

Flooding in Kentucky

Carey Johnson, Director

Kentucky Division of Water



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To Protect and Enhance Kentucky's Environment

Flooding is a concern throughout the Commonwealth of Kentucky



Pineville, Kentucky

Nicholas County trying to recover from historic flooding

Beshear declares state of emergency; city of Carlisle hardest hit



A state of emergency has been declared for Nicholas County after last week's historic flooding. Neighbors are helping neighbors clean up in Carlisle. (Facebook photo)

Carlisle, Kentucky – July 30, 2021



Metropolitan Louisville, Kentucky

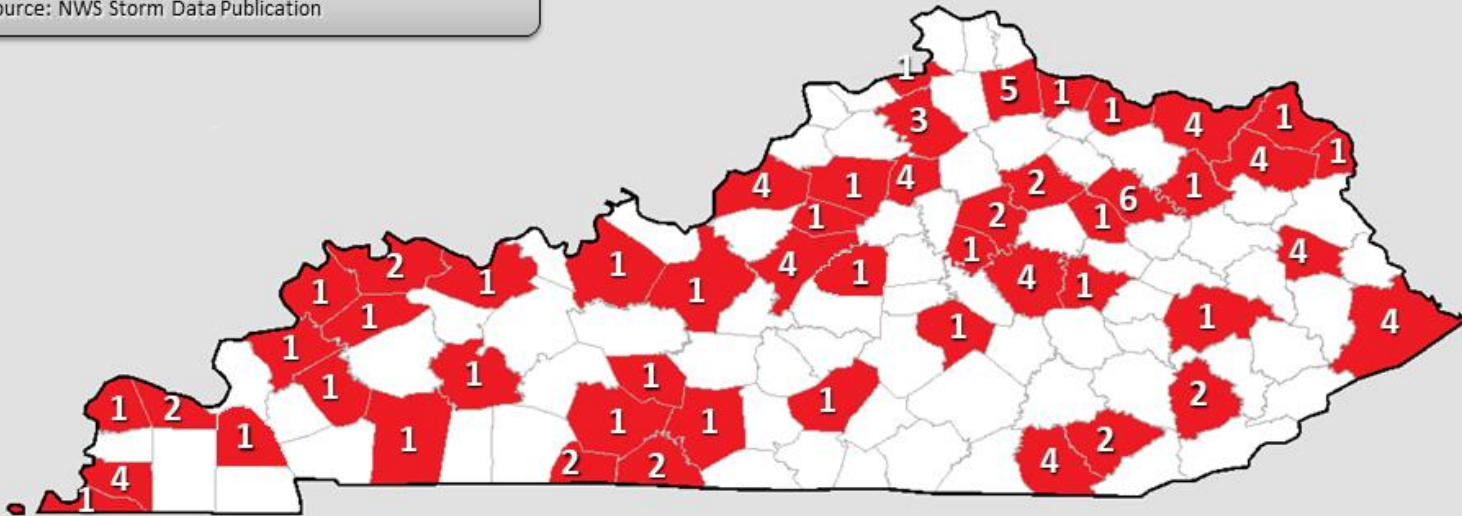


Why do we care?

- KY has had 100 flood deaths from 1996 – 2020
 - 8 in 2020 alone
- KY has 1% of the U.S. population but accounts for 4% of U.S. flood deaths between 1996 and 2020
- 47 Kentucky counties have experienced deadly floods since 1996

Kentucky Flood Deaths – 1996 to 2020

Source: NWS Storm Data Publication



Source: <https://www.weather.gov/jkl/flooddeathhistory>

Kentucky Flood Deaths – 1996 to 2020

Location	Deaths	% of Total
Vehicle	66	66%
Already in Water	17	17%
Mobile Home	8	8%
Outside	6	6%
Permanent Home	3	3%

Source: NWS Storm Data Publication



Flood Risk Management is essential to support community:

- Development goals/Land use criteria
- Infrastructure investments
- Overall community Economic, Environmental, and Social resilience



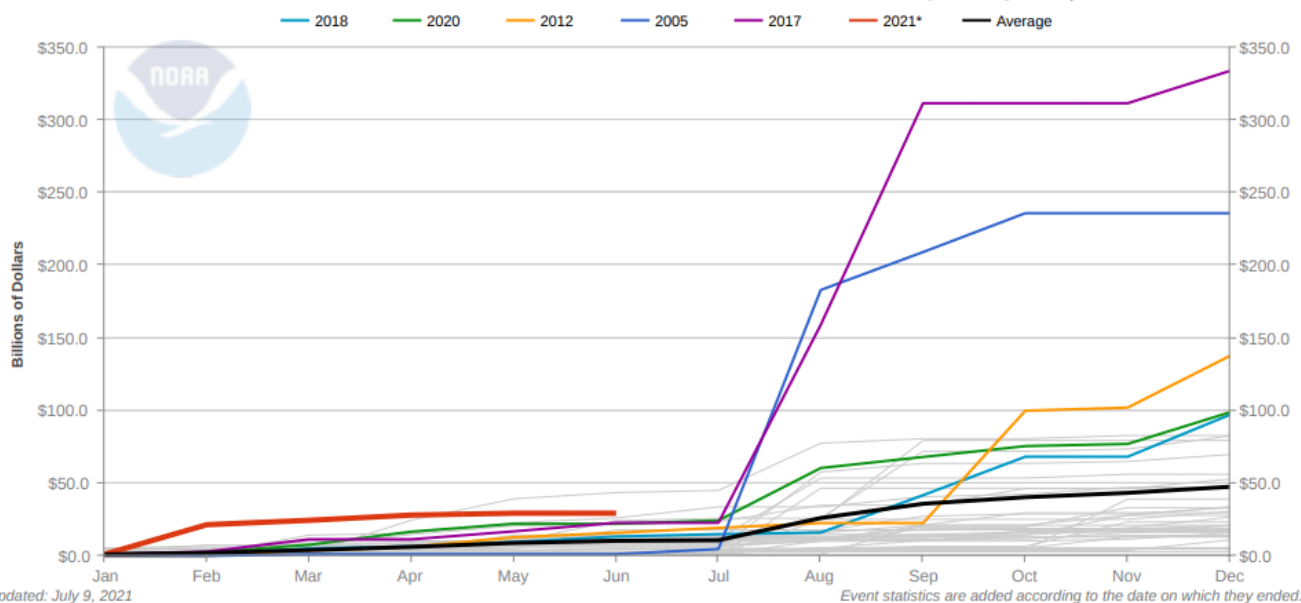
Disasters are getting worse...

U.S. 2021 Billion-Dollar Weather and Climate Disasters



Location for each of the 8 separate billion-dollar weather and climate disasters that impacted the United States January-June 2021.

1980-2021 Year-to-Date United States Billion-Dollar Disaster Event Cost (CPI-Adjusted)



Updated: July 9, 2021
*Costs not included for Western Drought and Heatwave (June 2021)



... and floods don't follow floodplain maps



52 Percent of Flooded Properties From Hurricane Harvey Not in Designated Flood Zones

Residential News » [Houston Edition](#) | By [Michael Gerrity](#) | August 29, 2017 9:00 AM ET



Flood Risk Management is coordinated across state agencies...

- DOW

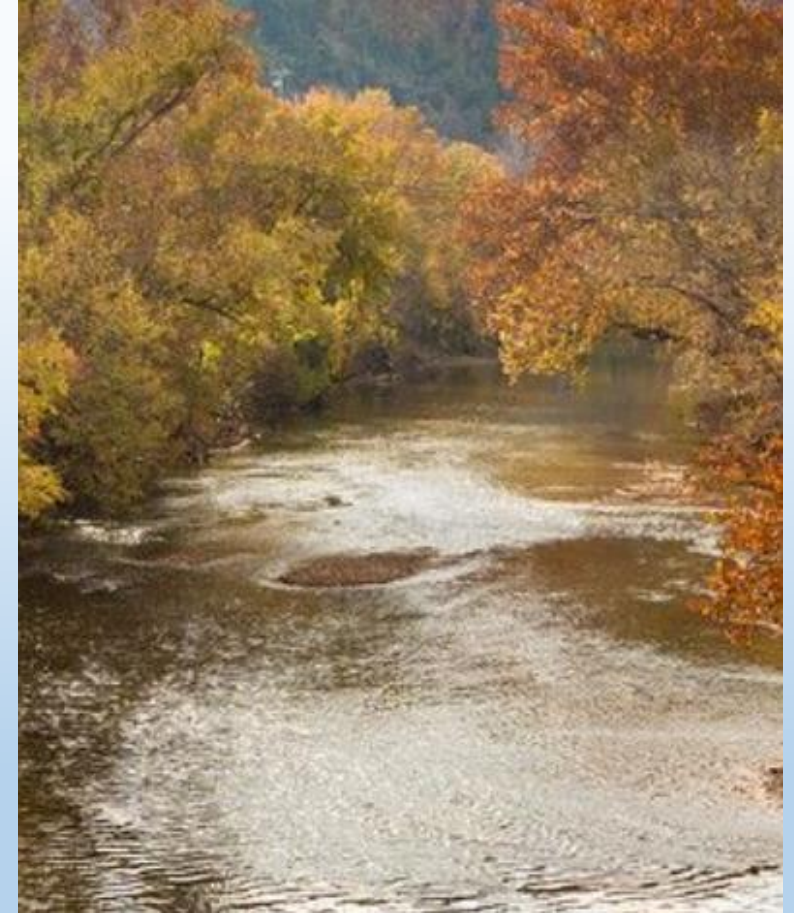
- Programmatic coordination

- National Flood Insurance Program (NFIP)
 - Floodplain permitting
 - Flood hazard mapping
 - Dam Safety
 - 401 Water Quality Certification
 - Stormwater management/urban flooding
 - Clean Water Act
 - Safe Water Drinking Act

- KYEM

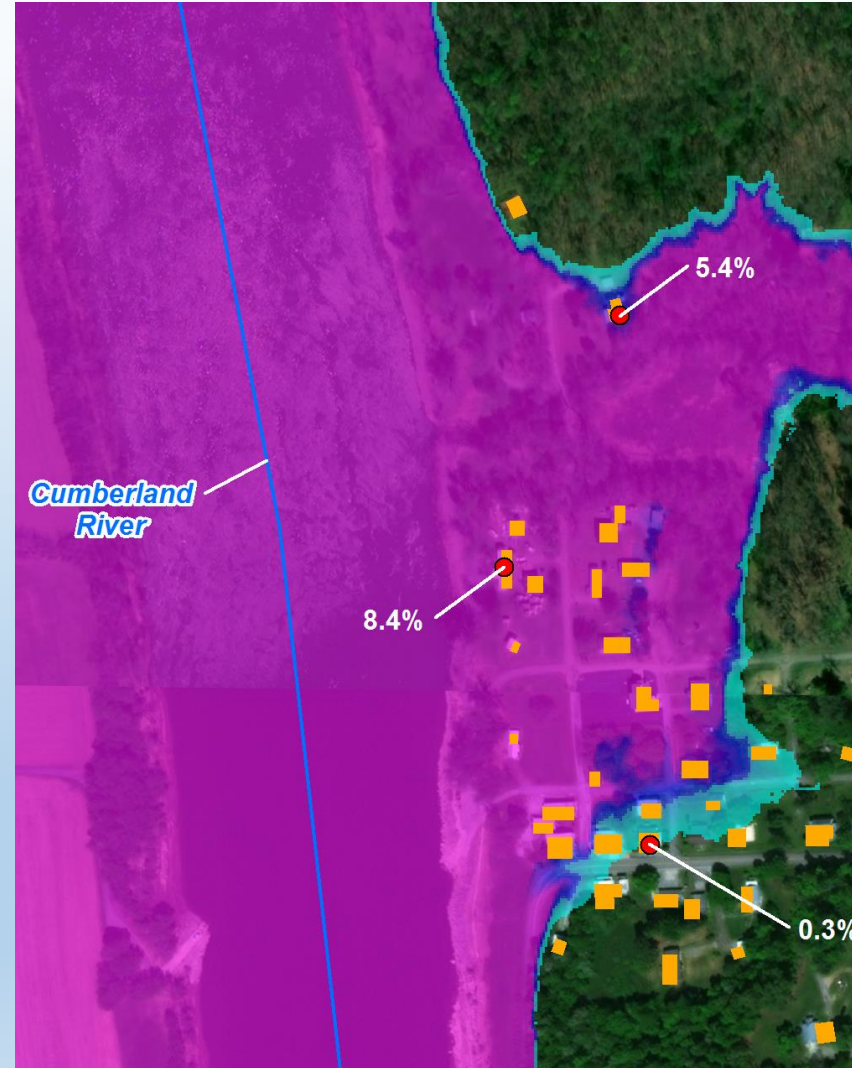
- Response, Recovery, and Mitigation

- Public Assistance
 - Individual Assistance
 - Hazard Mitigation Assistance programs
 - HMGP
 - FMA
 - BRIC



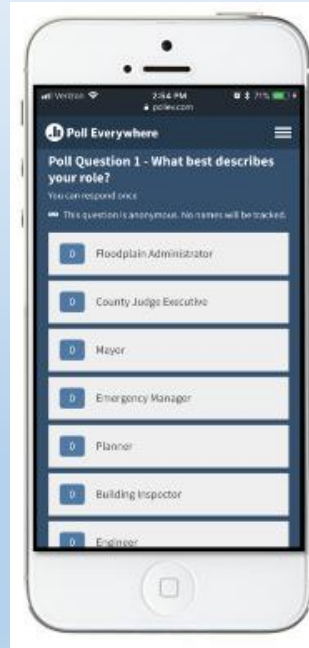
...and delivered to key stakeholders and citizens using Flood Hazard Mapping and Risk Tools

- Risk MAP
 - Flood Hazard Mapping
 - Flood Risk Assessment
 - Hazard Planning
- Informs floodplain management, regulations, flood insurance, and mitigation
- Ties flood risk management, hazard mitigation planning, and infrastructure planning together

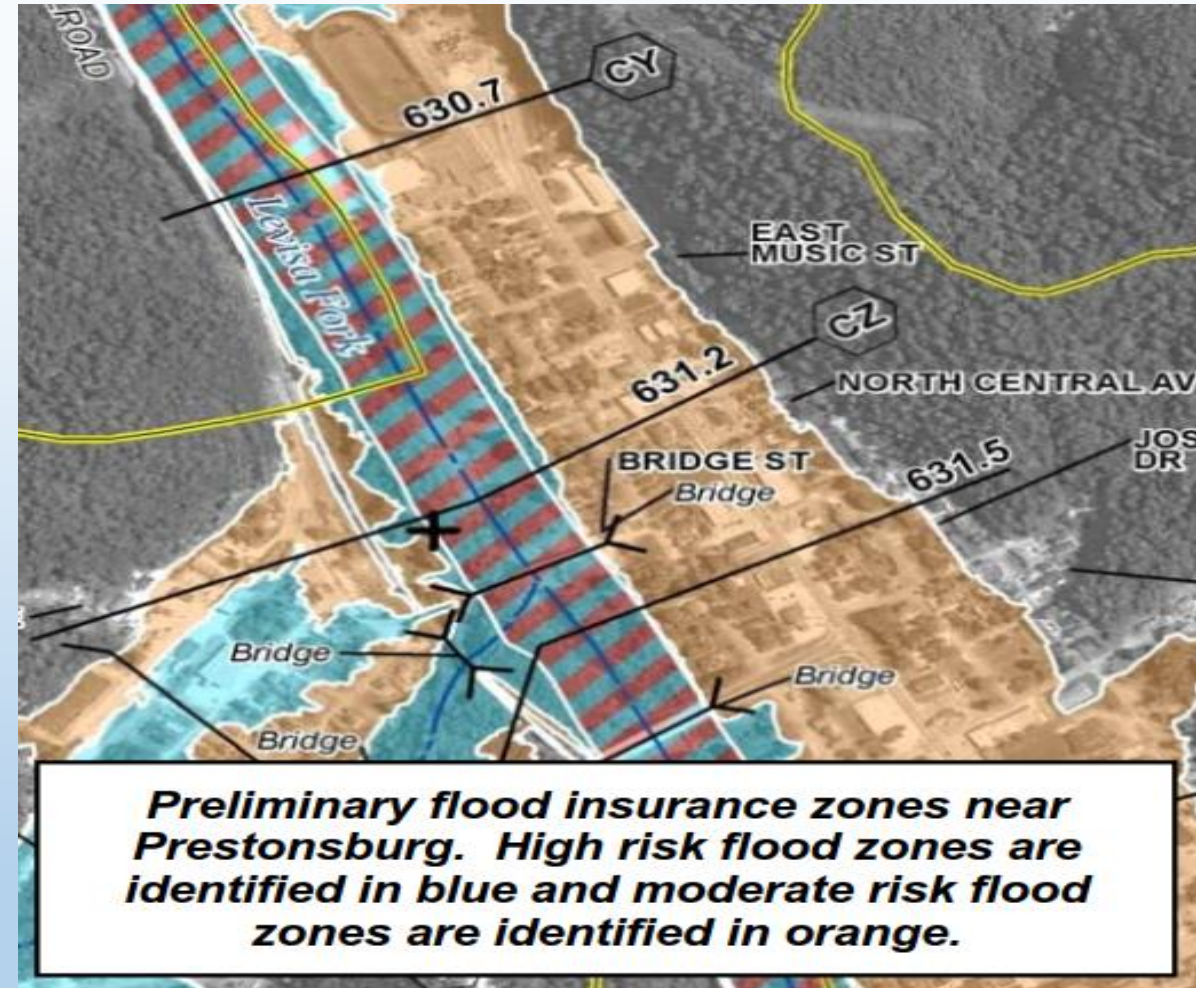


Specialized Outreach

- GIS based story maps for stakeholders
- Interactive surveys
- Training for insurance agents
- Informative handouts on flood risk changes for property owners
- Flood risk public open houses



Understand Your Flood Risk, Floyd County:
Why You Shouldn't Cancel Your Flood Insurance Policy if Your Flood Zone Is Changing from High Risk to Moderate or Low Risk



Virtual Reality

- A tool for stakeholders to visualize the impact of flooding at specific locations in a community
- Used at public outreach meetings including Flood Risk Review and Resilience



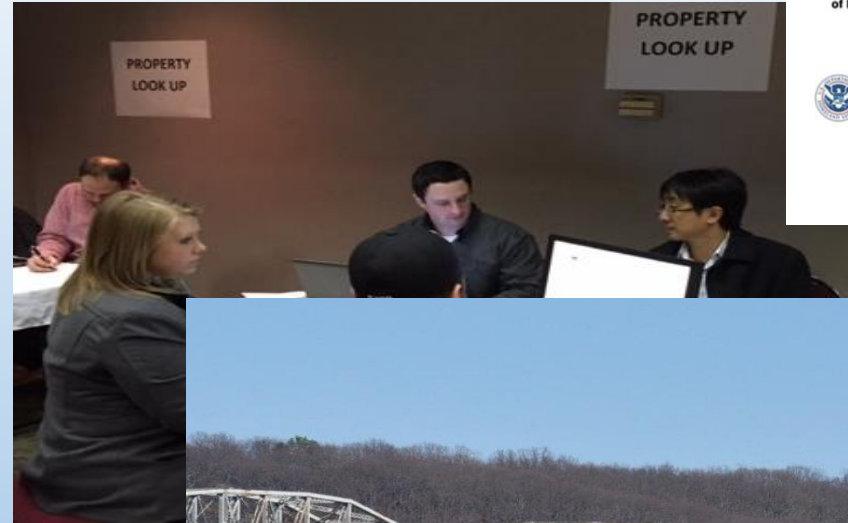
Technical Assistance for Mitigation Actions in Communities

- Identifying risk at a structure level
- DOW has developed a methodology to assess flood risk on a structure-by-structure basis:
 - May be implemented with currently available data;
 - Is cost effective;
 - Produces a risk score that is not skewed towards high-value assets (i.e. is independent of structure value);
 - Has the flexibility to be applied to structure values to help floodplain administrators and community officials quantify projected flood damage and losses



How do we bring it together? Promote six categories of mitigation!

- 1) Prevention
- 2) Property Protection
- 3) Structural Projects
- 4) Emergency Services
- 5) Public Outreach
- 6) Nature Based Solution



Division of Water
300 Sower Blvd
Frankfort, KY 40601
(502) 564-3410

Contact Information (water.ky.gov)

Director's Office	Carey Johnson, Director, 502-782-6990, Carey.Johnson@ky.gov Sarah Gaddis, Environmental Scientist Consultant Senior, 502-782-6953, Sarah.Gaddis@ky.gov	General questions.
Drinking Water Branch	Alicia Jacobs, Branch Manager, 502-782-6987, Alicia.Jacobs@ky.gov	Maintains list of certified laboratories. Provides technical assistance to drinking water facilities. Ensures drinking water complies with federal and state regulations.
Field Operations Branch	Connie Coy, Branch Manager 502-782-6587, Constance.Coy@ky.gov	Inspects municipal and non-municipal facilities. Responds to reports of spills or bypasses. Investigates citizen's complaints.
Program Planning and Program Support Branch	Carey Johnson, Acting Branch Manager 502-782-6990, Carey.Johnson@ky.gov	Accepts general public inquiries. Manages contracts and grants.
Surface Water Permits Branch	Jason Hurt, Branch Manager, 502-782-6167, Jason.Hurt@ky.gov	Issues KPDES permits to discharge stormwater from construction sites. Issues KPDES permits for wastewater discharges. Oversees pretreatment programs. Oversees Municipal Separate Storm Sewer Systems (MS4) program.
Water Infrastructure Branch	Jory Becker, Branch Manager, 502-782-6887, Jory.Becker@ky.gov	Issues construction permits for drinking water facilities and distribution lines. Issues construction permits for wastewater treatment facilities. Issues construction permits for sewer lines and extensions.
Water Quality Branch	Melanie Arnold, Branch Manager 502-782-6879, Melanie.Arnold@ky.gov	Maintains list of special use and impaired waters. Assesses the water quality of rivers, lakes and streams.
Water Resources Branch	Shawn Hokanson, Branch Manager, 502-782-6977, Shawn.Hokanson@ky.gov	Issues permits for construction in floodplain. Issues permits to construct dams. Issues §401 water quality certifications for construction in waters of the US.
Watershed Management Branch	John Webb, Branch Manager 502-502-782-7126, John.Webb@ky.gov	Issues permits to withdraw water. Certifies well drillers and maintains well driller directory. Maintains database of water availability for use (quantity and quality).

Questions?



Carey Johnson
Director

Kentucky Division of Water
300 Sower Boulevard, Third Floor
Frankfort, KY 40601

Carey.Johnson@ky.gov

