

= 1985 Election day floods =

The 1985 Election Day floods (also known as the Killer Floods of 1985 in West Virginia) produced the costliest floods in both West Virginia and Virginia in November 1985 . The event occurred after Hurricane Juan , a tropical cyclone in the 1985 Atlantic hurricane season , meandered near the coast of Louisiana before striking just west of Pensacola , Florida late on October 31 . Juan moved northward into Canada , but spawned another system that spread moderate rainfall across the Mid @-@ Atlantic States , wetting soils . On November 3 , a low pressure area developed south of Florida and moved northeastward along a cold front , bringing a plume of moisture influenced by Juan 's previous track . The storm moved through the southeastern United States , stalling on November 5 west of Washington , D.C. before turning out to sea the next day . The event was known as the Election Day floods due to its concurrence with elections in Virginia .

Damage was heaviest in Virginia and West Virginia . In the former state , the rainfall peaked at 19 @.@ 77 in (502 mm) just northeast of Montebello . The rains increased levels along many rivers to record heights across Virginia , including the James River which crested at 42 @.@ 15 feet (12 @.@ 85 m) at a station called Holcomb Rock , the highest level in the state . In Roanoke , the Roanoke River rose 18 @.@ 57 ft (5 @.@ 66 m) in ten hours to a peak of 23 @.@ 35 ft (7 @.@ 12 m) , considered a 1 in 200 year event . In the city , many residents had to be rescued after they were trapped , and three people drowned by driving into flooded waters . Considered the worst flood on record in the city , Roanoke sustained \$ 225 million in damage , with 3 @,@ 100 damaged homes and businesses . There was also flooding in Richmond after the James River crested at the second @-@ highest level on record . Throughout Virginia , damage was estimated at \$ 753 million , making it the state 's costliest flood at the time , and there were 22 deaths .

In West Virginia , 27 river gauging stations were 1 in 100 year events , mostly along the Potomac and Monongahela basins . As most of West Virginia 's liveable land is along flood plains , the river flooding caused heavy damage in the state , mostly in the eastern portion . High waters washed away topsoil and thousands of trees , and over 13 @,@ 000 homes and businesses were damaged or destroyed in the state . Damage was estimated at nearly \$ 700 million , making it West Virginia 's costliest flood , and there were 38 deaths . Flooding also affected Maryland , although to a lesser degree than neighboring Virginia , with \$ 21 million in damage and one death . There was also tidal flooding in the state along the Chesapeake Bay from the storm , which washed away beaches just weeks after Hurricane Gloria affected the coastline . In Pennsylvania , flooding was worst along the Monongahela River in the state 's southwest portion . During the storm , a power company opened the flood gates of the Lake Lynn dam along the river to preserve its integrity , triggering a class action lawsuit that ultimately failed . The floods damaged or destroyed 3 @,@ 349 houses in Pennsylvania , causing \$ 83 million in damage , as well as one death .

Overall damage was estimated at \$ 1 @.@ 4 billion , which would have been the fourth costliest United States hurricanes if it were a tropical cyclone , and there were 62 overall deaths . The flooding spurred changes to warning practices by the National Weather Service and the Government of Virginia . In December 2011 , the United States Army Corps of Engineers completed a flood mitigation project in Roanoke , Virginia that began following the 1985 floods .

= = Meteorological history = =

Early on October 26 , a tropical depression formed in the central Gulf of Mexico , and intensified into Hurricane Juan while meandering northward . The storm had a large wind field and was somewhat subtropical in nature . Due to weak steering currents , Juan looped once offshore Louisiana and later looped again over the state , weakening into a tropical storm over land on October 29 . The storm turned eastward and later northeastward , striking just west of Pensacola , Florida late on October 31 . Juan turned to the north over land and became extratropical on November 1 over Tennessee . After the remnants of Juan continued to the north into Canada , it spawned an occluded low in the Tennessee Valley . This low continued to the east through North Carolina , bringing moderate rainfall throughout the region , and saturating soils ; overcast skies and

the weak sunlight of early November prevented much of the rains from evaporating .

On November 3 , while the low was located over North Carolina , a stationary cold front extended from the Gulf of Mexico through Michigan , which absorbed the remnants of Juan . That day , a low pressure area developed in the Gulf of Mexico south of the Florida panhandle and tracked to the northeast along the front , bringing a plume of warm tropical air into the east @-@ central United States ; the previously erratic motion of Hurricane Juan allowed this flow of moisture to extend into the mid @-@ Atlantic . As a result , dew points reached over 60 ° F (16 ° C) in North Carolina , which is unusually high for the time of year . As the storm moved through the Carolinas , it produced an area of convection , or thunderstorms , that extended to the north and west . The low stalled over Virginia on November 5 to the west of Washington , D.C. , before turning to the east and exiting into the Atlantic Ocean , with rainfall ending on November 6 .

= = Preparations and warnings = =

Ahead of the main rainfall event , the National Weather Service (NWS) forecast office in Washington , D.C. issued a flood watch for southwestern Virginia , but canceled it early on November 4 after the heaviest rainfall was expected to continue to the northeast . Also that day , the NWS issued flood watches and warnings for portions of West Virginia . Later , special weather statements were issued in Virginia due to the continued rainfall . The Roanoke , Virginia NWS office lost telephone service shortly before the arrival of the flooding , which created difficulties in distributing warning information . Based on the rapid level increase of the Roanoke River , the Raleigh , North Carolina NWS issued a flash flood warning for Roanoke and its surrounding vicinity . The NWS also issued a river flood warning , initially anticipating a crest of 11 ft (3 @. @ 4 m) , and later increasing the estimate to 23 ft (7 @. @ 0 m) . In Virginia and Maryland along the western coast of the Chesapeake Bay , several low @-@ lying and small coastal communities were evacuated . About 18 @, @ 000 people were forced to evacuate in western Virginia due to river flooding . In West Virginia , residents relied on fire and civil defense sirens to receive warning about the floods , although some people in flood areas failed to receive any warning . Before the arrival of the floods , 23 of the 55 counties lacked updated disaster plans due to insufficient staff or funding , and as a result 29 counties ' plans were rated " poor " or " very poor " by Federal Emergency Management Agency (FEMA) .

= = Impact = =

The system dropped rainfall from North Carolina to Pennsylvania , westward to Ohio , with a peak of 19 @. @ 77 in (502 mm) just northeast of Montebello , Virginia . Widespread areas reported over 10 in (250 mm) of precipitation , with an unofficial total of about 14 in (360 mm) in West Virginia . Flash flooding occurred in mountainous portions of Virginia , West Virginia , and Pennsylvania , after orographic lift caused particularly high rainfall totals in the southern Appalachian Mountains . A total of 63 gauging stations along rivers and streams recorded flood magnitudes greater than the 100 @-@ year event , of which 40 surpassed the previous record by more than 50 % . In addition to the floods , the storm produced the highest tidal flooding in the Chesapeake Bay and its tributaries since the 1933 Chesapeake ? Potomac hurricane , and in some cases surpassed that of Hurricane Hazel in 1954 . This was due to persistent southeasterly winds just days after a full moon , causing tides that reached 4 to 5 ft (1 @. @ 2 to 1 @. @ 5 m) above normal in many places in Maryland , with 6 to 8 ft (1 @. @ 8 to 2 @. @ 4 m) waves on top . Overall damage totaled \$ 1 @. @ 4 billion , and the system killed 62 people ; if the system were a tropical cyclone , it would have ranked as the fourth costliest United States hurricane .

While moving through the southeastern United States , the storm produced gale force winds along the Outer Banks , and there were reports of two weak tornadoes that damaged boats . Rainfall reached 12 in (300 mm) in eastern North Carolina , which flooded coastal cities in combination with high tides . Crop damage in the state was estimated at \$ 1 @. @ 5 million , mostly to the soybean and wheat harvests . Flooding reached a depth of 2 ft (0 @. @ 61 m) in some places , which

damaged roads and affected a trailer park in Hertford County . The floods also destroyed a fish building in Colerain . In the Piedmont interior , the rainfall flooded streams , flooding some roads and houses , while in mountainous portions , upwards of 8 feet (2 @. @ 4 m) of snow fell .

The high rainfall caused levels to increase along the Ohio River in Kentucky . Rainfall spread as far north as New York , which flooded basements in Amherst and increased levels along streams .

= = = Virginia = = =

The high rainfall caused many rivers to rise above their banks across Virginia , becoming among the top three highest crests on record along several rivers in the state . The flood set the highest river stage on record along the Roanoke River at Roanoke , Tinker Creek near Daleville , the Calfpasture River at Goshen , the Craig Creek at Parr , and the James River at Buchanan , Holcomb Rock , and Bent Creek . At Holcomb Rock , the James River crested at 42 @. @ 15 feet (12 @. @ 85 m) , the highest in the state , and was about 20 feet (6 @. @ 1 m) above flood stage ; based on the observations and the associated discharge , the return period was estimated as greater than a 1 in 500 year event . River gauges recorded record discharge rates at 34 stations , of which 32 were 100 year events . The rains delayed crops from being planted across the state and caused minor crop damage . Across the state , about 3 @, @ 500 houses were destroyed . Overall , the storm system caused 22 deaths and \$ 753 million , greater than the devastating hurricanes Camille and Agnes , and making it the costliest flood in the state 's history .

The city of Roanoke recorded 6 @. @ 61 in (168 mm) in a 24 ? hour period , the highest 24 ? hour total on record for the city since records began in 1912 ; of the total , 4 @. @ 25 in (108 mm) fell in about three hours . After previously wet conditions , the Roanoke River at Roanoke rapidly rose 18 @. @ 57 ft (5 @. @ 66 m) in ten hours to its peak of 23 @. @ 35 ft (7 @. @ 12 m) , well above the flood stage of 10 ft (3 @. @ 0 m) . The floods were considered a 1 in 200 year event , and in one instance near Salem , the waters rose to the height of a three story building . Many surrounding rivers , including the James River , also rose , with 63 peak discharge rates in local streams . The high rivers flooded much of downtown Roanoke , including roads , rail lines , houses , and businesses , with some roads and bridges closed for weeks . Residents survived by holding onto trees , while others , some trapped in their cars , required rescue ; one helicopter rescued 125 stranded people . There were 10 deaths in and around Roanoke , including three who drove into flooded rivers , and three others who refused to evacuate . The floods damaged about 3 @, @ 000 homes and 100 businesses . Overall monetary damage in the city was estimated at \$ 225 million , with \$ 520 million in the entire metropolitan area , making it the city 's worst flood on record .

Across the Shenandoah Valley , the flooding caused widespread damage , notably in Rockingham County where the floods damaged most of the roads , and entered 4 @, @ 000 houses and 350 farms . Along the Shenandoah River , 13 gauging stations reported new discharge records , including the reading at Verona which was five times the previous record . In Elkton within the county , an 89 ? year ? old railroad bridge was washed out , although nearby Bridgewater had less flooding due to a levee built in 1949 ; the town sustained minor damage to roads and the hydroelectric plant . In nearby Highland County along the border with West Virginia , the floods damaged 350 homes or barns , and deteriorated \$ 2 million worth of roads . In Augusta County , also along the West Virginia border , the Buffalo Creek swept away bridges and roads , with \$ 8 million in transportation damage and \$ 7 million in other damages in the county . Staunton , a city independent from Augusta County , experienced minimal effects , although the water treatment plant was damaged and a hotel basement was flooded . Waynesboro , also within Augusta County , sustained \$ 3 million in damages after the South River reached a record crest , damaging 213 homes and businesses . Damage was particularly heavy in Rockbridge County , estimated at \$ 100 million , with 616 homes and businesses ravaged by floods . In Buena Vista alone , the Maury River left \$ 50 million in damage , after 3 to 6 ft (0 @. @ 91 to 1 @. @ 83 m) of water entered homes and businesses . Over half of the homes and businesses were damaged in Glasgow .

Along the James River , 15 gauging stations reported new records . At Lynchburg , the James River rose to 35 ft (11 m) , surpassing the record set by Hurricane Camille in 1969 by 7 ft (2 @. @ 1 m) .

There , the river swept up entire houses , causing portions of U.S. Route 29 to close , and ruining about \$ 8 million worth of tobacco . In Richmond , the James River rose to 30 @. @ 76 ft (9 @. @ 38 m) on November 7 , the second @- @ highest peak on record after the 36 @. @ 51 ft (11 @. @ 13 m) set by Hurricane Agnes in 1972 . The floods in Richmond closed a portion of Interstate 95 , and nearly overtopped the 14th Street Bridge . Three bridges were closed , resulting in heavy traffic due to detours . Portions of the industrial district south of the river was flooded , as were commercial buildings .

In eastern Virginia , high winds downed several trees in the eastern portion of the state , causing power outages and blocking roadways . Falling trees struck two vehicles , injuring three people . Along the Chesapeake Bay , high tides severely damaged or destroyed 75 % of piers along the Patomac and Rappahannock rivers . Flooding entered about 150 houses in Colonial Beach , while many adjacent highways and seawalls were heavily damaged . The tides damaged several marinas , sinking several boats . At the mouth of the James River , high waves capsized a crab boat , killing its two passengers . A ferry was also washed aground on the James River . Several beaches lost 15 to 20 ft (4 @. @ 6 to 6 @. @ 1 m) of sand .

The floods occurred election day throughout the state , in which Gerald Baliles won the governorship over Wyatt Durrette . The election had a decreased turnout than in 1981 , the first decrease in total votes since 1961 . The floods caused the three districts in western Virginia to have the lowest turnouts in the state , although other counties not affected by the overall system also saw decreased turnout . The event later became known as the " Election Day Floods " due to their concurrence .

= = = West Virginia = = =

After previously dry conditions , severe flooding also occurred in West Virginia , amplified by the mountainous terrain . Record discharge rates were observed at 25 gauging stations , and 27 stations along rivers were at least 100 year events , setting records along the Potomac and Monongahela rivers , among several others . While washing away large rocks , some streams changed their channels due to the high volume of water . Near Petersburg , the South Branch Potomac River crested at 25 @. @ 4 ft (7 @. @ 7 m) and produced a record discharge of 130 @, @ 000 cu ft (3 @, @ 700 m3) , and the peak discharge at Franklin was nearly three times the previous record . At five of the six gauging stations along the Potomac , there were new records for discharge rates . Along the Potomac , the floodwaters collected behind dams , causing 21 to exceed the capacity designed to withstand a 100 year flood . All five stations along the Greenbrier River recorded a new record discharge rate , as did all five along the Tygart Valley River . The flash flooding caused the Bloomington Reservoir to rise 80 ft (24 m) in 30 hours . Several caves were flooded , causing high amounts of erosion and damaging some speleothems . After the flooding , Mystic Cave in Pendleton County had tree branches wedged into the ceiling and a layer of sand on the floor .

Flooding was worst along the Cheat River , where five of the six gauging stations set new discharge records . At Parsons , the river produced a discharge of 200 @, @ 000 cu ft (5 @, @ 700 m3) , which was about 3 @. @ 8 times the previous flood record , and 3 @. @ 5 times the rate of a 100 year flood . At Rowlesburg , the Cheat River crested at 36 @. @ 9 feet (11 @. @ 2 m) , which remains the highest on record as of 2013 . At Hendricks , the Dry Fork of the Cheat River had a peak flow of 100 @, @ 000 cu ft (2 @, @ 800 m3) , more than twice the previous record .

As most of the livable land in West Virginia is in the flood plain , the high river flooding caused heavy damage , wrecking many small rural towns and washing out miles of roadways . A total of 43 bridges were destroyed and another 80 were damaged . Near Moorefield , the bridge carrying U.S. Route 220 was closed , but was reopened after emergency repairs . In Paw Paw , a flooded river washed a swept up building into a bridge , washing it away . Much of Pendleton County became isolated after 18 bridges were washed out and roads were covered by mudslides . The Cheat River destroyed 110 of the 132 houses in Albright , and washed away a trailer park in Rowlesburg . The flooding downed thousands of trees , which were carried into houses and recreation areas to cause

additional damage . Agriculture losses were heavy after the floods washed away the topsoil and left behind miles of debris . Many farm structures were washed away , and hundreds of thousands of chicken or turkeys were killed . Statewide , at least 8 @, @ 968 houses were damaged , and another 4 @, @ 000 were destroyed , which left nearly 2 @, @ 600 people homeless . In addition , the floods damaged or destroyed 711 businesses . Agriculture damage was estimated at \$ 97 million , and damage to the United States Forest Service in the state was estimated at \$ 3 @. @ 9 million . Statewide damage totaled nearly \$ 700 million , and 38 people were killed in West Virginia . This made it the most damaging flood in the state 's history , according to then @- @ Governor Arch A. Moore , Jr .

= = = Maryland , Washington , D.C. , and Pennsylvania = = =

Flooding in Maryland largely occurred along the Potomac River , primarily along the north branch , as well as downstream after draining floodwaters from Virginia and West Virginia . Two gauging stations recorded new discharge records , although the peak of 235 @, @ 000 cu ft (6 @, @ 700 m³) at Paw Paw was slightly less than the record set in 1936 . There was also flooding along the Youghiogheny River , which had a peak discharge of 11 @, @ 700 cu ft (330 m³) at Oakland , just below the record set in 1941 . The floods along the Potomac swept up debris and animals . In Georgetown in Washington , D.C. , the floods reached within 2 in (51 mm) of overtopping the lock , thus preventing significant flooding in the nation 's capital , although floodwaters reached 4 ft (1 @. @ 2 m) deep in portions of the neighborhood . Levels along the Potomac in Washington were the third highest on record . Officials closed the Washington Monument , Lincoln Memorial , and Jefferson Memorial for two days due to fears of flooding . The floods left \$ 9 million worth of damage to the Chesapeake and Ohio Canal between Georgetown and Cumberland , Maryland , which was closed for the first time in its 157 year history . In general , the floods in Maryland caused less damage than in neighboring states , and overall damage in the state was estimated at \$ 21 million ; there was one death .

Along the Chesapeake Bay , the high tides damaged many piers , bulkheads , and coastal homes along the western coastline of the Chesapeake , mainly in Maryland between St. Mary 's and Anne Arundel counties . High waters damaged roads and entered many cars while also washing away several boats . Along the Atlantic coast , high waves washed away 400 @, @ 000 cu yd (310 @, @ 000 m³) of beaches in Ocean City , just months after Hurricane Gloria eroded twice that amount of sand . In addition , winds gusted as strong as 80 mph (130 km / h) , which downed power lines and left thousands without power . During the storm , a member of the United States Coast Guard was injured while responding to a hoax mayday call . Damage in eastern Maryland totaled over \$ 5 million .

High rainfall also flooded streams in southwestern Pennsylvania , estimated as 50 year events , and primarily along the Monongahela River . In Point Marion at the confluence of the Monongahela and Cheat rivers , the waters crested at 40 ft (12 m) , or 14 ft (4 @. @ 3 m) above flood stage . There were many evacuation orders after a false report that the Lake Lynn dam had burst , which is located along the Cheat River several miles south of Point Marion in extreme northern West Virginia . The dam , owned by West Penn Power , reached the highest levels in its 60 year history , prompting the company to open flood gates , which flooded Point Marion with 8 ft (2 @. @ 4 m) of water . The Monongahela River crested at 42 @. @ 7 ft (13 @. @ 0 m) , or 10 @. @ 7 ft (3 @. @ 3 m) above flood state in Brownsville , and rose 18 ft (5 @. @ 5 m) above flood stage in Greensboro . In the latter city , the peak discharge rate was 220 @, @ 000 cu ft (6 @, @ 200 m³) , 60 % greater than the previous record , and downstream at Elizabeth , the peak discharge was 178 @, @ 000 cu ft (5 @, @ 000 m³) , also a record .

Damage in Pennsylvania largely occurred along the Monongahela River basin . In Brownsville , 35 businesses were flooded , while in Greensboro , high waters damaged roads and forced 300 people to evacuate . During the floods , 23 barges broke free and became lodged in the Maxwell Lock & Dam , which is an important shipping link ; the lock remained closed for nearly six weeks , costing the local economy \$ 20 million in lost production . The same river crested at 44 ft (13 m) in

Charleroi , breaking the record set in 1967 . The flooded river caused \$ 1 million in damage at California University of Pennsylvania , broke 40 barges from their moorings , and forced about 2 @, @ 600 people to evacuate ; one person in North Charleroi drowned after returning to his evacuated home . Throughout the region , the floods damaged or destroyed 3 @, @ 349 houses , leaving at least 2 @, @ 000 people homeless , and statewide damage was estimated at \$ 83 million .

= = Aftermath = =

In the aftermath of the floods , President Ronald Reagan declared 121 counties or other areas as disaster areas , including 40 counties and 12 independent cities in Virginia , 29 West Virginia counties , and 6 Pennsylvania counties . After a year of hurricanes Elena , Gloria , and Juan , as well as flooding in Puerto Rico , the American Red Cross ran out of funds while responding to the flood disaster , prompting an emergency fundraising appeal .

Much of the eastern portion of West Virginia was declared a federal disaster area on November 7 , 1985 . Within two weeks of the declaration , the United States Army Corps of Engineers (USACE) began clearing debris across the state , which was completed by July 1986 . Widespread areas were under a boil @-@ water advisory due to damage to water facilities , prompting officials to deliver trucks with bottled water through disaster areas . The state 's highway department worked with FEMA and the USACE to clear destroyed buildings . Workers also buried killed animals , cleared blocked streams , and helped farmers regrow lost crops . FEMA opened 20 disaster centers across the state to coordinate residents ' requests for federal aid , and used 290 full or part @-@ time employees . Overall federal assistance totaled \$ 285 million , including \$ 171 million for debris removal and repairing infrastructure , \$ 90 million for loans and temporary housing , and \$ 24 million through payments from the National Flood Insurance Program . This followed a six @-@ week period when applications for such assistance were processed . After receiving complaints about inadequate funding , FEMA increased payments to 869 people . FEMA also built 647 temporary mobile homes , only about half of which were utilized . Residents complained that the money spent on the homes was misdirected and instead should have been given directly to victims . Many residents in Albright moved away after the main industry - river rafting - was washed away . In the city of Parsons , most businesses relied on small business loans to continue operating , although 18 stores never reopened following the floods . Officials held a telethon on state television and radio on December 7 , 1985 , that ultimately raised \$ 1 @. @ 7 million for storm victims in the state . In the years after the flood , residents rebuilt houses farther away from flood plains , while officials rebuilt roads , bridges , and public buildings .

In general , the USACE credited existing flood control projects as preventing additional flooding . In West Virginia alone , it was estimated that existing flood @-@ control projects saved about \$ 135 million in damage . Lake Moomaw in western Virginia helped prevent \$ 70 million in damage along the James River . In Pennsylvania , flood measures resulted in minimal flooding along the Youghiogheny River . After sustaining damage from flooding along the Monongahela River with little warning , the owners of a marina filed a class action lawsuit in the Court of Common Pleas of Washington County on November 21 , 1985 , against West Penn Power Company to compensate for damages . The plaintiffs believed that the damage occurred because the company opened the flood gates of the Lake Lynn Dam . The power company attempted to move the case to the United States District Court for the Western District of Pennsylvania in March 1986 , citing the Federal Power Act 's provision that claims should be in the District Court , but the nature of the suit sent it back to the Court of Common Pleas , bringing it to trial in September 1989 . The jury found that although the West Penn Power was negligent , the damage was caused mainly by the historic and unprecedented flooding ; consequently , the case entered a compulsory nonsuit , meaning the company was not required to pay compensation . The plaintiffs sought an appeal in 1990 , which was denied .

The city of Roanoke , Virginia had experienced a series of major floods that affected . The floods caused by Hurricane Agnes in 1972 prompted a study that would channelize 10 mi (16 km) of the

Roanoke River to increase water capacity . After the 1985 floods , the city council sought assistance from the USACE to build flood walls and improve river flow to mitigate against future flooding . The agency estimated that the project would cut the damage in half for a flood similar to the 1985 one . The cost for the project was initially project to be \$ 34 @. @ 4 million , of which the city was expected to pay \$ 14 @. @ 3 million . Private land donations and other financial sources provided about \$ 6 @. @ 8 million of the cost , while the remaining \$ 7 @. @ 5 million was covered by a bond , approved in an April 1989 single @- @ issue referendum . This was the first such referendum for the city , and passed with 56 @. @ 6 % in support amid a voter turnout of 19 @. @ 6 % . The bond would be repaid by a 2 % raise of the utility tax . Construction began in 1990 , and that year a flood warning system was completed . In 1993 , Roanoke 's raw sewage plant and hospital finished flood proofing . The bulk of the project was finished in December 2011 when the final terrain cuts were made . When the project was completed , the USGS estimated that the annual damage from flooding decreased from \$ 5 @. @ 8 million to \$ 2 @. @ 7 million , and that the work prevented major floods in November 2009 from Hurricane Ida and January 2013 . Also in the state , the General Assembly passed the " Virginia Flood Damage Reduction Act " in 1989 , partly due to the flooding from 1985 ; this coordinated all work related to flood prevention throughout the state into one department .

In Pennsylvania , then @- @ governor Dick Thornburgh allocated \$ 1 million in emergency aid for the disaster areas , and activated 600 National Guardsmen to help with clean up . After nine water plants were closed , the companies relied on reserves to provide water supply to local residents while also encouraging cutting back on usage . About 2 @, @ 900 people in Washington County lost access to clean water .

In the decades following the floods , the NWS utilized enhanced radar technology and computer models to better forecast flood events , as well as improved communications . Whereas in 1985 , three different NWS agencies issued different warnings for the area affected in southwest Virginia , the NWS has since restructured to allow local offices , such as the one in Roanoke , to directly issue watches and warnings . The NWS also implemented increased flood prediction techniques across West Virginia in the years after the floods . As many West Virginia counties lacked a full @- @ time emergency management director at the time , funding from the NWS provided 24 ? hour weather radios for every county by the year 1987 .