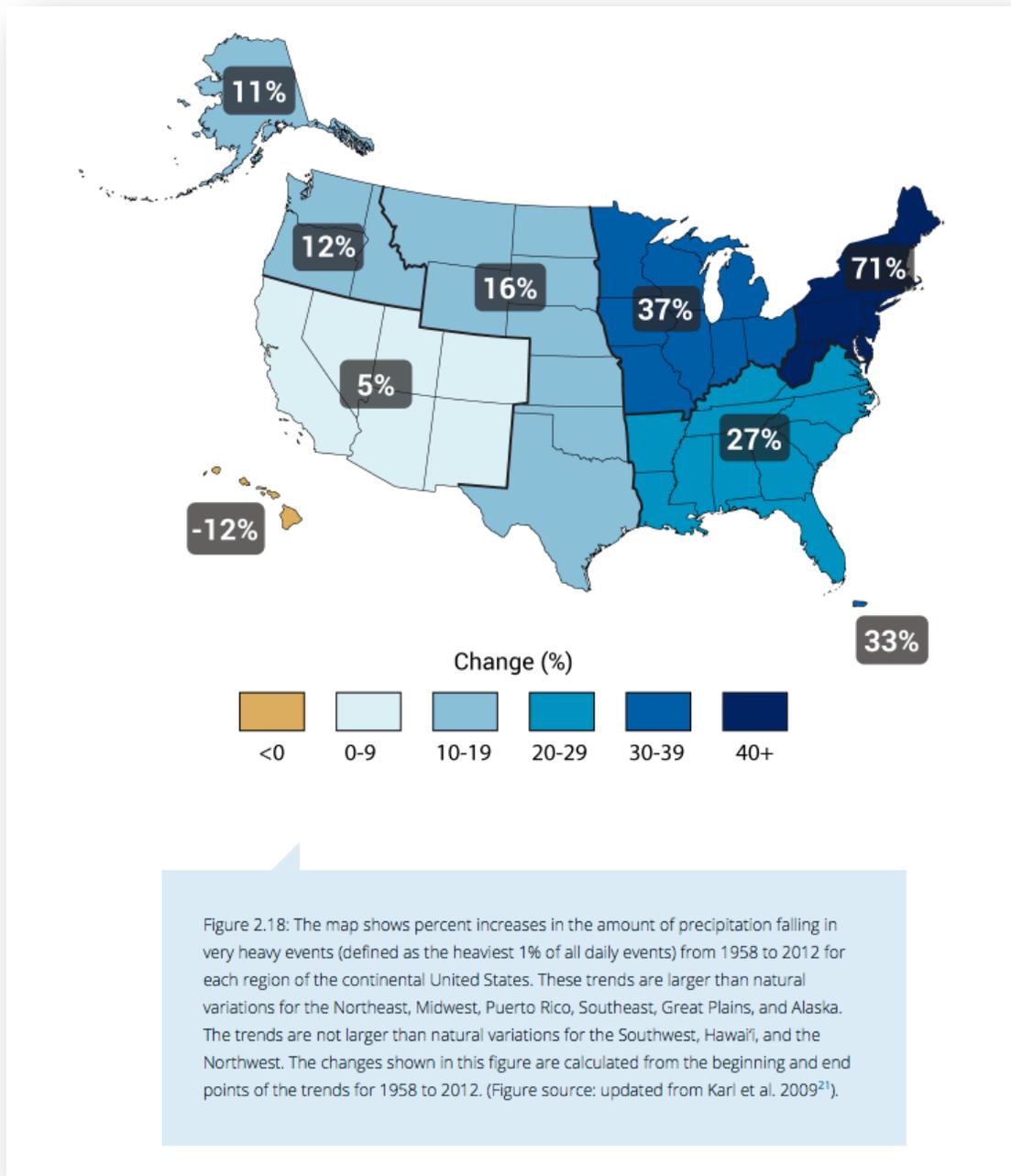


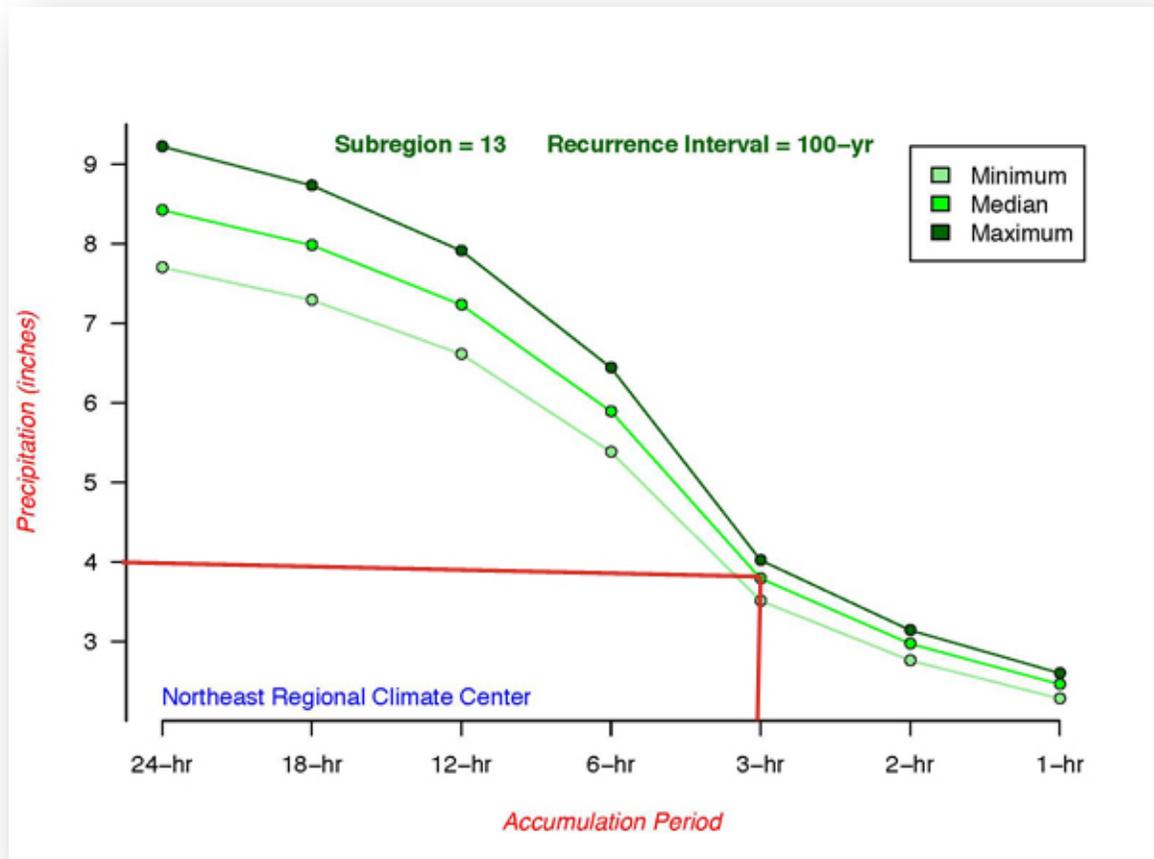
Dear Mr. Fontaine and Planning Board Members,

Silo Ridge has presented a storm water pollution prevention plan (SWPPP) that, even though it is several hundred pages long, may not reflect the reality of a rapidly changing climate. Nor does it consider the impact of two or more large rainstorms over a short period of time. The following diagram from the 2014 National Climate Assessment shows how climate change is affecting the US. Please observe that the NE US has already experienced a 71% increase in very heavy rainfall events.



Also please note that the SWPPP is based on the concept of a “100 Year Storm” without defining that term. The term means that there is a 1% chance of having such a storm at any given time. It’s entirely possible to have two such storms on successive days. In fact, the odds of having a 100-year storm over a 30 year time period are about 1 in 4, or about 25%.

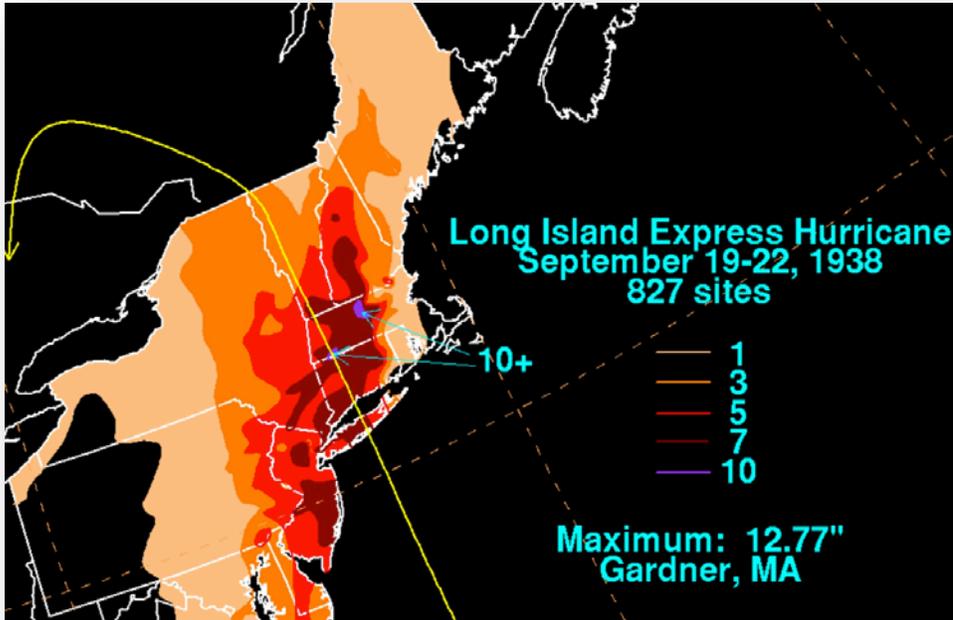
The SWPPP defines a 100-year storm as an event that produces around eight inches of rain in a 24-hour period. The diagram below represents a summation of the regional variables that define a 100 years storm for our area. This is largely based on past events and does not represent future trends due to climate change.



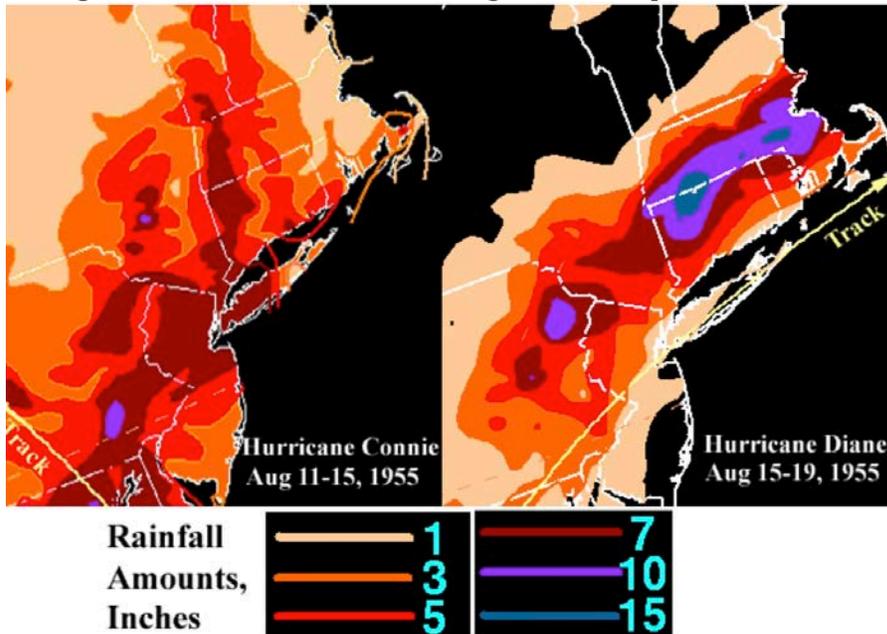
The red lines show that a storm of 3 hrs that produced 4 inches of rainfall would be considered an event with a recurrence interval of 100 years, or a “100 year storm”. This chart is for the Amenia area which is near the boundary of two sub regions.

Note that the chart does not take into account multiple rainfall events over several days nor does it take into account the many factors and variables that affect runoff. It is simply a method of defining a 100-year storm event based on data gathered from weather records from many locations in a regional area over many years. It does not predict the effects of climate change. Recent evidence suggests that storms that used to have a recurrence interval of 100 years may be expected at much shorter intervals.

Notable rainfall events in the Amenia area are often associated with hurricanes and coastal storms. The USGS gauging station on the Temile River in Wingdale has been keeping daily records of river flow for 80 years. These records can be useful in documenting major storms of the past. The Carey Institute in Millbrook also has archived daily rainfall amounts go back about 20 years. NOAA records along with the NHC are useful as well.



The great 1938 hurricane devastated the NE US and probably meets the modern definition of a 100 year event. The dam on Lake Amenia washed out during this hurricane. Local flooding was widespread.



The double event of Hurricane Connie and Diane would qualify as a singular event equal to a 100 year storm. The dam on Lake Amenia washed out again

and has never been rebuilt. Widespread local flooding occurred. Streamflow on the Tenmile set a record that has not been surpassed. Local flooding was widespread.



On April 15, 2007, 5 inches of rain was recorded at the Carey Institute in Millbrook. A culvert north of Wassaic was clogged by debris ultimately resulting in a very damaging flash flood downstream.



On March 7, 2011, 2-3 inches of rain fell on frozen ground in a short time. The same culvert north of Wassaic failed and a flash flood hit Wassaic again. The culvert has since been rebuilt to modern specs.



August 13, 2014. 1.5 inches of rain recorded at Millbrook in about an hour. Flood protection on the golf course construction, in spite of being inspected biweekly, failed in at least three places resulting in silt pouring into the pond along Rt. 22 at the Silo entrance. The Amenia Stream was also affected.

Other notable flooding events in Amenia occurred in 1936 and 1984.

An examination of daily data during the years 2008-2014 from the Carey Institute of Ecosystem Studies in Millbrook, NY shows that most rainfall events above 2 inches in a 24 hr period occur in the summer months. There seems to be a trend over the past ten years of more frequent storms above 2 inches with 12 storms from 2004 to present and only 9 from 1988 to 2003.

The SWPPP does not account for the effects of climate change as it is based on long-term historical data. It does not appear to account for the effects of multiple day storms and the accumulation of runoff into the detention basins. Can the plan handle a one two punch like Hurricane Connie and Diane delivered in 1955? How will it perform when heavy rains occur over frozen ground as in 2011?

The amount of runoff in a storm depends on many variables including soil infiltration capabilities, rate of rainfall, slope of the land, vegetative cover, impermeable surfaces, and many others. Silo Ridge proposes to build on steep slopes, cut a lot of mature forest, and has already altered native soil properties during golf course construction. Does the SWPPP take these existing and proposed changes into account?

The Planning Board has a serious responsibility to the residents of Amenia and Wassaic to do everything possible to keep runoff from the Silo Ridge project from damaging the downstream communities as well as the infrastructure and housing which will be built on the site. It must take into account the effects of changing climate. A wrong decision will adversely affect future generations. Can the applicant demonstrate that they can do this? Does the SWPPP adequately protect the environment and can it accommodate the changes that virtually every climate scientist is forecasting?

Eliminating the estate homes that are planned for the steep slopes along with the steep roads and driveways associated with those homes would help mitigate the potential for high intensity runoff. Another thing that could be implemented would be all of the green infrastructure ideas that are discussed in the SWPPP but have not been designed into the project.

David Reagon, CAC Chair
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