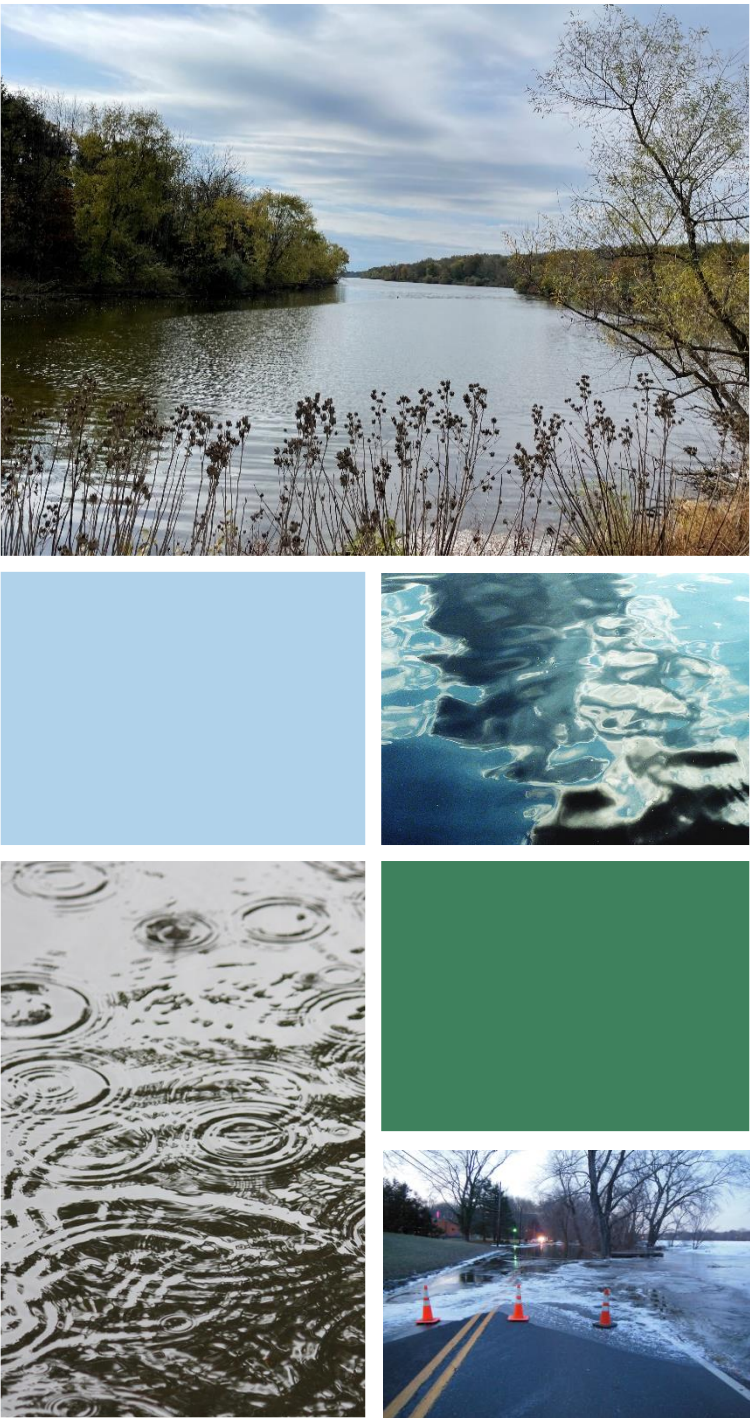




Hazard Mitigation Planning 101:

Middle Delaware River Watershed

Kristen Bowman Kavanagh, *Executive Director*

Elizabeth Brown, *Director of External Affairs & Communications*

Avery Lentini, *Community Engagement Specialist*

April 9, 2025 - Webinar



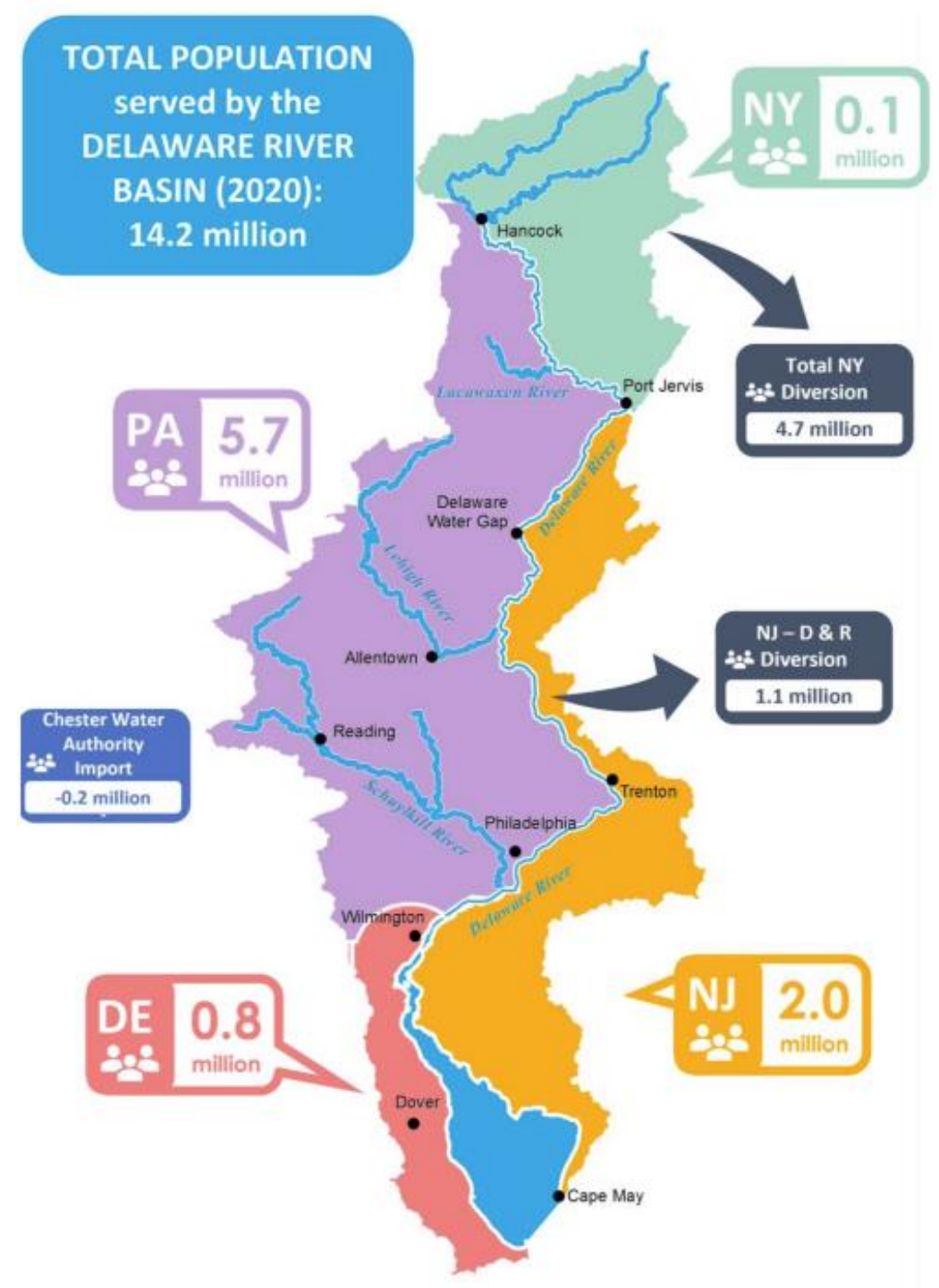
The Delaware River

- 330 miles
- 13,500 sq. mi. watershed
- Free-flowing mainstem
- Schuylkill is largest tributary
- Tidal from ocean to Trenton
- Unique habitats & communities



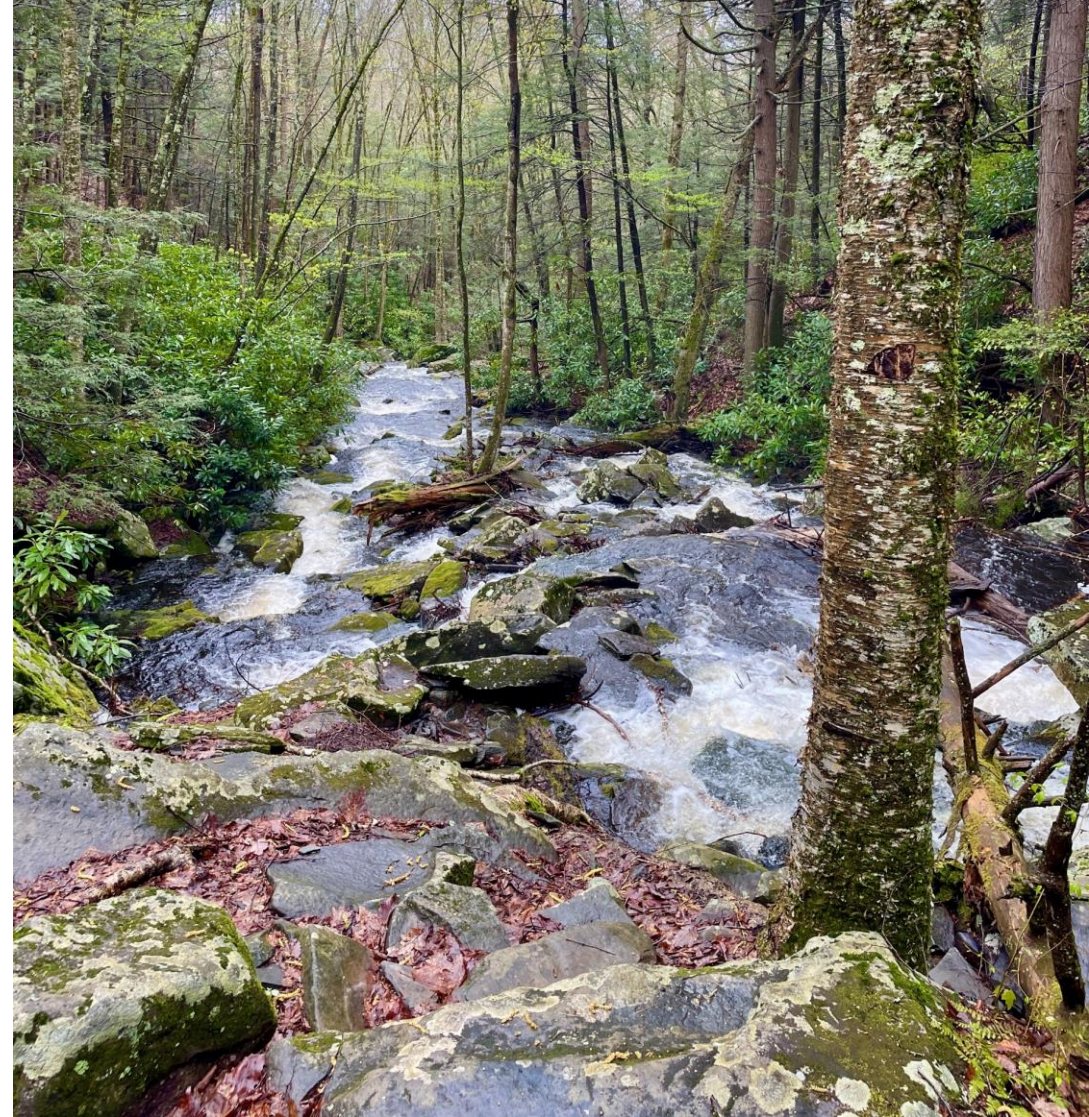
The Delaware River meets our needs.

- >14 million people in four states
- Half of NYC drinking water
- Four states
- >\$21 billion in economic value
- Interstate boundary



The DRB Compact includes broad authority for planning and regulation.

- Abatement and control of pollution
- Development of ground and surface water supply
- Development of recreational facilities
- Protection and aid to fisheries
- Promotion of watershed projects
- Development of hydroelectric power
- Control of movement salt water
- Flood damage reduction



DRBC's programs typically fall under two categories.

FLOW

1

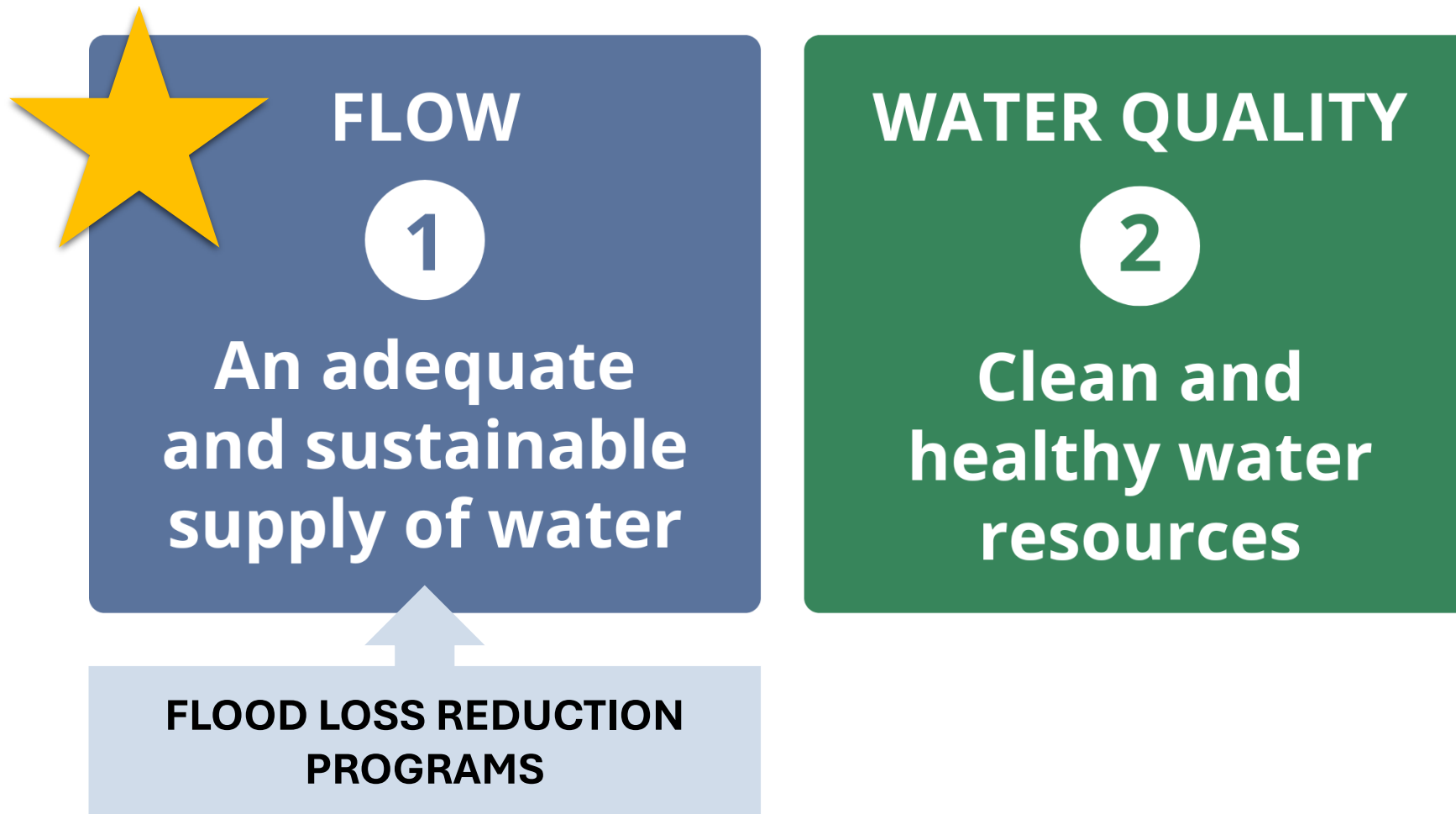
**An adequate
and sustainable
supply of water**

WATER QUALITY

2

**Clean and
healthy water
resources**

The DRBC has a mandate to ensure an adequate and sustainable water supply in the Delaware River Basin.



Flood loss reduction is a key mission in DRBC's water resource management.

Lessons learned from the DRB's Worst Flood

- August 1955: Back-to-back rain events resulting from remnants of Hurricanes Connie and Diane
- Loss of life and damage to infrastructure
- Remains the Delaware River's flood of record
- Flooding continues to impact DRB communities

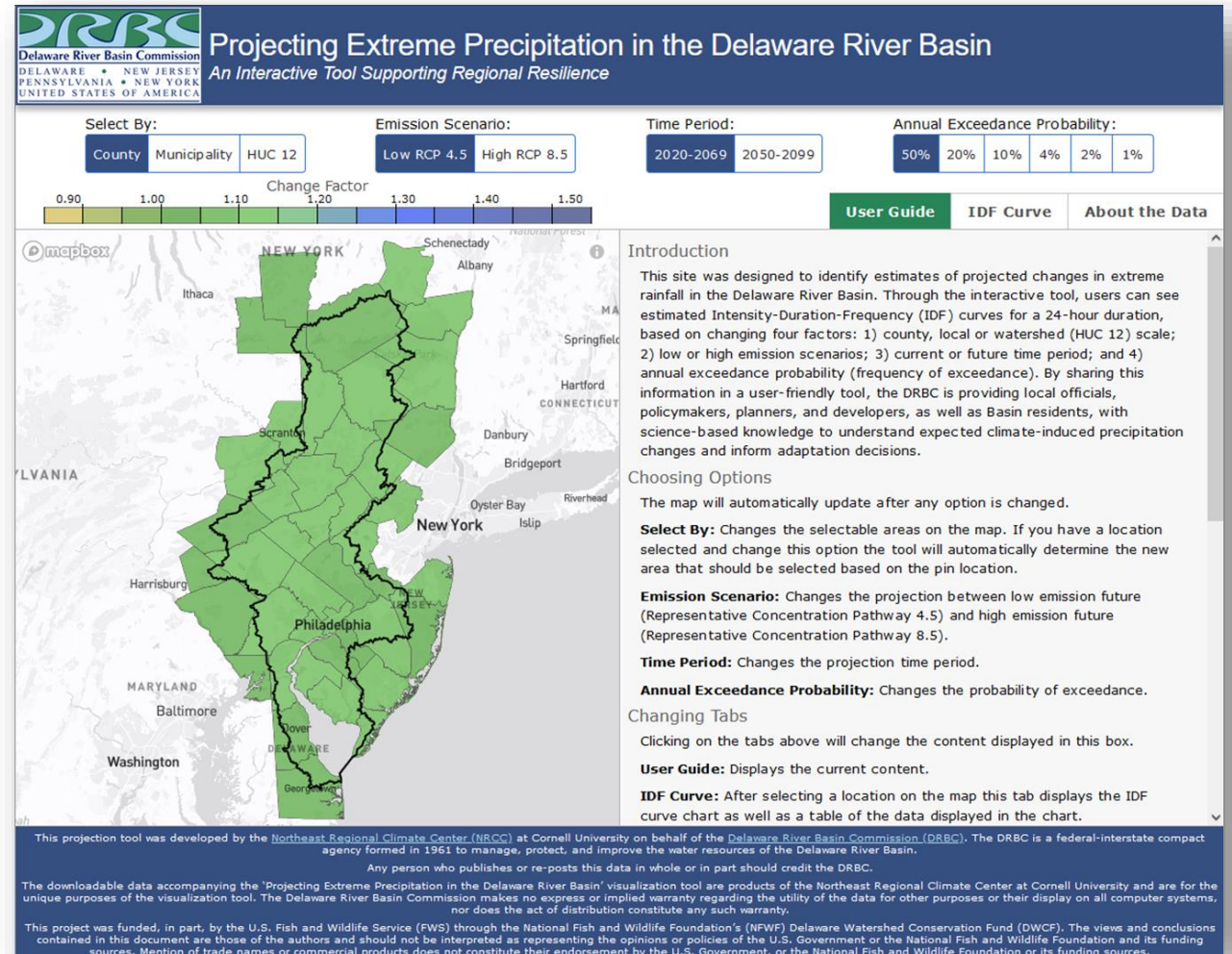
➤ Read more: [Flood History of the DRB](#)



Image Credit: The Intelligencer,
Accessed via [PhillyBurbs.com](#)

Projecting Extreme Precipitation in the Delaware River Basin

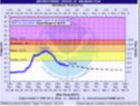
- Interactive tool allows users to obtain estimates of future changes in intensity, duration and frequency (IDF) curves throughout the DRB
- Curves project future rainfall patterns based on regional models and can be plotted against historical data (Atlas 14) to compare outcomes
- Application: may be used to inform stormwater management and infrastructure design to increase water resilience
- Access this tool [HERE](#)

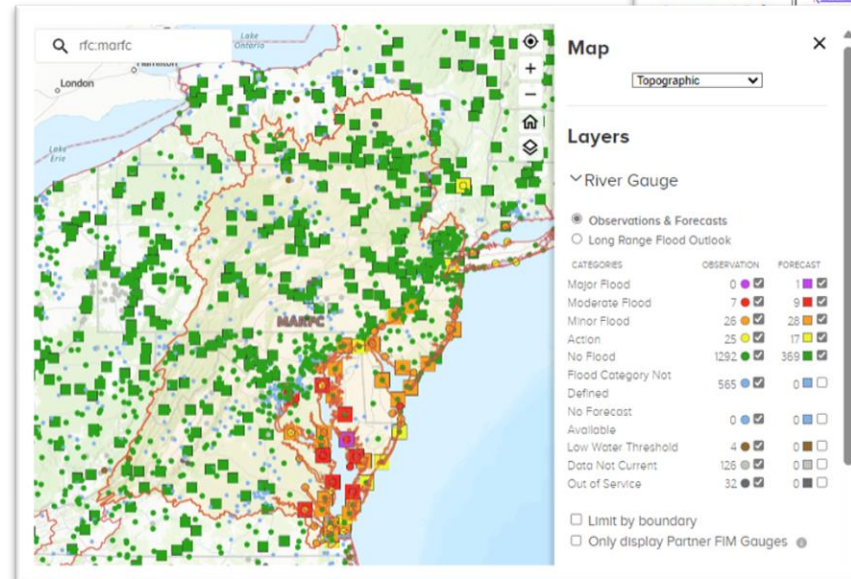


DRBC's website links to public tools for planning and awareness

- [Middle Atlantic River Forecast Center \(MARFC\)](#)
- [Flood Resources Portal](#)
- [Silver Jacket](#) guides
- And more!



Flood Alerts	Flood Forecasts	Flood Zones	Flood Preparedness	Flood History
				
Sign Up For: • USGS Water Alert • iNWS Mobile Alerts • Wireless Emergency Alerts (WEA) Links with	NWS Flood Forecast Maps (Incl. Several Tributary Locations): • Upper Basin • Lower Basin • National Water Prediction Service • River Flood Stage Dashboard (DRBC Map of USGS a)	Do You Live in One? Flood Insurance Flood Insurance Claims in the DRB What is a 100-Year Flood? More FEMA Products and Resources	Know Your Risk Make a Plan Vehicle Safety Federal & State Resources/Links Floods: The Awesome Power (pdf) Focus on Floods	A Look Back Remembering 1955 DRBC Flood Loss Reduction Activities

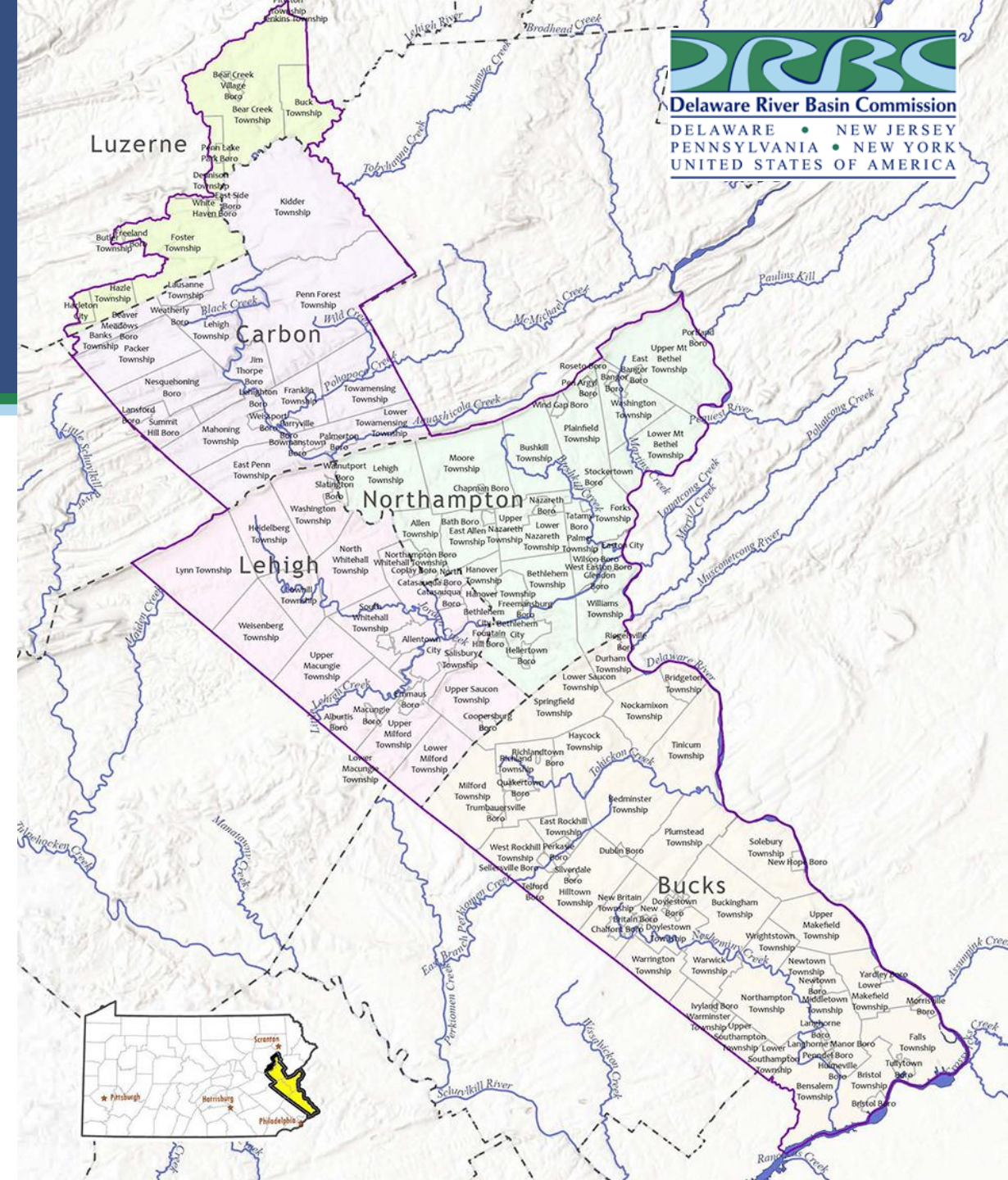


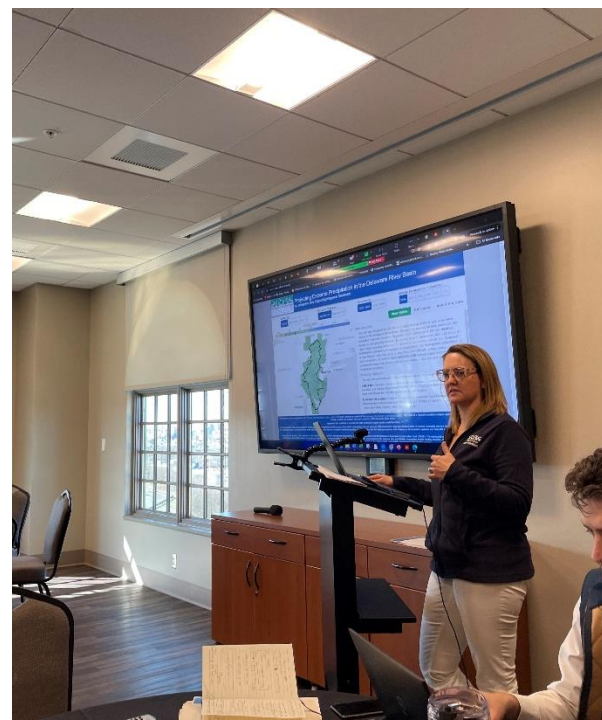
Hazard reduction planning begins at the local level and has basin-wide impacts.



DRBC Partners with the Pennsylvania Emergency Management Agency (PEMA)

- Middle Delaware Flood Mitigation Assistance Workshops
- Project focus: Bucks, Carbon, Northampton, Lehigh, and part of Luzerne counties
- Goal: increase capacity of local municipalities to apply for grants and access state and federal resources





Stay Engaged!

- **Webinar 2: Green Infrastructure & Mitigation** – May 9, 2025 - 12:30 PM – 1:30 PM
 - Register: TinyURL.com/PEMA-DRBC-2
- **Webinar 3: Acquisitions & Elevations** – May 27, 2025 - 12:30 PM – 1:30 PM
 - Register: TinyURL.com/PEMA-DRBC-3

Defining Resilience

- Resilience is attained through **better, safer design** for which **messaging must be prepared** for delivery to a range of audiences.
- To find out and understand what the community cares about:
 - Focus on developing an effective message
 - Root ideas in economics and safety



Defining Hazard Mitigation

- FEMA defines mitigation as a "**sustained action to reduce or eliminate risk to people and property from hazards and their effects.**"
- HUD identifies actions that may prevent and/or reduce:
 - Long-term risk of loss of life or injury
 - Damage to and loss of property
 - Suffering and hardship, by lessening the impact of future disasters.



Image Source: Coalitions and Collaboratives (COCO), Community Wildfire Mitigation Best Practices Toolbox

Defining Hazard Mitigation

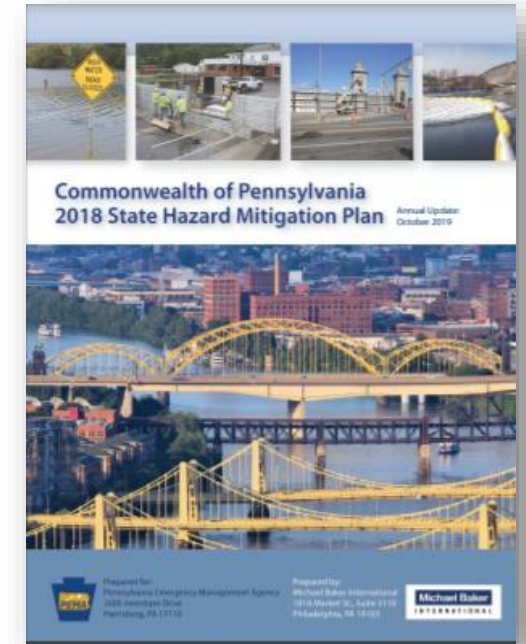
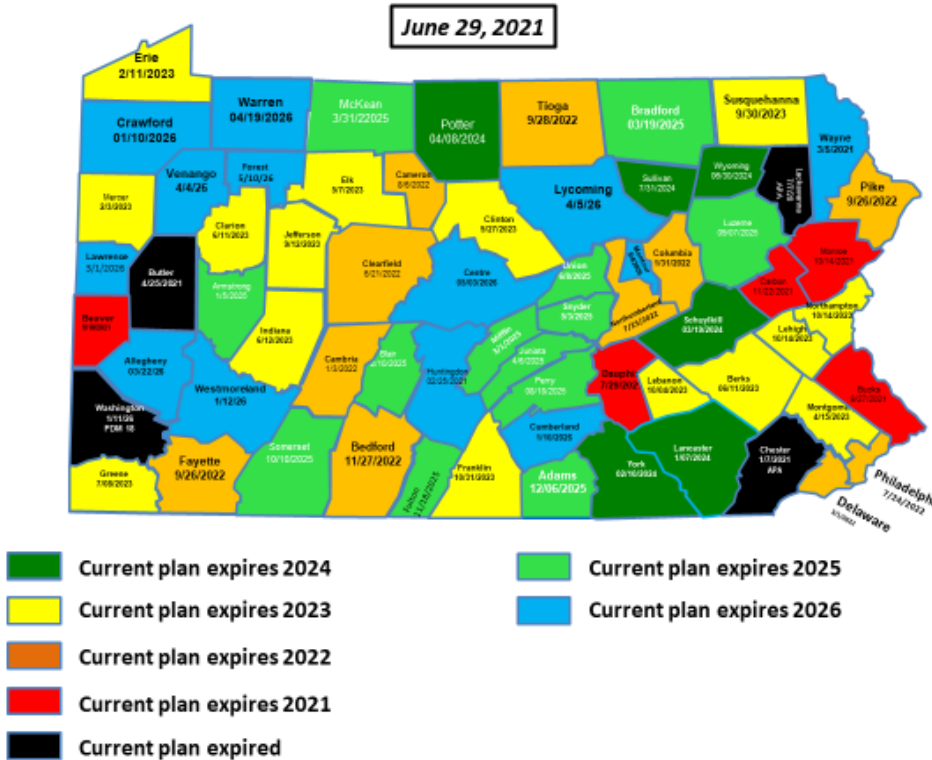
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 - Long-term risk of loss of life or injury
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 - Suffering and hardship, by lessening the impact of future disasters.
- **Every dollar spent on mitigation saves at least \$6 in post-disaster costs**



Image Source: Coalitions and Collaboratives (COCO), Community Wildfire Mitigation Best Practices Toolbox

Why do we have Hazard Mitigation Plans?

- Planning for better, safer design
- Strategic communications to communities
 - Engages public interest
- Sets framework for what a community cares about
- Access to FEMA funding



Examples of Hazard Mitigation Projects

- Property Acquisition and Structure Demolition
- Structure Relocation
- Dry Floodproofing of Historic Residential Structures
- Dry Floodproofing of Non-residential Structures
- Minor Localized Flood Reduction Projects
- Structural Retrofitting of Existing Buildings
- Non-structural Retrofitting of Existing Buildings and Facilities
- Safe Room Construction
- Infrastructure Retrofit
- Structure Elevation
- Soil Stabilization
- Wildfire Mitigation

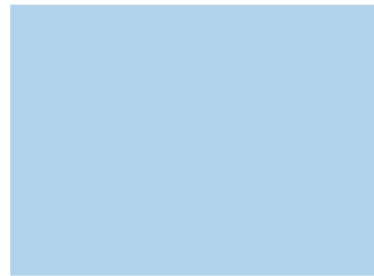


Additional funding opportunities may create co-benefits with hazard reduction and water resource management.

1. U.S. FWS - Delaware Watershed Conservation Fund
2. DRBC et al. - Schuylkill River Restoration Fund
3. PA DCNR - Community Conservation Partnership Program (C2P2)
4. PA DEP - Growing Greener Plus
5. Army Corps of Engineers – e.g. Planning Assistance to States
6. American Water - Water and Environment Grant Program



tinyurl.com/MiddleDelaware



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