

# CREATING ACCESS TO RESILIENCE

## RESILIENCE RETROFITTING PROTECTS COMMUNITIES AT AN ACCESSIBLE SCALE



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Hurricane Sandy exposed New York City's coastal vulnerability as catastrophic flooding flowed deep into waterfront neighborhoods in all five boroughs. Hurricanes Ida and Henri were different. Their destructive power came not from the sea but from torrential, devastating, unprecedented rainfall. That rainfall went beyond submerging homes, streets, and vehicles, it overwhelmed our 20th century stormwater infrastructure sending water and sewage shooting out through drains and fixtures. These storms, particularly Ida, demonstrated the importance of resilience across the boroughs. While large-scale government-led infrastructure upgrades are in dire need, the city also requires a network of smaller-scale solutions at the building and neighborhood-level.

New York City has options for small-scale interventions to retrofit buildings and properties for higher resiliency. At an individual building level, critical mechanical and electrical systems can be moved to higher floors and potential penetration points for water like utility hook ups can be sealed. Investments in green infrastructure at the building scale can reduce the burden on the stormwater system. Green roofs, holding tanks, porous surfaces and landscaping, and filtration systems can reduce or eliminate runoff that would otherwise flow into traditional stormwater infrastructure.

Much more can be done at the building-level scale. Programs to upgrade the existing building stock have largely focused on carbon emissions, an important but fundamentally different goal.

There is substantial value in a city-wide climate resilience retrofit incentive program to facilitate meaningful change at-scale. The City and State's climate responses must include incentives, grants, and loans that support resilience retrofitting by property owners. This would enable individual building owners to enact changes that benefit not only their property, but their neighborhood more broadly. This adaptation policy would also provide new green construction jobs and workforce opportunities, along with critical flood protection.

The incentive program has precedent. With the recent enacting of Local Law 97, the City created loan programs and technical assistance to incentive property owners to install solar panels and other energy efficient adaptations. NYSERDA's Commercial Property Assessed Clean Energy (PACE) program provides financing for renewable energy upgrades for commercial properties and the NYC Accelerator provides guidance to building owners for compliance with Local Law 97. Expanding programs like these to include flood resilience and residential properties creates

a toolkit that will increase tactical uptake of resilience projects. Addressing environmental injustices and past disinvestment should be central to the program’s funding structure to ensure protection in the most vulnerable communities.

The Waterfront Edge Design Guidelines (WEDG) developed by the Waterfront Alliance are a powerful tool for communities and landowners alike to build resilience into projects. While designed for the waterfront, WEDG’s strategies for reducing stormwater quantity, improving stormwater discharge quality, establishing preparedness plans, and reducing the risks brought on by climate change are applicable across the city. Credits in WEDG reward designs that use green infrastructure to manage the additional stormwater runoff expected with increased and more intense episodes of precipitation. For example, high on-site precipitation capture in the form of backflow prevention devices or retention basins for stormwater capture and infiltration or re-use. WEDG offers best practice design solutions that go beyond municipal code to protect neighborhoods. The guidelines offer a blueprint for resilience solutions that can apply across a broad swath of the city.

## **“ THE CHALLENGE IS NOT ABOUT TECHNOLOGY, BUT ABOUT POLICY AND PRIORITIES”**

Recent storms brought the city’s vulnerabilities to the forefront. The technical solutions, whether they are capacity upgrades to the City’s stormwater system or resilience retrofits for buildings, exist. The challenge is not about technology, but about policy and priorities. Creating a climate resilience retrofit incentive program is a critical means by which we can equip individual property owners to strengthen their communities.