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Fall 12-13-2020

### NYC Communities Battle Flooding, But Not From Coastal Storms

Danielle C. Cruz

*Craig Newmark Graduate School of Journalism*

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By Danielle Cruz  
NYC Communities Battle Flooding, But Not From Coastal Storms

Even on days when the sun is shining and there are no clouds in the sky, Roger Gendron still checks multiple coastal flood advisory reports to see how much water he and the other residents of Hamilton Beach will have flooding their streets.

Gendron, who has been a resident of Hamilton Beach for over 58 years and is the president of the community's civic association, said that in the past 30 years he has seen flooding become a more frequent occurrence in the community.

The Hamilton and Howard Beach community, as well as other New York City coastal communities, regularly deal with "[sunny day](#)" flooding, or high-tide flooding, which is when ocean water rises, in the absence of a storm, and floods into nearby coastal communities.

While this has been an issue that coastal communities in the city have dealt with for decades, in recent years "sunny day" flooding incidents have increased due to [rising sea levels](#).

In some areas high tides can often cause flooding twice a day and in others, they can mean permanent inundation.

"Our issue, that we're seeing, is it's more of the sunny day flooding," said Gendron. "On a beautiful sunny day, no winds, nothing really odd and then all of a sudden, we'll get eight inches of water in front of the house or my block for no reason, absolutely no reason."

Even in communities not near the coast, like Park Slope, Flatbush and Borough Park, inland flooding has become a recurring issue with rain or ice-melting causing residents to deal with water throughout their streets.

Though the city has [recognized](#) the flooding happening throughout these communities, the de Blasio administration has continued to receive criticism for still focusing many of its mitigation efforts on flooding caused by storm surge and not putting forward enough initiatives to address other forms of flooding throughout the city.

"If you focus on them [the different types of floods] together, you might have a different approach than you would if you were just focusing on storm surge," said Kate Boicourt, the director of resilience at the Waterfront Alliance. "And our perspective was that we were sort of artificially biasing ourselves towards harder solutions and short-term fixes, rather than a more comprehensive integrated approach"

### **Sunny Skies with a Chance of Flooded Streets**

Nearly 1 million New York City residents live within the expanded coastal floodplain and are particularly vulnerable to coastal and high-tide flooding.

According to data collected by the National Oceanic Atmospheric Administration (NOAA), in the 1950's high-tide flooding was not a frequent issue in coastal communities and would normally only happen when there was a coastal storm or a hurricane. Then in 2010, as sea levels continued to rise, it became a frequent occurrence. High-tide flooding is now more than twice as likely to occur then it was in 2000.

A [report](#) released back in July by NOAA also found that sea level across the U.S coastline had risen to 0.34 meters in 2019, which was 1.5 inches higher than the sea level in 2018.

In Hamilton Beach and Howard Beach the water entering into their community comes from the Jamaica Bay estuary that the community sits next to. The high tide flooding is usually caused by the full-moon or shifts in wind or currents.

Residents say flooding in their community usually happens once or twice a month and can take anywhere from hours to days to drain completely from the streets, causing residents to have to tailor their life around the flood warnings they receive.

"Sometimes someone might leave for work early, because they know that the flooding might prevent them from getting out of their street or their house," said Dr. Brett Branco, the director of the Science Resilience Institute at Jamaica Bay. "They don't want to be late for work, so they'll leave early. So, it [the flooding] is deep enough to impact their lives and it also impacts city services. You can imagine how even sanitation trucks might have difficulty going down certain streets."

Kizzy Vazquez, a Hamilton beach resident who has been living in the community for 13 years, said she always has to plan ahead and leave at least an hour and a half before the high tide is supposed to come in if she wants to be able to leave her house.

Vasquez also said that the flooding and damp conditions often leave the walls within her house and other houses in the community tainted with black mold.

"There is always mold," said Vasquez. "I can spray bleach around and in 14 days, there will be new black mold growing. Mold is an issue and is constantly growing in the neighborhood."

In an effort to document the "sunny day" flooding occurring, residents in the coastal communities surrounding Jamaica Bay are members of the [Jamaica Bay Community Flood Watch Program](#).

The program is run through the New York Sea Grant, which is a statewide program dedicated to researching, educating and providing services for various coastal communities. Through the flood watch program residents living in the communities surrounding Jamaica Bay are able to submit photos and data of the flooding that is occurring on their block. The program hopes that this will allow researchers and local lawmakers to use the data to work with residents to create resilient flood mitigation plans.

“Part of the hope of flood watch is that it rebuilds communication,” said Katie Graziano a project specialist for the flood-watch program, “in a way that communities can advocate for the changes that they want to see using the data that they collect, and the city is really paying attention to that data and to the messages from the community. And it's not one-off engagement, it's like an ongoing process.”

In December the program partnered with CUNY’s Advanced Science Research Center’s (ASRC) Environmental Science Initiative to set up flood sensors around Hamilton Beach as they look to collect more electronic data on the high tides.

Dr. Ricardo Toledo-Crow, who runs the Next Generation Environmental Sensing Lab at ASRC and installed the sensors, said that the data collected will help them get a quantified sense of how the floods function and move throughout Hamilton Beach.

“So, we are measuring the height, the depth of the flood and we're measuring also the temporal aspect, so how high and how low it [the flood waters] goes over time”

Toledo-Crow said that so far they have installed two sensors in the community, with one sensor located at the Howard Beach Motor Boat Club and the second sensor located on Davenport Court. A third sensor is set to be installed at another time in one of the lots in the community.

(Click [here](#) to listen to Toledo-Crow explain more about the flood sensors that were installed.)

### **When It Rains It Floods**

On average New York City gets around 47 inches of rain and around 25 inches of snow a year. In some communities in Brooklyn the rain or melting snow will often cause entire streets to fill with nearly a foot of water.

New Yorkers in these community’s face flooding risks besides storm-surge flooding from coastal storms, or high-tide “sunny day” flooding. Fluvial, or riverine, flooding occurs when rain or water from ice causes a river to overflow into nearby roads and communities. Pluvial, or surface water, floods occur when rainwater has nowhere to go, causing it to continue gathering on the streets.

Areas like Borough Park are often hit with flash-flood warnings during heavy rainstorms.

On November 30, rain caused several streets in Borough Park to fill up with water, prompting local officials from Borough Park and the surrounding communities to write a letter to DEP Commissioner Vincent Sapeinza on Dec. 8. The letter called for the DEP to address the inadequate drainage system that is causing these areas in Brooklyn to flood.

“The city has abdicated their basic responsibility and as a result every time it rains the streets flood,” said state assembly member Simcha Eichenstein, who was one of the officials who signed off on the letter. “This is incredibly dangerous for the elderly and for the kids in the

community. The DEP needs to address this issue that has been repeatedly brought to their attention.”

Inland flooding during storms can often be caused by a variety of reasons, said Edward Timbers, a spokesperson for the Department of Environmental Protection (DEP). Either the catch basins have been clogged with debris or the sewers and storm drains have been overwhelmed with the amount of rainwater they are receiving.

In areas like Park Slope, an inadequate drainage system in the area causes the streets to flood, especially at the intersection of Carroll Street and Fourth Avenue, which tends to collect more rain since it is the lowest point in the area.

Back in July of 2019, a flash flood caused Carroll Street and Fourth Avenue to flood with rainwater that reached up to the hood of some cars in the neighborhood.

Now the DEP said the community is slated to get their drainage system updated so that a flood like that does not happen again.

### **NYC Resiliency Initiatives are a Start but Not Enough**

The city is in the midst of changing where runoff rainwater goes when it enters catch basins and storm drains. In the 60 percent of the city that uses a combined sewer system, basins and drains connected to the sewer line are often unable to hold any excess water when there is heavy rain. This also often causes the flood water to be a mixture of wastewater and stormwater when it overflows.

Communities like Rosedale, Jamaica, Laurelton, and Springfield Gardens are a part of the city’s \$1.9 billion investment in upgrading the drainage system in Southeast Queens. The DEP said they are positive that once the construction of the new system is done it will alleviate flooding in the area.

The upgrade includes nearly one mile of new storm sewers and 115 feet of new combined sewers across 27 blocks. It also included the replacement of 2,050 feet of combined sewers, the replacement of 39 catch basins and the installment of 10 new catch basins.

Meanwhile, communities like Park Slope were included in the city's Bioswales, or rain garden, installation project which is part of the city's \$1.5 billion investment in green infrastructure.

Bioswales are rain gardens that are built into the sidewalks and are designed to absorb up to 2,500 gallons of stormwater when it rains. Each bioswale is about five feet deep and is built using plants that absorb a lot of water as well as use spaces within the soil and stone to hold stormwater. So far, the city has installed over 4,000 rain gardens throughout the five boroughs.

However, Boicourt said that the two projects by themselves are not enough to help communities struggling with flooding and that instead there needs to be a cohesive medley of projects to address the issue.

While the city does have a slate of green infrastructure projects in the works, Gendron said that within his community he has not seen the city take the necessary steps to make sure that the whole community is protected from high-tide flooding.

“The vulnerability of Hamilton Beach and Howard Beach and pretty much all of Jamaica Bay really has not changed,” he said. “Sure, there have been some street raising projects, which is wonderful, for those streets, but for the most part, nothing has changed.”

The elevation of the streets, Gendron said, doesn’t really do anything to stop or address the water that is entering the community from Jamaica Bay. It just makes sure that the cars in the area are above the water during the high tide.

Many of the houses in the community are also still not elevated. While some were able to get elevated through the Build It Back Program, Gendron said, many homes either didn’t qualify for it or dropped out before the construction could happen.

The Build It Back program, which was implemented after Sandy, is a \$2.2 billion program that is funded through the federal Community Development Block Grant Disaster Recovery Program. Build It Back was meant to use federal funds to assist residents impacted by Sandy with recovery, repairs and or storm-proofing homes.

However, the initiative has largely been viewed as a failure with more than half of the applicants dropping out before getting any of their benefits. Poor management and delays also caused the program to end up costing more than the \$2.2 billion they were allocated.

### **Floodplain, Flood Insurance and Help on the Federal Level**

As the floodplain expands with sea level rise, more residents are now being required to have flood insurance for their property.

Ninety-six percent of all flood insurance in the U.S is provided through the Federal Emergency Management Agency’s (FEMA) National Flood Insurance Program (NFIP) which [collects](#) about \$3.5 billion annually in premiums.

There are 23,000 communities within NFIP’s jurisdiction. The homes and businesses that reside within high-risk flood areas, have federally backed mortgages or participated in the [Build it Back Program](#) are all required to have flood insurance.

“Flood insurance for some is astronomical. It really is. Some people are paying upwards of \$5,000 for their flood insurance premium,” said Boicourt.

According to FEMA the average nationwide premium is \$700 per year, but the rate depends heavily on the location and build of the property According to [data](#) collected by Policygenius in New York the average flood insurance premium is \$1,154.84.

The [Water Resources Development act of 2020](#) (WRDA) was approved by the House on July 29. If passed by the Senate the act will include at least \$8.6 billion in federal funds for about three dozen Army Corps of Engineers projects and provide funding for more engagement focused flood projects.

"We need a coastal risk study of the region," said Boicourt. "We need to make sure that it's comprehensive, which I'll get into, and we need to make sure that the way that infrastructure is decided on includes a bit more engagement than just a few hundred people."

If passed WRDA would allow for the expedition of a feasibility study for a project that would prioritize ecosystem restoration as well as hurricane and storm damage risk reduction in Howard Beach.

The act will also provide funding, if passed, to continue the NY & NJ Harbor & Tributaries Focus Area Feasibility Study that was indefinitely postponed earlier this year due to budget shortfalls.

The study, which was started in part as a response to the damage caused by Sandy, was looking into ways to stop storm surges from destroying coastal communities if another storm of that strength were to happen again.

When the Army Corps of Engineers first revealed their five proposed storm surge mitigation projects, many local environmental organizations felt that the study should focus not only on storm surge but rather on all types of flooding and that the proposed projects would not be effective against daily flooding and sea level rise.

One of the proposed plans was a \$119 billion, six-mile-long wall that could be closed if a storm were on its way.

Gendron said he was opposed to the idea of a wall because he felt that they would not be used to protect communities dealing with monthly high-tide flooding and did not take into account other forms of flooding caused by sea -level rise.

"You're not gonna close down one of the world's busiest shipping ports because Hamilton Beach is going to get flooded," said Gendron

If WRDA is passed the feasibility study will not only get funding but require the study to be modified and include proposed projects that evaluate and address the impacts of sea level rise and low-frequency precipitation.

For now, with no flood mitigation plans ready to be implemented, some residents said they know they'll have to continue tailoring their life around the high tide for more years to come. NOAA predicts that by 2030 that coastal communities will be dealing with high-tide flooding for seven to 15 days out of the year; by 2050, it will be a factor on 25 to 75 days annually.

“I feel like the water is like this rude neighbor,” said Vazquez. “So, you get used to living with it, but it's definitely not normal.”