

A team organizing the RVA Street Art Festival stood in front of the Richmond floodwall in Manchester in November 2014.

DEAN HOFFMEYER/TIMES-DISPATCH

# 25 YEARS STRONG RICHMOND FLOODWALL

Following major floods in the 1930s, the Army Corps of Engineers first presented the city with a proposal for permanent flood protection in 1945. The idea was quickly abandoned due to local objections over its height and an inability to justify the then-\$4.1 million cost.

A series of three costly floods between 1969 and 1972 revived interest in a floodwall project, but it took 14 more years — and one more major flood — to complete studies, finalize plans and receive funding approval from Congress.

## CAMILLE AND AGNES

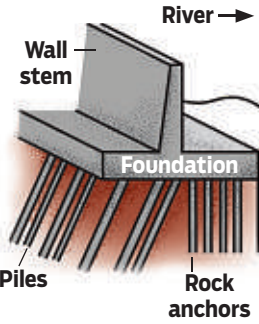
In August 1969, the remnants of Hurricane Camille dumped at least 27 inches of rain in Nelson County. The landslides and floods killed 153 people upstream from Richmond. Billions of gallons of water ran off into the James River and swelled into a major flood through Richmond. Thought to be a once-in-a-lifetime disaster for the city, Richmond set to restoring the inundated areas. In June 1972, Tropical Storm Agnes triggered an even bigger flood, surpassing Camille's levels by several feet and causing even greater damage. Agnes galvanized the Central Richmond Association to form a flood protection committee, which first met in July 1972. Months later, another significant flood struck in October. In the wake of the floods, some businesses could not or would not return to Shockoe Bottom.

## THE WALLS

Several different types of walls constitute the Richmond floodwall.

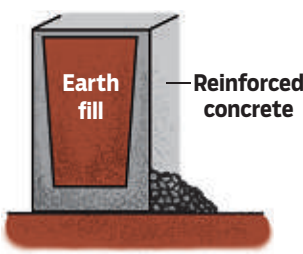
### INVERTED T-WALL

North side of the river



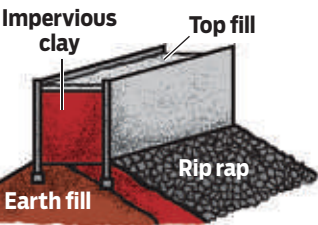
### U-WALL

South side of the river



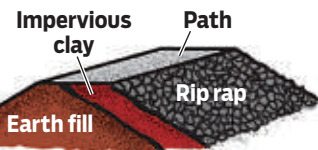
### BIN WALL

South side of the river



### EARTHEN LEVEE

South side of the river



TIMES-DISPATCH

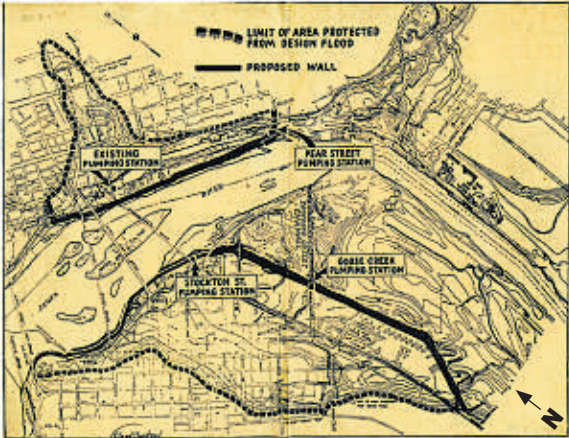
In April 1992, a section of the Richmond floodwall was under construction east of the Mayo Bridge.

## FUNDING THE WALL

The \$143 million floodwall was built through a 1986 cost-sharing agreement between the federal government and the city. The U.S. government paid 75%, while the city paid 25%.

## MR. FLOODWALL

A part of the first Flood Protection Committee, civic leader Dale Wiley saw firsthand how floodwaters from Camille impacted Richmond businesses. He became a major proponent of building the floodwall.



## EARLY IDEA

A map from the Richmond Times-Dispatch in December 1945 outlines the original plans for Richmond's floodwall with dark lines.

**4,277 FEET**

Length of the floodwall on the north side of the James River

**13,046 FEET**

Length of the floodwall on the south side of the James River

**750 ACRES**

On the north side of the floodwall, 150 acres of land is protected in Shockoe. On the south side, 600 acres of land is protected in Old Manchester and Manchester.

## MATERIALS:

**Concrete:**  
**66,000 CUBIC FEET**

**Reinforced steel:**  
**1,050 TONS**

**Steel piles:**  
**55,000 LINEAR FEET**

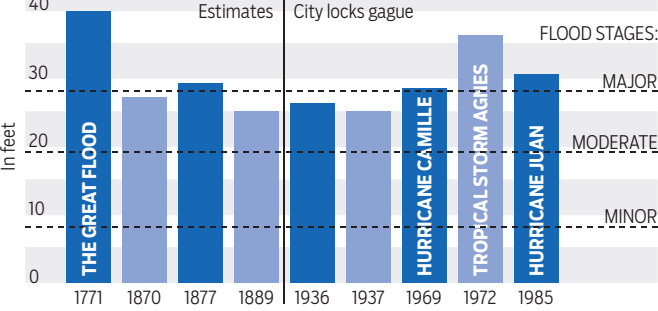
**\$143 MILLION**

Total cost of the floodwall project

## WORST CASE

The floodwall was designed to stand up to a 40-foot-high major flood with a 1-in-280 chance of happening in any given year. On May 27, 1771, after 12 days of rain, the James River rose to 40 feet. The resulting "Great Flood" killed 150 people. The chart at right shows the water levels of surges that hit at least 25 feet.

## RIVER LEVELS NEAR DOWNTOWN



## CLOSING THE WALL

The James River hasn't experienced a major flood since 1985, before the floodwall's construction, but the barriers have proved useful. Some underground gates are closed during minor floods, which happened this spring. The prediction of a 23-foot level at the upstream Westham gauge will cause city crews to close all of the gates. The system is tested and inspected annually.

Richmond's floodwall withstood its first test from a pair of floods in 1996. Since then, levels have not hit moderate flood stage at City Locks. The floodwall does not protect from flash floods. In 2004, an unprecedented deluge from the remnants of Tropical Storm Gaston inundated much of Shockoe Bottom. The disaster spurred the city to improve retention and drainage of rain runoff.