

Rhinebeck Village's Climate Vulnerability Planning as a Direct Result of Climate Change

Protecting our Drinking Water

Our Hudson 7 and Riverkeeper partnership resulted in recommendations to improve our stormwater policy in Rhinebeck Village. This partnership expanded our notion of the Hudson River to include surrounding tributaries and estuaries—all part of the ecosystem that feeds the Hudson River. Residents of Rhinebeck Village are part of this ecosystem: we take our drinking water from the river, and our effluents all eventually flow to the river. With climate change, increasing severity and frequency of storms and flooding impact the erosion of—and during events, overwhelm—natural and man-made structures through which effluents flow to the river.

The final report from the Hudson 7 research project with Riverkeeper recommended stormwater policy and permitting improvements.

Landsman Kill, Crystal Lake and Asher Dam

A Marist College research project made recommendations to the Village to mitigate flooding through natural plantings as well as adding a monitoring system to the Asher Dam.

The project also pointed out a need for policymaking in regard to stormwater.

Sea-level Rise Impacts on Water Infrastructure by Hudson River

Our Water Treatment Plant is located on the banks of the Hudson River. Firstly, we undertook a research phase, looking into the vulnerability of our drinking water infrastructure because of climate change. We are now at the next phase of the work to address those vulnerabilities and protect our Low lift Pump stations at the Water Treatment Plant from sea level rise. We approved a contract for \$24,000 for this project that included the installation of 4 flood vents in the lift station, building stands to elevate the vacuum pumps a minimum of 3 feet, replacing an existing sump pump, and refinishing the basement of the pump station with epoxy paint. Village Water Department employees are doing the painting. The project will come in below the budgeted amount.

One final piece: the climate vulnerability assessment has brought to light the risk to our drinking water because of sea-level rise and the encroachment of salt water further up the Hudson River. The salt comes north only during a drought situation. We've seen this as far north as the IBM plant, but never to the Poughkeepsie or Hyde Park Water treatment plants, which would impact those who get their water from the Hudson.

The drought situation would lessen the impact of the sea level rise, which is expected to be 17 inches when combined with a super storm event. It's been felt by the Hudson 7 committee that this risk of this salt water intrusion is less than other issues we are trying to tackle, such as the likelihood of an oil spill on the Hudson necessitating a coordinated recovery/containment response.

Future

The CSC Task Force would like to pursue a holistic approach to a vulnerability assessment.

Considerations may include how climate change could impact the village through:

- Oil spill on the Hudson from freight trains running along the river as well as tanker ships, and having a coordinated recovery/containment response.
- Salinity of drinking water due to sea-level rise
- Lyme Disease
- Tree loss
- Biodiversity loss
- Local farm loss and its economic impact
- Extreme heat and its impact on vulnerable communities such as the elderly