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RCAP Rural Community Assistance Partnership

LiKEN Livelihoods Knowledge Exchange Network

Building Rural Water Resilience: Community-Driven Decision Support for Climate Disasters

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Water and Climate Equity in Rural Communities in the United States

- **Partners:** Pacific Institute, LiKEN, and RCAP and other rural technical assistance providers
- **Goal:** Document how rural communities build water and climate resilience, and scale the tools that work
- **Approach:** Co-design decision-support tools with communities, combining research and lived experience



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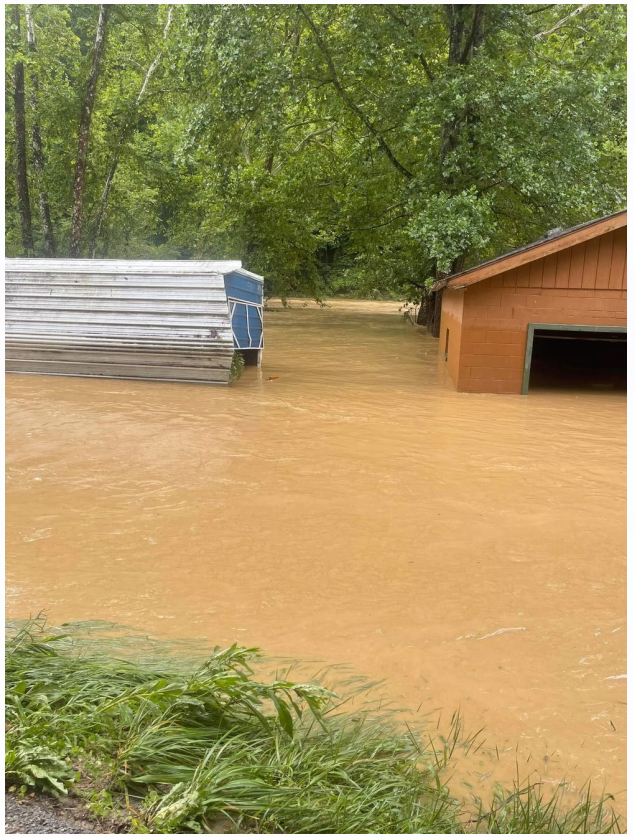
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Climate change is undermining rural water and sanitation

Extreme heat, flooding, drought and wildfire are intensifying.

- Water supplies shrink or become contaminated
- Wells, pipes, treatment plants and power lines are damaged
- Service is interrupted, raising health risks
- Small, under-resourced rural communities are hit hardest



Water and Climate Equity in Rural Water Systems in the United States
Key Findings and Areas for Resilience Building

Challenges

- Developmental pathways
- Legacies of injustice
- Climate change

Opportunity

Integrative, community-centered and asset-based approaches

Leads to

Tools and resources for climate resilience in rural water systems

Key areas for resilience building

Local capacity
A climate-literate, prepared workforce

Shared risk mapping
Co-identifying climate threats to each system

Disaster training
Tailored for operators and service providers

Community education
Outreach on disasters that could hit local water

Future-proofing
Materials and trainings for rural systems

Funding
Dedicated money for climate disaster resilience

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TOOL:
STORYMAP OF WEB TOOLS

StoryMap of web tools



- **What it is:** Free, interactive web tools on climate, water, equity and environmental justice, all in one place
- **How to use it:** Assess risks and vulnerabilities, support grant proposals, plan capital improvements and inform decisions

TOOL: COMMUNITY ENGAGEMENT GUIDE

Community Engagement Guide

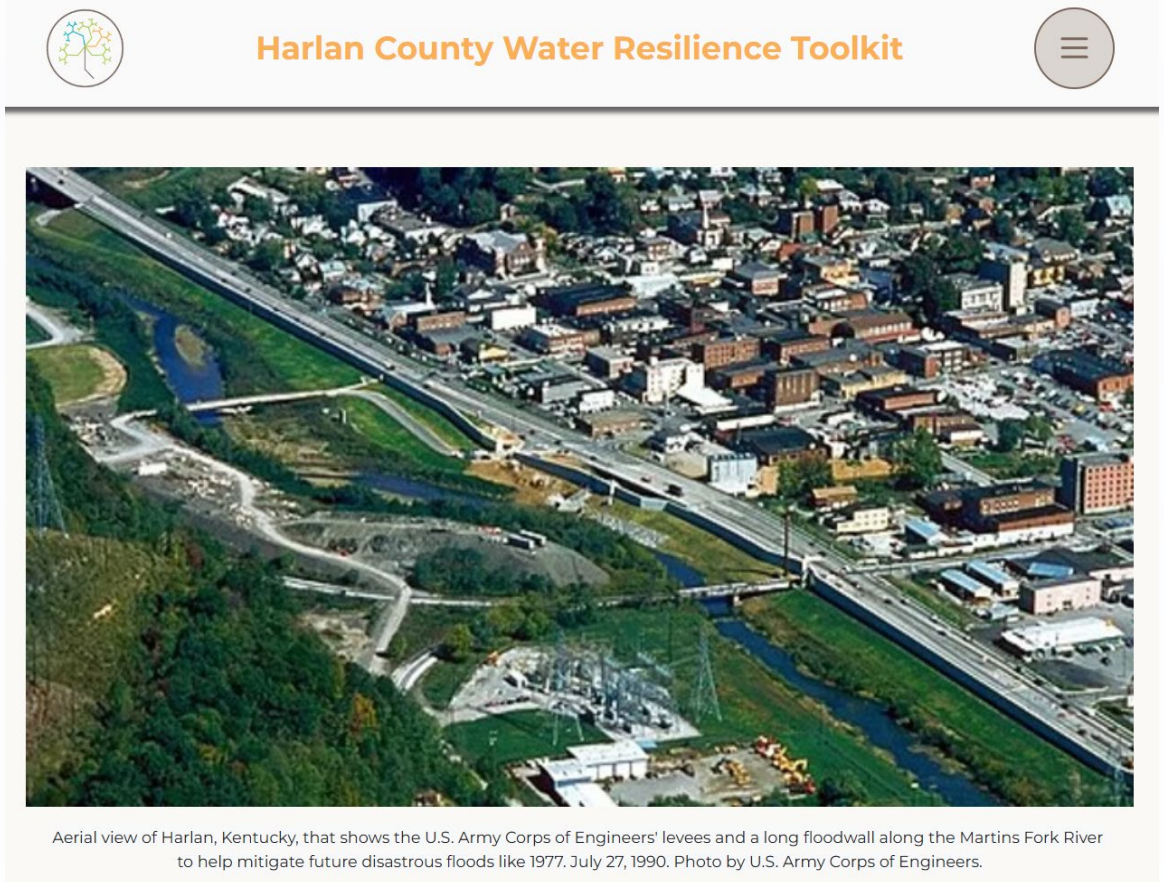
Components:

- Steps to Engage & Mobilize Your Community
- Planning for a Community Meeting
  - Advertising, Facilitating, Icebreakers, etc.
- Keeping Safe
- What Do You Need to Know About Water and Wastewater Systems?
- Using the Freedom of Information Act to request information
- Glossary, Definitions, Sources for More Information



TOOL:
WATER RESILIENCE TOOLKITS

Water Resilience Toolkits



Aerial view of Harlan, Kentucky, that shows the U.S. Army Corps of Engineers' levees and a long floodwall along the Martins Fork River to help mitigate future disastrous floods like 1977. July 27, 1990. Photo by U.S. Army Corps of Engineers.

- **Built with the community:** tailored to Harlan County, not general guidance
- **Place-based:** culturally sensitive and adapted to local conditions
- **Respectful framing:** honors the county's coal mining heritage when describing climate effects

likenknowledge.org/toolkits

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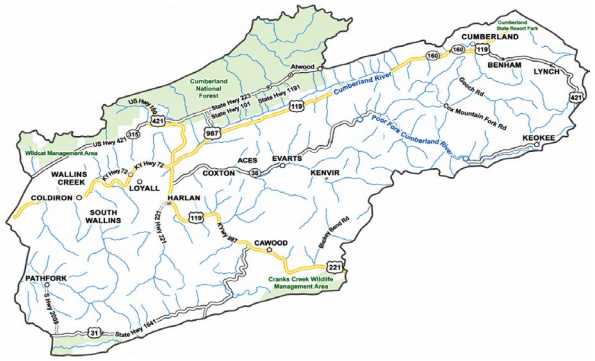
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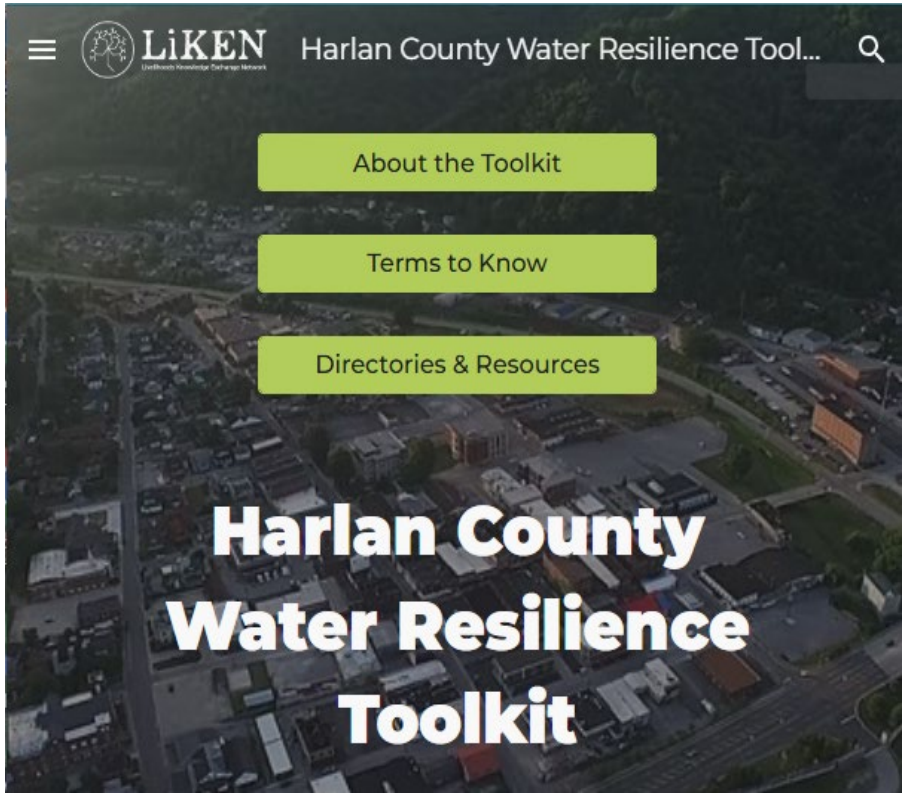
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The Harlan County Water Resilience Toolkit

This toolkit is designed to help residents:

- Better understand water and wastewater systems
- Understand where water comes from, source to tap
- Recognize the stressors and challenges in daily system operations
- Prepare for emergencies caused by extreme weather
- Understand their rights as water customers





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Tabletop Exercises: Train-the-Trainer and Community Workshops

Tabletop Exercises: Co-developed and tested in rural communities



Tabletop exercises (TTXs) are facilitated, scenario-based workshops where the people who would respond to a water emergency talk it through together before disaster strikes.

Train-the-Trainer
Cincinnati: rural technical assistance providers trained as facilitators

West Virginia
Pilot community workshop

Eastern Kentucky
Harlan and Martin Counties (Harlan featured next)

Puerto Rico
Pilot workshop, with materials translated into Spanish

Goal: bring this model to more rural communities nationwide

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Spotlight: Harlan County, KY

37
people in the room, including 31 community stakeholders

10
sectors at the table, from fire and police to radio and churches

5
scenario stages retracing the county's real Feb. 2025 flood

Held Sept. 24, 2026, the same week a real flash flood hit the county. Several responders and legislators were called away mid-exercise.

What participants discovered

- **Water failures cascade:** a neighboring utility could backfeed water to the hospital after a main break
- **Radio is a lifeline:** local radio and ham operators reach residents when cell and internet fail
- **Recovery is a web:** Red Cross, faith groups, and the housing authority each fill different gaps for displaced families

Key lesson: relationships are a community's strongest resilience asset, and a trusted local connector made the difference.

Read the full story: https://pacinst.org/everyone-at-the-table-how-tabletop-exercises-strengthen-rural-water-and-climate-resilience/

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Thank you!

Questions or comments?
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Project Page:

https://pacinst.org/water-and-climate-equity-in-rural-communities-in-the-united-states/

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