

# Environmental Protection and Remediation



Building under development at a completed cleanup site in the NYC Brownfield Cleanup Program

Credit: NYC Mayor's Office of Environmental Remediation

**New York City's waterfront has long been a working waterfront, home to a diverse array of businesses large and small.** From the South Bronx to Sunset Park in Brooklyn, and from the Kill Van Kull along Staten Island's North Shore to the Newtown Creek area in Queens, the working waterfront continues to thrive in many areas, home to growing companies and the strong employment opportunities they create.

Some of these businesses, however, rely upon hazardous substances to produce their goods and services. Whether on unenclosed or "open" industrial sites housing scrap metal yards or recycling centers, or at indoor or "enclosed" industrial sites housing factories and print shops, these industrial uses often depend upon chemicals and other compounds that can have harmful impacts if not used and protected properly.

Though industrial users can be found in many waterfront locations throughout the city, there are significant concentrations in several neighborhoods, including those noted above plus Red Hook and the Brooklyn Navy Yard. These working waterfront areas are not only important clusters of commercial activity, but are also vulnerable to storm surge.

Following Hurricane Sandy, the Department of Environmental Protection (DEP) undertook an effort to understand the impact of the storm on sites that store hazardous substances. This effort was in accordance with Local Law 26 of 1988, more commonly known as the NYC

Right-to-Know Law. This law generally requires businesses that store specified quantities of hazardous substances to report the presence of these substances to DEP, in order to enable monitoring—including in the event of extreme weather.

In the wake of Hurricane Sandy, DEP determined that there were 367 facilities that had, in recent years, filed reports under Local Law 26 and that were located within areas impacted by the storm. According to DEP's field research, out of these 367 facilities, 263 reported no impacts whatsoever from Sandy. Meanwhile, 46 facilities, were severely affected by Sandy, but reported no spills and showed no evidence of spills. Another 40 facilities, upon inspection by DEP proved to have closed or relocated. Of the remaining 18 facilities inspected by DEP, 11 facilities reported spills but had conducted clean-ups prior to inspection, and seven were completely washed out by the storm.

With this information in-hand, DEP conducted extensive inspections of the impacted sites. These inspections did not indicate the presence of any spilled chemicals regulated by DEP at any of the applicable sites. Though the lack of evidence of contamination may indicate that the impacted businesses had secured these chemicals sufficiently prior to Sandy or adequately remediated their sites post-storm, it also may reflect the particular reality of Sandy, as the high volume of water may have diluted and washed away any spills that occurred.

For sites that continue to host industrial businesses involving hazardous substances—whether open or enclosed—continued identification and monitoring remain critical in anticipation and in the wake of extreme weather. That is why DEP continues to work closely with the City's Office of Emergency Management, ensuring, for example, that its list of vulnerable facilities takes into account the floodplain identified in the most recently produced Federal Emergency Management Agency (FEMA) maps. The City also is continuing to identify ways for these important employers to protect their business, their employees, and their neighbors.

As important as the monitoring of active industrial sites is, another significant challenge faced by the City is how to deal with the many previously industrial sites located throughout the five boroughs that have ceased to be used for such purposes, but nonetheless remain encumbered by the hazardous remnants of their industrial past. These so-called "brownfields" present risks to adjacent communities, but they also represent an opportunity—for new development and new employment. That is why the 2007 PlaNYC report set a goal of cleaning up all contaminated land in New York City.

As an outgrowth of that report—and with that goal in focus—the City created the Mayor's Office of Environmental Remediation (OER) to coordinate public and private efforts, including those targeting the many brownfields located



Mayor Bloomberg announcing new brownfield project

Credit: NYC Mayor's Office

along or near the waterfront. For example, in 2011, OER initiated the New York City Brownfield Cleanup Program (BCP) to help landowners and developers clean up contaminated property and facilitate redevelopment of these abandoned properties. The first municipal brownfield cleanup program in the nation, the BCP ensures that brownfield sites with light-to-moderate levels of contamination are properly cleaned, thus spurring neighborhood revitalization, job creation, and an increase in local amenities. In administering the BCP, OER utilizes NYS Department of Environmental Conservation (NYSDEC) standards, achieving high-quality remediation that involves removal of highly concentrated pollutants and placement of thick and often hardened layers of clean materials on the surface of remediated brownfield sites. Upon successful completion of cleanup in the BCP, program participants receive liability protection against future environmental enforcement on the property, providing lenders and occupants with assurances that these properties have been cleaned up under government oversight to a standard that is protective of human health and the environment.

Another program established by OER is the NYC Brownfield Incentive Grant (BIG) program, which provides funding for brownfield investigation and cleanup, including grants to community brownfield planners under the Brownfield Opportunity Area (BOA) program, and special grants and resources to facilitate nonprofit and local community development on brownfields. OER also has developed the Searchable Property Environmental Electronic Database (SPEED), a one-of-a-kind GIS-based web application designed to facilitate property environmental research.

Since its inception in 2011, the BCP and associated OER programs have proven to be strong drivers of remediation that have made the environment cleaner and spurred economic activity. The BCP has enrolled and approved for cleanup over 95 projects—including 70 percent in historically disadvantaged communities—representing approximately \$3 billion in new

investment in over 8 million square feet of new development. This new investment is expected to generate over 3,100 permanent jobs, over 8,000 construction jobs and approximately \$600 million in new City tax revenues over the next 30 years—all as a result of just the first two years of operation of the BCP. (See *map: Brownfield Cleanup Program Sites*; see *chart: New Development Resulting from Brownfield Cleanup Program*)

In the first 48 hours after Sandy, OER undertook inspections of over 80 brownfield cleanup projects in inundated areas. These inspections indicated that the cleanup methods promoted by OER had proven very effective in preventing

pollutant release from brownfield sites and associated impacts in surrounding communities. These findings, supplemented by outreach to the scientific community and inspection of almost 25 miles of waterfront in different parts of the city, strongly support the efficacy of existing cleanup approaches and suggest that the most important thing the City can do to make its brownfield sites more resilient to the effects of future climate change is to accelerate the pace of brownfield cleanup in the floodplain. These findings also support the development of several improvements in remedial procedures that can make these sites even more resilient, including development of extreme weather preparedness plans and adoption of brownfield resiliency best management practices.

To protect operating open and enclosed industrial sites with hazardous substances in an economically feasible way, and to encourage the remediation and redevelopment of brownfields in a resilient fashion, the City will pursue the following initiatives:

**Initiative 1**  
**Identify cost-effective measures to safeguard exposed substances in the 100-year floodplain**

Given the large number of open industrial properties in the 100-year floodplain as

**Brownfield Cleanup Program Sites**



Source: NYC Mayor's Office of Environmental Remediation



Brownfield site after Sandy

Credit: NYC Mayor's Office of Environmental Remediation

delineated by FEMA, it is important to minimize the negative effects these uses have on adjacent properties, residents, and water bodies. To this end, the City will complete the Open Industrial Uses Study. The study, led by the Department of City Planning (DCP) in cooperation with DEP and the New York City Economic Development Corporation, will generate recommendations by the end of 2013 for zoning text amendments or other legislation, and assess incentives that may assist in the implementation of such controls. Recommendations for cost-effective measures will seek to improve the business climate and natural environment in industrial areas, retain important industrial businesses, and foster new businesses and jobs in areas near open industrial uses. The study, and subsequent actions to implement recommendations, will support the working waterfront and protect communities while making industrial areas stronger, safer, and more resilient to climate change.

**Initiative 2**  
**Develop a catalogue of best practices for storing enclosed hazardous substances in the 100-year floodplain**

Without the appropriate precautions, even enclosed hazardous substances in the city's 100-year floodplain could be disturbed by storm surge, resulting in undesirable impacts. As a complement to the preceding study on open industrial uses, the City, subject

to available funding, will develop a catalogue of cost-effective best practices for the prevention of contamination caused by the storage of hazardous substances in the floodplain. The development of the catalogue will include outreach to community groups and businesses. Federal funding may be available to implement best practices in certain instances through the City's Business Resiliency Investment Program, funded by Community Development Block Grants. The development of these best practices will help vulnerable businesses to protect themselves through a variety of preapproved measures, including resiliency investments, which will seek to protect adjacent communities from hazardous substances that otherwise could be released. The goal is for the Mayor's Office of Long-Term Planning and Sustainability to begin the process of developing the catalogue of best practices in 2013, with participation by other City agencies.

**Initiative 3**  
**Accelerate brownfield cleanup in the 100-year floodplain to prevent release of pollutants**

Brownfields pose potential risks to surrounding areas during coastal storms, as the pollutants embedded in these sites may be released and redistributed by floodwaters. Subject to available funding, the City will expand its existing BIG cleanup program to provide bonus grants to accelerate cleanup of brownfields in

the floodplain in order to mitigate the impact of extreme weather events. In the next two years, this program is expected to provide bonus grants for approximately 30 BCP sites located in the 100-year floodplain. In addition, the City will focus its use of existing State and Federal brownfield grants toward the study and cleanup of brownfields that can become parks and open spaces in the floodplain.

These grants will help to fund remedial actions that will remove concentrated pollutants and cap sites with thick or hardened clean surface layers, reducing contamination risks and providing more open space for storm surge dissipation. By focusing on shovel-ready cleanup and development projects, the program will help jump-start near-term economic recovery in waterfront neighborhoods—including investment in approximately 2.4 million square feet of development. The goal is to launch the expanded program in 2013.

**Initiative 4**  
**Explore strengthened cleanup standards on industrial waterfront brownfields**

Existing State brownfield soil cleanup standards are more lenient for sites that are to remain industrial than those for which other uses are contemplated. Where these industrial properties are located in waterfront areas that are vulnerable to erosion from future storm surges, these standards may not provide sufficient protection for surrounding communities. The City will examine the existing soil cleanup standards for industrial waterfront sites and evaluate whether such protections can be strengthened in a way that also is financially feasible for industrial development.

**Initiative 5**  
**Launch brownfield climate change resiliency audits and improve storm preparedness**

Brownfield developers can make significant progress towards improving the climate change resiliency of remediated land and the new buildings constructed on them by adopting simple best management practices during the project planning stage. However, many developers do not yet understand these practices. The City will establish a pilot program to provide free reviews of brownfield cleanup and development plans by a resiliency expert and will provide developers with a report of best management practices that could be implemented to improve the resiliency of their projects. These assessments, called Brownfield Climate Change Resiliency Audits, will be conducted by City contractors and will be provided free of charge. OER also is performing brownfield storm preparedness training for the

environmental and development industry. Going forward, OER will require an extreme storm contingency plan in every brownfield cleanup plan it approves. Developers also will have access to pro bono brownfield resiliency consultations with local industry experts through a program developed by OER and the nonprofit NYC Brownfield Partnership. OER will begin audits immediately and will publish a report of findings by the end of 2013. Subject to available funding, OER will continue and expand this program in 2014.

### Initiative 6

#### Launch full operation of the NYC Clean Soil Bank

After remedial action is completed at brownfield sites, it is common for developers to continue excavations deep into clean native soils in order to make room for basements or underground parking garages. Developers typically are not able to use this clean soil and must pay to have it removed. At the same time, at other locations, such as City-sponsored construction sites, clean soil is needed and must be purchased at substantial cost. With approval from NYSDEC now in hand, the City will establish full operation of the NYC Clean Soil Bank, a landmark recycling program for clean native soil from deep development excavations on remediated brownfield sites, which will allow this soil to be reused, free of charge, on city construction projects or brownfield properties. This soil may be used for projects such as the elevation of grades or the creation of natural barriers to mitigate the impacts of sea level rise and storm surge. OER will launch this program in 2013.



Brownfield cleanup site

Credit: NYC Mayor's Office of Environmental Remediation

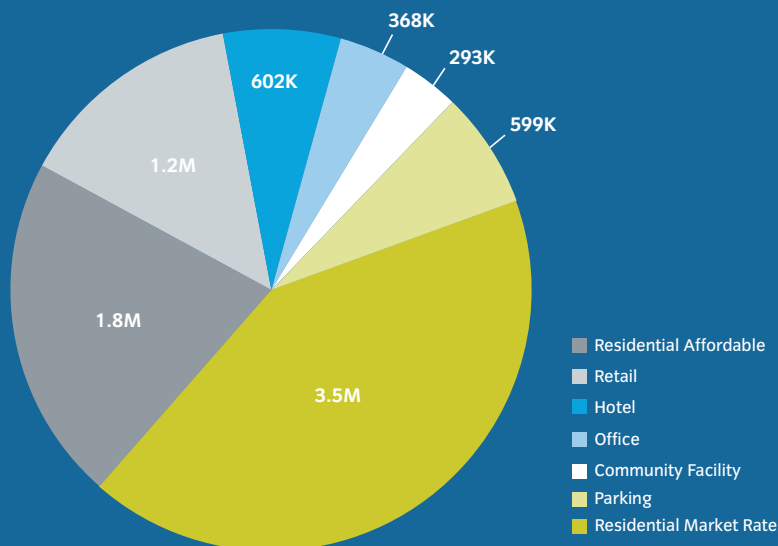
### Initiative 7

#### Perform update of SPEED, the City's online environmental research engine

The SPEED application described previously, though useful, lacks certain information that would help inform resiliency strategies, including information from the latest FEMA flood maps. Subject to available funding, the City will expand the information available in SPEED to enable climate change resiliency analyses, and to improve the efficacy of its use before, during, and after future extreme weather. Using an existing State grant, OER also will establish an innovative application for use by community brownfield planners working to improve local brownfield cleanup, development, and resiliency efforts. The goal is to complete an update to the SPEED database by the end of 2013.

#### New Development Resulting from Brownfield Cleanup Program

Square Feet, as of April 2013



Total = 8.3M Square Feet

Source: NYC Mayor's Office of Environmental Remediation