



# The Historic and Devastating Floods of June 23rd 2016

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**Blacksburg, VA**  
Weather Forecast Office

## Overview

On Thursday, June 23, 2016, several rounds of thunderstorms producing torrential rainfall over nearly the same area moved southeast through portions of the central Appalachians. These storms were associated with a nearly stationary frontal boundary which helped to focus an extremely moist air mass. The diverse topography of the area likely enhanced rainfall intensity - resulting in catastrophic flash flooding, historic river flooding, and 23 fatalities in West Virginia.

Thousands of homes and business were damaged or destroyed, and road repair costs alone were expected to exceed 50 million dollars. The fatalities were the highest in the state of West Virginia since November 1985 floods when 47 died. During the flooding, numerous water rescues and evacuations were conducted, and more than 2000 people were temporarily displaced. A State of Emergency was declared by the Governor of West Virginia for 12 counties.

## Flooding

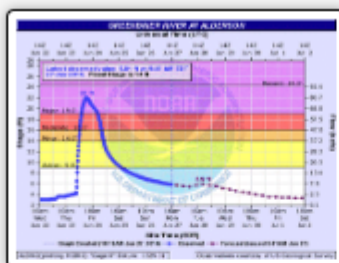
Approximately 8 to 10 inches of rain fell in less than a 12-hour period in the most severely impacted areas of Greenbrier County, WV. The probability of this amount of 24-hr rainfall occurring in any given year of about 1/1000 frequency of occurrence interval as analyzed by the Hydrometeorological Design Studies Center. The greatest weather-related weather impact in the Blacksburg county warning areas was due to flash flooding.

The Greenbrier River at Alderson, WV reached 22 feet, its 3rd highest on record. The last time it was this high was in January 1996 due to rain and snowmelt.

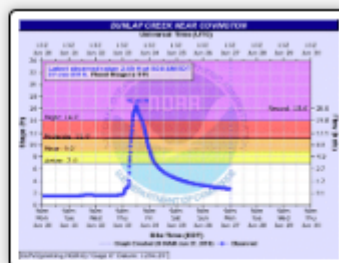
Record flooding at Dunlap Creek near Covington, Virginia (16.49 ft) occurred. The previous record was from Agnes remnants June 1972.



## Hydrographs

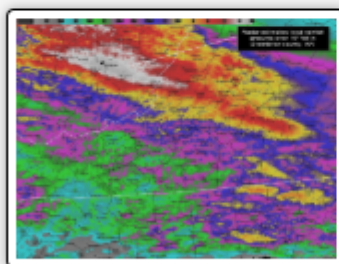


Greenbrier River at Alderson, WV

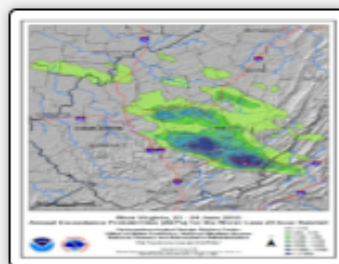


Dunlap Creek near Covington, VA

## Supporting Images



Radar Totals Estimated by radar



Hydrometeorological Design Studies Center Annual Exceedance Probabilities (AEPs) for the Worst Case 24-hour Rainfall - WV 23-24 Jun

## Rain Reports

### WEST VIRGINIA

#### ...GREENBRIER COUNTY...

MAXWELTON	9.67	759 AM	6/24	CWOP
WHITE SULPHUR SPRING	9.17	700 AM	6/24	CO-OP OBSERVER
WHITE SULPHUR SPRING	8.63	745 AM	6/24	GOES
RAINELLE	7.67	745 AM	6/24	USARMY-COE
KNOB	5.16	800 AM	6/24	GOES
1 NW ALVON	1.36	802 AM	6/24	CWOP

### VIRGINIA

#### ...ALLEGHANY COUNTY...

4 E COVINGTON	5.59	700 AM	6/24	COCORAHs
3 NNW COVINGTON CITY	5.20	758 AM	6/24	CWOP
COVINGTON FP COOP	4.76	700 AM	6/24	CO-OP OBSERVER
1 E CALLAGHAN	4.32	730 AM	6/24	HADS
GATHRIGHT DAM COOP	4.22	700 AM	6/24	CO-OP OBSERVER
2 NNE NATURAL WELL	3.64	730 AM	6/24	HADS