

Alewife Brook Flooding in 2023

Flooding is bad enough. Sewage flooding is many times worse and a serious health hazard.

There is a long history of Alewife Brook flooding during rain storms.¹ Alewife Brook flooding occurs because of its topography and because of urbanization. The area is relatively flat and has been heavily developed with impervious surfaces like pavement and buildings. This results in a reduction of natural flood storage.

The urban stormwater drainage system is designed to handle limited, small-size storms.² When we get larger or more intense storms, there is flooding.

When Alewife Brook floods, there is likely untreated sewage in the floodwater.³



A child riding her bike through Alewife sewage flood water on 9/19/2023.
Photo by Ann McDonald.



August 8th, 2023: Area residents jogged and pushed baby strollers through sewage floodwater on the Alewife Greenway. Photo by David Stoff.

2023 FLOOD EVENTS

We have documented that Alewife Brook flooded at least 5 times in 2023. It is possible that more flooding occurred. But based on photographic evidence⁴ and confirmed with USGS water gage data,⁵ we know of at least 5 times.

In these 2023 storms, sewage-contaminated flood water covered parts of the Alewife Greenway. The Greenway is a popular multi-use path on State Parkland for walkers, joggers, students, and cyclists. The Alewife Greenway connects residents from Somerville, Medford, Cambridge, and Arlington to the Alewife MBTA Station and the Minuteman Bikeway.

USGS WATER GAGE DATA AND RAINFALL IN 2023

The table below shows the 5 flooding events in 2023 that were documented with photos and gage data. There were also documented CSO sewage discharges on each of these flood dates. According to the MWRA, total Alewife CSO sewage discharges in 2023 were over 29 million gallons.⁶

Flooding Date	Max Water Height (feet)	Max Water Flow (cfs)	Daily Rainfall (in)
Mar 13-14	3.54	94.80	2.54
Aug 8	4.10	149.25	1.33
Sep 18-19	3.81	103.83	1.52
Dec 11	3.26	93.83	1.75
Dec 18	3.60	108.75	1.68

Daily values do not fully capture rainfall intensity.

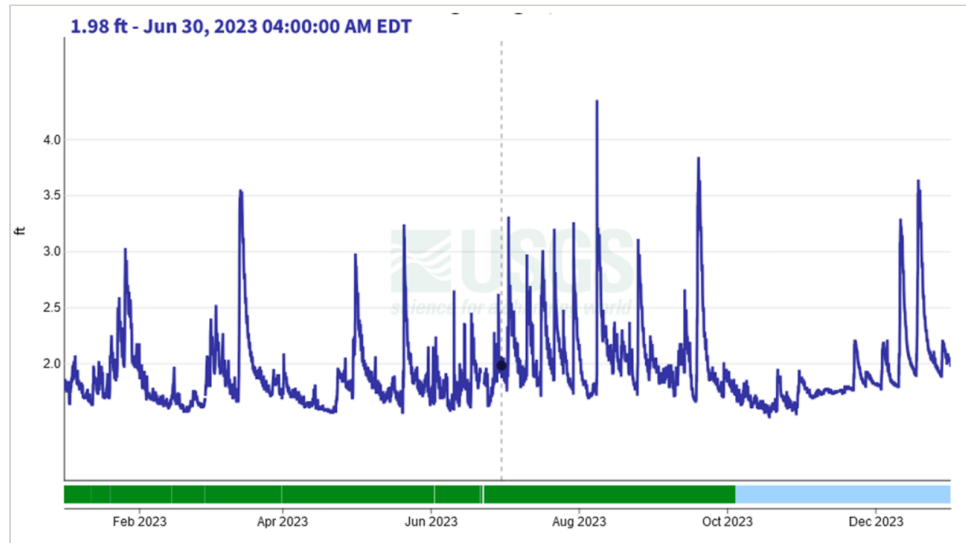
What level of storm caused this flooding?

The daily rainfall on all five documented 2023 flood dates ranged from 1.33 to 2.54 inches. For comparison, NOAA Atlas 14 puts the Boston 1-year, 24-hour storm at 2.53 inches and the 2-year, 24-hour storm at 3.14 inches.⁷

Not one of these events reached even a 2-year storm, and four of the five were well below a 1-year storm. Alewife Brook flooded with sewage in the floodwater at rainfall levels that occur multiple times a year.

2023 BROADWAY BRIDGE USGS GAGE DATA

Thanks to the Tri-Community Flood Group, we have a USGS water gage at the Broadway Bridge: Alewife Brook Near Arlington, MA, 01103025.



Gage height in feet, Alewife Brook Near Arlington, MA (USGS 01103025), calendar year 2023. Each spike is a storm response. Source: USGS.

FOOTNOTES

1. Tri-Community Flood Group Progress Report, Appendix F: Alewife Rainfall and Flooding Summary by Stephen Kaiser, March 2010 Flood Video and Will Brownsberger's Collected Observations.
2. Cambridge DPW Stormwater Guidelines 2006.
3. Alewife Brook and Charles River System Optimization Evaluations, Table 1-2.
4. 2023 Alewife Sewage Pollution, Save the Alewife Brook. <https://savethealewifebrook.org/2024/01/31/2023-alewife-sewage-pollution/>
5. Broadway Bridge Gage Data, thanks to the Tri-Community Flood Group: Alewife Brook Near Arlington, MA, 01103025. <https://waterdata.usgs.gov/monitoring-location/01103025/>
6. MWRA CSO Annual Report 2023, Table 2-3.
7. NOAA Atlas 14 24-hour precipitation frequency estimates for Boston, MA (Station 19-0770), as tabulated in MassDEP, NOAA14 PLUS Summary of Technical Review. <https://www.mass.gov/doc/massdep-noaa14-plus-summary-of-technical-review/download>

Source text, data, and photographs: Save the Alewife Brook, "Alewife Brook Flooding in 2023," November 9, 2024. <https://savethealewifebrook.org/2024/11/09/alewife-brook-flooding/> | Page 2 of 2