



FloodNet NYC

A Network for Real-time Urban Flood Monitoring and Community Resilience

FREQUENTLY ASKED QUESTIONS

Mission

FloodNet's mission is to develop tools for real-time urban flood monitoring, implement these tools to measure flooding in New York City, and make flood data and monitoring tools available in a manner that is accessible and useful to stakeholders including residents, community-based organizations, government agencies, and researchers.

The FloodNet team is composed of researchers and practitioners at New York University, the City University of New York, and New York City government agencies working in collaboration with stakeholders to collect and share data that contribute toward flood risk mitigation and building community flood resilience.

When did FloodNet NYC begin?

FloodNet began in 2020 as a partnership between academic researchers at New York University (NYU) and City University of New York (CUNY), and NYC agencies, including the Mayor's Office of Climate & Environmental Justice, NYC Department of Environmental Protection, and NYC Office of Technology & Innovation. Together, the group works with various stakeholders and in consultation with community organizations to monitor hyperlocal street-level flooding in NYC.

FloodNet team members are also involved in other programs like the [Community Flood Watch Project](#), led by the Science and Resilience Institute at Jamaica Bay and New York Sea Grant. Flood Watch helps residents carefully document flooding in their neighborhoods, tracking where it happens, its causes, and its impacts. This program not only helps communities better understand the flooding issues they face, but also helps them communicate the impacts that they are experiencing with city, state and federal government representatives.

How do the flood sensors work?

FloodNet sensors provide real-time information about flooding, including the presence, frequency, and depth of hyperlocal street-level flood events. The sensors use ultrasonic technology to collect depth measurements every 1 minute and transmit the measurements wirelessly to our servers. Flood data is publicly accessible, and displayed on the [FloodNet data dashboard](#) in real-time. The sensors operate independent of existing power and networking infrastructure. The information the sensors collect can help residents make critical decisions during events such as which streets are safe to use, and whether or not their home will be impacted by flooding.

How are locations for flood sensors determined?

Working in collaboration with DEP, our primary funder, academic collaborators at NYU's Center for Urban Science and Progress and NYC residents, FloodNet determines locations for flood sensors in flood-prone areas across all 5 boroughs of New York City. A fraction of flood sensors are installed according to requests from DEP and other NYC agency partners. NYC residents inform our team's



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understanding of locations by submitting their suggestions through a suggestion form (<https://arcg.is/0vGbmW>). Academic collaborators engage in an ongoing census tract scale analysis of flood hazard, exposure, and vulnerability that can inform decisions about flood sensor location over the coming years.

I don't see a sensor in my neighborhood. Will more sensors be added in the future?

FloodNet will continue to install more sensors throughout NYC over the next few years, as we work to meet our goal of approximately 500 sensors deployed by the end of June 2027. There are many factors that determine how quickly the team can get new sensors installed. These include the time it takes to build sensors, learn about optimal locations to install sensors, and engage with the local community to build relationships and share knowledge.

How do I use the FloodNet Data Dashboard to understand recent flood events?

All FloodNet sensor data can be viewed publicly on our data dashboard (<https://dataviz.floodnet.nyc/>). The dashboard landing page illustrates where all FloodNet sensors are located, as well as the values of the depth measurements each sensor is taking in real time. Users can click on a sensor icon to view and interact with data from that sensor. There is also a 'list' view, accessible from the dashboard landing page, where users can scroll to view recent data from all flood sensors. List view is a useful tool for identifying locations that have flooded in the 48 hours following a flood event.

How can New Yorkers utilize FloodNet sensor data?

Flood sensor data have multiple potential uses including:

1. informing potential road closures or travel bans and alerting drivers to avoid flooded and dangerous streets;
2. alerting communities to the need for emergency preparedness and response;
3. informing city agencies of locations that are flooding in real-time to inform localized flood response;
4. identifying areas the most urgently in need of post-storm assistance;
5. validating existing flood models (stormwater model and future flood models); and
6. informing stormwater and tidal flooding resiliency planning.

Our hope is that access to our openly available flood sensor data can be useful to, not only city agencies, but also community residents, organizations, and coalitions in understanding how flooding impacts their neighborhood, exploring how flooding is connected to other relevant community issues, and creating action strategies in response to the two. Community input and engagement with this project, as a result, is central to its success but, more importantly, to its ability to foster sustainable impact within communities most at risk.

Why should I care about NYC flooding now?

Extreme flooding events like Hurricane Sandy in 2012 and Hurricane Ida in 2021 can be very costly in terms of property and infrastructure damage, and unfortunately can also be deadly. They reveal our biggest weaknesses when it comes to flooding. NYC has responded to these extreme events in



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a variety of ways. For example, the current expansion of the FloodNet program was motivated in part by the lessons learned from Hurricane Ida. However, many people are affected by the more frequent but less widespread flooding that comes with smaller storms and sunny day flooding. We need to better prepare for and adapt to these events as well.

What are some common ways flooding can occur in the city?

The simplest way to think about the ways that the city can flood is that the water most often can either come from the sky or from the water bodies surrounding our city of islands. When it comes from the sky (i.e. rain), it can accumulate in the city faster than it can drain out through our stormwater drainage systems. We often call this stormwater or pluvial flooding. During coastal storms (e.g. hurricanes, tropical storms, Nor'easters), water from the ocean can surge towards the land and come up and over the coastline due to winds and other forces. We refer to this as coastal flooding from storm surge, and Hurricane Sandy represented an extreme case of this. Low lying coastal areas can experience high tide coastal flooding due to higher than average high tides during full and new moons even in the absence of a storm. We often call this “sunny day flooding” or “king tide flooding”. Sometimes, storms and higher than normal high tides can occur at the same time making coastal flooding more severe.

If I want to learn more about flooding in New York City, where can I look?

Our partners at the Community Flood Watch Project have collected resources and information about flooding in NYC on their [website](#), including information about emergency preparedness, hurricane evacuation zones, and future flood risk for different neighborhoods around NYC.

How can I get involved with FloodNet NYC?

We are consistently searching to build deeper relationships with communities across the city through presentations, community meetings, workshops, community walkthroughs, community feedback on the project and sensor placement, as well as other community-building efforts. If you or someone you know is interested in contributing to the FloodNet project, you can visit our website, floodnet.nyc, or email us at info@floodnet.nyc.

If you're interested in volunteering, we are always looking for help documenting flooding in NYC. Help our partners at the NYC Community Flood Watch Project track where flooding happens by submitting photos to the MyCoast NY website or mobile app ([linked here](#)). Your photos will educate residents, researchers, and government agencies about where flooding occurs — and what it looks like on the ground — to help everyone prepare for future flood events.