

RIVERINE FLOODING

A CREATE Resilience Resource



The hazard...

Riverine flooding occurs when a river overflows its banks because of excess water flowing down the river. Causes include: high-intensity rainfall from tropical systems; persistent, heavy precipitation events; and rapid snow-melt and ice dams. Flooding along larger rivers, such as the Delaware, usually can be forecast a day or more in advance, and will cause a rise and peak that will last for a number of hours before receding.



Flooding at the confluence of the Lehigh and Delaware Rivers in 2006. *Photo courtesy of Frank Chisesi*

In the event of a flood, community members should listen to evacuation orders and never drive into a flooded roadway.

The impacts...

The Lehigh Valley has experienced the environmental and economic impacts of flooding, including property damage and loss, streambank erosion, disruption to businesses and households and temporary loss of electricity and running water. The highest recorded flood was in 1955 but recent floods in 2004, 2005 and 2006 brought much damage and loss. Climate change is expected to increase the frequency of heavy precipitation events in the region, leading to a higher risk of flooding. Human development can exacerbate flooding impacts by increasing impervious surfaces.

Some solutions...

Flood control solutions include environmental, physical, and planning and communication approaches.

Natural flood control involves allowing rivers to flow naturally rather than try to control them with channels, dams, walls or levies. Restricting building and development in the floodplain, and maintaining vegetation and riparian buffers, prevents erosion and helps absorb water, preventing property damage and lessening flooding downstream.

Physical solutions, such as levees and floodwalls, are used in some locations to redirect floodwaters from highly vulnerable areas and to redirect the flow of floodwater.

Municipal and regional planning can identify high-risk areas and local governments can work to ensure riparian buffer zones are protected and maintained. The adoption of strong local floodplain regulations and ordinances can ensure that floodplains are used safely and that future development is discouraged in high-risk areas.

Communicating risk and impacts to communities is critical – before, during and after flood events. Residents can help by following weather forecasts, preparing for flooding and responding to orders for evacuation, and signing up for warning systems.

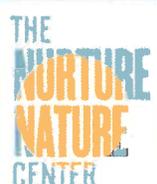
Local examples...

Locally, efforts to respond to flooding have included planning and ordinance revisions, environmental projects and household planning.

In **Williams Township**, homes heavily affected by flooding on the Delaware in 2004, 2005 and 2006 elevated their structures to reduce future impacts.

The **City of Easton Fire Department** is developing an education and communication program for floodplain properties. This program is working with **Lafayette College** to map properties in the floodplain, and the City has adopted a new notification platform that can send targeted messages to floodplain property owners during emergency times. Additionally, the city is developing an ongoing education program to build flood risk awareness in between flood events.

An update to the **Lehigh Valley Hazard Mitigation Plan** identified flooding as a priority hazard. Municipalities, including the Borough of Bangor, Lower Mt. Bethel Township and others report that they strengthened ordinances to require stricter flood protections for properties.



This publication was prepared by the Nurture Nature Center, Inc., under award NA18SEC0080005 from the Environmental Literacy Program of the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce. The statements, findings, conclusions and recommendations are those of the author(s) and do not necessarily reflect the views of NOAA or the U.S. Department of Commerce.