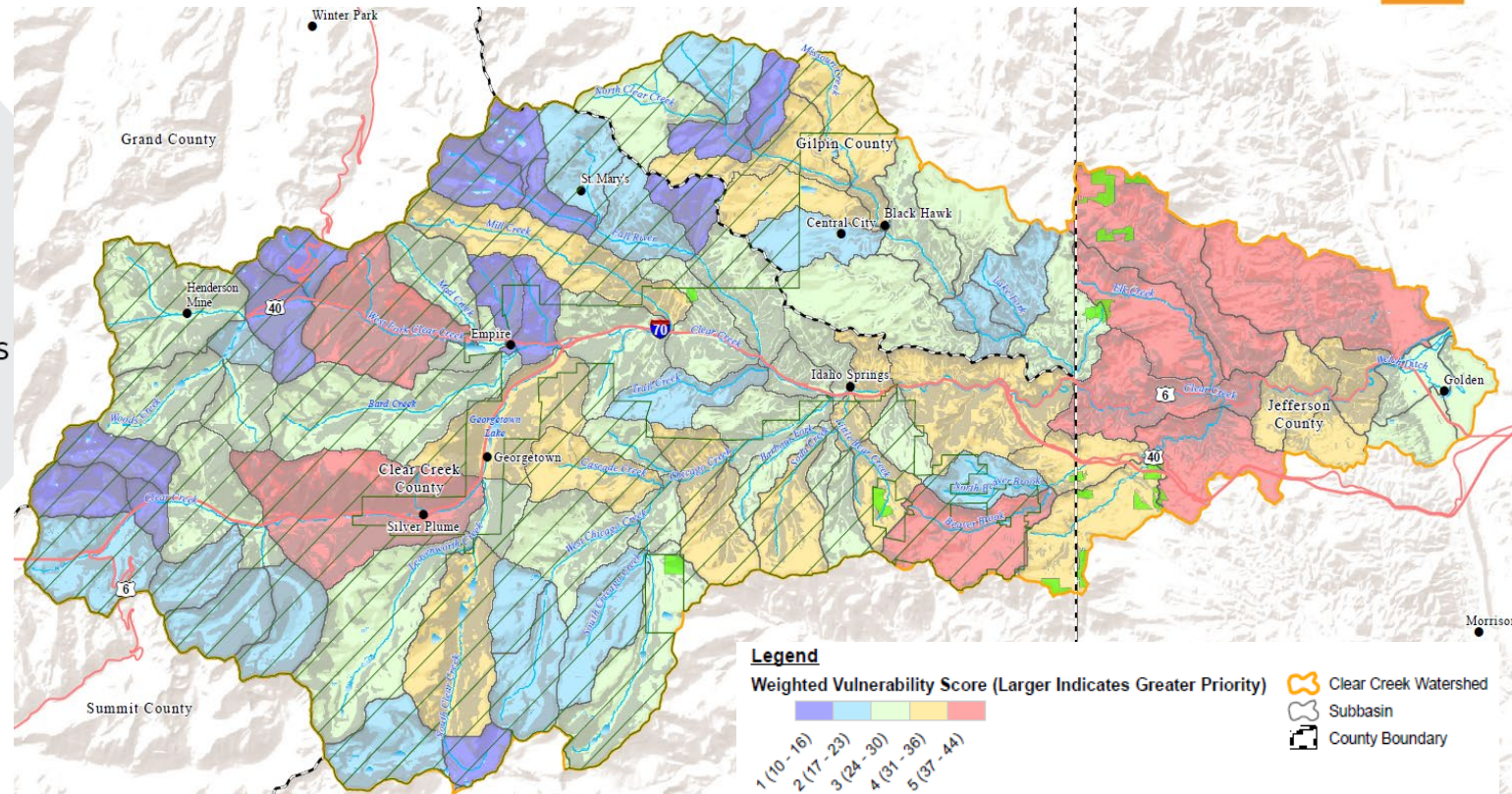### Susceptibility Analysis

Values at Risks (VARs)
- Water/Wastewater Infrastructure
- Public Infrastructure
- Forest & Ecosystem Health
- Life & Property

Post-Fire Hazards
- Increased Runoff
- Floodings
- Debris Flow
- Fluvial Hazard Zones
- Hillslope/ Gully Erosion

Susceptibility Analysis
- Relative Risk at HUC-12 Level
- VARs at Risk of Post-Fire Hazards

Legend
Weighted Vulnerability Score (Larger Indicates Greater Priority)
1 (10 - 16) 2 (17 - 23) 3 (24 - 30) 4 (31 - 36) 5 (37 - 44)

Clear Creek Watershed
Subbasin
County Boundary

Matrix

Pre-Wildfire Planning for Better Post-Fire Recovery

Framework for Communities
Pre-Disaster Mitigation Activities

- Watershed and stream restoration
- Infrastructure upgrades
- Warning systems
- Education and outreach, etc.

Matrix

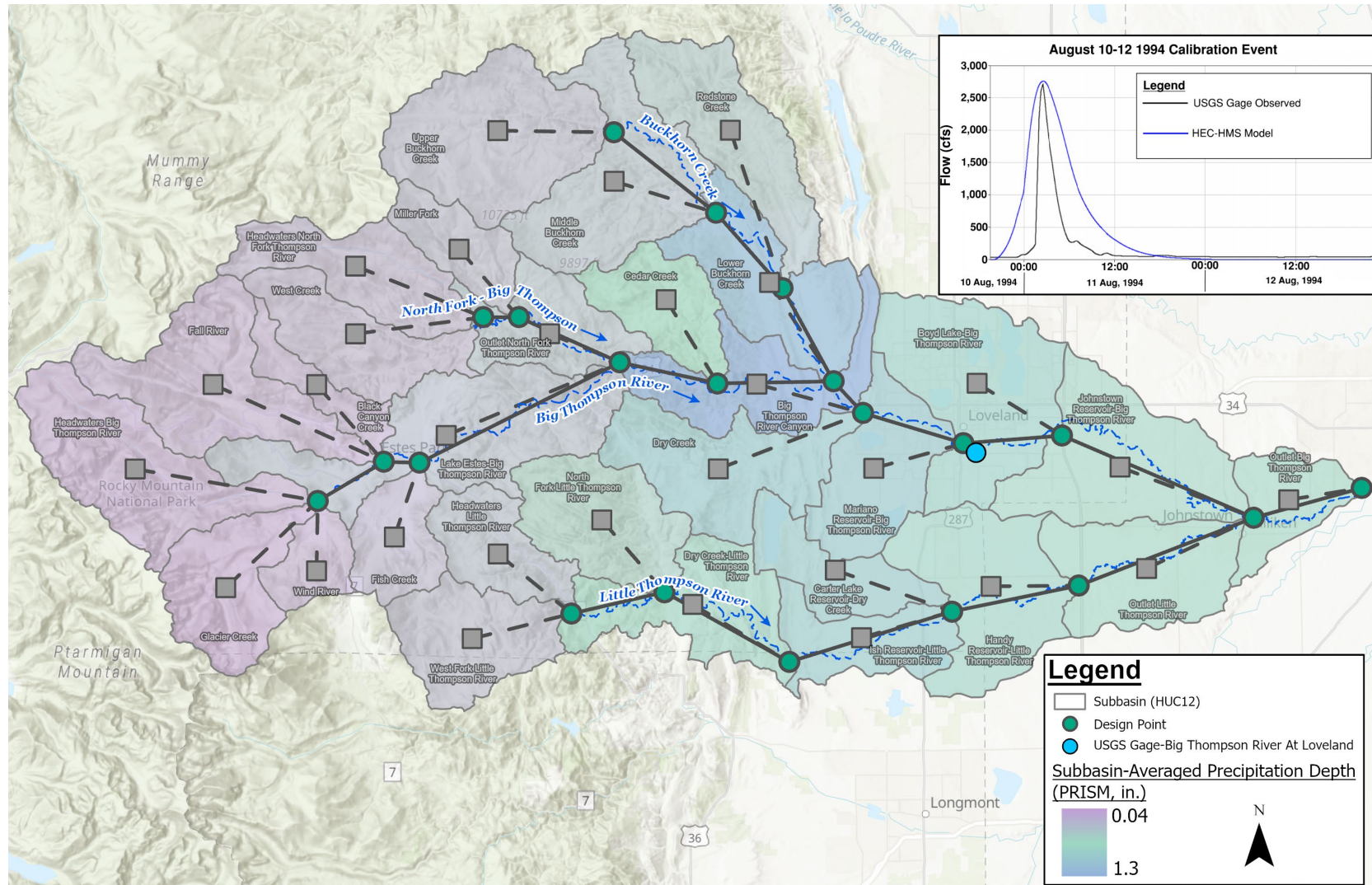# Pre-Wildfire Planning for Better Post-Fire Recovery

Framework for Communities
Pre-Disaster Mitigation Activities

- Identify potential projects or workflows that may be needed following a fire
- Emergency Watershed Protection (EWP) Program (Disaster Relief) – Colorado
- Community development block grant (CDBG) – Disaster Recovery (DR) – Department of housing and urban development (HUD)
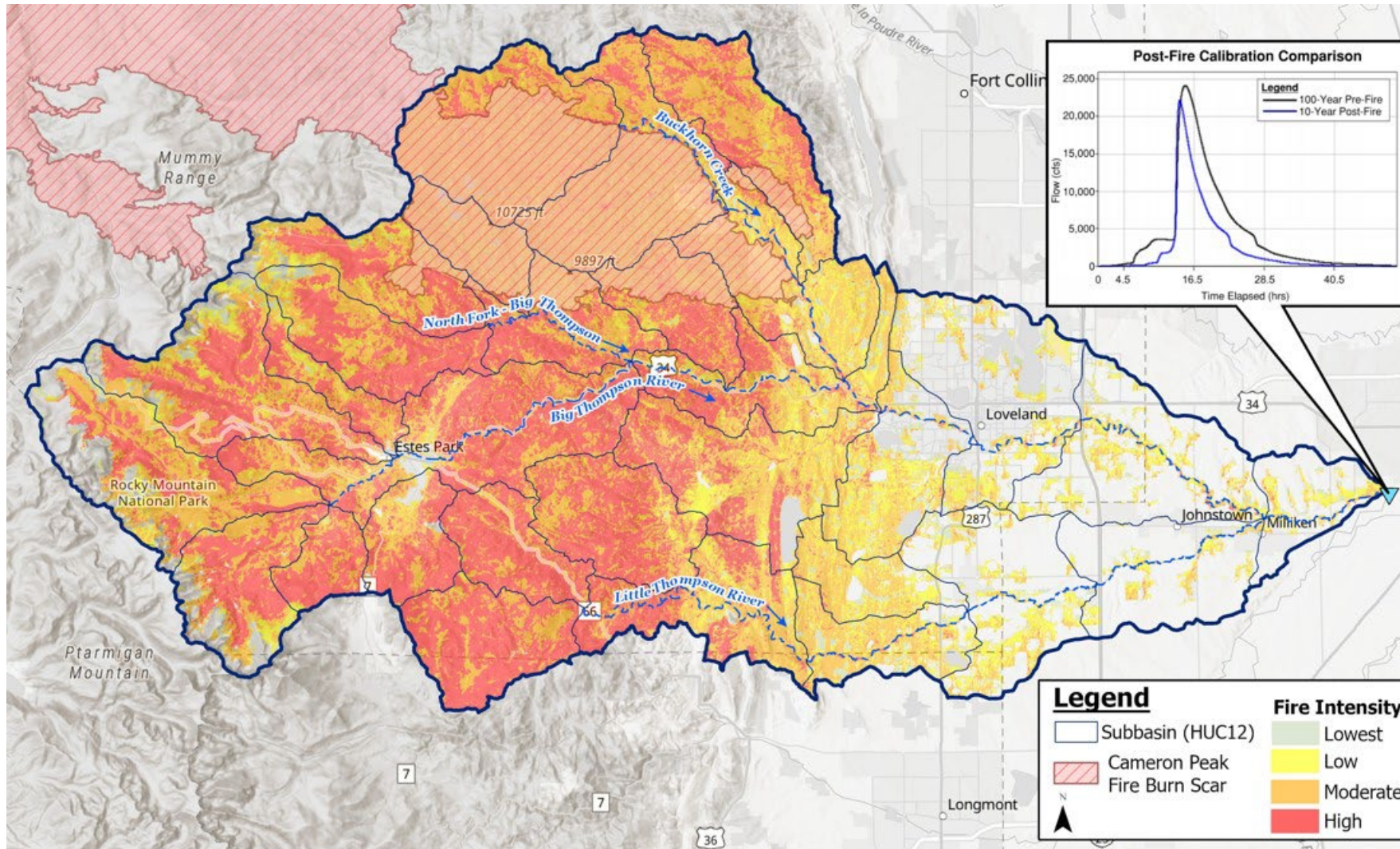- Building Resilient Infrastructure and Communities (BRIC) Program
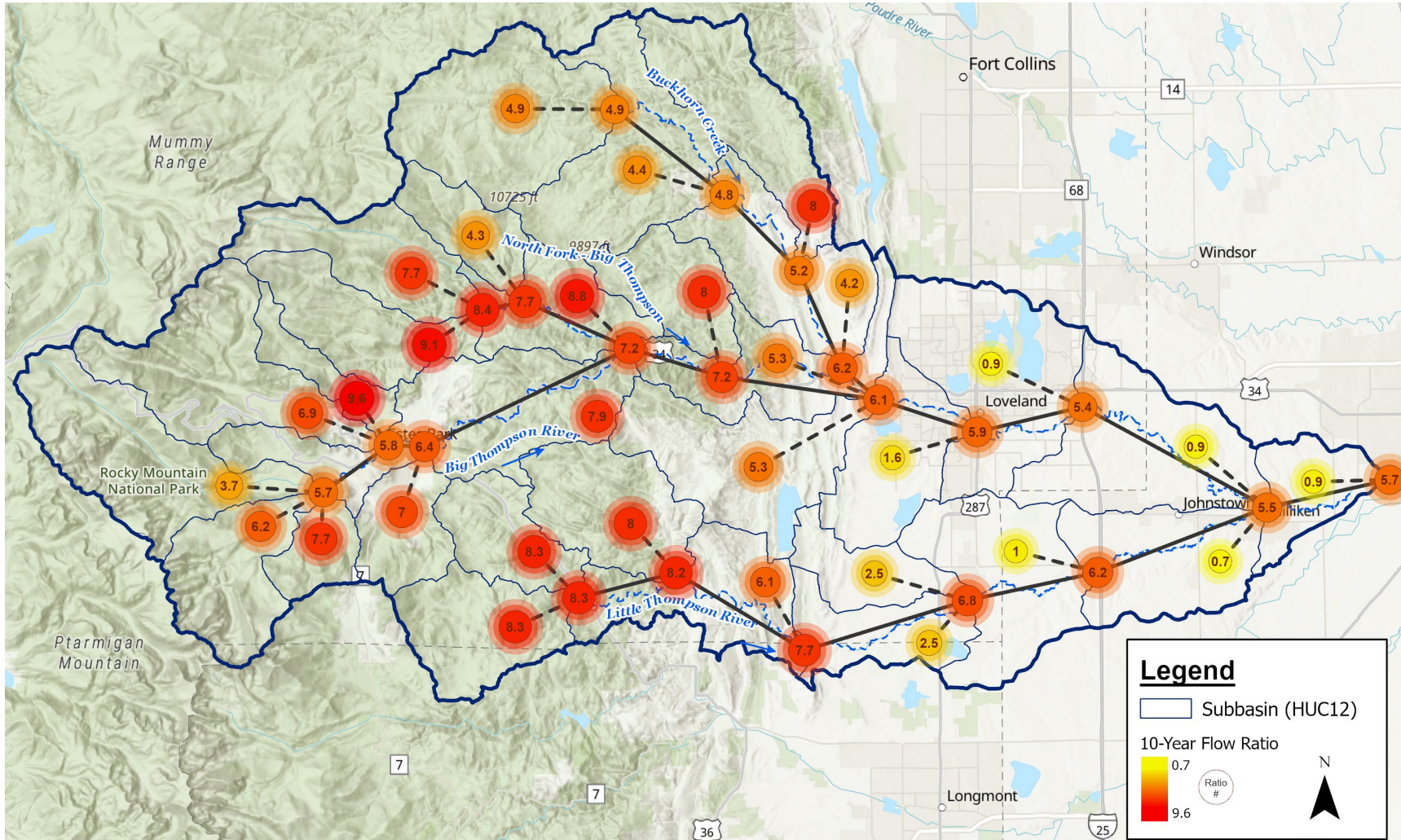
Matrix

Pre-Wildfire Planning for Better Post-Fire Recovery

Preliminary Results from Ongoing Project

Pre-Wildfire Planning for Better Post-Fire Recovery

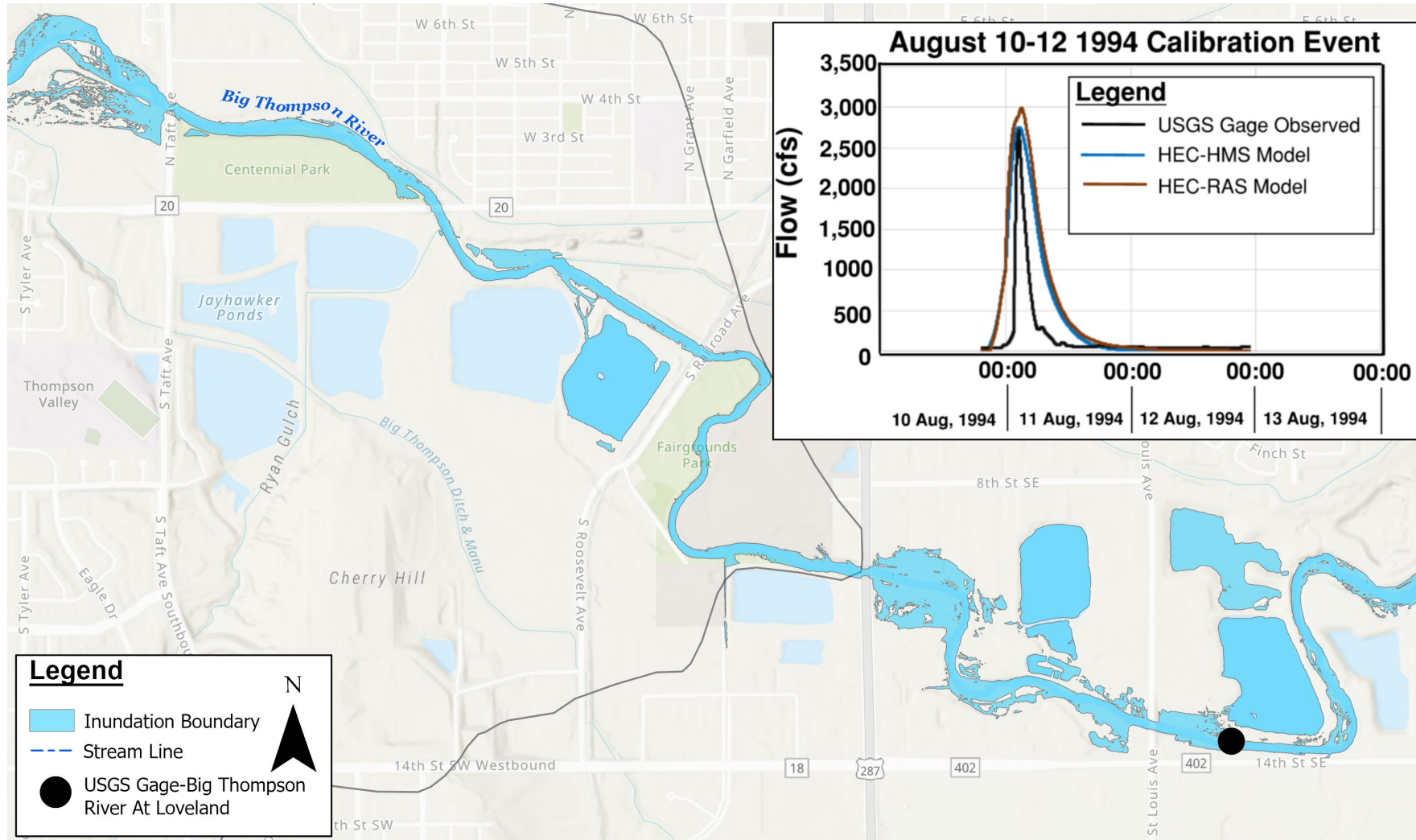## Preliminary Results from Ongoing Project

Pre-Wildfire Planning for Better Post-Fire Recovery

Preliminary Results from Ongoing Project

Pre-Wildfire Planning for Better Post-Fire Recovery

Preliminary Results from Ongoing Projects

Thank You

Colorado Water Conservation Board — Department of Natural Resources

- Chris Sturm
- Steven Reeves
- Andrea Harbin Monahan

Peaks to People Water Fund

- Julie Dubin
- Sandi Good

Big Thompson Watershed Coalition

- Laura Quattrini

Estes Valley Watershed Coalition — Water · Forests · Wildlife

- Wilynn Formeller

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