An aerial photograph of Stapleton, Staten Island, showing a dense urban area with a mix of residential and industrial buildings. The image is overlaid with a semi-transparent teal color. The text is positioned in the upper left and lower left areas.

**PLACE-BASED COMMUNITY BROWNFIELD PLANNING
FOUNDATION REPORT ON EXISTING CONDITIONS
STAPLETON, STATEN ISLAND**

**FINAL
MARCH 2016**

NYC

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This document was prepared by the New York City Department of City Planning for the New York City Mayor's Office of Environmental Remediation and the New York State Department of State with state funds provided through the Brownfield Opportunity Areas Program.

NYC Mayor's Office of
Environmental
Remediation



NYC PLANNING
DEPARTMENT OF CITY PLANNING CITY OF NEW YORK

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Purpose

This existing conditions foundation report was commissioned by the New York City Mayor's Office of Environmental Remediation (OER) to help community members and community-based organizations (CBO's) perform area-wide planning for revitalization of vacant and underutilized brownfield properties. Area-wide planning by community groups is supported by OER under the NYC Place-Based Community Brownfield Planning Program and by the New York State Department of State in the Brownfield Opportunity Area (BOA) Program. In addition to planning assistance, OER provides financial and technical assistance to CBO's for cleanup and redevelopment of brownfield properties and seeks to help people foster greater health and well-being in their neighborhoods.

Brownfields are vacant or under-utilized properties where environmental pollution has deterred investment and redevelopment. Pollution introduces many risks to land development and often causes community and private developers to pass over these properties, especially in low income neighborhoods where land values may be depressed and insufficient to cover added cleanup costs. Over time, brownfield sites accumulate and cluster in these neighborhoods, presenting heightened health risks while also reducing opportunities for small businesses, permanent new jobs, and affordable housing. OER has established a wide variety of programs to support place-based community brownfield planning and establish a local vision for use of these properties, and to help bring community plans to life. Using these tools, we seek to help citizens turn brownfield liabilities in their neighborhoods into community assets.

This existing conditions foundation report provides an overview of the study area's geologic and natural features, historical development patterns, zoning, land use and infrastructure, as well as demographic and economic profiles, a summary of environmental conditions and a preliminary evaluation of potential strategic properties. It is intended to initiate an ongoing process of data collection and analysis to better inform community planning activities and visioning and to enable citizens to make more informed decisions about their neighborhoods. This report was prepared by the New York City Department of City Planning (DCP) under contract with the Mayor's Office of Environmental Remediation.

EXECUTIVE SUMMARY

Stapleton, located on Staten Island's north-east shore, experienced significant flooding during Hurricane Sandy in October 2012 and is ripe for a comprehensive strategy for economic development and environmental remediation. This study of existing conditions and analysis of potential brownfield sites seeks to support healthy neighborhoods, people, and economies by capitalizing on existing community resources to redevelop brownfields. Local community brownfield planners may use the information in this report to advance their goals, engage their neighbors, and obtain funding for their work. Going forward, creation of local employment opportunities, economic revitalization, enhancement of community character and the physical environment, and investment attraction in light of Hurricane Sandy may all be identified as major priorities by local community organizations. The analysis in this report was conducted in early 2014. The area analyzed in this report encompasses but is larger than the area considered in the NYC Department of City Planning's (DCP) Bay Street Corridor @ Downtown Staten Island Neighborhood Planning Study.

GEOGRAPHY AND LAND USE

The Study Area explored in this document includes a mix of residential, commercial, and manufacturing zoning districts in the neighborhood, an irregularly shaped area of approximately 185 acres (.28 square miles). It is located in Staten Island Community District 1. Over time, land use evolved from agricultural farm land to a mix of industrial, commercial, and residential uses. As industry grew (due in large part to the presence of fresh water springs that enabled a substantial brewing industry to develop), residential areas and a rich commercial corridor and center grew around Tappen Park and along Bay Street as immigrant merchants and workers settled nearby. The waterfront, an area once dominated by industry and then by a large US Naval port, is largely disconnected from residents.

Stapleton has suffered decades of economic decline. Part of this decline can be attributed to changes in the local political economy beginning with Prohibition, the advent of car culture, and construction of major arterial highways that shifted a desire for "Main Street" style commercial centers like Bay Street and Stapleton Town Center to more mall-style shopping centers. More recently, the impact of Hurricane Sandy and heightened awareness of flood and climate risk have burdened the area with uncertainty. This decline is reflected in the built environment and conditions of Stapleton. Vacancy of storefronts along commercial corridors and a number of vacant parcels reflect this economic uncertainty.

DEMOGRAPHIC AND ECONOMIC PROFILE

As of the 2010 Census, the Stapleton Neighborhood (an area identified by US Census Tracts 21 and 27) encapsulates the Study Area and part of the surrounding neighborhood. This area has a total population of 6,453 people. Within the Study Area alone, there are approximately 3,979 residents. Largely Hispanic and Black/African American (39 percent and 28 percent respectively as of Census 2010), the population is characterized by lower educational attainment than the rest of the borough and New York City. Nearly 32 percent of residents are living in poverty, and unemployment is nine percent per the 2010 Census.

The health care and social assistance industry has been identified as the largest employer in the Study Area followed by retail firms, the second largest employer. Analysis of firms and their employees located in Stapleton show that firms engaged in "Other Services" and the retail industry represent the largest share of firms located in Stapleton. This is based on pre-Sandy data.

RECENT PUBLIC INITIATIVES AND PRIVATE INVESTMENTS

Several developments and initiatives in and around Stapleton have the potential to spur economic development in the neighborhood as well as on Staten Island as a whole. Large-scale development projects include the Homeport on the Stapleton waterfront; the St. George Redevelopment Project, which is poised to include the largest observation wheel in the western hemisphere and retail outlets; and a proposed mixed-used development known as Lighthouse Point, adjacent to the Staten Island ferry terminal in St. George. Other initiatives, such as the NYC Economic Development Corporation's (EDC) Staten Island Storefronts competition for local entrepreneurs, build off of an expectation that the development of the Homeport and St. George will transform the area. DCP's Bay Street Corridor Neighborhood Planning Process is working collaboratively with the community, other city agencies, and various stakeholders to develop comprehensive strategies and recommendations to achieve the neighborhood goals of affordable housing, capital investments, community resources, jobs, and transportation improvements in the area. Finally, EDC, DCP, and DOT's Transportation Improvement Strategy is examining multi-modal transportation needs throughout the North Shore of Staten Island in a comprehensive manner and will recommend improvements for pedestrian, cyclist, and vehicular traffic flow in the area.

ENVIRONMENTAL CONDITIONS

Environmental contamination is prevalent in areas with current and historic industrial activity. Industrial and semi-industrial uses such as automotive repair, processing of petroleum products, coal storage, and manufacturing pose a risk of contamination. This contamination may be a deterrent to investment, as it can be costly and time consuming to remediate. In this section of the document, sixteen potential strategic sites located throughout the Study Area are identified. They highlight environmental issues and provide a basis for the community planning process.

FLOOD RISK AND RESILIENCY

In October 2012, Hurricane Sandy's storm surge from the Upper New York Bay flooded much of Staten Island's coastline. In Stapleton, surge reached beyond Bay Street into the heart of Stapleton Town Center and Tappen Park, resulting in the flooding of homes and businesses throughout the neighborhood. While some restoration of damaged infrastructure such as the Staten Island Rail and the return of some businesses in Stapleton indicate signs of recovery from the storm, many uncertainties remain. The results of an extensive field survey are presented in this study and illustrate a complicated set of development challenges related to the impact of Hurricane Sandy and future flood resiliency. Understood within the context of an evolving regulatory environment related to flood insurance and flood resiliency, this study highlights potential challenges and opportunities that Stapleton may face in the long-term.



PART ONE
GEOGRAPHY AND LAND USE
DEMOGRAPHIC AND ECONOMIC PROFILE
RECENT PUBLIC INITIATIVES AND PRIVATE INVESTMENTS

Data Sources

Primary Land Use Tax Lot Output (PLUTO)

Primary Land Use Tax Lot Output (PLUTO) represents a compilation of data from the Department of Finance and the Department of City Planning. It includes primary tax lot and building characteristics such as land use, ownership, year built, number of units, lot and building size, allowable and built floor area ratio (FAR), and the presence of historic districts or landmarks.

The American Community Survey (ACS)

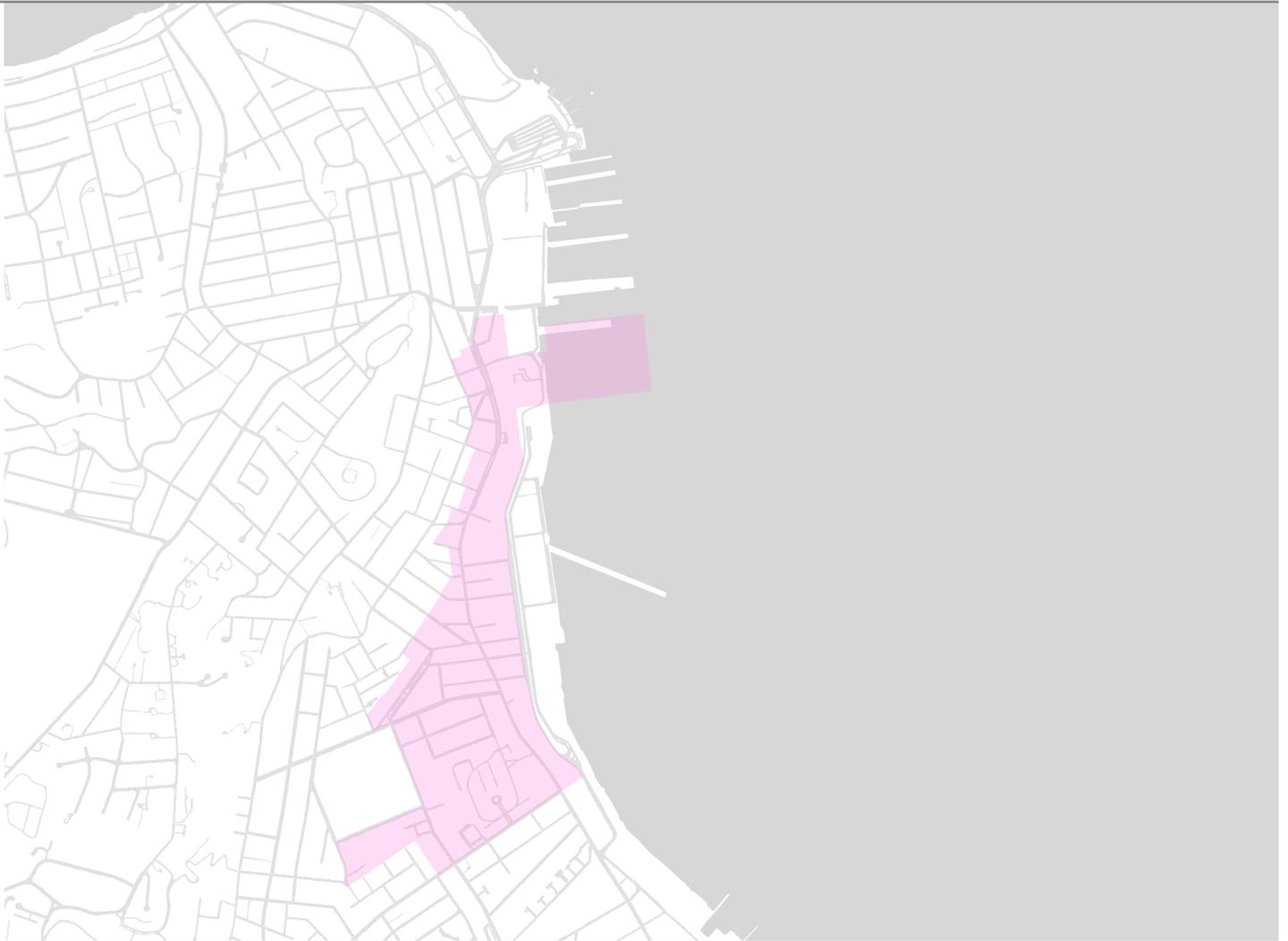
The American Community Survey (ACS) is an ongoing survey that provides data every year giving communities the current information they need to plan investments and services. The American Community Survey includes questions that are not asked by the 2010 Census, and the two serve different purposes.

United States Decennial Census

The U.S. Census counts every resident in the United States, and takes place every 10 years. The data collected by the decennial census determine the number of seats each state has in the U.S. House of Representatives and is also used to distribute billions in federal funds to local communities.

The Quarterly Census of Employment and Wages (QCEW)

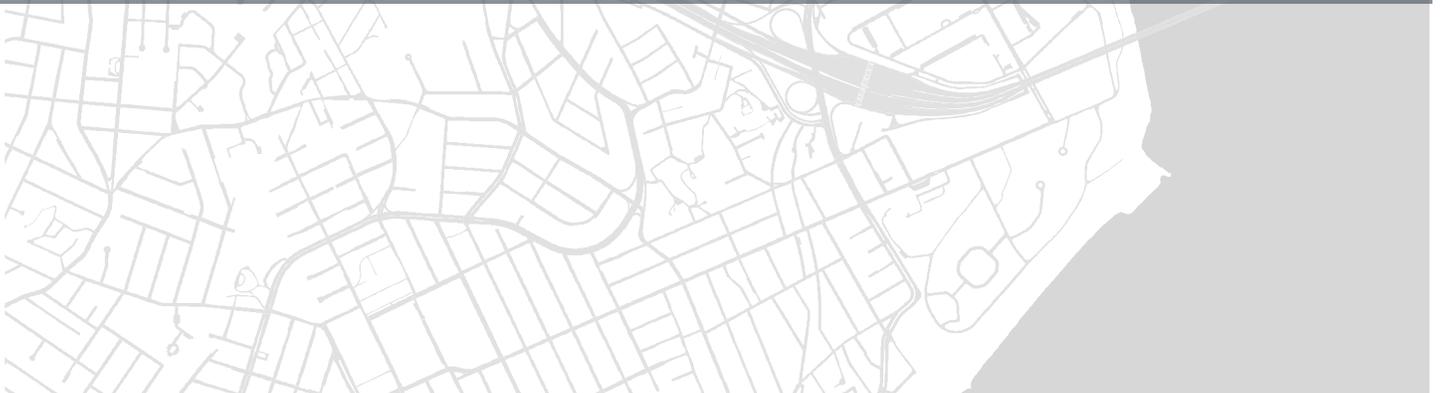
The Quarterly Census of Employment and Wages (QCEW) program produces a comprehensive tabulation of employment and wage information for workers covered by State unemployment insurance (UI) laws and Federal workers covered by the Unemployment Compensation for Federal Employees (UCFE) program. The data are provided to the Department of City Planning (DCP) by the New York State Department of Labor (NYS DOL), and are geocoded and analyzed by DCP.



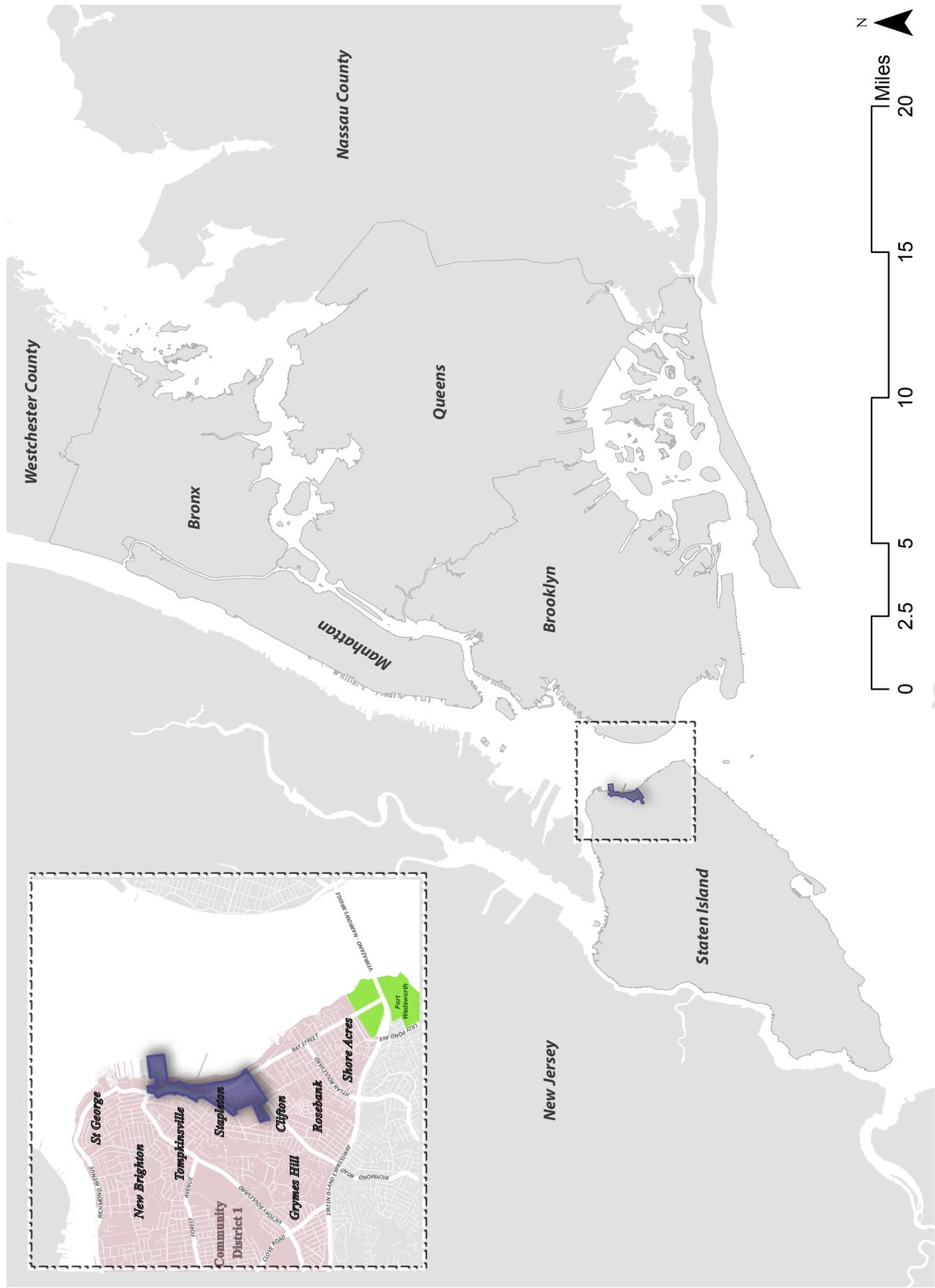
GEOGRAPHY AND LAND USE

Stapleton is situated on the north-east coast of Staten Island, New York City, along the waterfront of the Upper New York Bay roughly between the Tompkinsville and Clifton neighborhoods. An area of approximately 185 acres (.28 miles) has been identified for this existing conditions study. Stapleton will be referred to as the Study Area throughout this document; its geographical context is illustrated in MAP 1.1.

This section will explore geographical and land use conditions in Stapleton. First, a discussion of the geologic and natural features of Stapleton will set the stage for the historical development of the area. Next, a detailed description of the Study Area boundaries will underscore a discussion of relevant zoning and land use regulations.



Map 1.1 Community Context

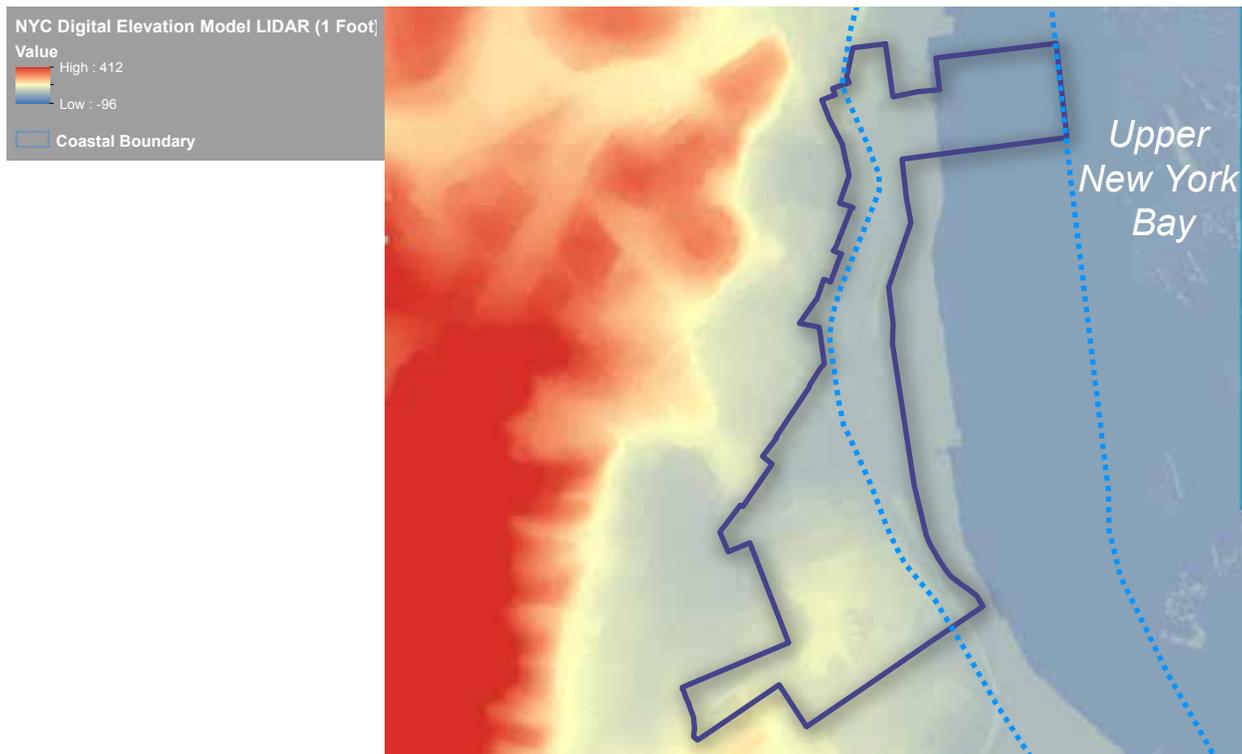


GEOLOGIC AND NATURAL FEATURES

The topography of this part of Staten Island is defined by low-lying land along the waterfront and steep upland grade changes. As shown in Map 1.2, the lowest portions of the Study Area are located near Stapleton Town Center. The most dramatic grade changes occur near the site of the former Bayley-Seton Hospital and at the northern end of the Study Area near Hannah Street. In the Study Area, the elevation of the ground ranges anywhere from five feet at its lowest point to 78.5 feet at its highest point. Upland of the Study Area, the elevation of the ground increases significantly in the direction of Tompkinsville. This change is illustrated in Map 1.2 where the pigments change from blue to red.

Nearly the entire Study Area is mapped as a Tidal Wetlands Adjacent Area (AA) by the New York State Department of Environmental Conservation (NYS DEC). As defined by the NYS DEC, this designation refers to an area that is “generally not inundated by tidal waters and that extends 300 feet landward of the most landward tidal wetlands boundary or to an elevation of ten feet (refer to Part 661 Tidal Wetlands Land Use Regulation).” There are no wetlands identified by the NYS DEC or the United States Fish and Wildlife Service (US FWS) in the Study Area or on the waterfront immediately east of the Study Area. However, the US FWS defines Upper New York Bay, the body of water that frames this part of Staten Island, as Estuarine and Marine Deepwater. These features are illustrated in Map 1.2.

Map 1.2 Water Resources and Topography



HISTORICAL DEVELOPMENT

Early Development Stapleton is situated on the north-east coast of Staten Island along the waterfront of the Upper New York Bay roughly between the Tompkinsville and Clifton neighborhoods. The area has a rich history that is reflected in present day Stapleton and has been chosen for study based on historical industrial uses in the neighborhood that may have caused environmental contamination, prevalence of vacant land, the condition of a commercial corridor in economic decline, and its location within a flood zone.

Historically agricultural, like much of Staten Island, Stapleton was once the site of the Vanderbilt family farm where Commodore Cornelius Vanderbilt was born (1794), grew up, and established the first of his many philanthropic endeavors. The Vanderbilt family was an integral part of the development of Stapleton and was responsible for the establishment of ferry service between Stapleton and Manhattan.

In 1832 William J. Staples and Minthorn Tompkins acquired land from the Vanderbilts and laid out a street network. At this time, the name “Stapleton” was first applied to the area. Staples and Tompkins began advertising this new village in 1836 as they established a new ferry service between the town’s waterfront and Manhattan.

Also around this time, wealthy families seeking summer retreats catalyzed new growth on Staten Island. These families built many of the Victorian-style homes that still stand in present-day Stapleton. In 1860, construction of the first line of the Staten Island Railway was completed, connecting Clifton to Tottenville (located at the southern tip of Staten Island). Today, this main north-south line is the only line of the Staten Island Rail line still in operation. It originates in St. George and runs the eastern length of Staten Island ending in Tottenville. Stations near the Study Area include Tompkinsville, Stapleton, and Clifton.

Established during the Revolutionary War, ferry service from Stapleton continued through the beginning of the 20th century. During the Revolutionary War, Cole’s Ferry operated between Staten Island and British-occupied New York. Ferry service continued to grow when the town of Stapleton was established and industry grew. Records show three ferry landings in the middle of the 19th century near Victory Boulevard, Canal Street, and Harrison Street. These ferries were independently operated, including by Tompkins-Staples and Vanderbilt. In 1908, a decade after Staten Island was incorporated into the City of New York, municipal ferry service began to provide service between Canal Street in Stapleton and Whitehall in Manhattan.

Historical Sanborn Fire Insurance Company maps indicate that around the turn of the century, the waterfront had a mix of uses including commercial shops, restaurants, and hotels along Bay Street, residential dwellings, as well as industrial uses such as coal and lumber yards, masonry, and breweries. The pace of industrial development and urbanization began to quicken in the middle of the 19th century. Prior to this time, much of the waterfront near Stapleton and the Study Area was undeveloped and, in some places, still under water. Rich with fresh-water springs, Stapleton was an attractive location for German immigrants looking to establish beer breweries. In fact, underneath present-day Canal Street, a spring runs from Broad Street, underneath Tappen Park, and into the Bay. Some of the most prominent breweries included the Rubsam and Horrmann Atlantic Brewery, historically located across from Tappen Park, as well as Bachmann’s, historically located about a half-mile to the south. The bottling industry also took hold in Stapleton complementing the breweries and distilleries. Dairy and beverage distributors as well as soft-drink producers also began to locate in the area. One such operation was the Standard Bottling Works which distributed locally produced beer through the region. Merchants often took residence and built ornate Victorian homes along St. Paul’s Avenue and the smaller residential streets in and around Stapleton Town Center.

Stapleton Town Center, a robust commercial center by the mid-late 19th century, also became a center for banking. The Staten Island Savings Bank and Stapleton National Bank both located around the park. Richmond Bank, presently occupied by Citibank, was also located in Stapleton on Bay Streetⁱ.

20th Century Development

Beginning in the 1920's, prohibition catalyzed large-scale decline of these industries and created nearly impossible conditions for breweries to remain operational, disrupting the economic foundations upon which Stapleton was built. In recent decades though, there appears to be a resurgence of interest in brewing in the area. Harbor Ale of Arlington opened briefly in the 1990s. Also, the Flagship Brewery, founded by a West Brighton resident, leased a 33,000 square foot space in nearby Tompkinsville and opened in May 2014.

In 1920, the City built piers along the waterfront in response to a need for warehousing and accommodations for shipping. These piers, and the industrial activity that followed, largely isolated the waterfront from the rest of the Stapleton community. From 1937 to 1942 several of the piers were utilized as the first Foreign Trade Zone (FTZ) in the United States^{Note 1}. Later, the piers became the site of the New York Port of Embarkation for the United States Army. They returned to their use as a Foreign Trade Zone for a brief period after WWII but became less utilized as containerization and new technology drew shipping industry from New York into New Jersey. As a result, most of the piers were demolished by the 1970s. In 1983, Secretary of the Navy John Lehman selected Stapleton to be the home port for a naval unit of battleship USS Iowa. This came at a time when President Ronald Reagan ordered military build-up and dispersal of US Navy units. This development was not well received by some residents who feared civilian job and business loss and were concerned over the possibility of nuclear weapons aboard the ship. By 1993, the completion of the base's construction was canceled due in part to cutbacks in military spending following the dissolution of the Soviet Union.

Debate over development of the formal naval base ensued for nearly a decade with proposals for a race track and a movie studio. After sitting largely vacant (the site was briefly used by a bagel manufacturer), the New York City Council approved plans for a large-scale redevelopment of the waterfront in 2006, a project that will be referred to as Homeport throughout this document. Details of this development plan will be covered in subsequent portions of this report.

Neighborhood Features

Bayley-Seton Hospital, a dominating feature of the neighborhood, is a focal point of the area's historical context and current conditions. Located on a hill, upland from Bay Street, the hospital opened as Seaman's Retreat, a hospital for sailors in 1832 and Staten Island's first hospital. Over time, it evolved from a U.S. Marine Hospital to a Public Health Service Hospital under President Franklin D. Roosevelt, and finally to Bayley-Seton Hospital. After its acquisition by Sisters of Charity (also owners of the former Manhattan based St. Vincent's Hospital), it became known as Bayley-Seton. Bayley-Seton had been the largest employer in the neighborhood until it closed in 2004. After Hurricane Sandy, the main building became host to dozens of displaced families. A detailed history of the site is laid out later in this report.



Bayley-Seton Hospital, Main Building

Note 1: A Foreign Trade Zone is defined as an isolated policed area adjacent to a port of entry (as a seaport or airport) where foreign goods may be unloaded for immediate transshipment or stored, repacked, sorted, mixed, or otherwise manipulated without being subject to import duties.

Another defining feature of the neighborhood includes Tappen Park, around which Stapleton Town Center is located. Commercial activity has been present in this area since the late 19th century. The old Village Hall still stands in Tappen Park and signifies Stapleton's incorporation as the Village of Edgewater in 1884. Both the park and the old village hall were added to the National Register of Historic Places in 1980.

The Paramount Theater, presently vacant, is another important cultural feature of the neighborhood. The theater opened its doors in 1930. For a time, it served as a movie theater, but stopped film shows in 1977. Through the end of the 1980's it was used as a nightclub, a multipurpose venue, as well as a rock music venue hosting acts such as the B52s, the Talking Heads, Squeeze, and the Ramones.

Stapleton Houses was developed by the State of New York as publicly subsidized housing in 1961. It is the largest New York City Housing Authority (NYCHA) housing development on Staten Island. Intermediate School (I.S.) 49 is located across from Stapleton Houses. Some famed residents of Stapleton Houses include members of the Wu-Tang Clan and jazz drummer Kenny Washington.

Historical Landmarks

There are several historical landmarks in the Study Area - each one speaks to the rich history of the neighborhood. These sites, each one a New York City Landmark designated by the New York City Landmarks Preservation Commission, include the Physician's House and Main Building of Seaman's Hospital, the Boardman- Mitchell House on Bay Street, Edgewater Village Hall, and the Staten Island Savings Bank building.

Hurricane Sandy

In October 2012, Hurricane Sandy induced disastrous storm surge that flooded large portions of the Staten Island waterfront. Near Stapleton, the water breached the rail line and Bay Street, causing significant damage to local businesses along the retail corridor. Images of the storm's immediate aftermath brought attention to the Stapleton waterfront when a massive ship, the John B. Caddell tanker, washed ashore onto a section of Front Street. Subsequent sections of this report cover in depth the damage sustained and the long term challenges that Stapleton faces as a result of the storm as well as a changing regulatory environment.

Present-day Stapleton

Today, Stapleton resembles many small downtown neighborhoods with struggling "Main Streets" across the country. Stapleton has struggled with economic vitality since developments including the Verrazano-Narrows Bridge and the Staten Island Mall attracted shoppers and residents towards the middle of the island. Other economic trends, such as the decline of the brewing industry, have contributed to economic instability in the neighborhood. This report explores the historical industrial uses that have left unresolved contamination in the area. Potential environmental contamination and investment costs associated with clean-up and development may also contribute to economic stagnation and/or decline.

There are many vacant lots and buildings in the neighborhood, a topic that is discussed in the "Zoning and Land Use" section of this report. It is apparent from data maintained by the City, conversations with stakeholders, and field observations that building owners in Stapleton have struggled to lease commercial spaces. Further, some businesses that may have been struggling prior to Hurricane Sandy (October 2013) have not been able to rebound. Stapleton's position within a flood zone is a defining characteristic of the neighborhood and is a topic that will be explored in depth in subsequent sections of this document.

Despite what might appear to be a downward trend, Stapleton holds a great deal of potential for economic growth and community development. Part of this potential is

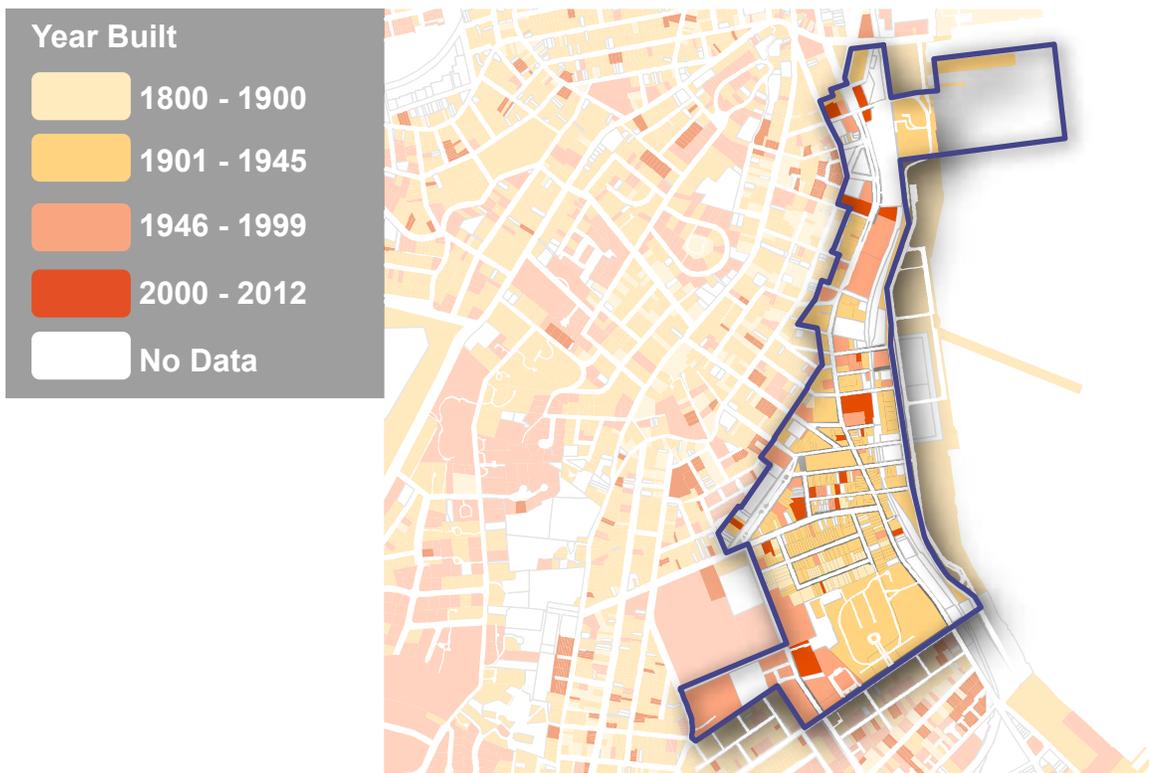
reflected in the steady decline of crime in neighborhood. Based on the NYPD CompStat report covering the week of January 13th, 2014 through January 19th, 2014 crime in the area steadily decreased since 1990 in every crime measure.

New Developments

A variety of developments are slated for areas within close proximity to the Study Area. These developments include the Homeport project, a mixed-use development with 900 units of housing in its first phase promises to connect residents of Stapleton to what has long been an inaccessible waterfront. An additional 600 units will soon be underway in Phase II, with Phase III to be determined. In addition, planned development in St. George will result in the construction of a 340,000 square-foot retail complex and a 625-foot tall observation wheel. The Lighthouse Point project will create 85,000 square feet of retail, a restaurant and entertainment space, a 12-story building including approximately 100 housing units, a 160+ room hotel, and a series of outdoor recreational areas throughout the site. These large-scale developments could catalyze economic growth in Stapleton and foster new opportunities for neighborhood improvement.

Further, the NYC Department of City Planning's Bay Street Corridor Neighborhood Planning Process is working collaboratively with the community, other city agencies and various stakeholders to develop comprehensive strategies and recommendations to foster affordable housing, capital investments, community resources, jobs, and transportation improvements in the area.

Map 1.3 Year Built

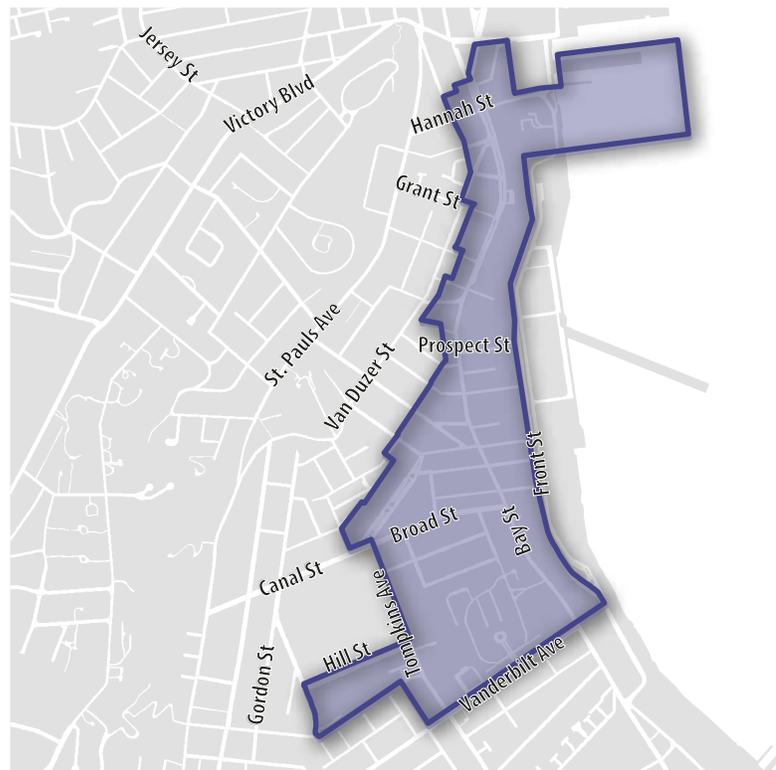


STUDY AREA BOUNDARY JUSTIFICATION

The Study Area was determined based on the analysis of the current and historical land use and economic conditions of the neighborhood. This neighborhood was chosen for study based on historical industrial uses in the neighborhood that may have caused environmental contamination, prevalence of vacant land, the condition of a commercial corridor in economic decline, and its location within a flood zone.

The boundaries mapped for this study of Stapleton largely follow zoning districts with a few exceptions. The Study Area has been mapped to include the portion of the C4-2 zoning district west of Front Street excluding the Homeport project area to the east of Front Street. The boundaries also exclude a portion of the R3-2 District that extends south of Vanderbilt Avenue. This achieves inclusion of the Bayley-Seton Hospital site and exclusion of a stable, residential area south of hospital site that may not be appropriate for study. The Study Area includes a very large vacant site along Canal Street in the R4/C2-2 zoning district near Tappen Park.

Map 1.4 Study Area and Local Roadways



ZONING

A variety of zoning districts are mapped in the Study Area. Zoning districts that permit manufacturing and industrial uses, residential uses, and commercial uses are all present.

Zoning in the area has remained largely the same since the 1961 Zoning Ordinance, with a few exceptions. The biggest change was the rezoning of the waterfront east of the rail line from M2-1 to C4-2A as a part of the New Stapleton Waterfront Plan. This action made way for the Homeport project described earlier in this report. As a part of this effort, City actions included the adoption of the Special Stapleton Waterfront District through a zoning text amendment, the adoption of a zoning map amendment to rezone the project area, the mapping and de-mapping of city streets, and the disposition of city-owned property. The project ultimately rezoned the M2-1 district to the east of Front Street to C4-2A. This will allow development that is compatible in character and scale of the upland portions of Stapleton. This district is generally mapped in regional commercial centers and encourages continuous retail frontage, permits mixed use buildings, and requires residences to meet the standards of the Quality Housing Program. Residential buildings in a C4-2 district must provide off-street parking for 50 percent of dwelling units.

The Special Stapleton Waterfront District (adopted through a zoning text amendment) modifies some of the rules governing the underlying C4-2A zoning and imposes additional regulation. These regulations limit Floor Area Ratio (FAR) to 2.0 for all uses and sets a 50-foot height limit with the exception of the portion of the site that's planned for a sports complex (allowed to rise 60 feet without setbacks). Per this zoning change, the special district also requires pedestrian connections to the waterfront esplanade at regular intervals and unobstructed visual corridors to the water from upland Stapleton. The positions of building walls are mandated in certain areas in order to frame public spaces and shape the streetscape to match Stapleton Town Center. Buildings on certain streets are required to have non-residential uses on the first floor to foster pedestrian activity. Parking must be located at the side or behind buildings and is not permitted between any buildings and Front Street.

Other zoning changes that have taken place since 1961 include the mapping of an R4 district where there was once M1-1 and M3-2 districts just west of Tappen Park. An R3X district was also mapped west of St. Paul's Avenue. Portions of the M1-1 district along Bay Street were included in this R3X district. This change, while technically outside of the Study Area, defines the western boundary of the Study Area between Prospect and Grant Streets.

Lastly, a C2-2 Overlay was mapped along Canal Street between Cedar and Wright Streets. Map 1.5 illustrates an overview of zoning changes since 1961 and the current zoning of the neighborhood.

Table 1.1 identifies the zoning districts presently mapped in the Study Area, their allowable uses, and the maximum FAR permissible under each respective zoning.

Lower Density Growth Management Area (LDGMA)

In addition to local zoning regulations, Staten Island is designated as a Lower Density Growth Management Area (LDGMA). Under this regulation, special zoning controls aim to match future development with the capacity of supporting services and infrastructure in parts of the city experiencing rapid growth. Within an LDGMA, special regulations apply to any development in an R1, R2, R3, R4-1, R4A or C3A districts; any development accessed by a private road in a R1, R2, R3, R5, or C3A district; and C1, C2 and C4 districts in the borough of Staten Island. As previously discussed in the zoning section of this report, there is an R3-2 district in the Study Area. This area would be regulated by LDGMA rules.

Table 1.1 Zoning Districts

Source: DCP

Manufacturing Zoning Districts		
District	Allowable Uses	Max FAR
M1-1	Typically includes light industrial uses, such as woodworking shops, repair shops, and wholesale service and storage facilities. Some community facilities and hotels are allowed in M1 districts.	1.0
M2-1	Typically includes medium-intensity industrial uses including those with higher levels of noise, vibration, and smoke except when bordering a residential area. Industrial activities must be entirely enclosed.	2.0
Commercial Zoning Districts		
District	Allowable Uses	Max FAR
C4-2A	Typically C4-2 are mapped in more densely built areas. C4 districts in generally, are mapped in regional commercial centers that are located outside of the central business districts. They are meant to permit specialty department stores, theaters and other commercial and offices uses that serve a larger region and generate more traffic than neighborhood shopping areas. All residential and community facility uses are permitted.	Commercial : 3.0 Residential: 3.0
C4-2		Commercial : 3.4 Residential : .78 - 2.43
C1-1	These districts are mapped within residential districts along streets that serve local retail needs. Typical retail uses include neighborhood grocery stores, restaurants and beauty parlors. C2 districts permit a slightly wider range of uses, such as funeral homes and repair services.	1.0
C2-1		1.0
C2-2		1.0
Residential Zoning Districts		
District	Allowable Uses	Max FAR
R4	These districts allow all types of housing. FAR of .75, plus an attic allowance of up to 20% for inclusion of space under the pitched roof common to these districts, usually produces buildings with three stories. Cars may park in the side or rear yard, in the garage or in the front yard within the side lot ribbon. Detached houses must have two side yards that total at least 13 feet and each one must be at least five feet wide.	0.75
R3-2	These districts allow for a variety of housing types including low-rise attached houses, small multi-family apartment houses, and detached and semi-detached one- and two-family residences. It is the lowest density zoning district in which multiple dwellings are permitted.	0.5

Map 1.5 Historic and Current Zoning Regulations

Source: DCP



LOCAL POLICY CONTEXT

Food Retail Expansion to Support Health (FRESH)

The north shore and portions of the east shore of Staten Island (capturing the entire Study Area) are mapped with the City's Food Retail Expansion to Support Health (FRESH) program. FRESH aims to facilitate the development of stores selling a full range of food products with an emphasis on fresh fruits and vegetables, meats and other perishable goods. The FRESH program, a joint effort sponsored by the Department of City Planning and the Economic Development Corporation offers an array of incentives for potential and existing food store developers and operators. On Staten Island and in the Study Area, discretionary tax incentives are available for eligible grocery store operators through the NYC Industrial Development Agency (IDA) including real estate tax reductions, sales tax exemptions, and mortgage records tax deferrals.^v

New York State Environmental Zone (EN-ZONE)

The Stapleton area, Census Tracts 21, 27, 29, and 40, is designated as a New York State Environmental Zone (EN-Zone). Sites in an EN-Zone that are cleaned up in the NYS Brownfield Cleanup Program can receive enhanced tax credits for real property taxes, in addition to tax credits for brownfield cleanup, redevelopment, and the purchase of environmental insurance. The Brownfield Redevelopment Tax Credit program is administered by the Empire State Development Corporation. Designation of an EN-Zone is limited to census tracts with a poverty rate of at least 20% according to the most recent American Community Survey 5-Year Estimates and an unemployment rate of at least 125% of the New York State average, or a poverty rate of at least double the rate for the county in which the tract is located.^v EN-Zone designations are periodically updated by the NYS Department of Labor's State Data Center.

Historic Landmarks Designations

The New York City Landmarks Preservation Commission (LPC) is presently reviewing a proposed historic district in Stapleton. Historic districts are collections of landmark buildings. As with any landmark, any change to a building in a historic district must be reviewed and approved by the LPC. The proposed district includes 43 single-family and two-family homes and one church located on Harrison Street, Quinn Street, Brownell Street and Tompkins Street. Buildings within the proposed historic district consist of wood-frame and masonry structures, most dating from the 1840s to the early 1900s.

LAND USE

Stapleton has long been characterized as a mixed-use neighborhood. Over time, land use has evolved from agricultural farmland to a mix of industrial, commercial, and residential uses. As discussed in the “Historical Context and Land Use Development” section of this document, industry grew quickly around the middle of the 19th Century when industrious German immigrants took advantage of the area’s many fresh water springs ideal for beer brewing. These immigrants were also largely responsible for the development of many of the houses in the neighborhood, often building ornate Victorian-style homes. There is a cluster of homes built prior to 1900 in the area just south of Tappen Park. Presently, this area is still residential, characterized by quiet, tree-lined streets. Stapleton Town Center, the area around Tappen Park, has been the focal point of retail and commercial activity since the late 1800’s. Prohibition of alcohol in the 1920’s catalyzed the decline of the brewing industry, and ultimately caused the demolition of the brewery buildings and warehouses, transforming the area’s land use character as well as its economic climate.

The development of industrial piers and reclamation of the waterfront created conditions that isolated the waterfront from the residential and commercial areas of Stapleton. However, by the 1970’s the waterfront area east of Front Street fell into disuse and has either been completely or marginally active for nearly four decades. Today, plans for a large housing development, Homeport, along the Stapleton waterfront reflect a larger trend across New York City to reconnect residents to waterfront areas that are no longer active industrial areas.

Commercial activity began to cluster around Tappen Park, an area known as Stapleton Town Center, around the mid-late 19th century. However, in the decades following prohibition, a period of steep economic decline began. Shifts in post-war American culture and economic dynamics that popularized car ownership reshaped Stapleton, like many other “Main Streets” across America. Further, the construction of the Verrazano-Narrows Bridge (completed in 1964) and the highway network throughout Staten Island supported this new trend. Developments like the Staten Island Mall speak to a dampened reliance on local town-center commercial offerings and services. Stapleton underwent a revitalization effort in the 1980’s, when the community established what was referred to as “Antiques Row” along Bay Street. However, as the U.S. Homeport project began to take shape, anticipation of demand for bars and restaurants to serve military personnel caused rents to soar, pushing out small antique businesses. As discussed previously, the U.S. Homeport project was never fully completed. Today, the area is still characterized by a retail corridor along Bay Street and a clustering of commercial uses around Tappen Park. While the commercial land uses dominate, the rest of the Study Area is characterized by residential homes between Tappen Park and the former Bayley-Seton hospital site and industrial uses east of the rail line along Front Street.

In addition to a varied mix of land uses in the neighborhood, the building stock in Stapleton is also diverse in character and age. While most buildings were built between 1901 and 1945 (58 percent), about 12 percent were built prior to 1900 (12 percent). About 20 percent of buildings were built between 1945 and 2000, and roughly 10 percent were built between 2001 and 2013.

Bay Street, the main north-south vehicular artery, is a defining feature of the neighborhood and Study Area. Low-rise mixed-used buildings are common along Bay Street, particularly between Broad and William Streets. In this area, buildings average between two and four stories and are mainly characterized by ground floor commercial spaces with residential units on the upper floor. In the M1-1 districts (north of William Street), Bay Street widens from two traffic lanes to four. In this area, buildings (such as a grocery store and shopping centers) are set back from the street and provide parking. This area is less conducive to pedestrian foot-traffic.

The Staten Island Rail is a defining feature of the neighborhood, located between Bay Street and Front Street. It runs the length of Staten Island's east-shore south of St. George. There are three train stations that are either within or very close to the Study Area: Tompkinsville, Stapleton, and Clifton. The rail line is elevated above the street in certain locations. In other areas, the right-of-way is built at grade level such as at the Clifton Rail Yards. East of the rail line, the waterfront has little pedestrian activity or car traffic, some vacant land, and some industrial uses. The built character of this area is defined by warehouses and building typologies that are generally no taller than two stories.

Tables 1.2 and 1.3 show the amount of land committed to different types of land uses. This analysis also presents how Stapleton compares with the rest of Staten Island and New York City. Stapleton has a significantly lower amount of land dedicated to one- and two-family houses (10 percent) than the rest of Staten Island (33.8 percent) and New York City as a whole (27 percent). Stapleton has much more land committed to mixed commercial and residential uses and commercial and office uses (4.8 and 14.1 percent respectively) than the rest of Staten Island (0.5 and 3.5 percent respectively) and New York City (three and four percent respectively).

This data also shows that a significant amount of land in Stapleton is vacant (a total of 661,767 square feet). This translates in 12.1 percent of the total number of lots in the Study Area and 11.4 percent of the total lot area in the Study Area. The total lot area that has been identified as vacant is lower than the rest of Staten Island (13.9 percent) but higher than the rest of New York City (6 percent).

While the data shows that 38.6 percent of the total building area and 25.1 percent of the total lot area are dedicated to "public facilities and institutions," this number includes the Bayley-Seton Hospital site, much of which is vacant or partially vacant. Also, the built structures that have been identified as "open uses" include the built structures in Tappen Park as well a building that is owned by Ocean Yacht Club, Inc. Further, "transportation and utility" uses are identified or 24.9 percent of the total lot area of the Study Area. This is significantly higher than the rest of Staten Island (7.5 percent) and New York City as a whole (7 percent). This reflects the amount of land that is occupied and operated by the Metropolitan Transit Authority / Staten Island Rail.

A significant amount of the total lot area in Stapleton is under City ownership (25 percent). As shown in Table 1.3 and Figure 1.1, most of the land is privately owned (91 percent of the total lots and 60 percent of the total lot area). All of the land that is identified as owned by a public authority is presently under the ownership of the Metropolitan Transportation Authority.



Front Street



Front Street

Table 1.2 Comparative Land Use

Source: PLUTO 2012

Building Type	Stapleton	Staten Island	NYC
One & Two Family Building	9.8%	33.80%	27.0%
MultiFamily Walkup Building	2.0%	3.00%	12.0%
Mixed Commercial/Residential Building	4.8%	0.50%	3.0%
Commercial/Office Building	14.1%	3.50%	4.0%
Industrial/Manufacturing	2.7%	2.90%	4.0%
Transportation/Utility	24.9%	7.50%	7.0%
Public Facilities & Institutions	25.1%	7.40%	7.0%
Open Space	1.2%	26.10%	27.0%
Parking Facilities	2.7%	0.70%	1.0%
Vacant Land	11.4%	13.90%	6.0%
No Data	1.2%	0.70%	2.0%
Total	100%	100.00%	100%

Map 1.6 Land Use

Source: PLUTO 2012



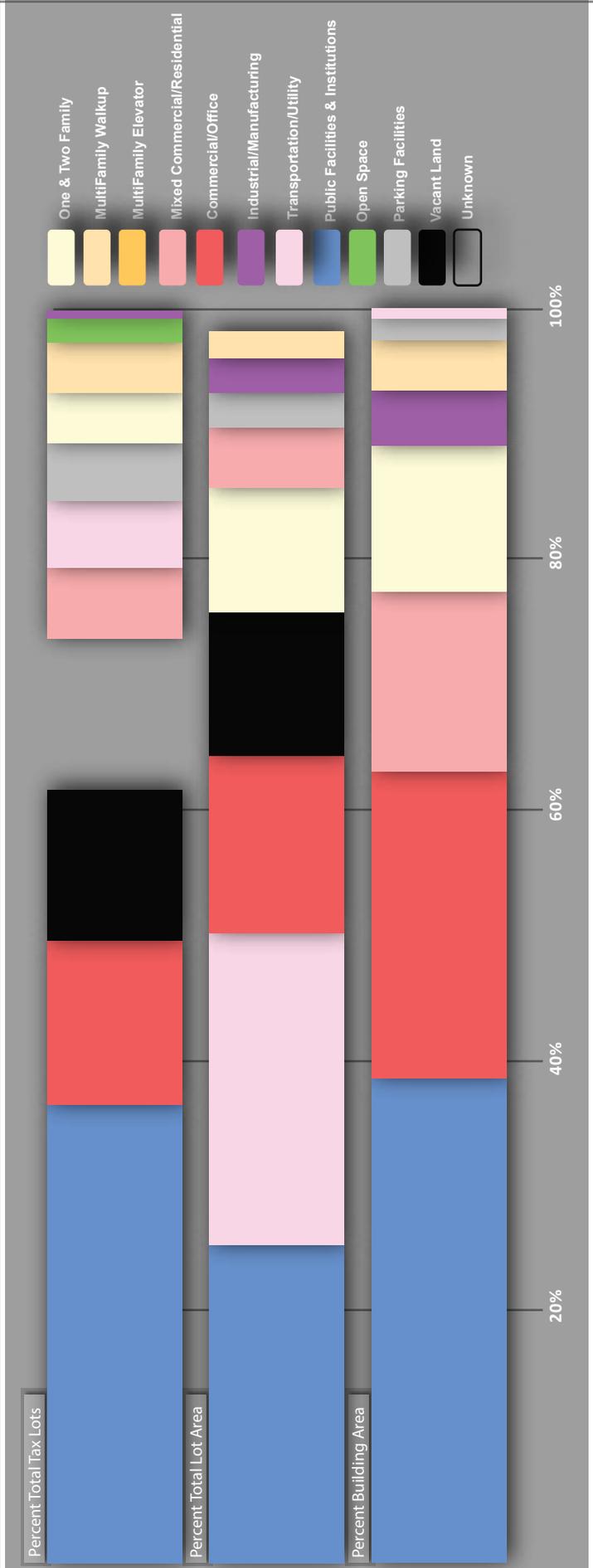
Table 1.3 Land Uses in Stapleton

Source: PLUTO 2012

Land Use	Total Tax Lots	% Tax Lots	Total Lot Area (sq ft)	% Lot Area	Total Building Area (sq ft)	% Building Area
One & Two Family Building	215	36.7%	571,428	9.8%	350,262	11.8%
Multi-Family Walkup Building	31	5.3%	116,144	2.0%	115,192	3.9%
Mixed Commercial/Residential Building	76	13.0%	280,300	4.8%	425,374	14.3%
Commercial/Office Building	71	12.1%	817,639	14.1%	723,061	24.3%
Industrial/Manufacturing	24	4.1%	158,810	2.7%	130,159	4.4%
Transportation/Utility	33	5.6%	1,448,358	24.9%	22,478	0.8%
Public Facilities & Institutions	27	4.6%	1,462,168	25.1%	1,148,153	38.6%
Open Space	3	0.5%	69,033	1.2%	10,188	0.3%
Parking Facilities	23	3.9%	159,438	2.7%	52,169	1.8%
Vacant Land	71	12.1%	661,767	11.4%	-	0.0%
No Data	12	2.0%	72,246	1.2%	-	0.0%
Total	586	100.0%	5,817,331	100.0%	2,977,036	100.0%

Figure 1.1 Land Uses in Stapleton

Source: PLUTO 2012

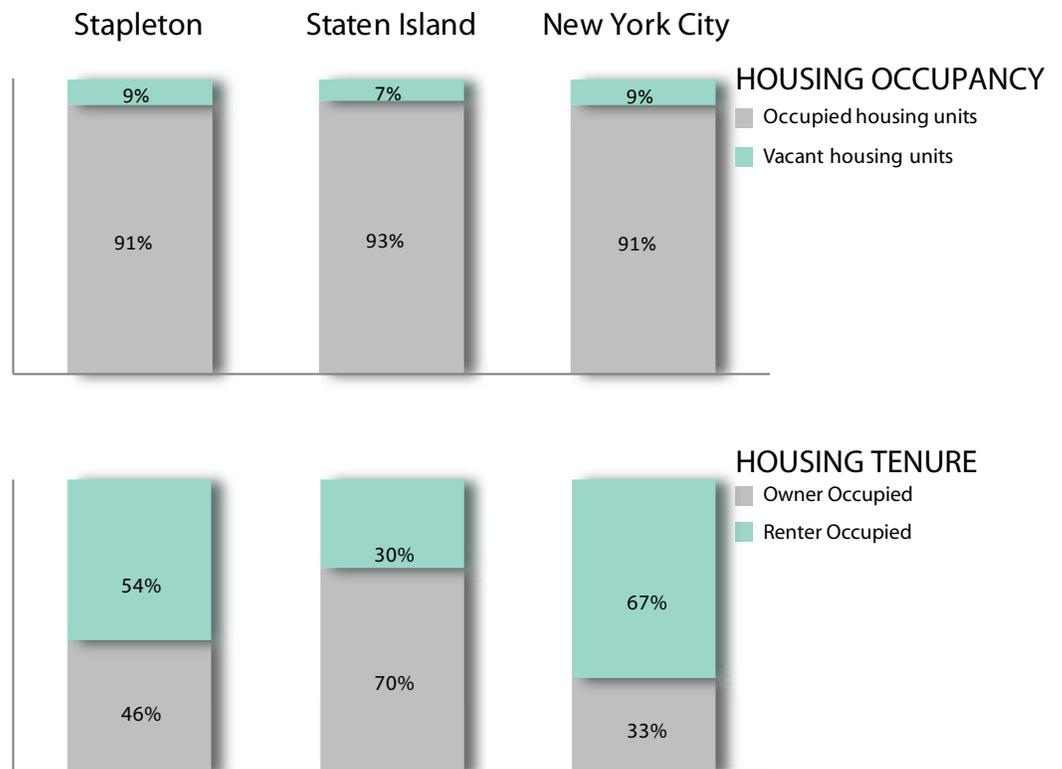


Housing Based on the American Community Survey 2007-2011 estimates for Census Tracts 21 and 27 (the area referred to in this document as the Stapleton Neighborhood), the percentage of home ownership is significantly lower (46 percent) than in the rest of Staten Island (70 percent). However, the rate of home ownership for New York City as a whole (33 percent) is lower than both the Stapleton Neighborhood and Staten Island. Staten Island has the highest rate of home ownership of all the boroughs in New York City. The percentage of vacant housing in the Stapleton Neighborhood (9 percent) is roughly the same as the rest of New York City as a whole (9 percent), but higher than the rest of Staten Island (7 percent).

Based on the City's Primary Land Use Tax Lot Output Data (PLUTO), there are 754 housing units in the Study Area.

Figure 1.2 Housing Occupancy and Housing Tenure

Source: ACS 2007 - 2011



PUBLIC INFRASTRUCTURE

Highways The Staten Island Expressway (Interstate-278), located approximately 1.5 miles south of the Study Area, connects Stapleton to Staten Island and the region. The Expressway runs the width of Staten Island connecting Staten Island to New Jersey by way of the Goethals Bridge and to Brooklyn by way of the Verrazano-Narrows Bridge. Both bridges are toll roads and ultimately connect Staten Island to the New Jersey Turnpike (Interstate-95) in the west and the Gowanus Expressway (Interstate-278) in the east. West of the Study Area, the Staten Island Expressway connects to the Dr. Martin Luther King Jr. Expressway which approaches the Bayonne Bridge and New Jersey as well as the West Shore Expressway, a major north-south highway corridor on Staten Island.

Truck Routes In the Study Area, there are several Local Truck Routes. These include: Vanderbilt Avenue between Richmond Road and Bay Street; Bay Street between Richmond Terrace and School Road; Edgewater Street between Bay Street and Hylan Boulevard; Broad Street between VanDuzer Street and Bay Street; Tompkins Avenue between Hylan Boulevard to Broad Street; and VanDuzer Street from Richmond Road to Victory Boulevard.

According to the New York City Department of Transportation Traffic Rules (Section 4-13) a truck is defined as a vehicle or combination of vehicles designed for the transportation of property, which has either of the following characteristics: two axles, six tires; or three or more axles. Regarding Local Truck Routes, an operator of any truck having an origin or destination for the purpose of delivery, loading or servicing within the Borough of Staten Island, shall only operate such vehicles over the following listed "Local Truck Routes" and "Limited Local-Truck Routes," except that an operator may drive on a street not designated below for the purpose of arriving at his/her destination.^v

Bus Service The Study Area is well served by the New York City Bus system. The St. George Ferry and Bus Terminal, located within close distance to the Study Area is the major hub of bus service for Staten Island. All of the buses that serve residents within the Study Area originate or terminate at the St. George Terminal. The S76, S86, S51, S81, S74, and S84 each run routes along Bay Street. The S78 route runs along Van Duzer Street, St. Paul Avenue, and Tompkins Avenue through the Study Area. The S52 also runs along Tompkins Avenue connecting the Study Area with the West Brighton neighborhood north of the Study Area and ultimately to St. George. The S81 provides express service along Bay Street a stop at the intersection of Bay and Water Streets. Also the S92 offers express service along Victory Boulevard with a stop at the northern edge of the Study Area at the intersection of Bay and Victory Blvd. Map 1.7 shows these transportation connections with respect to the Study Area.

Bike Lanes Strong and safe bike infrastructure are varied on Staten Island and in the Stapleton. In Stapleton, there is a shared bike lane that runs along Bay Street through the Study Area from the St. George Ferry and Bus Terminal to Fort Wadsworth Park. Just north of the Study Area, there is a protected bike lane that runs short distance along the waterfront. In addition to the existing bike infrastructure in the area, potential bike paths and routes are shown in Map 1.7. These potential bike lanes include a route along Front Street and a protected path along the waterfront, near the Homeport development site.

Subway Service The Staten Island Rail (SIR) serves Staten Island and the Study Area. The SIR runs from St. George to Tottenville, the southernmost point of Staten Island. Near the Study Area, there are stations at Tompkinsville, Stapleton, and Clifton. The SIR is illustrated below in Map 1.7.

Ferry Service The Study Area is located about one-half mile south of the St. George Ferry and Bus Terminal. This transportation hub is the docking site of the Staten Island Ferry. Ferry service is operated by the New York City Department of Transportation and is free of charge to riders. Ferry service operates between the St. George Terminal (1 Bay Street, Staten Island) and the Whitehall Terminal (4 South Street, Manhattan) every day of the year. The ferry runs more frequent trips during weekday rush hour times, and limited late-night and holiday service. The ferry offers transit connections to the Staten Island Railway, the S40, S42, S44, S46, S48, S51, S52, S61, S62, S66, S74, S76, S78, S81, S84, S86, S90, S91, S92, S94, S96 and S98 bus routes in Staten Island, and the M5, M15, M15 SBS and M20 bus routes and the 1, 4, 5, J, R and Z subway trains in Manhattan. On a typical day, five boats make 109 trips, carrying approximately 70,000 people across the harbor (a journey of approximately 25 minutes). The NYC DOT estimates that the Ferry carries over 22 million passengers annually.

Sewer and Power Stapleton is served by the Port Richmond Wastewater Treatment Plant located on the North Shore of Staten Island. This plant has been in operation since 1953 and serves approximately 200,000 people. Its drainage area is approximately 9,600 acres of the northern section of Staten Island.^{viii} Electricity is delivered to Stapleton by Con Edison.



Staten Island Rail, Stapleton Station

Map 1.7 Public Transportation Network



Parks and Open Spaces Three parks serve the Study Area: Lyons Pool, Tappen Park, and Tompkinsville Park. Lyons Pool, located on Murray Julbert Avenue between Victory Boulevard and Hannah Street is located at the northern end of the Study Area. The property was originally known as the Tompkinsville Playground, named after Daniel D. Tompkins (Supreme Court Justice of New York, New York State Governor, and Vice President of the United States) who founded the community in 1815 and established the first steamboat ferry linking Staten Island to Manhattan in 1817.^x Today, the park is just over 3 acres in size and offers an indoor fitness center, an outdoor lap pool, and an outdoor recreation area.

Tappen Park is located at the intersection of Canal, Water, and Bay Street in Stapleton Town Center. The park, named after James J. Tappen, a World War I veteran, was formerly referred to by local residents as Stapleton Park, but officially known as Washington Square between 1867 and 1934.^x The park, 1.78 acres in size, is the site of a historic landmark: Edgewater Village Hall, which is now used for municipal offices. Tappen Park underwent \$1.53 million worth of renovations in 2008. These improvements resulted in a revitalized decorative fountain, seasonal plantings, reconstructed perimeter fences and gates, new benches and trash receptacles, drinking fountains, and bicycle racks.

Tompkinsville Park, located at the intersection of Bay Street and Victory Boulevard, is a small, triangular-shaped park that is roughly 0.42 acres in size. This park underwent a \$1.29 million renovation in 2008 which resulted in improved fencing and gates, trash receptacles, seasonal plantings, a reconstructed lawn, accessible benches, and an accessible drinking fountain.

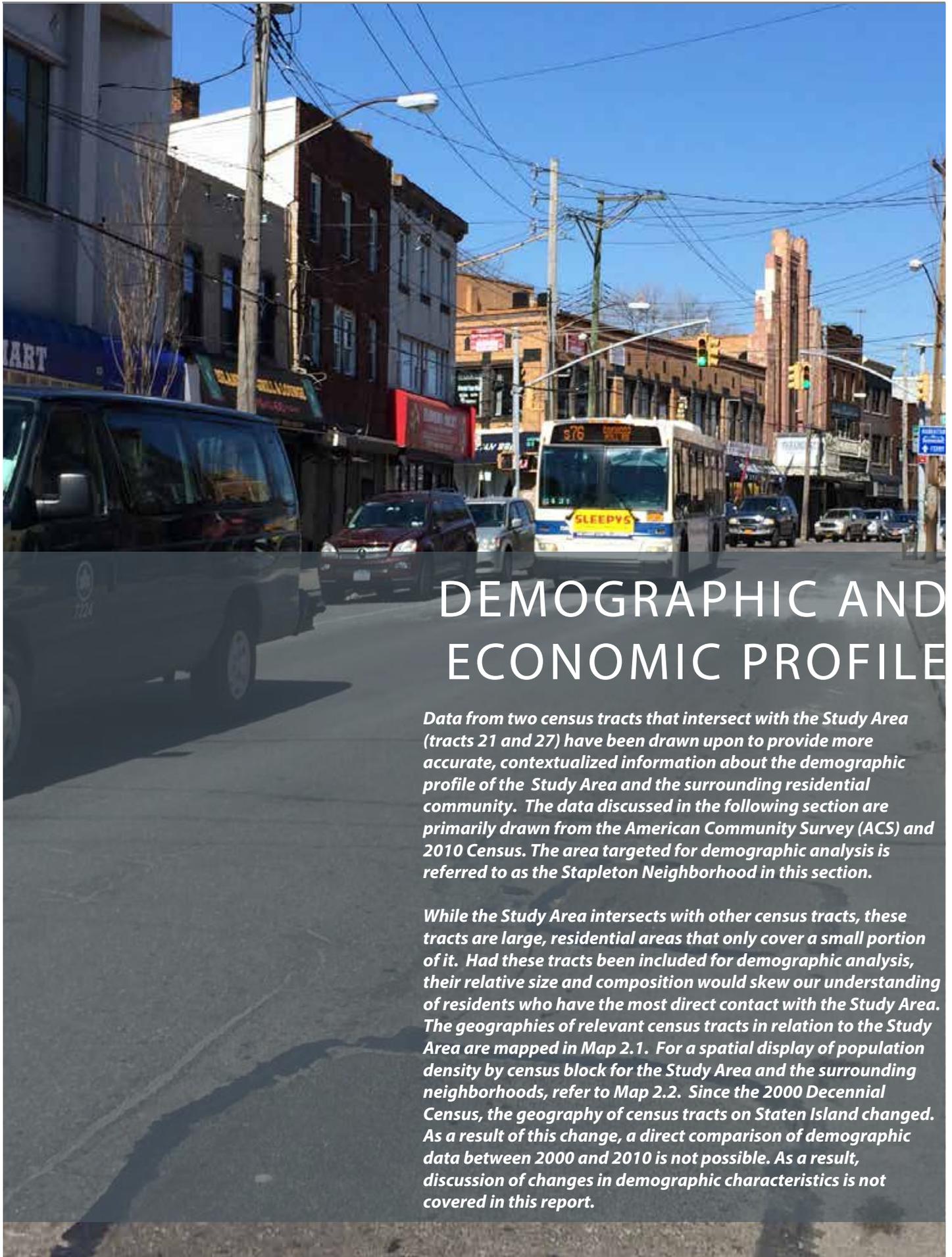
Within a short distance of the Study Area, Silver Lake Park (about 1 mile to the west of the Study Area) and Eibs Pond Park (about .6 miles to the south of the Study Area) also serve this part of Staten Island. Fort Wadsworth, once one of the oldest military installations in the nation, is now a 226 acre Gateway National Recreation Area that is located near the Verrazano-Narrows Bridge. It has been operated and maintained by the National Park Service (NPS) since the U.S. Navy turned over Fort Wadsworth to NPS in 1994.

There are approximately 337 street trees within the Study Area. This is roughly the same density of street trees on the rest of Staten Island (approximately 989 per square mile). Within the Study Area however, trees are sparse on the blocks east of the rail line. This is likely due this area's historical and present-day use as an industrial area.

Map 1.8 Parks, Open Spaces, and Street Trees

Source: DPR





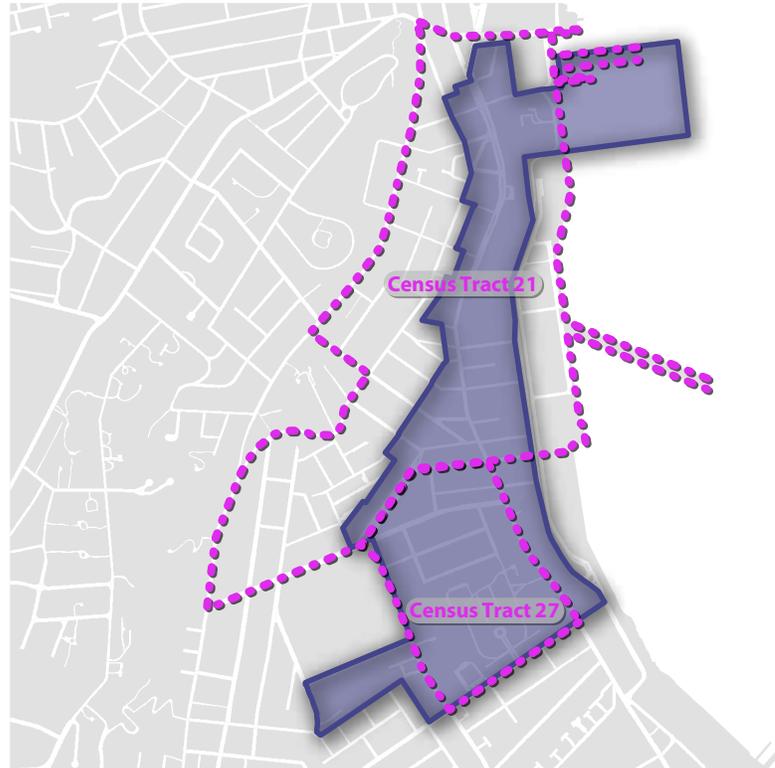
DEMOGRAPHIC AND ECONOMIC PROFILE

Data from two census tracts that intersect with the Study Area (tracts 21 and 27) have been drawn upon to provide more accurate, contextualized information about the demographic profile of the Study Area and the surrounding residential community. The data discussed in the following section are primarily drawn from the American Community Survey (ACS) and 2010 Census. The area targeted for demographic analysis is referred to as the Stapleton Neighborhood in this section.

While the Study Area intersects with other census tracts, these tracts are large, residential areas that only cover a small portion of it. Had these tracts been included for demographic analysis, their relative size and composition would skew our understanding of residents who have the most direct contact with the Study Area. The geographies of relevant census tracts in relation to the Study Area are mapped in Map 2.1. For a spatial display of population density by census block for the Study Area and the surrounding neighborhoods, refer to Map 2.2. Since the 2000 Decennial Census, the geography of census tracts on Staten Island changed. As a result of this change, a direct comparison of demographic data between 2000 and 2010 is not possible. As a result, discussion of changes in demographic characteristics is not covered in this report.

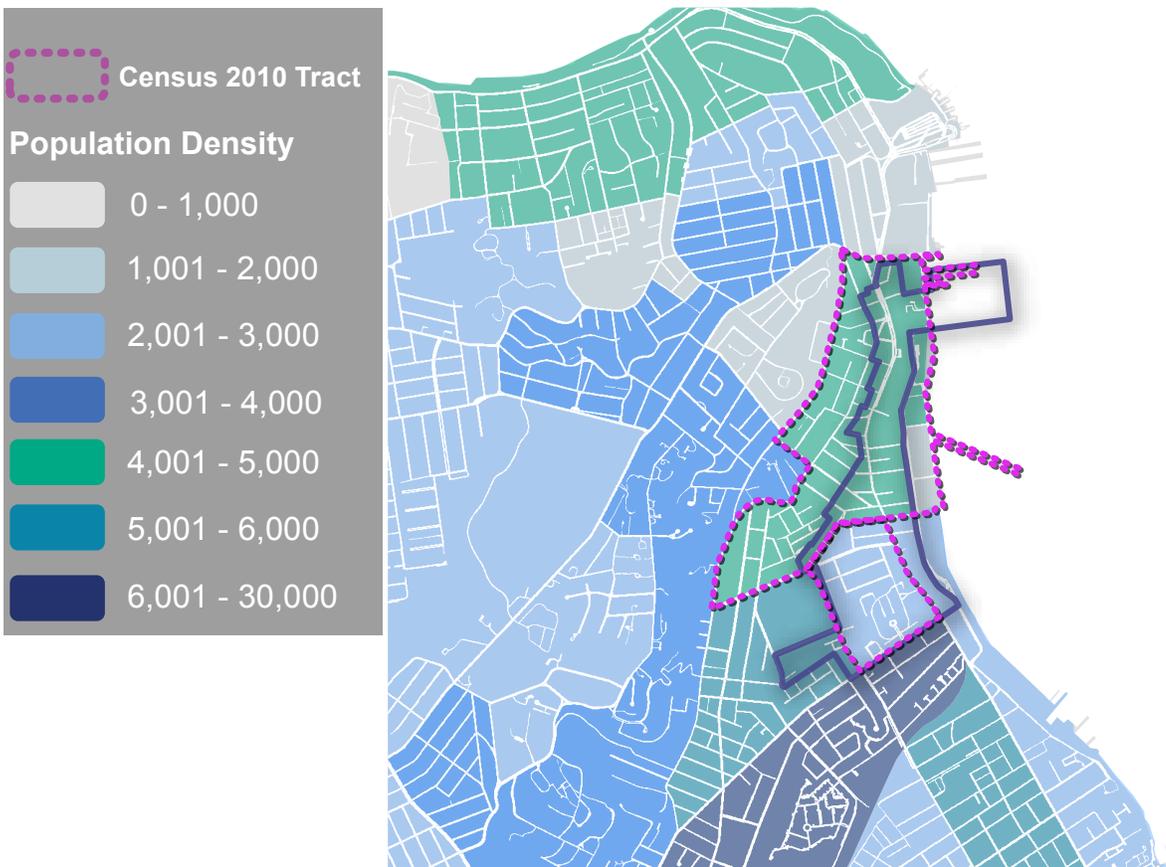
Map 2.1 Demographic Study Area

Source: DCP, US Census



Map 2.2 Population Density

Source: DCP, US Census



DEMOGRAPHICS: SOCIAL CHARACTERISTICS

General Population As of the 2010 Census, the Stapleton Neighborhood has a total population of 6,453 people. This differs slightly from the population estimated by the American Community Survey (ACS) 2007-2011 5-Year Estimates which indicate that 5,558 people live in the Stapleton Neighborhood. There are approximately 3,979 residents in the Study Area.

Race As of the 2010 Census, a significant portion (39 percent) of the population in the Stapleton Neighborhood is self-identified as Hispanic. Comparatively, only 29 percent of residents of New York City self-identified as Hispanic. There is also a strong presence of Black/African American residents in Stapleton, over 28 percent, a higher proportion of the population than New York City as a whole (23 percent).

In the Stapleton Neighborhood, 24 percent of residents self-identify as White non-Hispanic, lower than the rest of New York City where 33 percent of the population self-identify with this demographic group. There are also fewer people in the Stapleton Neighborhood who self-identify as Asian non-Hispanic compared with the rest of New York City (6 per-cent and 13 percent respectively).

Table 2.1 Racial Demographics

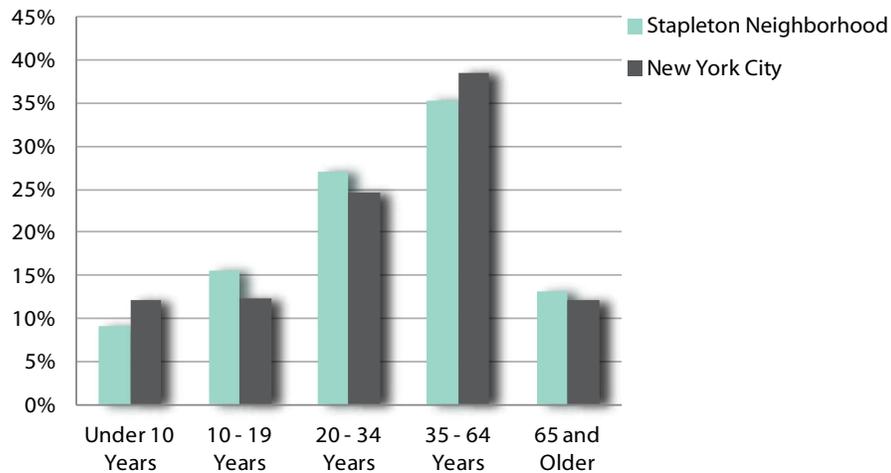
Source: Census 2010

	Stapleton		New York City	
	Number	Percent	Number	Percent
White non-Hispanic	1,554	24%	2,722,904	33%
Black/African American Nonhispanic	1,828	28%	1,861,295	23%
Asian Nonhispanic	366	6%	1,030,914	13%
American Indian/Alaskan Nonhispanic	22	0%	17,427	0%
Some other race Nonhispanic	37	1%	57,841	1%
Nonhispanic of two or more races	118	2%	148,676	2%
Hispanic origin	2,528	39%	2,336,076	29%
Total Population	6,453	100%	8,175,133	100%

Age The age distribution among residents of the Stapleton Neighborhood skews slightly younger than that of New York City, with a higher share of teenagers (10-19 years) and young adults (20-34 years) in the community. These two age cohorts represent 12 percent and 25 percent of the population of the Stapleton Neighborhood respectively. There are fewer children under 10 years old in the Stapleton Neighborhood than the rest of New York City (9 percent and 12 percent respectively). Overall, the population distributions of residents in the Stapleton Neighborhood and residents of New York City follow a similar pattern as shown below in Figure 2.1. People between the ages of 35 and 64 represent the largest share of the population.

Figure 2.1 Residential Age Distribution

Source: ACS 2007 - 2011

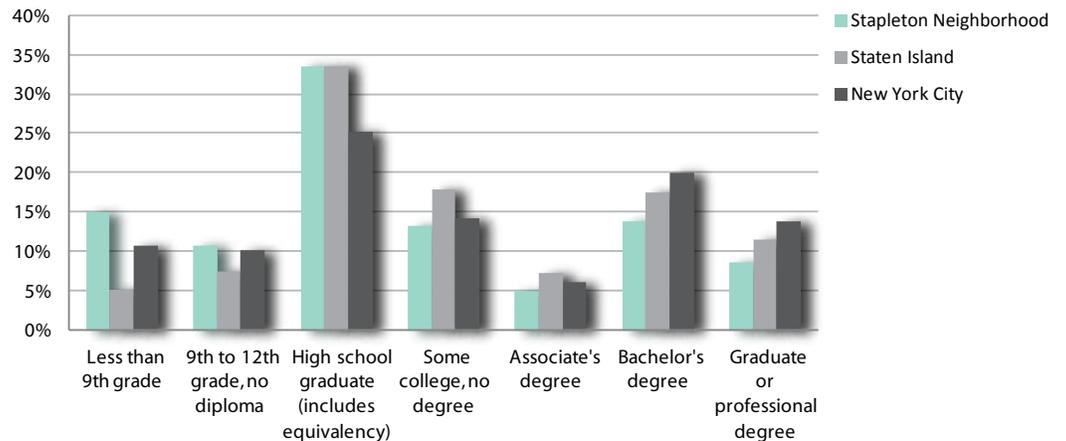


Educational Attainment

Based on ACS 2007-2011 5-Year estimates, residents over the age of 25 in the Stapleton Neighborhood are more likely to have not completed high school than the rest of Staten Island and New York City as a whole. Of these residents, 26 percent have not completed high school, which indicates overall lower educational attainment in this neighborhood compared to the rest of State Island and New York City. Across Staten Island and New York City educational attainment is generally higher - only 13 percent and 21 percent respectively have not completed high school. This data indicates that residents of Stapleton are less likely to go on to higher education including college, and advanced graduate or professional degrees.

Figure 2.2 Educational Attainment

Source: ACS 2007 - 2011



DEMOGRAPHICS: ECONOMIC CHARACTERISTICS

Poverty and Income The percentage of people living in poverty is significantly higher among Stapleton Neighborhood residents. Almost one-third (32 percent) of residents live in poverty in the Stapleton Neighborhood, while 11 percent of Staten Island and 19 percent of New York City residents live in poverty.

The median household income for the Stapleton Neighborhood (\$38,426) is considerably lower than the rest of Staten Island (\$72,752) and New York City (\$51,270).

Table 2.2 Economic Characteristics

Source: ACS 2007 - 2011

Economic Characteristic	Stapleton	Staten Island	NYC
Poverty			
<i>Percentage of families and people whose income in the past 12 month is below the poverty level</i>	32%	11%	19.40%
Income			
<i>Median Household Income (Dollars)</i>	\$38,456	\$72,752	\$51,270

INDUSTRIES AND EMPLOYMENT

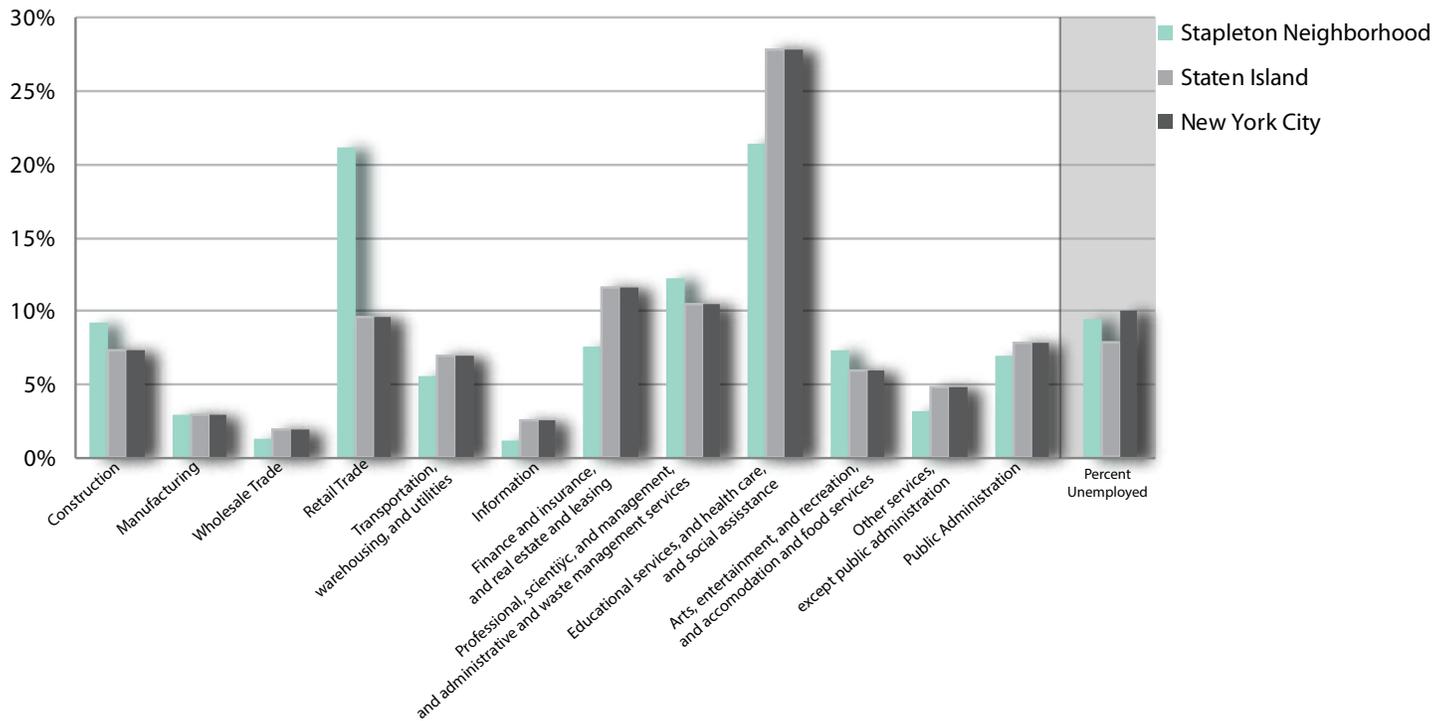
Employment by Industry

Among those employed, a significantly greater share of workers living in the Stapleton Neighborhood work in the retail sector (21 percent) than workers employed in this sector across Staten Island and New York City (both 10 percent). A higher percentage of workers is employed by the construction industries compared to the rest of Staten Island and New York City. The retail and educational services, health care, and social assistance industries are among the highest employers of residents of the Stapleton Neighborhood.

At nine percent, the unemployment rate in the Stapleton Neighborhood is slightly higher than that of Staten Island (7 percent) and New York City (10 percent) according to the 2007-2011 ACS. The unemployment rate is defined by the Census as “all civilians 16 years or older who were neither ‘at work’ nor ‘with a job but not at work’ during the reference week, were looking for work during the last four weeks, and were available to start a job.”

Figure 2.3 Employment by Industry and Unemployment

Source: ACS 2007 - 2011



Jobs and Firms Analysis of the industry mix and employment conditions was conducted using the Quarterly Census of Employment and Wages (QCEW) administered by the United States Department of Labor, Bureau of Labor Statistics. The QCEW program publishes a quarterly count of employment and wages reported by employers covering 98 percent of U.S. jobs. The QCEW program produces a comprehensive tabulation of employment and wage information for workers covered by State unemployment insurance laws and Federal workers covered by the Unemployment Compensation for Federal Employees program.

Analysis of a custom geography's industry mix helps to identify the potential for new business and land use development. To understand commercial and industrial development potential in Stapleton, the Study Area was drawn to capture the industries in the area. This QCEW analysis was done based on only private firms. The data captures private companies on privately- or city-owned land, but does not include public employees, regardless of site ownership. The following analysis was done with the data supplied for the third-quarter of the years 2000 and 2011.

Due to rules dictating the disclosure of this data, firms and employees for the administrative and support and waste management and remediation services industry, the transportation and warehousing industry, and the educational services industry were aggregated and categorized in the Table 2.3 as "All Other." In Figure 2.4, the "All Other" category represents the aggregate of firms and employees in the administrative and support and waste management and remediation services industry, the transportation and warehousing industry, and the educational services industry, the arts, entertainment, and recreation industry, the information industry, and the professional, scientific, and technical services industry.

In 2011, there were 136 firms with QCEW records in the Study Area and 1,750 employees. The health care and social assistance industry has been identified as the largest employer in the Study Area (nearly half of the jobs are in this industry). Retail firms are the second largest employer (13 percent of all employees). In 2011, the finance and insurance industry, the manufacturing industry, the professional, scientific, and technical services industry, and the real estate and rental leasing industry had the smallest percentages of employees. Accommodation and food services and retail have the highest overall percentages of both total firms and employees.

The data relevant to Stapleton demonstrates a modest increase in the number of firms in the Study Area between 2000 and 2011 (60 percentage points). However, there has been an overall loss in employees (jobs) in the area (24 percentage points). The greatest gains by industry over this time period occurred in the finance and insurance industry (133 percentage point increase in total firms and 75 percentage point increase in jobs), the real estate, rental, and leasing industry (175 percentage point increase in total firms and 86 percentage point increase in jobs), and the wholesale trade industry (100 percentage point increase in total firms and 72 percentage point increase in jobs).

These industries, however, presently only make up a small portion of the economic picture; combined, the finance and insurance industry, real estate, rental, and leasing industry, and the wholesale trade industry account for nine percent of the total jobs in Stapleton as of 2011. The greatest losses over this time period occurred in the manufacturing industry (40 percentage point decline in total firms), the construction industry (36 percentage point decline in jobs despite an increase in total firms), and in the 'other services' category of industries (32 percent loss in jobs despite a 33 percentage-point gain in number of total firms).

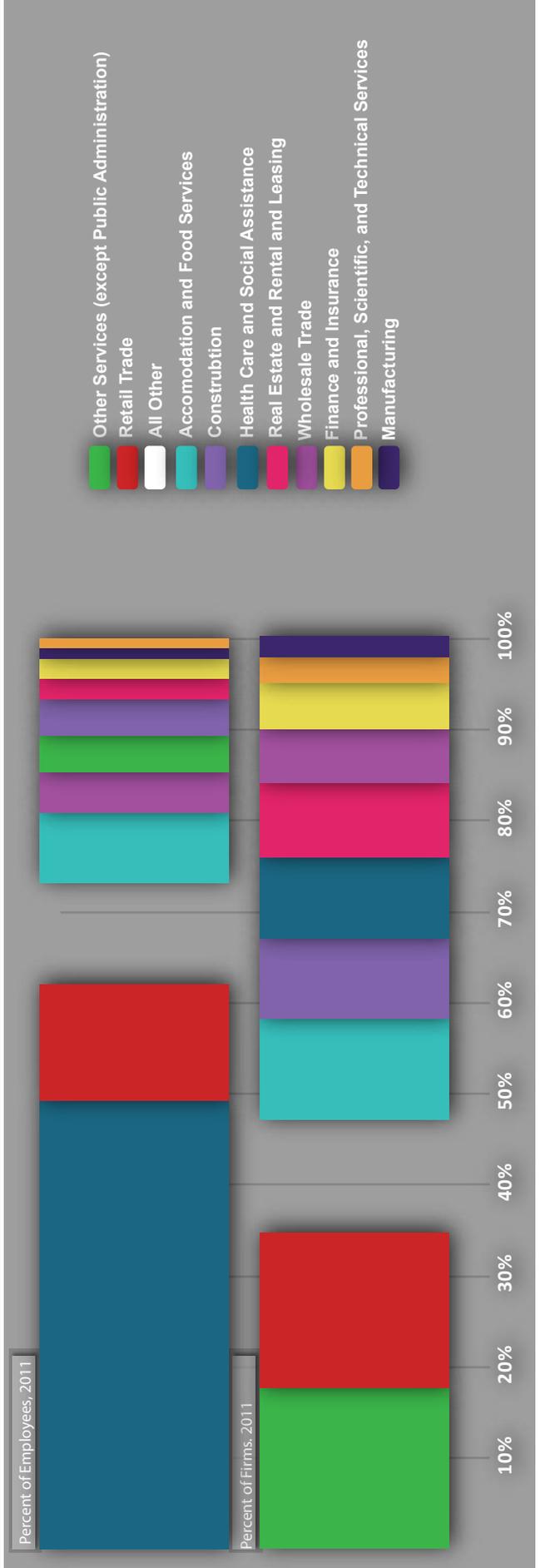
Table 2.3 Employment and Firms, 2000 - 2011

Source: QCEW 2000, QCEW 2011

Industry	2000			2011			Percent Change		
	Firms	Employees		Firms	Employees		Firms	Employees	
Accommodation and Food Services	10	92	15	133	50%	45%			
Construction	5	107	12	69	140%	-36%			
Finance and Insurance	3	20	7	35	133%	75%			
Health Care and Social Assistance	9	1,679	12	862	33%	-49%			
Manufacturing	5	22	3	23	-40%	5%			
Other Services (except Public Administration)	18	105	24	71	33%	-32%			
Real Estate and Rental and Leasing	4	22	11	41	175%	86%			
Retail Trade	16	170	23	224	44%	32%			
Wholesale Trade	4	46	8	79	100%	72%			
All other	11	39	21	213	91%	446%			
Grand Total	85	2,302	136	1,750	60%	-24%			

Figure 2.4 Employment and Firms, 2011

Source: QCEW 2011





RECENT PUBLIC INITIATIVES AND PRIVATE INVESTMENTS

Several developments and initiatives in and around Stapleton have the potential to spur economic development in the neighborhood as well as on Staten Island as a whole. Of these, several large-scale developments have been planned for the area. They include Homeport on the Stapleton waterfront, the St. George Redevelopment Project poised to include the largest observation wheel in the western hemisphere and retail outlets, and a proposed mixed-used development at Lighthouse Point in St. George. Public initiatives such as a proposition to re-configure traffic along Bay and Front Streets and the NYC EDC Staten Island Storefront's competition for local entrepreneurs build off of an expectation that the development of Homeport and St. George will be transform the area.

In 2016, the NYC Department of City Planning's Bay Street Corridor Neighborhood Planning Process is working collaboratively with the community, other city agencies and various stakeholders to develop comprehensive strategies and recommendations to foster affordable housing, capital investments, community resources, jobs, and transportation improvements in the area.

Homeport As previously discussed in this document, rezoning of the waterfront east of the rail line from M2-1 to C4-2A and the adoption of the Special Stapleton Waterfront District took place as a part of the New Stapleton Waterfront Plan. These actions, as well as the disposition of City- owned property along the waterfront, are facilitating development of the former Homeport naval base into a large, waterfront, mixed-use waterfront development. Homeport's first phase, a \$150 million development led by the Ironstate Development Company, includes 900 housing units and 30,000 square feet of retail space. The City has invested approximately \$32 million in infrastructure upgrades and the construction of a waterfront esplanade. A consultant team led by engineers at Weidlinger Associates and landscape architects/planners at Wallace, Roberts & Todd has designed the public improvements including the new esplanade, open spaces, roadways, streetscapes and other elements. The NYC Economic Development Corporation oversaw construction of the streets and preparation of the site for development, including demolition of the Navy buildings and construction of the public open spaces and esplanade.

North Shore 2030 North Shore 2030: Improving and Reconnecting the North Shore's Unique and Historic Assets (North Shore 2030) was released by DCP and the New York City Economic Development Corporation (EDC) in December of 2011. The study focuses on four key North Shore assets; the Kill Van Kull waterfront, historic neighborhood centers, the historic street grid and the former North Shore railroad right-of-way. The identified study area runs from Arlington Marsh in the west, to the St. George Ferry Terminal in the east, the Kill van Kull in the north, and Forest Avenue in the south. This area includes St. George, where new development is expected to take place at Lighthouse Point and as a part of the St. George Waterfront Redevelopment Project. The study identifies strategies to achieve four main community goals: create quality jobs and workplaces, reconnect people with the working waterfront, support and create neighborhood centers, and improve connections and mobility. This study recommended city coordination with Brownfield Opportunity Area grant recipients to advance their work and support the remediation of brownfield sites. Such work is currently underway along the North Shore in the Port Richmond and West Brighton neighborhoods.

Bay Street Corridor The Bay Street Corridor @ Downtown Staten Island Neighborhood Planning Study aims to examine key land use and zoning issues in the neighborhood, but also take a broader, more comprehensive look at current and future community needs to identify a wide range of strategies and investments for the Bay Street Corridor's growth and vitality. The study, led by the NYC Department of City Planning (DCP), is a part of *Housing New York*, Mayor deBlasio's housing plan to build and preserve affordable housing through community development initiatives and to foster a more equitable and livable New York City. Current information on the study is located at www.nyc.gov/baystreetcorridor.

*Redevelopment of
St. George*

On October 23, 2008, the City Council adopted the Special St. George District Rezoning. The proposal was built on the following goals: to build upon St. George's existing strengths as a civic center, neighborhood and transit hub by providing rules that will bolster a thriving, pedestrian-friendly, business and residence district; to establish zoning regulations that facilitate continuous ground floor retail and the critical mass needed to attract a broader mix of uses; to require a tall, slender, building form that reflects its hillside topography and maintains waterfront vistas; to encourage the reinvestment and reuse of vacant office buildings; and to accommodate an appropriate level of off-street parking while reducing its visual impact.

These actions have made way for the St. George Redevelopment Project and build on the goals set forth in the North Shore 2030 study. Plans for this project involve a transformation of the waterfront into a mixed-use destination with the construction of the tallest wheel in the Western Hemisphere and a high-end outlet retail complex and hotel. At the base of the wheel will sit an approximately 125,000-square-foot Terminal Building, which will include various commercial uses such as retail, restaurant, a 4-D theater and exhibition space about New York City history, alternative energy and environmental sustainability. A 950-space structured parking garage will be built on the site, featuring a green roof with open space, solar panels, planted gardens, and a playground. New York Wheel LLC will invest approximately \$350 million to complete the project and will create an estimated 419 construction jobs and 426 permanent jobs.

Also included in these plans, BFC Partners' Empire Outlets will be an approximately 340,000 square foot retail complex comprised of up to 125 designer outlet retailers, restaurants and cafes. Plans also include a 200-room, 130,000-square-foot hotel and a 15,000-square-foot banquet facility that will provide extraordinary views of the Manhattan skyline. BFC Partners will also build a 1,250-space structured parking garage below the retail and hotel components to accommodate commuters and tourists alike. Construction began in 2015 and is anticipated to be completed in 2017^{xi}.

Lighthouse Point

Plans to develop a three-acre parcel just south of the Ferry Terminal on Bay Street are underway. The site was historically used by the U.S. Lighthouse Depot, which assembled and distributed lighthouse lenses along the East Coast during the 19th century. This plan, lead by Triangle Equities, involve the construction of a 50,000 square foot development including retail outlets, a boutique hotel, open public spaces and a waterfront esplanade, and 96 housing units. In March 2014, the Federal Transit Administration relinquished control over the site, effectively granting the City control over the site. The City, acting through the NYC Economic Development Corporation (EDC), will enter into a 49-year lease agreement with Triangle Equities with the option to buy. Triangle Equities has estimated that 458 construction jobs and about 440 permanent jobs will result from the project.^{vii}

Proposed Bay Street Initiatives

Bike Lanes: In 2009, shared bike lanes were established with paint markings along Bay Street extending from the St. George Ferry Terminal to School Road. Concerns over the placement and configuration on these bike lanes have been raised in the community; however, cyclists can now ride from St. George to Fort Wadsworth Gateway National Recreation Area. NYC DOT's 2013 NYC Bike Map illustrates a "potential bicycle route" along Front Street and a "potential bicycle path" along Edgewater Street. Bike infrastructure is shown in Map 1.7.

New Developments along Bay Street

Transportation Improvement Strategy (TIS): Through the City's Transportation Improvement Strategy, NYC EDC, the Department of City Planning, and NYC's Department of Transportation are examining multi-modal transportation needs throughout the North Shore of Staten Island in a comprehensive manner and will recommend improvements for pedestrian, cyclist, and vehicular traffic flow in the area.

Key Food: On June 14, 2013 a new Key Food supermarket opened at 155 Bay Street, just north of the Study Area. The supermarket has been a welcome addition to the neighborhood, which has long been underserved.

Stapleton Senior Houses

The Rail: After having stalled for nearly seven years as a result of community opposition over parking associated with the site, construction of a mixed-use, affordable housing development was completed in 2012 at 40 Prospect Street. The development replaced what was once the municipal parking lot associated with the Stapleton train station (Land Use Application No. C 080091 HAR). Built under the supervision of The New York City Housing Development Corporation, the development is approximately 100,000 square feet and boasts 92 affordable housing units and ground-floor retail.

NYC EDC Storefronts

In 2008, the New York City Housing Authority was authorized to turn over a portion of a parking lot associated with Stapleton Houses to BFC Partners to develop an eight-story affordable housing development for seniors (Land Use Application No. N 080255 ZAR). Located at 180 Broad Street, the project was completed in 2010 and has 105 residential units.

Staten Island Storefronts: Race for Space was a competition administered by NYC EDC designed to encourage businesses to open or expand in the Downtown Staten Island communities of New Brighton, St. George, Tompkinsville, Stapleton, and Clifton. In December 2013, nine businesses (eight of which are owned by Staten Island residents) received a total of \$425,000 to support leasing and capital improvements. These businesses included a brewery, a grocery, a table-service restaurant, a pet care, and three counter-service restaurants. Cumulatively, these businesses will lease and occupy 42,400 square feet of the estimated 100,000-plus square feet of vacant storefront space in Downtown Staten Island. These new businesses expect to hire 34 full-time and 83 part-time employees^{viii}.



PART TWO

*ENVIRONMENTAL CONDITIONS
STRATEGIC SITES
FLOOD RISK AND RESILIENCY*



Data Sources

The following list is a compilation of governmental databases and regulatory programs that are associated with the management of hazardous materials. These records are publicly accessible and indicate potential contamination in a given area and help communities maintain awareness of environmental issues in their neighborhood. In addition to Sanborn Fire Insurance maps and records kept by the New York City Department of Buildings, the following resources also contribute to the site histories found in the Strategic Site profiles.

*Government Databases
and
Regulatory Programs*

New York State Bulk Storage Program

Tanks storing petroleum and hazardous chemicals must meet minimum standards established by the United States Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (DEC). New York's Hazardous Substances Bulk Storage Program (including Petroleum Bulk Storage and Chemical Bulk Storage programs) provides guidelines and controls for the storage of many different hazardous chemicals including petroleum products.

Petroleum Bulk Storage (PBS)

The NYS Petroleum Bulk storage Program regulates tanks at facilities with a cumulative storage capacity of more than 1,000 gallons

Chemical Bulk Storage (CBS)

The NYS CBS program regulates above-ground storage tanks with a capacity of 185 gallons or more, all underground storage tanks regardless of capacity, and all non-stationary tanks.

New York State Spill Incidents Database

A "spill" is an accidental or intentional release of petroleum or other hazardous materials. The database records spill incidents, including such information as material spilled, resource affected, amount spilled in gallons or pounds, and the name of the water body affected by a spill.

New York City Vacant Property Database

Vacant Properties (VP) are vacant, privately-owned properties. 3,150 vacant privately owned commercial and manufacturing properties were evaluated in 2009 by the Mayor's Office of Environmental Remediation (OER) to establish general site histories, and this information is publicly available on SPEED (Searchable Property Environmental Electronic Database; www.nyc.gov/speed). Vacancy status, signifying the lack of structure or use on site, is determined by NYC Department of Finance assessors.

New York City E-Designation

Changes in zoning are subject to an environmental review pursuant to state and local law. An (E) designation is a zoning map designation that provides notice of the presence of an environmental assessment requirement pertaining to potential hazardous materials contamination, noise, or air quality impacts on a particular tax lot where new construction or land use change is planned. Planned development of E-designated properties requires coordination with OER.

Historic Resources

The following resources and records were the primary sources involved in the compilation and evaluation of strategic sites.

Sanborn Fire Insurance Maps

These maps, produced by the Sanborn Map Company since 1867, include information about built structures such as building footprint, construction materials, and use of structures. The maps identify materials known to be fire accelerants, and show all pipelines, railroads, wells, dumps, and heavy machinery in an area.

NYC Department of Buildings

The Department of Buildings maintains records of all construction activity, job filings, violations, complaints, and certificates of occupancy for a particular address.



ENVIRONMENTAL CONDITIONS

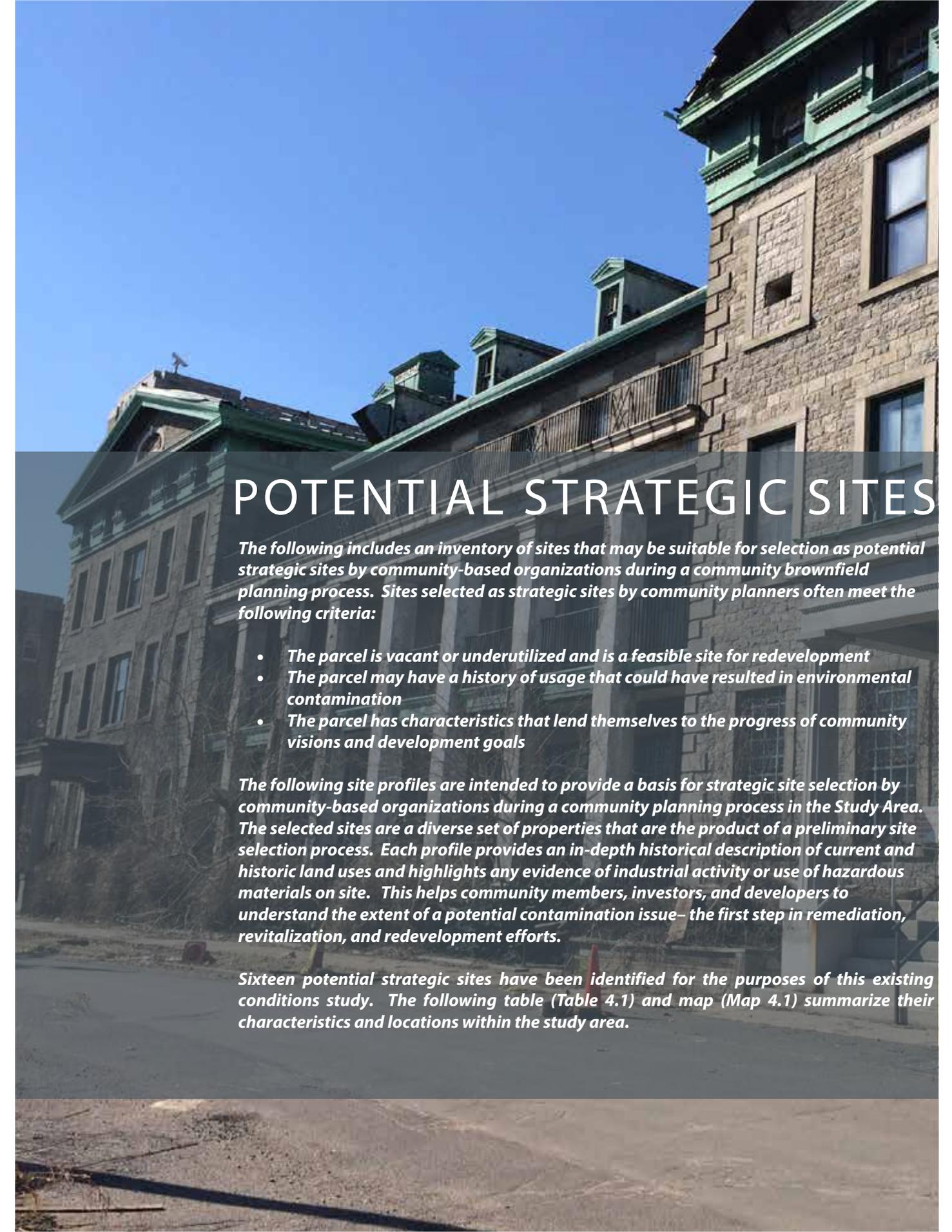
This section explores the geologic and historic setting that informs the environmental conditions of Stapleton. A place-based community brownfield planning program has been established by the Mayor's Office of Environmental Remediation and aims to enhance a community's understanding of its environment and empower residents to make more informed decisions about the future of their neighborhoods. Part of that process includes the identification of historic and current contamination issues, as well as the selection of strategic sites which may ultimately be remediated and redeveloped. The following section will provide an overview of geologic conditions in Stapleton that may contribute to contamination. It will discuss historic resources and available data for the area and provide a synopsis of local environmental trends. It will conclude with potential strategic site profiles that encompass current and historic land uses and address any evidence of noxious or hazardous materials on site.

Nearly the entire Study Area is mapped as a Tidal Wetlands Adjacent Area (AA) by the New York State Department of Environmental Conservation (NYS DEC). While there are no wetlands identified by the NYS DEC or the United States Fish and Wildlife Service (US FWS) in the Study Area or on the waterfront immediately east of the Study Area, this neighborhood is prone to flooding. Part of the neighborhood is included in the geography identified by FEMA as the 100-year flood zone (the area that has a 1 percent chance of flooding in any given year), a topic that will be discussed in detail in subsequent sections of this document. In the context of environmental conditions, flood risk combined with historical industrial uses, particularly along the waterfront, creates conditions of possible wide-spread hazardous materials contamination.

ENVIRONMENTAL TRENDS AND REMEDIATION ACTIONS

Open Spills and records of Petroleum Bulk Storage are expected in areas like the Stapleton Study Area where there are a number of automotive related land uses and other industrial and semi-industrial uses. In the Study Area, there are four records of Open Spills and 21 registrations of Petroleum Bulk Storage. Along Front Street, 19 E-Designations were placed on properties when the area was rezoned from M2-1 to C4-2A as a part of the Special Stapleton Waterfront District enabling the development of Homeport. Eleven of these E-designations are related to hazardous materials; eight are related to noise. Seventeen properties in the Study Area are listed in the NYC Vacant Property Database.

One site, located at 44 Canal Street, has been identified by the New York State Department of Environmental Conservation as an Inactive Hazardous Waste Site and has been remediated under the State's Superfund Program. Historically used as an auto repair shop, the site was examined as a part of a larger investigation conducted by the US Navy of all of the vacant lots purchased along Front Street in the 1980s. Soil-testing revealed lead contamination of soil, groundwater, and building surfaces. In the summer of 1996, soil removal and excavation, sump removal, power washing, and debris removal completed remediation actions. Post-cleanup soil samples indicated that lead levels remaining in the soil were nonhazardous. While this site has been remediated, the conditions found on the property highlight the potential for contamination on similar sites that have historical and current land uses related to industrial and automotive operation.



POTENTIAL STRATEGIC SITES

The following includes an inventory of sites that may be suitable for selection as potential strategic sites by community-based organizations during a community brownfield planning process. Sites selected as strategic sites by community planners often meet the following criteria:

- *The parcel is vacant or underutilized and is a feasible site for redevelopment*
- *The parcel may have a history of usage that could have resulted in environmental contamination*
- *The parcel has characteristics that lend themselves to the progress of community visions and development goals*

The following site profiles are intended to provide a basis for strategic site selection by community-based organizations during a community planning process in the Study Area. The selected sites are a diverse set of properties that are the product of a preliminary site selection process. Each profile provides an in-depth historical description of current and historic land uses and highlights any evidence of industrial activity or use of hazardous materials on site. This helps community members, investors, and developers to understand the extent of a potential contamination issue— the first step in remediation, revitalization, and redevelopment efforts.

Sixteen potential strategic sites have been identified for the purposes of this existing conditions study. The following table (Table 4.1) and map (Map 4.1) summarize their characteristics and locations within the study area.

Map 4.1 Potential Strategic Sites

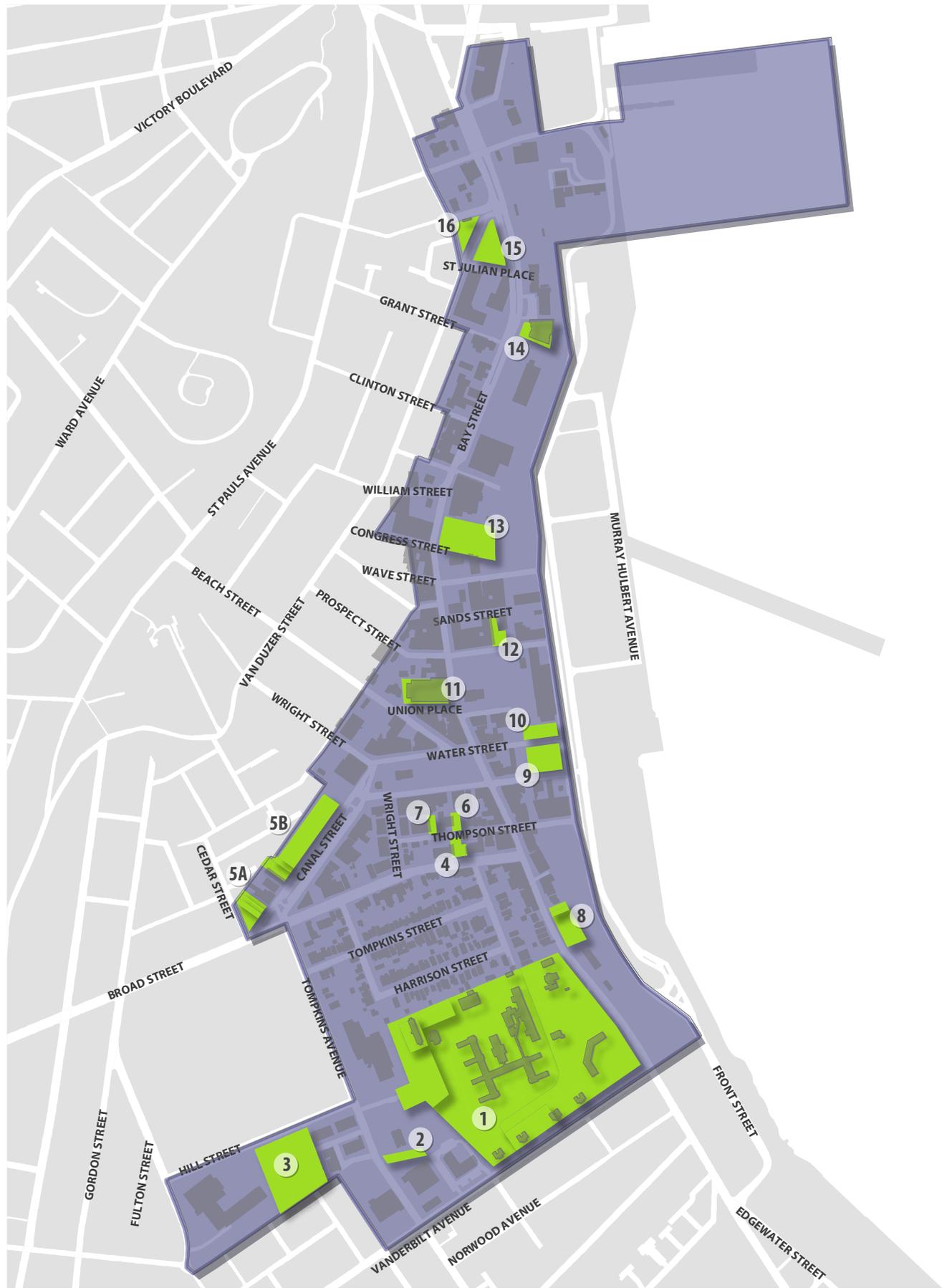


Table 4.1 Strategic Site Summary Table

Site Number	Site Name	Site Area (sqft)	Site Area (acres)
1	BAYLEY - SETON	878,741	20.2
2	TOMPKINS AVENUE	10,500	.3
3	NYPD	104,355	2.4
4	BROAD STREET	7,554	.2
5A	CANAL STREET	52,540	1.2
5B	CANAL STREET	17,312	.4
6	THOMPSON STREET	5,000	.1
7	77 THOMPSON STREET	4,200	.1
8	BAY STREET	24,684	.6
9	WATER STREET	23,625	.5
10	WATER STREET	13,500	.3
11	PARAMOUNT THEATER	-	-
12	PROSPECT STREET	8,740	.2
13	475 BAY STREET	53,422	1.2
14	365 BAY STREET	15,000	.3
15	BAY TRIANGLE	23,000	.5
16	VAN DUZER TRIANGLE	11,173	.3
TOTAL AREA		1,253,346 sqft	28.8 acres

STRATEGIC SITE 1 : Bayley - Seton

Address	<i>Vanderbilt Avenue (between Bay Street and Tompkins Avenue)</i>
Map Location	<i>74°4'31.155"W 40°37'21.757"N</i>
Zoning	<i>R3-2</i>
Block and Lot	<i>534 / 1 , 25 , 40 , 150</i>
Ownership	<i>Bayley-Seton Hospital, The Salvation Army, SV Land Three, LLC.</i>
Total Site Area	<i>878,741 sqft</i>
Existing Buildings	<i>23</i>

Summary

The Bayley-Seton site, a cluster of four tax lots along Vanderbilt Avenue between Bay Street and Tompkins Avenue, is over 870,000 sq ft (approximately 2.3 acres). Ownership is split between Bayley-Seton Hospital (lot 1), The Salvation Army (lots 25 and 40), and SV Land Three, LLC (lot 150). The site is zoned R3-2, and buildings are currently in use as medical facilities or are completely vacant.

This site has a rich and complex history. Originally farmland, Seaman’s Retreat was developed in the 1830’s as Staten Island’s first hospital , serving retired naval and commercial sailors. There are two historical landmarks on the site which include the Main Building and Physician-in-Chief’s Residence of the former Seaman’s Retreat hospital which occupied the site between 1831 and 1882. In the 1880’s the New York Marine Society acquired Seaman’s Retreat and subsequently leased the property to the federal government for use as a U.S. Marine Hospital.

At this time, Dr. Joseph J. Kinyoun established a single-room bacteriological lab on the top floor of the Marine Hospital. In 1902, the U.S. Congress passed legislation to fund the lab (known as the “Laboratory of Hygiene for Bacteriological Investigation”), which resulted in a move from Staten Island to Washington D.C. and laid the groundwork what would become the National Institutes of Health. In 1902, the U.S. federal government acquired the property and took over complete operations of what had become the nation’s largest marine hospital.

By the 1930’s, President Franklin D. Roosevelt’s New Deal plan paved the way for construction and maintenance U.S. Public Health Service Hospitals to serve both the military and the public. Under this plan, the main building was constructed on the site and, built in the iconic Mayan Revival style, is architecturally distinct relative to the older buildings on the site. The site remained a U.S. Public Health Service Hospital until 1981, providing services including in- and out- patient treatment, emergency services, surgery, and rehabilitation.

Shortly after he took office, President Regan announced a plan to close and sell all Public Health Service Hospitals. At this time, the site was sold to the Sisters of Charity, New York (a Catholic medical and social services system which also operated the St. Vincent’s Medical Centers system). The hospital was renamed Bayley-Seton after New York’s Saint Elizabeth Ann Seton and her father Richard Bayley, an American born British Army Revolutionary War surgeon and founder of the New York Dispensary. Also in the 1980’s, the hospital turned over part of the campus to the New York Foundling Hospital. Certificates of Occupancy maintained by the NYC Department of Buildings throughout the 1980’s indicate that medical activities such as psychiatry, pulmonology, and dermatology examination rooms, nuclear medical and radiological and morgue operations all took place on the site.

STRATEGIC SITE 1 : Bayley - Seton



In the 1990's, Amethyst House, a women's drug abuse treatment center, opened on the site. An Alcoholism Acute Care Unit, the St Vincent's Nursing School, and the St Elizabeth Ann's Health Care and Rehabilitation Center also established operations on the site at this time. Social service agencies also began operations in other buildings and a psychiatric emergency center was established.

By 2009, The Salvation Army had purchased lots 25 and 40, and finalized plans for a Kroc Center community facility. However, plans never broke ground as result of economic recession, and the site remains unused to this day.

In 2011, St. Vincent Catholic Medical Center initiated a process of selling St. Elizabeth Ann's Health Care and Rehab Center for at least \$34 million and lease the former Bayley-Seton hospital in bankruptcy court. St. Elizabeth Anne's once consisted of a 300-bed facility with skilled nursing and an extended facility. Bayley-Seton presently houses mental-health and substance abuse programs, a psychiatric emergency facility, and a detox unit. Today it is leased and operated by the Richmond University Medical Center (RUMC), which has plans to relocate to a different site on its main campus in Westerleigh. In 2013, RUMC announced that they would close the detox center, reducing the number of detox beds in the borough from 100 to 63.

In 2012, Bayley-Seton became a temporary shelter for Staten Island residents who had been displaced by Hurricane Sandy.

On the site, there are 11 tanks on site registered with the New York State Petroleum Bulk Storage program (NYS PBS No. 2-034304). Six of these have been closed, and all but one have been removed. Two underground tanks are temporarily out of service. Two tanks are in service and are located above ground and have no contact with the soil. In 1995, an unknown amount of Fuel Oil #2 spilled on the site (NYS Open Spill No. 9511313) and affected soil resources on the site. The spill was the result of a tank test failure and was subsequently closed in May 2013.

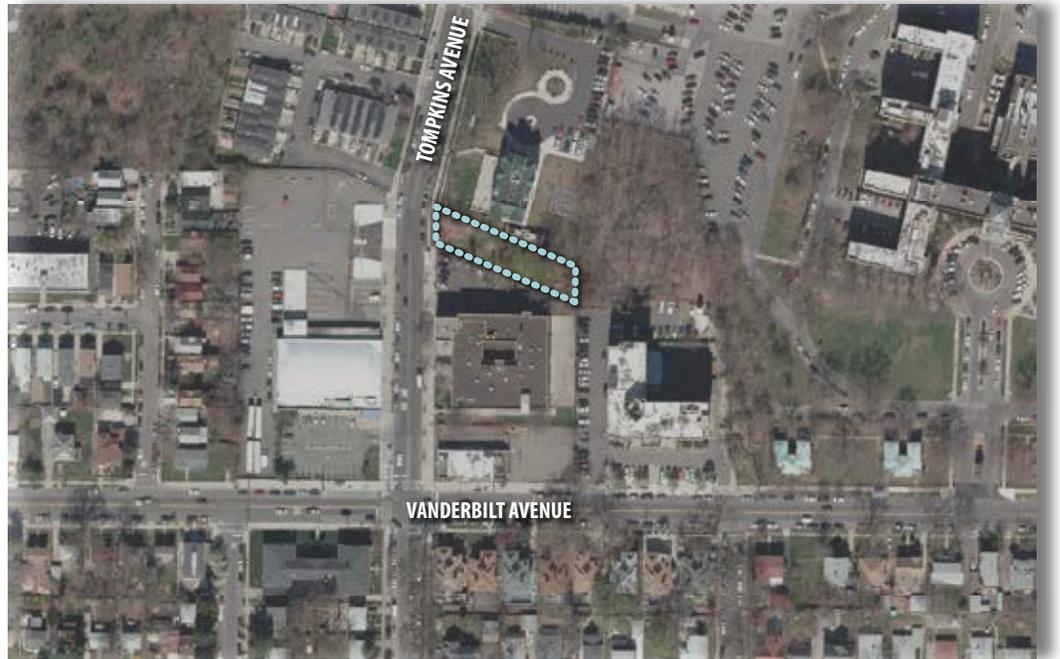
STRATEGIC SITE 2 : Tompkins Avenue

Address	<i>Tompkins Avenue (between Vanderbilt and Hill Street)</i>
Map Location	<i>74°4'37.655"W 40°37'16.281"N</i>
Zoning	<i>C1-1/R3-2</i>
Block / Lot	<i>534 / 84</i>
Ownership	<i>Liota, Peter</i>
Total Site Area	<i>10, 500 sqft</i>
Existing Buildings	<i>0</i>

Summary

Originally part of what was once the Seaman's Retreat Hospital, this site is adjacent to the Richard Hungerford School and the New York Foundling site. It is presently vacant with no structure. The lot is zoned R3-2/C1-1 and is a total of 10,500 square feet. It is privately owned by Peter Liota.

STRATEGIC SITE 2 : Tompkins Avenue



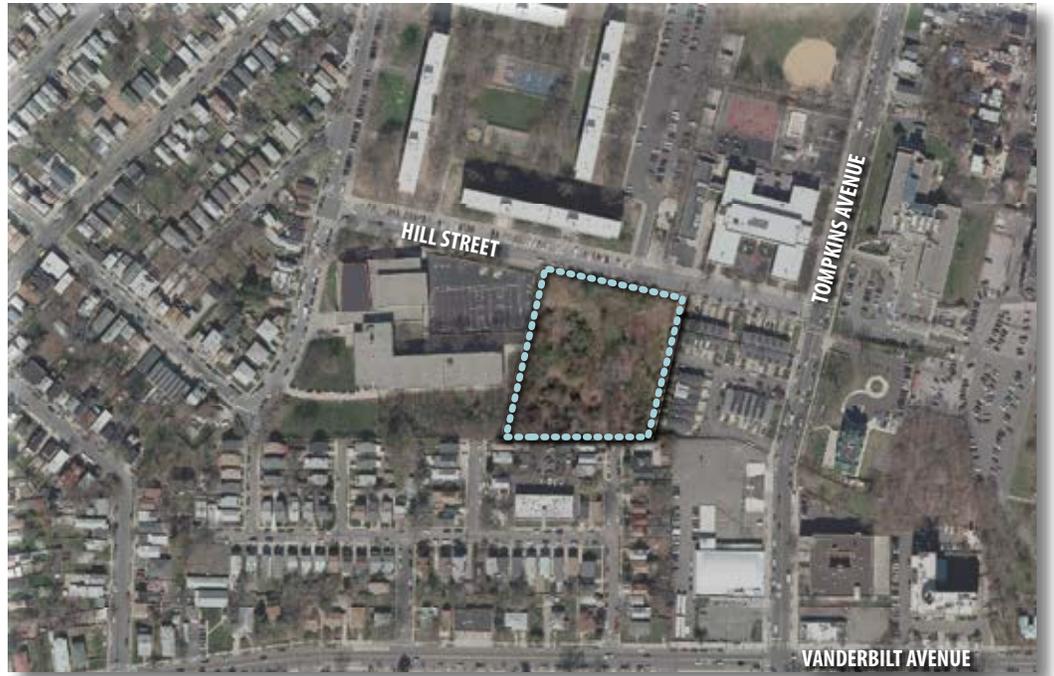
STRATEGIC SITE 3 : NYPD

Address	Hill Street (between Tompkins Avenue and Warren Street)
Map Location	74°4'45.602"W 40°37'15.452"N
Zoning	R3-2
Block / Lot	556 / 100
Ownership	NYPD
Total Site Area	104,355 sqft
Existing Buildings	0

Summary

Located on Hill Street, adjacent to the Bert A. Dreyfus Intermediate School 49, this site is approximately 104,000 square feet in size (2.4 acres). The site, owned by the New York Police Department, is vacant with no built structure and zoned R3-2. Historic Sanborn Fire Insurance maps indicate that this property has never been developed.

STRATEGIC SITE 3 : NYPD



STRATEGIC SITE 4 : Broad Street

Address	25 Broad Street
Map Location	74°4'34.277"W 40°37'32.314"N
Zoning	R4/C2-2
Block / Lot	525 / 37
Ownership	Asam LLC.
Total Site Area	7,554 sqft
Existing Buildings	1

Summary

Located on Broad Street between Bay and Wright Street, this potential strategic site is partially occupied by a two-family home. Public records indicate the residential building is 1,500 square feet and it situated on a much larger lot which remains vacant and unimproved. The site has a total area of 7,554 square feet and is owned by Asam LLC. Historic Sanborn Fire Insurance maps indicate that this site has been used for residential purposes.

STRATEGIC SITE 4 : Broad Street



STRATEGIC SITE 5 : Canal Street

5A

Address	<i>Canal Street (between Wright and Cedar Streets)</i>
Map Location	<i>74°4'44.97"W 40°37'33.362"N</i>
Zoning	<i>C2-2/R3-2</i>
Block / Lot	<i>527 / 52 , 50 , 49</i>
Ownership	<i>AGGARWAL RAJENDRA P, IEROTHEOS MORAITIS, CANAL STREET PROPERTIES</i>
Total Site Area	<i>52,540 sqft</i>
Existing Buildings	<i>0</i>

5B

Address	<i>Canal Street (between Wright and Cedar Streets)</i>
Map Location	<i>74°4'48.815"W 40°37'29.242"N</i>
Zoning	<i>C2-2/R3-2</i>
Block / Lot	<i>527 / 70, 66 , 68 , 65</i>
Ownership	<i>EMERALD MANAGEMENT LLC</i>
Total Site Area	<i>17,312 sqft</i>
Existing Buildings	<i>0</i>

Summary

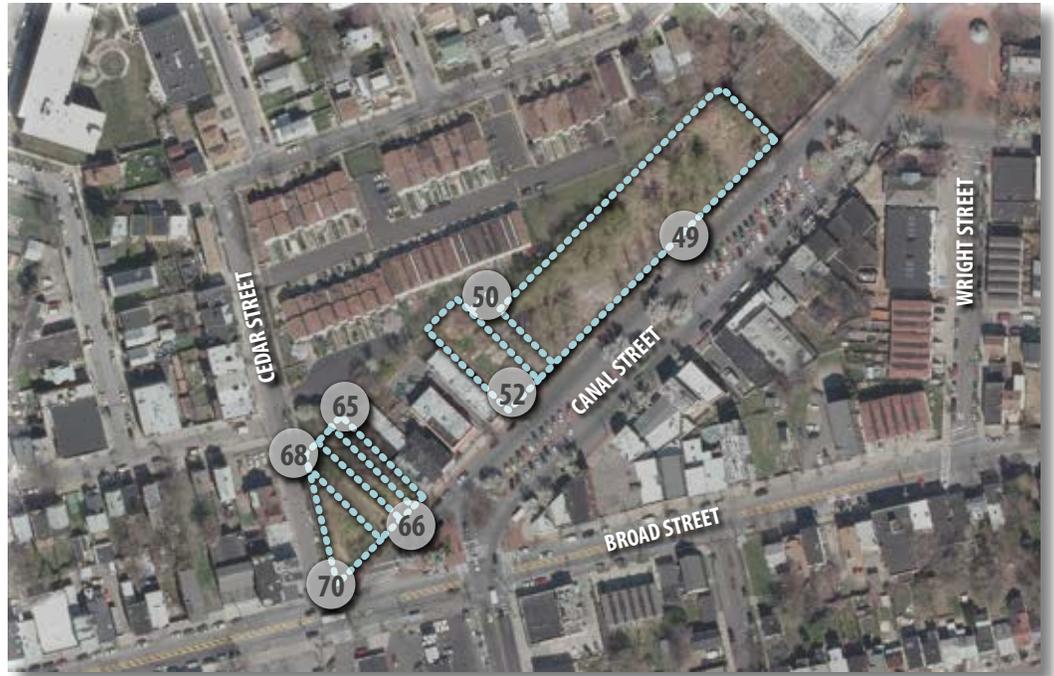
Canal Street (A) is a cluster of adjacent tax lots on Canal Street between Wright and Cedar Streets. A total of 52,540 square feet, ownership of the site is split between three parties: Aggarwal Rajendra, Ierothereos Moraitis, and Canal Street Properties. The site owned by Canal Street Properties (lot 49) is the largest of the three (39,940 square feet). All of these lots are vacant with no built structures and are zoned R3-2/C2-2.

Canal Street (B), also a cluster of adjacent tax lots, is separated from Canal Street (A) by five existing buildings. On March 19, 2014 a three-alarm fire spread through three of these buildings, causing heavy damage to the beauty salon, upper-floor apartments, and shipping company in three of these buildings (215, 217, and 219 Canal Street). As of the writing of this report, the cause of the fire was still under investigation. Each lot included as a potential strategic site is vacant with no built structure and zoned R3-2/C2-2. These four tax lots are commonly owned by Emerald Management LLC.

Historic Sanborn Fire Insurance maps illustrate how these sites were a focal point of commercial and cultural life in historic Stapleton. The maps show that in 1885 the site was an integral part of a commercial area with small shops including a tailor, cigar shop, saloons, a bakery, a hotel, and horse stables. These maps show that by 1899, the growth of the brewing industry had begun and show that this site also hosted a beer garden, saloons and a hotel. By this time, the Rubsam and Horrmann Atlantic Brewery had established operations adjacent to this potential strategic site.

Maps from 1917 and 1951 illustrate that saloons remained on the site. At this time a plumbing shop, bakery, bowling alley, tin shop, garage, and office space had also opened on the site.

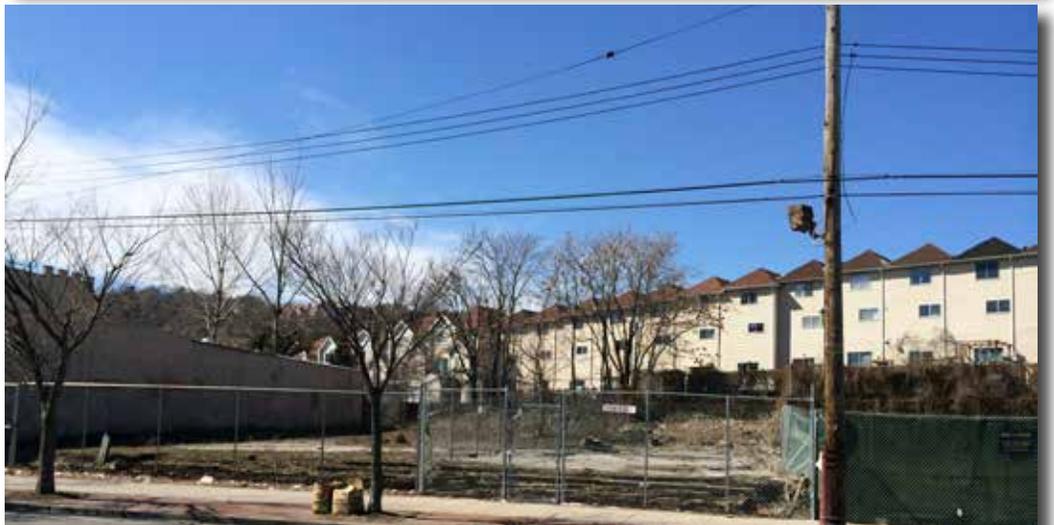
STRATEGIC SITE 5 : Canal Street



5A



5B



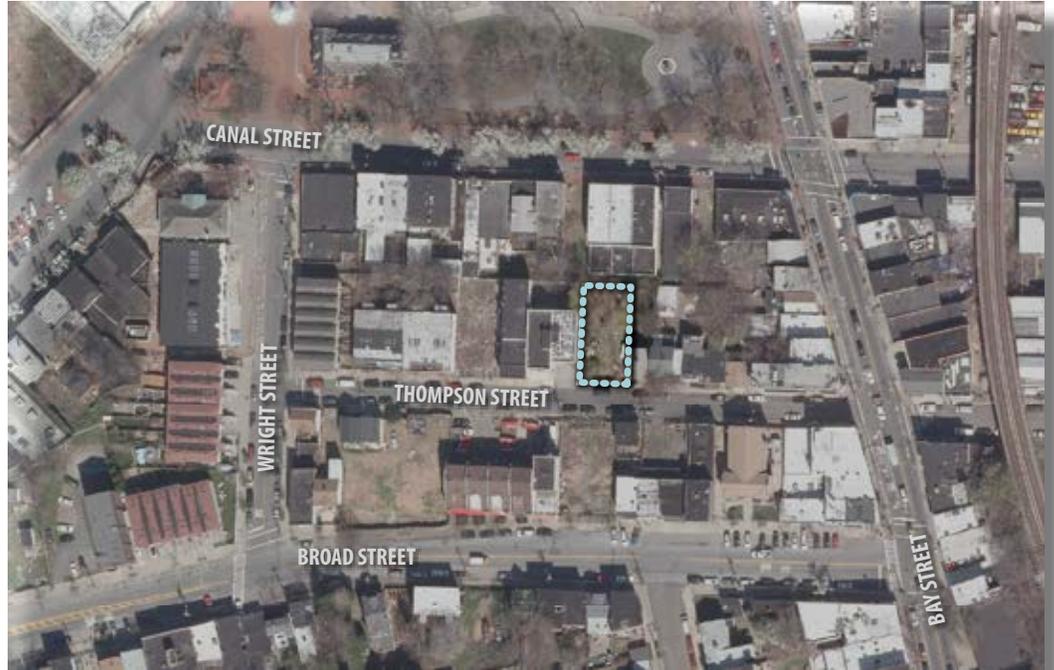
STRATEGIC SITE 6 : Thompson Street

Address	Thompson Street (between Wright and Bay Streets)
Map Location	74°4'34.501"W 40°37'33.832"N
Zoning	C4-2
Block / Lot	524 / 40
Ownership	NICHOLAS C GNAZZO
Total Site Area	5,000 sqft
Existing Buildings	0

Summary

Located on Thompson Street between Bay and Wright Streets, this lot is vacant with no built structure. Approximately 5,000 square feet, the lot is zoned C4-2 and is owned by Nicholas Gnazzo. Historic Sanborn Fire Insurance maps indicate that the site has historically been used for housing. Some of the site's land use history is contained in the NYC Vacant Property Database in the Mayor's Office of Environmental Remediation's SPEED portal.

STRATEGIC SITE 6 : Thompson Street



STRATEGIC SITE 7 : 77 Thompson Street

Address	77 Thompson Street
Map Location	74°4'36.392"W 40°37'33.471"N
Zoning	C4-2
Block / Lot	524 / 60
Ownership	ALTAN HOLDINGS LLC
Total Site Area	4,200 sqft
Existing Buildings	0

Summary

Located on Thompson Street between Bay and Wright Streets, this lot is vacant with no built structure. Approximately 4,200 square feet, the tax lot is zoned C4-2 and is owned by Altan Holdings LLC. Historic Sanborn Fire Insurance maps indicate that the site has historically been used for housing. Some of the site's land use history is contained in the NYC Vacant Property Database in the Mayor's Office of Environmental Remediation's SPEED portal. Records maintained by the NYC Department of Buildings indicate that a job had been filed a new multi-family building with a ground-floor storefront. The plan was disapproved in January 2011, and notes indicate that a Development Challenge Process is pending Zoning Approval.

STRATEGIC SITE 7 : 77 Thompson Street



STRATEGIC SITE 8 : Bay Street

Address	Bay Street (between Vanderbilt and Broad Streets)
Map Location	74°4'26.873"W 40°37'28.415"N
Zoning	R3-2/C2-2
Block / Lot	496 / 40, 49, 50
Ownership	NYC MTA , NYC DCAS
Total Site Area	24,684 sqft
Existing Buildings	0

Summary

Publicly owned, this set of three tax lots is located between Bay Street and the Staten Island Railroad right-of-way. The site appears to be vacant with some storage of materials on the site and some accessory parking to businesses located on lots 51 and 52. Zoned R3-2/C2-2, the site has no built structure. The location of this site within such close distance to the railroad right-of-way may indicate an increased potential of environmental contamination.

STRATEGIC SITE 8 : Bay Street



STRATEGIC SITE 9 : Water Street

Address	Water Street
Map Location	74°4'28.808"W 40°37'37.044"N
Zoning	C4-2A/SW
Block / Lot	493 / 12
Ownership	BLOCK 493 DEVELOPERS
Total Site Area	23,625sqft
Existing Buildings	0

Summary

Located at the south-west corner of Front and Water Streets, this potential strategic site is a large vacant lot with no built structure. Over 23,500 square feet in area, it is zoned C4-2A. This property was rezoned from M3-1 to C4-2A and is now a part of the Stapleton Special Waterfront District. This site is located across the street from the Homeport development project. As such, streetscape improvements are expected on this block.

Historic Sanborn Fire Insurance maps illustrate that the site had been used for saloons, hay storage, and wagon sheds from 1885 through 1917. By 1917, there were a few dwellings on the site which continue to appear on maps from 1951. Certificates of Occupancy maintained by the NYC DOB indicate that in 1955, the site was approved for parking lot use. In 1960, a Certificate of Occupancy was issued for the property for the establishment of auto sales in addition to parking.

Some of the site's land use history is contained in the NYC Vacant Property Database in the Mayor's Office of Environmental Remediation's SPEED portal. When the area was rezoned, the property received two E-designations: one for noise and one for hazardous materials.

STRATEGIC SITE 9 : Water Street



STRATEGIC SITE 10 : 1 Water Street

Address	1 Water Street
Map Location	74°4'28.697"W 40°37'38.691"N
Zoning	C4-2A/SW
Block / Lot	492 / 31
Ownership	U S OF AMERICA
Total Site Area	13,500 sqft
Existing Buildings	0

Summary

Located on north-west corner of Front and Water Streets, this potential strategic site is a large vacant lot with no built structure. Approximately 13,500 square feet in area, it is zoned C4-2A. This property, located across the street from potential Strategic Site 9, was also rezoned for inclusion in the Stapleton Special Waterfront District. The site is currently under the ownership of the US Federal government.

Historic Sanborn Fire Insurance maps illustrate that the site had largely been used for housing from the late 19th century through the mid 20th century. By 1937, some parking had been established on the site that was converted into storage space by 1951. As a part of the rezoning actions involving this site, the property received an E-designation for noise.

STRATEGIC SITE 10 : 1 Water Street



STRATEGIC SITE 11 : Paramount Theater

Address	560 Bay Street
Map Location	74°4'35.861"W 40°37'40.941"N
Zoning	C4-2
Block / Lot	513 / 5
Ownership	PROSPECT 88 REALTY LLC
Total Site Area	NA
Existing Buildings	1

Summary

Located on Bay Street between Prospect Street and Union Place, the Paramount Theater is a portion of a building on 31,000 square feet tax lot. Presently owned by Prospect 88 Realty, LLC, the portion of the building not dedicated to the historic theater is occupied by commercial businesses that front Bay Street (both on the ground floor and second story) including a real estate office, nail salon, thrift shop, hair salon, and dance studio. The theater makes a frontage of approximately 35 foot on Bay Street and extends roughly 215 feet deep into the tax lot. The entire building is approximately 32,000 square feet, 25,000 square feet of which is occupied by the theater space.

Historic Sanborn Fire Insurance maps illustrate that that prior to the construction of the theater, the site was largely an open and empty lot with a single dwelling on the site. The theater opened its doors in 1930. For a time, it served as a movie theater, but stopped film shows in 1977. Through the end of the 1980's, the theater remained closed but was used as a nightclub and multipurpose venue, as well as a rock music venue hosting acts such as the B52s, Squeeze, and the Ramones. Presently vacant, the theater remains an important cultural feature of the neighborhood.

On the site, there is one tank with a capacity of 4,000 gallons that is registered with the New York State Petroleum Bulk Storage program (NYS PBS No. 2-111600). The tank is closed but remains in place and in contact with the soil.

STRATEGIC SITE 11 : Paramount Theater



STRATEGIC SITE 12 : Prospect Street

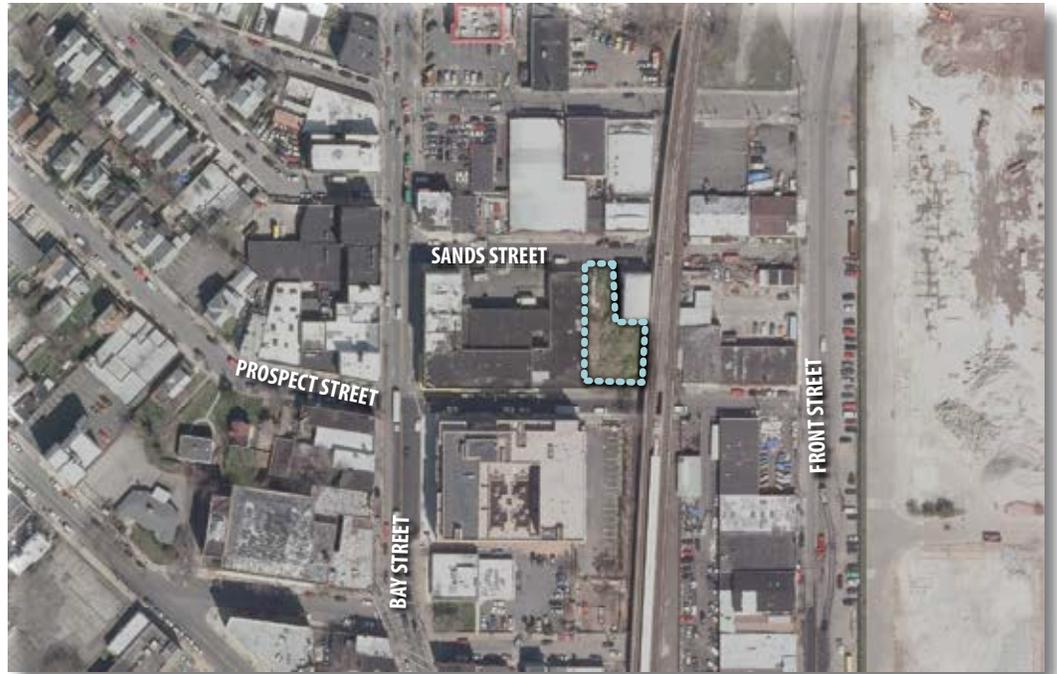
Address	Prospect Street
Map Location	74° 4' 31.8" W 40° 37' 43.6" N
Zoning	C4-2
Block / Lot	490 / 49
Ownership	Aria 1 Hotel LLC
Total Site Area	8,740 sq ft
Existing Buildings	0

Summary

This vacant site is located on Prospect Street between Bay Street and the railroad right-of-way. Sanborn maps show that the site has a long history of meat packing operations. It was the home of the Stapleton Beef Co. and an associated ice house in 1898. In 1917, Swift & Co. Wholesale Meats maintained a 12-ton ice machine, cold storage, a gas engine, condensers, ammonia tanks, a refrigeration plant, and a garage, in addition to offices there. Sanborns indicate the cooler, garage, ammonia tanks, and refrigeration plant were on the site through at least 1977. Some of the site's land use history is contained in the NYC Vacant Property Database in the Mayor's Office of Environmental Remediation's SPEED portal.

The site is zoned C4-2 and privately owned. The site's proximity to the railroad right-of-way may indicate an increased potential of environmental contamination.

STRATEGIC SITE 12 : Prospect Street



STRATEGIC SITE 13 : 475 Bay Street

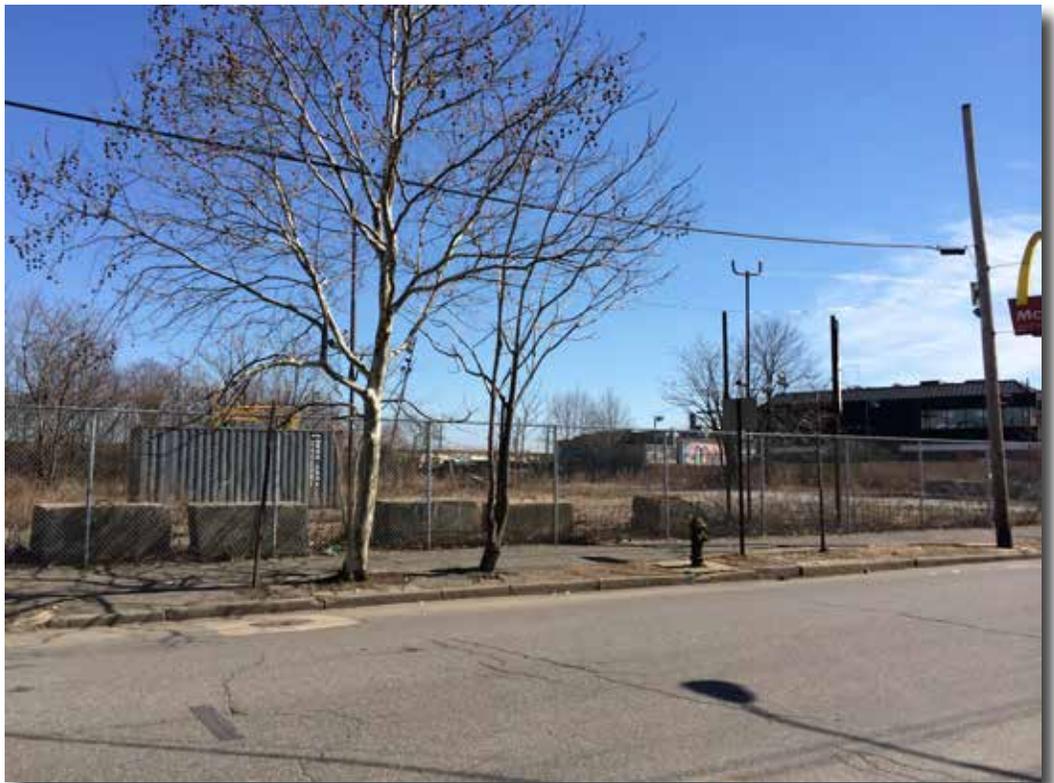
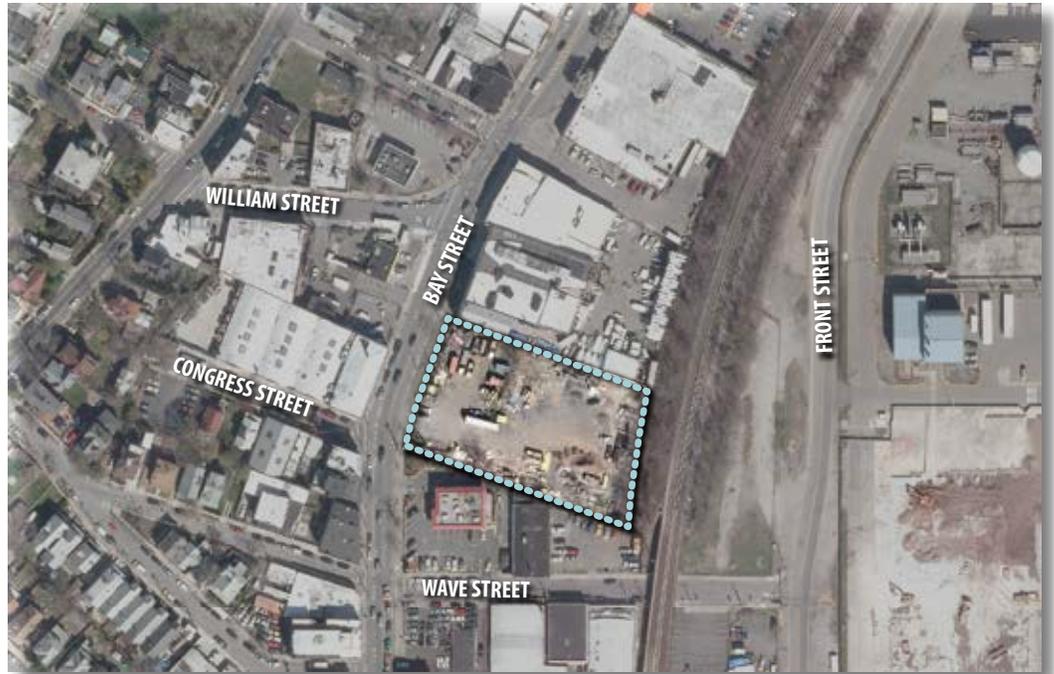
Address	475 Bay Street
Map Location	74°4'33.01"W 40°37'49.153"N
Zoning	M1-1
Block / Lot	488 / 9
Ownership	RAMPAUL KATHLEEN
Total Site Area	53,422 sqft
Existing Buildings	1

Summary

Located on Bay Street between Congress and William Street, this potential strategic site is a large and vacant site with no built structure. Field observations in March 2014 revealed that the site is being used for some parking and some storage of construction materials. The site is adjacent to a McDonald's Restaurant and a vacant building. Over 53,000 square feet in area, the lot is zoned M1-1.

Historic Sanborn Fire Insurance maps indicate that the site has a long history of industrial uses. Historic maps from 1885 through 1917 show that the James Thompson and Sons Lumber Yard operated on the site. Sanborn maps from 1937 illustrate that operations had turned over to the Chas F. McAteer, Inc Coal Yard and that coal piles, sand piles, oil and grease storage, fueling stations, and fuel tanks were all located on the site. By 1951, operations had turned over again to the JT Montesani Sand and Gravel Company, Inc. At this time, sand and gravel storage and parking and fueling took place on the site. In 1968 a Certificate of Occupancy was issued by the NYC DOB for the open sales and storage of new and used cars. Some of the site's land use history is contained in the NYC Vacant Property Database in the Mayor's Office of Environmental Remediation's SPEED portal.

STRATEGIC SITE 13 : 475 Bay Street



STRATEGIC SITE 14 : 365 Bay Street

Address	365 Bay Street
Map Location	74°4'29.297"W 40°37'59.978"N
Zoning	M1-1
Block / Lot	488 / 71
Ownership	WATERFRONT OWNERS, LLC
Total Site Area	15,000 sqft
Existing Buildings	1

Summary

Located on Bay Street between St. Julian and Grant Street, this potential strategic site is approximately 15,000 square feet and zoned M1-1. Owned by Waterfront Owners, LLC there is one structure on the site, an unfinished development of a spa that stalled in 2010. Historic Sanborn Fire Insurance maps illustrate this site’s close relationship with the historical industry that took place in this area. In 1898, the site had yet to be developed, but by 1917 had been acquired, reclaimed, and developed as a part of the expansion of Ichabod T. Williams Lumber Yard. At this time, there was a warehouse located on the site. These historic maps show that between 1937 and 1951, the operations of I.T. Williams Lumber Yard had ceased, and that the site was turned over to a coal storage business.

The location of this site within such close distance to the railroad right-of-way may indicate an increased potential of environmental contamination.

STRATEGIC SITE 14 : 365 Bay Street



STRATEGIC SITE 15 : Bay Triangle

Address	Bay Street (between St. Julian and Van Duzer Streets)
Map Location	74°4'32.299"W 40°38'4.277"N
Zoning	M1-1
Block / Lot	502 / 1
Ownership	BAY TRIANGLE LLC
Total Site Area	23,000 sqft
Existing Buildings	0

Summary

Located at the intersection of Bay Street and St. Julian Place , this potential strategic site is vacant with no built structure. Roughly 23,000 square feet in area, it is zoned M1-1 and owned by Bay Triangle LLC.

Historic Sanborn Fire Insurance maps illustrate how this site was a part of a once contiguous tax block, Block 502. The construction of Van Duzer Street effectively split Block 502 into two triangular shaped lots. Historic maps from 1898 illustrate that dwellings were one the site as well as the K Feist Stone Works company. These maps show that stone cutting operations, a bake house, and saloons were also active on the site. Historic maps from 1917 through 1951 show that the site had developed to include a bike repair shop, printing shop, more saloons, tin work, and wagon houses. The K Feist and Sons Monument Works remained in business through at least 1951. In 1946, a Certificate of Occupancy was issued for the property by the NYC DOB permitting a building with ground floor storage, a first-floor machine shop, and second- and third-floor single-family residences.

Some of the site's land use history is contained in the NYC Vacant Property Database in the Mayor's Office of Environmental Remediation's SPEED portal.

STRATEGIC SITE 15 : Bay Triangle



STRATEGIC SITE 16 : Van Duzer Triangle

Address	Van Duzer Street
Map Location	74°4'33.993"W 40°38'5.024"N
Zoning	M1-1
Block / Lot	502 / 34
Ownership	MICHAEL BOTTALICO
Total Site Area	11,173 sqft
Existing Buildings	0

Summary

Located at the intersection of St. Julian Place and Van Duzer Street, this strategic site is currently used for truck and construction materials storage and has no built structure. Approximately 11,000 square feet, the site is zoned M1-1 and owned by Michael Bottalico.

Historic Sanborn Fire Insurance maps illustrate that this site shares a similar history to that of potential Strategic Site 15. Prior to the building of Van Duzer Street, the sites shared one contiguous tax block. Historic maps from 1898 illustrate that dwellings were once on the site as well as the K Feist Stone Works company. These maps show that stone cutting operations, a bake house, and saloons were also active on the site. Historic maps from 1917 through 1951 show that the site had developed to include a bike repair shop, printing shop, more saloons, tin work, and wagon houses. The K Feist and Sons Monument Works remained in business through at least 1951. In 2001, a Certificate of Occupancy was issued by the NYC DOB permitting open storage and sales of motor vehicles including trucks. This Certificate of Occupancy also permitted a hand car wash for up to 45 vehicles and an accessory sales office.

Some of the site's land use history is contained in the NYC Vacant Property Database in the Mayor's Office of Environmental Remediation's SPEED portal.

STRATEGIC SITE 16 : Van Duzer Triangle





FLOOD RISK AND RESILIENCY

As a coastal area, Stapleton is located within a flood zone, making it particularly vulnerable to the economic and infrastructure challenges associated with flood damage. Characterized by an older building stock, some industrial businesses and facilities, attached and semi-attached structures, and ground floor retail along the Bay Street commercial corridor, the built environment in Stapleton may be difficult to retrofit for flood resiliency. As such, flood vulnerability may be a significant obstacle for economic development in Stapleton. Existing businesses that lack the resources to invest in flood-resilient renovations or to pay increasing flood insurance premiums may choose to relocate out of the flood zone, while prospective firms may subsequently see Stapleton as a higher-risk place to do business. Further, environmental contamination and the containment of hazardous materials and waste is uniquely problematic in a flood zone as the potential for wide-spread contamination is considerable. This document is meant to provide a preliminary basis to inform future planning and economic development strategies in light of these challenges.

Additional research and analysis has been done to summarize the short- and long- term damage and impact sustained by Hurricane Sandy (October 29, 2012) and to identify factors that exacerbate flood damage risk in the Study Area. In addition to synthesis and presentation of relevant data that is already available, extensive field work was conducted to begin to measure the vulnerabilities of buildings in the area that's been identified as the 100-year flood zone in the Stapleton Study Area. The findings of this survey are presented in this chapter and highlight the complicated nature of assessing flood vulnerability in light of an evolving regulatory environment oriented around flood resiliency. What follows is an overview of the impact of Hurricane Sandy on Stapleton. The Special Initiative for Rebuilding and Resiliency (SIRR) report, "A Stronger, More Resilient New York," released by the New York City Office of the Mayor, data from FEMA, the Office of Emergency Management, the CUNY Institute for Sustainable Cities, and the New York Panel of Climate Change were foundational resources used for this section.

Analysis of land use patterns, employment, and demographics done in previous sections of this report reflect pre-storm conditions. While the neighborhood has recovered somewhat since Sandy, many uncertainties remain. These uncertainties, including future flood risk implications, are explored in this chapter.

Data Sources

*The **Federal Emergency Management Agency (FEMA)** administers the **National Flood Insurance Program (NFIP)**, the Federal Program under which flood-prone areas are identified and flood insurance is made available to the owners of the property in participating communities.*

100 – Year flood plain and Special Flood Hazard Areas (SFHAs)

The 1 percent annual chance flood is also referred to as the base flood or 100-year flood (or flood plain). This is also known as a Special Flood Hazard Area (SFHA). SFHAs are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30. Areas subject to inundation by the 1-percent-annual-chance flood event are determined by detailed methods. Base Flood Elevations (BFEs) are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.

Base Flood Elevation (BFE)

The base flood is the national regulatory standard used by the National Flood Insurance Program (NFIP) and all Federal agencies for the purposes of requiring the purchase of flood insurance and regulating new development. The Base Flood Elevation (BFE) is the elevation shown on the Flood Insurance Rate Map (FIRM) for Zones AE, AH, A1-30, or VE that indicates the water surface elevation resulting from a flood that has a 1-percent chance of occurring in any given year.

The following flood zones are referred to with respect to Stapleton:

Zone A

Zone A is comprised of the area subject to storm surge flooding from the 1% annual chance coastal flood. These areas are not subject to high velocity wave action but are still considered high risk flooding areas.

Coastal A / AE

Coastal A / AE: The portion of the Special Flood Hazard Area landward of a V zone (i.e., areas where wave heights are computed as less than 3 feet) that is mapped as an A or AE zone on the FIRM. While the wave forces in coastal A zones are not as severe as those in V zones, the capacity for the damage or destruction of buildings is still present.

Zone V / VE

Zone V / VE An area of high flood risk subject to inundation by the 1% annual-chance flood event with additional hazards due to storm-induced velocity wave action (a 3-foot or higher breaking wave). Typically, this is the area where the computed wave heights for the base flood are 3 feet or more. V zones are subject to more stringent building requirements and different flood insurance rates than other zones shown on the FIRM because these areas are exposed to a higher level of risk than other coastal flooding areas.

500 - Year flood plain

The 0.2 percent annual chance flood is also referred to as the 500 -year flood (or flood plain).

Flood Insurance Rate Maps (FIRMs)

FIRMs are the official map of a community on which FEMA has delineated the 1% annual chance (base) floodplain or Special Flood Hazard Area, the Base Flood Elevations (BFEs), and the risk premium zones applicable to the community. The FIRM is used to determine who must buy flood insurance and where floodplain development regulations apply. Once effective, FIRMs are available through the local community map repository and online.

Preliminary Work Maps (PWMs)

The preliminary work maps created for certain New Jersey/New York communities are an interim product created by FEMA in the development of preliminary Flood Insurance Rate Maps (FIRMs). The preliminary work maps reflect the full results of an ongoing coastal flood hazard study for the New York/New Jersey coast.

Preliminary Flood Insurance Rate Maps (pFIRMs)

A FIRM that is not yet effective that reflects the initial results of a flood map project performed by or for FEMA. The Preliminary FIRM (pFIRMS) is provided to the Chief Executive Officer (e.g., Mayor, County Commissioner, etc.) and floodplain administrator for each affected community and is available to all citizens for review both online or through the local community map repository (often the community planning or zoning office).

North American Vertical Datum of 1988 (NAVD88)

A datum is a vertical plane from which surveyors measure elevations. The North American Vertical Datum of 1988 (NAVD88) is the standard vertical datum used by the federal government for mapping projects.

New York Panel on Climate Change Flood and Climate Projections

New York City Panel on Climate Change (NPCC), a body of leading climate and social scientists, updated its 2009 projections in a report called Climate Risk Information 2013 in order to inform planning for rebuilding and resiliency post-Sandy.

HURRICANE SANDY

On October 29, 2012, as peak high tide approached New York Harbor, Hurricane Sandy made landfall in the New York City metropolitan area. This nearly 1,000-mile-wide storm generated colossal storm surges causing widespread destruction of homes and businesses along 51 square miles of New York City's urban coastline, wiping out power for nearly two million people and shutting down transportation networks. Exceeding expected inundation mapped out by FEMA's "100-year" flood zones, storm surge highlighted weaknesses in the Federal Emergency Management Agency's (FEMA) Flood Insurance Maps (FIRMs) and the administration of the National Flood Insurance Program (NFIP). These maps, which define geographies for predicted flooding in the 100- and 500-year flood zones, are based on the statistical probability of the 1 percent chance and 0.2 percent chance flood events per year respectively, and had not been significantly updated since 1983.

Despite what these maps indicate, many properties in Stapleton were unprepared for the storm and the resulting storm surge and flooding both in terms of structural resiliency and insurance coverage. The inundation of flood waters from Hurricane Sandy and the changes to the regulatory climate due to an upcoming map update and the implementation of the Biggert-Waters Flood Insurance Reform Act of 2012 will have lasting impacts on Stapleton. The events of Hurricane Sandy have made clear the vulnerabilities faced by New York City as a coastal city. The implications of these vulnerabilities, and ultimately their solutions, may take different forms based on local neighborhood contexts. Stapleton is unique in its vulnerabilities based on the characteristics of the built environment, its local economy and demographics, and the probable presence of environmental contamination.



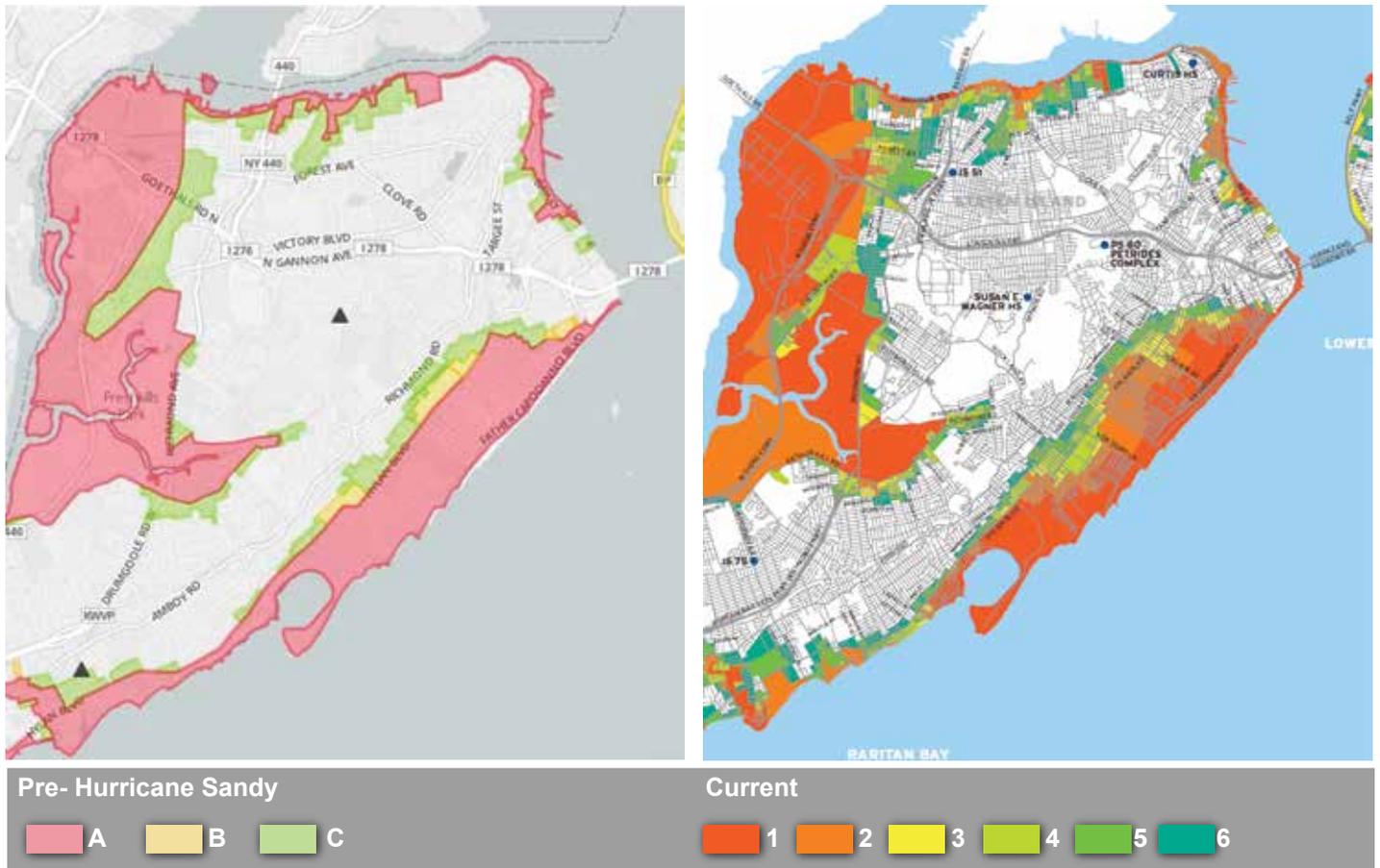
Images of Stapleton post-storm from top left clockwise: Stapleton Waterfront facing north; Staten Island Rail Clifton Station; Western Beef, Bay Street; Stapleton Town Center, Broad Street

Evacuation Zones In October of 2012, a large portion of Stapleton was located in Hurricane Evacuation Zone A, an area defined by and identified by the City of New York as “at risk from any hurricane that makes landfall close to New York City.” In preparation for the storm, this zone was deemed a Mandatory Evacuation Zone by then-Mayor Bloomberg. Preceding the storm, portions of Stapleton were in Evacuation Zone B, which is characterized as having potential flooding in a category two or higher hurricane.

The extent of New York City’s Hurricane Evacuation Zones with reference to Stapleton is shown below in Map 5.1. Since Hurricane Sandy, New York City has revised these zones and replaced the letter system with a graded number system. Designed to allow for flexibility in targeting areas for evacuation, zones now range from 1 through 6 and include 600,000 New Yorkers that had not been previously included. Under these revisions, most of the Study Area is located within Hurricane Evacuation Zone 2. These new evacuation zones are also shown in Map 5.1.

Map 5.1 Evacuation Zones

Source: NYC OEM



Storm Surge As a result of storm surge generated by Hurricane Sandy, a significant portion of Stapleton suffered flooding. The severity of this flood has highlighted the vulnerabilities of Stapleton and New York City's urban waterfront as a whole. Flooding in Stapleton took two forms: flood waters directly from the New York Upper Bay, which were characterized by significant wave action at the water's edge, and from the drainage infrastructure below the street as the sewer system's catch basins, manholes, and storm drains were overwhelmed by surge inundation. Flood waters reached beyond the railroad tracks that run the length of Front Street, filling Tappen Park with water. Nearly all of Bay Street in the Study Area was inundated, causing damage to many of the commercial businesses located there. In some places, flooding in the Study Area reached depths of over seven feet. Along the waterfront, immediately outside of the Study Area, flood depths during Hurricane Sandy are estimated to have reached over 14 feet.

Map 5.2 on page 91 illustrates the inundation of flood water resulting from storm surge that occurred in Stapleton. This map, created post-storm, is based on the FEMA Modeling Task Force Surge Extent (November 2, 2012). As illustrated, the portion of the Staten Island Railroad that is elevated on a berm did not experience any flooding.



Hannah Street and Lyons Pool post-storm

Infrastructural Impact As a result of widespread flooding, critical infrastructure was compromised during Hurricane Sandy. Loss of power, damage to transportation networks including damage to the Staten Island Ferry Terminal and Staten Island Rail, and overwhelmed wastewater treatment facilities across the city highlighted weaknesses in the strength and resiliency of infrastructure.

Power Supply Widespread power outages occurred on Staten Island as a result of Hurricane Sandy. Wind and downed trees resulted in damaged power lines on much of the island. The largest of the outages occurred in Castleton and Westerleigh, Sunnyside, Rosebank/Fort Wadsworth, New Dorp, Richmond, and Great Kills. On the night of the storm over 18,000 Con Edison customers on Staten Island were without power.

Drainage The Port Richmond Wastewater Treatment Plant, the plant that serves this portion of Staten Island, suffered damaged equipment and heavy flows. While it maintained its ability to disinfect waste, 30 million gallons of partially treated sewage bypassed the facility during the storm^{iv}.

Transportation The flooding induced by storm surge during Hurricane Sandy brought historic outages and flood damage, impairing mobility throughout the New York City area. Prior to the storm, The Port Authority of New York and New Jersey, the Metropolitan Transportation Authority, and the New York City Department of Transportation closed all of the city's major bridges and tunnels, with the exception of the Lincoln Tunnel. These closures included the Bayonne and the Verrazano-Narrows Bridges, which connect Staten Island to New Jersey and Brooklyn. The MTA also suspended all subway, bus, and commuter rail service in New York City on October 28 in preparation for the storm. This included suspension of the Staten Island Ferry, which resumed service on November 3. Temporary ferry service was added between the Great Kills and Lower Manhattan on November 26 to service the Island's hard-hit south and east-shore residents.

As referenced earlier in this report, the Staten Island Railroad is an above-ground railroad that operates on a continuous north-south corridor on Staten Island. Despite large-scale outages and debris littering the tracks, the SIR resumed limited service on November 3 and full service by mid-December 2012. Near Stapleton, severe damages were sustained at the Clifton Station and to the Staten Island's Railway's only mechanical repair facility, the Clifton MUE Shop. The shop lost critical mechanical parts and experienced flood damage to walls and storerooms, complete loss of electrical power, damage to the boiler, loss of machinery and tools, loss of personnel records and documents, flooding of pump pits, and loss of car hoists and jacks^v. As of October 17, 2013 \$1.7 million in losses were estimated for materials and equipment, and labor costs associated with recovery were estimated at \$450,000. Many critical tools and equipment required replacement, and the site operated under generator power for over a year. Employees had to use portable jacks to elevate trains, and tasks related to inspections and emergency repair work took significantly longer than in pre-storm conditions.

Waterfront In preparation for the storm, gangways were removed from boat terminals and landings in order to allow floating elements of docks and piers to move freely with the tide and surge to prevent damage to buildings and facilities along the waterfront. However, given the velocity of waves on the coastline, the surge damaged landings, docks and bulkheads along the waterfront.

Buildings In some cases, residents were unable to occupy their homes, and businesses were unable to operate either because structural integrity had been compromised by water damage or because a building's mechanical systems were rendered dysfunctional and incapable of supporting habitable spaces. This issue was particularly problematic on parts of Bay Street in Stapleton where commercial vitality, including that of small shops and restaurants, was severely affected by the severity of the storm.

MEASURING IMPACT

Data that's been represented and analyzed in preceding sections of this study provide an overview of land uses, industries, jobs, and demographic striations impacted by Sandy. As such, this data also illuminates the scope of potential impact in future floods. The extent of flooding in Stapleton during Hurricane Sandy, and predicted increases in intensity and frequency of storms and sea-level rise, make Stapleton a focal point for the study of potential resiliency strategies. These predictions and their implications are discussed later in this report. Beyond the scope of what was included in previous analyses, the implications of flooding and resiliency are measured with data maintained by FEMA and field surveys conducted by the NYC Department of City Planning.



Beached Caddell oil tanker on Stapleton Waterfront, Homeport

Flood Insurance Context Citywide, since 1983, building owners with federally-backed mortgages in the 100- year flood zone have been required to maintain flood insurance. However, loose enforcement of the policy led many mortgage holders to let their policies lapse. In July 2012, the US Congress passed the Biggert-Waters Flood Insurance Reform Act of 2012 (BW-12), which revised how flood insurance subsidies are managed by the National Flood Insurance (NFIP) program. According to FEMA: “Key provisions of the legislation will require the NFIP to raise rates to reflect true flood risk, make the program more financially stable, and change how Flood Insurance Rate Map (FIRM) updates impact policyholders. The changes will mean premium rate increases for some - but not all - policyholders over time.”

On March, 21, 2014, President Obama signed the Homeowner Flood Insurance Affordability Act of 2014 into law. This law repealed and modified certain provisions of the Biggert-Waters Flood Insurance Reform Act. These reforms intended to help homeowners maintain affordable flood insurance, ensure the financial stability of the NFIP, and reduce the risks and consequences of flooding on a national level. This reform, however, will not impact upon the continued revisions of special flood hazard and flood risk zone maps.

The Federal Emergency Management Agency (FEMA) defines coastal flood hazard zones on Flood Insurance Rate Maps (FIRMs). The FIRM shows each community’s flood hazards and is an essential resource for participation in the National Flood Insurance Program (NFIP). The FIRM is used to determine who must buy flood insurance and where flood zone development regulations apply. FEMA is presently updating these maps updating in order to more accurately reflect risk through an ongoing coastal flood hazard study for the New York/New Jersey coast. Prior to these recent revisions, the FIRMs had not been significantly updated since 1983. FEMA’s work on an ongoing coastal flood hazard study for the New York/New Jersey coast has informed these pFIRMs. Eventually, the pFIRMs will be adopted as official Flood Insurance Rate Maps (FIRMs).

These maps define the 100- and 500-year flood zones as well as the Base Flood Elevations (BFE) for the 100 -year flood zone. The 100- and 500- year flood each reflect the probability that Base Flood Elevations will be equaled to or exceeded in a given year in a given geography (1 percent and 0.2 percent respectively).

FEMA sets insurance rates and establishes building standards based on FIRMs and through the administration of the NFIP. The 100- year flood zone is the area where insurance and building requirements are regulated. The 100- and 500-year flood zones are also referred to as “A”-zones and “Shaded-X”- zones. In addition to showing the 100- and 500-year flood zones, they also show the height to which the flood water in a 100-year flood event may rise. This is known as the Base Flood Elevation (BFE) and is referenced to the North American Vertical Datum of 1988 (NAVD88), a control for measuring vertical height consistently across the country. The BFEs guide acceptable resiliency measures that comply with NFIP and buildings code requirements. For example, BFEs inform the height to which a building must elevate.

The process of updating these maps has resulted in an overall expansion of the flood zones, and the maps now include upwards of 32,000 additional buildings city-wide. The updated maps also reflect higher Base Flood Elevations in many areas.

With respect to Stapleton, Map 5.3 shows the 100- year flood zone established by FEMA in 1983 and the extent to which storm surge as a result of Hurricane Sandy exceeded this geography. As shown, the flood waters reached well beyond the expected extent of the

100-year flood. The revision to the FIRM established in 1983 is shown in Map 5.4. The 100-year and 500-year flood zones established by the pFIRM are illustrated in Map 5.5. Maps 5.6 and 5.7 both show the Base Flood Elevations that have been established in the pFIRM in Stapleton. With respect to the Stapleton Study Area, 141 buildings are presently captured in the 100-year flood zone. As only 63 buildings were included in the 100-year flood zone mapped in the 1983 FIRMs, this indicates a substantial increase (78 buildings) as result of the FEMA's revisions to these maps. Of all the buildings in the area, 24 percent are located within the 100-year flood zone (141 buildings.) Based on these new maps, 31 percent (or 58 of the total 184 acres) of the entire study area is in the 100-year flood zone mapped in the pFIRM.

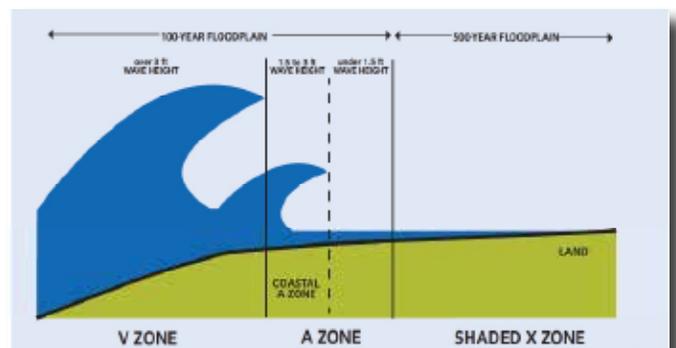
Since this study is largely focused on a commercial and industrial area, the implications of NFIP reform and the new FIRMs are different than residential areas. According to FEMA: *"If your commercial property is in a high-risk flood area and you have a mortgage from a federally regulated or insured lender, you are required to purchase a flood insurance policy."*

As these maps ultimately mandate the purchase of flood insurance, their revisions may have significant impacts on existing and prospective businesses and homeowners in Stapleton. Businesses often choose to purchase private insurance outside of the NFIP in order to attain more expansive coverage. The full implications of these revisions related to insurance coverage and cost are still under question and have resulted in uncertainty among property owners in Stapleton.

Should flood insurance premiums increase significantly as a result of the move to actuarially sound premium rates (as called for by Biggert-Waters), businesses and homeowners may face new or worsening challenges related to insurance costs. Typically, property owners who must purchase flood insurance have three options to qualify for lower premiums, regardless of whether they purchase private insurance or participate in the NFIP: (1) elevate the building above the BFE, (2) "wet flood proof" by enabling a "water in, water out" structure that is allowed to flood, or (3) "dry flood proof" by installing a barrier or gate to prevent water from reaching the inside of the building. These options are recognized based on building type and construction, its use, and its location in the flood zone. In Stapleton, it may be cost-prohibitive and/or structurally infeasible to elevate or retrofit a large industrial building, warehouse, or commercial storefront to accommodate these standards.

In Stapleton, many business owners may lease space from a building owner. In this case, the business owner (the lessee) is exempt from the mandated purchase of insurance but may choose to independently insure inventory and equipment within the building itself. However, in this case, plans such as elevating inventory in anticipation of a flood may not be adequate in reducing premiums for business owners. Should the building owner be required to purchase flood insurance and is impacted by rising premiums, the burden of this added cost may also be felt by the lessee.

Should a building be owned without a federally-backed mortgage, the owner may still choose to independently invest in resiliency measures to protect the building despite being exempt from compulsory purchase of flood insurance. The additional cost associated with owning property and doing business in a high-risk area such as Stapleton may be more than they are able or willing to absorb.



FEMA Flood Zones

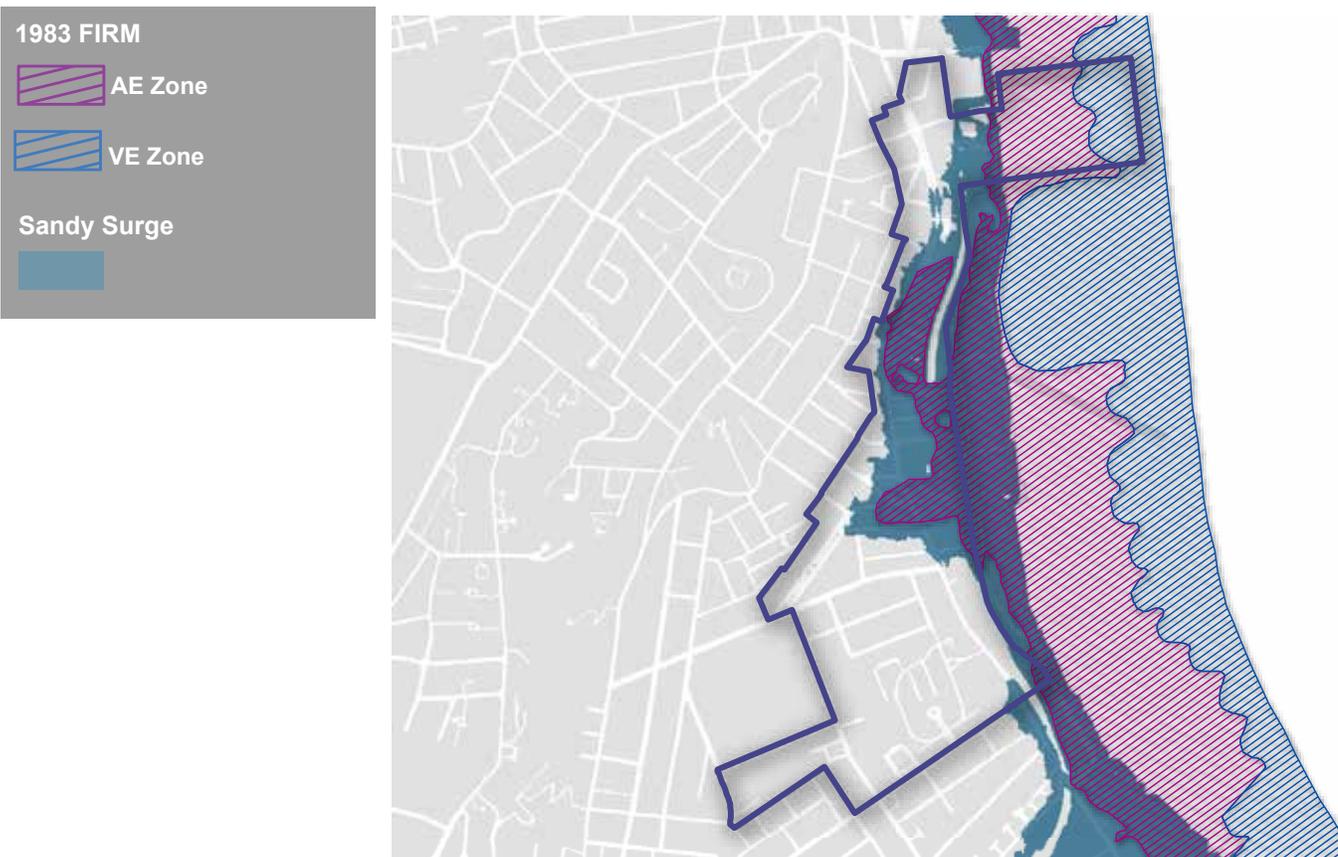
Map 5.2 Hurricane Sandy, Storm Surge Extent

Source: FEMA



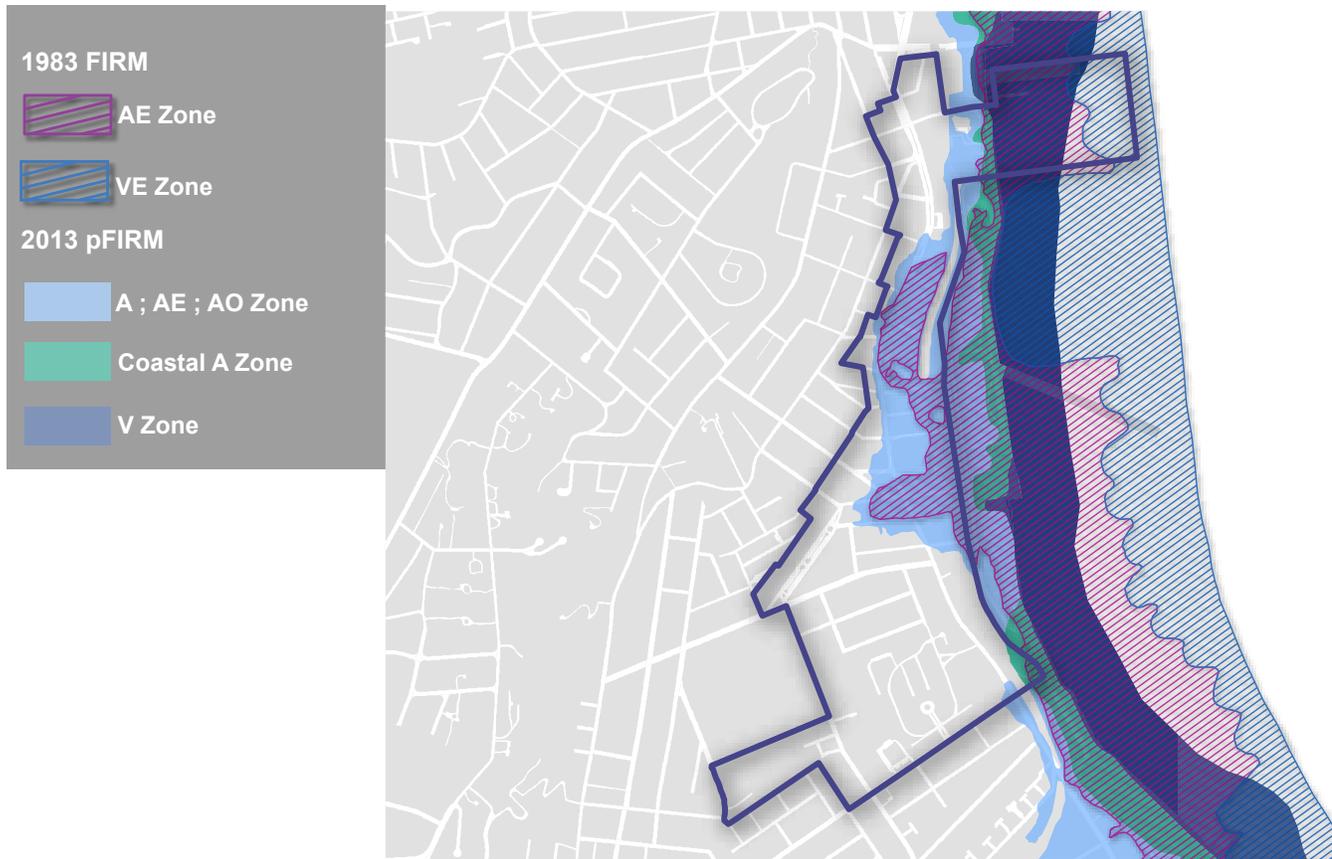
Map 5.3 1983 FIRM and Hurricane Sandy, Storm Surge Extent

Source: FEMA



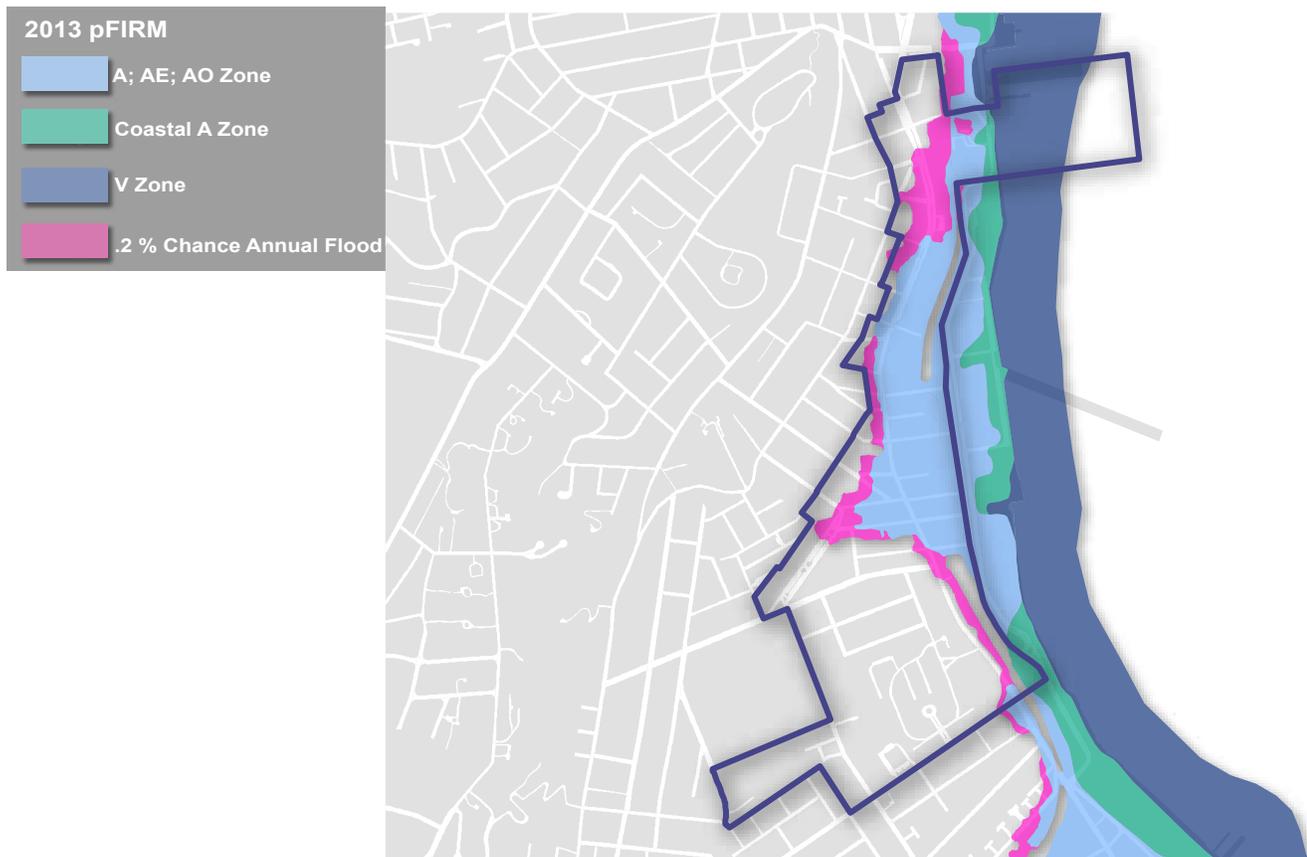
Map 5.4 1983 FIRM and 2013 Preliminary - FIRM Flood Zones

Source: FEMA



Map 5.5 2013 Preliminary - FIRM Flood Zones

Source: FEMA



Map 5.6 Buildings and Base Flood Elevations

Source: FEMA



Map 5.7 Buildings and Base Flood Elevations By Lot

Source: FEMA



Note 2: In order to assign one flood zones per lot, a lot was assigned the flood zone with the stricter design guidelines (in order V, Coastal A, A, Shaded X) as long as 10 percent of its area falls within that flood zones. For example, if 11 percent of the lot fell within a V zone and the rest was in an A zone, it was assigned V zone since it has the stricter design guidelines and it reached the 10 percent threshold. The 10 percent criteria isn't based on any FEMA regulations.

LOCAL POLICY CONTEXT

Executive Order No. 230 and Intro 990 Issued on January 3, 2013, the Mayor’s Emergency Executive Order No. 230 allows property owners to rebuild after Hurricane Sandy to meet updated FEMA flood standards in ways that may not comply with zoning or other regulations. This Executive Order suspended height and other restrictions to the extent necessary to rebuild to the latest flood-resistant standards. The Executive Order was by nature an interim measure. The Department of City Planning adopted the “Flood Resilience Text Amendment” to codify this action in October 2013.

Further, in November 2013, the Mayor signed into law Intro 990, thereby amending the Administrative Code of the City of New York and the New York City Building Code in relation to the use of best available flood maps. It allows the City to adopt the Preliminary Flood Insurance Rate Maps (pFIRMs) into the City’s building code 30 days after they are released from FEMA. These maps replaced the Preliminary Work Maps as the best available flood hazard data for NYC.

Flood Resilience Zoning Text Amendment The Department of City Planning proposed a zoning text amendment to encourage flood-resilient building construction throughout designated flood zones. The amendment aimed to remove regulatory barriers that would hinder or prevent the reconstruction of storm-damaged properties and enables new and existing buildings to comply with new building standards and requirements. Building to these new standards will reduce vulnerability to future floods as well as help to avoid higher flood insurance premiums. This zoning text amendment, while outlining design standards for flood resiliency, is largely focused on one- and two-family residences, some commercial spaces, and parking. There is not yet the equivalent regulatory allowance specifically addressing manufacturing and industrial structures and operations; however, the Open Industrial Uses Study (OIUS), elaborated upon below, aims to address some of the flood resiliency issues that pertain to industrial facilities. This zoning action was approved by the City Council on October 9, 2013.

Open Industrial Uses Study (OIUS) Discussed in depth in the “Local Planning and Policy Context” section of this report, OIUS is cited as a primary initiative in “A Stronger, More Resilient New York”. The Open Industrial Uses Study addresses open uses such as scrap yards that do not provide adequate environmental controls, create objectionable influences on neighboring businesses and residents, and pollute the city’s soil, air, and waterways. Given the large number of open industrial properties in the 100-year flood zone, this study identifies cost-effective measures to safeguard exposed substances in flood zones.

With respect to flood vulnerability and resiliency, the zoning proposal also supports complementary amendments to the Building Code that specify flood hazard mitigation requirements for open industrial uses such as a maximum fence height requirements. This study and actions associated with the recommendations discussed above will support the working waterfront by controlling for contamination of hazardous materials in light of the increased risks of flooding and supporting the climate resiliency of Stapleton, particularly the area around Front Street and other similar industrial areas in the flood zone.

FIELD SURVEY

The Department of City Planning conducted field work in order to begin measuring the vulnerabilities of buildings in the 100-year flood zone in Stapleton. Execution of the survey took place in March 2014. The findings of this survey, presented here, highlight the complexity of assessing flood vulnerability in light of an evolving regulatory environment. Data collected as a part of this study may ultimately guide discussion about development and resiliency potential in Stapleton and on strategic sites.

Methodology DCP surveyed 145 sites (this includes any tax lot with multiple buildings) on the 128 tax lots in the study area that intersect with the 100-year flood zone as mapped in the Preliminary Flood Insurance Rate Maps drawn by FEMA and documented their conditions.

Survey points were chosen based on the vulnerabilities to flood events and potential for challenges given possible increases in flood insurance rates and evolving regulatory controls in Stapleton and other flood zones. Careful consideration was given to the elevations of entry-ways of buildings, as options can be limited in terms of flood proofing measures that qualify the insured for lower premiums. As noted earlier, property owners who must purchase flood insurance typically have three options to qualify for lower premiums: (1) elevate the building above the BFE, (2) “wet flood proof” by enabling a “water in, water out” structure that is allowed to flood, or (3) “dry flood proof” by installing a barrier or gate to prevent water from reaching the inside of the building. These methods can pose unique challenges for urban buildings and may only be effective in reducing insurance costs depending on a building’s typology and construction, use, and location within the flood zone. Specifically, it may be cost-prohibitive as well as structurally infeasible to elevate or retrofit a large industrial building or mixed-use buildings with ground-floor retail for flood events. Elevating these types of structures may also pose challenges where general operations, materials storage, shipping activities, or machinery operations are infeasible when not on the ground-level. Further, many of the buildings in Stapleton are vulnerable to flooding well above the 3-4 foot threshold that dry flood proofing methods typically protect against (refer to Map 5.9).

Building type and use, sale or lease signage, the visibility of open industrial uses, and the observable presence of a below-grade space (including a basement or cellar) were all recorded as a part of this survey. Below-grade spaces that were observed to be residential units were also noted. Second-floor uses were also recorded where applicable. Most importantly, surveyors estimated the elevation of the lowest entry-ways to buildings above the ground or sidewalk. The survey sheet is appended to the end of this document.

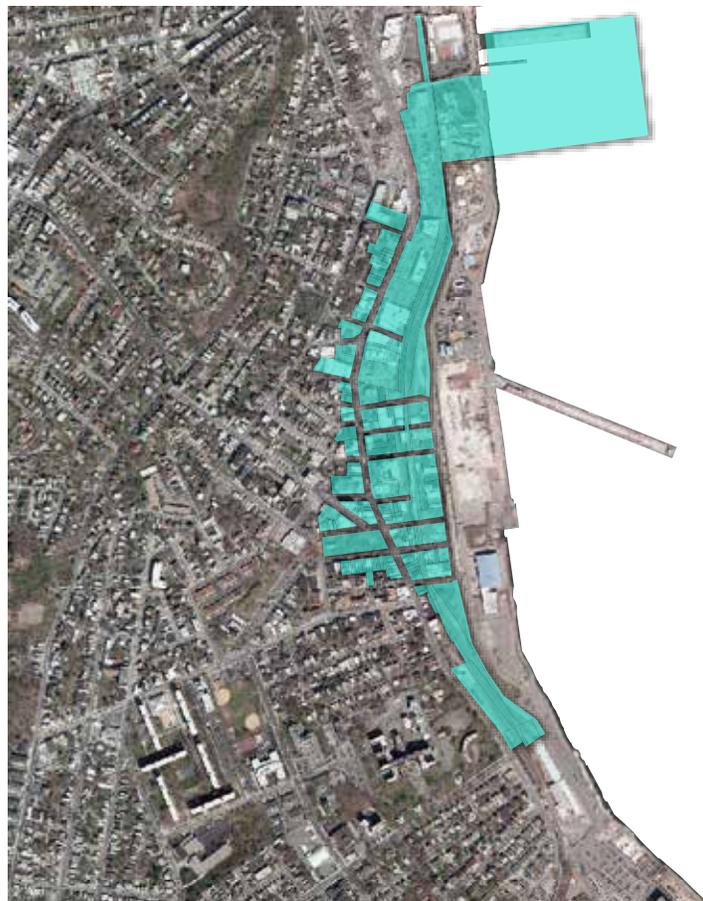
Building use was recorded in order to better understand the types of businesses, materials, and operations that are most likely to suffer from rising flood insurance rates and flood events. From an economic development standpoint, land use may indicate future challenges for development or current and prospective firms considering operations located in Stapleton. Industrial and mixed-use buildings in the study area may have large machinery, open storage of materials, and large amounts of supplies and inventory that may all be at risk. Any changes in land use regulation to accommodate for flood risk may affect these activities.

This survey documented the presence of below-grade spaces and below-grade residential units. In some cases, for a building to qualify for affordable flood insurance, these spaces must be rendered uninhabitable. This may result in a building owner filling them in entirely where elevating the building and wet flood proofing is impossible, undesirable, or infeasible.

The presence of visible open industrial uses was recorded as a part of this field survey. This did not include any site used exclusively for automotive purposes or parking, as this was recorded in a separate category. Open industrial uses included activities such as active and uncontained industrial operations, open storage of materials, or waste treatment and processing.

All of the data that was collected as a part of this survey was analyzed, and the results are presented in this document. Survey results were then joined to data maintained by the Department of City Planning that identifies the difference between the Base Flood Elevation and the elevation of the ground. The estimated elevations of buildings (collected in the survey) was then factored in, revealing approximately how much water buildings might be inundated with in a 100-year flood event.

Map 5.8 Field Study Area



Field Survey Results The field survey results revealed information about the land use distribution as well as the presence of sale or lease signage, below grade spaces, and open industrial uses.

Table 5.1 Land Uses in Field Study Area

<i>Building Use</i>	<i>Surveyed Sites</i>	<i>Percent of Total</i>
Utility	4	3%
Auto	12	8%
Auto and Industrial	1	1%
Vacant auto	1	1%
Industrial	9	6%
Vacant industrial	1	1%
Warehouse	3	2%
Commercial and Community Facility	3	2%
Commercial and industrial	1	1%
Commercial only	28	19%
Vacant commercial	10	7%
Community Facility	7	5%
Mixed Commercial/Residential	36	25%
Vacant mixed commercial/residential	7	5%
Residential	4	3%
Parking	7	5%
Vacant lot	10	7%
Inaccessible	1	1%
<i>Total of Surveyed Sites</i>	145	100%

Commercial Uses: As shown in Table 5.1, most of the surveyed lots in the 100-year flood zone are either commercial only or mixed commercial/residential. Over 52 percent of all of the buildings surveyed had active commercial, community facility, or mixed commercial / residential uses.

Industrial Uses: Of all of the buildings surveyed, 20 percent are active utility, automotive, industrial, and warehouse buildings.

Vacancy: A total of 19 lots had vacant buildings (about 13 percent of all surveyed sites), and 17 were either used for parking only or are vacant lots with no building (11 percent). Together, these vacant buildings, parking lots, and vacant lots make up nearly a quarter of the total number of lots in the area mapped in the 100 year flood zone in Stapleton.

Open Industrial Uses were recorded on four sites. Two of these sites are in use by the MTA for open storage of equipment and materials associated with the rail line. One is a contractor yard accessory to a warehouse ,and another is used for open materials storage for a plumbing supply business.

Sale or lease signage was documented on 14 sites in the survey area. Most of them, 36 percent, were found on mixed-use buildings, followed by buildings used only for commercial uses (21 percent), and then by vacant lots with no building.

Table 5.2 Sale or Lease Signage in the Field Study Area

<i>Building Use</i>	<i>Signage</i>	<i>Percent of Total</i>
Vacant industrial	1	7%
Not vacant commercial only	3	21%
Vacant commercial	1	7%
Not vacant mixed commercial/residential	5	36%
Vacant mixed commercial/residential	1	7%
Parking	1	7%
Vacant lot	2	14%
Total	14	100%

Below-grade spaces were recorded at a total of 15 sites on the survey area. As demonstrated in the table, they are largely associated with buildings that are commercial, residential, or mixed commercial/residential uses. There were no below-grade spaces that were clearly identifiable as in use as a residential unit.

Table 5.3 Below-Grade Spaces in the Field Study Area

<i>Building Use</i>	<i>Below Grade Spaces</i>	<i>Percent of Total</i>
Commercial only	3	20%
Community facility	1	7%
Vacant commercial	3	20%
Mixed commercial/residential	5	33%
Vacant mixed commercial/residential	2	13%
Residential	1	7%
Total	15	100%

Elevations of Buildings All of the height estimations for entry-ways of buildings were made with respect to the sidewalk. For example, a building entrance identified as “At Grade” refers to an entry-way that is flush with the sidewalk.

Figure 5.1 Observed Building Entrance Elevations in the Field Survey Area

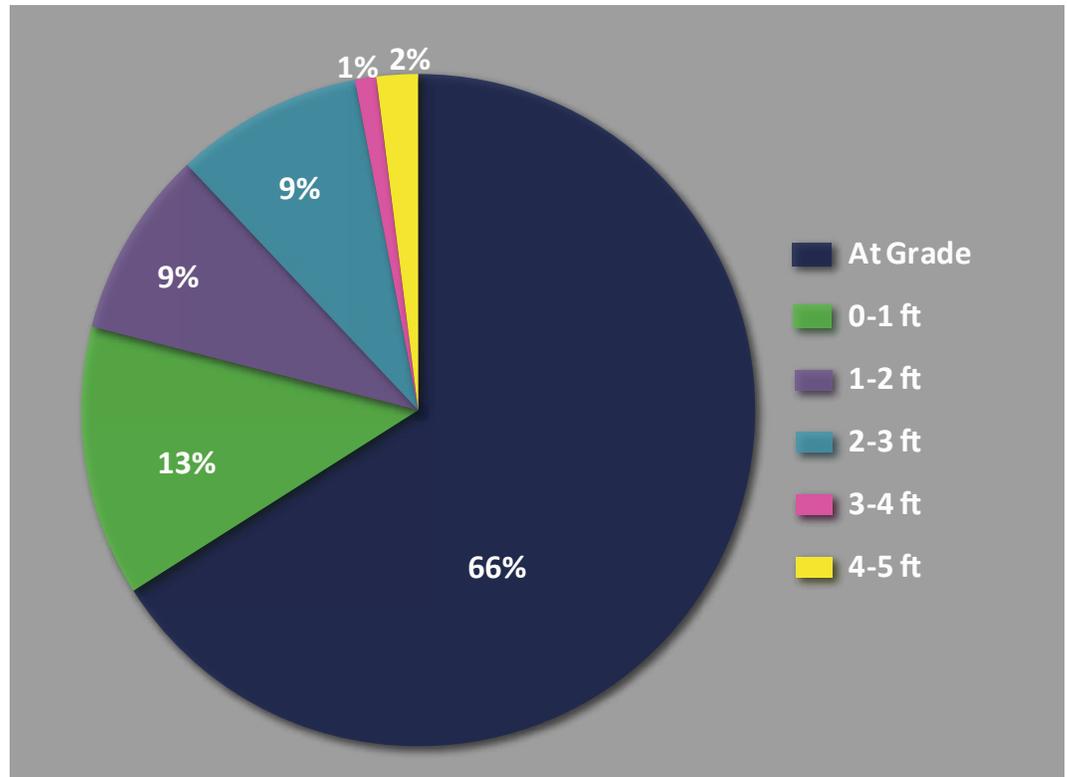


Table 5.4 shows the result of the field survey with respect to estimated building elevations of all of the sites that had buildings. A total of 18 sites (12 percent of all surveyed sites) have no identifiable buildings recorded in this survey; they have been discounted from the following analysis. As shown in Table 5.4, most of the buildings in the survey area are not elevated. Sixty-six percent of buildings have entry-ways that are “At Grade.” Of all the surveyed buildings, entry-ways of 97 percent of the buildings are located somewhere between grade-level and three feet. All of the building entry-ways within the 100-year flood zone are below six feet in height.

Since such a substantial portion of the surveyed entry-ways the buildings were recorded as “At Grade,” the following table illustrates the types of uses that are associated with those sites. This table excludes all sites that have no building.

As shown, commercial and mixed commercial/residential uses account for the largest share of buildings with entry-ways located at grade. With respect to industrial and semi-industrial uses (i.e., utility, automotive, industrial, and warehouse buildings), survey data shows that in almost all cases these buildings are located at grade. Of all of the surveyed buildings that are primarily used for commercial purposes or are built to support commercial or community facility uses (use categories: commercial and community facility, commercial and industrial, commercial only, vacant commercial, and community facility), 61 percent have entry-ways that are at grade. A total of 25 of the 43 surveyed buildings that were identified as mixed-use or vacant mixed-use (mainly buildings with ground-floor commercial use and residential units above) have entry-ways at grade.

Table 5.4 Land Use of Buildings with Entry-ways At Grade in the Field Survey Area

<i>Use Category</i>	<i>Total Lots</i>	<i>Total Entry Ways At Grade</i>	<i>Percent of Use Category</i>	<i>Percent of Total Lots</i>
Utility	4	4	100%	5%
Auto	12	9	75%	11%
Auto and industrial	1	1	100%	1%
Vacant auto	1	1	100%	1%
Industrial	9	8	89%	10%
Vacant industrial	1	1	100%	1%
Warehouse	3	3	100%	4%
Commercial and community facility	3	3	100%	4%
Commercial and industrial	1	0	0%	0%
Commercial only	28	17	61%	20%
Vacant commercial	10	7	70%	8%
Community facility	7	3	43%	4%
Mixed commercial/residential	36	22	61%	26%
Vacant mixed commercial/residential	7	3	43%	4%
Residential	4	2	50%	2%
Grand Total	127	84	66%	100%

Estimated Flood Risk Based on Building and Ground Elevations

Since ground elevation varies across the flood zone, different “At Grade” entries may have different level of flood risk. Based on the pFIRM map, Base Flood Elevations in this area range from 11 to 17 feet. In the same area, ground elevations range from five feet to 13 feet. As discussed, survey results were joined to data maintained by the Department of City Planning that identifies the difference between the Base Flood Elevation and the elevation of the ground, or the estimated “Water Level”:

$$\text{Water Level} = \text{Base Flood Elevation} - \text{Ground Elevation}$$

The estimated elevations of buildings collected in the survey was then subtracted from the “Water Level” in order to illustrate approximately how much water buildings might be inundated with in a 100-year flood event. This factors in both the elevation of the ground and the existing elevation of the building:

$$\text{Water Level in Building} = (\text{Water Level}) - \text{Building Elevation}$$

For example, if the BFE on a given lot is eight feet and the ground elevation is six feet, the water level in the 100-year flood event is expected to be two feet. If the lowest entry-way to the building on this lot was estimated at one foot, the Water Level of the Building in the 100-year flood scenario is one foot.

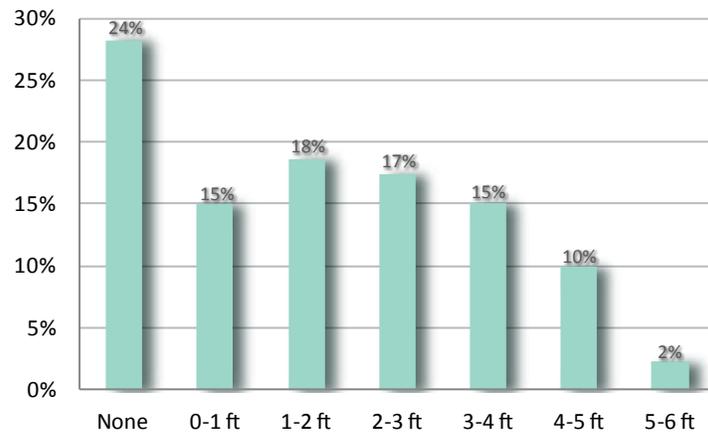
$$\text{Water Level in Building} = (8 \text{ feet} - 6 \text{ feet}) - 1 \text{ foot}$$

This analysis was done on a lot-level, whereby entire lots were assigned the flood-zone where the model maintained by FEMA intersects with at least 10 percent of a city tax lot. As a result, there may be some discrepancies in the precise difference between ground elevations and BFEs.

In the results presented below, any lot that either (a) has a ground elevation that is higher than the BFE or (b) has a building that is elevated higher than the (BFE (minus) Mean Elevation) is presented as “No Inundation.” Lots with no buildings were filtered out of this analysis. Lastly, since data was analyzed on the lot level, the lowest estimated entry-way was assigned to the lot where field survey results indicated that there are actually multiple buildings on the lot.

In Stapleton, 76 percent of buildings should expect some inundation in the event of a 100-year flood scenario. Flood-gates that protect buildings from flooding are typically reliable when flooding is below three feet. Buildings that may be flooded with more than three feet may need substantial retrofits that may be challenging and expensive to implement. Approximately 27 percent of buildings in the field study area (the portion of the Study Area that is included in FEMA's 100-year flood zone) can expect flood inundation of greater than 3 feet.

Figure 5.2 Water Level In Buildings in Field Survey Area

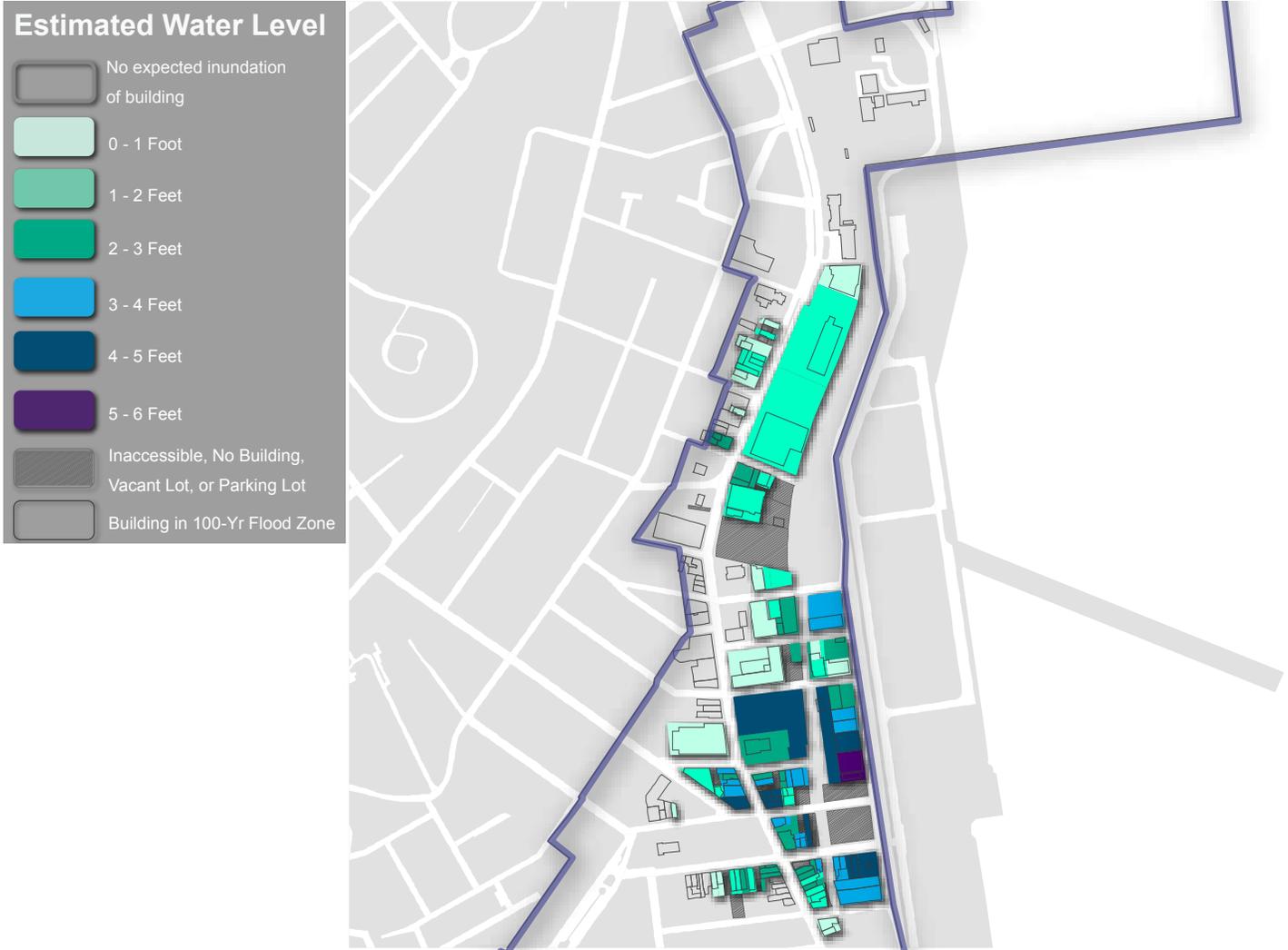


Below, Table 5.5 illustrates the estimated water level in buildings in the 100-year flood scenario based on the uses that were observed as a part of the field study.

Table 5.5 Water Level In Buildings in Field Survey Area

	Total Lots	Water Level in Buildings						
		None	0-1 Ft	1-2 Ft	2-3 Ft	3-4 Ft	4-5 Ft	5-6 Ft
Utility	3	33%	-	-	-	-	67%	-
Auto	12	17%	25%	25%	8%	25%	-	-
Auto and industrial	1	-	-	-	-	100%	-	-
Vacant auto	1	-	-	100%	-	-	-	-
Industrial	9	11%	33%	11%	22%	11%	11%	0%
Vacant industrial	1	-	-	-	-	-	-	100%
Warehouse	3	33%	-	-	67%	-	-	0%
Commercial and industrial	1	100%	-	-	-	-	-	-
Commercial only	24	21%	8%	25%	13%	17%	13%	4%
Vacant commercial	10	40%	20%	10%	10%	10%	10%	-
Community facility	6	50%	-	17%	33%	-	-	-
Mixed commercial/residential	31	16%	16%	19%	23%	16%	10%	-
Vacant mixed commercial/residential	7	29%	29%	14%	-	14%	14%	-
Residential	4	50%	-	-	25%	25%	-	-
Grand Total	127							

Map 5.9 Estimated Water Level in Buildings



Note 4: Based on observations of elevations of entry-ways to buildings, ground elevation, and the Base Flood Elevation assigned to the tax lot.

FLOOD PROJECTIONS : 2020s and 2050s

In January 2013, the City reconvened the New York City Panel on Climate Change (NPCC), a body of leading climate and social scientists, to update its local climate projections to inform planning for rebuilding and resiliency post-Sandy. The NPCC updated its 2009 projections in a report called Climate Risk Information 2013. According to this report:

“In response to the Mayor’s charge to the Panel, this Report provides new climate change projections and future coastal flood risk maps for New York City. This climate risk information is designed to inform community rebuilding plans, and help to increase current and future resiliency of communities, and citywide systems and infrastructure to a range of climate risks.”

In addition to projecting and analyzing rising air temperatures and more frequent precipitation events, this panel also considered sea level rise and the likelihood of future frequency, extent, and height of coastal flooding. Below, Tables 5.5 and 5.6 display the results of the analyses done by the NPCC, categorized in terms of city-wide flood risk and potential sea level rise.

The analysis of future flooding also included the development of maps displaying future coastal flood risk. The estimated potential sea level rise was mapped to incorporate the FEMA 2013 Preliminary Work Maps described and displayed in detail earlier in this report. These maps illustrate risk of the combined sea level rise with the 100- and 500-year flood zones but do not account for other climate change impacts, such as storm intensity and frequency which may also affect storm surge. As previously discussed, the 100- and 500-year flood zone each reflect the probability (1 percent and 0.2 percent respectively) that Base Flood Elevations will be met or exceeded in a given year. The 100- year flood zone is the area where insurance and buildings requirements are regulated.

The following maps depict the 100- and 500-year flood zones in Stapleton as predicted for the 2020s and 2050s. By the 2050s, the buildings on the upland side of Bay Street (between Prospect and Hannah) will be located the 100-year flood zone. This data shows that the 100-year flood zone will extend well beyond Tappen Park by the 2020s and will include a significant portion of the properties located between Bay Street and the rail line. Both the 100- and 500-year flood zones will be significantly expanded as sea levels continue to rise and the frequency of storms and the resulting storm surge continue to intensify.

Table 5.6 Coastal Floods at the Battery

Source: NPCC

	2020s				2050s		
	Baseline (1971-2000)	Low-estimate	Mid-range	High-estimate	Low-estimate	Middle range	High-estimate
Annual Chance of today's 100-year-flood	1.0%	1.1%	1.2 to 1.5 %	1.7%	1.4%	.7 to 3.2%	5.0%
Flood heights associated with 100-year-flood in feet (stillwater + wave heights)	15.0	15.2	15.3 to 15.7	15.8	15.6	15.9 to 17	17.6

Table 5.7 Sea Level Rise Projections

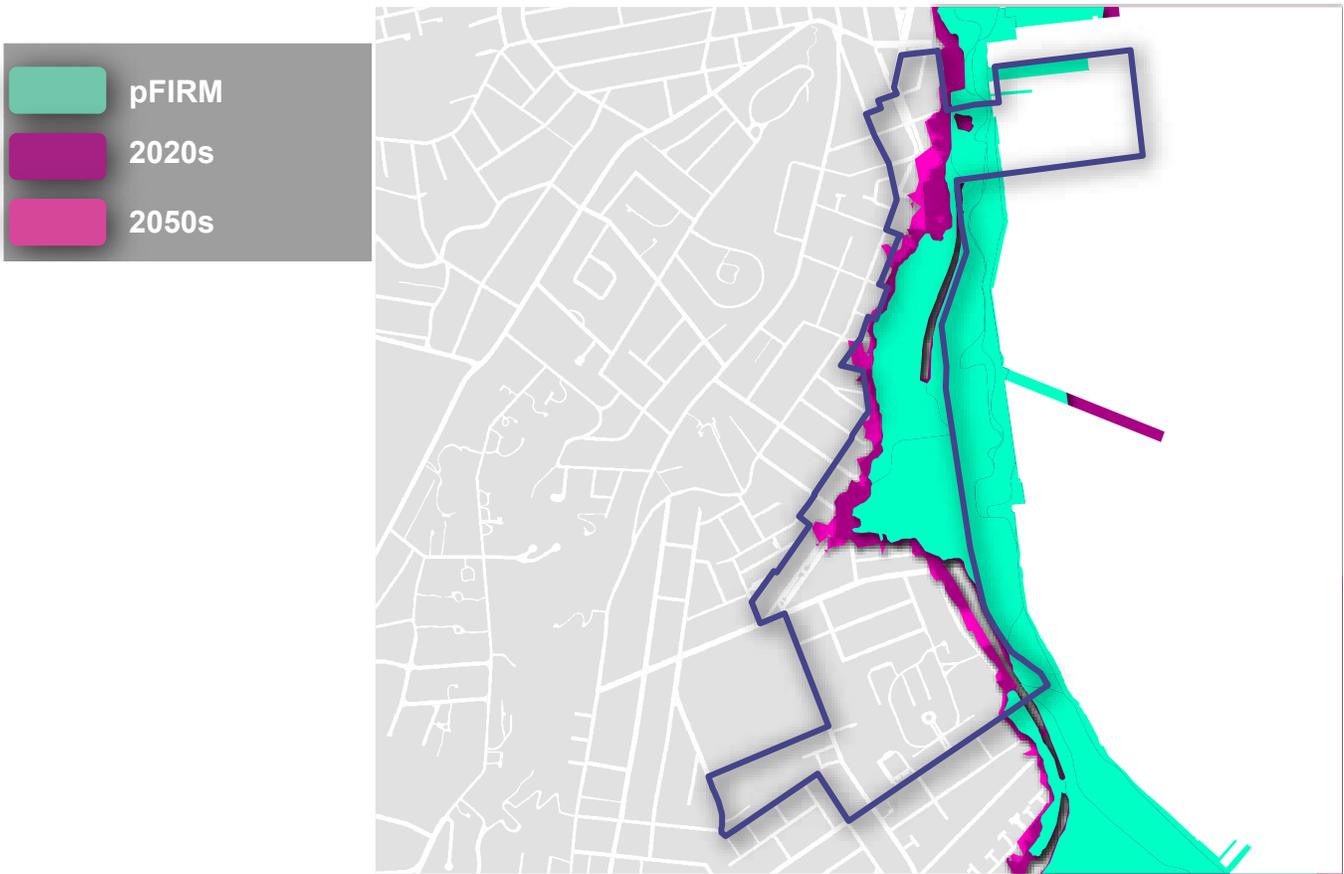
Source: NPCC

	Low- estimate	Mid- range	High- estimate
2020s	2 inches	4 - 8 inches	11 inches
2050s	7 inches	11 - 24 inches	31 inches

Note 3: Low Estimate = 10th percentile ; Middle Range = 25th to 75th percentile ; High-estimate= 90th percentile

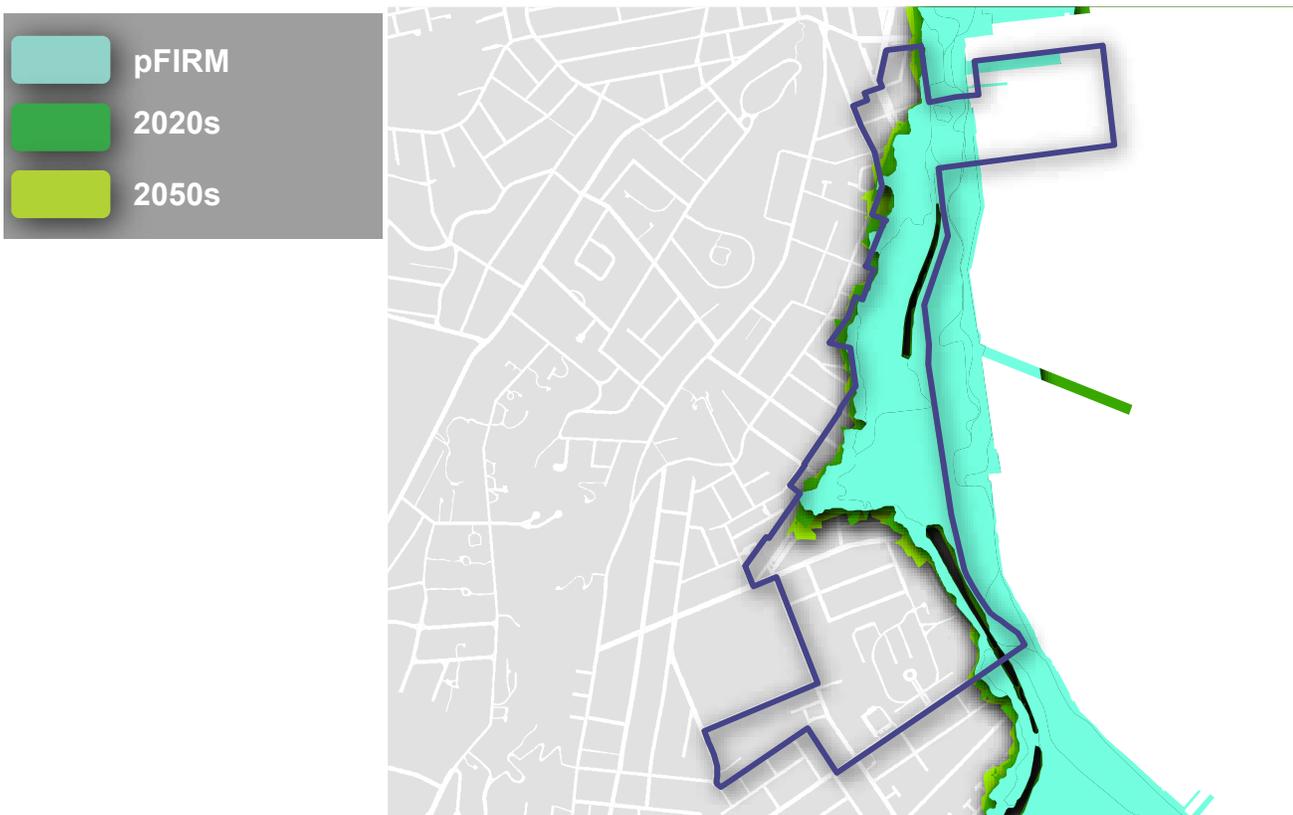
Map 5.10 NPCC Flood Projections : 100 Year Flood plain

Source: NPCC



Map 5.11 NPCC Flood Projections : 500 Year Flood Plain

Source: NPCC



LONG TERM CONSIDERATIONS

As previously discussed, 31 percent (or 58 of the total 184 acres) of the entire Study Area is in the 100-year flood zone mapped in the pFIRM. Based on this map, Base Flood Elevations in this area range from 11 to 17 feet. In the same area, ground elevations range from five feet to 13 feet. Based on lot-level data of the "Water Level", regardless of existing building elevations, approximately 50 percent of the study area would experience up to 3 feet of flooding during the 100-year flood event; 27 percent would experience upwards of 3 feet of flooding during the 100-year event.

Flood insurance is required of nearly all buildings in the 100-year flood zone that have a federally-backed mortgage. Given the challenges of flood proofing, the implications of this may be significant for an area like Stapleton. Federal flood-resistant construction standards allow dry flood-proofing of industrial and commercial spaces, but in many cases it is cost prohibitive and unreliable when flood elevations are higher than 3 feet. With respect to rising costs associated with insurance premium reform, property owners may have to pay significantly more for flood insurance.

For local business owners, the level of risk illustrated by this study may signify the potential for increased flood insurance premiums. Business owners may also choose to independently invest in resiliency measures. Further, the built typologies and operations of industrial and commercial buildings in Stapleton may not lend themselves to elevation. Further, most of the commercial spaces along Bay Street rely on foot traffic to their ground-floor store-fronts. While the cost of dry flood proofing the ground floor may be untenable, elevation of the lowest ground-floor use may challenge the viability of a business and complicate accessibility.

In addition to challenges posed by issues related to flood insurance, should repeated and intensified flooding occur as predicted, businesses that are unable to invest in flood resiliency measures may face repeated set-backs related to building repairs, interruptions in service and operations, and replacement of machinery, materials, and inventory. These issues are further complicated by the risk resulting from potential disruptions to transportation networks and infrastructure that make recovery from a flood even more difficult. As a result, some businesses may choose to re-locate, may close, or may never re-open.

These conditions have created an uncertain economic climate in Stapleton and may be a major focal point of future planning in the neighborhood.

A STRONGER MORE RESILIENT NEW YORK

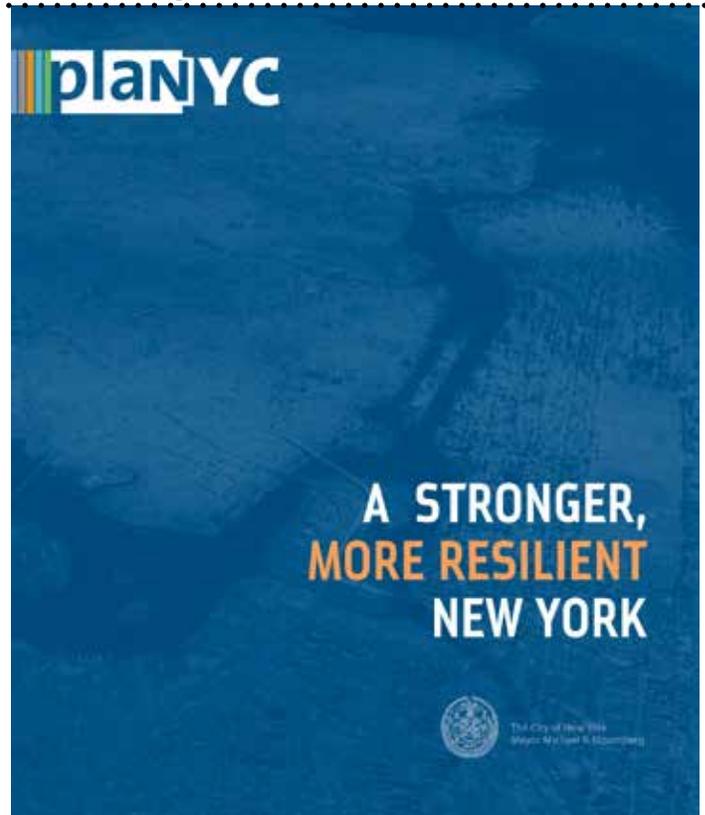
East and South Shores Community Rebuilding and Resiliency Plan

In December 2012, the City created the Special Initiative for Rebuilding and Resiliency (SIRR) to address climate resiliency in New York City in the wake of Hurricane Sandy. In June 2013, "A Stronger, More Resilient New York" was released and offered recommendations both for recovery and rebuilding after Hurricane Sandy, as well as for the increased resiliency of New York City's infrastructure and buildings.

The report outlines a variety of strategies and initiatives designed to make New York City more resilient. The projected total cost of all of these initiatives is estimated at approximately \$19.5 billion, broken into short- and long-term expenditures. With respect to the plan outlined in SIRR, approximately \$14 billion is expected to cover both capital and study costs over a 10-year period. The remaining costs are associated with projects and programs that are identified as worthy of study or that are proposed for completion beyond the 10-year time horizon of the plan. So far, \$10 billion worth of the plan is funded, and \$5 billion is expected to be funded through federal aid and the City's capital program. This leaves a funding gap of approximately \$4.5 billion. The City proposes to address this gap by both implementing the initiatives that can be covered by funds already in-hand and by identifying a basket of potential strategies that could close the funding gap.

Throughout the report, recommendations have been made that would affect Stapleton. While the recommendations outline in "A Stronger, More Resilient New York" are largely related to the East and South Shores of Staten Island, a few recommendations have been made with specific reference to Stapleton and nearby neighborhoods including St. George. These strategies are framed in terms of Coastal Protection, Critical Infrastructure, and Community and Economic Recovery. Some initiatives have been funded and have entered into implementation phases, while others do not yet have any identified funding source. The initiatives that would impact Stapleton are outlined in this section are reproduced as they were written in "A Stronger, More Resilient New York."

*Special Initiative for Rebuilding and Resiliency,
"A Stronger, More Resilient New York", 2013*



Comprehensive Coastal Protection Plan

Initiatives outlined in the Comprehensive Coastal Protection Plan are designed to increase coastal edge elevations, minimize upland wave zones, protect against storm surge, and improve coastal design and governance.

- **Coastal Protection Initiative 6: Raise bulkheads in low-lying neighborhood to minimize inland tidal flooding.**

Many bulkheads, the first line of defense against flooding in many neighborhoods, may be insufficient based on projections of sea-level rise. Subject to available funding, the City plans to launch a program to raise bulkheads and other shoreline structures across the five boroughs in low-lying areas most at risk of daily or weekly tidal flooding. The Stapleton waterfront has been targeted as one of these areas.

Critical Infrastructure Plan

“A Stronger, More Resilient New York” identifies a set of recommendations related to strengthening critical infrastructure across New York City. This infrastructure includes the city’s utilities and liquid fuel systems, its hospitals and other healthcare facilities, telecommunications network, transportation system, parks, and wastewater and drainage systems.

- **Transportation Initiative 6: Protect Staten Island Ferry and private ferry terminals from climate-change-related threats**

To allow for quicker restoration of services on the Staten Island Ferry, the City will use Federal Transit Administration Emergency Relief funds to construct physical improvements to the floating infrastructure, loading bridges and gangways, pilings, and piers at the St. George Terminal. According to the report, NYC DOT had plans for immediate launch of this investment. While not immediately within Stapleton, this improvement (coupled with planned development in St. George discussed earlier in this study) has the potential to impact the vitality of Stapleton.

- **Water and Wastewater Initiative 2: Harden Pumping Stations**

This initiative calls on the City, through the Department of Environmental Protection, to retrofit wastewater and storm water pumping stations. These retrofits include raising or flood-proofing critical equipment, constructing barriers, and installing backup power supplies. Among the pumping stations considered in “A Stronger, More Resilient New York” for hardening, one is located on the Stapleton Waterfront near the site of Homeport.

Community and Economic Recovery Plan

In order to strengthen neighborhood resiliency, the city has identified a set of strategies that would help build grassroots capacity and foster community leadership, help businesses and nonprofits impacted by Sandy to recover, to help businesses and nonprofits to make resiliency investments, and to bring new economic activity to neighborhoods recovering from the storm.

- **East and South Shore Initiative 12: Implement planned and ongoing investments by the City and private partners**

New Stapleton Waterfront (Homeport) Redevelopment, a 35-acre decommissioned naval base that will be transformed into a vibrant waterfront community. The first phase, an expected \$140 million, broke ground in 2013 and will include two new residential buildings with 27,000 square feet of retail space. The project will also include \$33 million in City-funded infrastructure and open space improvements.

St George Waterfront Redevelopment will include the world’s tallest Observation Wheel and high-end outlet retail complex and hotel that, together, will attract \$480 million in private investment in St. George.

FUTURE ENVIRONMENTAL IMPACT

The risks of flooding in Stapleton reach beyond potential structural damage to buildings and infrastructure. The potential migration of environmental contaminants is a concern in a flood zone. This complicated and diffuse risk threatens not only the viability of business operations, but also the many natural resources in and around Stapleton and the health and safety of residents. According to a report sponsored by the United States EPA:

“Floods and flooding often result in widespread contamination that poses both immediate and long-term threats to human health and the environment. The environmental consequences of flooding, however, can be extremely complex and difficult to assess because of their large spatial extent, including multiple sources, sinks, and types of pollutants, and because of their potential effects on nearly all components of the environment.”

As discussed previously in this report, storage of petroleum and the presence of open spills (sites where New York State has documented the event of either a chemical or petroleum spill) are found in Stapleton and heighten this risk of widespread contamination. Dangerous conditions can develop in the event of a flood as petroleum products can spill and leak into homes, soil resources, and surrounding water bodies from sources such as home heating oil tanks in basements as well as large industrial tanks. The NYS DEC suggests that owners of commercial and residential fuel oil tanks located in flood zones take precautions in preparation for future floods, including those stored underground and in basements. It also warns owners and operators to call for immediate inspection and interim remediation should a spill occur to minimize environmental contamination and risks to human health. Given the industrial nature of some business in Stapleton, there is a wide variety of hazardous materials that may spill in the event of a flood, including oil and petroleum, paints, and chemical compounds. If not safely stored, they may spill in a flood and further contaminate the soil and water resources in the area.

In Stapleton, the prevalence of historic and current uses that use hazardous materials, particularly along Front Street, indicates the strong possibility that contaminants may present a risk to future users. The surrounding properties, soil and land resources, and water bodies are also at risk because of their proximity in the event of a flood. The potential strategic sites profiled previously highlight how the potential presence of contamination may hinder future development. Flooding can also disturb hazardous materials, heightening the risk of cross contamination of pollutants. Contamination may be significantly more widespread than what can be assumed based on site-specific historical research. Disturbing hazardous materials compounds this challenge.

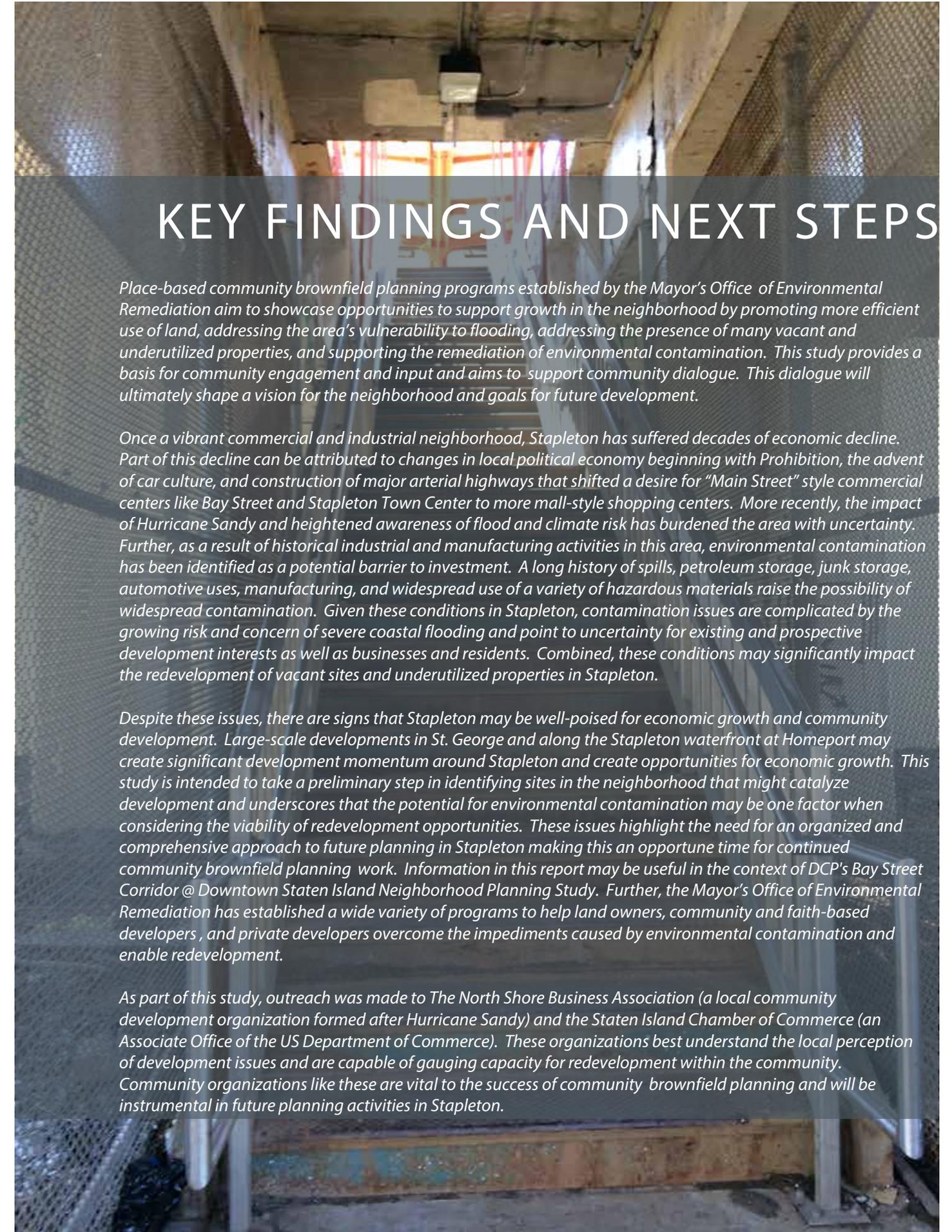
Following Hurricane Sandy, the NYC Department of Environmental Protection conducted inspections of the facilities that had reported storage or presence of hazardous materials under Local Law 26 of 1988, known as the NYC Right-to-Know law. DEP did not find evidence of chemical spills on these sites. According to “A Stronger, More Resilient New York”: *“the lack of evidence may indicate that these 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.”*

Flood waters can also carry raw sewage. In New York City, sewer infrastructure containing sewage can be overwhelmed by flood or rain water. The result can lead to an inability for a waste water treatment plant to process the total volume of combined sewage and storm or flood water directed to the facility. Some combined sewage then bypasses the plant and spills into local waterways. This is commonly called Combined Sewer Overflow (CSO). “A Stronger, More Resilient New York” outlines seven initiatives intended to support the waterfront, and support industrial resiliency in light of climate change and flood risk. These recommendations also will influence the future of community brownfield planning work.

These recommendations are identified in the Environmental Protection and Remediation Chapter of “A Strong, More Resilient New York” as follows:

- **Identify cost-effective measures to safeguard exposed substances in the 100-year flood zone**
- **Develop a catalogue of best practices for storing enclosed hazardous substances in the 100-year flood zone**
- **Accelerate brownfield cleanup in the 100-year flood zone to prevent release of pollutants**
- **Explore strengthened cleanup standards on industrial waterfront brownfields**
- **Launch brownfield climate change resiliency surveys and improve storm preparedness**
- **Launch full operation of the NYC Clean Soil Bank**
- **Perform update of SPEED, the City’s online environmental research engine**

Any action taken by the city based on these initiatives may directly impact Stapleton given the extent to which it was flooded and potential for the spread of environmental contamination. The above-listed initiatives may be instrumental in future neighborhood planning and economic development work.



KEY FINDINGS AND NEXT STEPS

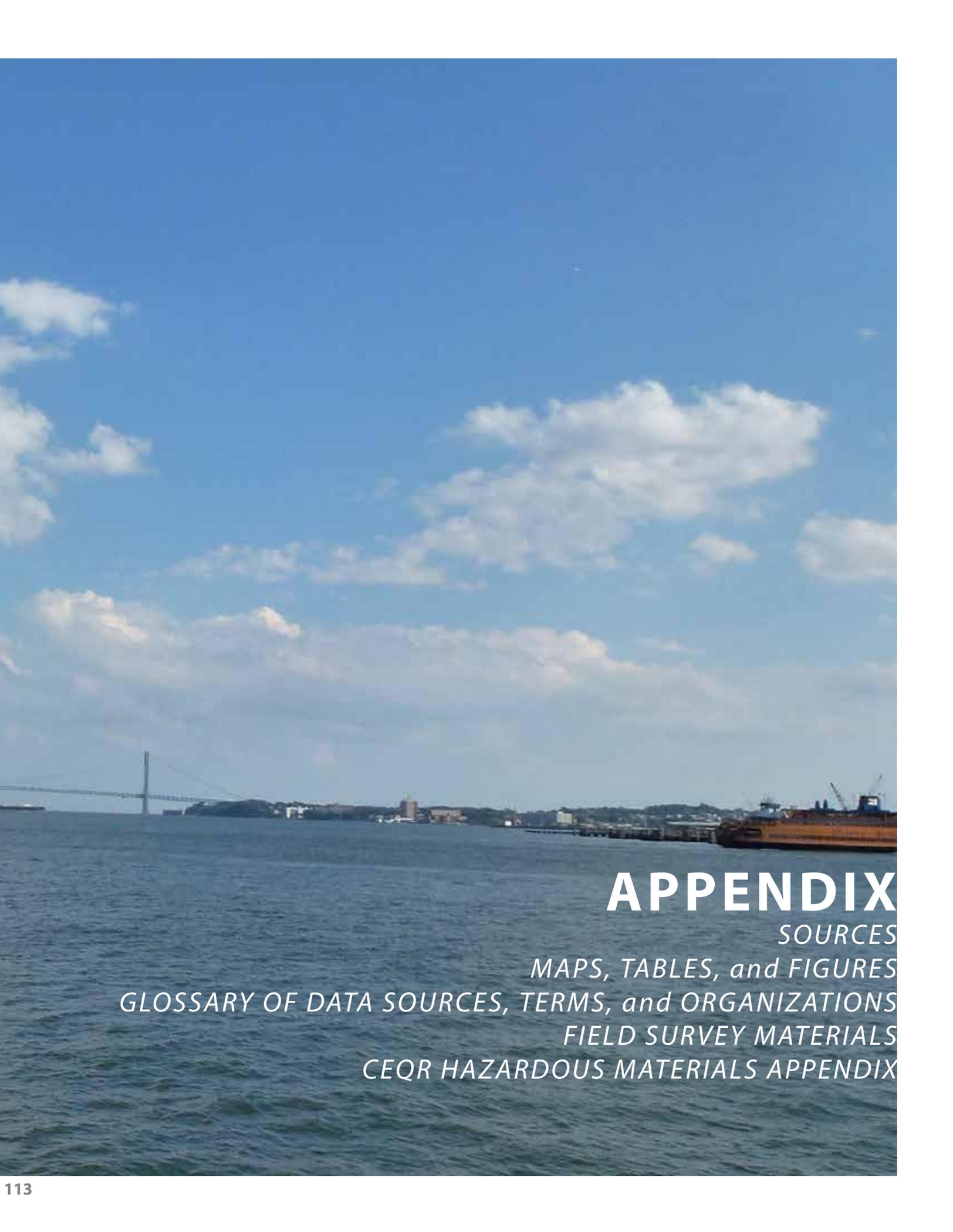
Place-based community brownfield planning programs established by the Mayor's Office of Environmental Remediation aim to showcase opportunities to support growth in the neighborhood by promoting more efficient use of land, addressing the area's vulnerability to flooding, addressing the presence of many vacant and underutilized properties, and supporting the remediation of environmental contamination. This study provides a basis for community engagement and input and aims to support community dialogue. This dialogue will ultimately shape a vision for the neighborhood and goals for future development.

Once a vibrant commercial and industrial neighborhood, Stapleton has suffered decades of economic decline. Part of this decline can be attributed to changes in local political economy beginning with Prohibition, the advent of car culture, and construction of major arterial highways that shifted a desire for "Main Street" style commercial centers like Bay Street and Stapleton Town Center to more mall-style shopping centers. More recently, the impact of Hurricane Sandy and heightened awareness of flood and climate risk has burdened the area with uncertainty. Further, as a result of historical industrial and manufacturing activities in this area, environmental contamination has been identified as a potential barrier to investment. A long history of spills, petroleum storage, junk storage, automotive uses, manufacturing, and widespread use of a variety of hazardous materials raise the possibility of widespread contamination. Given these conditions in Stapleton, contamination issues are complicated by the growing risk and concern of severe coastal flooding and point to uncertainty for existing and prospective development interests as well as businesses and residents. Combined, these conditions may significantly impact the redevelopment of vacant sites and underutilized properties in Stapleton.

Despite these issues, there are signs that Stapleton may be well-poised for economic growth and community development. Large-scale developments in St. George and along the Stapleton waterfront at Homeport may create significant development momentum around Stapleton and create opportunities for economic growth. This study is intended to take a preliminary step in identifying sites in the neighborhood that might catalyze development and underscores that the potential for environmental contamination may be one factor when considering the viability of redevelopment opportunities. These issues highlight the need for an organized and comprehensive approach to future planning in Stapleton making this an opportune time for continued community brownfield planning work. Information in this report may be useful in the context of DCP's Bay Street Corridor @ Downtown Staten Island Neighborhood Planning Study. Further, the Mayor's Office of Environmental Remediation has established a wide variety of programs to help land owners, community and faith-based developers, and private developers overcome the impediments caused by environmental contamination and enable redevelopment.

As part of this study, outreach was made to The North Shore Business Association (a local community development organization formed after Hurricane Sandy) and the Staten Island Chamber of Commerce (an Associate Office of the US Department of Commerce). These organizations best understand the local perception of development issues and are capable of gauging capacity for redevelopment within the community. Community organizations like these are vital to the success of community brownfield planning and will be instrumental in future planning activities in Stapleton.





APPENDIX

SOURCES

MAPS, TABLES, and FIGURES

GLOSSARY OF DATA SOURCES, TERMS, and ORGANIZATIONS

FIELD SURVEY MATERIALS

CEQR HAZARDOUS MATERIALS APPENDIX

SOURCES

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GLOSSARY OF DATA SOURCES and ACRONYMS

GLOSSARY OF DATA SOURCES

100 – Year flood plain and Special Flood Hazard Areas (SFHAs)

The 1 percent annual chance flood is also referred to as the base flood or 100-year flood (or flood plain). This is also known as a Special Flood Hazard Area (SFHA). SFHAs are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30. Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Base Flood Elevations (BFEs) are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.

500 - Year flood plain

The 0.2 percent annual chance flood is also referred to as the 500-year flood (or flood plain).

A

A Zone

Zone A is comprised of the area subject to storm surge flooding from the 1% annual chance coastal flood. These areas are not subject to high velocity wave action but are still considered high risk flooding areas.

The American Community Survey (ACS)

The American Community Survey (ACS) is an ongoing survey that provides data every year -- giving communities the current information they need to plan investments and services. The American Community Survey includes questions that are not asked by the 2010 Census, and the two serve different purposes.

B

Base Flood Elevation (BFE)

The base flood is the national regulatory standard used by the National Flood Insurance Program (NFIP) and all Federal agencies for the purposes of requiring the purchase of flood insurance and regulating new development. The Base Flood Elevation (BFE) is the elevation shown on the Flood Insurance Rate Map (FIRM) for Zones AE, AH, A1-30, or VE that indicates the water surface elevation resulting from a flood that has a 1-percent chance of occurring in any given year.

C

Chemical Bulk Storage (CBS)

The NYS CBS program regulates aboveground storage tanks with a capacity of 185 gallons or more, all underground storage tanks regardless of capacity, and all non-stationary tanks.

Coastal A / AE

Coastal A / AE: The portion of the Special Flood Hazard Area landward of a V zone (i.e., areas where wave heights are computed as less than 3 feet) that is mapped as an A or AE zone on the FIRM. While the wave forces in coastal A zones are not as severe as those in V zones, the capacity for the damage or destruction of buildings is still present.

F

Flood Insurance Rate Maps (FIRMs)

FIRMs are the official map of a community on which FEMA has delineated the 1% annual chance (base) floodplain or Special Flood Hazard Area, the Base Flood Elevations (BFEs), and the risk premium zones applicable to the community. The FIRM is used to determine who must buy flood insurance and where floodplain development regulations apply. Once effective, FIRMs are available through the local community map repository and online.

N

New York City E-Designation

Changes in zoning are subject to an environmental review pursuant to state and local law. An (E) designation is a zoning map designation that provides notice of the presence of an environmental assessment requirement pertaining to potential hazardous materials contamination, noise or air quality impacts on a particular tax lot where new construction or land use change is planned. Planned development of E-designated properties requires coordination with OER.

New York City Vacant Fill Property database

Vacant Fill Properties (VFP) are vacant, privately-owned properties that have evidence of historic fill. Vacancy status, signifying the lack of structure or use on site, is determined by NYC Department of Finance assessment.

New York Panel on Climate Change Flood and Climate Projections

New York City Panel on Climate Change (NPCC), a body of leading climate and social scientists, updated its 2009 projections in a report called Climate Risk Information 2013 in order to inform planning for rebuilding and resiliency post-Sandy. The NPCC

New York State Bulk Storage Program

Tanks storing petroleum and hazardous chemicals must meet minimum standards established by the United States Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (DEC). New York's Hazardous Substances Bulk Storage Program (including Petroleum Bulk Storage and Chemical Bulk Storage programs) provides guidelines and controls for the storage of many different hazardous chemicals including petroleum products.

New York State Spill Incidents Database

A "spill" is an accidental or intentional release of petroleum or other hazardous materials. The database records spill incidents, including such information as material spilled, resource affected, amount spilled in gallons or pounds, and the name of water body affected by spill.

North American Vertical Datum of 1988 (NAVD88)

A datum is a vertical plane from which surveyors measure elevations. The North American Vertical Datum of 1988 (NAVD88) is the standard vertical datum used by the federal government for mapping projects.

NYC Department of Buildings

The Department of Buildings maintains records of all construction activity, job filings, violations, complaints and certificates of occupancy for a particular address.

P Petroleum Bulk Storage (PBS)

The NYS Petroleum Bulk storage Program regulates tanks at facilities with a cumulative storage capacity of more than 1,000 gallons.

Preliminary Flood Insurance Rate Maps (pFIRMs)

A FIRM that is not yet effective that reflects the initial results of a flood map project performed by or for FEMA. The Preliminary FIRM (pFIRMs) is provided to the Chief Executive Officer (e.g., Mayor, County Commissioner, etc.) and floodplain administrator for each affected community and is available to all citizens for review both online or through the local community map repository (often the community planning or zoning office).

Preliminary Work Maps (PWMs)

The preliminary work maps created for certain New Jersey/New York communities are an interim product created by FEMA in the development of preliminary Flood Insurance Rate Maps (FIRMs). The preliminary work maps reflect the full results of an ongoing coastal flood hazard study for the New York/New Jersey coast.

Primary Land Use Tax Lot Output (PLUTO)

Primary Land Use Tax Lot Output (PLUTO) represents a compilation of data from the Department of Finance and the Department of City Planning. It includes primary tax lot and building characteristics such as land use, ownership, year built, number of units, lot and building size, allowable and built floor area ratio (FAR), and the presence of historic districts or landmarks.

- Q The Quarterly Census of Employment and Wages (QCEW)**
The Quarterly Census of Employment and Wages (QCEW) program produces a comprehensive tabulation of employment and wage information for workers covered by State unemployment insurance (UI) laws and Federal workers covered by the Unemployment Compensation for Federal Employees (UCFE) program. The data are provided to the Department of City Planning (DCP) by the New York State Department of Labor (NYS DOL), and are geocoded and analyzed by DCP.
- S Sanborn Fire Insurance Maps**
These maps, produced by the Sanborn Map Company since 1867, include information about built structures such as building footprint, construction materials, and use of structures. The maps identify materials known to be fire accelerants, and show all pipelines, railroads, wells, dumps, and heavy machinery in an area.
- Shaded X Zone**
Areas of moderate coastal flood risk outside the regulatory 1% annual chance flood but within the limits of the 0.2% annual chance flood level.
- U United States Decennial Census**
The U.S. Census counts every resident in the United States, and takes place every 10 years. The data collected by the decennial census determine the number of seats each state has in the U.S. House of Representatives and is also used to distribute billions in federal funds to local communities.
- Zone V / VE**
Z *Zone V / VE An area of high flood risk subject to inundation by the 1% annual-chance flood event with additional hazards due to storm-induced velocity wave action (a 3-foot or higher breaking wave). Typically, this is the area where the computed wave heights for the base flood are 3 feet or more. V zones are subject to more stringent building requirements and different flood insurance rates than other zones shown on the FIRM because these areas are exposed to a higher level of risk than other coastal flooding areas.*

GLOSSARY OF ACRONYMS

ACS	American Community Survey
BEF	Base Flood Elevation
BOA	Brownfield Opportunity Area
CBS	Chemical Bulk Storage
CEQR	City Environmental Quality Review
DTM	Digital Tax Map
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
MOSF	Major Oil Storage Facility
MTA	Metropolitan Transportation Authority
NAVD	North American Vertical Datum
NFIP	National Flood Insurance Program
NPCC	New York Panel on Climate Change
NYC DCP	New York City Department of City Planning
NYC DEP	New York City Department of Environmental Protection
NYC DOB	New York City Department of Buildings
NYC DOT	New York City Department of Transportation
NYC EDC	New York City Economic Development Corporation
NYC OEM	New York City Office of Emergency Management
NYC OER	New York City Office of Environmental Remediation
NYS DEC	New York State Department of Environmental Conservation
NYS DOS	New York State Department of State
OIUS	Open Industrial Uses Study
PBS	Petroleum Bulk Storage
pFIRM	Preliminary Flood Insurance Rate Map
PLUTO	Primary Land Use Tax Output
PWM	Preliminary Work Map

SFHA	Special Flood Hazard Area
SIRR	Special Initiative for Rebuilding and Resiliency
US EPA	United States Environmental Protection Agency
USFWS NWI	United States Fish and Wildlife Service National Wildlife Inventory
VFP	Vacant Fill Property
WRP	Waterfront Revitalization Plan

FIELD SURVEY
Sample Survey Sheet

Red Hook BOA Field Work
 Dept. of City Planning - June, 2013

Section	Block	Lot	Building Type (R, C, I, W, G, MX, P, O)	Occupancy (o, y, x)	Sale or Lease Signage? (y, n)	Open or closed industrial uses? (o, c, p, x)	Observable Basement? (y/n)	Estimated elevation of lowest window or door above ground? (to nearest foot)	Notes
Section 1									
1	583	36							
1	583	30							
1	583	28							
1	583	23							
1	583	1							
1	572	1							
1	562	49							
1	562	47							
1	562	46							
1	562	37							
1	562	33							
1	562	32							
1	562	29							
1	562	28							
1	562	27							
1	562	26							
1	562	25							

CEQR TECHNICAL MANUAL
Hazardous Materials Appendix

CEQR

City Environmental Quality Review Technical Manual



NYC Mayor's Office of
Environmental Coordination

JANUARY 2012 EDITION (REV. 6/5/13)

WARNING: These printed materials may be out of date.
Please ensure you have the current version that can be found on www.nyc.gov/oec.

LIST OF FACILITIES, ACTIVITIES, OR CONDITIONS REQUIRING ASSESSMENT

1. A facility, on or adjacent to a tax lot, which generates (including small quantity generators), stores, treats, or disposes of hazardous waste, as defined by RCRA and regulated by EPA and/or DEC.
2. A facility, on or adjacent to a tax lot, which manufactures, produces, prepares, compounds, processes uses, repackages or disposes of hazardous chemicals, as defined under New York City's Community Right-to-Know Law, N.Y.C. Admin. Code tit. 24, Ch. 7 (1992).
3. A facility, on or adjacent to a tax lot, which is included on the following list:
 - Adhesives and sealants manufacture
 - Advertising displays manufacture
 - Agricultural machinery manufacture (including repairs)
 - Aluminum manufacture or aluminum produces manufacture
 - Aircraft manufacture (including parts)
 - Airports Appliance (electrical) manufacture
 - Art goods manufacturer
 - Asphalt or asphalt products manufacture
 - Athletic equipment manufacture
 - Automobile and other laundries
 - Automobile manufacture
 - Automobile rental establishments
 - Automobile wrecking establishments
 - Automobile service stations
 - Battery manufacture
 - Bicycle manufacture
 - Blacksmith shops
 - Boat repair
 - Boat fuel sales
 - Boat storage
 - Business machine manufacture
 - Camera manufacture
 - Canvas or canvas products manufacture
 - Carpet cleaning establishments
 - Carpet manufacture
 - Cement manufacture
 - Ceramic products manufacture
 - Charcoal manufacture
 - Chemical compounding or packaging
 - Chemical manufacture
 - Cleaning or cleaning and dyeing establishments
 - Clock manufacture
 - Clothing manufacture
 - Coal products manufacture
 - Coal sales or storage
 - Coke products manufacture
 - Coil coating
 - College, university, trade school laboratories
 - Construction machinery manufacture
 - Copper forming or copper products manufacture
 - Cosmetics or toiletries manufacture
 - Dental instruments manufacture
 - Dental laboratories
 - Disinfectant manufacture
 - Drafting instruments manufacture
 - Dry cleaning establishments
 - Dumps
 - Electric power or steam generating plants
 - Electric power substations
 - Electric and electronic components manufacture
 - Electric appliance manufacture

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HAZARDOUS MATERIALS APPENDIX

- Electric supplies manufacture
- Electroplating or stereotyping
- Engraving or photo-engraving
- Exterminators
- Explosives manufacture
- Felt products manufacture
- Felt products bulk processing, washing or curing
- Fertilizer manufacture
- Filling stations
- Film manufacture
- Fire stations
- Foundries ferrous or non-ferrous
- Fuel sales
- Fungicides manufacture
- Fur tanning, curing, finishing or dyeing
- Furniture manufacture
- Garbage incineration, storage or reduction
- Gas manufacture, storage
- Gasoline service stations
- Generating plants, electric or steam
- Glass manufacture
- Glue manufacture
- Golf courses
- Graphite or graphite products manufacture
- Gum and wood chemicals manufacture or processing
- Hair products manufacture
- Hardware manufacture
- Heliports
- Incineration or garbage reduction
- Ink or ink ribbon manufacture
- Insecticides manufacture
- Inorganic chemicals manufacture
- Iron and steel manufacture
- Jewelry manufacture
- Junk yards
- Laboratories, medical, dental, research, experimental
- Leather tanning, curing, finishing or dyeing
- Linoleum manufacture
- Luggage manufacture
- Lumber processing
- Machine shops including tool, die, or pattern making
- Machine tools manufacture
- Machinery manufacture or repair
- Mechanical products manufacture
- Medical appliance manufacture
- Medical instruments manufacture
- Medical laboratories
- Metals manufacture including alloys or foil
- Metal casting or foundry products
- Metal finishing, plating, grinding, polishing, cleaning, rust-proofing, heat treatment
- Metal ores reduction or refining
- Metal product treatment or processing
- Metal reduction, refining, smelting or alloying
- Metal treatment or processing
- Mining machinery manufacture
- Mirror silvering shops
- Motorcycle manufacturer
- Motor freight stations musical instruments manufacture
- Newspaper publishing
- Non-ferrous metals manufacture
- Office equipment or machinery repair shops
- Oil, public utility stations for metering or regulating oil sales
- Oil storage
- Optical equipment manufacture
- Organic chemicals manufacture
- Orthopedic appliance manufacture

WARNING: These printed materials may be out of date.

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- Ore mining
- Paint and ink manufacture
- Paper and pulp mills
- Paper products manufacture
- Pesticides manufacture
- Petroleum or petroleum products refining
- Petroleum or petroleum products storage and handling
- Pharmaceutical products manufacture or preparation
- Photographic equipment and supplies manufacture
- Plastics and synthetic products manufacture and processing
- Plastics raw manufacture
- Plumbing equipment manufacture
- Porcelain enameling
- Precision instruments manufacture
- Printing and publishing
- Pumping stations, sewage
- Radioactive waste disposal services
- Railroad equipment manufacture
- Railroad rights-of-ways, substations
- Railroad freight terminals, yards or appurtenances
- Refrigerating plants
- Rubber processing of manufacture
- Rubber products manufacture
- Sewage disposal plants, pumping stations
- Ship or boat building repair yards
- Shipping waterfront
- Shoes manufacture
- Sign painting shops
- Silver-plating shops
- Silverware manufacture, plate or sterling
- Slag piles
- Soap and detergent manufacture
- Soldering shops
- Solvent extraction
- Steam electric power plants
- Steel products manufacture
- Tar products manufacture
- Textiles bleaching, products manufacture or dyeing
- Textile mills
- Thermometer manufacture or assembly
- Tile manufacture
- Timber products manufacture
- Tool or hardware manufacture
- Toys manufacture
- Trailer manufacture
- Transit substations
- Truck manufacture
- Trucking terminal or motor freight stations
- Turpentine manufacture
- Varnish manufacture
- Vehicles manufacture
- Venetian blind manufacture
- Welding shops
- Wood distillation

