

Floods, Freshets, Severe Storms, and Climate Change in West Newbury

Freshets, floods, and extreme weather have for centuries proven predictable and commonplace—yet [unexpected](#) and [unprecedented](#)—here in the greater Newburys. Historian Joshua Coffin noted a violent storm that left a foot-deep fall of hail on [June 9, 1654](#), “such as hath not been heard of in New England since the first planting thereof” and described a flood, or freshet, that occurred in [December, 1740](#), “the like was not known ... for seventy years.... It was said that a sloop might pass between [Emery’s mill](#) [at the mouth of the Artichoke River] and his house, and that the water was twelve feet deep on Rawson’s meadow [now the upper end of the Artichoke Reservoir] at Turkey hill.”

Compared to its more industrialized neighbors along the Merrimack River, until the 20th century, West Newbury had relatively little infrastructure to lose to bad weather—except for roadways. In [1834](#), eighty-four West Newbury residents petitioned the Essex County Commissioners to widen and relocate the part of River Road between what is now Way to the River and Coffin Streets along the Merrimack. Among other things it was “so low as to be many times every year overflowed in certain places with high tides and freshets, so as to render it impassible.” In [1967](#), the Town finally determined to cease repairs that would maintain this road for vehicular traffic. [Bridge washouts](#) and repeated inundation have led to other permanent road closures, not least Pikes Bridge Road, whose loss in March, 1936 provoked enraged residents in the eastern part of West Newbury to propose [secession to Newburyport](#). The [Pipestave Hill section](#) of Main Street was so prone to landslides that in 1903 local inventor [E. Moody Boynton patented a woven willow stem mat system](#) to try to hold the banks.

During the great storm of 1936, when ceaseless rains and snowmelt caused flooding for most of the month of March, West Newbury was isolated in ways both familiar and novel. A landslide at Pipestave Hill would have [closed off Main Street](#), but that already occurred thanks to again unprecedented flooding at the Artichoke. The raging Merrimack split into a second channel at Ferry Lane, running through what are now hayfields and back to the main channel. [Floodwaters inundated all of River Road and the lower parts of Church, Bridge, and Coffin Streets](#). River Road

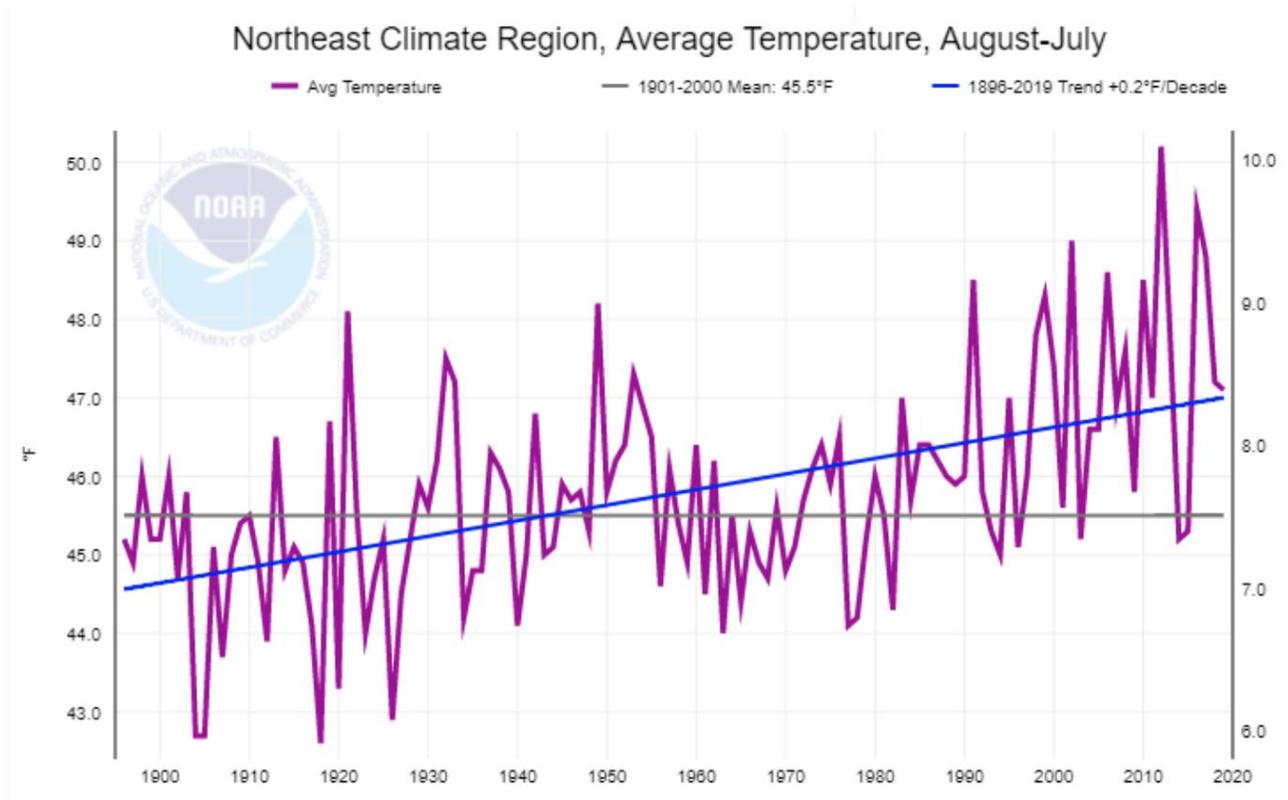
residents were so isolated that one of the Selectmen walked down Long Hill and, finding some marooned families in need of groceries, secured the supplies, and rounded up some boys to help with deliveries.

From the perspective of the [Newburyport Daily News](#), this flood’s worst impact in West Newbury was “the gravest threat to health and the safety of property in [Newburyport’s] history”—potential loss of the city’s water supply due to unprecedented flooding of the Artichoke River, which overtopped the reservoir dam. “[P]rompt action and only grim, bulldog toil, unremitting since 4 o’clock yesterday morning thus far has saved Newburyport’s water supply from absolute stoppage. Now, only a 100-yard long levee of 5-foot high sandbag earthworks, enforced by an 8-foot wide embankment of sand and gravel, is holding back the tremendous pressure of water that is thigh high on the river side of the Holland-like dike from rushing across Spring lane, filling the storage reservoir and quenching the fires under the pumping station boilers.”

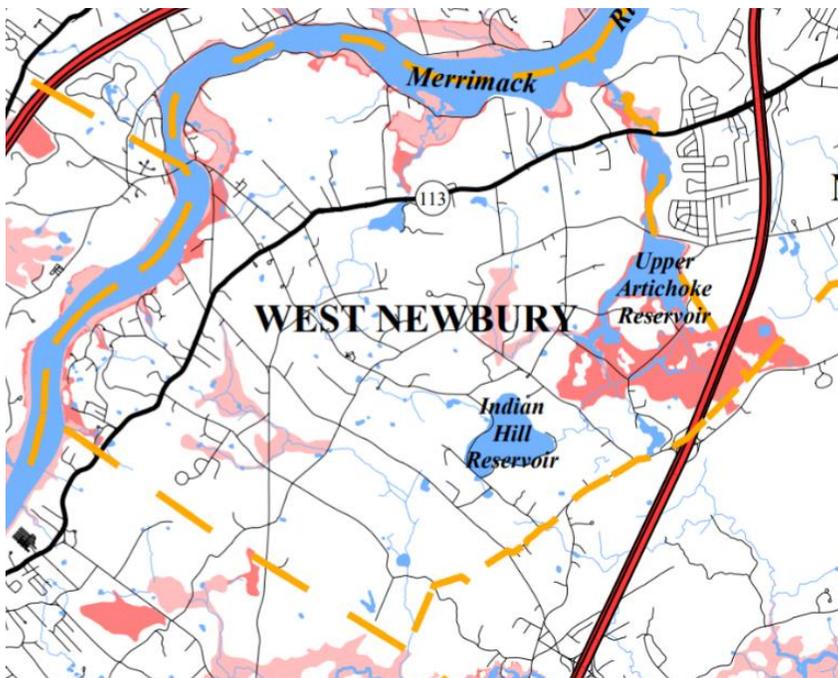
Consequences of even moderately significant storms are different now: today West Newbury relies not only on the Artichoke Reservoir’s water supply, but also on telecommunications, electric power, and other services for a lifestyle vastly changed from that in 1936. Power outages are far more consequential when townspeople depend on electricity not only for light, warmth, and cooling, but also for medical support and other necessities. A [March 2018](#) storm left West Newbury 99% without power over a multiday outage. Power was out for several days between the end of October and the beginning of November, [2017](#). In the [summer of 2016](#), outages were so prevalent that the police chief asked residents not to overwhelm dispatchers with non-emergency calls about power losses.

Looking back, we have seen damaging winds, snow, ice storms, hail, landslides, drought, and countless floods in past centuries. Today we face much the same, likely with greater intensity and greater infrastructure damage, thanks to climate change. New, truly unprecedented concerns also deserve consideration. Once crisp New England summers have [heated dramatically since 1900](#). This raises numerous new challenges, not least [additional insect-borne diseases](#) and [harmful algal blooms](#) in ponds and lakes.

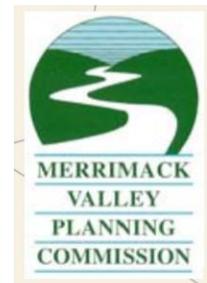
Showing Departure from Mean:



Source: https://www.ncdc.noaa.gov/cag/regional/time-series/101/tavg/12/7/1895-2019?base_prd=true&firstbaseyear=1901&lastbaseyear=2000&trend=true&trend_base=10&firsttrendyear=1895&lasttrendyear=2019



- Legend
- Flood Prone Areas
 - 100yr Flood Zone
 - 500yr Flood Zone
 - Town Boundary
 - Hydrographic Features

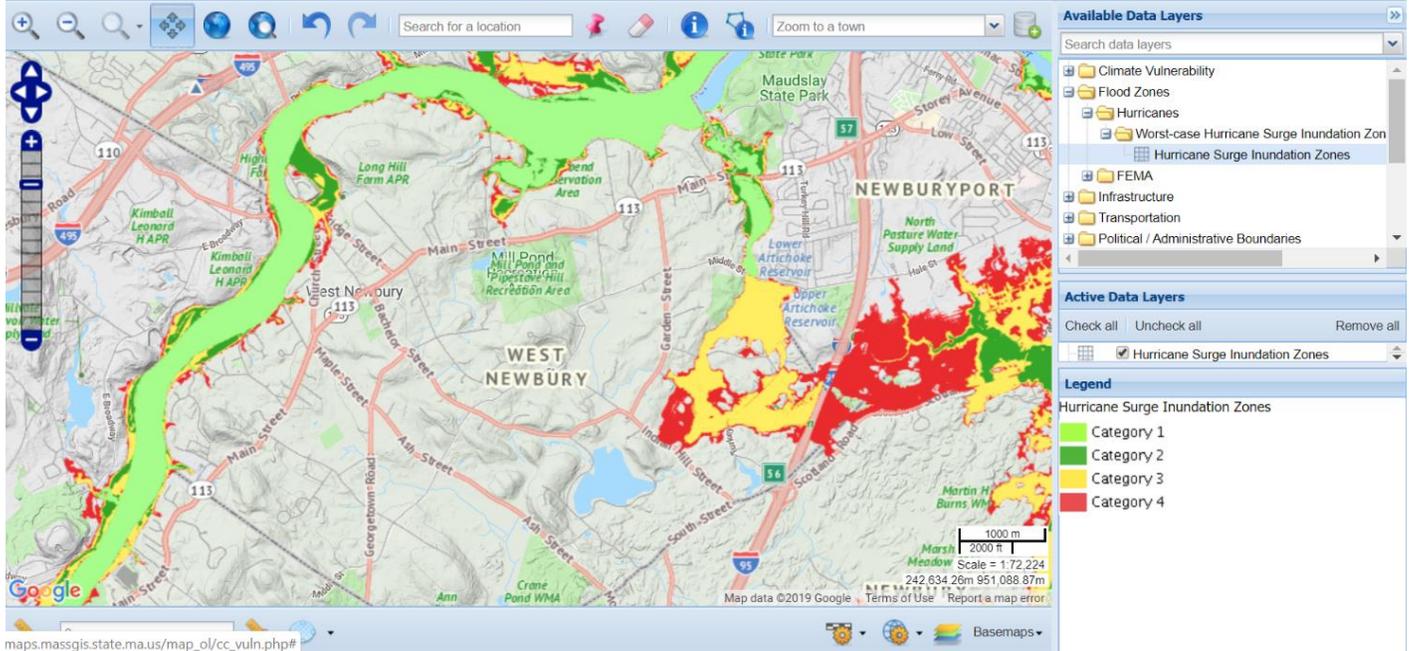


Source: http://mvpc.org/wp-content/uploads/MVPC_Region_FloodProneAreas.pdf

Present-Day Hurricane Surge Threat

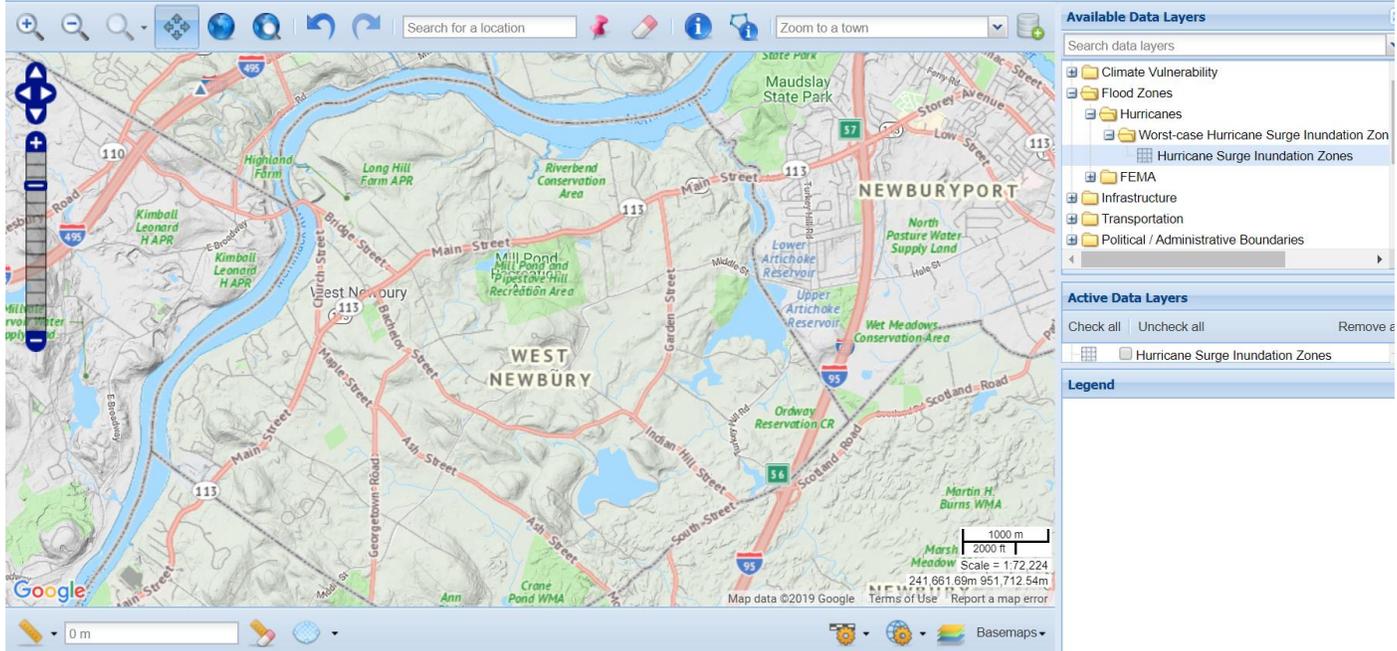
Climate Change Vulnerability Map

Provided by [Massachusetts Dept. of Public Health - Bureau of Environmental Health](http://massgis.state.ma.us)



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Source: http://massgis.state.ma.us/map_ol/cc_vuln.php