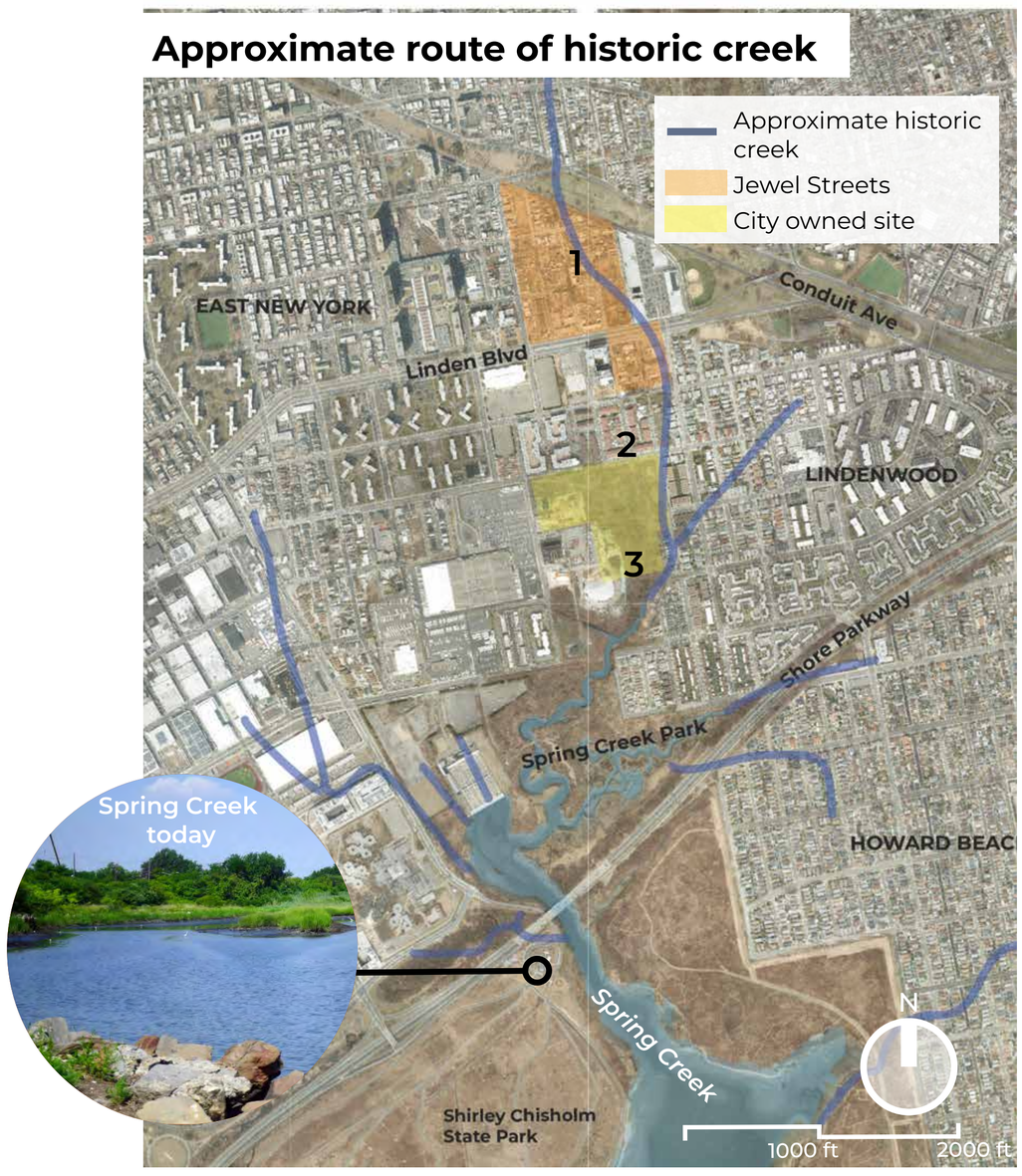
Why do the Jewel Streets flood?

Residents of the Jewel Streets are well aware of how bad the flooding is in the neighborhood. But why does this area flood? And why does it take so long for water to clear from the streets after it rains?

A historic waterway

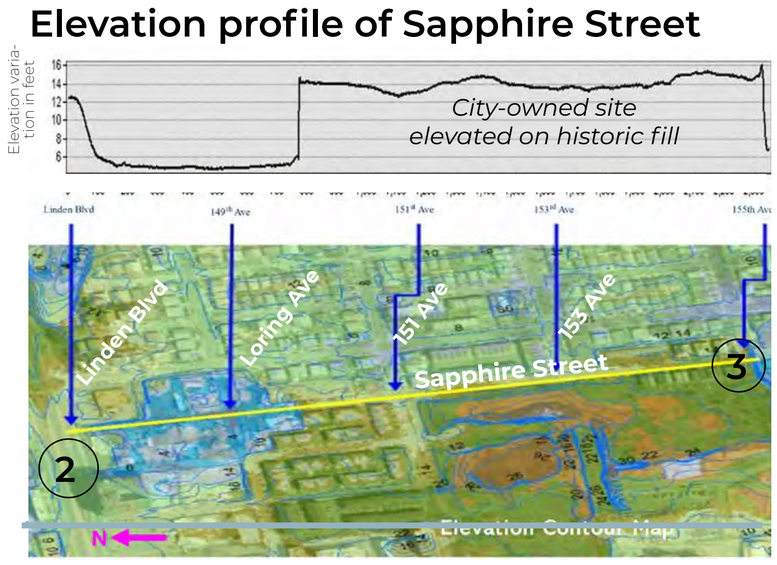
Approximate route of historic creek



The Jewel Streets are built on top of a historic creek that ran to Jamaica Bay 100 years ago. This area is low-lying compared to surrounding neighborhoods and has a high water table. The high water table limits what can be constructed below ground and also means water can't easily drain through the soil, resulting in water collecting and pooling on the ground.

Flooding on Amber St.

Elevation profile of Sapphire Street



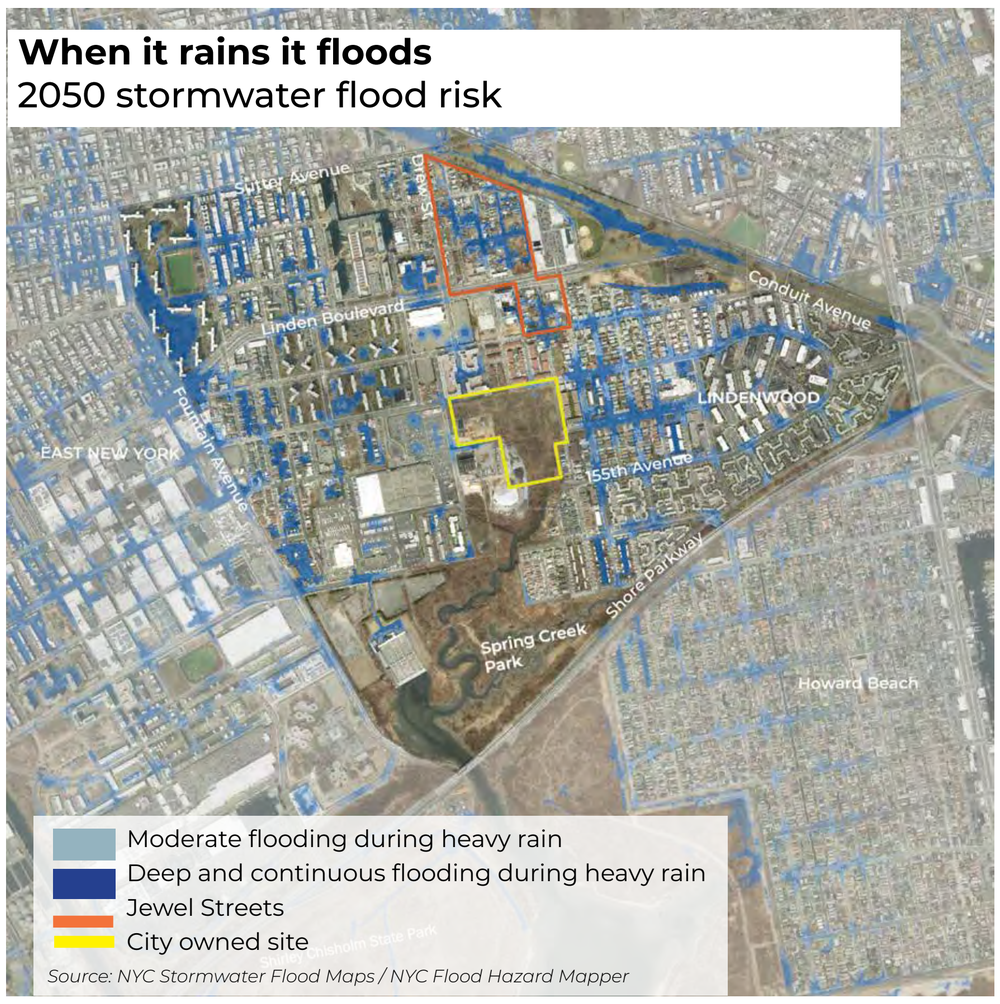
The low-lying nature of the historic creek can be seen on Sapphire Street between Linden and Loring. Higher ground areas are built on top of fill

Flooding and climate change

Flooding from rainfall and coastal storms is expected to worsen due to climate change. We need to consider climate conditions of today and what is to come when planning for the future

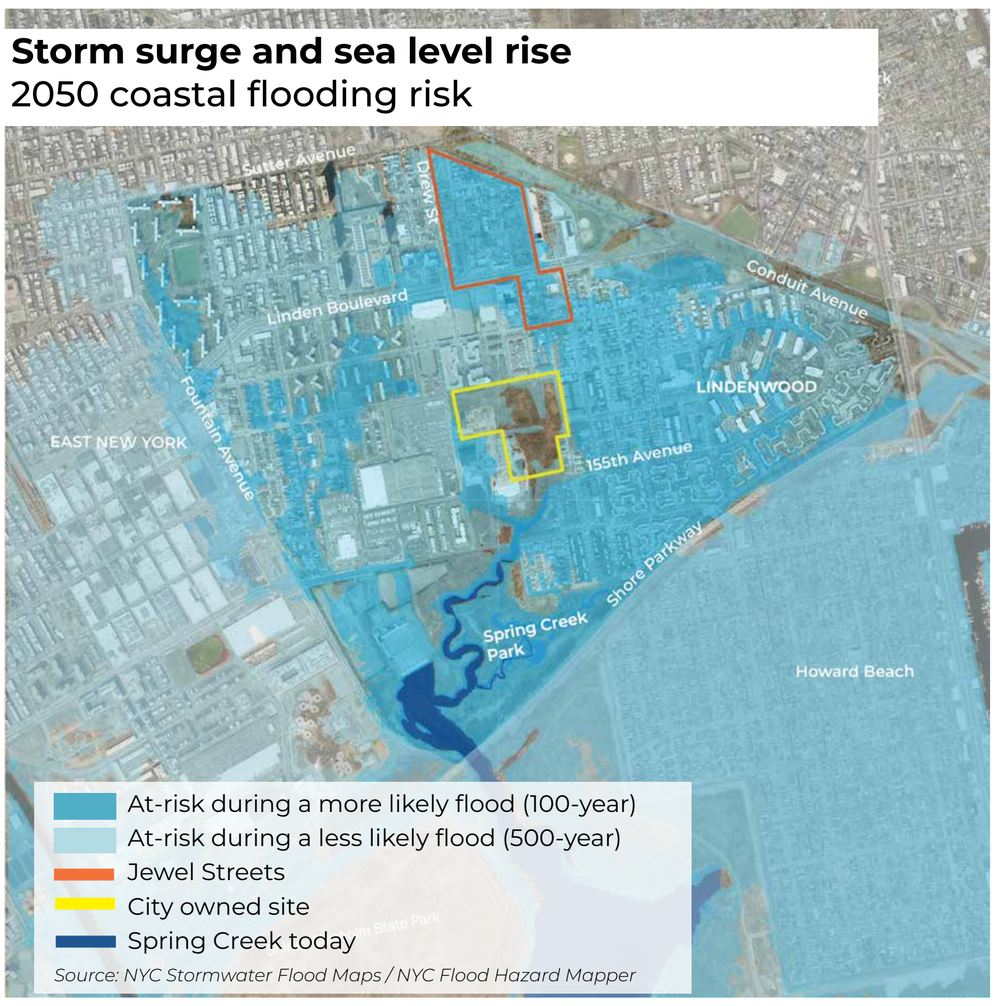
Are you a homeowner in an area at risk of flooding? Check out **FloodHelpNY.org** *to learn how you can protect your home and finances from flooding.*

When it rains it floods
2050 stormwater flood risk



Source: NYC Stormwater Flood Maps / NYC Flood Hazard Mapper

Storm surge and sea level rise
2050 coastal flooding risk



Source: NYC Stormwater Flood Maps / NYC Flood Hazard Mapper

Who in your community is particularly vulnerable to flooding?
How do you support your neighbors when it floods?

What we've heard

Community members have organized around the infrastructure and environmental justice failures in the neighborhood. The city is hearing these calls to action and working to make the neighborhood a resilient, healthy place to live. Below are key infrastructure and quality of life issues we have heard about from residents and how the city is responding.

- Flooding in streets and homes is a major issue in the Jewel Streets, both north and south of Linden Boulevard
- Standing water is an issue because flood water is slow to drain
- Residents have experienced unsanitary living conditions due to sewage backups
- Residents want to see short- and long-term solutions to flooding
- Solutions to flooding might include investments in additional stormwater and sewer infrastructure
- Some residents are concerned about how new infrastructure would affect existing buildings

Do you share these experiences? Anything else we should know?

What we've done and what we're doing to address...

Flooding

Short term: DEP installed shallow pipes to gradually drain away standing water at intersections along Dumont (north of Linden) and Loring (south of Linden).

Long term: Agencies are developing long term strategies to address flooding

Septic systems

HPD has issued violations when residents report unsafe or unsanitary housing conditions.

DEP exploring the possibility of installing sewer lines in parts of the neighborhood that currently rely on septic systems.

How does flooding affect how you experience and get around your neighborhood?

NYC's *Flooding* Toolkit

What is Green Infrastructure?

Green infrastructure is a way of managing storm water naturally. These strategies direct water so it can naturally return to the ground

What is Grey Infrastructure?

Grey infrastructure includes traditional methods of moving stormwater, such as curbs, drains and pipes

Green infrastructure








Gray infrastructure

Open Space/ bluebelt

Bluebelts are streams, ponds, or wetlands that use natural water systems and native plants to reduce flooding, improve water quality and create habitat for wildlife.

Bluebelts can also provide green space to the surrounding community.

The City has built more than 70 Bluebelts across Staten Island and Queens.

Daylighting historic waterways

Some historic streams were piped into NYC's sewer system. "Daylighting" brings these streams aboveground and restores them to a more natural state.

This can increase sewer system capacity, manage local flooding, and provide places for the public to enjoy.

The City is working to daylight parts of Tibbetts Brook in the Bronx that have been piped underground for more than a century.

Rain gardens or porous pavement

Rain gardens are planted areas designed to collect and manage rain that runs off concrete or asphalt, like streets and sidewalks.

Porous pavement is special paving material that allows rain to seep through directly into the ground where it can filter into groundwater.

Rain gardens are located in city streets all over NYC, including along Conduit Avenue, and on playgrounds, like the rain garden installed at NYCHA Pink House's playground. Porous concrete is used at the nearby Belmont Playground around the spray showers.

Voluntary Buyouts

Voluntary buyouts may be an option for repeatedly flooded properties where there are limited alternatives to address flood risks. Sites may be publicly acquired and then used for green infrastructure, open space, or storm resilient housing.

After Hurricane Sandy, some homeowners in Brooklyn, Staten Island and Queens were able to voluntarily sell their flood damaged properties to the City, State, and federal government.

Retrofitting existing homes

Some building improvements can reduce flood risk and minimize damages after a storm. Strategies can range from lower-cost options, such as elevating a boiler or installing tile, to more complex projects such as home elevation.

After Hurricane Sandy, many impacted homes and apartment buildings citywide were retrofitted to be more resilient during future floods.

Underground storage

Underground storage tanks can temporarily hold stormwater. These tanks help manage the flow of water entering the city's sewer system during heavy rain events. This strategy is most effective in areas with larger sites, significant stormwater flooding and limited drainage capacity.

Underground water storage has been installed at NYCHA Pink House's playground and under new development on Linden Boulevard.

New storm sewers

New storm sewers can receive stormwater from the surface, divert it from wastewater treatment facilities, and move it through pipes directly to nearby waterways. This can prevent street flooding and sewer backups.

New sewers were recently installed in Canarsie to expand sewer capacity.

Street raising

Where there are low-lying conditions and a high water table, it may be necessary to elevate streets to prevent flooding.

In some cases, elevated streets may be higher than entryways to existing buildings.

Some streets in Broad Channel were elevated to address flooding.

Have you seen green infrastructure in the neighborhood?

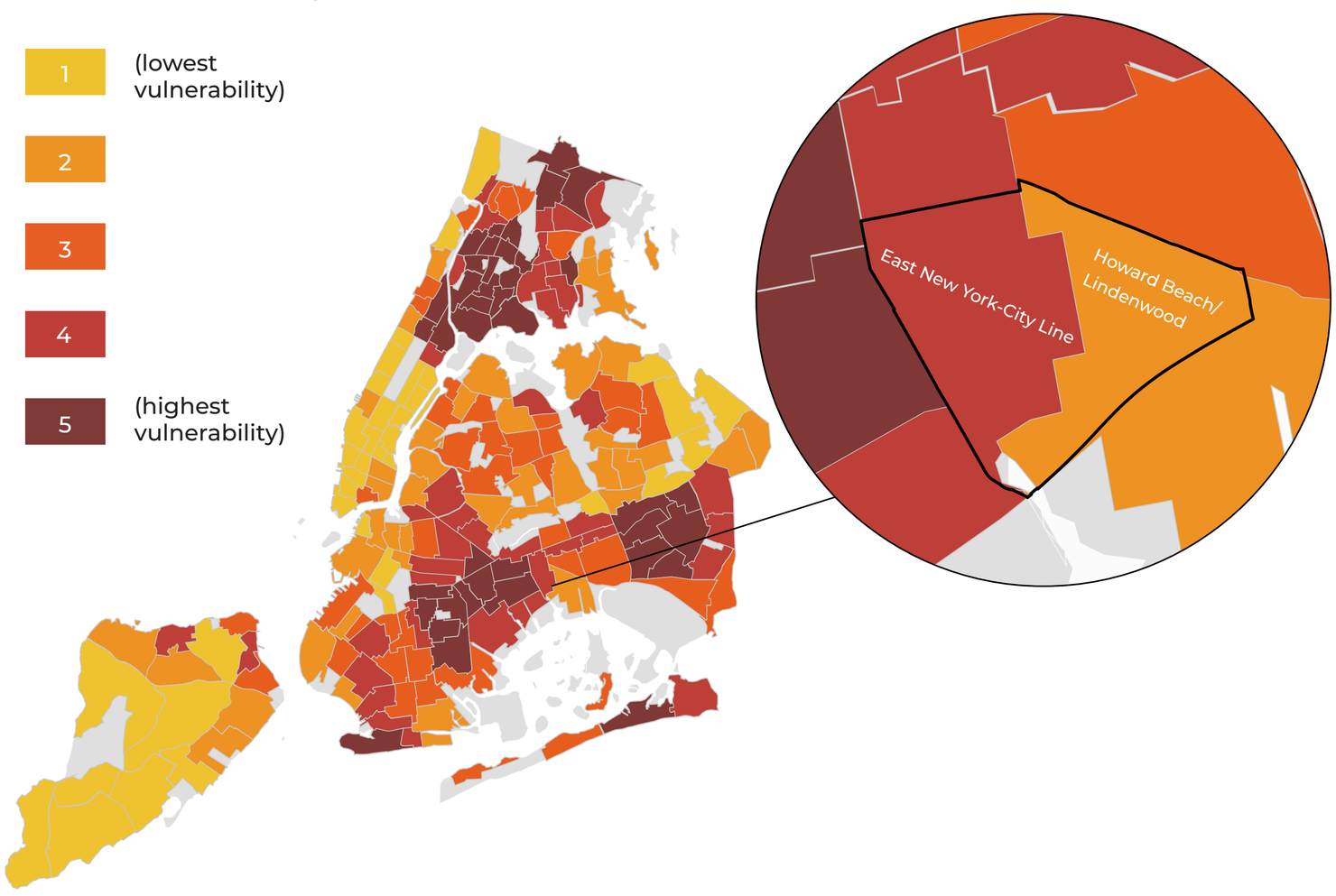
Do you have any questions about these tools?

How does heat affect the Jewel Streets?

Hot weather can be dangerous. In New York City - and across the country - more people die from heat than from other natural disasters combined. As our climate continues to warm, we expect more heat events that can put people's lives at risk.

Existing climate risks

Heat Vulnerability Index



In New York City, the risk of death from heat is not fairly distributed across neighborhoods. The Heat Vulnerability Index (HVI) shows neighborhoods whose residents are more at risk for dying during and immediately following extreme heat. Factors included in the HVI are:

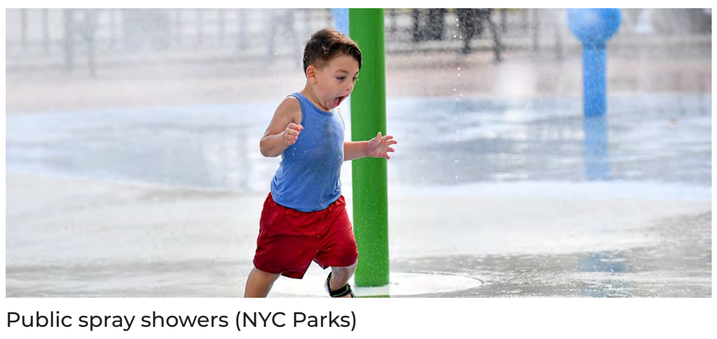
- surface temperature,
- green space,
- access to home air conditioning, and
- percentage of residents who are low-income or
- non-Latinx Black.

All neighborhoods have residents at risk for heat illness and death. A neighborhood with low vulnerability does not mean no risk.

Interactive heat vulnerability index. Environment & Health Data Portal (nyc.gov)

Existing neighborhood resources

The NYC Parks CoolIt! Map shows places across the city to hydrate, refresh, and find shade during hot weather. CoolIt! NYC is a Citywide plan to increase the amount of cooling features available to the public during heat emergencies, particularly in neighborhoods facing the dangers of high heat.



Public spray showers (NYC Parks)

CoolIt! NYC (nycgov-parks.org)

Public Spray Showers and Tree-lined Streets

What we've heard

- Residents want to see more green space in the neighborhood, including more trees
- Residents feel there are very few parks, greenery, and areas for recreation

Is this your experience? Anything else we should know?

NYC's *Heat* Toolkit

Street trees/ tree cover map

Tree canopy is especially effective at cooling neighborhoods as temperatures rise. Trees also intercept and help retain stormwater. The City prioritizes planting street tree in high heat vulnerability areas.

Public water features

Pools and spray showers in parks offer a fun way to cool down when temperatures are high. Staying hydrated is also important, so there are thousands of drinking fountains located in parks across the city.

Cooling centers

Cooling centers are air-conditioned, public facilities that are activated when a heat advisory is in effect.

A/C at home: HEAP Program

Air conditioners are critical when temperatures are high. In NYC, eligible households can receive a free Air Conditioner once every five years through the Home Energy Assistance Program (HEAP).

Green roofs

Green roofs have vegetation that absorbs stormwater, provides insulation and combats the heat island effect, where urban environments can be warmer than surrounding areas.

Cool roofs

Through application of a reflective coating or white paint, cool roofs reflect sunlight to keep buildings and their surroundings cooler. The NYC cool roofs program provides New Yorkers with paid training and work experience installing energy-saving reflective rooftops.

What parts of the neighborhood feel the hottest?

How do you stay cool during the hot months (i.e., A/C, fan, spending time in water, traveling out of the city, etc.)?

Do you worry about your energy bills during hot months?

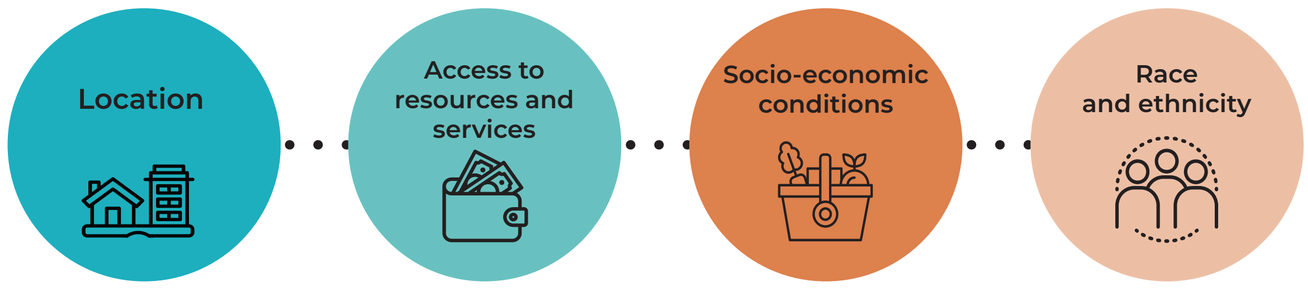
Emergency Response & Social Resilience

New Yorkers are affected by climate hazards in different ways and need to be prepared for all types of emergencies: hurricanes, extreme heat, and flooding. Being able to respond in the face of an emergency requires knowing your risks and having a support network, an evacuation plan, and emergency supplies.

Climate risks are not felt equally across New York City

A New Yorker's ability to prepare for an emergency and recover quickly relates to the place they live and circumstances of their daily lives. Populations that have been excluded or marginalized based on their race, income or ability are more vulnerable to climate impacts.

To learn more about the different risks in your community and the actions that can reduce the potential risk of being affected in the future, visit
nychazardmitigation.com/cradashboard

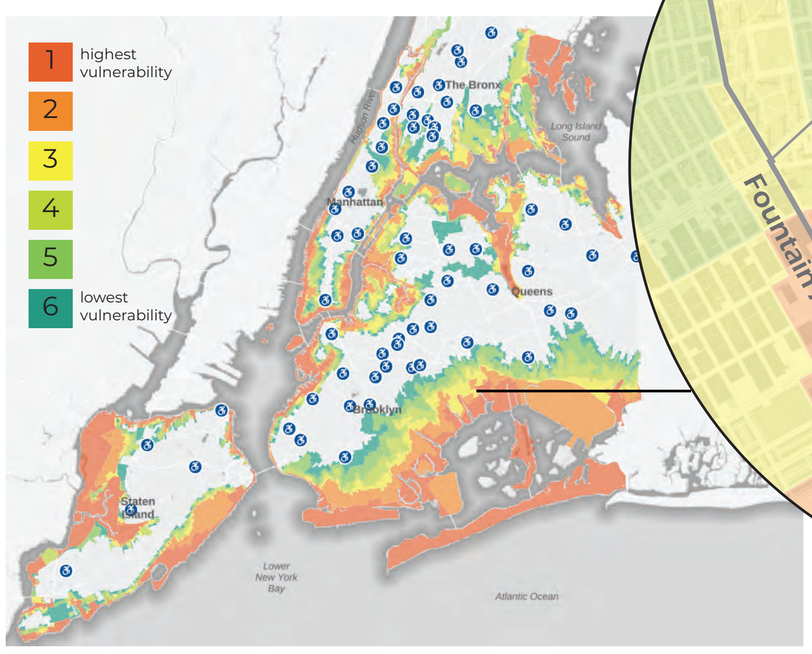


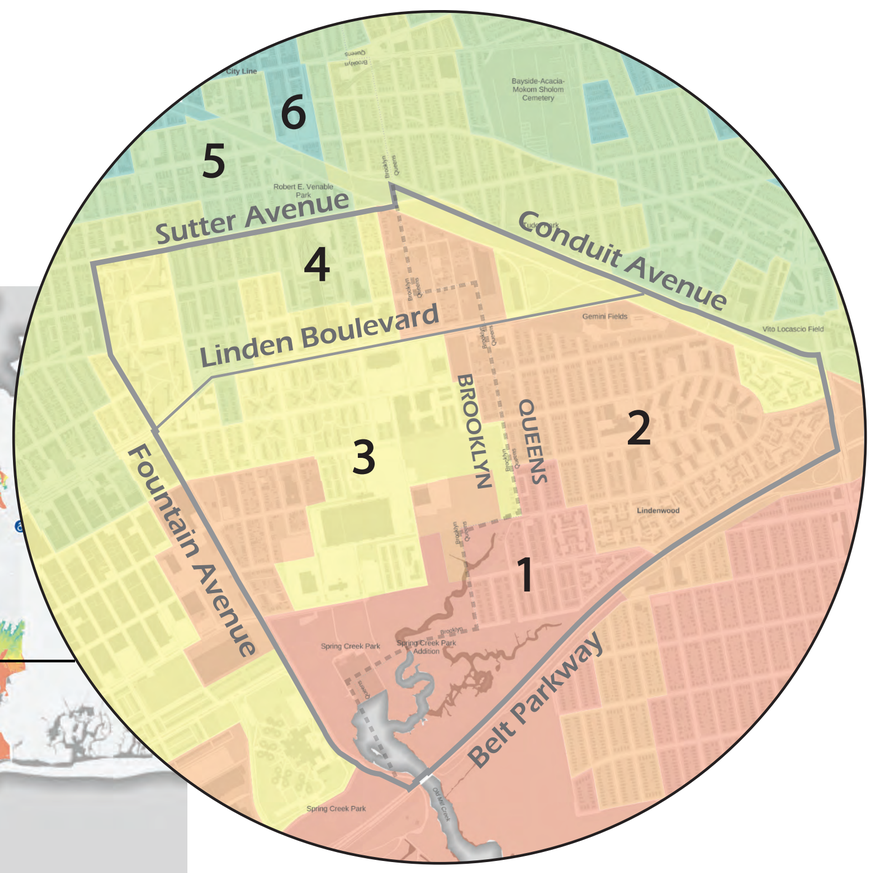
Vulnerability to climate risks is impacted by multiple factors

Hurricane Evacuation Zones and Centers

Evacuation Center

Accessible Evacuation Center





Jewel Streets Study Area

Existing neighborhood risks

Coastal parts of New York City face the highest risk of being affected by hurricanes. Hurricane evacuation zones range from 1 (highest risk) to 6 (lowest risk).

The Jewel Streets Planning area includes Zone 1 closer to Jamaica Bay up through Zone 4 in the northern part of the area by Sutter Avenue. There are no evacuation centers in the study area.

To be prepared for a possible hurricane evacuation:

- Know your evacuation zone
- Plan your destination and travel routes with time

To find out if your address is in an evacuation zone, visit
maps.nyc.gov/hurricane

What we've heard

- More community spaces for gathering are needed, especially since the multiplex closed.
- Mental health resources are desired and need to be more accessible to residents
- A resilience hub could provide critical help to residents during storm
- Bus service can be inconsistent and better transit access could help with evacuation.
- Seniors, people with disabilities, unhoused, and unemployed residents are the most in need of City services in the neighborhood
- Incarceration rates in East New York are really high
- It's hard to raise kids as a single parent

Is this your experience? Anything else we should know?

NYC's *Emergency Response & Social Resilience* Toolkit

Prepare New Yorkers for emergencies

Ready New York is a campaign to educate the public about the hazards we face in NYC and how to prepare for all types of emergencies. The City can send experts to educate the community about preparing for emergencies.

How can you be prepared for an emergency?

1. Write an emergency plan
2. Choose a meeting place
3. Gather supplies for your home
4. Prepare a Go Bag

Sharing good info quickly during an emergency

Notify NYC is NYC's official, free emergency communications program. Every New Yorker should sign up to stay informed during an emergency.

Many New Yorkers live close to the water and may need to evacuate during a hurricane. **Knowing your hurricane evacuation zone** in advance can prevent stress and evacuation delays if you are asked to evacuate because of an incoming hurricane or coastal storm. Evacuation depends on the hurricane's track and projected storm surge.

Resilience hubs

Resilience Hubs are existing community spaces protected from climate hazards such as flooding, heat, and power outages. They have resources like backup power, reliable heating and cooling, charging stations, and medical refrigeration to serve communities before, during, and after emergencies.

Where do you get information about emergency events (ie. storms, hurricanes, heat waves, etc.)?

What social networks or community groups are you a part of (cultural, religious, etc.)?

Do you feel connected to your neighbors?

Where do you go when there is an emergency?

Who do you rely on during emergencies?

NYC Housing Preservation & Development | Office of Neighborhood Strategies

Jewel Streets Neighborhood Plan