

City of Bristol

The principal sources of flooding in Bristol, Tennessee, are Back Creek, Beaver Creek, Cedar Creek, Little Creek, Sinking Creek, and Whitetop Creek.

The only flood information available for Back Creek is a water-surface elevation profile for the October 2, 1977, flood. It reached an elevation of 1,442.2 feet NAVD at river mile 0.5 and was caused by backwater from Beaver Creek. No damage information is available for this flood (Reference 4).

The development of Bristol, Tennessee, has created constrictions to the flow of Beaver Creek. There are buildings in the floodplain, bridges over the stream, and a portion of the creek is covered and serves as a main street. The development has occurred gradually, thus complicating the comparison of past flood discharges and corresponding high water marks. This, coupled with short gage records, makes it difficult to estimate the recurrence interval of the historic events. In 1965, Beaver Creek and Clear Creek dams were closed, regulating 19.5 square miles of the Beaver Creek watershed, further changing flow conditions. Therefore, no attempt was made to estimate the recurrence interval of floods occurring prior to 1965.

A record of most, if not all, major floods in Bristol extending back to 1867 has been developed from floodmarks, newspapers, diaries, photographs, eyewitnesses, and reports of city officials.

The largest known flood on Beaver Creek occurred on March 7, 1867. The flood had a crest stage of 1,673.6 feet NAVD at Moore Street (Beaver Creek river mile 15.6). There is no information available on damages produced by the flood (Reference 9).

The July 2, 1928, flood is the second largest on record, reaching an elevation of 1,672.3 feet NAVD along Beaver Creek at Moore Street. About 84 acres of business property were flooded in downtown Bristol (Reference 9).

The January 12, 1879, flood had the third highest stage of record along Beaver Creek at Moore Street, cresting at 1,672.1 feet NAVD (Reference 9).

The largest flood on Beaver Creek since closure of Beaver and Clear Creek dams occurred on October 2, 1977. Beaver Creek at Moore Street crested at 1,671.8 feet NAVD, the highest stage since 1929. Elevations at river miles 8.12 and 14.92 were 1,455.4 and 1,662.7 feet NAVD, respectively, having a recurrence interval of about 20 years. The total damage for Bristol, Tennessee was estimated at \$1,364,000 (Reference 4).

Flood flows and elevations on Cedar Creek are affected by the railroad fill at river mile 5.60. The reaches above the fill are in backwater while flows in the reaches below the fill are reduced by the limited capacity of the culvert through the fill. The culvert will pass the 0.2-percent-annual-chance discharge without overtopping the fill.

The only flood information available for Cedar Creek is for the October 1977 flood. The flood reached elevation 1,656.6 feet NAVD at river mile 5.80. The recurrence interval is about 10 years (Reference 4).

On March 14, 1975, 35 acres of low-lying land along Cedar Creek were submerged. No buildings were flooded and damage was negligible (Reference 41).

The flood situation on Little Creek is aggravated by bridges with low clearances and buildings built over the creek which obstruct high flows and increase stages.

Flood information on Little Creek is limited to floodmarks for the March 1955, April 1972, December 1972, and October 1977 floods. The highest of these is the October 1977 flood, reaching an elevation of 1,668.8 feet NAVD at State Street, river mile 0.2. The recurrence interval is estimated at 35 years.

The second highest marked flood on Little Creek occurred in April 12, 1972. The flood reached an elevation of 1,667.1 feet NAVD at river mile 0.2, having a recurrence interval of 10 years.

Middlebrook Dam was constructed at Sinking Creek river mile 2.13 in 1970-71. During high flows, the reach from river miles 2.13 to 2.66 is in backwater. During the April 1977 flood, the dam broke, causing minor damage (Reference 4). The dam was reconstructed in October 1990. The spillway passes the 0.2-percent-annual-chance discharge without overtopping the dam.

At river mile 1.30 on Whitetop Creek, the flood of October 2, 1977, reached an elevation of 1,449.5 feet NAVD with an estimated recurrence interval of 10 years. No other marked high water-surface profiles are available. No damage information is available for this flood (Reference 4).

City of Kingsport

The principal flood problems associated with Kingsport are the South Fork Holston River, Reedy Creek, and Mad Branch.

South Fork Holston River

Flow conditions on the South Fork Holston River at Kingsport were changed after closure of Watauga and South Fork Holston Dams in 1948 and 1950 respectively. Prior to closure of these dams the largest floods of record in order of magnitude were those of 1901, 1867, and 1940. It is estimated that with present regulation the peak discharge of the 1901 and 1867 flood would be 44,000 and 40,000 cfs and recurrence interval of 250 and 160 years respectively. No damage information is available for these floods.

Most vulnerable to flood damage is the large residential area on Long Island. The island, which was developed as a residential section for industrial employees, extends from mile 1.3 to mile 5.6 opposite Kingsport. Most of the homes are located at the upstream end of the island. The 1940 flood with estimated peak discharge of 68,800 cfs covered most of Long Island except for a few small areas in the residential section. The city received warning of the flood from Elizabethton early on the morning of August 14, and residents of Long Island and old Kingsport were evacuated. From 3 a.m. until the crest at 9:45 a.m., the river rose 12 feet at the rate of 2 feet per hour. On Long Island 126 houses were flooded and in the old section of Kingsport water entered 50 houses to depths of a few inches to 3 feet. The total tangible loss at Kingsport was estimated at \$43,000. About 40 percent of this amount was residential