

News Release
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Flooding in Massachusetts and Rhode Island, October 2005

Heavy rains on October 8-9 and 13-15 resulted in high streamflows throughout the region, including new peaks of record at three U.S. Geological Survey (USGS) streamflow-gaging stations in western Massachusetts. Streamflow at these stations peaked at levels that are expected to occur about only once every 50 years or more. Throughout the intense rain and flooding, the USGS provided near-real time data on river levels and flows from its network of streamflow-gaging stations that are operated in cooperation with other Federal, state, and local government agencies. These stations provide critically important data to the National Weather Service and others to estimate flood levels and to issue warnings. These data are also used to calculate the magnitude and frequency of floods for a variety of purposes including the delineation of flood prone areas and for bridge design.

October 8-9, 2005

During October 8-9, rainfall was heaviest in western Massachusetts. Rainfall amounts were generally between 3 to 7 inches, but the National Weather Service (NWS) recorded nearly 8 inches at a rain gage in Pittsfield during this time. The ensuing streamflows for many rivers in western Massachusetts peaked at levels that are expected once about every 5 to 25 years. Localized intense rains resulted in new record peak flows at Mill River at Northampton (in operation since 1938), West Branch Westfield River at Huntington (in operation since 1935), and East Branch Housatonic River at Coltsville (in operation since 1936). Additional information on flood stage, peak streamflow, and flood-recurrence-interval for these and other stations can be obtained from the Web link listed below.

October 15-19, 2005

During October 13-15, rainfall was heaviest in central and eastern Massachusetts and Rhode Island. The NWS reported rainfall amounts of 4 to 7 inches in central and eastern Massachusetts and 7 to 9 inches in Rhode Island. With the ground already saturated and streamflows elevated from earlier rains, the additional rains generally resulted in minor flooding throughout this region. Streamflow at most gaging stations peaked at levels that are expected once about every 2 to 25 years, but localized heavy rains produced peak flows that are expected once about every 50 years at stations on the Quinsigamond River at North Grafton, MA (in operation since 1939) and at the Woonasquatucket River at Centerdale, RI (in operation since 1941). The Blackstone River peaked at stations at Northbridge, MA and Woonsocket, RI at levels that are expected once about every 25 years.

Flooding in Taunton Massachusetts

Rainfall recorded by the NWS in Taunton, MA totaled 3.07 inches during October 8-9 and 6.75 inches during October 13-15. The Taunton River gaging station at East Bridgewater peaked on October 17th at a level that is expected once about every 25 years. The second storm also caused the already swollen Mill River in Taunton to rise rapidly. The high flows and elevated pool level behind the Whittenton Street Dam, a wooden

structure built 173 years ago on the Mill River about two miles upstream from the city of Taunton (population about 55,000), alarmed city and state officials. On Tuesday, Oct. 18, 2005, officials considered a dam break imminent and evacuated a significant portion of downtown Taunton. Schools and businesses were closed and about 5,000 residents were displaced during this emergency.

To help officials evaluate conditions at the dam the USGS was contacted and requested to make flow measurements. Hydrographers from the USGS Massachusetts Water Science Center (WSC), in Northborough, MA, were making high-flow measurements in the area and were quickly dispatched to the Mill River. The hydrographers used an Acoustic Doppler Current Profiler (ADCP) to measure flows about 30 feet upstream from the dam on October 18 and 19. These measurements provided engineers with important data on flow rates, velocities, and water depths in the pool behind the dam. The flow rate (648 cubic feet per second or 420 million gallons per day) was used to determine the number of pumps needed to dewater the pool behind the dam.

Additional Information

Tables summarizing peak river stage, discharge, and flood frequency for these and many other streamflow-gaging stations during October 8 – 19, 2005, can be obtained from the USGS Web site:

http://ma.water.usgs.gov/floods/flood10172005/oct_2005_flood_peaks.htm

Graphs and tables showing real-time flow data collected at USGS streamflow-gaging stations in Massachusetts and Rhode Island can be obtained from the USGS Web site:

<http://waterdata.usgs.gov/ma/nwis/current/?type=flow>