

Johnstown, PA Flash Flood of 1977

History of Johnstown Floods

Johnstown has always had a problem with flooding as it sits in the heart of a valley 20 miles long and 4 miles wide. The most famous floods were those in 1889 and 1936. The flood of 1889 was caused mainly by heavy rain, which led to a dam failure. Killing more than 2,000 people, it was also one of the deadliest floods in U.S. history. The flood of 1936, however, was caused by runoff from melted snow and rain. While it was not as severe, it sparked a response. After it had become clear to residents that any significant amount of precipitation could prove to be disastrous, they requested help. President Franklin Roosevelt authorized the U.S. Army Corps of Engineers to channelize the rivers through the town. The Corps declared the town "flood free" after the project was completed in 1937.



Photos of some channels
Top: Channel downstream from Laurel Run - 1996
Top right: Channel downstream from Coppersdale Bridge - 1996
Right: Channel downstream from the Fourth Avenue Bridge - 1996

Images from Library of Congress

Overview

On the night of July 19, 1977, two lines of thunderstorms moved across western Pennsylvania. The second laid out a boundary where new slow-moving convection would develop over the area for 6-9 hours. Torrential rainfall amounted to more than 6 inches over a 400 square mile area. The mountainous region to the northeast of Johnstown had total amounts as much as 12 inches.

These factors eventually led to a wall of rushing water that caused such streams as Solomon's Run, Sam's Run, and Peggy's Run to smash through roadways, buildings, and homes. The rain also caused many dams to fail, one being the Laurel Run Reservoir, which led to the overflow of the previously thought flood proof system. This false sense of security coupled with the time (early morning) is probably why there were a significant number of deaths associated with this event.

Impacts of the Event

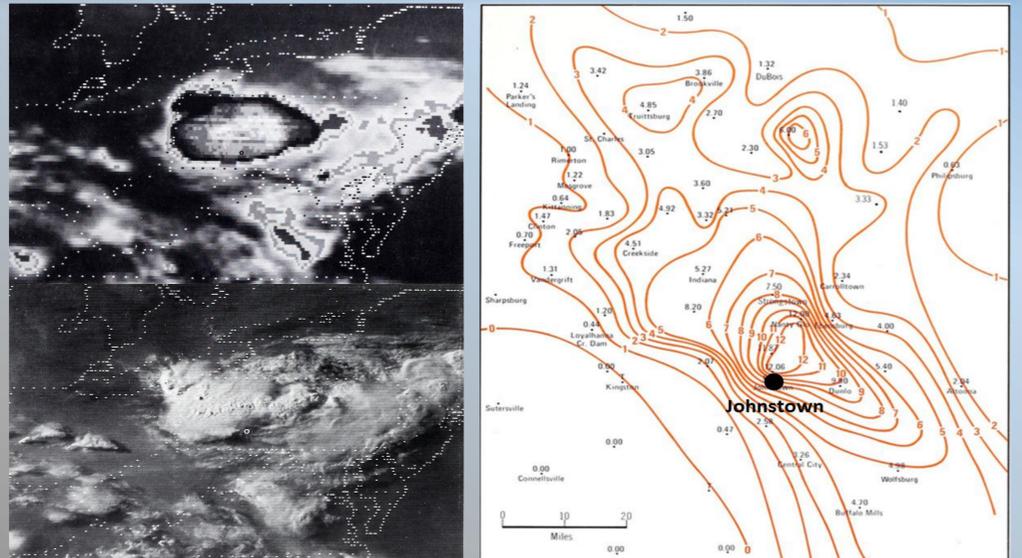
- At least 73 dead. 15 missing.
- Over \$200 million in property damage.
- Large decrease in population.
- Huge impact to economy.

"Back in 1936, the residents of the flooded city thought that they had seen the last of the great floods. But they were proved wrong." – Jon McClintock



Damages and flooding in and around Johnstown, PA.

Courtesy of the Meteorological Analysis of the Johnstown, Pennsylvania Flash Flood, 19-20 July 1977 and Johnstown Redevelopment Authority



Right: Observed rainfall, in inches, with a maximum area of 12 inches to the northeast of Johnstown

Top: Enhanced infrared image showing thunderstorms at 0000 UTC
Bottom: Visible satellite image showing thunderstorms at 2300 UTC

Courtesy of the Meteorological Analysis of the Johnstown, Pennsylvania Flash Flood, 19-20 July 1977

Repairing the Damages

Over the next year, \$200 million was spent in reconstructing buildings, public facilities, and damaged roadways. Already with a struggling economy, many businesses never reopened or moved elsewhere. Between 1970 and 1980, the population of the town dropped from 42,221 to 34,221, a 19.4% drop which never seemed to recover, especially after this flood.

- Michael Young, University of Louisville, Louisville KY.