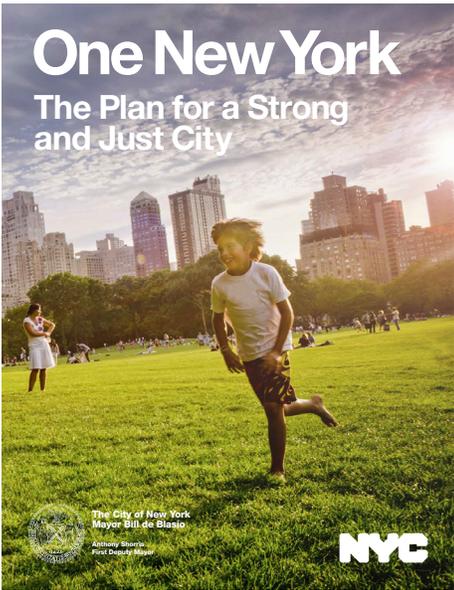


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Planning Context and Recent Initiatives

New York City's population has steadily increased in recent years, exceeding 8.5 million residents in 2016 for the first time in the city's history. The post-recession economy has also been expanding rapidly, with a staggering 600,000 private sector jobs added between 2010 and 2016.⁷ Economic growth citywide is supported in many ways by industrial areas that contain private enterprise that facilitates the movement of goods and much of the critical infrastructure on which the city depends. To sustain this overall economic growth, the city has advanced a number of planning initiatives to support vibrant and healthy industrial activities. At the same time, a recognition of the vulnerabilities of much of the city to flooding, coastal storms, and climate change has led the City to embrace resiliency planning and promote strategies to reduce risk through several initiatives. The following chapter summarizes key planning efforts and programs that enhance the ability for industrial businesses in the floodplain to reduce disruptions.



PlaNYC

The 2007 release of “**PlaNYC: A Greener, Greater New York**,” established the City’s first sustainability strategy and became a model for other large global cities. In addition to programs aimed at reducing greenhouse gas emissions, the initiative strengthened the City’s commitment to addressing aging infrastructure, launching brownfield cleanups, and improving air and water quality. The 2013 update following Hurricane Sandy, “**PlaNYC: A Stronger, More Resilient New York**,” laid out a strategy for the city to build back in the aftermath of Hurricane Sandy and adapt to projected climate change impacts, including rising sea levels and extreme weather events. The nearly \$20 billion plan described in the PlaNYC report included more than 250 initiatives ranging from major coastal defense infrastructure to a more resilient food wholesale and distribution network. Many of these resiliency or recovery projects are either completed or underway, and will help avoid or minimize damage from future storms.

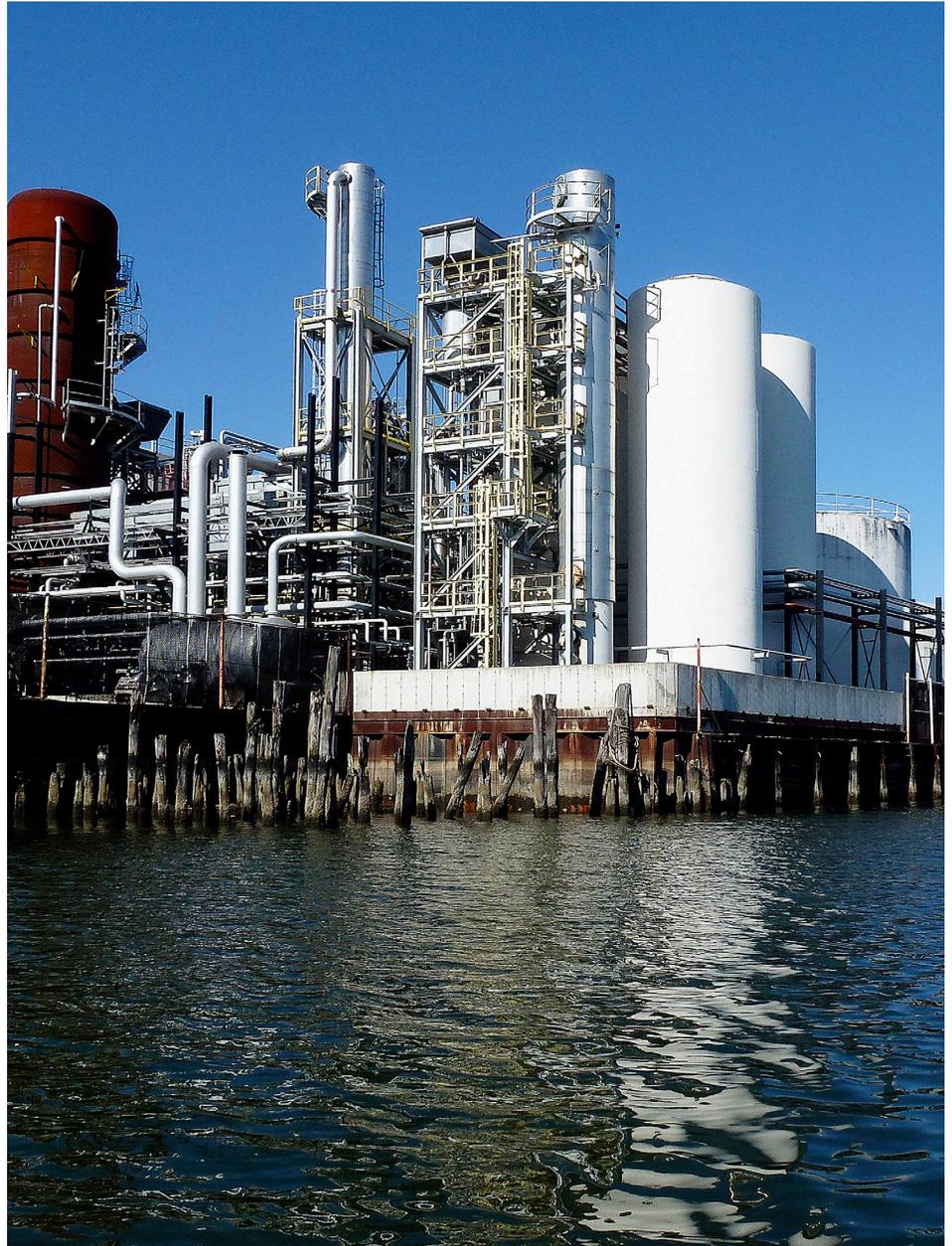
OneNYC

The 2015 launch of “**One New York: The Plan for a Strong and Just City**,” established an approach to managing climate change while also addressing income inequality. Notably, the plan calls for investments in city-owned industrial assets, workforce development programs targeted at high-growth industries, and a reduction of regulatory burdens on small businesses. Sustainability initiatives include efforts to reduce waste while expanding recycling and composting, accelerate cleanup of brownfield sites, and further implement green infrastructure and smart design for stormwater management. A number of resiliency strategies are also documented in the plan, including improved emergency preparedness and investments in building resiliency, and efforts to work with FEMA to reform the National Flood Insurance Program. The efforts of the Resilient Industry study directly further the goals of OneNYC by supporting industrial jobs through measures to maintain the long-term viability of industrial businesses in areas of the city at risk of flooding.

RISE : NYC is a OneNYC initiative to help deploy innovate resiliency technologies at Sandy-impacted businesses. Solatube Daylighting Systems deliver natural light into dark interior spaces, reducing energy demand, and in the event of a power outage, providing a daytime light source that conserves backup generator power for critical uses.



Petrochemical facility with barge and pipeline access in Greenpoint, Brooklyn.



NYC Hazard Mitigation Plan

With the goal of reducing long-term risk to human life, property, and infrastructure from hazards, New York City developed and regularly updates the [Hazard Mitigation Plan](#). The most recent plan, released in April 2014, addresses the risk assessment of coastal erosion, coastal storms, disease outbreaks, drought, earthquakes, extreme temperatures, flooding, severe weather, wildfire, winter

storms, infrastructure failure, hazardous materials, and chemical, biological, radiological, nuclear, and cyber threats. The Hazard Mitigation Plan evaluates risks that the city faces and proposes actions to lessen the impact from likely or consequential hazards. These actions, to be carried out by more than 40 agencies, non-profits, and utility providers, include disaster prevention, property protection, coastal and natural resource protection, emergency services, education and awareness, and infrastructure projects.

Nearly 89 percent of industrially zoned land lies within the Coastal Zone, making the WRP an important tool in setting a direction for development within the industrial floodplain.

Waterfront Revitalization Program

The Waterfront Revitalization Program (WRP) is the city's principal coastal zone management tool, establishing the policies for development and use of the waterfront. Nearly 89 percent of the city's industrially zoned land lies within the Coastal Zone, making the WRP an important tool in setting a direction for development within the majority of the industrial floodplain.

When a proposed project is located within the Coastal Zone and requires a local, state, or federal discretionary action, a determination of the project's consistency with the policies and intent of the WRP must be made before the project can move forward. Among the WRP policies is a standard to "minimize loss of life, structure, infrastructure, and natural resources caused by flooding and erosion, and increase resilience to future conditions created by climate change." This policy is intended to identify risks posed by coastal hazards, including the impacts of climate change, and drive the city and businesses to explore adaptive measures to manage these risks. It also requires that the latest projections of climate change and sea level rise are integrated into the planning and design of projects in the city's Coastal Zone.

WRP provides an important opportunity to ensure that adaptive techniques are considered on a case-by-case basis. WRP consistency review can help ensure that critical facilities and infrastructure are adequately protected from flooding and the impacts of climate change by promoting standards, such as higher design elevations or more stringent flood protection, that exceed those established in current building codes.

In addition, the WRP also states an objective to "support water-dependent and industrial uses in NYC's coastal areas that are well-suited to their continued operation." Within this policy, the WRP designates seven Significant Maritime and Industrial Areas (SMIAs), which have high concentrations of water-dependent and industrial activity and are generally well-suited to these activities.

Resiliency Planning and the Department of City Planning

The NYC Department of City Planning has undertaken a number of planning studies that highlight the scale of flood mitigation challenges and opportunities to encourage flood resiliency. The **Resilient Neighborhoods** initiative is working with communities to identify local zoning and land use strategies that reduce risks from flooding and coastal storms, while also fostering adaptable and vibrant communities. In July 2016, the Department of City Planning released the **Resilient Retail** report, identifying land use recommendations and proposed policy changes to facilitate building and corridor-wide strategies to increase the resiliency of commercial corridors in the floodplain. The focus on resiliency opportunities for nonresidential properties explored in the study provides an important foundation for the *Resilient Industry* study. Among the recommendations described in the *Resilient Retail* study is the need for greater flexibility to incorporate partial mitigation options for existing retail businesses in the floodplain.

The **Retrofitting Buildings for Flood Risk** manual, published in October 2014, provides a detailed analysis of how New York City's diverse building typologies are impacted by federal floodplain construction requirements and offers guidance to property owners on how to approach decisions about retrofitting buildings. The manual also advocates for regulatory reforms to facilitate mitigation. While some of these strategies apply to nonresidential buildings, the *Resilient Industry* study builds on this research to consider physical mitigation unique to the city's industrial building stock and operational preparedness tailored to industrial businesses.

Drawn together, these initiatives provide a framework for steering New York City toward a coordinated resiliency strategy that engages communities, advances land use policies, and builds off of other local, state and federal initiatives aimed at safeguarding where we live, work and experience the city.



Commercial vehicles parked along Newtown Creek in Long Island City, Queens.

Open Industrial Uses

In 2014, the NYC Department of City Planning released for public comment a draft study of best management practices and pollution prevention controls for unenclosed industrial facilities. Open industrial uses perform a critical, but often overlooked, role in the city's economy. These facilities include activities that, unless managed properly, can have negative environmental and quality of life impacts for adjacent uses. The study developed potential strategies to improve standards in manufacturing zones, enhance economic development, create safer and cleaner environments, and safeguard facilities in the floodplain.

Industrial Action Plan

The **"10-Point Industrial Action Plan,"** released by Mayor de Blasio's administration in November 2015, is designed to support and grow the industrial sector by strengthening core industrial areas, investing in long-term development of industrial businesses, and preparing New Yorkers for industrial jobs of the future. Because the majority of the city's core industrial areas are located in the floodplain, resiliency investments are an important component of efforts to support, strengthen, and grow the industrial sector.



Maritime facilities at
the Brooklyn Navy Yard



Supporting Businesses through Preparedness and Mitigation

Several voluntary programs are available to help industrial businesses in New York City prepare for disruptions. These programs help businesses minimize the time to restore operations and reduce the possibility of damage in the event of flooding or other interruptions.

Partners in Preparedness is a free program offered by NYC Emergency Management that helps organizations prepare employees, services, and facilities for emergencies. The program provides businesses with real-time emergency alerts in advance of storms or other potential hazards. It also makes available on an ongoing basis information and resources about disaster preparedness through tabletop exercises, webinars, and other events. Businesses of all sizes and industries can enroll in Partners in Preparedness

The **Corporate Emergency Access System** (CEAS) authorizes essential employees to access restricted areas following an emergency, and is the only program recognized by the New York Police Department and NYC Emergency Management that allows for emergency access. CEAS-credentials can help businesses limit financial losses, retain customers, and restore normal operations more quickly. For example, CEAS may enable businesses to shut down technology systems or retrieve critical equipment and vital records.

Business Preparedness and Resiliency Program (Business PREP) offered by the NYC Department of Small Business Services is designed to help small businesses better prepare for emergencies. Business PREP provides a range of services, including business continuity workshops, on-site risk assessments with micro-grants to implement specific recommendations for qualifying businesses, and online resiliency resources.

