



SUNSET PARK

Brownfield Opportunity Area Nomination Study Report

Prepared for

UPROSE



Prepared by

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The NYSDOS Brownfield Opportunity Area (BOA) Program



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Executive Summary

A Working Waterfront

Located at the heart of New York's Port District, the Sunset Park Brownfield Opportunity Area (BOA) has a strong connection with its waterfront as well as a rich industrial history. In the early 1900s, when Bush Terminal was developed on the harbor, it was one of the first intermodal shipping, warehousing, and manufacturing complexes in the Port District.

At one point, more than 300 firms operated out of Sunset Park, fuelling the area's local economy. The demand for workers led to the development of housing in the upland areas, establishing a close live-work relationship. This connection between waterfront jobs and nearby homes embedded the 'walk-to-work' neighborhood phenomenon that persists today.

During both the World Wars, the Sunset Park waterfront and Bush Terminal buildings served as the naval base for the US Army. The Brooklyn Army Terminal opened in 1919, became the largest military supply base in the US through World War II. However, in the decades after World War II, a number of factors such as the decline of the railways, introduction of containerized shipping, and the construction of Post Newark-Elizabeth Marine Terminal,

led to the gradual decline of manufacturing and industrial activities in the area, and thus a gradual loss of jobs. The construction of the Gowanus Expressway in the 1941 further severed connections between the waterfront and upland neighborhood, and most of Sunset Park's working class communities left the area.

However, the presence of high quality housing stock and the large swath of industrial land along the water drew new immigrants to the area. Even as millions of square feet of space continued to be underutilized, the industrial uses, building and the nature of employment within the BOA gradually began to adapt in favor of a diverse set of uses. This diversity has helped to maintain Sunset Park's status as a walk to work neighborhood even today, where 19% of its total population commutes to work by biking or walking. As a result, Sunset Park is one of the most active walk to work communities in New York City.

The uses across the BOA now include warehousing and distribution, auto repair, bakeries and a range of food services, furniture assembly, wholesale retail, utilities and other light manufacturing. In 1967, when Lutheran Medical Center opened its doors to the

neighborhood, it provided a huge infusion of service-oriented jobs in the area. Today it accounts for approximately 30% of the jobs in the BOA, engaging its population in over 6,000 quality jobs.

While manufacturing and construction jobs continue to be strong contributors to Sunset Park's employment base, the gradual diversification of employment types within the BOA, the shift in local resident job skills, and the new market demands for space requires a strategic approach to maximizing brownfield development, framing the area's assets, and enhancing the walk to work neighborhood.

The area's interconnectedness with regional markets, the availability of 20 million square feet of quality industrial and loft buildings directly linked to transportation infrastructure, access to local work force, and its dynamic industrial profile with a mix of industrial operations ranging from warehousing to textile product manufacturing, are valuable assets. Together, they provide a strong platform for the neighborhood to transform itself as a model for green industrial practices and quality jobs that will become the engine for a strong walk to work community.



Figure 1: Historic image of the Brooklyn Army Terminal

BOA Team and Project Goals

Given the area's history of industrial uses and many years of neglect, there is a large concentration of brownfields in the BOA. This community based Step 2 BOA Study is centered on identifying brownfield sites and putting them back to productive use. The study is being led by UPROSE, an environmental and social justice organization that is committed to increasing open space, decreasing environmental hazards, developing local jobs and facilitating community-inclusive decision-making in Sunset Park.

In December 2011, UPROSE commissioned WXY architecture + urban design to lead a multidisciplinary group of planning, design, environment and economic consultants for this project. Together with HR&A Consultants, Gannett Fleming, Southwest Brooklyn Industrial Development Corporation (SBIDC), e-design Dynamics, and the Sunset Park community, WXY undertook a year long planning study. This effort involved establishing a clear vision and road map for the redevelopment of currently underutilized sites within the BOA.

Funded under the Department of State's New York State Brownfield Opportunity Area Program, this study considered the Sunset Park area from 15th Street to 65th Street, and from 3rd Avenue to the waterfront. The study has included the identification of eight "strategic sites" for the revitalization of Sunset Park.

The potential future uses identified for the sites

are to be closely aligned with the community's goals and priorities for Sunset Park:

1. Increase job opportunities for local residents especially through the encouragement of sustainable industry and green jobs;
2. Decrease environmental hazards and facilitate the remediation and redevelopment of key brownfield properties in the BOA study area;
3. Work with area businesses, the City and the State to develop environmentally friendly business practices;
4. Create new open space and areas of outdoor recreation in Sunset Park that will reconnect the residential community to its waterfront; and
5. Preserve existing affordable housing and encourage new housing development on brownfield sites where appropriate.

With these goals in mind, the team undertook a detailed evaluation of the area's physical, economic and environmental conditions. This assessment, coupled with community engagement helped frame a corresponding set of recommendations and implementable strategies that address Sunset Park's challenges and capitalize on its assets for revitalization.

Framework for Re-development

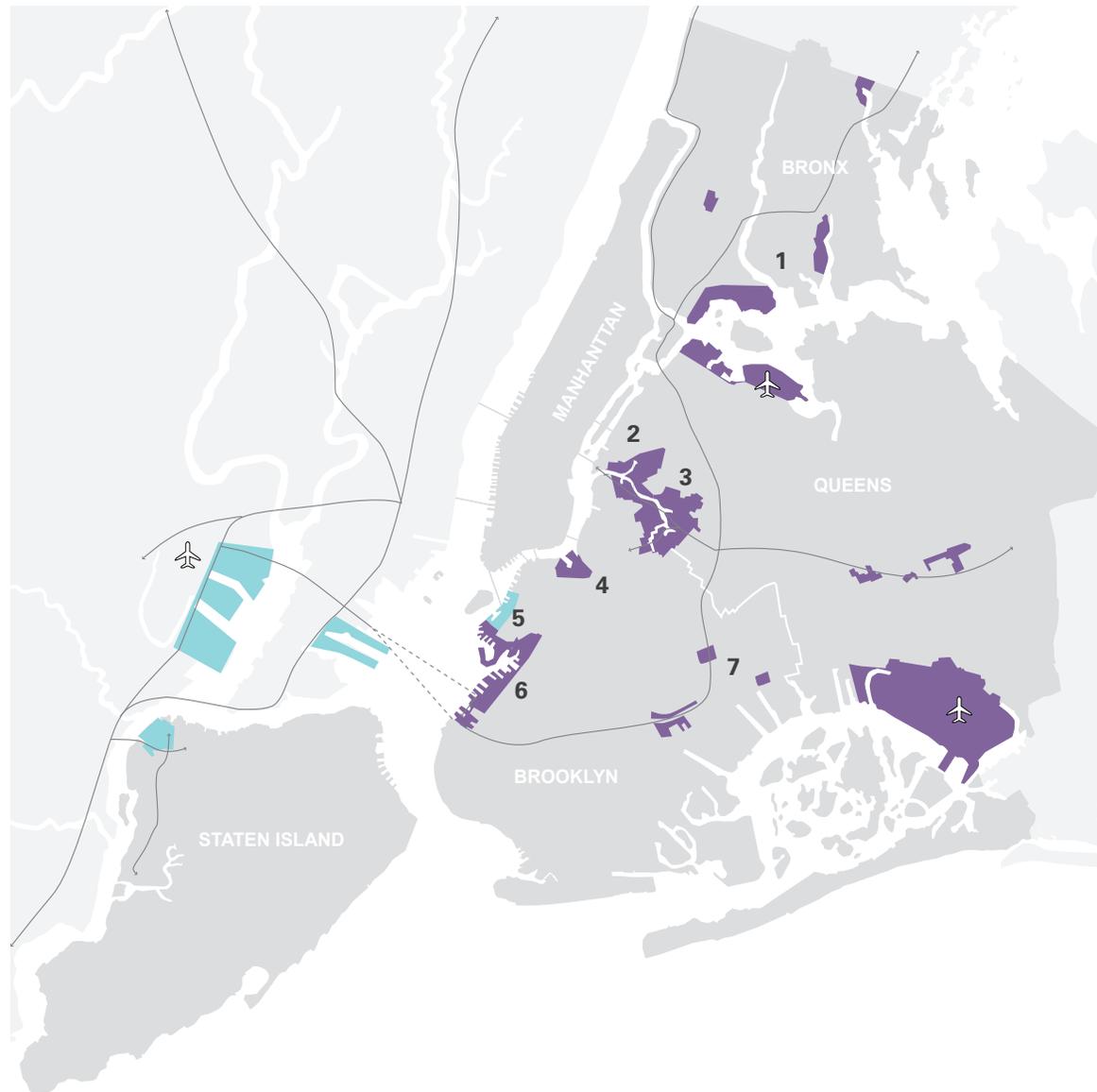
Over the last decade, City, State and Federal agencies have invested considerable capital in upgrading marine and freight infrastructure for industries, and creating new park space for area's residents and workers.

As a result of over \$125 million in bulkhead repairs, modernization of rail and terminal infrastructure and dredging, South Brooklyn Marine Terminal (SBMT) has become the focal point for manufacturing and distribution industries like Sims Recycling and Axis Automotive. Investment in Bush Terminal Piers and Park has created a new public realm destination, which in conjunction with the Brooklyn Greenway Plan will re-establish public access to the waterfront.

Moving further south, Lutheran Medical Center continues to invest in the local community and is the single largest employer in the area. Around its facilities have emerged support functions such as convenience retail that give this area its bustling character. Additionally, building renovation such as the Federal Building 2 and the Brooklyn Army Terminal (BAT) are setting a precedent for repurposing Sunset Park's historic warehouses. These modernized buildings will fulfill some of the real estate demands by small to medium scale industries that are continually looking to locate and grow in the area.

Meanwhile, in the midst of these investments targeted towards growing industrial uses, there has been an overall shift in favor of non-industrial employment. This trend is understood more clearly when one looks at Sunset Park in its regional setting and in the context of other Industrial Business Zones (IBZs), as shown in Figure 2. While Hunts Point and Newtown

NYC REGION'S INDUSTRIAL BUSINESS ZONES AND EMPLOYMENT TRENDS



	2000	2008
1. Port Morris/Hunts Point		
Industrial employment	78%	77%
Non-industrial employment	22%	23%
2. Newtown Creek		
Industrial employment	82%	77%
Non-industrial employment	18%	23%
3. Maspeth		
Industrial employment		58%
Non-industrial employment		42%
4. Brooklyn Navy Yard		
Industrial employment		52%
Non-industrial employment		48%
5. Red Hook		
Industrial employment		79%
Non-industrial employment		21%
6. Sunset Park		
Industrial employment	63%	51%
Non-industrial employment	37%	49%
7. East New York		
Industrial employment		36%
Non-industrial employment		62%

Figure 2: NYC's industrial business zones



Creek, comparable in size to Sunset Park, have managed to maintain their industrial employment base, the Sunset Park IBZ has seen a 12% decline in industrial jobs. This decline is offset by a corresponding increase in jobs related to food, professional and technical services, education, real estate, utilities and information.

Collectively, the wide range of building types, ongoing investments, incoming industries and the emergence of new employment sectors require a more fine grain urban analysis. Consequently, as shown in Figure 3, the area has been divided into seven subzones based on current uses, building types and access to infrastructure.

Four subzones populate the waterfront; Industrial Incubation Spaces, Large Scale Distribution, Working Waterfront and Utilities and Large Format Retail. To the west of 2nd Avenue are Historic Warehouses, Small Scale Manufacturing and Services and Residential, that are more closely dependent on direct access to 3rd Avenue and the Gowanus Expressway. Each of these subzones has a distinct character and offerings.

The **Industrial Incubation Spaces** offers a variety of real estate, multimodal freight transportation facilities and ferry access for its workers. To its north, the **Large Scale Distribution** subzone is constituted of factory lofts directly associated with rail, but which will

also house the future Bush Terminal Park. The **Working Waterfront** stretches across SBMT and with tenants like Axis Automotive and Sims Recycling can encourage green industrial practices in the BOA. **Utilities and Large Format Retail** fronts both the waterfront and 3rd Avenue, providing the opportunity to create visual and physical waterfront access for upland neighborhoods.

The **Historic Warehouses** is a concentration of early 20th century warehouse buildings that in recent years have started to offer a variety of real estate for industrial, retail and office uses. Market sectors such as food, metal fabrication etc. that have grown in the last two years constitute the **Small Scale Businesses** subzone whose uniform lots can be configured in a number of ways, to provide single and multistory buildings.

Lastly, the **Service and Residential** subzone that is anchored by Lutheran Medical Center covers a good 20 blocks roughly between 50th and 65th Streets. Well frequented by workers and residents, this part of the BOA more of a 24X7 neighborhood.

Eight strategic sites were selected on the basis of their ability to capitalize on infrastructure investments, tie into and improve the public access routes to the waterfront, and catalyze redevelopment of the BOA and the subzones in which they are located. Figure 4 shows how these strategic sites relate to the ongoing

investments and suggested public realm improvements.

Programs and uses for each of the eight sites, set out below, were based on the findings from the real estate market and industry analysis, the community goals established in the BOA Pre-Nomination Study, proposed government initiatives, zoning regulations, and opportunities provided by the new industries and amenities soon to be located at the BOA. The study focused on identifying a mix of program alternatives that would create local jobs and provide new services to the BOA and adjacent neighborhood.

- 1) 5201 1st Avenue:** Multi-use facility with community spaces overlooking Bush Terminal Park.
- 38 43rd Street:** Small manufacturing center that becomes part of the northern gateway to Bush Terminal.
- 2) A M Cosmetics Building:** Sustainable and green business incubator.
- 3) Verizon Fleet Parking:** Electric vehicle charging facility with stormwater management green infrastructure.
- 4) EW Bliss Building and Atlantic Properties:** Film trade school with community use that activates 52nd Street approach leading to the waterfront.
- 5) Moore McCormack:** Waterfront facing, medium scale commercial and community space that provides public waterfront access.
- 6) SBMT:** Recycling and green technology

SUBZONES: SUPPORTING STRATEGIC FRAMEWORK FOR DEVELOPMENT

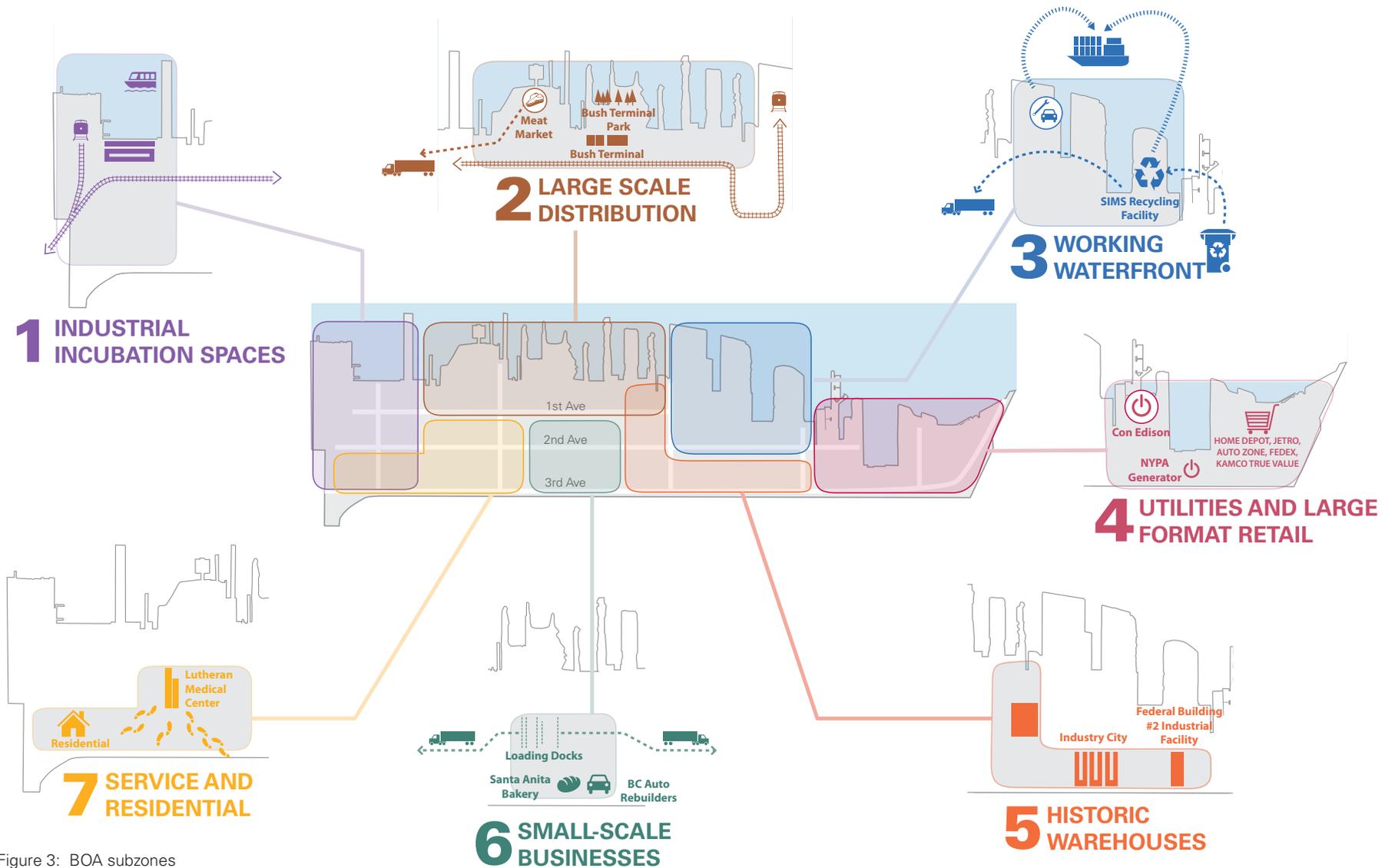


Figure 3: BOA subzones

center that encourages green industry practices

7) 244 39th Street: Retail, cafe and furniture workshop

8) 5201 2nd Avenue: Ground floor retail with commercial/industrial uses above.

Each site has the potential to contribute new green infrastructure that would improve the area's resiliency, through on-site work such as green or blue roofs or green walls and planting. These interventions would be complemented by streetscape improvements that both improve public access and capture stormwater. For example, green walls and plantings at the Verizon parking lot site would mitigate environmental hazards while allowing the existing use to continue. 43rd Street has emerged as a critical connector that would bring residents, workers and visitors to the gateway of new Bush Terminal Park. Another of the eight strategic sites, at the end of 43rd Street within Bush Terminal, would serve as a gateway to both a reinvigorated employment area and the new park.

Of the eight sites, four sites were selected for a more in-depth market analysis, including an estimate of the market value of a proposed program. The pro formas were used to establish each site's "Potential Development Value," which in turn established the redevelopment cost on a per square foot basis that the market could support. In the cases where redevelopment costs (which factored in high level remediation

costs but did not finalize the rebuild costs as part of the process) were in excess of the potential development value, the financial gap would need to be filled by a public or private subsidy. (Section 3.15 sets out the results of the pro formas.)

With the redevelopment analysis in hand, an outline of proposed next steps was developed that first, emphasized the need to establish critical success factors such as creating a vision for the BOA and its place in New York's economy, maximizing the existing assets, connecting to the new industries and promoting the area's competitive advantage. A coordinated effort will be required to create potential partnerships for the redevelopment, such as investment firms focused on green businesses, private niche manufacturers or the NYCEDC and to pursue funding opportunities at the federal, state and city levels. Examples of funding options include federal New Market Tax Credits, New York State Brownfield Cleanup Program Tax Credits and New York City Brownfield Incentive Grants.

Recommendations

1/ Increase job opportunities for local residents especially through encouragement of sustainable industry and green jobs.

In recent years there has been a substantial decline in the jobs in traditional industrial sectors, but at the same time, the overall employment in the BOA has stayed relatively stable. This trend can be attributed to the

growth of a range of other non-industrial sectors which has facilitated skills development in neighborhood residents. An effective way to capitalize on this trend is through supporting existing workforce development programs and encouraging new ones such as apprenticeship programs that prepare the workforce for skilled employment opportunities. In addition to this growth in non-traditional industrial sectors, there are a number of strong anchor institutes and businesses, such as the Sims Recycling, that can support additional growth through suppliers and/or customers. Organizations such as SBIDC can play an important role in helping the market by facilitating exchanges between existing and potential businesses that understand the growth needs of existing businesses, and space and asset needs of potential new businesses.

Investments such as those in Brooklyn Army Terminal, South Brooklyn Marine Terminal, Bush Terminal Park and the rail line extension will also substantially benefit the BOA. Currently, however these investments and their impacts are not known to many people outside the immediate area. The redevelopment of strategic sites in conjunction with the marketing efforts for these investments can attract more businesses and industries to the BOA.

2/ Decrease environmental hazards and facilitate the remediation and redevelopment of key brownfield properties in the BOA.

Approximately 90 out of a total 126 brownfield parcels within the BOA are underlain by historic

ALIGNING INVESTMENT, PUBLIC REALM OPPORTUNITIES AND A STRATEGIC DEVELOPMENT FRAMEWORK

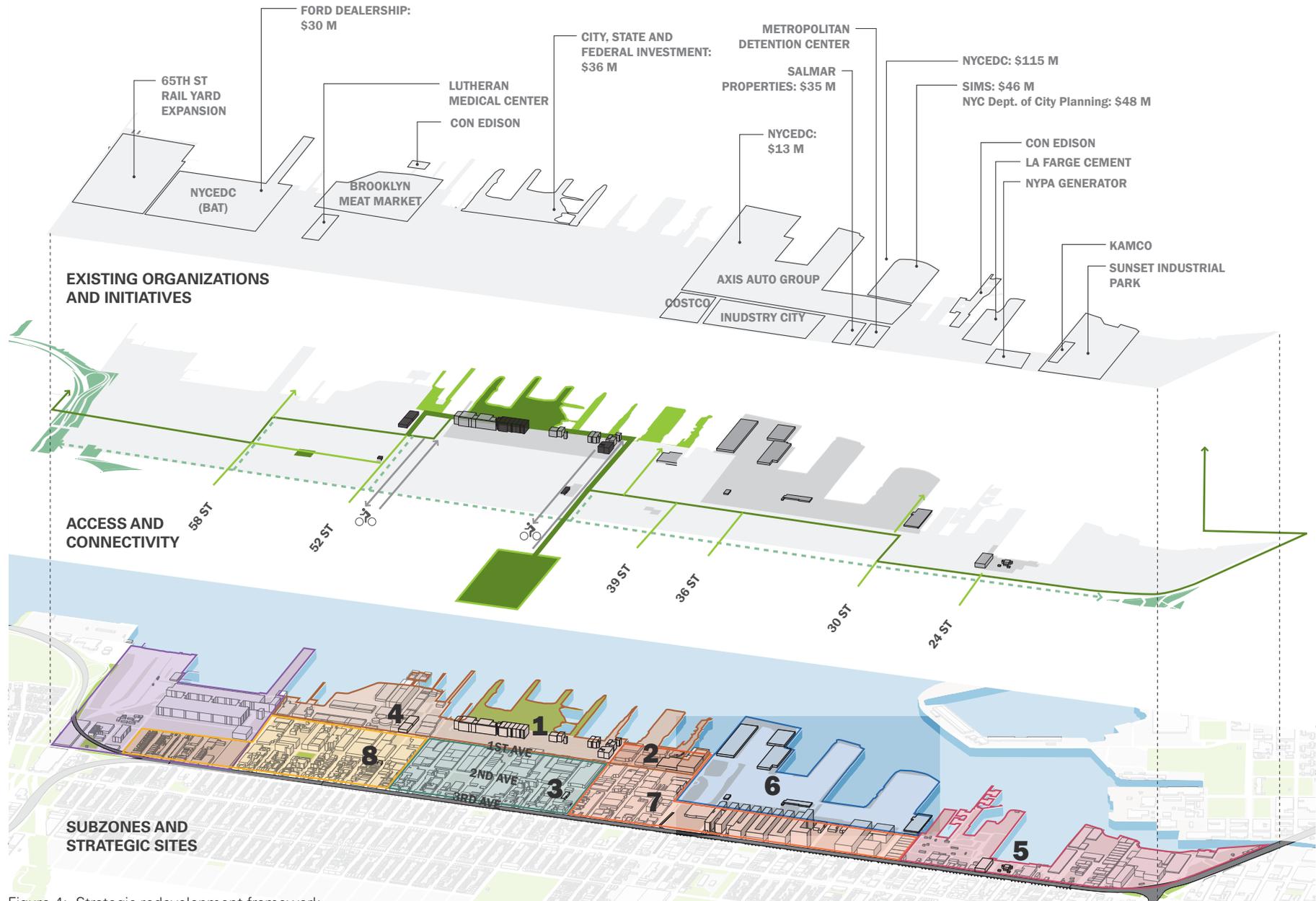


Figure 4: Strategic redevelopment framework

fill material which often contains PAHs and metals. While it may not be necessary to clean up all 90 parcels, remediation of strategic sites will reduce environmental hazards and may spur additional remediation and redevelopment within the BOA. UPROSE can bring together local developers and key municipal organizations to spur such key catalytic redevelopment opportunities. Additionally, unknown costs associated with the clean up of brownfield sites often poses a barrier to redevelopment. These unknowns can be reduced through Phase I and Phase II site assessments that provide more site-specific information about potential contamination. This in turn will help in identifying the most cost-effective remediation techniques and further advance redevelopment opportunities. At the same time, efforts should be made to consider sustainable environmental remediation over energy intensive remediation techniques that create significant carbon footprints. Where possible more sustainable remediation techniques that seek to reduce energy consumption and green house gas emissions and incorporate water conservation measures should be considered.

Heavy freight movement dependent on conventional fuel sources degrades the air quality in Sunset Park, risking higher incidence of respiratory disorder for BOA workers and residents. The rail spur within the BOA, which is benefiting from a major City investment, can greatly reduce polluting truck traffic that causes ongoing environmental pollution. Additionally,

alternative energy production through the potential development of a new anaerobic digestion plant at Sims and the installation of wind turbines on industrial buildings will help reduce dependency on conventional energy sources and create a healthier environment.

The Sunset Park BOA is also covered with impermeable surfaces, which contribute heavily to runoff. This runoff can create unsafe surface ponding conditions for pedestrians, and degrade the water quality by carrying surface contaminants deposited by automobiles, fertilization practices, aerial deposition and trash, into New York Harbor. Addressing stormwater runoff is addressed more fully under Recommendation 6/ on Climate Resiliency.

3/ Promote environmentally friendly business practices

The BOA benefits from several major and growing green businesses such as Sims recycling and AXIS automotive. Recently, the world's largest rooftop farm was announced atop the renovated Federal Building #2 and PANYNJ is investigating plans for a green business incubator. These plans demonstrate the potential for more growth of green businesses and can be used to brand the BOA as a green business cluster. This will in turn help attract more green businesses to the area. In addition to branding, encompassing a broad definition of green businesses that focuses on both businesses with an explicitly green end product, and demonstrates the value of green

business processes to other types of business, can promote environmentally friendly business practices in the area.

4/ Create public access links to the Sunset Park Waterfront

There has been a significant amount of investment at the Bush Terminal Piers and Park sites located at the waterfront, which is a precious public realm amenity for the neighborhood residents and workers. However, access to this new facility still remains a challenge. Some of this challenge can be attributed to the BOA's landscape and streetscapes that are dominated by loading docks and are mostly suited for vehicular movement and industrial uses. Just outside of the BOA, on 3rd and 4th Avenues, there are high instances of vehicular and pedestrian conflicts which is a major barrier for pedestrians who want to get into the BOA and to the waterfront. Some of these challenges can be overcome by creating safe environments for pedestrians and bicyclists that will encourage mobility. Specifically at key intersections on waterfront connectors, i.e. 3rd Avenue with 24th, 30th, 36th, 39th, 42nd, 43rd, 50th, 51st, 52nd, 58th and 59th Streets, increased lighting, proper crosswalk marking, pedestrian refuge islands and extensions to reduce crosswalk distances can greatly improve pedestrian safety.

In addition to strengthening waterfront corridors and key pedestrian intersections, the area around the E.W. Bliss and Atlantic Properties on

52nd Street, the Moore McCormack Building and Piers 5, 6 and 7 can be developed as publically accessible waterfront sites. This will further increase waterfront access and increase the overall public realm area in the BOA.

The historic resources within the BOA such as architectural details on buildings façades and critical infrastructure can contribute to strengthening the identity of the area and creating pleasing pedestrian environments. Efforts should be made to preserve these resources and to tell a story of the area through signage and information displays in open and community spaces. These efforts will support the creation of a dynamic waterfront and employment center that is an attractive place to work and visit.

5/ Preserve existing affordable housing and encourage new housing developments on brownfields where appropriate.

While the Sunset Park neighborhood remains more affordable than other parts of Brooklyn, growing price pressures on the market can make affordability a challenge for long-time residents of the neighborhood. The pressure will increase as the clean-up of brownfield sites, and investments in green businesses and public realm improvements increase the livability of the area and make it more attractive for residential development. Select sites should be supported for affordable housing development after conducting further conversations with key stakeholders.

6/ Build for greater climate resiliency

Though the Sunset Park BOA was once an integral part of the natural ecosystem that could buffer the impact of storm surges and sea level rise, today the waterfront no longer functions as a permeable floodplain marshland. As a result, Hurricane Sandy caused significant damage in Sunset Park and neighboring areas. The storm was accompanied by a 14- foot storm surge that caused back-ups and flooding, severe damage to infrastructure, and interrupted power for days, displacing a number of residents and businesses from the area. Forecasters predict an increase in the frequency of such extreme storm events and hurricanes, putting Sunset Park at an increased risk of flooding in the coming years.

Sunset Park's community, businesses and developers need to collectively adopt an environmentally responsible approach to any new building construction and should upgrade existing buildings where possible. New construction should respond to the 100- year floodplain and be situated on higher ground to prevent damage from storm surge. Building utilities should be located at higher levels to avoid damage from flooding. Within the existing industrial buildings, measures such as relocation of mechanical equipment to higher levels, waterproofing at lower levels, installing back up generators and other storm preparation plans can greatly reduce long term costs and recovery costs.

Area wide approaches such as habit restoration, constructed wetlands and green infrastructure can also help attenuate storm surges, control stormwater runoff and revive a part of Sunset Park's ecological role. The Sunset Park waterfront was originally developed for heavy industries and is covered with impermeable surfaces, which contribute heavily to runoff. This runoff can add to the heat island effect and carry with it surface contaminants that can degrade the water quality of New York Harbor. A study area wide assessment to determine and categorize sources of runoff and ways for their mitigation would be a first step in developing interventions in the BOA that would improve stormwater management. A number of interventions such as constructed wetlands, rain gardens, curbside bioswales and blue-green roofs can be employed at specific locations in the BOA. These improvements can be implemented at both the neighborhood level and by individual property owners. A list of resources that can be used to assist in these initiatives are detailed in this report.

Project Description and Boundary

1.1 Lead Project Sponsors and BOA Team

The Sunset Park Brownfield Opportunity Area (BOA) Step 2 Nomination Study is being led by UPROSE - an environmental and social justice organization that is committed to increasing open space, decreasing environmental hazards, developing local jobs and facilitating community-inclusive decision-making in Sunset Park.

In December of 2011, UPROSE commissioned WXY architecture + urban design to lead a multidisciplinary group of planning, economic, environmental and design consultants to craft a holistic plan for the revitalization of this brownfield opportunity area. Together with HR&A Consultants, Gannett Fleming, Southwest Brooklyn Industrial Development Corporation and e-Design Dynamics, the WXY team brings experience in community based planning, urban design, economic strategies for neighborhood revitalization, environmental engineering and hazard mitigation strategies.

Throughout the Step 2 nomination process, the consultant team engaged with stakeholders, community members and municipal agencies who have all contributed their unique perspectives to this study.

Their engagement has been invaluable and has enriched the team's understanding of the area.

1.2 Project Overview and Description

The Sunset Park waterfront was filled to create land for industrial use (see Figure 5) and first came to thrive in the early 1900s as an industrial waterfront. The area's marine freight facilities such as the Brooklyn Army Terminal (BAT) and the cargo piers and buildings around Bush Terminal set the standard for port facilities through World War II. In addition to its marine industrial facilities, construction of the elevated rail line by the Brooklyn Rapid Transit Company along 3rd Avenue brought with it new residential construction and connected the area to the employment centers of downtown Brooklyn and Manhattan. This infrastructure also provided employees access to the expanding port operations along the Sunset Park waterfront, beyond those who lived within walking distance.

In the latter half of the 20th century, the shipping industry was going through a paradigm shift where industries no longer thrived by co-locating manufacturing with port and rail facilities. Sunset Park based companies were unable to compete with the expansive, single-story campuses adjacent to highways. Since

BOA FACTS

Brownfield: A Brownfield is any real property where redevelopment or re-use may be complicated by the presence or potential presence of a hazardous waste, petroleum, pollutant, or contaminant.

BOA program: The BOA Program provides assistance to communities to undertake activities resulting in neighborhood revitalization strategies for areas affected by brownfields or economic distress. The program enables communities to assemble effective strategies to return dormant sites and areas back to productive use and simultaneously restore environmental quality by enabling communities to:

1. Address a range of opportunities and problems posed by multiple brownfield sites
2. Build consensus on the future uses of strategic brownfield sites
3. Establish the multi-agency and private-sector partnerships necessary to leverage assistance and investments to revitalize neighborhoods



Figure 5: Sunset Park area showing shorelines today and in 1869. The image shows the area that was filled to create land for the industrial use.

☐ Sunset Park BOA Boundary — Mean High Water Line in 1869

then the area has suffered disinvestment which has further reduced its ability to compete as an industrial working waterfront.

Today, while the area has a significant industrial inventory, the challenge is to adapt and re-use the infrastructure and buildings to reposition Sunset Park. In addition, as with other communities that have been home to manufacturing uses for many decades, Sunset Park has a number of brownfields that pose a major challenge in the revitalization of the neighborhood and the vision of its community.

The Sunset Park Step 2 Nomination Study will provide an in depth and thorough description and analysis, including an economic and market trends analysis, of existing conditions, opportunities, and reuse potential for strategic properties located in the proposed BOA that can serve as catalysts for revitalization.

/ Historic Development

1600 - 1800s: New Netherlands Farm

Initially Dutch, and later other European settlers, flocked to Sunset Park in the 17th and 18th centuries for the area's fertile soil and proximity to the river for trade. Despite the transfer of New Netherlands to the English in 1664, the residents remained predominantly Dutch. During the American Revolution, Sunset Park was the major field of battle during the Battle of Long Island.

With the incorporation of the City of Brooklyn,

South Brooklyn, as it was then called, began to develop along the newly laid-out street grid, moving eastward from the waterfront.

Early Urbanization

1825: Horse car lines and factories began to be built all across the area.

1834: The City of Brooklyn, was incorporated.

1891: The City of Brooklyn bought land for public parks, including Sunset Park. Named for the spectacular views achievable due to its rapid rise in elevation over the waterfront, the park would go through expansions and reconstructions, including a remodeling by the Works Progress Administration during the Depression.

Rapid Industrialization

1900 - 1930: As Manhattan's docks reached full capacity at the end of the 19th century, pressure for expanded shipping capability in Brooklyn spurred new development in Sunset Park. Soon, Sunset Park would become a cluster of waterfront factories and piers. The largest of these intermodal facilities, Bush Terminal, would become a model for the regional and national shipping industry.

3rd Avenue: Midway between the docks and the Park, 3rd Avenue operated as the center of the Sunset Park. The Avenue had seven movie theaters, and drew a large local crowd. Later, with the construction of Gowanus Parkway (later Gowanus Expressway, see Figure 6), 5th Avenue replaced 3rd Avenue as the main shopping street.

Immigrant Communities

1920s: Communities of Irish, Norwegians, Polish, among others, settled in the area, often working at the prosperous docks. Each of these groups left their mark on Sunset Park, bringing customs, trades, and especially churches to serve their community and spiritual needs.

The Height of Industry

1940s: Despite witnessing greatly reduced business during the Great Depression, activity at the port reached its apex during World War II. The U.S. Army Military Ocean Terminal, now Brooklyn Army Terminal (see Figure 7), was the embarkation point for most troops. The area was a hub of construction for the war effort.

Gowanus Parkway

1941: The Gowanus Parkway opened to traffic in 1941. To accommodate local traffic, 3rd Avenue was widened from four to ten lanes, condemning buildings fronting the street. Unlike the "el" which it replaced, the Gowanus served as a physical barrier to the waterfront for the rest of Sunset Park and displaced any community activity along the Avenue.

Port Decline

1960s - 1980s: The industrial activity provided by WWII proved fleeting. With the advent of containerized freight requiring vast amounts of space to stack goods, port activity soon moved elsewhere due to Sunset Park's older facilities, limited footprint, and lack of a good rail connection.

Departing Populations: Without the draw of jobs at the piers, much of Sunset Park's population left for the suburbs, as occurred throughout the city. With the opening of the Verrazano Bridge in 1964 in particular, the area and any jobs or cultural resources became easily accessible from Staten Island. This movement left poor housing conditions, and disinvestment for the area.

New Vibrancy

1980s - 2010: While existing populations left, a diverse group of new immigrants came to Sunset Park. With people from Puerto Rico, the Dominican Republic, Mexico, and other Latin American countries, Latinos now represent a majority of the neighborhood. A significant Chinese population also exists, drawn by the area's accessibility to Manhattan's Chinatown. Chinese New Year is celebrated on 8th Avenue yearly.

Renewed City Interest: Beginning with the DCP's 1992 Comprehensive Waterfront Plan, the City has promoted industrial and manufacturing uses through the Southwest Brooklyn Industrial Business Zone and funding through the Economic Development Corporation. Since then, several plans have been released, including CB7's 2009 197a plan, the Sunset Park Waterfront Vision Plan and the Significant Maritime and Industrial Areas designation.



Figure 6: Gowanus Parkway and 3rd Avenue
Source: <http://forgotten-ny.com>



Figure 7: Brooklyn Army Terminal (1949)
Source: <http://www.trainweb.org>

1.3 Community Vision and Goals

The Sunset Park BOA public and stakeholder engagement was central to the development of the Nomination Study. Participants ranged from elected officials to neighborhood residents bringing together a very diverse mix of voices that highlighted issues in the area from many different perspectives. Prior to beginning the Step 2 Nomination Study, UPROSE engaged community and other stakeholders to develop a vision for the area's many brownfield sites as a resource to achieve future economic development and land use goals. The project goals drawn from the outreach initiatives during the Step 1 Pre-Nomination and other community plans such as the 197 A study, reflect the desires of Sunset Park's communities.

1.4 BOA Boundary Description and Justification

The Sunset Park BOA is located just south of Red Hook in Brooklyn (see Figure 8). The BOA is approximately 694 acres including all right of ways, and a total of 522.75 acres excluding the right of ways. This area is bound by 15th Street in the north, 65th Street in the south, Gowanus Expressway / 3rd Avenue in the east, 65th Street in the south, and on the west by the East River Waterfront (see Figure 9).

The area is primarily industrial with warehouses, utilities, storage buildings, small manufacturing uses and rail, marine and road infrastructure, some of which has been upgraded in recent years. West of 2nd Avenue, there is a

concentration of smaller parcels and residential uses. These are primarily concentrated around the Lutheran Medical Center. The study area has about the 126 brownfield sites. A large number of these sites are concentrated between 28th and 58th Streets and 2nd Avenue and the East River.



Figure 8: Sunset Park BOA in its regional context

PROJECT GOALS

1. Increase job opportunities for local residents especially through the encouragement of sustainable industry and green jobs;
2. Decrease environmental hazards and facilitate the remediation and redevelopment of key brownfield properties in the BOA study area;
3. Work with area businesses, the City and the State to develop environmentally friendly business practices;
4. Create new open space and areas of outdoor recreation in Sunset Park that will reconnect the residential community to its waterfront; and
5. Preserve existing affordable housing and encourage new housing development on brownfield sites where appropriate.

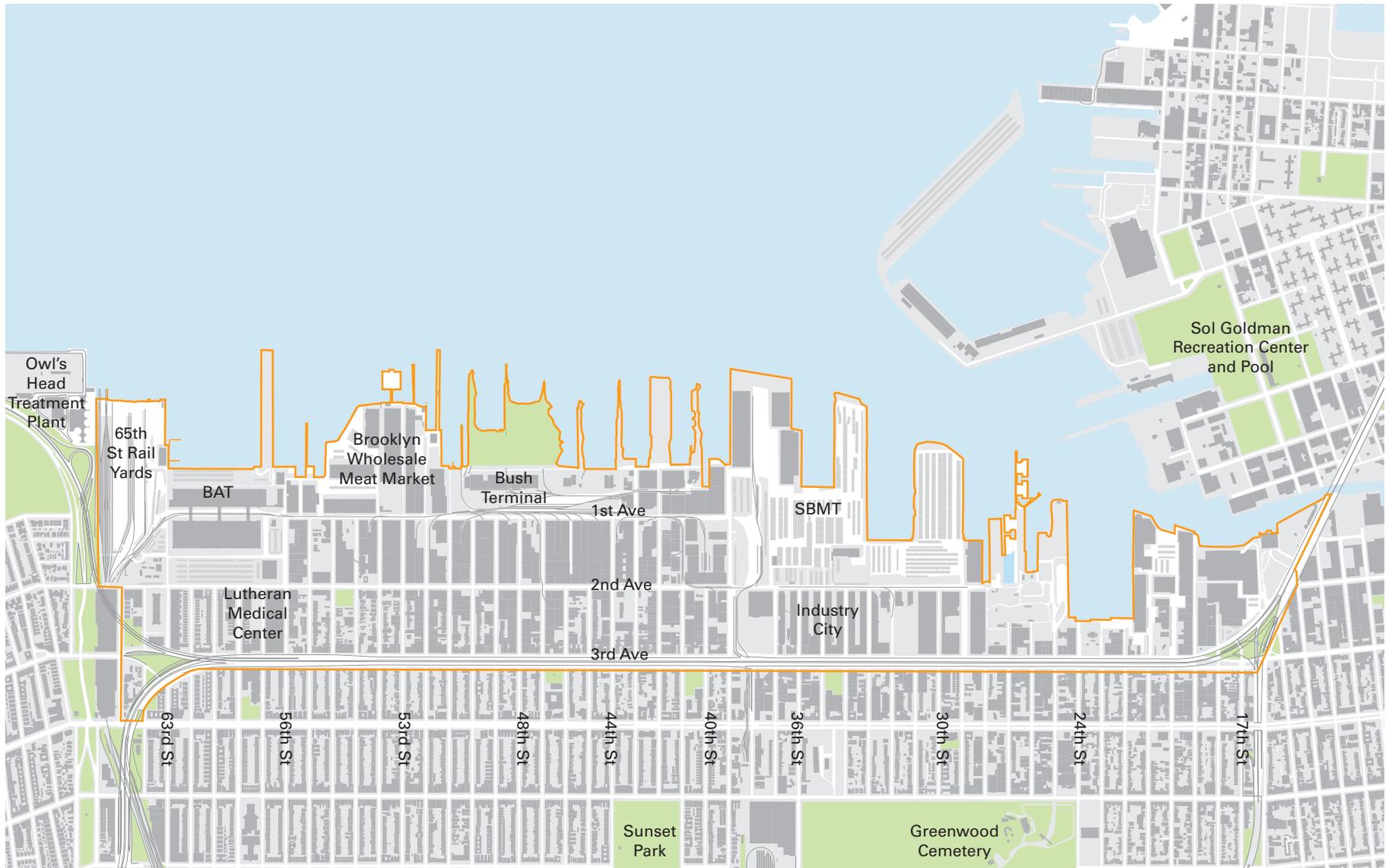
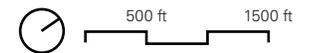


Figure 9: Sunset Park BOA Boundary



— BOA boundary

Public Participation Plan and Techniques to Enlist Partners

2.1 Public Participation Plan

Community visioning for the BOA occurred in conjunction with work on the 197a plan that set out clear community expectations. These expectations were translated into the BOA goals during the Step 1 pre-nomination process, when UPROSE engaged the area's community and stakeholders to develop the Sunset Park BOA vision and priorities for brownfield redevelopment. In Step 2 of the BOA process, the prime goal of public outreach was to engage stakeholders and the community in identifying catalytic sites for redevelopment and in discussing strategies for advancing these projects. In order to capture the diverse voices, the team developed a comprehensive participation plan closely aligned with the project schedule and milestones. At the end of each milestone, a comprehensive presentation of findings was presented to members of the Steering Committee and the wider public to ensure greater awareness and provide opportunities to local residents to make decisions about their future. A descriptive graphic that outlines key dates, project milestones and findings is outlined in Figure 10.

2.2 Techniques to Enlist Partners

To foster participation from all representative

stakeholders and community members throughout the BOA process, the team developed comprehensive engagement methods and held various meetings, interviews and visioning sessions. Techniques were developed specific to the audience and included steering committee meetings, visioning sessions with the community, one on one interviews with business owners in the area and outreach with key municipal organizations. The following section details out these techniques.

/ Steering Committee Meetings

Over the course of seven months, four steering committee meetings, each with a different focus, were held. The steering committee, comprised of major stakeholders in the BOA area and neighborhood including municipal agencies, elected officials, community members, businesses and property owners, brought a diverse set of expertise and knowledge to the project. Throughout the study, the steering committee was engaged to discuss key elements of the plan and appraise the main ideas and approaches prior to public visioning sessions. These meetings, held at critical junctures of the plan development helped develop a deeper insight into the area, articulate a cohesive vision representing the area's diverse

community and evaluate recommendations and potential strategies for implementation.

/ Community Visioning Sessions

Two public presentation and work sessions open to all members of the community were organized; one at the end of the data gathering and analysis task (May 3, 2012), and one during the final development of draft recommendations (June 13, 2012). These presentation and visioning sessions were organized with a goal to:

- Bring the community up to speed with the planning and economic analysis conducted by the consultant team and apprise them of the opportunities and constraints in the redevelopment of key brownfield sites;
- Create a source of information for programmatic needs and details on how and by whom specific program elements might be used; and
- Generate consensus and community ownership of the Step 2 Nomination Plan.

/ Interviews with Local Business and Property Owners

The BOA team conducted one-on-one interviews with business and private property owners of strategic brownfield sites. These

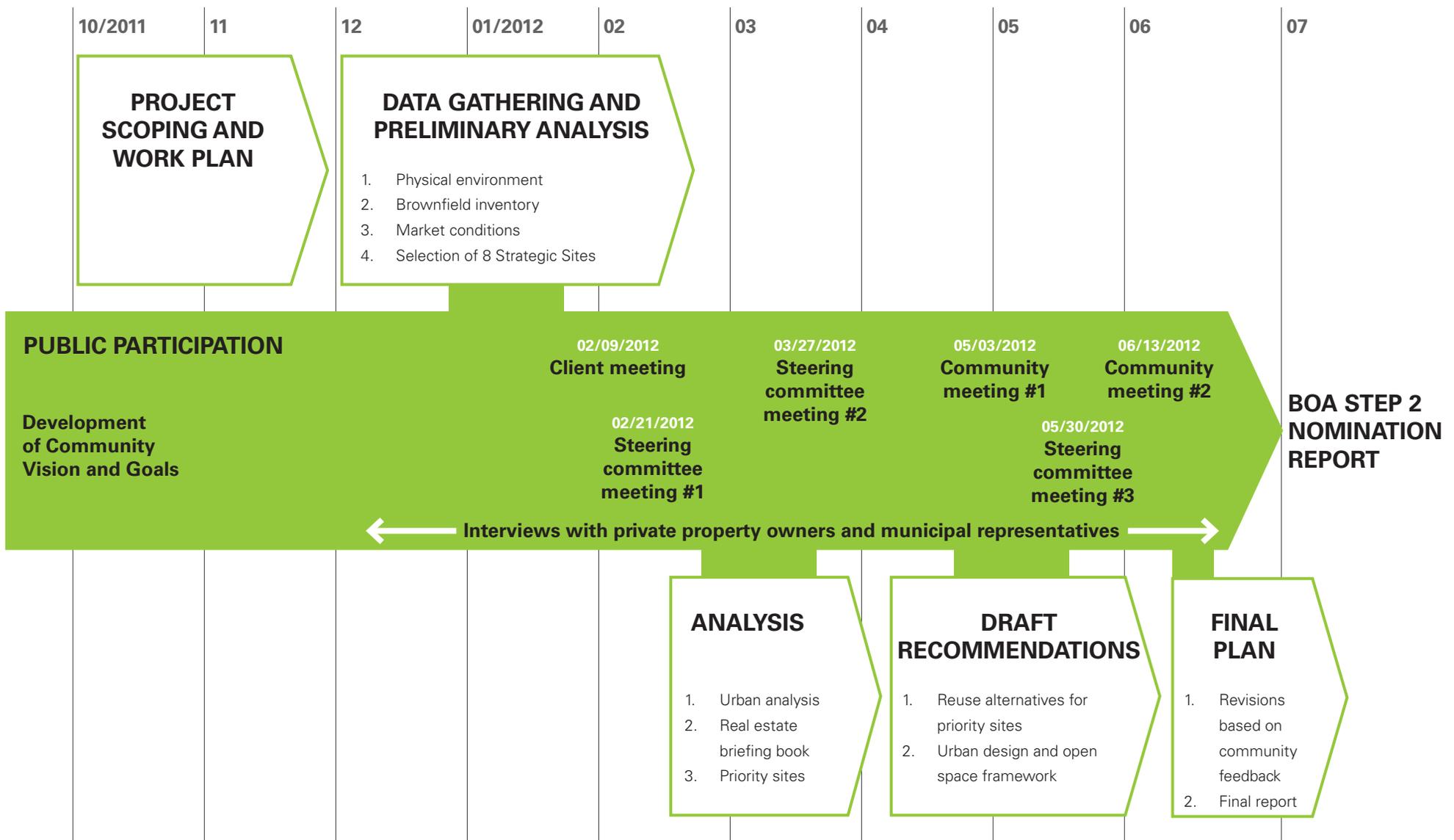


Figure 10: Project Work Plan and Engagement Process

interviews provided critical insight into the willingness of property owners to redevelop their sites and whether they would participate in and support the BOA Step 2 Nomination Study. These interviews also brought to light specific issues, existing activities and other speculative development plans for the strategic sites. Details of outreach with private property owners can be found in Appendix C.

/ Communication Tools

To ensure effective participation from all stakeholders, a number of different communication tools and materials were developed throughout the consultation process. Each of the different techniques of engagement listed below utilized a set of materials and communication tools that were developed specific to the target audience. In steering committee meetings, detailed graphics, illustrations and data analysis were presented and later distributed in an easily accessible digital format for comments and feedback. In addition to presentations, community meetings and visioning sessions included additional materials for conducting design workshops. These included drawings, worksheets outlining the main goals and way to think about them at a physical scale and icons representing an exhaustive list of building and public realm programs.

A planned bus tour including community members, elected officials and municipal officials was conducted during the first

community meeting. This tour provided access to Bush Terminal Park (still under construction), which helped people get a better understanding of site conditions and made the visioning sessions more effective. Figures 11 and 12 show some of the tools that were used during community meetings, to gather feedback and images from the community bus tour to Bush Terminal Park.

Detailed notes and findings from all meetings and outreach efforts during the course of the entire projects are provided in Appendix C.

BOA STAKEHOLDERS

COMMUNITY ORGANIZATIONS AND LOCAL BUSINESSES

Community Board 7
Neighbors Helping Neighbors
Lutheran Medical Center
Asian Americans for Equality
Industry City
East of Hollywood Studios

ELECTED OFFICIALS

Office of Council Member Sara González
Office of State Assemblymen Felix Ortiz
Office of Senator Velmenatte Montgomery
Office of Congresswoman Nydia Velázquez
Office of Congressman Jerry Nadler

MUNICIPAL AND STATE AGENCIES

Office of Brooklyn Borough President
Mayor's Office of Environmental
Remediation
NYS Office of Coastal, Local Government,
and Community
NYC Economic Development Corporation
NYC Department of Transportation
Brooklyn Department of City Planning

Analysis of the Brownfield Opportunity Area

3.1 Community and Regional Setting

The Sunset Park neighborhood and BOA have been addressed in many planning initiatives. In particular, the use of the BOA's waterfront as a shared resource for both recreational and industrial uses has been seen as one of the main challenges. The following sections give a brief overview of some of the relevant planning studies. This review also serves to identify key institutional support and potential funding opportunities for plans and projects that can support the BOA goals.

/ Vision 2020 Comprehensive Waterfront Plan

Led by the Department of City Planning, Vision 2020 is a ten year vision for the future of the NYC waterfront. The plan provides a sustainable framework for water transportation, increased public access to the waterfront and economic opportunities along NYC's shoreline. Specifically for Sunset Park, the Plan supports initiatives like the Brooklyn Waterfront Greenway, Bush Terminal Park, The Sunset Park Waterfront Vision Plan, marine transportation and maritime support services. The plan also promotes working waterfronts initially laid out through the designation of Significant Maritime Industrial Areas (SMIAs) in the 1992 Comprehensive Waterfront Plan.

/ Sunset Park 197a Plan

The Sunset Park 197a plan was adopted by the City in December 2009. Sponsored by CB7, the document sets forth a comprehensive framework for economic viability and environmental sustainability, designed to serve the needs of the upland communities. Some of the plan's initiatives include improvement of shoreline public access, creation of safe waterfront access corridors along 43rd and 51st Streets and improvement of rail freight infrastructure as a means of reducing truck traffic. Preservation of manufacturing and industrial jobs within the IBZ was also identified as a priority. Figures 13 and 14 show the comprehensive recommendations and major development plans / initiatives adopted by the Sunset Park 197a plan.

/ Sunset Park Waterfront Vision Plan

Sponsored by the New York City Economic Development Corporation, the Waterfront Vision Plan outlines strategies for a modern industrial waterfront that can become an environmentally sustainable resource. The plan also outlines initiatives to improve the freight transportation system and the reuse of existing buildings to accommodate a range of industrial uses. Most importantly, the plan stresses the need to

make the waterfront a safe environment and a resource for adjacent residents and workers to ensure they all coexist.

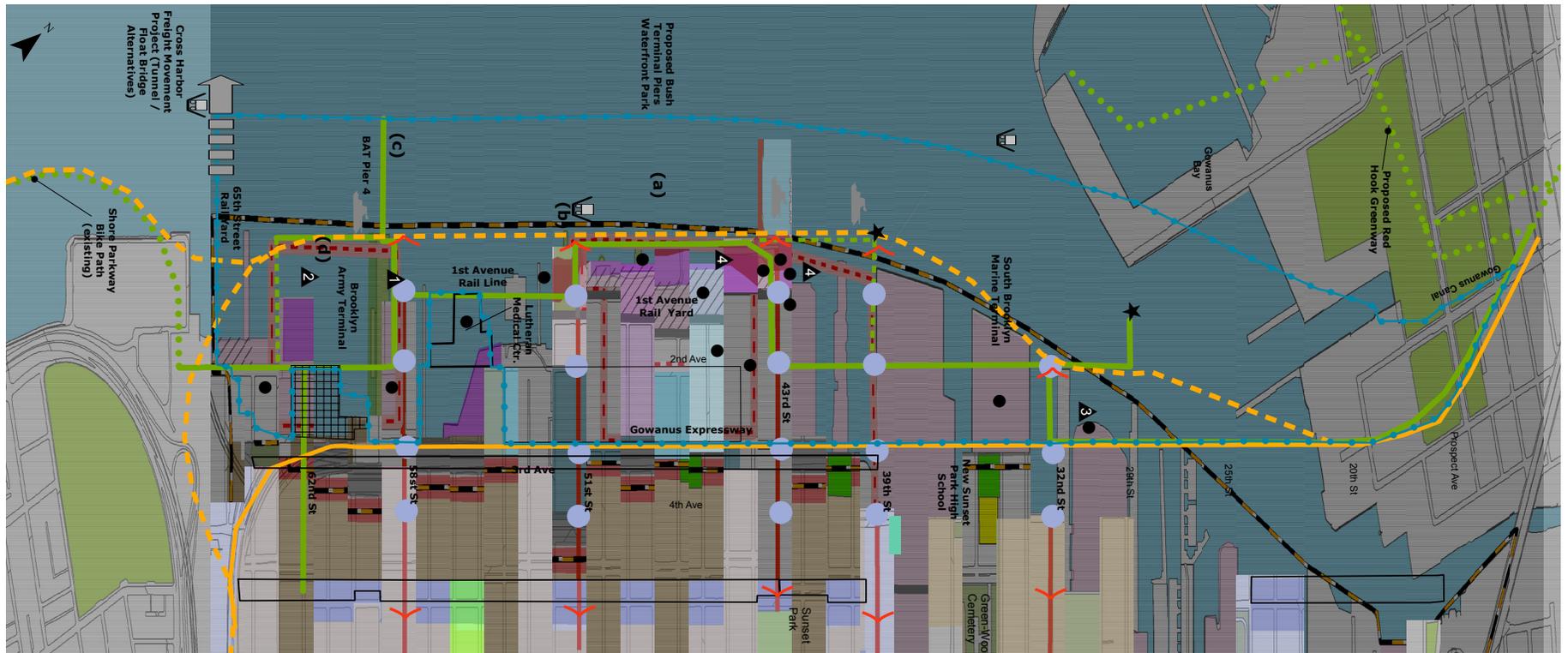
/ NYCDEP Green Infrastructure Plan

The Green Infrastructure Plan provides an approach to improving the water quality of NYC's water bodies through the use of natural infrastructure systems. The plan suggests integrating swales and green roofs with conventional infrastructure systems and building targeted small scale grey or traditional infrastructure. The northern part of the Sunset Park BOA overlaps with the plan's initiatives for the Gowanus Bay. The goal for this area is to manage stormwater from 10% of the impervious surfaces in the combined sewer contributory area for Gowanus Bay.

/ BOA Pre-Nomination Study

The BOA Pre-nomination Study provides a basic and preliminary analysis of the Sunset Park BOA. Among other things, the study identified 13 brownfield sites that had been selected by the community as potential priorities for redevelopment.

Figure 13: Sunset Park 197a Plan - Comprehensive recommendations



- | | | | | | |
|---|---|---|--|---|---|
|  | Study Area Boundary |  | Gowanus Expressway Project (reconstruction / tunnel alternatives): Central on-ramps and direct truck access to / from SBMT. |  | Promotion of South Park Slope Inclusionary Housing Program. |
|  | Job intensive maritime, industrial and transportation uses on city-owned property. |  | Expanded ferry service |  | Full use of residential space in mixed-use buildings on Fifth Avenue. |
|  | Rehabilitation / preservation of existing publicly-owned affordable industrial space. |  | Third Avenue redevelopment, in consultation with community, if viaduct is demolished. |  | Potential housing development over the 38 th Street rail cut. |
|  | Vocational training center - potential sites:
(1) BAT "administration" bldg; (2) BAT Bldg. A; (3) Federal Bldg. #2; (4) Bush Terminal. |  | Sustainable Industrial District (high performance maritime / industrial uses; green manufacturing; green building standards). |  | Cultural / historic precinct linked to waterfront park (maritime / industrial museum; environmental / cultural center). |
|  | Housing preservation and development in existing R districts. |  | Affordable housing development on east side of Third Avenue if viaduct is demolished. |  | Potential historic landmark / historic district designation. |
|  | Contextual rezoning to preserve low-rise midblocks. |  | Identify areas east of Third Avenue suitable for (a) higher density affordable residential development; and (b) contextual rezoning to preserve neighborhood character, historic district and views. |  | Expedite the development of a public high school in Sunset Park. |
|  | Housing preservation - and development, where feasible - in existing M1-2D district. | | | | |

/ Current Planning Initiatives

Figure 14 illustrates the current planning initiatives within the Sunset Park BOA by different agencies.

PlaNYC [DCP, 2011]

1. Support local and area-wide community brownfield planning efforts
2. Create and upgrade flagship parks: Bush Terminal: Complete remediation of open space and advance phase I of park

DOT 10 year Capital Plan 2014 [DOT, 2009]

3. 5th Avenue from 24th to 65th Street

Sunset Park Waterfront Vision Plan [EDC, 2009]

4. Construct 1st Avenue Rail Upgrades
5. Expand Rail Capacity
6. Activate Marine Cargo at South Brooklyn Marine Terminal
7. Continue Study of Deepwater Container Port
8. Activate Rail & Marine Transfer Hub at 65th St. Yard
9. Establish Marine Freight Village at South Brooklyn Marine Terminal
10. Bush Terminal Circulation Improvements for vehicular, pedestrian, and bicycle
11. Support the Study of New Gowanus Expressway Access at 39th St.
12. Increase Energy Efficiency at Brooklyn Army Terminal
13. Create Major Open Space at Bush Terminal Piers

Vision Plan for 4th Avenue Corridor [Office of Brooklyn Borough President, Spark 4th Ave, NYU Wagner, 2010]

14. Develop the Brooklyn Boulevard
15. 45th St + 4th Avenue Connection to Waterfront

NYC DCP Vision 2020 [NYC DCP, 2011]

16. Relocate NYPD tow-pound at South Brooklyn Marine Terminal.
17. Commence first phase of Brooklyn Army Terminal commercial life sciences and technology center
18. Issue RFP for the lease and development of an approximately 130,000 sf property at the Bush Terminal Complex.
19. Bush Terminal Piers Park

Community 197a plan [Brooklyn Community Board 7, 2009]

20. Adopt additional measures to strengthen the Southwest Brooklyn Industrial Business Zone and preserve manufacturing and industrial space.
21. Create Pedestrian Waterfront Access Corridors
22. Rehabilitate Federal Bldg. #2 and identify other publicly- and privately-owned underutilized industrial properties that may provide space for business development and expansion.
23. Improve rail freight infrastructure as a means of reducing truck traffic and fuel emissions. First Ave. Rail Line and Yard / 65th St.
24. Explore feasibility of decking the 38th Street

rail cut to create housing development opportunities.

25. Expand ferry service - with stops at BAT Pier 4- Ferry Locations
26. Expedite development of the entire Bush Terminal Piers Waterfront Park.
27. Expand redevelopment efforts at BAT to maximize opportunities for affordable industrial space.
28. Expand bus service (B11, B35, B70) to access public open space and new industrial uses.

Brooklyn Waterfront Greenway [Brooklyn Greenway Initiative, 1998 – in association with the DOT since 2010]

29. New Greenway paths
30. Bike Connector Routes
31. Connections to the Greenway

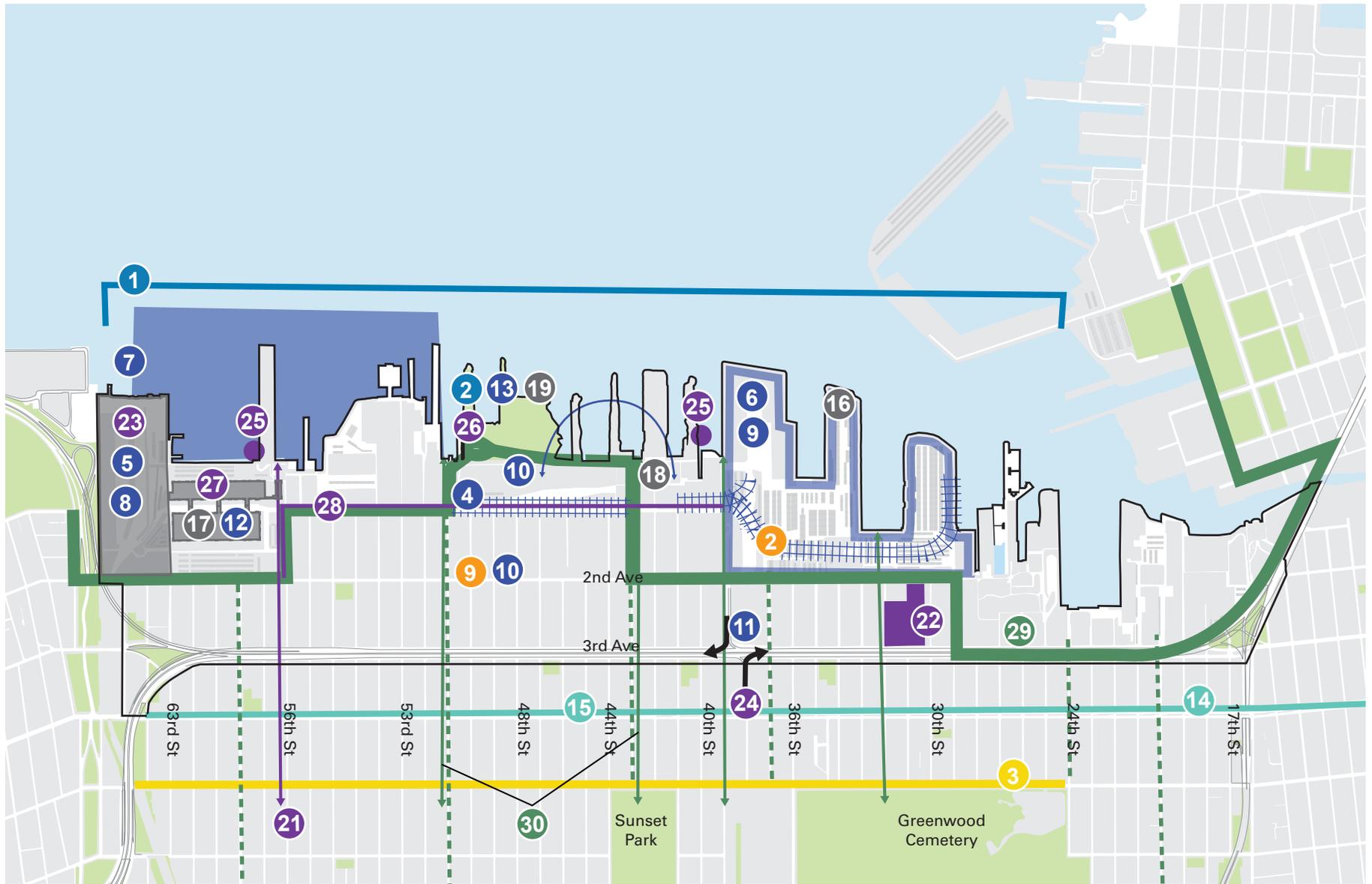


Figure 14: Current Planning Initiatives in Sunset Park BOA and Neighborhood

- PlaNYC [DCP, 2011]
 - DOT Capital Plan 2014 [DOT, 2009]
- Sunset Park Waterfront Vision Plan [EDC, 2009]
 - 4th Avenue Corridor Plan, [Office of Brooklyn Borough President, 2010]
 - Community Board 7 197a Plan
- Brooklyn Waterfront Greenway Initiative [Brooklyn Greenway Initiative 1998 - in association with the DOT since 2010]

/ Sunset Park: A Regional Perspective

New York City has a strong history as a global center of industrial and manufacturing commerce. Over the past decade, however, the City experienced dramatic decline in manufacturing employment. Between 2000 and 2010, average annual employment in the manufacturing sector declined by over 50% to 76,258 jobs in the New York City Metropolitan Statistical Area (MSA), according to the New York State Department of Labor Statistics. Employment in transportation and warehousing uses stayed relatively flat over the same period. Industrial subsectors in which companies could reduce costs using cheap overseas labor, such as apparel manufacturing, experienced the greatest losses. Employment in industrial subsectors requiring advanced knowledge or local connections, e.g. food production, however, has stabilized.

Industrial development in New York City faces a number of challenges, including older building stock with floor plate sizes and configurations not suitable for modern manufacturing, limited financial resources for small industrial businesses, and lack of entrepreneurial support for business growth. In addition, the amount of space in the City zoned for manufacturing has declined significantly due to major rezoning efforts. Between 2002 and 2007, the amount or acreage zoned for manufacturing uses declined by 17% to 10,750 acres as the City rezoned over 20 million square feet of manufacturing spaces for other uses and also affected the industrial

employment (see Figure 15).

At the same time, the City has a number of competitive advantages that make it a strong location for ongoing manufacturing uses. It is the center of one of the densest regions in the country, with over 20 million consumers within 25 miles. The City is served by an excellent transportation network, including the third busiest Port in the United States, an extensive passenger and freight rail network, and interstate highways.

Both New York City and the Port Authority of New York and New Jersey (PANYNJ), however, have prioritized the preservation and expansion of industrial uses as critical to the region's economy. The City's 2005 Industrial Policy established 22 initiatives to support industrial development. Many of these initiatives are targeted to 16 Industrial Business Zones (IBZs), one of which includes the Sunset Park BOA. The Bloomberg Administration made a commitment not to rezone IBZs for residential uses. In addition, the Industrial Policy offers incentives to industrial businesses that relocate in the IBZs from other areas of the City. As illustrated in Figure 16 the zones in Brooklyn and Queens have a high percentage of the area zoned for manufacturing with a small percentage in The Bronx.

IBZ FACTS

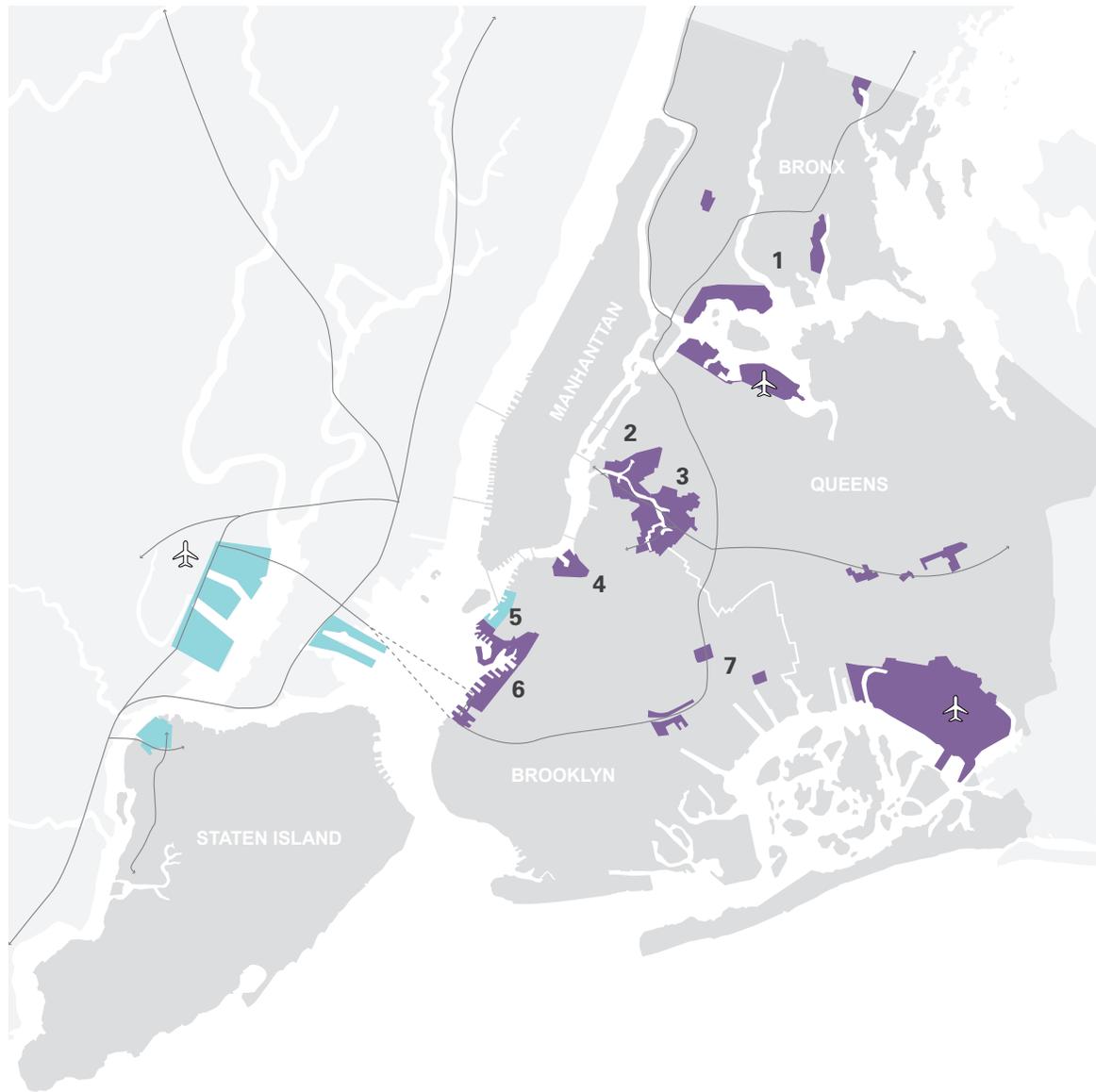
What is an IBZ?

Industrial Business Zones (IBZs) replaced In-Place Industrial Parks (IPIPs) in 2005 to reflect industrial districts accurately and incentivize investment in industrial sectors. Typically, residential developments are prohibited in areas within IBZ boundaries.

There are a total of 16 IBZs, in New York City.

Most IBZs are run in partnership with nonprofit local development corporations, which assist businesses seeking locations, financing, and services.

Sunset Park BOA lies within the Southwest Brooklyn IBZ that includes parts of Red Hook, Sunset Park and Gowanus.



	2000	2008
1. Port Morris/Hunts Point		
Industrial employment	78%	77%
Non-industrial employment	22%	23%
2. Newtown Creek		
Industrial employment	82%	77%
Non-industrial employment	18%	23%
3. Maspeth		
Industrial employment		58%
Non-industrial employment		42%
4. Brooklyn Navy Yard		
Industrial employment		52%
Non-industrial employment		48%
5. Red Hook		
Industrial employment		79%
Non-industrial employment		21%
6. Sunset Park		
Industrial employment	63%	51%
Non-industrial employment	37%	49%
7. East New York		
Industrial employment		36%
Non-industrial employment		62%

Figure 15: Regional industrial context and employment trends



3.2 Existing Land Use

Throughout the early half of the 20th century, land use in the BOA study area was dominated by heavy industry and associated infrastructure such as rail yards, and marine terminals. Today, while the area primarily remains industrial, there has been a change in the type of industries that populate the area. In addition to a number of utility uses, big-box retail, services and some residential uses have moved into the area. Despite this, the waterfront today is primarily dominated by freight related infrastructure and uses.

Land use in the BOA study area, as shown in Figure 16, is comprised primarily of transportation and utility, parking, and industrial and manufacturing uses. There are large parcels of property designated as transportation and utility along the waterfront, including the Brooklyn Army Terminal (BAT), the Bush Terminal and Bush Terminal Park, the South Brooklyn Marine Terminal. This designation is appropriate for some parcels, as there is a substantial amount of transportation infrastructure in the form of rail lines, piers, and goods movement. Others, such as the future Bush Terminal Park, retain their transportation or utility use designation, recalling their active maritime uses decades ago. Similarly, BAT has a transportation and utility use despite currently housing nearly 70 firms.

Industrial and manufacturing lots take up much of the space along 2nd Avenue. There is some

commercial and office space within the BOA area, mostly located along 3rd Avenue. The two largest commercial sites are the big box stores Costco and Home Depot, located at 37th Street and 18th Street, respectively.

At the southern end of the BOA, a concentration of public facility uses represents the Lutheran Medical Center. While this is a small area, health services has the largest number of employees by sector. To the east of the Lutheran Medical Center, bordered by 2nd and 3rd Avenue and 44th Street and 62nd Street, is an area of residential use. Most of the Sunset Park housing stock is located east of 3rd Avenue, outside of the BOA. There is very little open or recreation space. However, the new Bush Terminal Park, once completed, will provide access to the waterfront. Figures 17, 18 and 19 illustrate the concentration of commercial, residential and industrial uses within the BOA.

Vacant lots are scattered throughout the study area, with the largest vacant area situated between the Bush Terminal Park and the South Brooklyn Marine Terminal.

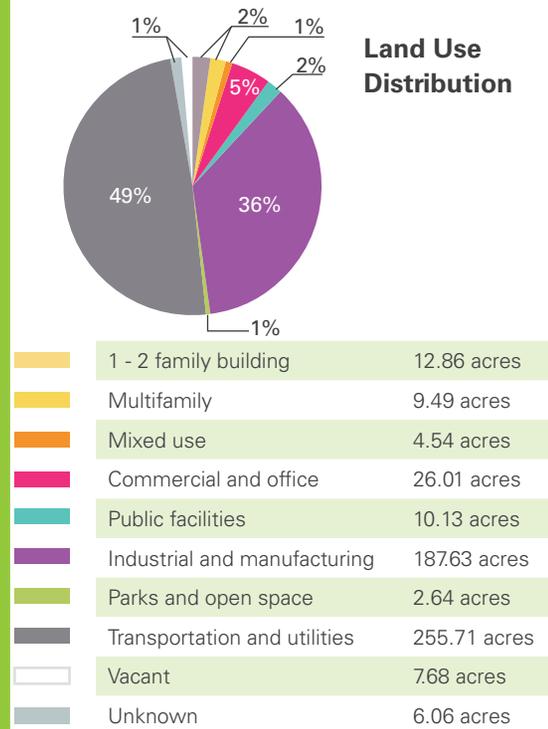
/ Breakdown of Transportation and Utilities land use category

Transportation:	71.29 acres (28%)
Parking:	8.80 acres (3%)
Utilities:	32.83 acres (13%)
Parks:	16.03 acres (6%)
BAT:	47.18 acres (18%)
SBMT:	79.57 acres (31%)

LAND USE FACTS

What comprises 50% of transportation and utility uses?

Most of land along the waterfront is designated as transportation and utility. However, it is being used by establishments such as Industry City, Sims Recycling, Axis Automotive, LaFarge Cement, ConEdison and the BAT.



1 - 2 family building	12.86 acres
Multifamily	9.49 acres
Mixed use	4.54 acres
Commercial and office	26.01 acres
Public facilities	10.13 acres
Industrial and manufacturing	187.63 acres
Parks and open space	2.64 acres
Transportation and utilities	255.71 acres
Vacant	7.68 acres
Unknown	6.06 acres

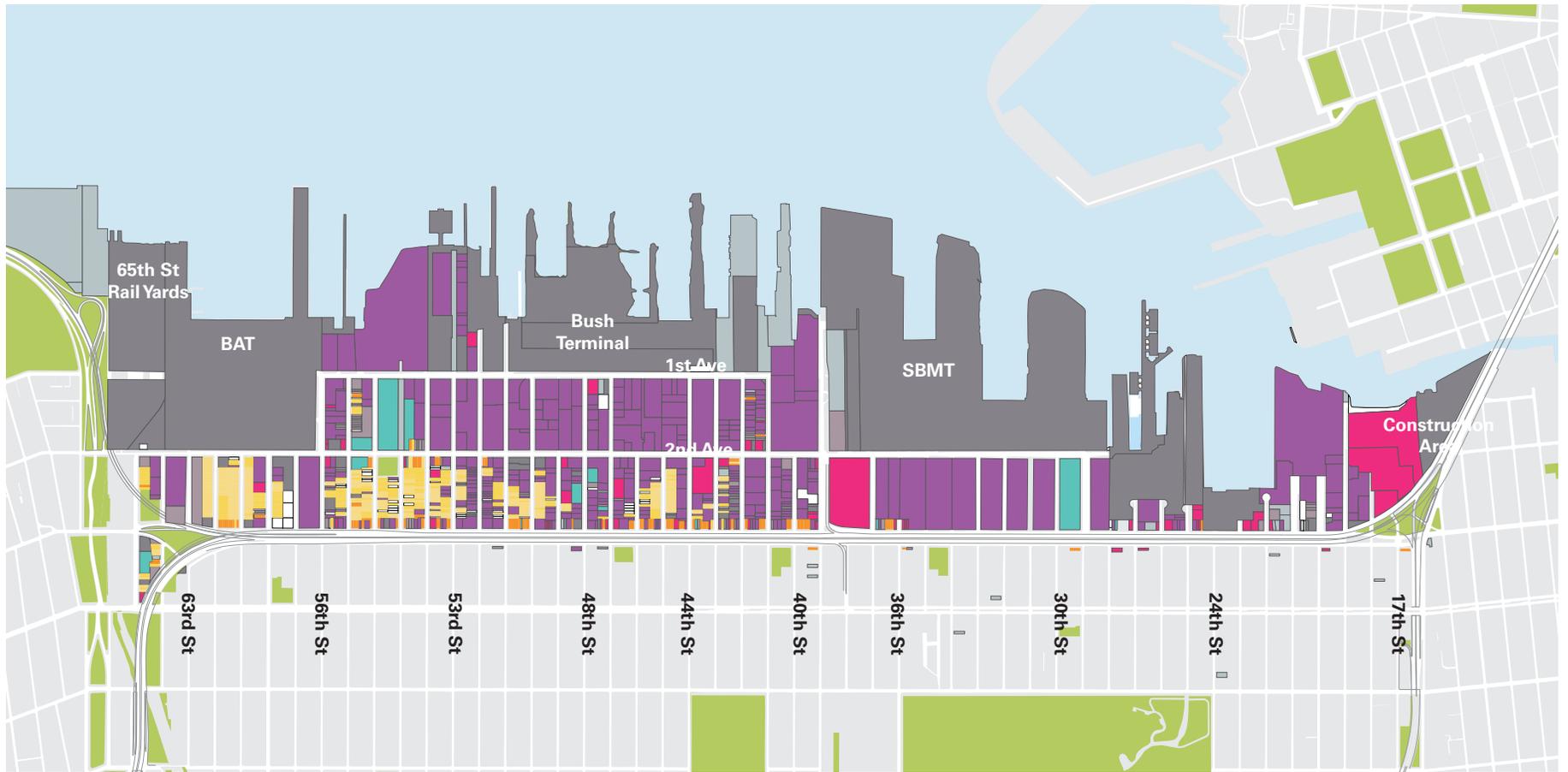


Figure 16: Land Use Distribution

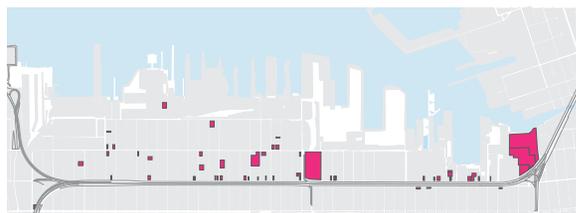
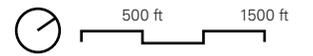


Figure 17: Commercial Use Concentration

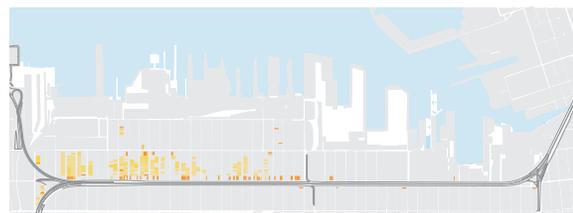


Figure 18: Residential Use Concentration

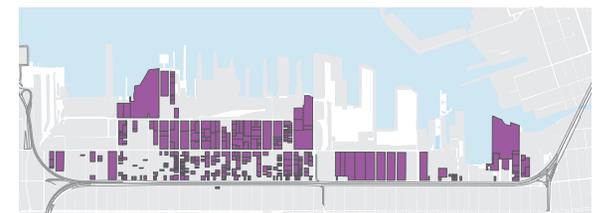


Figure 19: Industrial Use Concentration

3.3 Existing Zoning

The BOA neighborhood west of 3rd Avenue is predominantly zoned for manufacturing. The waterfront lots are zoned M3-1 or M2-1, allowing for heavy and medium industrial uses, meaning that they are not required to conform to the City's most stringent performance standards for industry. These uses are buffered from residential areas by the lighter industrial M1 districts that comprise most of the area between 2nd and 3rd Avenues. Figure 20 shows a detailed map of existing zoning and special districts for the entire Sunset Park BOA and area adjacent to it.

Within the BOA study area, residential zoning districts allow for a small range of residential options. Around Lutheran Medical Center, R5 and R6/R6A/R6B districts allow for higher density row houses and medium-scale high rises. In addition, there is a small strip of R4A zoning near 62nd Street that allows for detached and semi-detached housing only.

Although land use and zoning typically match, Sunset Park's industrial district like many in the city has a number of non-conforming uses. These are primarily residential, with an established pocket of housing units south of 42nd St, both within the existing R6/R6B and M1-2D zoning districts. Between 54th and 58th Streets, this residential mixed-use area features C1-3 commercial overlay districts that include the facilities of Lutheran Medical Center and permit retail frontage on 2nd and 3rd Avenues.

Most types of retail and commercial uses are permitted within the City's M-zones. However, these higher revenue generating uses could contribute to pricing out industrial uses in the area. The final outcome would be dependent on a number of other factors such as ownership, incentives for industrial development and market factors.

/ Industrial Business Zones (IBZs)

Industrial Business Zones are policy-designated geographic areas created in 2005 by New York City's Industrial Policy. The IBZ program is administered by the Mayor's Office for Industrial and Manufacturing Business (OIMB), which the Bloomberg Administration established to "protect and promote NYC's industrial sector." The central advantage of the IBZs is the creation of added real estate certainty; within the City's 16 IBZs, the Bloomberg Administration has pledged not to allow the development of new residential uses. This policy promise is supported by increased scrutiny of illegal conversions and uses. Additionally, businesses located in IBZs can tap into incentive and business support programs, which are administered through partner organizations and Small Business Services.

ZONING FACTS

What uses are permitted within the existing M zoning districts of the BOA?

There are three main manufacturing districts within the BOA: M1, M2 and M3. M3 Districts accommodate the City's essential heavy manufacturing uses. M2 districts are considered appropriate for medium-performance industries. New residential uses or community facilities are not permitted within M2 districts except by variance or special permit. M1 districts are for light manufacturing. These areas act as buffers between residential and heavier manufacturing uses. Again, new residential uses are not permitted, except within the M1-2D district, where residential use is permitted when authorized by the City Planning.

Most types of retail and commercial uses are permitted within the City's M-zones. However, recent debates over a few key issues, such as hotel development in industrial areas, have highlighted the incursion of other uses in manufacturing areas. The City's zoning resolution outlines type, size and other specifics, such as type of enclosure required, for each use group.

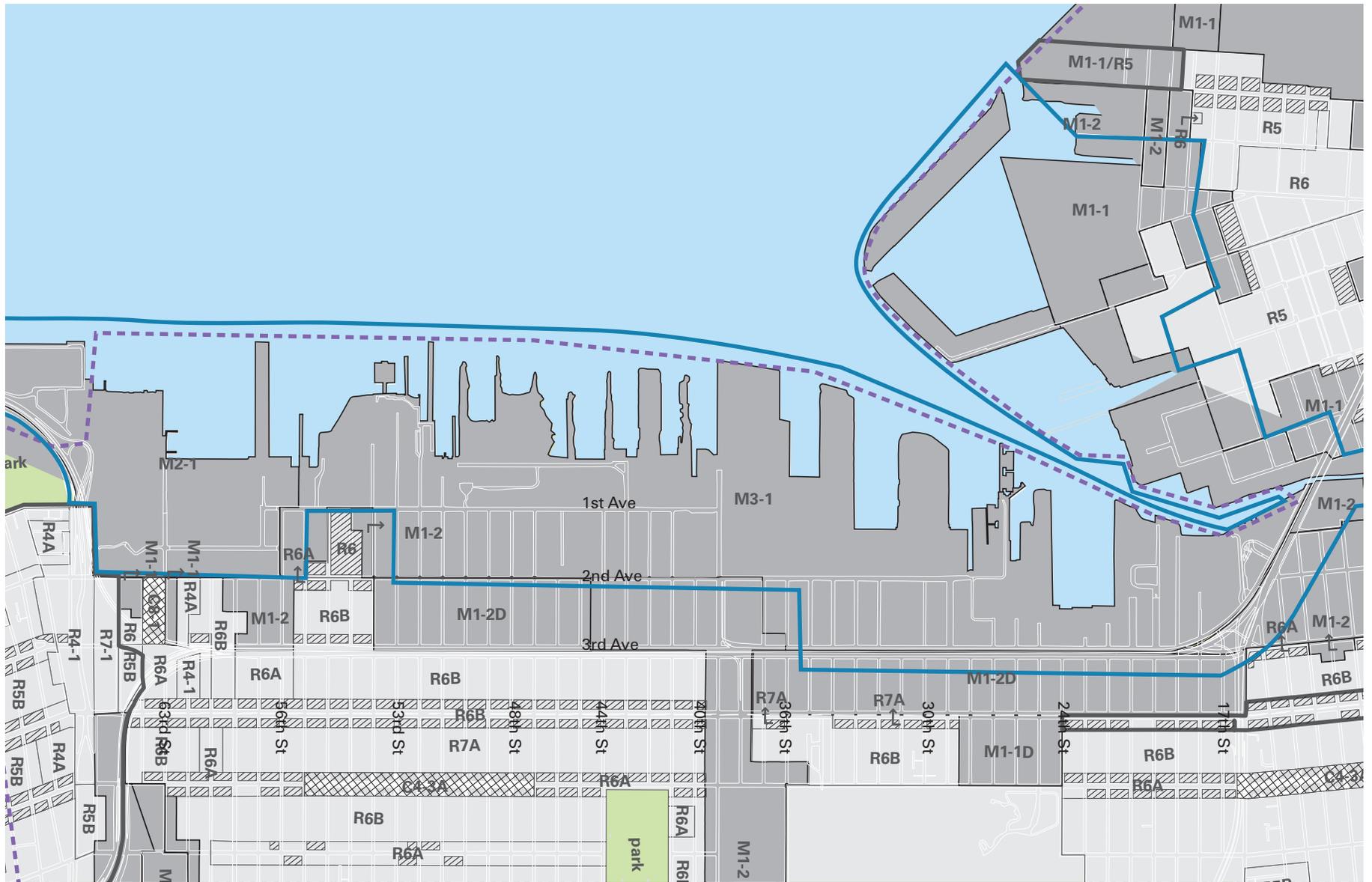
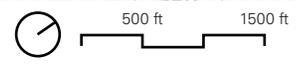


Figure 20: Existing Zoning and Special Districts

- Industrial Business Zone
- Significant Maritime Industrial Area
- Special Purpose District
- All Commercial
- All Manufacturing
- All Residential



3.4 Land Ownership

As shown in Figure 21, over 55%, of the BOA is publicly-owned land. This includes property that is either owned by New York City, such as the Brooklyn Army Terminal, or property that is owned by the federal government, like the Metropolitan Detention Center. Most of the large waterfront parcels, like the South Brooklyn Marine Terminal, Bush Terminal, and Moore McCormack site are all owned by the NYC Department of Small Business Services.

The large amount of public ownership of land is a product of the 1960s and 1970s when Sunset Park’s industrial waterfront went into decline and most industries left the area for New Jersey. Now most of the parcels, though owned by Department of Small Business Services (DSBS), are being developed through the New York City Economic Development Corporation (NYCEDC).

Of note in Figure 22, while City data shows the ownership of Bush Terminal Park as “unknown or private,” it is currently owned and being redeveloped by NYCEDC.

The three federally-owned lots, west of South Brooklyn Marine Terminal, are the Detention Center (previously called Federal Building 1), and Federal Building 2. Once used by the Department of the Navy, Federal Building 2 has been vacant for over a decade and is currently being developed.

The only mixed ownership (private and public) is to the north of the BOA area where two large lots are co-owned by private entities and the Department of Sanitation. These lots are solid waste transfer stations.

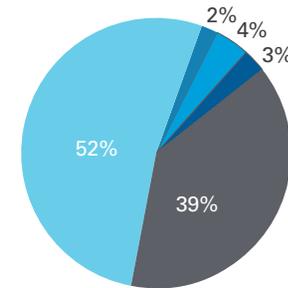
There are several tax exempt mixed ownership lots scattered throughout the study area, with the greatest concentration around the Lutheran Medical Center. All of the mixed use lots near here are owned by Lutheran, except for the lot on 57th and 1st Streets.

Approximately 40% of property within the Sunset Park BOA land is privately owned and is concentrated along 3rd Avenue and along 2nd Avenue between 39th and 56th Streets. Since development goals and expectations for different owners may vary, private development interests could in turn impact future development and its alignment with the BOA goals.

OWNERSHIP FACTS

What accounts for the high percentage of public ownership?

Most of the waterfront parcels were being used for port / marine industries and were being operated by municipal agencies. In the 1960s and 1970s, the waterfront went through a decline and industries left the area for newer ports in New Jersey.



Private	202.61 acres
Public - NYC	274.35 acres
Public - Authority, State or Federal	9.66 acres
Mixed - Private and Public	22.77 acres
Mixed - Tax Exempt property, owned by a public authority or a private institution	13.36 acres

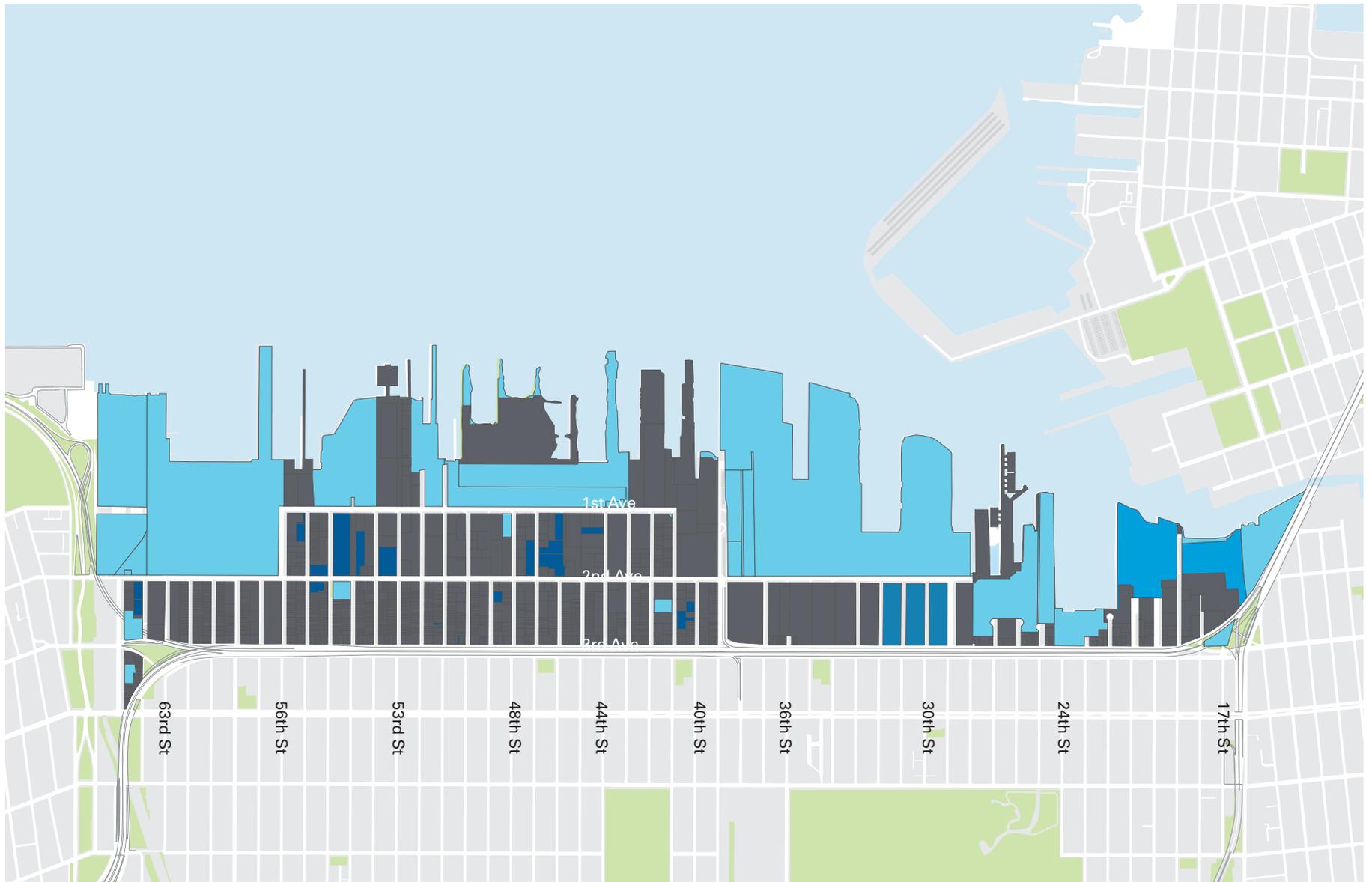
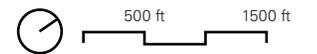


Figure 21: Existing Ownership



3.5 Historic and Archaeologically Significant Sites

The Sunset Park BOA has had a thriving industrial past with significant developments that can be directly related to industrial advancements, architectural innovation and infrastructure developments. In addition to its physical assets, significant events in the area are directly linked with the 200 years of industrial expansion in the United States. Despite this long history, there are few measures that have been taken to preserve the area's rich industrial past.

At present there are no formally designated historic districts within the BOA and the only building recognized as an area of historical importance is the Brooklyn Army Terminal, which is listed on the National Register of Historic Places. There are however many BOA assets that are worthy of recognition, some of which have been mentioned in the Historic Assets box to the left and are also shown in Figure 22. A number of buildings in the area are prone to being lost because of ongoing neglect. For instance the salt shed / sanitation building at the end of 52nd Street and the E W Bliss building, which has also been identified in the 197a as a historically significant building could be preserved as community assets.

As one of the primary project goals is to develop new employment opportunities in the BOA, traditional historic preservation programs can be seen as restricting ongoing industrial operations

and new development. Projects or programs that recognize the historical nature of Sunset Park's industrial past must be used to encourage and not stifle development.

There are specific sites that should be part of the overall public realm development in the area. Such sites and areas include the Industry City area and Bush Terminal. In addition programs that would incentivize private land owners to preserve their real estate should be explored.

HISTORIC ASSETS



Buildings and Campuses

- E W Bliss Building
- Bush Terminal Campus
- A M Cosmetics Building
- South Brooklyn Marine Terminal
- Industry City area
- Federal Building #2
- Brooklyn Army Terminal
- Building on 42nd and 1st Avenue

Streets

- 58th Street
- 52nd Street
- 44th Street
- 32nd, 33rd, 34th and 35th Streets

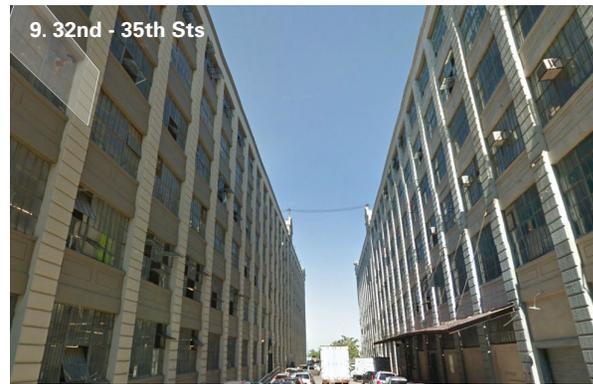
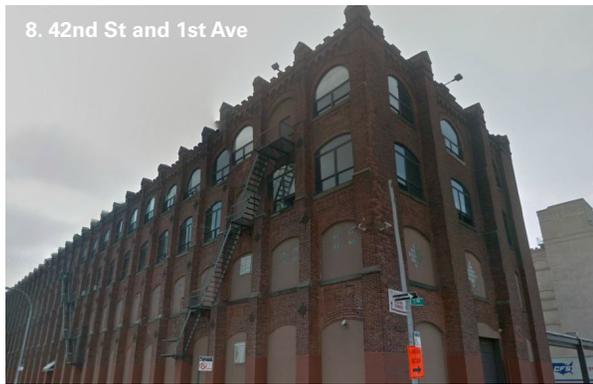
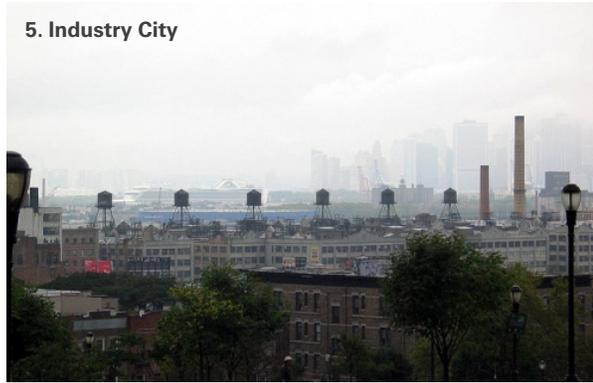


Figure 22: Historic assets

3.6 Building Inventory

When Sunset Park's land use designations are overlaid with the building classification data an interesting pattern of built density and uses is revealed.

Warehouses and loft buildings that take up 21% of the land area account for 42% of the total built area. These uses are associated with the highest built density and housed within some of the tallest buildings in the BOA.

Residential, retail, office and institutional uses that together comprise 10% of the total BOA area and house 17% of the total built square footage, closely follow warehouses and loft buildings in built density. These uses, primarily concentrated around the Lutheran Medical Center, have much finer urban fabric that creates pedestrian friendly environments.

Factory and industrial buildings that are mostly single story buildings take up 34% of the land area and account for 37% of the total building square footage. Most of these buildings are associated with the rail and marine infrastructure along the waterfront. The most significant building with this use is the BAT.

Large land-consuming uses such as transportation and utilities take up almost 32% of the total land area but account for only 2% of the building area within the BOA. These uses have the lowest built density within the BOA and in most cases don't have built structures

associated with them eg. SBMT.

Figure 23 provides a more detailed distribution of lot and building size associated with different building typologies.

/ Industrial Building Typologies

A visual observation of the BOA immediately presents three distinct categories of industrial buildings. These are diagrammed in Figures 24, 25 and 26 and described below.

Large Multistory Floorplate

These buildings were mostly built in the early 20th century and are usually associated with large loading docks. Typical floorplates are 250Ft X 200Ft and the building height ranges from 5-7 floors, ceiling heights for each floor height being at least 15 Ft. The Brooklyn Army Terminal is a great example of this typology.

Narrow Rail-served Floorplate

Built in early 1900s, this typology is typical of Industry City and Bush Terminal. Within Industry City, these are multistory, U-Shaped buildings with 700Ft X 200Ft floorplates that have 30-40Ft clearance in between for rail cars and loading docks. At Bush Terminal, these buildings have the same floorplate sizes and are associated with rail infrastructure, however, they are single storey buildings.

Small Single Lot Floorplate

These building types are concentrated between 2nd and 3rd Avenue and 39th and 58th Streets. These are typically 50Ft X 100Ft lots that are usually combined to get larger floorplates and are 1-2 floors high.

BUILDING CLASS	Lot			Building	
	Square Feet	Acres	Percentage	Square Feet	Percentage
Factory & Industrial Buildings	10,325,795	237.0	34%	9,537,258	37%
Transportation Utilities and Utility Bureaus	9,095,112	208.8	30%	221,235	1%
Warehouses	4,742,896	108.9	16%	4,148,686	16%
Loft Buildings	1,440,581	33.1	5%	6,739,575	26%
Garages and Gasoline Stations	608,907	14.0	2%	354,659	1%
Residential Uses	1,324,486	30.4	4%	2,101,067	8%
Retail Uses	900,694	20.7	3%	654,082	3%
Office Uses	87,816	2.0	0%	46,258	0%
Institutional Uses	1,039,464	23.9	3%	1,666,402	6%
Outdoor Recreation	66,700	1.5	0%	322,895	1%
Vacant	377,142	8.7	1%	0	0%
TOTAL	30,009,593	688.9	100%	25,792,117	100%

Figure 23: Lot and building size distribution for different building classes within the BOA.
 Source: Sunset Park Real Estate Market Study, May 2005, BFJ Inc.

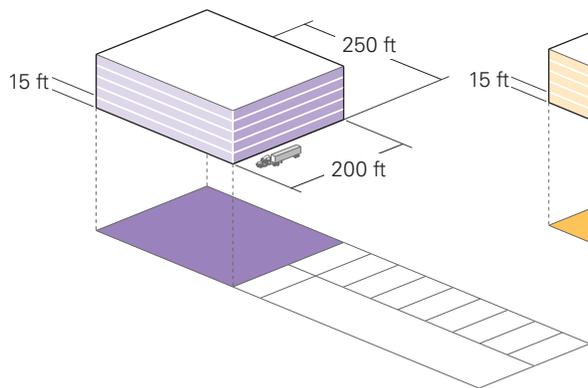


Figure 24: Large multistory floorplate

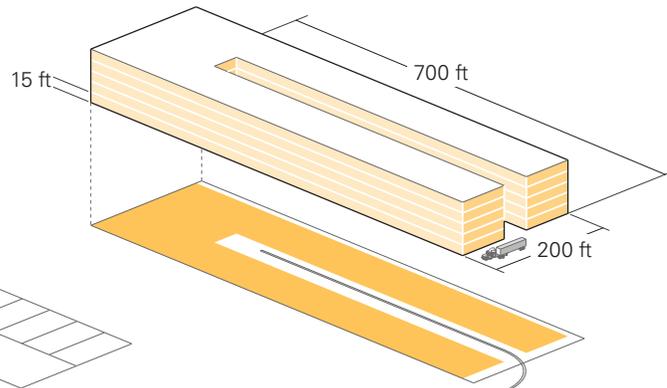


Figure 25: Narrow rail-served floorplate

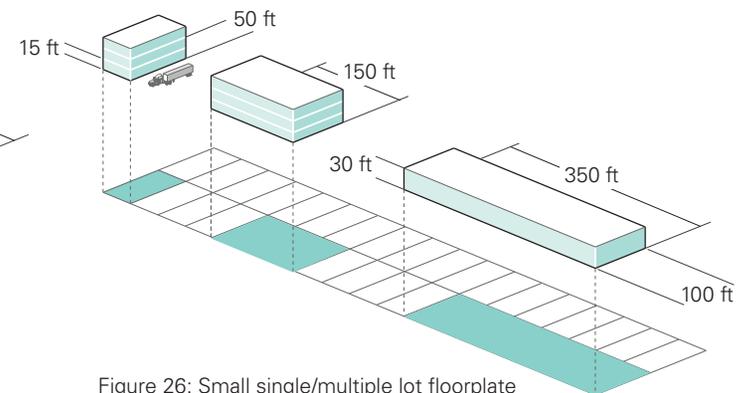


Figure 26: Small single/multiple lot floorplate

3.7 Transportation Systems

The Sunset Park BOA is very well connected and has a significant inventory of rail and terminal infrastructure primarily used for freight movement. The following section highlights the major vehicular and pedestrian routes, and Section 3.10 on *Infrastructure* provides details on freight distribution infrastructure.

/ Roadways and Highways

Deemed one of the top 10 corridors in the country with the highest concentration of heavy trucks, the Gowanus Expressway which is the southern extension of the Brooklyn-Queens Expressway (I-278), connects the Brooklyn-Battery Tunnel approach, the Prospect Expressway (NY 27), the Belt Parkway and the Verrazano-Narrows Bridge.

This six lane expressway links Sunset Park to Manhattan, New Jersey and the rest of the northeastern seashore via Staten Island and is one of the most important truck freight routes in the region. Planned and built in the Robert Moses era and first opened in 1941, the Gowanus Expressway carries high annual traffic volume of 50 million cars, 5 million trucks and 100,000 buses. The segment of this expressway between the Brooklyn Battery Tunnel and the Belt Parkway, which also borders the eastern edge of the BOA, has consistently been deemed one of the worst traffic bottlenecks in the country. Along the entire length of BOA (14,000Ft), the highway is accessible only at two points; 39th Street, which

has both north and south bound off ramps; and at 65th Street and 5th Avenue which has a northbound on ramp and southbound off ramp.

In addition to the Gowanus Expressway which is the only through truck route within the BOA, local truck routes can be found along on 39th, 43rd, 58th and 60th Streets, on 1st Avenue between 58th and 39th Streets, and on 3rd Avenue.

Once the Gowanus Expressway was built, 3rd Avenue was widened from four lanes to ten lanes, effectively severing the Sunset Park neighborhood. As it exists now, 3rd Avenue is three lanes wide with a lane of on-street parking on both sides. The area directly underneath the Gowanus Expressway is allocated for additional parking.

/ Ferry Service

The New York Water Taxi operates from the 58th Street pier located just off the property from BAT and is frequently used by commuters. The ferry service provides weekday access from BAT to Pier 11 (Wall Street) in Manhattan.

/ Subway Access

Although there are no subway stops within the BOA, the area is well served by the D, N and R lines. The N and R lines run along 4th Avenue and parallel to the study area's eastern edge. The D line travels along 4th Avenue up to 36th Street and then veers east making stops at 9th Avenue before heading to south Brooklyn. The

subway stops that service the BOA area are located at the intersections of 4th Avenue and Prospect Avenue, 25th Street, 36th Street, 45th Street, 53rd Street, and 59th Street.

/ Bus Routes

There are three bus lines that serve the BOA; B11, B35 and B70 and are all east-west bus routes. B11 (Sunset Park - Midwood route) runs along 52nd and 55th Streets between 3rd and 2nd Avenues and 53rd and 58th Street between 2nd and 1st Avenue. This route loops around the residential and institutional areas in the south west part of the BOA and connect to the Borough Park and Flatbush neighborhoods further west.

The B35 (Brownsville - Sunset Park route) runs along 39th Street, connecting the neighborhood to Greenwood Cemetery, Kensington and East Flatbush.

B70 (Dyker Heights - Sunset Park route) also runs along 39th Street within the BOA and connects the Industry City area to the larger Sunset Park neighborhood extending all the way to 8th Avenue. The bus line runs further south connecting Sunset Park to Fort Hamilton and Bay Ridge in South Brooklyn.

A popular means of public transportation are privately-owned vans that travels along 8th Avenue, from 43rd Street to 61st Street before heading to Manhattan and Queens.

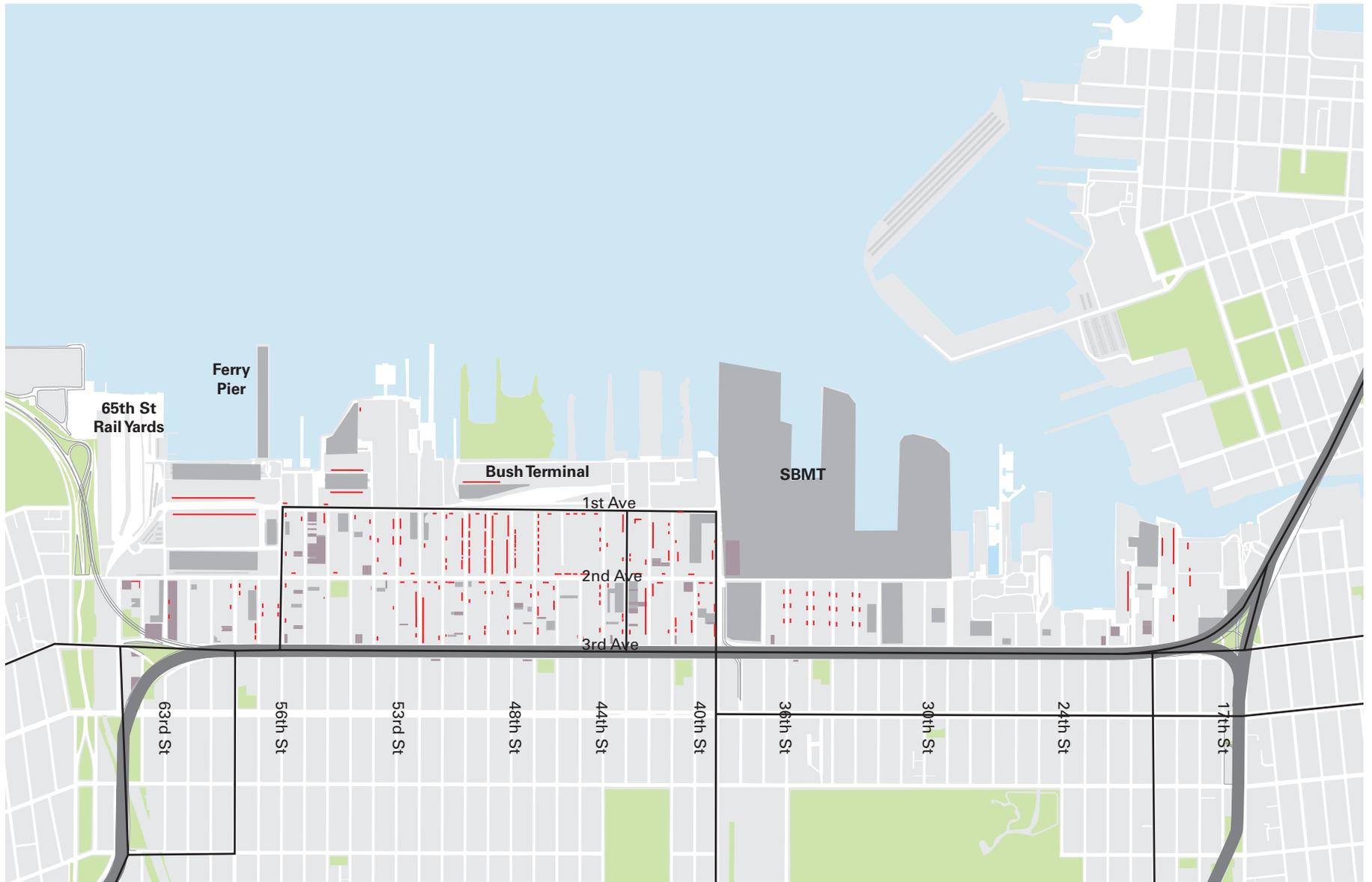


Figure 27: Vehicular transportation systems

- Local Truck Route
- Loading Dock
- Through Truck Route
- Parking Lot



Along 3rd Avenue, are four express bus routes; X27 (Bay Ridge - Downtown / Midtown route); X28 (Sea Gate / Bensonhurst - Downtown / Midtown route); X37 (Bay Ridge / Midtown); X38 (Sea Gate / Bensonhurst - Midtown route). None of these bus routes have stops in the BOA or the larger Sunset Park neighborhood.

/ Public Transportation: Accessibility and Connectivity

Even though there are a number of buses and subway lines along the periphery of the BOA, the southern part of the study area does not have access to any public transportation. Other than B11 and B35 bus lines that service a limited part of the BOA, important destinations such as the Lutheran Medical Center, the future Bush Terminal Park, SIMS etc. are not integrated with any public transportation.

The discontinuation of B37, that terminated at the Lutheran Medical Center, has further impacted access to this facility. A number of seniors with chronic illnesses are now forced to walk from the 4th Avenue subway stops to the Medical Center.

/ Loading Docks

As shown in Figure 27, there is a high concentration of loading docks within the BOA. These are related to both rail infrastructure and trucks and are essential for freight movement. However, they can impede pedestrian movements and access to the waterfront. A large number of the truck loading docks can

be found on all streets between 39th and 51st Streets and 1st and 3rd Avenues. The loading docks that occur in this zone also inform the building typology and in some cases necessitate direct access into the buildings. This access is associated with large curb cuts, unsafe sidewalks and fewer opportunities for pedestrian oriented streetscaping.

/ Bike Routes

Within the BOA, there are no bike routes. Outside of the BOA, and in the larger neighborhood there is one bike path which is a demarcated bike lane that travels along 7th Avenue from 42nd to 65th Street. This path follows 42nd Street from 9th Avenue to 12th Avenue, heading towards Prospect Park. Future east-west bike path connections are planned as part of the Brooklyn Greenway and are proposed to run along 43rd and 44th Streets and 50th and 51st Streets. These routes will connect with the Brooklyn Greenway planned along 1st Avenue and also provide direct access to the future northern and southern entrances to Bush Terminal Park. In addition to these east-west connections, the proposed Brooklyn Greenway will have designated bike lanes and routes serving the BOA and its waterfront areas.

/ Bike and Pedestrian Conflict Points

Owing to the heavy industrial use within the BOA and associated volumes of vehicular and truck traffic, there are many instances of conflict between vehicular and bike / pedestrian movement. As shown in Figure 29, within the

BOA, there is a high instance of conflicts at the intersection of 2nd Avenue and 58th Street, 3rd Avenue and 42nd Street and along 3rd Avenue between 46th and 47th Streets. Both conflict points on 3rd Avenue have had pedestrian fatalities.

Outside of the BOA, there is a high number of accidents along 4th Avenue between 58th and 61st Streets, which are also the location for PS 503 and PS 506. All along 4th Avenue, conflict points are concentrated close to the subway stops with fatalities at 37th, 39th, 43rd and 51st Streets. Figure 28 maps all bike and pedestrian conflict points and fatalities that shows the hazards of crossing the area under the Gowanus Expressway to get to the BOA from the subway stops. Some of these issues are being addressed by the 4th Avenue Safety Vision Plan.

Starting August 2012, NYCDOT has been making safety improvements on 4th Avenue between 15th and 65th Streets. These improvements will create a more pedestrian friendly environment and include wider curbside lanes, more pedestrian space at medians, reducing congestion at bottle neck points through additional lanes and reducing double parking by adding loading zones for truck deliveries.

In addition to these improvements, it is hoped that the Brooklyn Greenway would greatly improve infrastructure for bicyclists and pedestrians and reduce fatalities in the neighborhood.

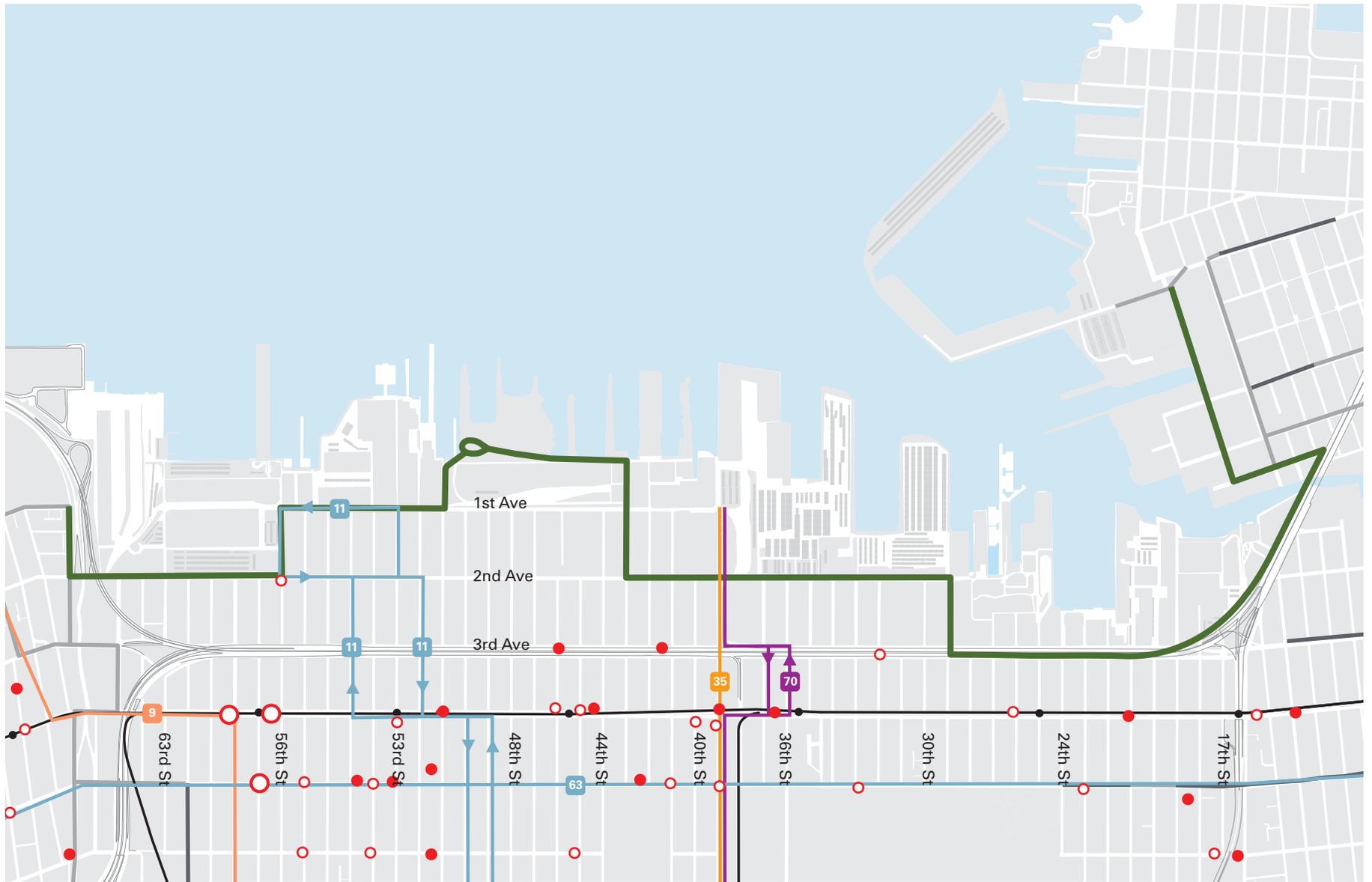


Figure 28: Pedestrian movement systems



3.8 Parks, Open Space and Waterfront Access

Figure 29 shows existing and proposed greenways and bike routes as well as parks and other open spaces. If one takes into account the land use area distribution, only 1% of land within the BOA is designated open space. There are no existing parks within the BOA boundary except for Martin Luther Playground at 2nd Avenue and 55th Street, John Allen Payne Park at 64th Street, and slips of greenery between highways and railroad tracks. Martin Luther Playground is surrounded by the small concentration of residential buildings within the BOA, and the Lutheran Medical Center. The playground's basketball courts are frequently used by the neighborhood, and during the summer, free day camp activities are held for children. The John Allen Payne Park, while slightly larger in size, is less accessible, as it is situated underneath the Belt Parkway.

Outside of the BOA are major parks such as Prospect Park in the northeast, Owl's Head Park and Leif Ericson Park to the south, and Greenwood Cemetery and Sunset Park to the west. However, none of these are easily accessible or within walking distance to the Sunset Park BOA residents and workers. This leaves the waterfront as the only major open space resource for people working and living in this area.

The future Bush Terminal Park and Piers Project (BTP), requiring the decontamination of Bush Terminal Piers, will help remedy

the neighborhood's shortage of park space, especially for workers nearby. Once the park is completed and proper access routes are created, it will open up the shoreline for public access. As it exists today, the future park and waterfront are generally inaccessible to Sunset Park residents and workers.

The Brooklyn Greenway Initiative is a 14-mile path providing transportation connections and improvements via pedestrian paths and bike

lanes. When completed, this greenway will link the southern point of Sunset Park at 65th St to Red Hook, follow the waterfront, and terminate in Greenpoint. In Sunset Park, 43rd and 44th Streets to the north and 50th and 51st Streets to the south will link the Greenway to upland neighborhoods and mark the northern and southern entrances to BTP.

Currently, implementation of the Greenway master plan is being overseen by NYCDOT.



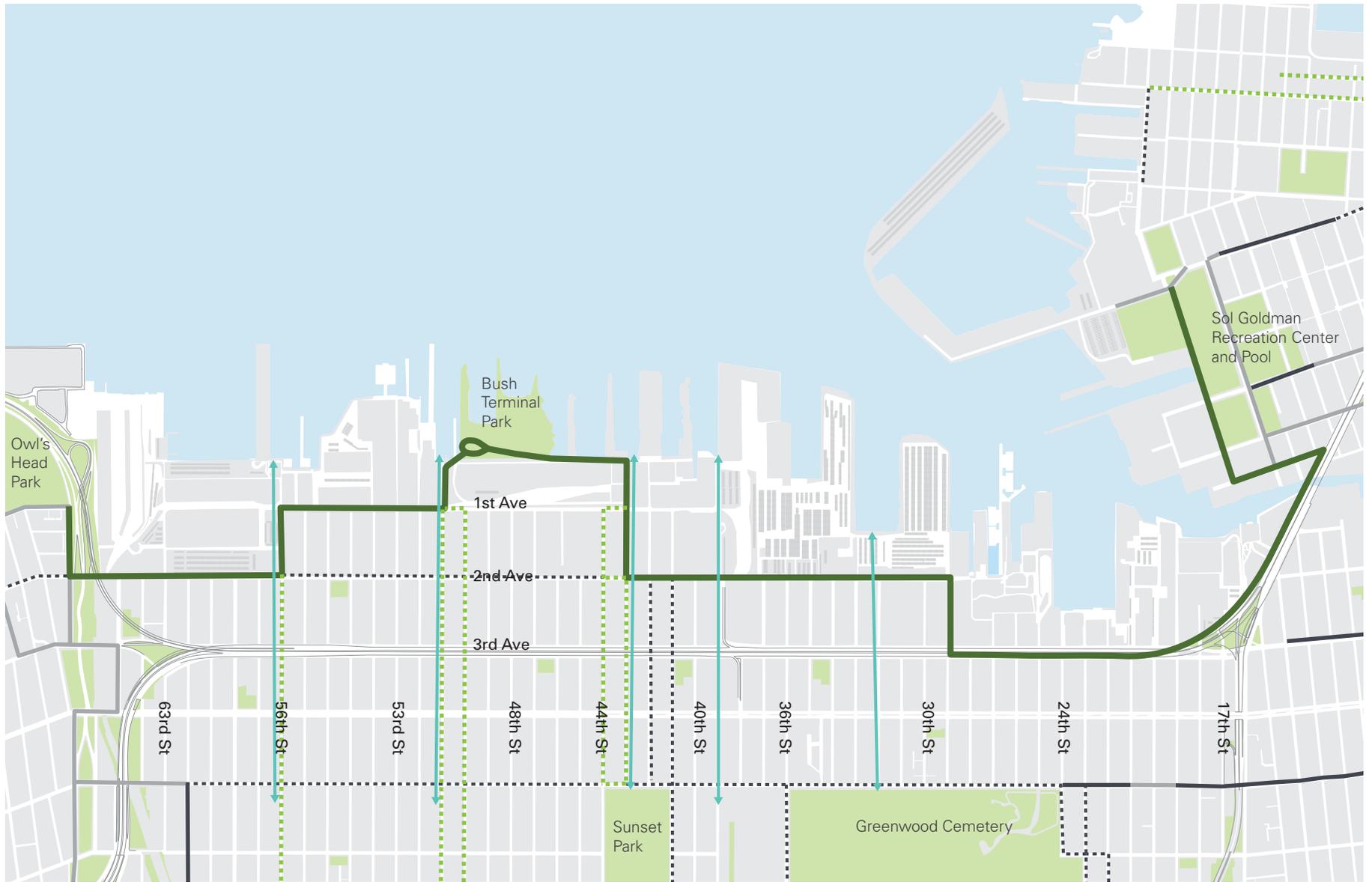


Figure 29: Current and proposed greenways and bike routes

- Proposed Greenway (Brooklyn Greenway Initiative)
- Current Bike Lane
- Proposed Greenway (Brooklyn Greenway Initiative)
- Current Bike Route
- Proposed Bike Route
- Proposed Waterfront Connection (197a plan)



3.9 Natural and Environmental Resources

The Sunset Park community is located adjacent to the Upper Bay of New York Harbor and to the south of Gowanus Bay. The New York / New Jersey Harbor Estuary (Harbor Estuary) is home to a population center of 19 million people and contains the largest industrial port on the east coast, with \$14 billion generated yearly in wages and taxes arising from shipping and seaport activities. The establishment of marine-driven industry has resulted in the loss of about 80 percent of the Harbor Estuary's benthic habitat and tidal wetlands. However, in the last 30 years, wading bird populations have been returning to the Harbor Estuary following coastal habitat improvements, particularly salt marshes, both up river and around New York Harbor.

The Sunset Park waterfront has been primarily developed with bulkheading and consists of a series of usable and dilapidated piers extending into the Harbor, with some piers containing a narrow band of vegetation on the perimeter. Most of the inland terrestrial habitat within the Sunset Park neighborhood is paved with limited vegetation. The vegetated areas are composed primarily of ornamental planting and sparsely distributed invasive species. Vegetation present throughout the site is typical of a highly urbanized area – species are limited to those tolerant of disturbed, urban areas and frequent human activity.

Stormwater Green Infrastructure (GI) is being proposed for the Sunset Park BOA. The primary

purpose of the GI is to manage stormwater and prevent it from exacerbating combined sewer overflow (CSO). However, there are many secondary benefits to GI, such as providing attractive green space, improving habitat value, and providing opportunities for community based environmental education and stewardship programs.

/ 100-year Floodplain and Sea Level Rise

The 2007 Fourth Assessment Report released by the Intergovernmental Panel on Climate Change projects that sea levels may rise by as much as two feet by the end of the 21st century due to the effects of global climate change. The impact of this sea level rise on the Sunset Park waterfront is shown in Figure 30.

When Hurricane Sandy struck New York City in late October 2012, it was accompanied by a 14-foot storm surge that caused flooding on most of the parcels adjacent to the East River. In addition to causing back-ups and flooding in the adjacent low-lying area, damage to infrastructure and interrupting power supply for days, Sandy displaced a number of residents and businesses from the area. Forecasters predict an increase in the frequency of such extreme storm events and hurricanes, putting New York City at an increased risk of flooding in the coming years.

Sunset Park lies near sea level adjacent to New York Harbor and within a combined sewer district in New York City. Early effects of global climate change are expected to result in sea

level rises and increased frequency of high energy storms, making Sunset Park's shoreline vulnerable to encroachment by storm surge. As shown in Figure 30, much of the Sunset Park's port facilities and other infrastructure lie within one meter of mean high tide and it is important to consider measures to minimize risk posed by climate change and storms such as Sandy.

Within existing industrial buildings, the following measures can prevent damage and greatly reduce recovery costs:

1. Relocation of electrical and mechanical equipment that are typically located at the basement level, to higher floors where they are above flooding levels.
2. Taking waterproofing measures such as installing floodgates and building with concrete at lower levels.
3. Storm preparation plans including installation of back-up generators and temporary relocation if needed.

New construction along the waterfront should address the 100-year floodplain and should be built at levels that protect them from storm surge. An example of this is the Sims center that used recycled glass and crushed rock to raise the plant's four buildings foundation four feet higher than required. The cost of this measure was 0.6% of the entire development cost. In addition to these strategies, area-wide approaches such as constructed wetlands and GI can also attenuate storm surges that are described in detail under recommendation 6.

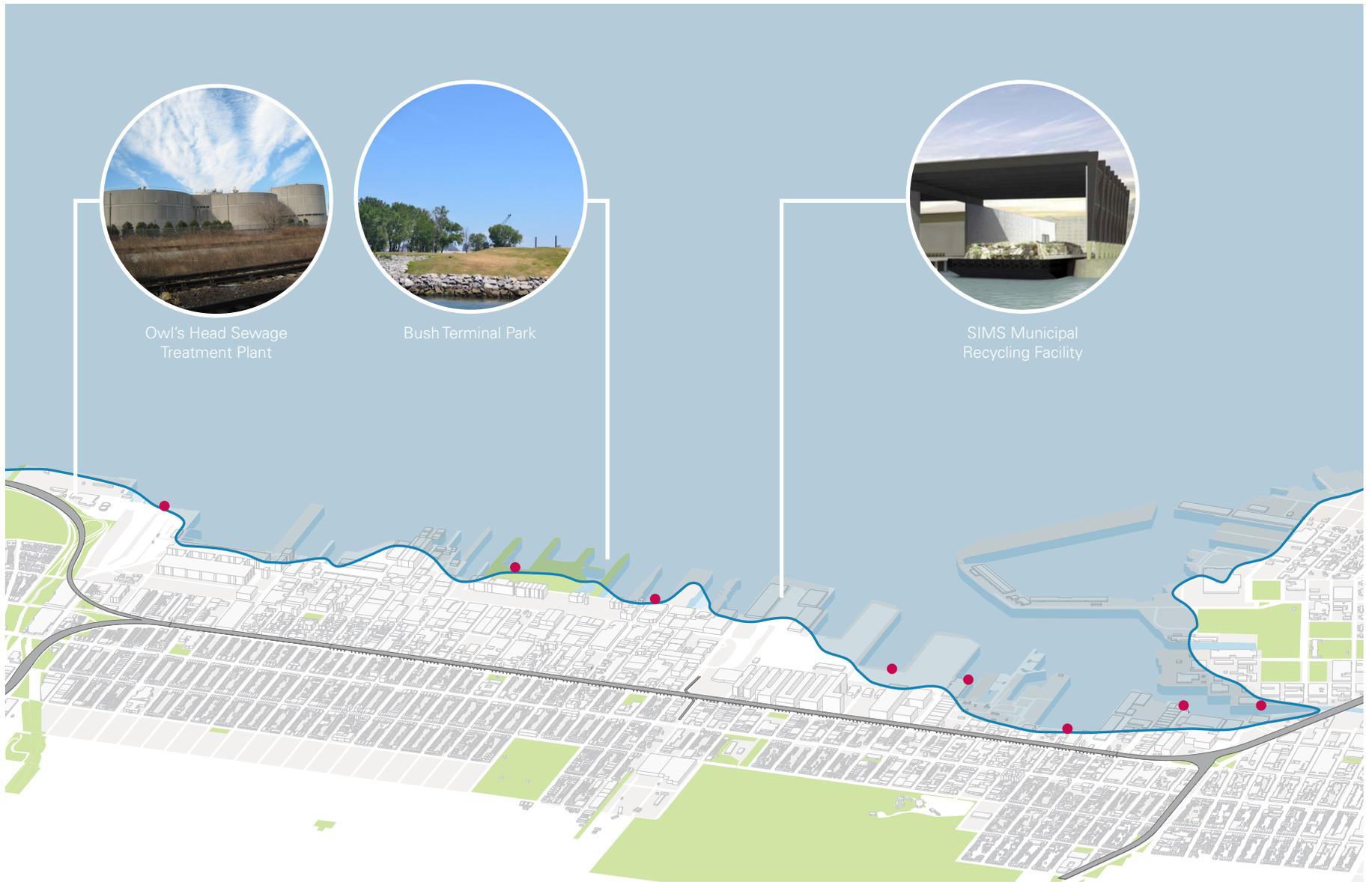


Figure 30: Map showing approximate area threatened by flooding by a 1 meter rise in sea level

3.10 Infrastructure

/ Rail Infrastructure

Most waterfront lots in the BOA are served by rail and the factory lofts and warehouses built in the early 1900s are designed to accommodate rail infrastructure. Within the BOA, there are two independent rail yards; the 1st Avenue rail yards at Bush Terminal and the 65th Street rail yards. In addition the New York Cross Harbor Railroad operates a railroad car float service that links Bush Terminal to Greenville Yard in New Jersey. This provides businesses operating by freight direct rail water access and connections to Conrail.

The SBMT rehabilitation project undertaken by the NYCEDC includes plans for a direct rail connection to SBMT along 1st Avenue. This will provide a direct connection between Bush Terminal and SBMT and eliminate the S curve that currently connects the two. In addition, new rail infrastructure including a new break-bulk rail spur along the 39th Street shed, two new rail sidings for auto rack loading and unloading and a new rail connection to the Sims recycling facility at the 29th Street Pier are a part of this rehabilitation project.

/ Marine Terminal Infrastructure

Sunset Park naturally has deep waters that have allowed deep sea vessels to travel to its waterfronts. In the 1970s for over a decade SBMT was used as a container terminal and is now being rehabilitated. The \$115 million investment being made by NYCEDC includes

reconstruction of the north face of the 39th Street Pier and north and west faces of the 29th Street Pier, dredging and construction of an enclosed barge unloading facility on the south face of 29th Street pier. The BAT had a working pier when it was operated as an U.S. army military ocean terminal but now it is no longer functional.

/ Combined Sewer Outfalls

There are 14 wastewater treatment plants in New York City that capture and treat dry weather sewage flows of 1,805 million gallons daily. Approximately 70 to 80 percent of the City's sewers are combined (sewage and stormwater) and about 650 combined sewer outfalls (CSOs) discharge into the City's waterways when the combined flow exceeds the hydraulic capacity of the City's wastewater treatment plants. Stormwater runoff throughout Sunset Park is directed toward the City's combined sewer which frequently overflows, resulting in discharge of raw sewage directly to New York Harbor.

/ Owl's Head Wastewater Treatment Plant

The Owl's Head Wastewater Treatment Plant located along the Sunset Park waterfront, treats up to 120 million gallons of wastewater per day. The treatment plant services 758,007 New Yorkers over an area of 12,947 acres within the western section of Brooklyn. According to the NYC Department of Environmental Protection (NYCDEP), the dry weather flow to the plant is 120 million gallons daily (MGD) and the

maximum design wet weather flow to the plant is 240 MGD. Above 240 MGD, the gates of the treatment plant open and wastewater is routed to a series of CSOs that discharge into New York Bay. Poor water quality and sparse habitat are macro-scale issues occurring along the entire expanse of New York Harbor and throughout the metropolitan area. CSO events continue to be the primary contributor to the poor water quality of New York City's waterways. According to the Hudson Riverkeeper, New York City discharges 27 billion gallons of combined sewage and wastewater into its harbor each year.

Figure 31 locates each of the aforementioned infrastructure facilities in the BOA.

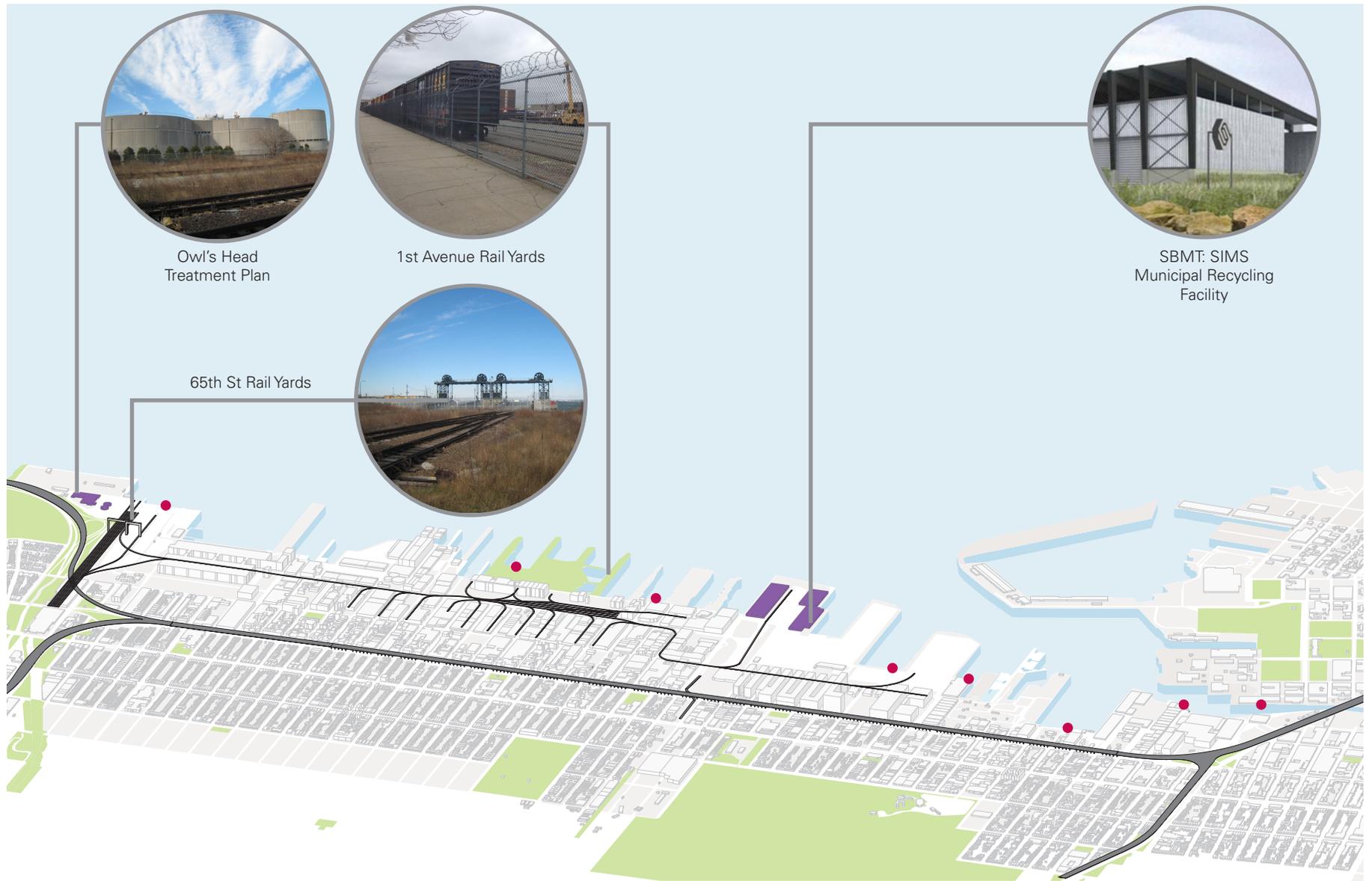


Figure 31: Infrastructure

3.11 Brownfield, Abandoned and Vacant Sites

Due to its industrial past and present, Sunset Park is home to many brownfield sites. Figure 32 shows all the brownfield sites in the Sunset Park BOA. Brownfields can be defined as abandoned or underused properties, including but not limited to those occupied by industrial and commercial facilities, where redevelopment or expansion may be complicated by the presence or possible presence of environmental contamination.

Gannett Fleming prepared an inventory of brownfield sites in the Sunset Park BOA. This inventory was based on a walkthrough of the BOA, review of the Sunset Park BOA Pre-Nomination Study, a review of available environmental database information, discussions with the BOA Steering Committee and UPROSE and a review of select historical maps.

/ Methodology

A BOA Step 1 Pre-Nomination Study was prepared for UPROSE in September 2009. The Pre-Nomination Study identified a preliminary list of 56 potential brownfield, abandoned, and underutilized sites warranting further study. The list highlighted 13 priority properties which were identified as having development potential. Using this list of sites, Gannett Fleming analyzed a public Geographic Information Systems (GIS) database of geographic and environmental information - the New York City Office of Environmental Remediation (NYC

OER) Searchable Property Environmental E-Database (SPEED) to assess real or perceived environmental concerns associated with each identified property; and to identify additional sites not described by the Step 1 Pre-Nomination Study. The environmental database is current as of 2009.

SPEED includes information from the following regulatory databases: the New York State Department of Environmental Conservation (NYSDEC) Open Spills Database, the United States Environmental Protection Agency (US EPA) Resource Recovery and Conservation Act (RCRA) Database, the New York State Inactive Hazardous Waste Sites Database (IHWDS), the New York State Brownfield Cleanup Project/ Volunteer Cleanup Project (NYS BCP/VCP) Database, the Petroleum Bulk Storage (PBS) Database, the Major Oil Storage Facility (MOSF) Database, the Chemical Bulk Storage (CBS) Database, and the Solid Waste Database. A more detailed description of these databases can be found in the appendix.

/ Findings

The search identified a total of 126 properties, inclusive of relevant properties identified in the Step 1 Pre-Nomination Study, which have real or perceived environmental concerns. An inventory of these 126 properties potential associated environmental contamination is provided in Appendix A. Of these 126 properties, six were identified on the NYSDEC Open Spills Database; three on the US EPA RCRA Database; one on

the NYS IHWDS Database; one on the NYS BCP/VCP Database; 64 on the NYS PBS and CBS Databases; and one on the Solid Waste Database. Current and historical property uses include power and gas generation; industrial; manufacturing; warehouses; junkyards; auto salvage, dismantling, service, repair and sales; parking; health care services; carpentry; retail; gasoline sales; metal fabrication; solid waste transfer; lumber yards; metal polishing and plating; chemical manufacturing; and rail yards.

/ Vacant, Underutilized, and Abandoned Sites

The environmental database search identified a total of 26 properties which were listed as vacant at the time of the search. These properties range in size from approximately 1,720 square feet to 20,060 square feet and include any property identified by New York City as vacant.

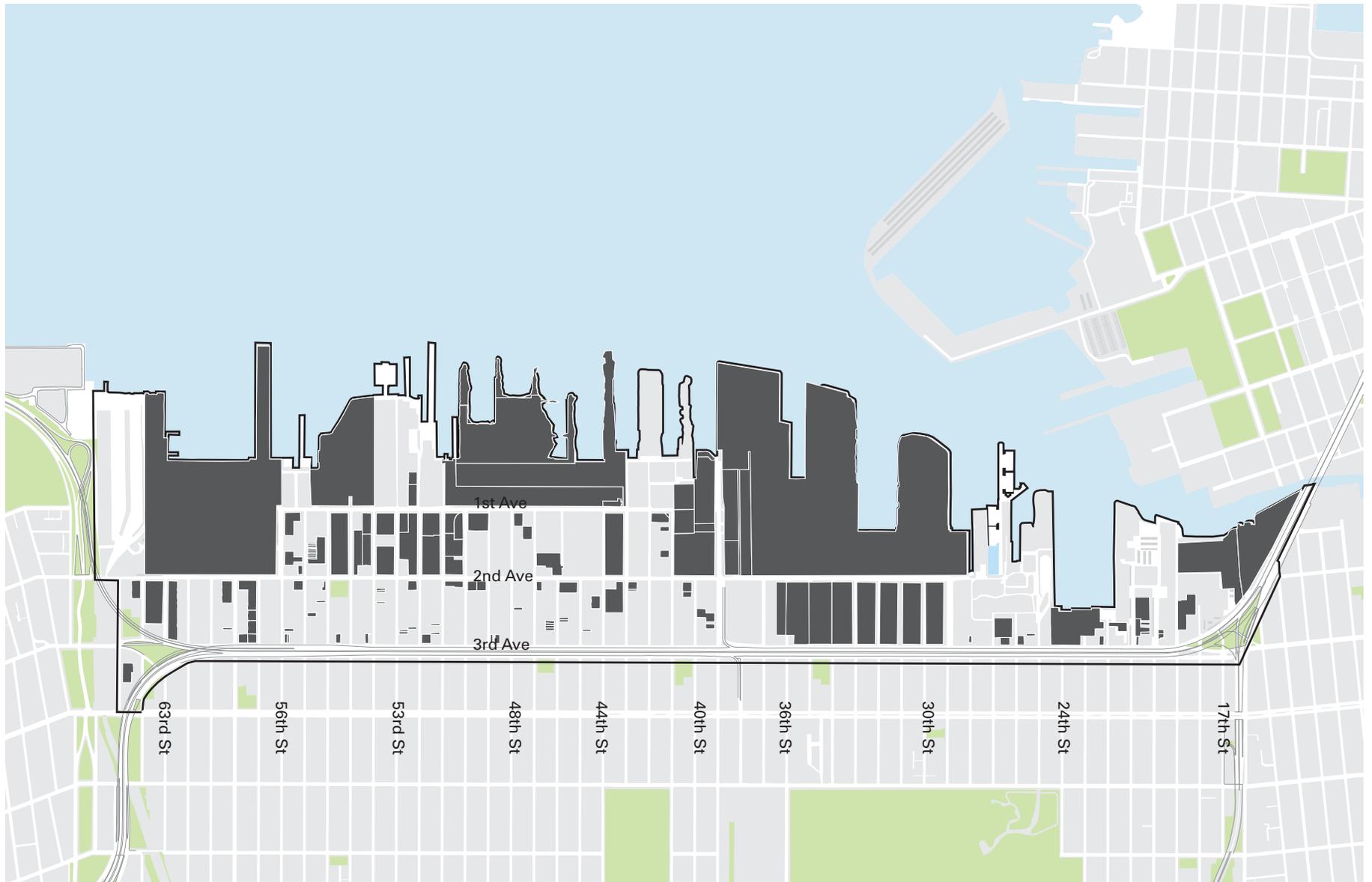


Figure 32: Brownfields inventory

■ Brownfield site

3.12 Economic and Market Trends Analysis

Successful strategies for neighborhood revitalization must be based on a comprehensive understanding of demographics, economic and real estate market conditions. While redevelopment may ultimately include market transformation, current market trends and drivers serve as key indicators of opportunities and challenges to future development. Furthermore, current market data helps to quantify parameters for future growth.

/ Demographic Overview

The team analyzed the demographic trends for Sunset Park, Brooklyn, New York City and the Port District (defined as the area within a 25 mile radius from the Statue of Liberty). Figure 33 represents the demographic summary for these geographies.

The Sunset Park (BOA) is mainly an industrial area with a population of 8,744 residents. The population represents only seven percent of Sunset Park neighborhood's overall population of 127,721. Given the small number of residents in the BOA, together with the interrelationship between the BOA and the Sunset Park labor markets, the team focused its demographic analysis on the neighborhood of Sunset Park as a whole.

Sunset Park's population is distributed across 38,000 households with an average size of 3.3 residents. The latter is higher than the 2.7

	1990	2000	2010	Annualized Growth 1990 - 2000	Annualized Growth 2000 - 2010
Sunset Park BOA					
Population	4,649	7,483	8,744	4.9%	1.6%
Households	1,388	1,766	1,872	2.4%	0.6%
Average Household Size	3.3	3.3	3.5	-0.1%	0.5%
Sunset Park					
Population	101,007	120,171	127,721	1.8%	0.6%
Households	32,951	36,990	38,112	1.2%	0.3%
Average household size	3.1	3.2	3.3	0.5%	0.3%
Brooklyn					
Population	2,300,664	2,465,326	2,504,700	0.7%	0.2%
Households	828,199	880,727	916,856	0.6%	0.4%
Average household size	2.7	2.8	2.7	0.0%	-0.2%
New York City					
Population	7,322,564	8,008,278	8,175,133	0.9%	0.2%
Households	2,819,401	3,021,588	3,109,784	0.7%	0.3%
Average household size	2.5	2.6	2.6	0.2%	-0.1%
Port District					
Population	12,400,968	13,407,576	13,684,826	0.8%	0.2%
Households	4,650,170	4,959,101	5,086,933	0.6%	0.3%
Average household size	2.6	2.7	2.6	0.2%	-0.1%

Figure 33: Demographic Summary, Source: ESRI Business Analyst, HR&A

Sunset Park has a younger population than the region overall.

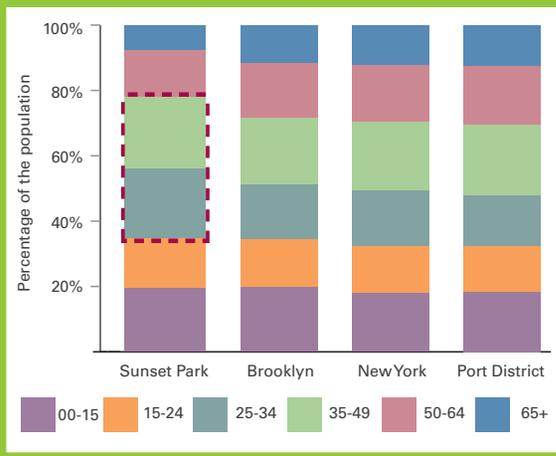


Figure 34: Age Distribution
Source: ESRI Business Analyst, HR&A

average for Brooklyn and the 2.6 average for the City as a whole. With a median age of 32 years, Sunset Park’s population is relatively young in relation to Brooklyn (34 years) and New York City (35.5 years). The majority of Sunset Park residents are between the ages of 25 and 49, as illustrated in Figure 34.

Sunset Park is a diverse, growing community with relatively large households. The neighborhood’s diversity is reflected in the high percentage of foreign-born residents (49 percent). Figure 35 compares Sunset Park’s foreign born population to its regional

Sunset Park neighborhood has a high percentage of foreign-born residents.

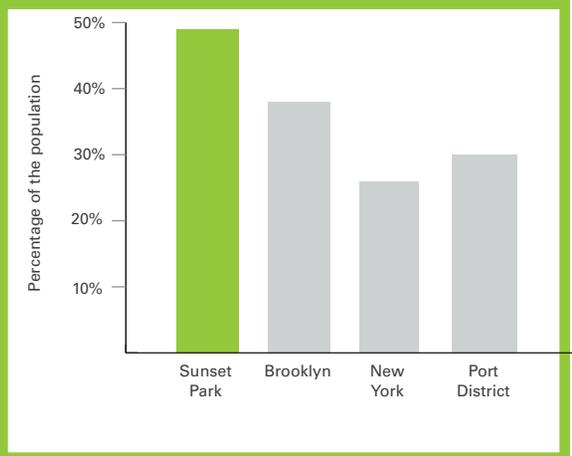


Figure 35: Foreign-born population
Source: ESRI Business Analyst, HR&A

benchmarks. Also, between 2000 and 2010 the neighborhood added more than 7,000 residents, a total growth of six percent. This growth was three times higher than the two percent growth experienced in both Brooklyn and New York City during the same period.

Educational attainment in Sunset Park lags behind that in other areas as demonstrated in Figure 36; 36 percent of Sunset Park’s population lacks a high school diploma. This figure is 14 percentage points higher than in Brooklyn overall, where 22 percent of residents do not hold a high school diploma. In addition,

Educational attainment lags in the area, suggesting need for workforce development.

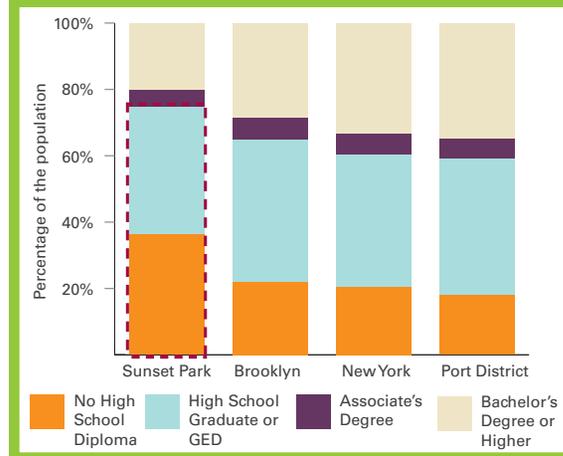


Figure 36: Educational Attainment
Source: ESRI Business Analyst, HR&A

only 20.4 percent of Sunset Park residents hold a bachelor’s degree, a number significantly lower than the overall percentage for New York City (34.9 percent).

In 2010, median household income in Sunset Park (\$43,100) was slightly below that of Brooklyn (\$43,800) but was \$9,400 lower than that of New York City (\$52,500). Given its larger than average household size, Sunset Park’s income per capita of \$17,500 is 17 percent below Brooklyn’s average. Figure 37 shows regional median household and per capita incomes.

Per capita income is 20% lower than in Brooklyn due to the large household sizes.

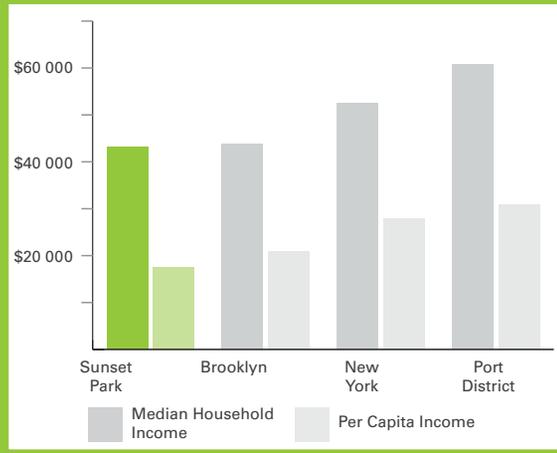


Figure 37: Household and per capita income
Source: ESRI Business Analyst, HR&A

40% employed in the accommodation & food, education, and health care.



Figure 38: Total residential employment (not limited to jobs within Sunset Park, Source: 2009 U.S. Census Bureau American Community Survey, HR&A

50% of BOA employment is in health care, social assistance, wholesale and retail trade.

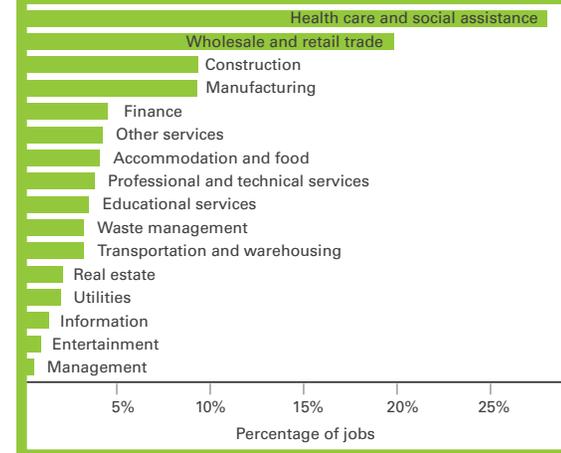


Figure 39: BOA employment distribution by industry
Source: 2009 U.S. Census Bureau Longitudinal Employment-Housing Dynamics, HR&A

The moderate per capita income, high foreign born population, relatively young population, and low educational attainment all need to be taken into account when designing effective economic development and neighborhood revitalization strategies. Sunset Park benefits from having a strong residential base and an industrial area with capacity for growth that could generate jobs for residents with the right public investment and support for workforce development.

/ Labor Market and Industrial Overview

Sunset Park exhibits a dynamic labor market

with an unemployment rate of 12.8 percent. This rate is in line with the City’s overall rate of 12.3 percent but is lower than Brooklyn’s overall rate of 13.6 percent. According to the most recent estimates from the U.S. Census Bureau, more than 59,000 Sunset Park residents are currently employed. These residents work mainly in Downtown Brooklyn, Downtown Manhattan and Sunset Park. As shown in Figure 39, neighborhood residents are mainly employed in accommodation and food services (12,300), educational services and health care (11,200), and wholesale and retail trade (7,500).

Sunset Park BOA is an active economic area with a changing industrial profile and the engine of a strong “walk to work” community. The BOA is the main employment location in Sunset Park, hosting more than 21,000 jobs, or 59 percent of the approximately 36,000 jobs located in the neighborhood. With respect to employment distribution, the main economic sector in the BOA is health care and social assistance, which accounts for 28 percent of overall employment. Other significant sectors are wholesale and retail trade (20 percent of total jobs), construction, and manufacturing (nine percent of total employment each). All

BOA supports a number of firms in a range of manufacturing subsectors

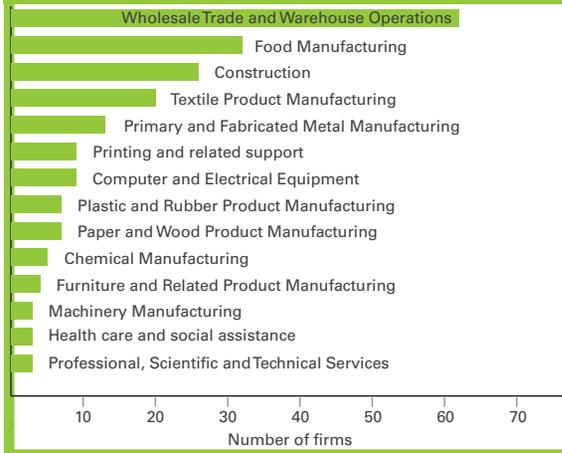


Figure 40: BOA firms and industry
Source: South Brooklyn Industrial Development Corporation Database (2012)

together, these sectors account for 57 percent of the total jobs in the BOA. Figure 40 shows the distribution of BOA jobs by industry.

The data shows that out of the 203 firms currently operating in the BOA; 62 perform trading and warehousing operations, 32 are in food manufacturing and 26 are involved in construction activities. Overall, there are 100 firms involved in a set of manufacturing activities that range from food manufacturing to fabricated metal to chemical manufacturing, where healthcare is the largest single sector, a diverse base of manufacturing activities remain

While the number of jobs in health care and manufacturing industries declined dramatically between 2002 and 2009, there was a small amount growth in a range of other sectors



Figure 41: Employment trends by industry (2002 - 2009)
Source: 2009 U.S. Census Bureau Longitudinal Employment-Housing Dynamics, HR&A

in the BOA.

Furthermore, a comparison of the BOA with other industrial locations across the City shows that health care, construction, manufacturing and trade activities are over represented in the BOA, suggesting a competitive advantage in these sectors.

Even though health care and manufacturing are among the top employers in the BOA, both industries have experienced significant declines in employment numbers. As Figure 41 shows, between 2002 and 2009 the number

of jobs in each of these industries declined by more than 2,500 positions. In this time, the number of manufacturing jobs declined by more than half. This decline has been somewhat offset by increases in employment in other industries such as retail trade (920 additional jobs), construction (492 additional jobs), accommodation and food services (721 additional jobs), educational services (724 additional jobs), finance and insurance (540 additional jobs), and professional and technical services (517 additional jobs). These new emerging industries have helped maintain fairly stable overall employment (see Figure 42).

Overall employment in the BOA remained steady between 2002 and 2009.

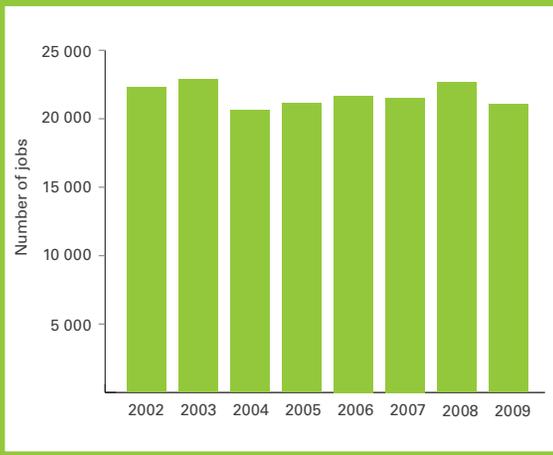


Figure 42: Total employment trends
Source: U.S. Census Bureau Longitudinal Employment-Housing Dynamics, HR&A

Large building complexes encompass 85% of the BOA's industrial spaces.

- A) Brooklyn Army Terminal - 6 million sq ft**
Occupancy: 85%, Rents: \$5 - \$9/sf
- B) Bush Terminal - 1.3 million sq ft**
Occupancy: 99%, Rents: \$5 - \$6/sf
- C) Industry City - 6 million sq ft**
Occupancy: 66%, Rents: \$8 - \$9/sf
- D) Federal Building - 1.1 million sq ft**
Occupancy: N/A, Rents: N/A

Figure 43: Large building complexes
Source: Industry Intelligence, HR&A

Bush Terminal and BAT. The location as well as general information about these properties is shown in Figure 43. Most of the buildings in these complexes are four stories or higher and offer spaces ranging from 2,000 to 280,000 square feet. Rents and occupancy levels exhibit a large degree of variability, with rents ranging from \$5 to \$9 per square foot and occupancy fluctuating from 66 percent at Industry City to 96 percent at BAT.

Smaller properties mainly correspond to one or two story buildings of less than 250,000 square feet. These properties offer spaces ranging from 700 to 150,000 square feet at rents of \$7 to \$17 per square foot depending on size, location and condition. Smaller buildings exhibit good market performance with an occupancy rate of 94 percent. Warehousing has been identified as the predominant use in smaller buildings.

/ Real Estate Market Assessment

To understand the real estate market trends in BOA, the team analyzed the existing inventory, price points and vacancy rates. In cases where information was not available for the BOA, data for Sunset Park was reviewed as a whole.

Industrial and Office Market

Most of the built area in the BOA corresponds to flexible space that could accommodate either office, industrial or warehousing activities if the appropriate renovations are made. HR&A analyzed the office and industrial market

separately based on the buildings' current use as defined by Costar, a real estate database that tracks commercial properties all around the country and is widely used by the industry.

Industrial Market

The BOA is predominantly industrial, with 20 million square feet classified as industrial uses. There are a mix of buildings in the BOA that can be categorized according to size; larger than one million square feet and smaller properties. Large building complexes encompass 85 percent of the BOA's industrial spaces and include Industry City, the Federal Building,

The City of New York is the largest property owner in the BOA, managing 7.5 million square feet of industrial space in the BAT, Bush Terminal and the Meat Market. These buildings represent 45 percent of the BOA's total industrial space. Rents tend to be low, ranging from \$5 to \$9 per square foot. These low rents, together with a general state of good repair, have allowed the City to achieve occupancy levels above 95 percent in its properties.

Privately owned properties represent an array of buildings types ranging from Industry City to small warehouses. Together, they represent

BOA has lower office rents, but higher vacancy, than Sunset Park or Brooklyn.

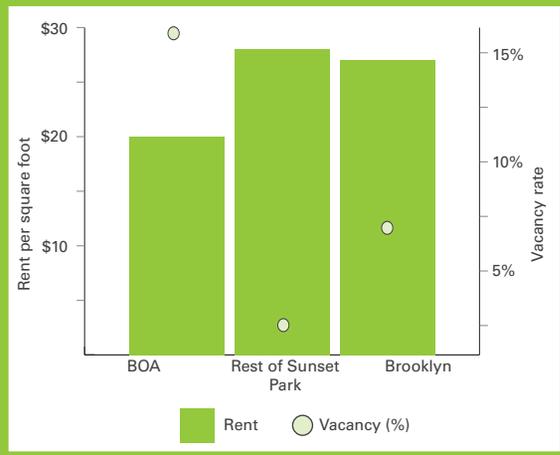


Figure 44: Office rents per square foot and vacancy rate
Source: Costar, HR&A

Small scale retail near Lutheran center achieves highest rents in BOA.

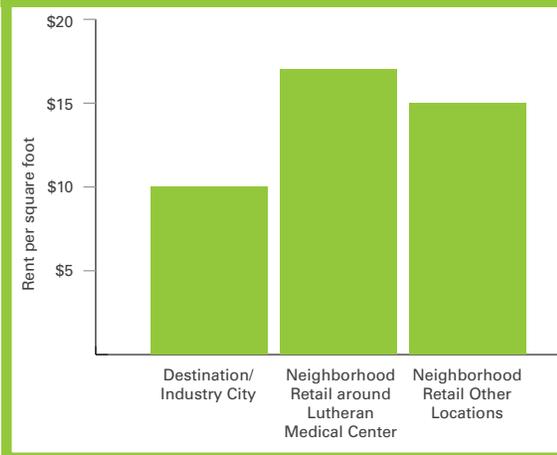


Figure 45: Retail rents per square foot (2011)
Source: Industry Intelligence, HR&A

9.5 million square feet of built space. These properties tend to have higher rents than City owned properties, ranging from \$8 to \$17 per square feet. Occupancy is lower than in City properties and there is high variability with regard to buildings' conditions. Currently, there are several properties in the market for either lease or sale.

The variability in occupancy between the City-owned properties and private properties suggests that the industrial market in the area is still ripening. Over time, as city properties become fully occupied and create a critical

cluster of businesses, other nearby locations will become more attractive, despite slightly higher rents. Recent deals completed since the bulk of the market assessment was completed in 2012, suggest that momentum is building for Sunset Park to emerge as a vibrant location for small manufacturers.

Office Market

With 460,000 square feet of office space, the BOA contains 32 percent of Sunset Park's total office space. 80 percent of the office space is located in a single building in Industry City located at 241 37th Street. This building

is 76 percent leased and its tenants include non-profits, health insurance companies and furniture firms. Figure 44 shows full service office rents average \$20 per square foot in the BOA, making it more affordable than Sunset Park and Brooklyn overall. Despite the comparatively low rents, the BOA's vacancy rate of 16 percent is six times the vacancy rate found in the rest of Sunset Park and twice the overall rate in Brooklyn, suggesting that the BOA is not an attractive location for traditional office users.

Retail Market

Sunset Park BOA contains 690,000 square feet of retail space or 20 percent of the neighborhood's 3.5 million square feet of retail space. The local retail market is highly segmented across the neighborhood with the BOA supporting a number of "Big Box" destination retailers such as Costco, Auto Zone, and Home Depot, together with a number of construction materials and furniture wholesalers. These firms have located in the BOA due to the availability of large-footprint sites, highway access, proximity to Manhattan and parking availability. In contrast, retail activities located outside the BOA, mainly on 5th and 8th Avenues in the Sunset Park neighborhood, consist primarily of neighborhood-oriented restaurants, grocery stores, and small shops. The only area in the BOA where there is neighborhood-oriented retail is around the Lutheran Medical Center (2nd Avenue and 55th St.), an area where major chains such as Subway and Duane Reade can be found.

Strong residential market performance compared to Brooklyn and NYC overall.

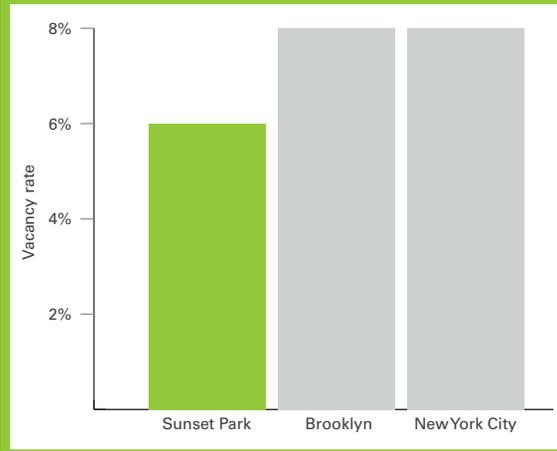


Figure 46: Sunset Park vacancy rate
Source: 2010 Census, HR&A

Recession halted new housing development.

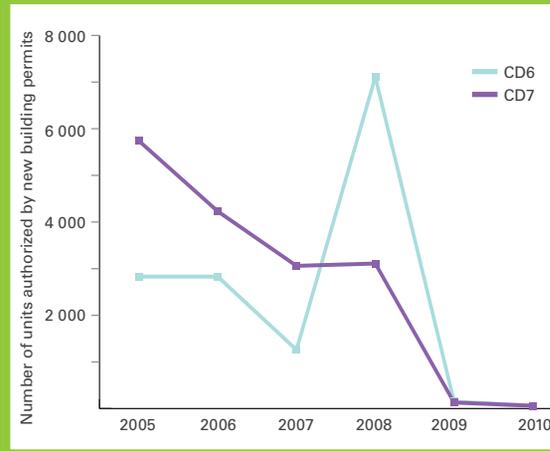


Figure 47: New housing permits
Source: Furman Center, HR&A

Median rents in BOA are lower than overall median rents for Brooklyn.

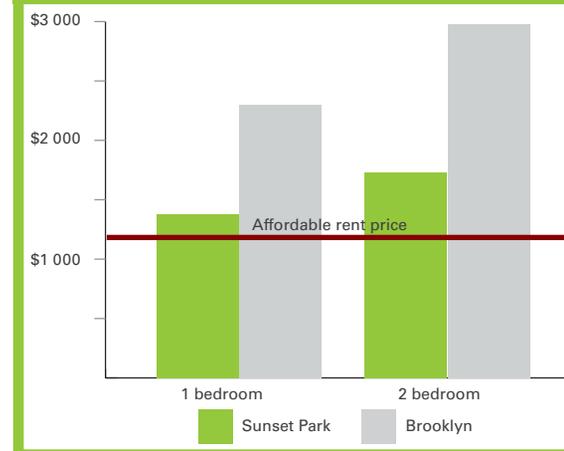


Figure 48: Median residential market rents
Source: Street Easy, MNS Brooklyn Rental report, HR&A

Market rents for retail range widely across Sunset Park, from \$10 to \$65 per square foot, depending on location and size, with the highest rents on 8th Avenue. Within the BOA, there is less rent variability, with rents ranging from about \$10 per square foot for large destination retail to \$16 per square foot for smaller scale, neighborhood-oriented retail near Lutheran Medical Center. Figure 45 shows average rents inside and outside the BOA.

Residential Market

There are approximately 2,500 residential units in the BOA, representing 6 percent of the Sunset Park neighborhood's housing stock. Most of the units are located in three to five-story multifamily buildings located south of 39th Street, with the majority clustered near the 53rd Street subway station (see Figure 19). Given the small proportion of units in the BOA and the limited information available for such a small geographical area, the team focused the residential analysis on Sunset Park as a whole.

Sunset Park is a predominantly rental community with 74 percent of the units occupied by renters, a figure that is five percentage points higher than NYC's average. As shown in Figure 46, the neighborhood's vacancy rate of six percent is low in comparison to the vacancy rates in Brooklyn and New York City (both have rates near eight percent), suggesting a strong market. Despite low vacancy, the analysis of new units authorized by building permits, as shown in Figure 47, shows that Sunset Park's housing market was hit hard by the economic downturn: the number of new units plummeted in 2009 and did not

show recovery in 2010. A slow recovery of the housing market coupled with population growth contributes to increasing pressure on rents and a lack of affordable housing.

Sunset Park is an affordable neighborhood relative to Brooklyn overall. As shown in Figure 49, median market rate rents for one- and two-bedroom apartments in Sunset Park are approximately 40 percent lower than Brooklyn. However, these rents are still unaffordable for many Sunset Park residents. The horizontal line on Figure 48 illustrates the price level that is affordable to a typical household based on the median income for the neighborhood.

/ Green Businesses in the BOA

There is an opportunity to build upon the success of existing green businesses in the BOA to brand the area as a center for green industry in New York City. This in turn could help attract additional green jobs, the definition of which varies. The Environmental Justice Movement defines green job as:

Multi-tiered employment in industries that restore ecological integrity and natural resources by creating eco-friendly life cycles of materials and harnessing renewable resources in the context of climate change while enfranchising and enhancing the quality of life of the most vulnerable populations.

The U.S. Bureau of Labor Statics defines green jobs as:

1. Jobs in businesses that produce goods or provide services that benefit the environment or conserve natural resources, or
2. Jobs in which workers' duties involve making their establishment's production processes more environmentally friendly or use fewer natural resources.

This report considered both definitions. The greatest opportunities for green jobs growth in New York City are in energy efficiency and renewable energy, construction, and, to a

lesser degree, manufacturing. Figure 49 shows the distribution of green jobs versus other employment according to New York State's 2011 Green Jobs Survey:

- 27 percent of Construction Trades positions,
- 28 percent of the positions in Building Services,
- 29 percent in Professional Services, and
- 13 percent of Component Manufacturing positions.

Furthermore, the introduction of policy initiatives that target green industries promises strong occupational growth in the Energy Efficiency and Green Construction sectors.

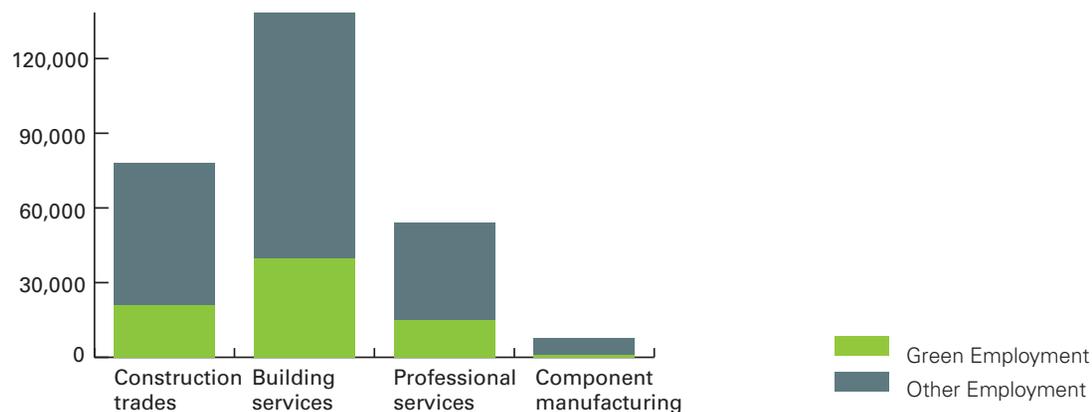


Figure 49: Green Employment Vs. Other Employment (NYS 2011 Green Jobs Survey)

/ Opportunities to create green jobs in the BOA could stem from current firms as well as from newcomers

Firms currently located in the BOA could create green jobs by expanding their current green activities or by establishing green practices that would make current jobs greener. In addition, there are opportunities to create new green jobs in the BOA by installing renewable energy and supporting the establishment of a new green business community through the implementation of a green business incubator. Engaging in green construction is an immediate opportunity to create green jobs given the relatively large number of construction firms located in the BOA (13 percent of total). In fact, several local firms are already involved in green activities such as solar panel installation, cogeneration plants installation, weatherization measures, and green roofs. Expanding these activities by taking advantage of the green policy initiatives represents a significant opportunity for Sunset Park.

/ Green Jobs Potential – Lutheran Medical Center Practices

The establishment of green practices in the BOA should not only be about attracting new jobs, it should also be about making existing jobs greener. Lutheran Medical Center, with its Go Green Initiatives, has started to make its facilities greener. An example of this is Lutheran Medical Center Go Green initiatives. These initiatives have led to the replacement of all lighting with energy efficient bulbs, the

installation of a cogeneration system, switching to green filters for air conditioner units, and switching to greener cleaning products. Although Lutheran is an impressive example of green practices, there are further opportunities for improvement. In particular, the medical center currently ships its laundry by truck to New Jersey. This provides the opportunity to establish a laundry facility in Sunset Park BOA that would serve the hospital. Such a facility could implement a gray water recycling system, install a heat recovery system, utilize environmentally friendly cleaning products and perform its operations using the most efficient laundry machines. This project would also reduce vehicles miles traveled, and thereby have a positive impact on greenhouse gas emissions. Another green project Lutheran Medical Center could pursue is the replacement of their current transportation fleet for electric vehicles, transforming its transportation services into a green activity.

Another potential source of green jobs for the BOA could be the creation of a Green Business Incubator. The transformation of old industrial buildings in the BOA into a cluster of emerging green businesses is an idea that has been proposed by both EDC and the Port Authority of New York and New Jersey. These government entities have proposed Bush Terminal and the AM Cosmetic building as potential locations. Green businesses at the incubator would benefit from subsidized rents and from an

innovative environment where ideas and work referrals could be shared. These companies would share office space and equipment, enjoy a collaborative environment and refer green business to each other.

Neighborhood composition

OPPORTUNITIES

- Upland neighborhood close to industrial area helps facilitate a live-work environment.
- Immigrant population has a reputation for being highly motivated and entrepreneurial.

CONSTRAINTS

- Lack of services and amenities makes the existing buildings less appealing for firms and workers, with a particularly strong impact on office tenants.
- Customers coming to big box retail facilities do not engage with the rest of the neighborhood.
- Low educational attainment limits the employability of some local residents, who lack the skills being demanded by new and established firms.

Industry mix

- Growing demand for employees in food service industries could be captured by local residents with the appropriate skills.
- New industries coming to the area (Sims and Axis) will create complementary uses and new jobs.
- Local demand from residents and workers provides potential to develop neighborhood oriented retail around Lutheran Medical Center.

- Diminishing number of manufacturing jobs threatens a traditional source of employment.
- Lack of coordination between Industry City, SBMT and Bush Terminal limits the opportunities to identify synergies and develop clusters.
- Low job density restricts the capacity to generate the critical mass required to attract service providers.

Infrastructure

- Good connectivity and infrastructure allows for easy movement of goods and people.
- Rail line between SBMT and Bush Terminal will expand the area where Sims and Axis suppliers and service providers could potentially locate.
- Bush Terminal Park will provide a major new amenity for workers and residents.

- Poor connectivity between the BOA and the rest of the neighborhood keeps Sunset Park residents outside the BOA, limiting potential for service provision and street life.

Real estate

- Comparatively low rents for industrial, office, and retail uses can be used to attract tenants.
- Availability of space allows the BOA to potentially serve tenants with a myriad of space requirements.

- Tenants are typically looking for spaces less than 10,000 SF, but most of the spaces available are much larger. Owners need to be educated about how to subdivide properties and market to smaller tenants.

3.13 Strategic Sites Investigation / Strategic Site Selection

The brownfield inventory detailed in Section 3.11 includes 126 sites with known and suspected contamination. The BOA team devised a selection process to shortlist key catalytic sites that could effectively further the project goals. Key to this process are the selection criteria. These criteria were developed in order to award more points to sites with the potential to have greater positive redevelopment impacts. The selection process, methodology and criteria are described in detail below and depicted in Figure 50.

Step 1: Mapping of Brownfield Sites

As a first step, the locations of the 126 brownfield sites were placed on a map. This map was overlaid with parks, open spaces, infrastructure and major transportation routes. This exercise provided context for each site as well as basic physical characteristics such as size, location, built structures on site, parking etc.

Step 2: Screening for Qualifying Sites

During Step 2, each site was scored on the basis of six criteria, described in the “Step 2 Scoring” box to the right. These criteria were selected as indicators for ease of redevelopment and each indicator had a series of qualifiers that were assigned scores. The higher the score, the more likely that redevelopment was feasible and would create a positive impact in the BOA. A score was calculated for each of the 126

sites in the inventory and all sites that achieved 60% of the maximum score were retained for further consideration. 31 brownfield sites were selected during this step.

Step 3: Site Elimination

The sites from the previous step were examined further. The process was treated more like an elimination process than a selection process and sites with the following characteristics were eliminated from the list:

1. Sites under development
2. Sites that provide services for neighborhood, eg. gas station site, construction staging area
3. Campus-like developments, eg Industry City that would need special planning within the context of their larger premises.
4. Sites with significant built structures and existing operations

This elimination resulted in a shortlist of 10 sites for consideration.

Step 4: Steering Committee Feedback

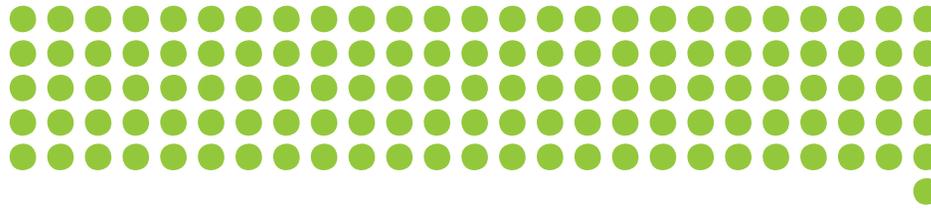
Each of these ten sites was presented to the steering committee for discussion. In addition to these sites, the steering committee reconsidered the priority sites from the Step 1 pre-nomination study and selected a final set of eight strategic sites.

STEP 2 SCORING

Lot Size	
+10 001 sf	3 points
7 501 - 10 000 sf	2 points
5 001 - 7 500	1 point
Ownership	
Public, tax exempt, mixed, federal	3 points
Vacancy	
Vacant lot	3 points
Value added by urban environment	
• Adjacent to 2 or more planned / existing greenways / bikeway / parks OR adjacent to waterfront	3 points
• Adjacent to 1 planned / existing greenway / bikeway / park	2 points
• Within 3 short blocks / 1 long block of existing / planned greenway / bikeway / park	1 point
Access / Distribution infrastructure	
• Abutting 2nd Avenue	3 points
• Interior lot directly accessible from 2nd Avenue (with regards traffic direction)	2 points
• Interior lot accessible in a circuitous way because of traffic direction (consider lots located on 1st avenue as well)	1 point
Proximity to other brownfields	
• Directly adjacent to another brownfield	3 points
• Directly across the street from another brownfield	2 points
• In the same or adjacent block from brownfield	1 point

Step 1: Mapping

Brownfield sites inventory
Speed database
Step 1 potential/underutilized sites

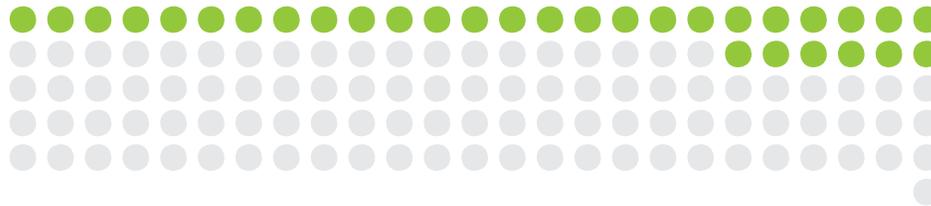


126 SITES

**with known
or suspected
contamination**

Step 2: Screening

Points given based on:
Lot size
Ownership
Vacancy
Value added by urban environment
Access/distribution infrastructure
Proximity to brownfields

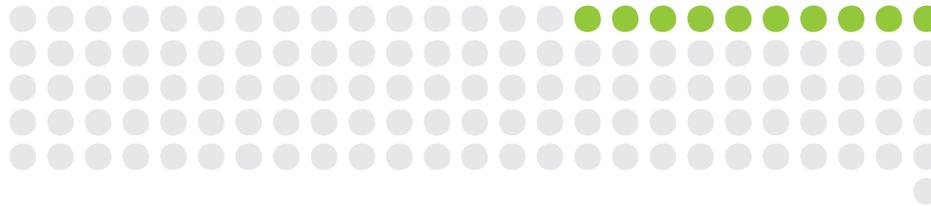


31 SITES

**with scores of 11/18 or
above (60%)**

Step 3: Elimination

Eliminated sites meeting the criteria:
Sites under development
Sites providing services for neighborhood
Developments like Industry City
Sites with no or minimal built structures
and existing operations

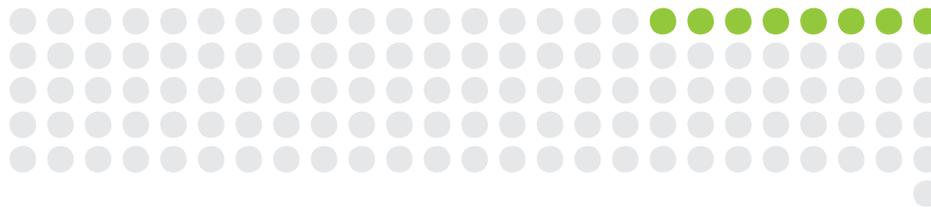


10 SITES

**without reason for
elimination**

Step 4: Feedback

Lot size
Ownership
Vacancy



8 SITES

**chosen by the steering
committee**

Figure 50: Strategic site selection process and methodology

/ Site 1: Bush Terminal

Located adjacent to the new Bush Terminal Park, the redevelopment of this site will offer increased accessibility to the new park, enhance connections between the neighborhood and the waterfront, and increase the appeal of the Bush Terminal campus for business and visitors.

The Bush Terminal Site is listed on the New York State Department of Environmental Conservation (NYSDEC) State Superfund database. This property is currently listed as a Class 3 site, which means that contamination does not presently constitute a significant threat to public health or the environment. Although the site has been given a Classification of 3, depending on redevelopment of the site and the future intended use of the site, additional remediation may be required by the NYSDEC. This site is also underlain with unregulated historic urban fill material associated with the former presence of a railroad yard. The review of historic maps indicates that the Bush Terminal Site was used as a railroad yard with multiple buildings which may have been improved with fireproofing material. Such fireproofing material installed during the time these building were constructed is likely to contain asbestos-containing materials (ACMs). Any remaining buildings currently present on the site may contain ACMs.

Current use

The entire Bush Terminal area currently consists of nine adjacent parcels of land which contain

9 buildings with associated parking lots, and a railroad spur and associated yard which extends from a pier on the Gowanus Bay through most of the eastern portion of the site. The buildings appear to be used for manufacturing, and/or warehousing and distribution activities.

Adjacent uses

North: To the north of the site is the Gowanus Bay.

South: To the south of the site are multiple manufacturing uses including shoe, clothing, and jewelry manufacturing; and multiple commercial uses including small scale retail, auto sales, and furniture warehousing.

East: To the east of the site are industrial and manufacturing buildings.

West: To the west of the site is the Gowanus Bay.

Property description

The strategic site itself is composed of two adjacent parcels of land located at the rear of a park which is currently undergoing remediation along the waterfront. The two parcels are to the southeast of this park along 1st Avenue from 43rd Street to 51st Street.

No. of Buildings on site and Square Footage:

The irregular-shaped Bush Terminal site is approximately 1,307,250 -square feet (30.0103-acres).

Existing infrastructure and access points

The site is serviced by the B11 bus route at 53rd Street and 2nd Avenue, approximately three blocks from the site's southeastern edge; and the B35 and B60 at 1st Avenue and 39th Street approximately three blocks from the site's northeastern edge.

Natural and cultural resources and features

Elevation at the site varies from approximately one foot above mean sea level (amsl) to 15 feet amsl. The nearest body of water is the Gowanus Bay, located adjacent (west of the western side of the site).

Environmental history and former use

According to a historic topographic maps, the site exists in a location which may have been part of the Bay Ridge Channel. The site was filled with material which was not under regulatory agency control and therefore may have contained contaminated material. Urban fill material in the NYC metropolitan area has been known to contain construction and demolition (C&D) debris, soil, gravel, industrial debris, and various forms of ash.

The site is listed on the NYSDEC State Superfund Program database under Hazardous Waste (HW) Site Code 58024 and HW Code 224011. The site is currently listed with a Classification of 3: Contamination does not presently constitute a significant threat to public health or the environment. The NYSDEC

Site name	Bush Terminal
Address	5102 1st Avenue Brooklyn, NY 11232
Parcel information	BBL: BK/725/100 and BK/725/1
Total property area	1,307,250 Square Feet (30.0103-acres)
Current Zoning	M3-1
Current Owner	New York City Department of Business
Previous owners	Bush Terminal Co; Bush Universal, Inc; Junior Wisdom

Figure 50: Bush Terminal parcel Information



Figure 51: Bush Terminal site plan



Figure 52: Bush Terminal site photo

DEVELOPMENT IMPLICATIONS

- Depending on the future use of the site, the NYSDEC may require additional remediation to meet soil and/or groundwater cleanup guidelines.
- Due to the presence of buildings at the site which were constructed prior to approximately 1980, a lead-containing materials and ACM survey should be conducted prior to any demolition and/or remodeling of on-site buildings.

database listing states the following:

The site is located along the Upper New York Bay, in the Sunset Park Section of Brooklyn, in the western part of Kings County, New York. The site borders an access road referred to as Marginal Street (which parallels 1st Avenue), between 45th and 50th Street. The land immediately adjacent to the site is used for commercial and industrial purposes, although residential housing areas are present within approximately 1,500 to 2,000 feet of the site. The 17.3-acre site includes approximately 14 acres of urban land that was created by land filling between four piers that were part of the former Bush Terminal warehouse complex. The remaining pier structures are dilapidated and extend 600 to 800 feet into the Bay from the existing fill areas. The site is currently fenced to prevent public access. The total landfill area is approximately 14 acres in size. Partial filling between two piers (Piers 3 and 4) has resulted in the presence of two ponded areas in the northeastern portion of the site.

While most of the land filled areas are covered with grasses or barren soils, the western most fill area between Piers 2 and 3 supports an area of mature trees. Debris piles are present in some areas, especially along the edge of the site bordering Marginal Road. This site is being tracked under the NYSDEC Environmental Restoration Program (ERP) as site number B00031-2.

Investigations conducted at the site identified that the primary contaminants of concern (in groundwater, soils and sediments) that exceed cleanup guidance standards are semi-volatile organic compounds (SVOCs) and metals. Volatile organic compounds (VOCs), the pesticide 4,4-DDT, and Polychlorinated biphenyls (PCBs) were also detected at levels exceeding cleanup guidance standards, but to a much lesser extent than the SVOCs and metals. It has been determined that no significant threat exists to the environment: while groundwater quality at the site has been impacted, it is unlikely that surface water quality criteria will be exceeded when groundwater discharges to the Bay, due to the low rates of groundwater discharge and the relatively low concentrations of contaminants in groundwater. Therefore, groundwater is not expected to present a potential environmental impact.

Known / suspected contaminants and affected media:

1. Fill material consisting of unregulated material may exist beneath the surface of the site.
2. Soil and groundwater at the site have been impacted by VOCs, SVOCs, metals, PCBs, and pesticides.
3. The site is in close proximity to various manufacturing and industrial facilities.
4. Structures at the site may contain Asbestos Containing Materials (ACM).

5. A portion of the site was formerly a railroad yard. If trains were serviced in this area, the subsurface may have been impacted by this use.

Potential future use

Given the location of the Bush Terminal site and based on the community feedback, the site would be ideal for a multi-use facility with community spaces overlooking the Bush Terminal Park. Small artisanal manufacturing uses that can be housed in the building at the northern entrance to Bush Terminal on 43rd Street, can help establish the northern gateway.

/ Site 2: E W Bliss and Atlantic Properties

The E.W. Bliss and Atlantic Properties Buildings were formerly one parcel which was first used as a power plant for the Brooklyn trolley system, and later as an electric generating facility under the Empire Electric Company. Both the EW Bliss Building and the underlying property are significantly contaminated. Since both buildings were previously considered one parcel and owned and operated as one facility, the Atlantic Properties Building may also have similar contamination issues. Redevelopment of the property may be complicated by these environmental issues.

Use status

The site is occupied by two adjacent buildings: the E.W. Bliss Building is currently vacant, and the Atlantic Properties building may have been used in the recent past as a filming location, the current use of this building is unknown.

Adjacent use

North: To the north of the site is a New York City Department of Sanitation facility.
South: To the south of the site is a vacant warehouse owned by the Astoria Generating Company which owns the NYS Superfund site across 53rd Street to the south of the warehouse.
East: To the east of the site across 1st Avenue is a parking lot with truck storage.
West: To the west of the site is a parking lot with truck storage.

Property description

The site is located at the corner of 1st Avenue and 53rd Street. The site consists of two rectangular buildings which are both brick with large windows. The E.W. Bliss Building does not appear to have a roof, has boarded windows and doors, and appears to be vacant; the Atlantic Properties building appears to have a roof and the windows and doors of this building are not boarded.

No. of Buildings on site and Square Footage:

The E.W. Bliss building 's footprint is approximately 24,200 square feet (SF) and the footprint of the Atlantic Properties building is approximately 14,200 SF. The footprint of the entire subject property, including both buildings is approximately 38,400 SF.

Existing infrastructure and access points

The site is serviced by the B11 Bus which is located at 53rd Street and 2nd Avenue, one block from the site.

Natural and cultural resources and features

Elevation at the site varies from approximately 15 feet above mean sea level (amsl) to approximately 22 feet amsl. The nearest body of water is the Gowanus Bay, located approximately 850 feet west of the western side of the Atlantic Properties building.

Environmental history

The E.W. Bliss building is listed in the NYSDEC Inactive Hazardous Waste Database under

Hazardous Waste Site number 224015 and named as the "Empire Electric Company Site." The NYSDEC database listing states the following:

The Empire Electric Company site is located at 5200 1st Avenue in Brooklyn, New York and contains a dilapidated, vacant, red brick building. The red brick building covers the entire lot. The area is primarily industrial in nature, with a potato chip manufacturing plant, a New York City Department of Sanitation vehicle maintenance and storage building, an overnight courier, the former Brooklyn Union Gas - Kings County Works manufactured gas plant site (MGP), and the Bush Terminal docks in the general vicinity.

The site consists of a 100 ft x 240 ft parcel (Block 803, Lot 9) that is located on the southwest corner of 1st Avenue and 52nd Street. The building was constructed in 1892 by the Brooklyn City Railroad Company for use as a power plant for the municipally owned trolley system. The building was used for electrical generation until the 1930s when the trolley system was abandoned. The facility was conveyed to the city of New York in 1940. In 1951, the property was sold to Hastone Realty Corporation who subdivided the parcel into two lots (Lot 9 and Lot 6). On 5 September 1951, Lot 9 was sold to Ben Hasnas. The Hasnas family operated Empire Electric on Lot 9, the eastern two-thirds of the building, from 1951 to December 1986 when the property was sold to 5200 Enterprises.

Significant polychlorinated biphenyl (PCB) contamination of Lot 9 was identified at the time of the building sale in 1986 and a cleanup was conducted by ENSI, Inc. However, PCBs at elevated levels were still present in post clean-up samples. On 28 February 1989, the NYSDEC listed the site as a Class 2 site on the New York State Registry of Inactive Hazardous Waste Sites. In 1993, NYSDEC collected and analyzed four shallow soil samples from outside the building along 52 Street for PCBs. The data indicated the presence of PCBs above the NYSDEC surface soil cleanup guidelines (greater than 1 part per million [ppm]). In 1999, Lawler, Matusky, & Skelly Engineers (LMS) LLP conducted a Preliminary Site Assessment (PSA) of the site on behalf of the NYSDEC to determine if the building was still contaminated and whether other media (i.e., soil and groundwater) had also been contaminated by site activities. No further information is available regarding the PSA.

Historical investigations at the site have documented the presence of widespread PCB impacts throughout the structure. NYSDEC conducted several studies at the site and concluded that building demolition and off-site disposal was required. The building has been secured and emptied of accumulated garbage. Demolition is on indefinite hold and will occur once the necessary funding has been secured and made available. Following demolition, the area beneath the building can be investigated.

The site presents a significant environmental threat due to the ongoing releases from source areas in soil beneath the building into groundwater. The floors, walls and the soil beneath the basement floor of the dilapidated on-site building are contaminated with significant levels of PCBs. Building entrances have been sealed with concrete block to prevent homeless people from living in the building and being exposure to PCBs. Testing results for upgradient and downgradient groundwater samples indicated the presence of volatile organic compounds above standards for public drinking water supplies. However, exposure to the contaminated groundwater is unlikely since public water serves the area. Indoor air contamination from volatile organic compounds in the groundwater is a potential exposure pathway that will be evaluated during the upcoming investigation.

Known or suspected contaminants and affected media

1. PCB contamination is widespread within the E.W. Bliss Building and beneath the building. Other known contaminants include volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals. Due the former use of the Atlantic Properties Building as part of the operations at the E.W. Bliss facility, there is potential for contamination to continue beneath the Atlantic Properties Building as well.
2. The site is in close proximity to various manufacturing and industrial facilities.

Potential future use

Film studio with community use that activates 52nd Street as a waterfront connector.

Site name	E.W. Bliss and Atlantic Properties Buildings
Address	55200 1st Avenue, Brooklyn NY 11232 and 2 52nd Street, Brooklyn NY 11232
Parcel information	BBL: BK/803/9 and BK/803/6
Total property area	1,307,250 Square Feet (30.0103-acres)
Current Zoning	M3-1
Current Owner	Empire Electric Co/5200 Enterprises Ltd Corp/Department of Business Jay Syrbnik/Atlantic Properties
Previous owners	E.W. Bliss Building: Hasnas Company and associated Hasnas family members; San Martin Company; City of New York. Atlantic Properties Building: Bermor Estates, Inc.

Figure 53: E W Bliss and Atlantic Properties parcel information

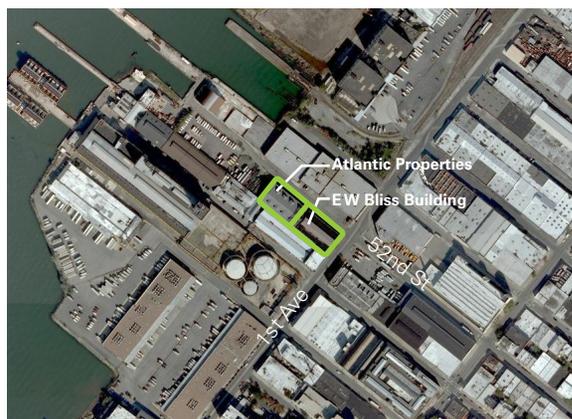


Figure 54: E W Bliss and Atlantic Properties site plan



Figure 55: E W Bliss and Atlantic Properties site photo

DEVELOPMENT IMPLICATIONS

- The presence of contamination beneath the site and the Interim Remedial Measure (IRM) mandated by the NYSDEC pose complications to redevelopment. The building must be demolished and contamination beneath the site must be remediated under guidance of the NYSDEC.
- Due to the construction of the on-site buildings prior to approximately 1980, a lead and asbestos survey should be conducted prior to the demolition of the on-site building.

/ Site 3: A M Cosmetics Building

The A M Cosmetics Building Site is listed on the United States Environmental Protection Agency (US EPA) Resource Conservation and Recovery Act (RCRA) database as a Conditionally Exempt Small Quantity Generator (CESQG) and the NYSDEC Petroleum Bulk Storage (PBS) database with one active tank. The site has been used as a manufacturing center for a number of years.

Use status

The site currently contains one seven-story manufacturing building. Based on North American Industry Classification System (NAICS) Code for the site - 32562 - current operations are thought to be toilet manufacturing.

Adjacent use

North: To the north of the site is another manufacturing building and a parking lot for Bush Terminal.
South: To the south of the site are small manufacturing and food service supply facilities.
East: To the east of the site is a lot currently under construction.
West: To the west of the site is a manufacturing-style building, beyond which are a dock and the Gowanus Bay.

Property description

The site is located mid-block on 1st Avenue between 39th Street and 42nd Street and consists of a white brick seven-story

manufacturing building.

Existing infrastructure and access points:

The site is serviced by the B35 and B70 bus route, which has a bus stop at 39th Street and 1st Avenue, which is located one-half block to the northeast of the site.

Natural and cultural resources and features

Elevation at the site varies from approximately 3 feet above mean sea level (amsl) to 10 feet amsl. The nearest body of water is the Gowanus Bay, located approximately 315 feet west of the western edge of the site.

Environmental history

The site is listed on the USEPA RCRA database under ID number NYD981488216 as the Arthur Matney Co. Inc. and as AM Cosmetics Inc. The site is listed as an active CESQG which is defined as any facility which generates 100 kilograms (kg) or less per month of hazardous waste, or 1 kg or less per month of acutely hazardous waste. Facilities under this classification are required to identify all hazardous waste generated, may not accumulate more than 1,000 kg of hazardous waste at any time, and must ensure that hazardous waste is delivered to a person or facility who is authorized to manage it. The site is also listed as a Toxic Release Inventory (TRI) Reporter under Standard Industrial Classification (SIC) Code 2844 – Toilet Preparations* as a facility which has released acetone to the air, and has transferred acetone off-site for disposal.

*Toilet Preparation facilities are identified as establishments which manufacture perfumes, cosmetics, and other toilet preparations.

The site is listed on the NYSDEC PBS database under regulatory number 2-608583. The record indicates that one 2020-gallon Underground Storage Tank (UST) is in service at the site.

The site has operated as a manufacturing center for a number of years.

Known / suspected contaminants and affected media:

1. The site has been reported to release acetone into the air, and may continue to do so.

Parcel information	BBL: BK/710/1
Name	AM Cosmetics Building
Address	4000 1st Avenue, Brooklyn NY 11232
Owner	22-26 Bush Terminal/Industry City Associates/Arthur Matney Co. Inc.
Previous owners	Lawrence A. Wien; Grancet Corp.; Harry Helmsley; Industry City Associates; Bush Assistance Co.; Bush Realty Associates; K&D Development Corp.; Kavdo Corporation
Size	48,800 sf / 1.12 acres
Zoning	M3-1

Figure 56: A M Cosmetics Building parcel information

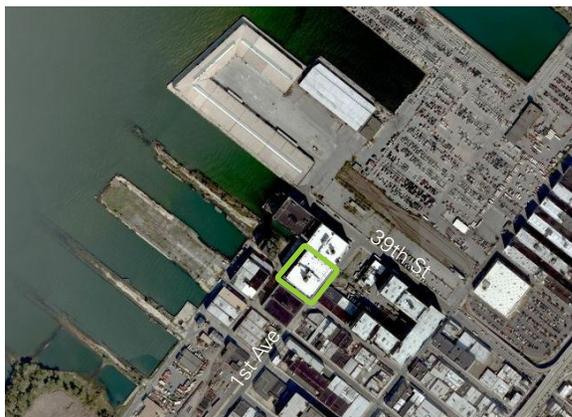


Figure 57: A M Cosmetics Building site plan



Figure 58: A M Cosmetics Building site photo

DEVELOPMENT IMPLICATIONS

- Records and/or site plans regarding any tanks at the site should be inspected to determine if tanks the tanks are currently in compliance with NYSDEC PBS regulations.
- A Phase I Environmental Site Assessment (ESA) and, if deemed necessary, a Phase II Environmental Site Investigation (ESI) should be conducted to determine the nature and extent of environmental concerns associated with the site. If any on-site buildings were constructed and/or renovated prior to approximately 1980, a lead and asbestos survey should be conducted in conjunction with the Phase II ESI prior to any demolition and/or remodeling of on-site buildings.

/ Site 4: Verizon Fleet Parking

The Verizon Fleet Parking Site is a parking lot for Verizon maintenance and service vehicles and has been used as such for many years. The site is listed on the NYSDEC PBS database. The site is also in close proximity to manufacturing and automobile repair facilities.

Use status

The site is currently used as a parking lot for Verizon service and maintenance vehicles.

Adjacent use

North: To the north of the site are manufacturing facilities and a recycling facility.

South: To the south of the site are manufacturing facilities.

East: To the east of the site are automobile repair facilities.

West: To the west of the site are manufacturing facilities.

Property description:

The site is located at the corner of 43rd Street and 2nd Avenue and currently consists of a parking lot for Verizon service and maintenance vehicles.

Existing infrastructure and access points:

The site is serviced by the N and R subway at the 45th Street subway station, which is located approximately five blocks from the site to the southeast. The B35 and B70 bus route has a bus stop at 39th Street and 2nd Avenue, which is located approximately four blocks from the

site to the northeast.

Natural and cultural resources and features

Elevation at the site varies from approximately 18 feet above mean sea level (amsl) to 24 feet amsl. The nearest body of water is the Gowanus Bay, located approximately 1,470 feet west of the western edge of the site.

Environmental history

The site is listed on the NYSDEC PBS database under regulatory number 2-344257. The PBS record indicates that the site name is Verizon New York Inc-NY-35555, and is located at 230 43rd Street in Brooklyn, NY. The tank registration expiration date is listed as 12/02/2013. No further information is available.

The site is in close proximity to manufacturing and automobile repair facilities.

The site has been used as automobile motor vehicle parking lot for an unknown number of years.

Known / suspected contaminants and affected media

1. Due to use as a motor vehicle parking lot for an unknown number of years, material beneath the site may be contaminated by motor vehicle fluid leakage.

Parcel information	BBL: BK/727/7
Name	Verizon Fleet Parking Site
Address	4301 2nd Avenue, Brooklyn NY 11232
Owner	Verizon
Previous owners	NY Telephone Co; My Toy Realty Co, Inc.; James Talcott Inc.; Kjellgren Construction Co. Inc.; John Stetson; Janet Huldack; Verizon New York Co. (New York Telephone Co.); Berti L K Kjellgren Trust
Size	60,098 sf / 1.34 acres
Zoning	M1-2

Figure 59: Verizon Fleet Parking parcel information



Figure 60: Verizon Fleet Parking site plan

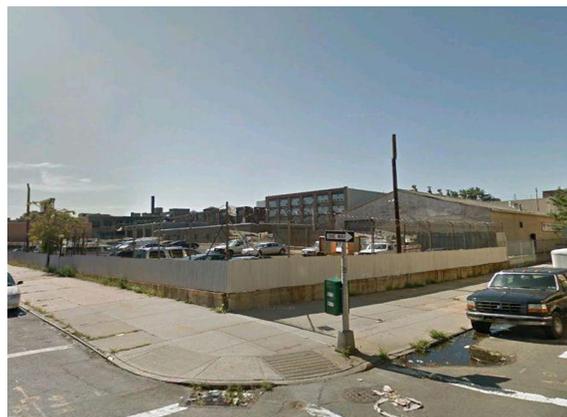


Figure 61: Verizon Fleet Parking site photo

DEVELOPMENT IMPLICATIONS

- Records and/or site plans regarding the tanks at the site should be inspected to determine the following: if the site is presently or was formerly operating as a gasoline filling station for service and maintenance motor vehicles; the current location of any tanks; and if the tanks are currently in compliance with NYSDEC PBS regulations.
- A Phase I Environmental Site Assessment (ESA) and, if deemed necessary, a Phase II Environmental Site Investigation (ESI) should be performed to determine the nature and extent of environmental concerns associated with the site.

/ Site 5: Moore McCormack Building

The Moore McCormack Building site may be underlain with unregulated historic urban fill which may be contaminated. The site is listed on the NYSDEC CBS database as “New York Power Authority Gowanus.” The site may have operated as part of a power generating facility which currently exists to the north. An undeveloped parcel of land is located between the Moore McCormack building and the neighboring power generating facility.

Use status

The site contains one building which is currently vacant.

Adjacent use

North: The Moore McCormack building is bordered to the north by an undeveloped parcel of land followed by a power generating facility.

South: To the south of the site are a video store, a kitchen and bath expo center, and a building material supply store.

East: To the east of the site is 3rd Avenue, above which is the Gowanus Expressway and below which are parking lots. Across 3rd Avenue is an automotive service station.

West: To the west of the site is the Gowanus Bay.

Property description

The site is located on 3rd Avenue, between 24th and 25th Streets. The site contains one vacant building and an undeveloped parcel of land located to the north.

Existing infrastructure and access points

The site is serviced by the D/N/R subway route at the 25th Street subway station located approximately 2 blocks southeast of the site.

Natural and cultural resources and features:

Elevation at the site varies from approximately 5 feet above mean sea level (amsl) to 14 feet amsl. The nearest body of water is the Gowanus Bay, located approximately 125 feet west of the western edge of the site.

Environmental history

The site was formerly part of the Gowanus Bay and was created by landfilling in the late 1800s. The fill operations were not conducted any regulatory authority and the fill may contain contaminated materials. Fill material has been known to contain construction and demolition (C&D) debris, soil, gravel, industrial debris, and various forms of ash.

The site is listed on the NYSDEC CBS database under regulatory number 2-000378. The CBS record indicates that the site name is New York Power Authority Gowanus, located at 730 3rd Avenue at the northwest corner of 3rd and 24th Street in Brooklyn, NY. The site’s tank registration expiration date is listed

as 04/18/2013. No further environmental information is available.

Known or suspected contaminants and affected media:

1. Fill consisting of unregulated materials exists beneath the surface of the site.
2. In NYSDEC CBS database, the site is listed as “New York Power Authority Gowanus.” Therefore, this site may have been used for electric generation activities.
3. The site is adjacent to what appears to be an active power plant.
4. The site is in close proximity to various manufacturing and industrial facilities.

Parcel information	BBL: BK/644/1
Name	Moore McCormack Building
Address	730 3rd Avenue, Brooklyn NY 11232
Owner	New York City Department of General Services
Previous owners	City of New York
Size	808,022 sf / 18.55 acres
Zoning	M3-1

Figure 62: Moore McCormack Building parcel information



Figure 63: Moore McCormack Building site plan

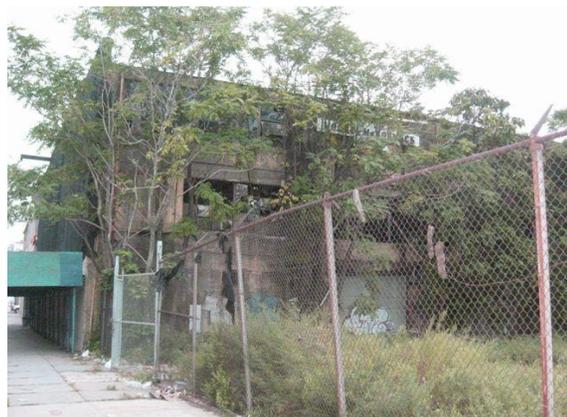


Figure 64: Moore McCormack Building site photo

DEVELOPMENT IMPLICATIONS

- Records and/or site plans regarding former and existing chemical tanks should be inspected to determine the current location of the tanks and if the tanks are currently in compliance with NYSDEC CBS regulations.
- A Phase I Environmental Site Assessment (ESA) and, if deemed necessary, a Phase II Environmental Site Investigation (ESI) should be performed to determine the nature and extent of environmental concerns at the site. If the on-site building was constructed and/or renovated prior to approximately 1980, a lead and asbestos survey should be conducted in conjunction with the Phase II ESI prior to any demolition and/or remodeling the building.

/ Site 6: South Brooklyn Marine Terminal

The SBMT site is underlain by unregulated historic urban fill which may contain contaminated material. The site has been used as a parking lot for automobiles for over 20 years. Depending on the condition of the pavement and the condition of the vehicles parked at the site, leaking material may have impacted the subsurface. The site was also formerly used as a rail yard. If service and repair of trains was performed at the site, the subsurface at the site may have been impacted.

Use status

The site currently consists of seven buildings as well as multiple parking lots, dealership vehicle storage lots, and vehicle impound lots.

Adjacent use

North: To the north of the site is the Gowanus Bay and a distribution company

South: To the south of the site are other SBMT parcels as well as multiple manufacturing uses including shoe, clothing, and jewelry manufacturing; and multiple commercial uses including large scale retail, auto sales, and furniture warehousing.

East: To the east of the site is Industry City, consisting of 10 industrial loft buildings holding approximately 150 manufacturing and warehousing operations.

West: To the west is the Gowanus Bay.

Property description

The site is composed of one parcel of land bounded by the Gowanus Bay and 2nd Avenue east-west and 28th and 37th Streets north-south.

Existing infrastructure and access points

The site is serviced by the D/N/R subway route at the 25th Street subway station located approximately 5 blocks northeast of the site. It is also adjacent and has easy access to the B35 and B70 bus routes along 39th Street, two blocks south of the site.

Natural and cultural resources and features

Elevation at the site varies from approximately one to eight feet above mean sea level. The nearest body of water is the Gowanus Bay, located adjacent-west of the western side of the site.

Environmental history

According to historical topographic maps, the site may have been part of the Bay Ridge Channel. The site was filled without regulatory agency control and therefore contaminated material may be present. Urban fill material in the NYC metropolitan area has been known to contain construction and demolition (C&D) debris, soil, gravel, industrial debris and various forms of ash. According to historical aerial photographs, the site has been used for almost 20 years for the storage and/or parking of motor vehicles and as a railroad yard. As a result, subsurface materials may be contaminated by

motor vehicle fluid leakage. Due to the use of the site as a railroad yard, material beneath the site may contain contaminated material due to maintenance / repair of rail cars.

During a search for previous owners and/or operators, GF discovered that a Consent Order was issued for the Borough Block and Lot (BBL) of the site (BK/622/1). The document does not; however, correspond to the address of the site (269 37th Street Brooklyn, NY 11232). The document states that a release or substantial threat of a release of hazardous substances into the environment occurred at the property and gives a scope of work detailing the required cleanup activities for the property.

Known / suspected contaminants and Affected media

1. Unregulated fill material is present beneath the surface of the site.
2. The parking of motor vehicles at the site may have impacted soil and/or groundwater beneath the site.
3. The use of the site as a railroad yard may have impacted soil and/or groundwater beneath the site.
4. The site is in close proximity to various manufacturing and industrial facilities.

Parcel information	BBL: BK/662/1
Name	South Brooklyn Marine Terminal
Address	269 37th Street Brooklyn, NY 11232
Owner	Department of Business
Previous owners	Bush Universal, Inc.; Axis Group, Inc.; Tina A Tomicic
Size	3,970,000 sf / 91.14 acres
Zoning	M3-1

Figure 65: South Brooklyn Marine Terminal parcel information



Figure 66: South Brooklyn Marine Terminal site plan



Figure 67: South Brooklyn Marine Terminal site photo

DEVELOPMENT IMPLICATIONS

- Building records should be searched to determine whether the Consent Order issued for the lot is in fact related to the property.
- A Phase I Environmental Site Assessment (ESA) and, if deemed necessary, a Phase II Environmental Site Investigation (ESI) should be performed to determine the nature and extent of environmental concerns at the site. If any on-site buildings were constructed and/or renovated prior to approximately 1980, a lead and asbestos survey should be conducted in conjunction with the Phase II ESI prior to any demolition and/or remodeling of on-site buildings.

/ Site 7: 244 39th Street Site

The 244 39th Street Site is a vacant parcel which previously contained at least two gasoline tanks and served as a storage facility for unknown materials. The site is adjacent to an auto repair facility and is in close proximity to various manufacturing facilities.

Use status

The site is currently vacant.

Adjacent use

North: To the north of the site is 39th Street, across which is a large-scale retail store with associated parking lot.

South: To the south of the site are a shoe manufacturer and a souvenir manufacturer.

East: To the east of the site are a fire protection supply company and an automobile repair facility.

West: To the west of the site are a welding supply company and a manufacturing building.

Property description

The vacant site is located midblock on 39th Street, between 2nd and 3rd Avenues.

Existing infrastructure and access points

The site is serviced by the B35 and B70 buses which have stops at both corners of 39th Street – the corner of 39th Street and 2nd Avenue and the corner of 39th Street and 3rd Avenue.

Natural and cultural resources and features:

Elevation at the site varies from approximately 16 feet above mean sea level (amsl) to 18 feet amsl. The nearest body of water is the Gowanus Bay, located approximately 1,785 feet west of the western edge of the site

Environmental history

According to historical fire insurance maps, the site formerly contained at least two gasoline tanks and operated as a storage facility for unknown materials. According to the Step 1 Pre-Nomination Study of the Sunset Park BOA, illegal dumping at the site has been reported.

The site is adjacent to an automobile repair facility and is in close proximity to various manufacturing facilities.

Known or suspected contaminants and affected media:

1. Historical maps revealed the presence of two gasoline tanks at the site. These tanks may have impacted soil and/or groundwater at the site.
2. The site is adjacent to an automobile repair facility.
3. The site is in close proximity to various manufacturing and industrial facilities.

Parcel information	BBL: BK/707/57
Name	244 39th Street Site
Address	244 39th Street, Brooklyn NY 11232
Owner	Abraham Damast
Previous owners	Billsig Realty Corporation
Size	20,059 sf / 0.46 acres
Zoning	M1-2

Figure 68: 244 39th Street Site parcel information



Figure 69: 244 39th Street site plan



Figure 70: 244 39th Street site photo

DEVELOPMENT IMPLICATIONS

- A Phase I Environmental Site Assessment (ESA) and, if deemed necessary, a Phase II Environmental Site Investigation (ESI) should be performed to determine the nature and extent of environmental concerns associated with the site.

/ Site 8: 5201 2nd Avenue Site

The 5201 2nd Avenue Site consists of two buildings, the environmental history of which is unknown; however, the site is in close proximity to various manufacturing and industrial facilities. One building at the site is composed of red brick with metal roll-up doors and a corrugated metal gate with “Livery Sale and Feed” painted on the street-facing gate, and the word “Stable” painted on the corner of the building, facing 52nd Street. No further environmental information is available.

Use status

The site currently contains two buildings of unknown use.

Adjacent use

North: To the north of the site are a manufacturing facility, a restaurant, and a medical laboratory.

South: To the south of the site are an import facility and residential homes.

East: To the east of the site are residential homes and an electrical contracting facility.

West: To the west of the site is a cabinet and granite warehouse.

Property description

The site is located on the corner of 52nd Street and 2nd Avenue. The site currently contains two buildings. One building is composed of red brick with metal roll-up doors and a corrugated metal gate with “Livery Sale and Feed” painted

on the street-facing gate, and the word “Stable” painted on the corner of the building, facing 52nd Street.

Existing infrastructure and access points

The site is serviced by the N/R subway route at the 53rd Street subway station located approximately 2.5 blocks southeast of the site. The B11 bus has a bus stop at 53rd and 2nd Avenue, approximately one block southwest of the site.

Natural and cultural resources and features:

Elevation at the site is approximately 29 feet above mean sea level (amsl). The nearest body of water is the Gowanus Bay, located approximately 2,000 feet west of the western edge of the site.

Environmental history:

The environmental history of this site is unknown; however, the site is in close proximity to various manufacturing and industrial facilities and may have been used as a stable.

Known / suspected contaminants and affected media

1. The environmental history of this site is unknown at this time.

Parcel information	BBL: BK/805/6
Name	5201 2nd Avenue Site
Address	5201 2nd Avenue, Brooklyn NY 11232
Owner	YNT, Inc.
Previous owners	Devlee Realty Corp; De Fri Holding Corp; A Wald Inc.; Maria A. Cardona; 5201 2nd Ave Realty Corp.
Size	10,017 sf / 0.23 acres
Zoning	M1-2D

Figure 71: 5201 2nd Avenue Site parcel information



Figure 72: 5201 2nd Avenue site plan



Figure 73: 5201 2nd Avenue site photo

DEVELOPMENT IMPLICATIONS

- A Phase I Environmental Site Assessment (ESA) and, if deemed necessary, a Phase II Environmental Site Investigation (ESI) should be performed to determine the nature and extent of environmental concerns associated with the site. If any on-site buildings were constructed and/or renovated prior to approximately 1980, a lead and asbestos survey should be conducted in conjunction with the Phase II ESI prior to any demolition and/or remodeling of on-site buildings.

3.14 Inventory and Analysis / Urban Framework for Analysis

The BOA has a number of diverse industrial assets including over 20 million square feet of warehouse, factory and loft space in a number of different typological configurations and multimodal freight infrastructure.

The last decade has seen a considerable amount of public and private investment that has gone into the reuse and modernization of these assets and the revitalization of BOA. City and Federal agencies have invested approximately \$200 million in capital improvements including upgrading of marine and freight infrastructure, creating new park space for area's residents and workers and redevelopment of industrial buildings such as Federal Building #2 and the BAT. This in turn has leveraged more private investment in the area from industries like Sims Recycling and Axis Automotive, which creates new job opportunities. In addition, small scale industries ranging from food manufacturing to metal fabrication are increasingly locating in the BOA and together with anchor institutions like Lutheran Medical offer a wide range of employment opportunities.

Collectively, the various building types, ongoing investments, incoming industries and the emergence of new employment uses have contributed to a diversity in the BOA that calls for a more fine grain urban analysis. Consequently, the area has been divided into seven subzones based on current uses, building

types and access to infrastructure. These subzones serve as a framework for analysis and the eight strategic sites complement this framework because of their potential as catalysts for their respective subzones.

Overview of Subzones

The **Industrial Incubation Spaces** are primarily in the BAT that has been restored and is receiving subsidies for commercial and light industrial uses. Along with the 58th Street ferry terminal and the 65th Street rail yards, this subzone offers multimodal freight transportation facilities and ferry access for its workers. To its north, factory buildings directly associated with rail constitute the **Large Scale Distribution** subzone, which also houses the future Bush Terminal Park that will open up Sunset Park's waterfront for public access. This subzone provides a unique opportunity to be on the waterfront and plan a mix of uses ranging from community facilities to job generating industries.

The SBMT has minimal built structures, modernized rail and marine infrastructure. Together with Axis Automotive and Sims's future recycling operations, this zone has the potential to become a model **Working Waterfront** subzone that incorporates green industrial practices. The **Utilities and Large Format Retail subzone** with direct access to 3rd Avenue is the northern most segment of the waterfront. The waterfront in this zone is closer inland and provides opportunities for public access from upland neighborhoods.

As one moves away from the waterfront, directly east of SBMT is a concentration of **Historic Warehouses** that in recent years have started to offer a variety of real estate for industrial, retail and office uses.

Market sectors such as food, metal fabrication etc. that have grown in the last two years are located to the east of Bush Terminal. Owing to the uniform lot sizes that can be configured in a number of ways, this subzone of **Small Scale Businesses** is made up of single and multistory buildings.

The **Service and Residential** subzone that is anchored by Lutheran Medical Center covers a good 20 blocks roughly between 50th and 65th Streets. Well frequented by workers and residents, this part of the BOA is more of a 24X7 neighborhood.

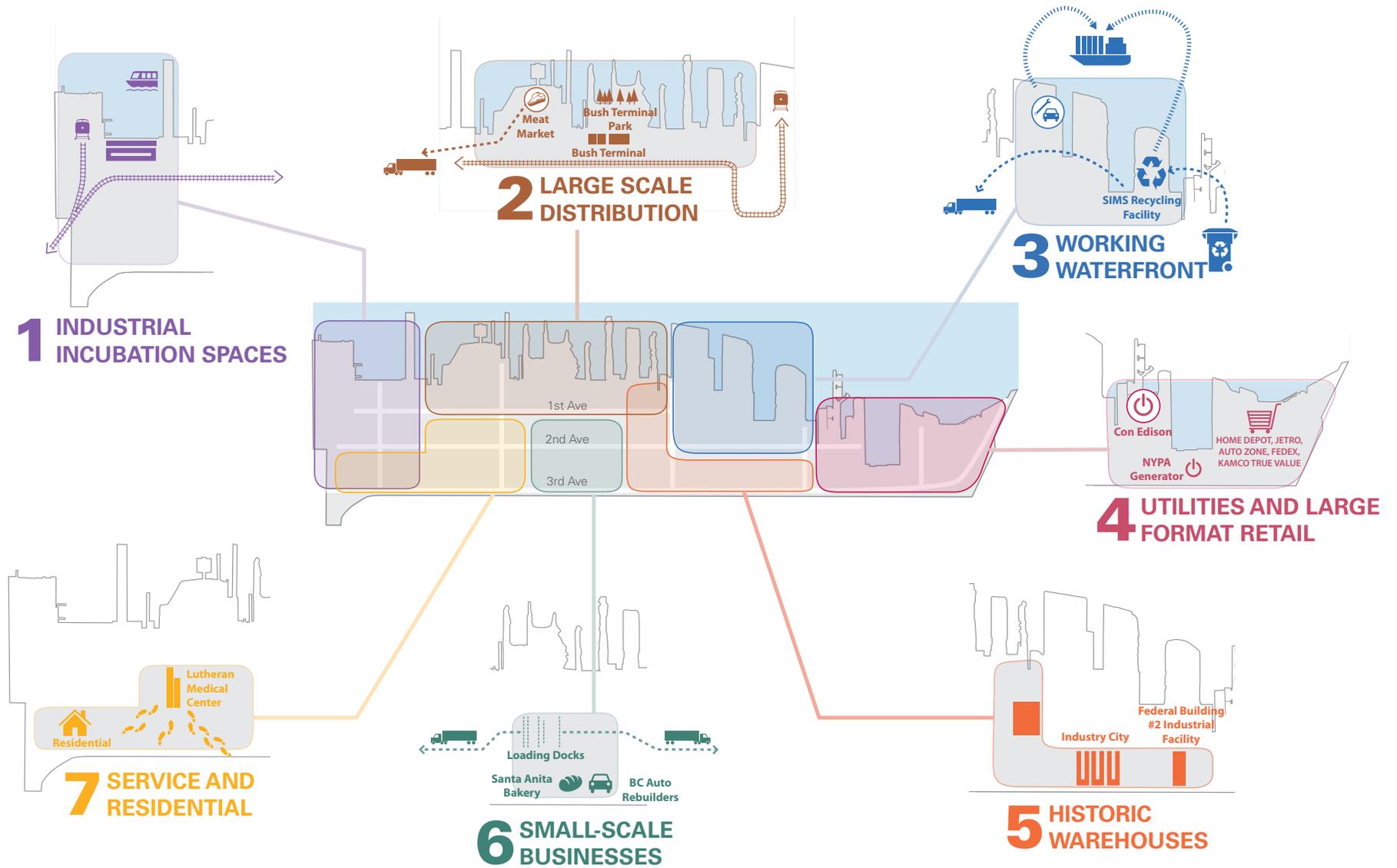


Figure 74: BOA subzones - supporting strategic framework for development

/ Subzone Analysis

Industrial Incubation Space

Home to the BAT, and the 65th Street rail yards, this area has recently been redeveloped and modernized by EDC and has over 3 million square feet of leasable industrial space. In addition to a concentration of subsidized and modernized incubation space for small industries, this area is very well connected through land, water and rail for freight and passengers. Recently (July 2012), EDC reopened the modernized and upgraded 65th Street rail yards for intermodal rail and waterborne uses. These yards connect with the 1st Avenue rail line and together with the SBMT have the potential for serving as a regional scale intermodal freight transportation facility.

While all these assets add to the area's industrial marketability, they also separate the waterfront from the upland neighborhood west of 2nd Avenue. BAT's gated campus with 24 hour security, large parking lots and fenced areas limit pedestrian activity along 2nd Avenue in this zone. The future Greenway along 2nd Avenue can potentially serve as a pedestrian connection.

— Proposed Brooklyn Greenway (2012)

Public Realm Opportunities:
 ●●●● Waterfront Connectors

■ Open Space

--- Bioswales

■ Rain Gardens

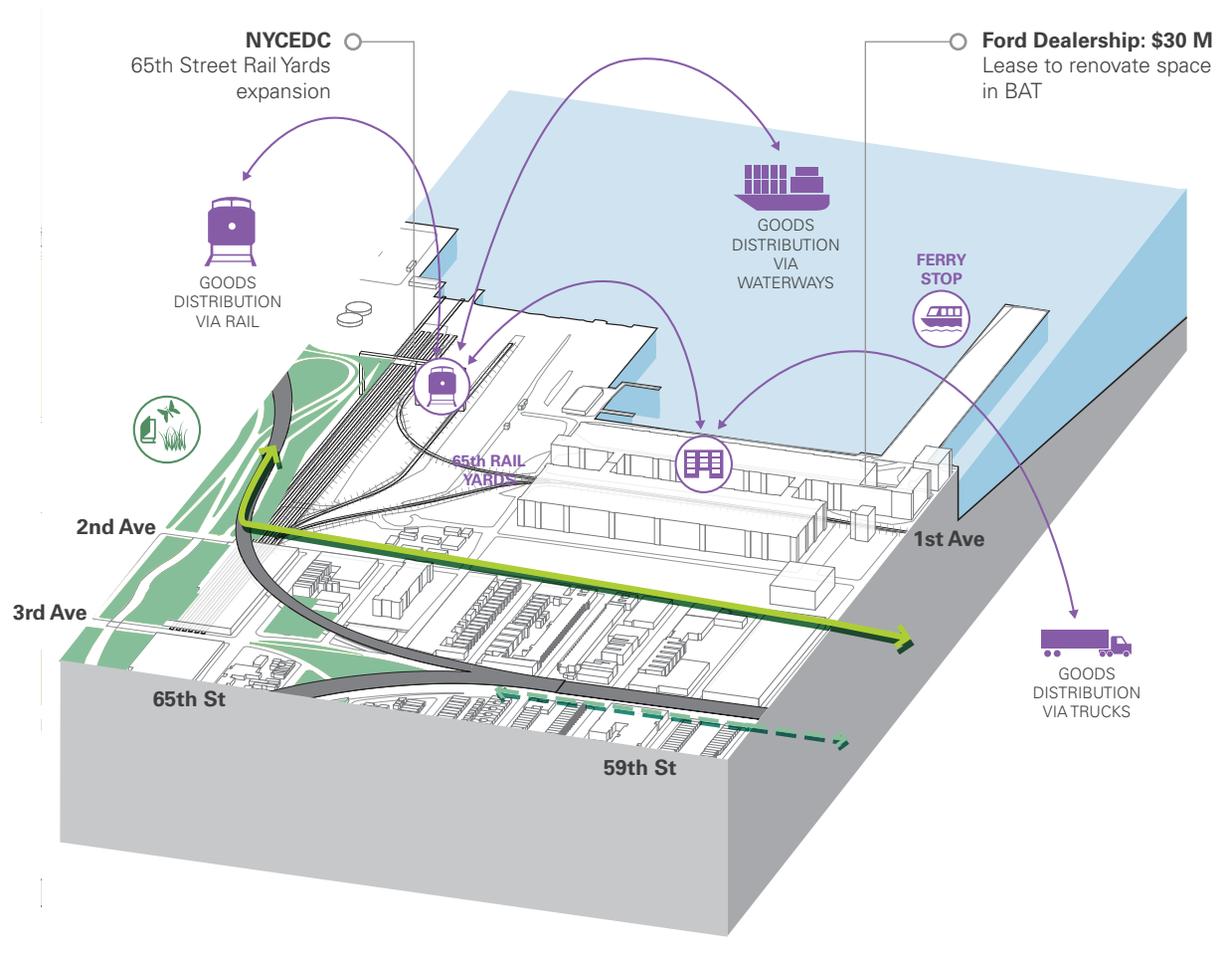


Figure 75: Industrial Incubation Space: Ongoing investments, character and public realm opportunities

Large Scale Distribution

Bush Terminal, with its infrastructure and railroad investments from the late nineteenth century, is a hub for large scale distribution. This partially active hub has a concentration of warehouses, factory and loft spaces that were built to accommodate rail infrastructure.

The subzone has benefited from investment in the Bush Terminal Piers and Parks that will provide public waterfront access. The future Brooklyn Greenway been realigned along Marginal Street and establishes key upland connections. In addition to public realm investments, the Port Authority of New York and New Jersey (PANYNJ) have expressed keen interest in restoring the entire site to develop an industrial campus.

This combination of industrial and public realm investments can attract multiuse facilities that include industrial, community, cultural, educational small scale retail uses.

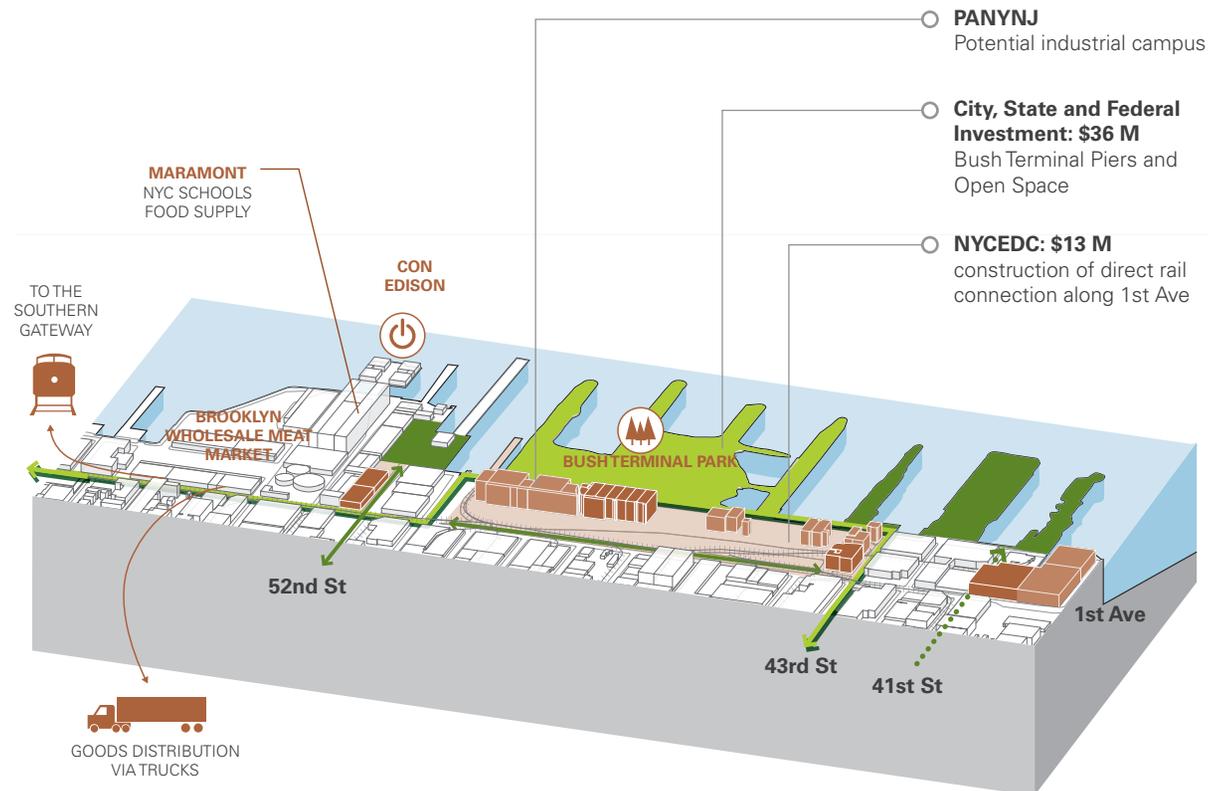


Figure 76: Large Scale Distribution: Ongoing investments, character and public realm opportunities

- Proposed Brooklyn Greenway (2012)
- Public Realm Opportunities:*
- Waterfront Connectors
- Open Space
- - - Bioswales
- Rain Gardens

Working Waterfront

The SBMT was originally developed in the 1970s by PANYNJ to handle containerized and non-containerized cargos, this facility was only functional as a port in the 1960s and 1970s. The facility was operationally closed in the 1980s.

Under the PlaNYC 2030 initiative for the development of a recycling facility for efficient waste management, EDC has invested in terminal infrastructure and dock rehabilitation. This infrastructure development has attracted anchor tenants like the Axis Automobiles and Sims Recycling and leveraged on \$46 million in private funding.

A new state of the art recycling center and a potential anaerobic digestion plant generating alternative fuel are part of the Sims recycling facility. These “green” investments can help transform the Sunset Park waterfront into a model green industrial area and promote best practices for industries in the BOA.

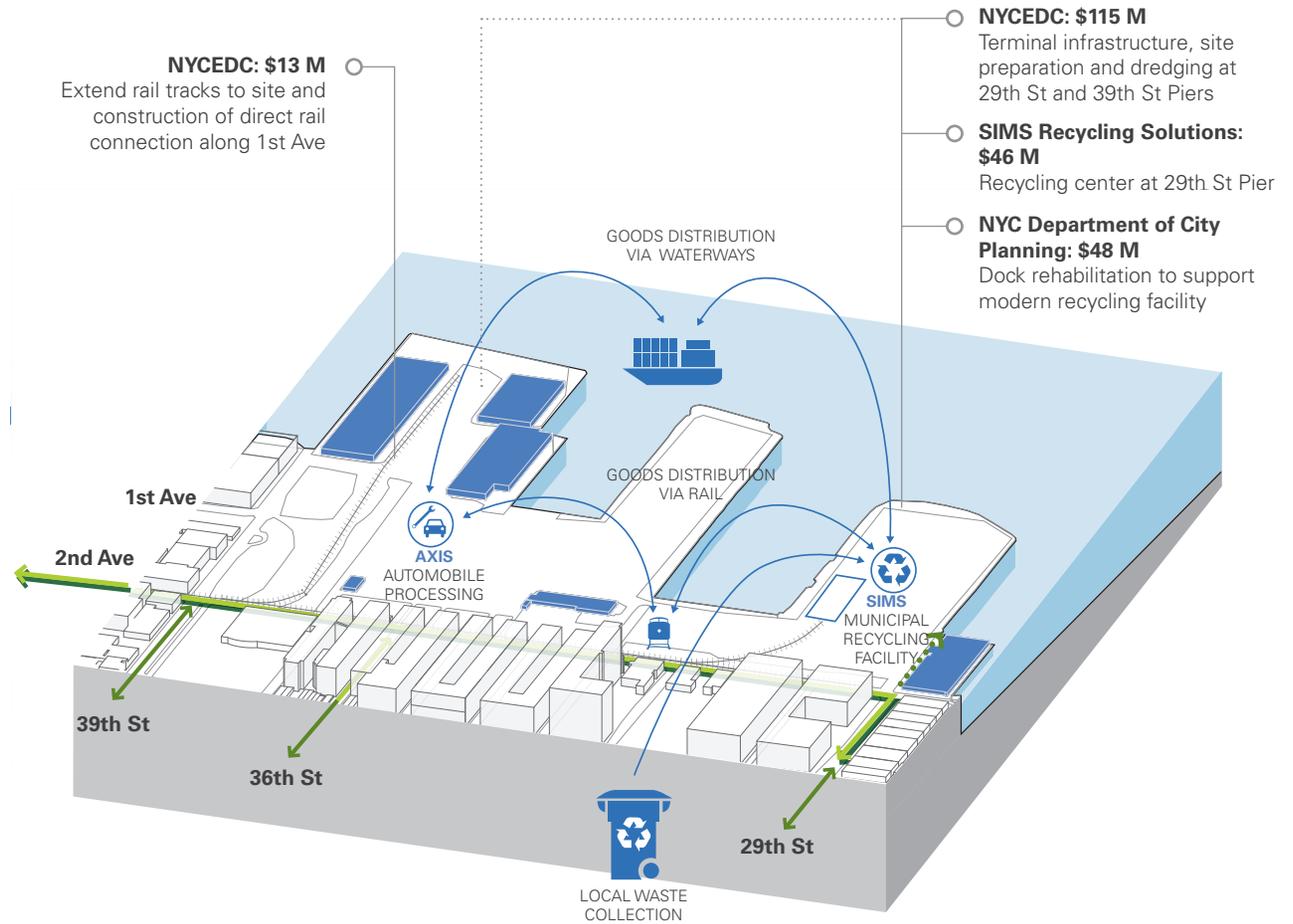


Figure 77: Working Waterfront: Ongoing investments, character and public realm opportunities

-  Proposed Brooklyn Greenway (2012)
- Public Realm Opportunities:*
-  Waterfront Connectors
-  Open Space
-  Bioswales
-  Rain Gardens



Figure 78: South Brooklyn Marine Terminal

Utilities and Large Format Retail

The northern portion of the study area extends roughly from 17th to 30th Street and is largely occupied by utility distribution companies such as ConEdison and regional shopping establishments such as Home Depot. Most of these facilities occupy large parcels of land that front both 3rd Avenue and the waterfront.

However, as most of these facilities require fencing around their perimeter for security reasons, they restrict public access to the waterfront. In particular, 24th Street that runs from the Greenwood Cemetery upland to the NYPA facility along the waterfront is currently blocked off from public access west of 3rd Avenue.

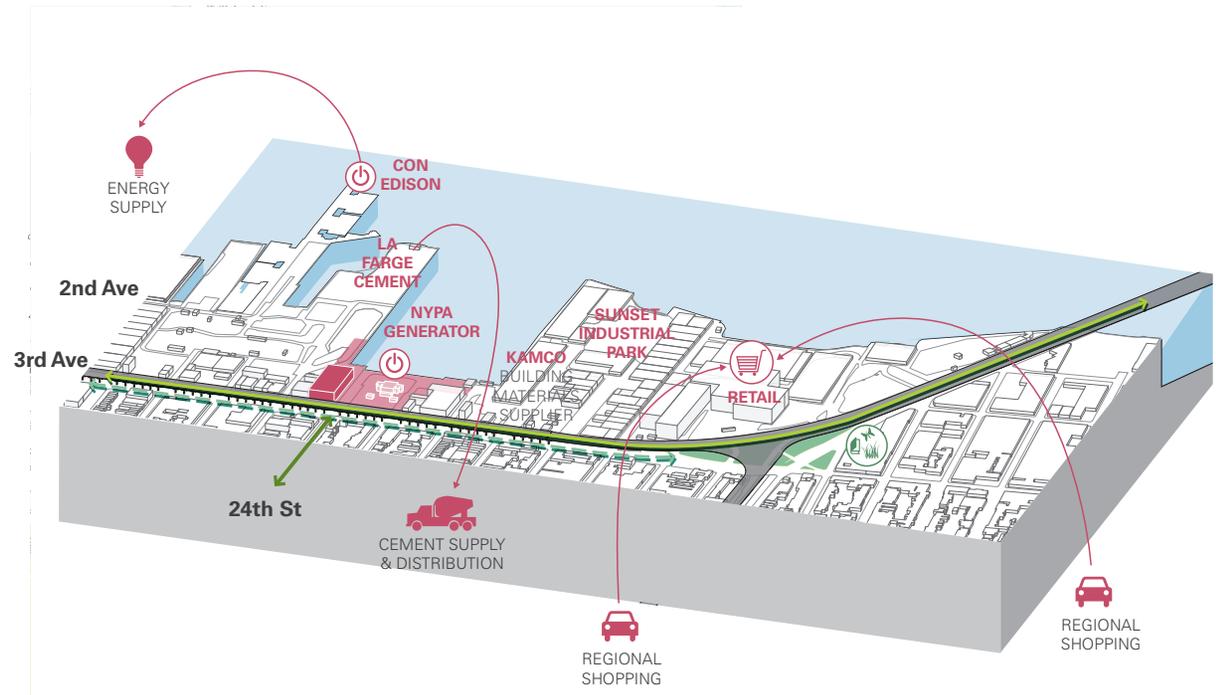


Figure 79: Utilities and Large Format Retail: Ongoing investments, character and public realm opportunities

-  Proposed Brooklyn Greenway (2012)
- Public Realm Opportunities:*
-  Waterfront Connectors
-  Open Space
-  Bioswales
-  Rain Gardens

Historic Warehouses

Directly to the south and west of SBMT is a large inventory of warehouses, factory, and loft spaces built in the early 1900s. These buildings have double height ceilings with manned heavy capacity freight elevators and internal layouts that were designed to suit the needs of large industrial and manufacturing facilities from the early and mid 20th century.

However, in recent times, there has been a shift in the scale of industrial set ups toward smaller units and thus a shift in demand for real estate toward smaller column-less floorplates. As a result, this subzone struggles with high vacancy rates. Fortunately, Federal Building #2, provides a potential example of how the historic warehouses in this subzone can develop a “hybrid” model that can attract a range of tenants for compatibility of uses. This model may not only prove to be economically viable but provide an interesting mix of users that can contribute to the vitality of the BOA.

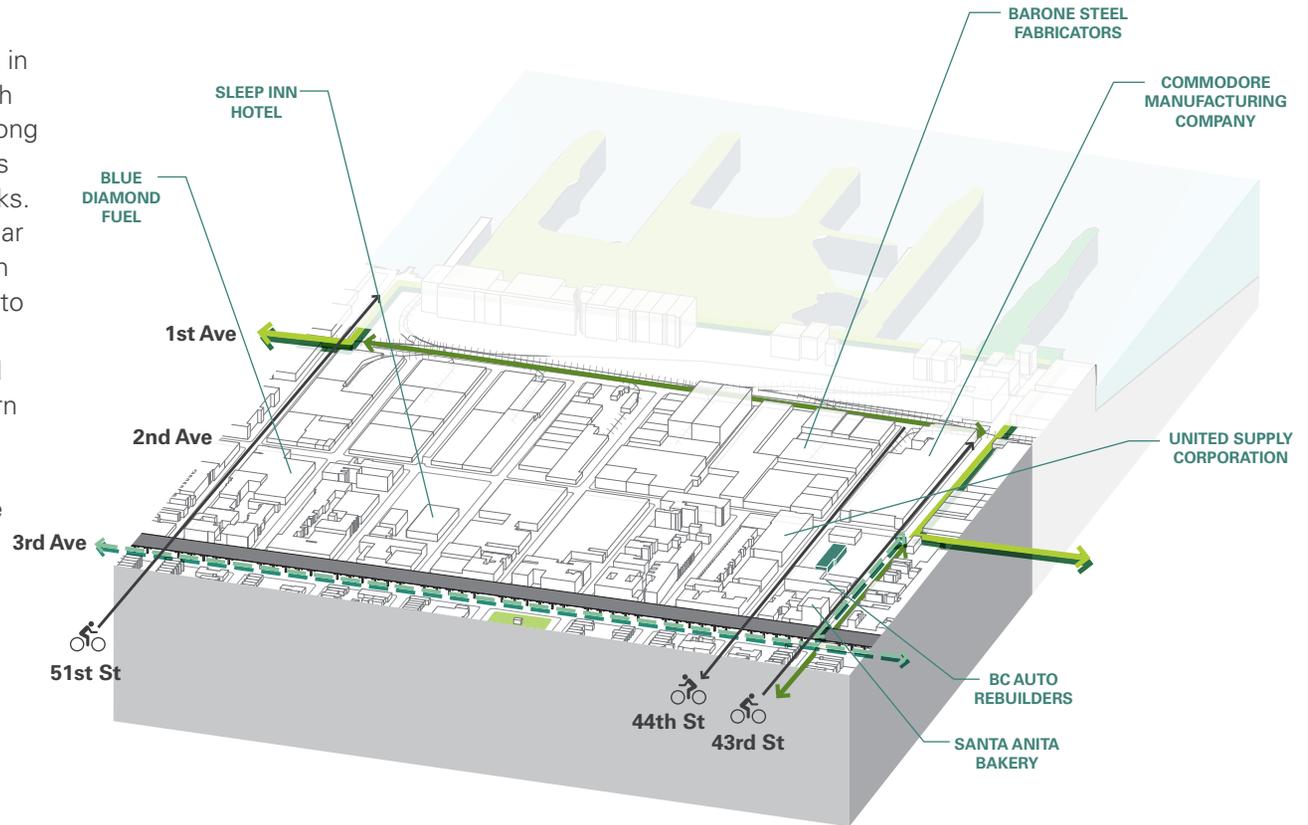


Figure 80: Historic Warehouses: Ongoing investments, character and public realm opportunities

- Proposed Brooklyn Greenway (2012)
- Public Realm Opportunities:*
- Waterfront Connectors
- Open Space
- Bioswales
- Rain Gardens

Small Scale Businesses

Though the BOA is predominantly occupied by and serves large scale industries and businesses, there is a concentration of small scale businesses along 3rd Avenue between 43rd and 52nd Streets. Most of the buildings in this area are single story small floorplates with the loading docks either within buildings or along the streets. A notable character of the streets in this area is either limited or absent sidewalks. This streetscape is primarily suited for vehicular access combined with high truck traffic, which is an impediment to direct pedestrian access to the newly commissioned Bush Terminal Park. However, 43rd and 52nd Streets, at north and south edges of this subzone mark the northern and southern entrances to the Bush Terminal Piers and Parks project and have potential for streetscape treatment that will accommodate pedestrians, bicyclists and vehicular traffic.



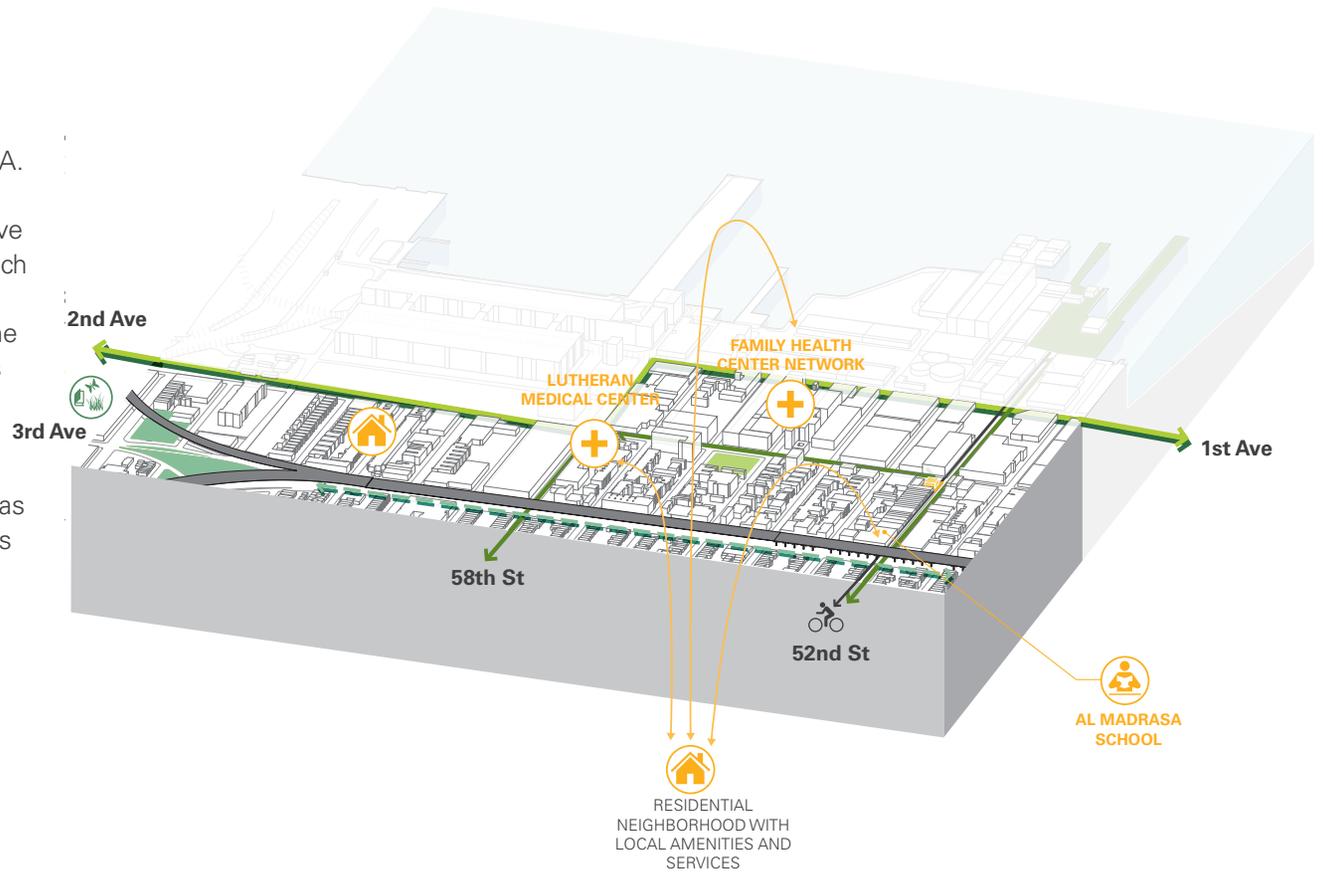
- Proposed Brooklyn Greenway (2012)
- Public Realm Opportunities:*
- Waterfront Connectors
- Open Space
- - - Bioswales
- Rain Gardens

Figure 81: Small Scale Businesses: Ongoing investments, character and public realm opportunities

Services and Residential

Anchored by the Lutheran Medical Center this subzone attracts over 6,000 workers each day. Since its establishment in 1969, Lutheran Medical Center has been one of the largest employers in the area contributing to approximately 30% of the total jobs in the BOA.

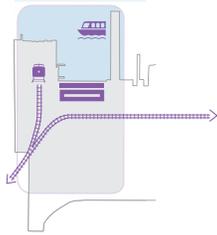
Over time the Medical Center's operations have given rise to a number of support services, such as convenience retail and local amenities. In addition, this is one of the only areas within the BOA that is zoned for residential uses and has terraced housing. Together these elements create a fine urban fabric, safe environments and pedestrian scale streets and invite high pedestrian footfall. In particular, 58th Street has the potential to develop as a waterfront access route.



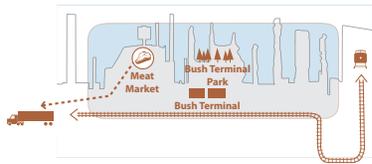
- Proposed Brooklyn Greenway (2012)
- Public Realm Opportunities:*
- Waterfront Connectors
- Open Space
- Bioswales
- Rain Gardens

Figure 82: Services and Residential: Ongoing investments, character and public realm opportunities

1 INDUSTRIAL INCUBATION SPACES



2 LARGE SCALE DISTRIBUTION



3 WORKING WATERFRONT



4 UTILITIES AND LARGE FORMAT RETAIL



OPPORTUNITIES

CONSTRAINTS

1. Multimodal hub has convenient access to freight transportation through land, rail and water.
2. Being wrapped on three sides by the proposed Brooklyn Greenway provides opportunity to enhance streetscapes and create inviting public realm for pedestrians.

1. BAT's inward looking campus cuts off upland communities from waterfront.
2. Large parking lots and fences along 2nd Avenue creates an environment that is primarily dominated by vehicular traffic.

1. Underutilized spaces along the waterfront have potential to develop into new public spaces strengthening urban public realm.
2. Buildings along Marginal Street have potential for development as an integrated industrial and community space that utilizes recent investments to Bush Terminal Park.

1. 1st Avenue rail yards serve as a barrier to pedestrian access to the waterfront
2. Building typologies in the area are not suited to the increasing demands for small scale industries.
3. Loading docks on E-W street impede pedestrian access to waterfront and park.

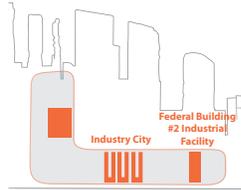
1. Newly developed and modernized terminal will bring new and related industries.
2. Sims provides potential to form supply chain relationships with smaller businesses to strengthen industrial ecology.
3. Adjacency to future Brooklyn Greenway strengthens upland pedestrian access.

1. Heavy industrial programming along waterfront will restrict pedestrian waterfront access.

1. Potential for public waterfront access along 24th Street that can be strong upland connection leading to Greenwood Cemetery
2. Alignment of Brooklyn Greenway along 3rd Avenue has potential to create a more seamless transition from upland areas to the BOA.

1. Location of large scale utility plants and power generation facilities creates fenced areas, restricting public access to waterfront
2. Direct access to 3rd Avenue creates traffic congestion in the area and limits mobility for pedestrians and bicyclists

5 HISTORIC WAREHOUSES



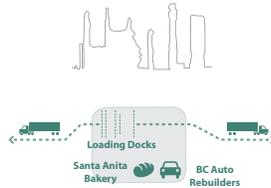
OPPORTUNITIES

1. Historically rich in urban character that is worth preserving.
2. Relatively narrower streets within Industry City that are free of loading docks and in close proximity to future Brooklyn Greenway present potential to recreate a pedestrian scale environment in this zone.

CONSTRAINTS

1. Building typologies and associated infrastructure are not suited to increasing demands for small scale industries.
2. Higher rents than in publicly-owned buildings make it hard for these privately owned buildings to compete with modernized facilities such as the BAT, resulting in further disinvestment.

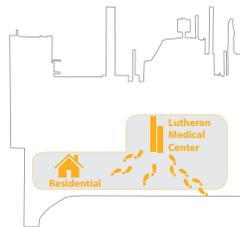
6 SMALL-SCALE BUSINESSES



1. Existing building typologies are more suited to the demands of small scale businesses.
2. Potential for parts of 43rd Street to develop as a commercial / retail street and act as waterfront access route for pedestrians and bicyclists.

1. Most E-W streets have very bare landscapes dominated by loading docks and in some cases no pedestrian sidewalks.
2. The entire area has poor public realm with no amenities nearby.

7 SERVICE AND RESIDENTIAL



1. Fine urban fabric with pedestrian scale streets and amenities encourages foot traffic for convenience retail.
2. 24X7 community creates a safe area
3. 58th Street has potential to develop into pedestrian oriented street and strengthen waterfront access.

1. Most E-W streets have very bare landscapes dominated by loading docks and in some cases no sidewalks.
2. The entire area has poor public realm with few amenities nearby.

3.15 Summary Analysis, Findings and Recommendation of the BOA and Strategic Sites

UPROSE's community engagement efforts during the Step 2 led to the formulation of six specific goals for the Sunset Park Waterfront:

1. Increase job opportunities for local residents especially through the encouragement of sustainable industry and green jobs;
2. Decrease environmental hazards and facilitate the remediation and redevelopment of key brownfield properties in the BOA study area;
3. Work with area businesses, the City and the State to develop environmentally friendly business practices;
4. Create new open space and areas of outdoor recreation in Sunset Park that will reconnect the residential community to its waterfront;
5. Preserve existing affordable housing and encourage new housing development on brownfield sites where appropriate; and
6. Build for greater climate resiliency.

Eight sites that advance these goals and present opportunities to catalyze the development of the BOA subzones were selected as *strategic sites*. Public realm improvements coordinated with the development of these strategic sites further strengthen the re-development framework. The BOA subzones, strategic sites, ongoing investments and public realm improvements

that together form the re-development framework are represented in Figure 83.

In order to provide a clear roadmap for next steps, re-development scenarios for four of the strategic sites (referred to as *priority sites* hereon) were detailed out. This analysis includes a list of potential funding resources, partnership opportunities and priority actions that can spur redevelopment efforts.

In addition to the detailed re-development scenarios for the four priority sites, a set of area wide recommendation based on the six goals determined by the community for the Sunset Park Waterfront are detailed in the following section. These recommendations are closely aligned with the re-development framework and subzones detailed in section 3.14, as well as ongoing public and private investment, and emphasize the adoption of environmental mitigation methods.

8 STRATEGIC SITES

1. Bush Terminal

5201 1st Ave: Multi-use facility with community spaces overlooking Bush Terminal Park. **38 43rd St.:** Small manufacturing center that becomes part of the northern gateway to Bush Terminal

2. A.M. Cosmetics building

Sustainable and green business incubator

3. Verizon fleet parking

Electric vehicle charging facility with stormwater management green infrastructure.

4. EW Bliss building and Atlantic Properties

Film studio with community use that activates 52nd Street as a waterfront connector.

5. Moore McCormack

Waterfront facing, medium scale commercial and community space that provides public waterfront access.

6. SBMT

Recycling and green technology center that encourages green industry practices

7. 244 39th Street

Retail, café, furniture workshop

8. 5201 2nd Avenue

Ground floor retail with commercial/ industrial uses above

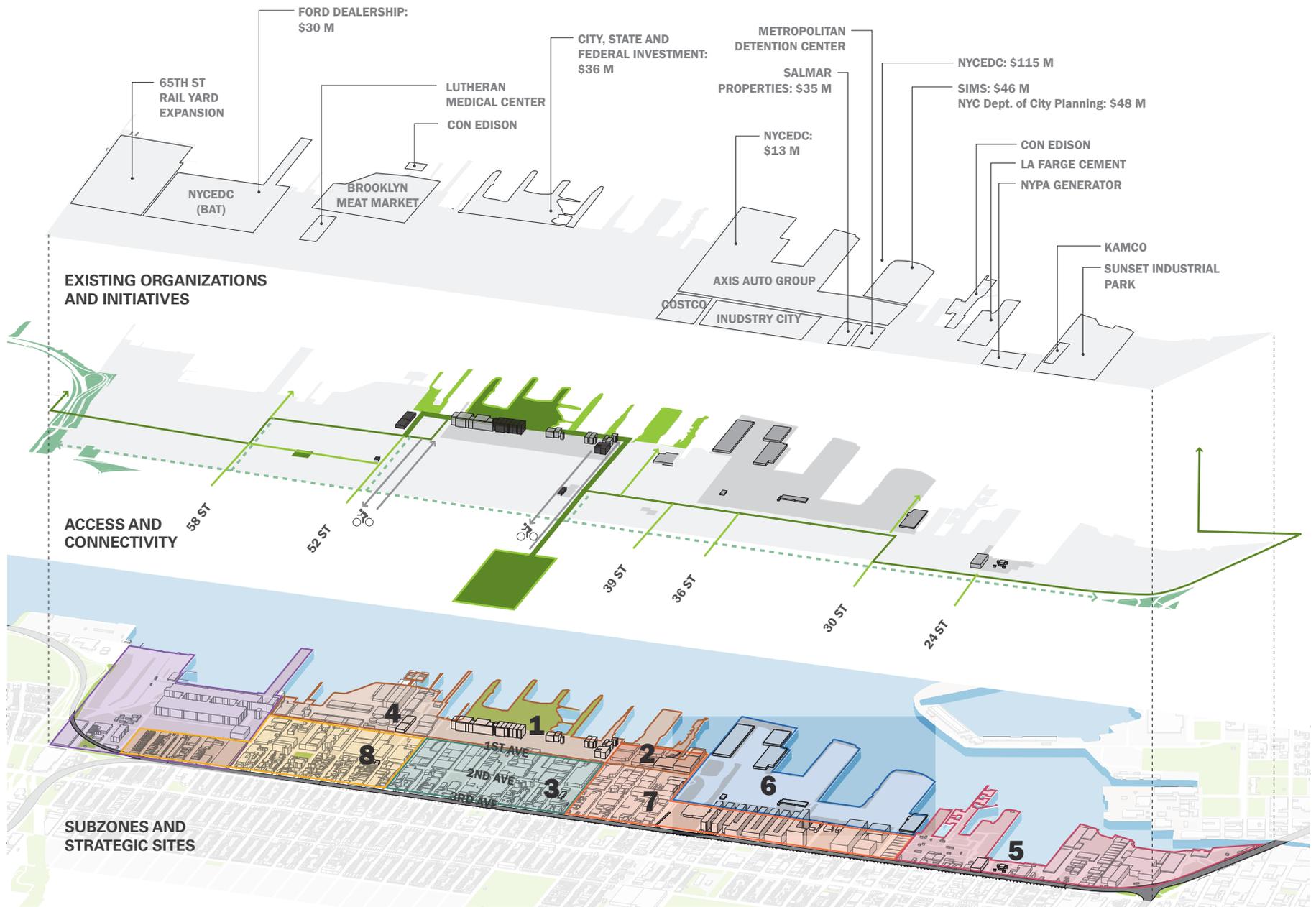


Figure 83: Aligning investment, public realm opportunities and a strategic development framework

PRIORITY SITES REDEVELOPMENT

/ Methodology

HR&A developed the following stabilized year pro formas (refer Appendix D for details for the four priority sites based on the comprehensive market assessment summarized in the existing conditions section of this report. The analysis incorporated findings from the real estate market and industry analysis, community goals, proposed government initiatives, zoning regulations, and opportunities provided by the new industries and amenities soon to be located at the BOA. The team focused on identifying a mix of program alternatives that would create local jobs and provide new services to the BOA and adjacent neighborhood. The overall goal of the proposed program is for the redevelopment sites to serve as catalysts that will ignite further redevelopment in the BOA.

Each pro forma estimates the market development value of a proposed program developed in concert with the community. It is based on a stabilized year cash flow divided by a market capitalization rate. Cash flows were estimated based on market rents, taking into account the impact of subsidized rents at City-owned properties, and industry standard assumptions for operating expenses. Capitalization rates were estimated from industry sources based on current market

comparables. This rate represents required investor return from real estate assets. Remediation costs are subtracted from the total capitalized value to obtain the potential development value of each site on a gross and a square foot basis.

The Team used information from the real estate market analysis to estimate market price points for retail, industrial and office uses. For less traditional uses such as businesses incubators and community space the team used rent values currently found at City owned properties such as BAT and Bush Terminal.

Remediation costs were estimated by developing a preliminary/conceptual assessment of potential remedial costs for each site on a high, medium, and low basis based on:

- Available environmental information, and
- The team's experience with site assessment and remediation.

These remedial cost estimates were based on the limited information available from publicly accessible environmental data at the time the assessment was performed. The Team made reasonable and conservative preliminary assumptions regarding the types of remediation which may be necessary at each property. These costs are presented as concept-level estimates based on industry-wide standards and should be considered when further assessment of the redevelopment cost at each property is prepared.

The recommended programs, financial analysis and conclusions for each site are summarized in the strategic site profiles on the following pages. Given overall real estate market conditions in the BOA, the revenues generated by the proposed programs may not be sufficient to cover the cost of redevelopment. To address this issue the team reviewed public financing vehicles (i.e., incentives and grants) available to the strategic partners that could help redevelop each of the sites.

/ Recommended Programs

Listed below is a description of the potential uses that could be hosted at the priority sites. The first five would be expected to produce some revenues that could partially support redevelopment.

- 1. Flex/Industrial/Office:** These multipurpose spaces correspond to open floor plates that could support light manufacturing, design studios, and office tenants searching for basic space.
- 2. Retail:** This is neighborhood oriented retail or, in the case of 5102, 1st Avenue retail oriented towards Bush Terminal Park visitors. Examples are convenience stores, gift shops, and office supplies stores.
- 3. Restaurant/Café:** This use includes informal sit-down or take out restaurants targeted towards workers, residents, and park visitors.

4. **Artisanal Manufacturing:** This type of manufacturing generally produces small batches of goods using light machinery. Examples are arts and crafts and specialty food manufacturing.
5. **Green Business Incubator:** A green business incubator is a cluster of start-up firms, interested in sustainable manufacturing practices and/or products, that share common spaces and receive subsidized rents. The purpose of an incubator program is to help companies grow their business by providing an environment that fosters innovation and allows for the free flow of ideas. Given the start-up nature of these companies, a subsidy is required to make the space affordable to them.
6. **Community Space:** This is space open for uses prioritized by the community that are not being provided by the market. Examples are learning facilities, meeting areas, and offices for community organizations.
7. **Climate Change Learning Space:** This is a community space to be located near Bush Terminal Park. It is envisioned as an interactive center where children would have the opportunity to learn about climate change and then enjoy related activities at Bush Terminal Park.

DEVELOPMENT VALUE

The Potential Development Value of a site is the redevelopment cost the market could support without any further intervention. In case redevelopment costs go beyond the potential development value of a site, the financial gap needs to be filled by a public or private subsidy.

BUSH TERMINAL

5102 1st Ave. has the potential to become a multi-use facility with community spaces. Its re-development should take advantage of the site's privileged location overlooking Bush Terminal Park by incorporating a program catered towards workers and visitors. The building is large enough to support first floor retail and restaurant uses, community resources such as a climate change learning space and flexible office/industrial space in its upper floors. The redevelopment of this site will support the activation of the Park and creation of a dynamic employment center. The Green Building Exchange case study illustrates a fully redeveloped example.



/ Site Characteristics

1. Site area: 1,307,250 SF
2. Building area: 659,725 SF
3. Number of stories: 7
4. Current owner: NYCEDC
5. Current state: Partially occupied
6. Current use: Warehousing
7. Former use: Warehousing
8. Current zoning: M3-1

/ Potential Environmental Issues:

1. Fill material consisting of unregulated material exists beneath the surface of the site.
2. Soil and groundwater beneath the site have been impacted
3. The site is in close proximity to various manufacturing and industrial facilities.
4. A portion of the site was formerly a railroad yard. If trains were serviced in this area, the subsurface may have been impacted.
5. Based on the age of the building, lead-based paint and asbestos containing materials are suspected to exist within the building.

/ Proposed Program

Multi-use facility with community spaces overlooking Bush Terminal Park.

/ Key Assets

1. Proximity to the park together with relatively low rents could be attractive for office tenants.
2. Restaurant/café would be essential to serve the working community.

3. Retail space could be supported by workers and visitors to Bush Terminal Park.
4. Green business incubator would need to provide low rents to be competitive with rents at other City owned properties.

/ Development Value

The site could support redevelopment costs of up to \$72 per square feet and still meet investor's expectations. In the case of higher costs, the gap would need to be addressed through subsidies.

/ Potential Partnerships and Funding Opportunities

1. New York City Economic Development Corporation
2. New York City Department of Buildings
3. Port Authority of New York and New Jersey
4. Cultural institution focusing on environmental education.
5. Local restaurant owner

Federal Funding

1. New Market Tax Credits
2. EB-5 Regional Center low-cost financing
3. EPA site assessment and clean up grants

New York State

1. Brownfield Cleanup Program Tax Credits*
2. NYSERDA New Construction Program

New York City

1. Mayor's Office of Environmental Remediation (MOER) Brownfield Incentive Grants
2. Industrial and Commercial Abatement Program
3. Energy Cost Savings Program

*The Brownfield Cleanup Program Tax Credit expires in 2015.

GREEN EXCHANGE CASE STUDY

The Green Exchange is a private historic adaptive reuse project of a 95 year old former industrial 272,000 sf building. Its size and location in former industrial area provides several similarities to the AM Cosmetics Building and Bush Terminal. Baum Development designed the project following a “triple bottom line” approach (people, profit, and planet). It is mainly a private venture but received a \$500,000 Federal grant.

The project seeks to provide new high-quality jobs in an economically and environmentally sustainable way by attracting a community of green-minded companies. These companies benefit from shared resources, a collaborative environment and shared referrals. The building opened in 2011 and is currently 86 percent leased, hosting a wide range of companies such as Green Choice Bank (a bank that focuses on green investments), Distant Village (a packaging manufacturer that uses recycled materials), and Coyote Logistics (which focuses on reducing carbon emissions by matching load to trucks who would otherwise return empty to their base). The Green Exchange Building is expected to host 1,500 to 2,000 jobs when fully leased. As in conventional real estate projects, the identification of an anchor tenant, in this case Coyote, was key for the financial viability of the project.

Building Characteristics

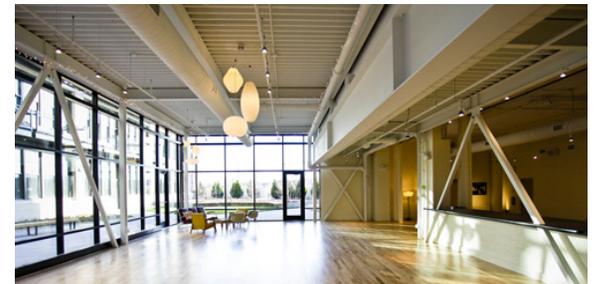
- Four-story 272,000 SF former factory.
- Leadership in Energy and Environmental Design (LEED) Platinum standards.
- Green rooftop and 8,000 SF sky organic garden.
- 41,000-gallon rain cistern and 90 solar panels.
- Three types of spaces available for lease:
 - Small office space: 150SF to 900 SF
 - Office Space: 1,000 SF and up
 - Retail Space: 1,000 to 15,000 SF

Services and Amenities

- On-site restaurant.
- Event Space.
- Shared conference rooms with AV capabilities.
- Energy savings of 22%.
- High-speed Internet access.
- Bike room and showers.
- On-site parking.
- Networking events.

Key lessons for Sunset Park:

- There is demand from businesses to develop sustainable business communities.
- Clustering adds value to sustainable businesses.
- Triple bottom projects can be profitable.
- Former industrial buildings and brownfield sites provide an appealing location for triple bottom developers.
- Identifying an anchor tenant is crucial for the financial feasibility of redevelopment projects.



BUSH TERMINAL

38 43rd Street serves as the gateway to Bush Terminal. Its redevelopment will play a key role in increasing Bush Terminal appeal for business and visitors. The site has the potential to serve as a showcase for local artisanal products that are produced in the building. Such a program would create new jobs as well as serve local workers and visitors. The redevelopment of this site will enhance the connection between the neighborhood and Bush Terminal by creating a hub of activity at the gateway through retail and artisanal uses.



/ Site Characteristics

1. Site area: 407,250 SF
2. Building Area: 25,396 SF
3. Number of Stories: 2
4. Current owner: New York City Department of Business
5. Current State: Vacant
6. Current use: N/A
7. Former use: Warehousing
8. Current zoning: M3-1

/ Potential Environmental Issues:

1. Fill material consisting of unregulated material exists beneath the surface of the site.
2. Soil and groundwater beneath the site have been impacted
3. The site is in close proximity to various manufacturing and industrial facilities.
4. A portion of the site was formerly a railroad yard. If trains were serviced in this area, the subsurface may have been impacted by this use.
5. Based on the age of the building, lead-based paint and asbestos containing materials are suspected to exist within the building.

/ Proposed Program

Small manufacturing center that is part of the gateway to Bush Terminal.

/ Key Assets

1. Site is strategically located at the entrance to Bush Terminal.
2. Building will be exposed to an increased

flow of people when Bush Terminal Park opens.

3. First floor could support artisanal manufacturing. A related retail space targeted to park visitors could also be feasible (e.g., if specialty food is produced a small selling area could be incorporated into the program)
4. Second floor could be used as office or flexible space.

/ Development Value

38 43rd Street could support redevelopment costs of up to \$52 per square feet and still meet investors' expectations. In the case of higher costs, the gap would need to be addressed through subsidies.

/ Potential Partnerships and Funding Opportunities

1. New York City Economic Development Corporation.

Federal Funding

1. New Market Tax Credits
2. EB-5 Regional Center low-cost financing
3. EPA site assessment and clean up grants

New York State

1. Brownfield Cleanup Program Tax Credits*
2. NYSERDA New Construction Program

New York City

1. MOER Brownfield Incentive Grants
2. Industrial and Commercial Abatement Program
3. Energy Cost Savings Program

*The Brownfield Cleanup Program Tax Credit expires in 2015.



Figure 84: Rendering of redevelopment site on 43rd Street

AM COSMETICS

PANYNJ identified the AM Cosmetics building as a potential site on which to establish a green business incubator. The building's generous floor plates provide space to host a large number of small start-ups firms that would share conference rooms and other public areas. A similar project privately developed in Chicago (The GreenExchange) proves that market demand for sustainable office space can be stimulated in the right conditions. The redevelopment of the AM Cosmetics building as a green business incubator would help brand the BOA as a regional hub of green business activity. Over the long term, it could stimulate demand for additional development in the BOA as businesses grow out of the incubator and seek additional space.



/ Site Characteristics

1. Site area: 48,800 SF
2. Building Area: 374,240 SF
3. Number of Stories: 8
4. Current owner: 22-26 Bush Terminal/ Industry City Associates/Arthur Matney Co.
5. Current State: Partially Occupied
6. Current use: Manufacturing/Warehousing
7. Former use: Manufacturing
8. Current zoning: M3-1

/ Potential Environmental Issues:

1. Fill material consisting of unregulated material exists beneath the surface.
2. Operations at the site has been reported to release acetone into the air, which may continue.
3. The site is listed in the NYSDEC PBS
4. The site has operated as a manufacturing center for a number of years.
5. Based on age of the building, lead-based paint and ACM are suspected to exist within the building

/ Proposed Program

Sustainable and green business cluster. Given the partially occupied status of the building, the proposed program is designed for 50% of the building.

/ Key Assets

1. PANYNJ has identified the property as a potential venue for the establishment of a green business incubator.
2. Such a project would provide subsidized

rents to businesses focusing on green and sustainable practices.

3. The location is large enough to allow for on-site business growth.
4. Companies located at the facility would benefit from shared spaces and networking opportunities.

/ Development Value

Given the subsidized rents required to install a green business incubator, AM Cosmetics, could support redevelopment costs of up to \$48 per square feet and still meet investor's expectations.

/ Potential Partnerships and Funding Opportunities

1. NYCEDC
2. PANYNJ
3. Foundations and investment firms focusing on encouraging green business.
4. Baum Development, developer of Chicago's Green Exchange Building.
5. Small Business Services

Federal Funding

1. New Market Tax Credits
2. EB-5 Regional Center low-cost financing
3. EPA site assessment and clean up grants

New York State

1. Brownfield Cleanup Program Tax Credits*
2. NYSERDA New Construction Program

New York City

1. MOER Brownfield Incentive Grants
2. Industrial and Commercial Abatement Program
3. Energy Cost Savings Program

*The Brownfield Cleanup Program Tax Credit expires in 2015.

MOORE McCORMACK

The Moore McCormack property includes open space with direct access to 3rd Ave. These characteristics make it ideal for combining community uses with retail and office programs. The first floor of the building could accommodate retail fronting 3rd Avenue. The back side and open space would be available for community uses. The top floors could be redeveloped into flexible spaces targeted towards office and niche manufacturing uses. The redevelopment of this property for commercial uses with community space would provide another waterfront access point to Sunset Park residents.

In June 2012 NYCEDC released a rolling RFP for proposals to lease the site with the goal of supporting the growth and retention of industrial businesses.



/ Site Characteristics

1. Site area: 808,022 SF
2. Building Area: 70,000 SF
3. Number of Stories: 3
4. Current owner: New York City Department of General Services
5. Current State: Vacant
6. Current use: N/A
7. Former use: Manufacturing / Chemical Bulk Storage
8. Current zoning: M1-2

/ Potential Environmental Issues:

1. Fill material consisting of unregulated material exists beneath the surface.
2. Site may have been used in electric generation activities associated with the New York Power Authority.
3. The site is adjacent to what appears to be an active power plant.
4. The site is in close proximity to various manufacturing and industrial facilities.
5. Lead-based paint and asbestos containing materials are suspected to exist in building.

/ Proposed Program

Waterfront facing, medium scale commercial and community space. The proposed program incorporates demolition of 3 warehouses (15,000 SF total) located at the back of the site to make it available as community open space.

/ Key Assets

1. Access to water and available open space makes the location ideal for establishing a

- community/educational facility on the first floor of the front building.
2. Zoning regulation allows only for a small amount of first floor retail facing 3rd Avenue.
3. Upper floors could be used for manufacturing or offices activities.

/ Development Value

The Moore McCormack building, could support redevelopment costs of up to \$77 per square feet and still meet investors' expectations. In the case of higher costs, the gap would need to be addressed through subsidies.

/ Potential Partnerships and Funding Opportunities

1. NYCEDC
2. NYC Department of Buildings
3. PANYNJ
4. Cultural institution focusing on environmental education.
5. Local restaurant owner
6. NYC Small Business Services
7. New York Power Authority

Federal Funding

1. New Market Tax Credits
2. EB-5 Regional Center low-cost financing
3. EPA site assessment and clean up grants

New York State

1. Brownfield Cleanup Program Tax Credits*
2. NYSERDA New Construction Program

New York City

1. MOER Brownfield Incentive Grants
2. Industrial, Commercial Abatement Program
3. Energy Cost Savings Program

*The Brownfield Cleanup Program Tax Credit expires in 2015.

PRIORITY SITES REDEVELOPMENT AND ALIGNMENT WITH REDC GOALS

	Bush Terminal 5201 1st Ave.	Bush Terminal 38 43rd St.	AM Cosmetics Building	Moore Mc Cormack Site
Improving Quality of Life				
Public Safety _____	X	X		
Education _____	X	X		
Parks and waterfront _____	X	X		X
Cultural institutions _____	X			X
Sanitation _____				
Clean air and waterfront _____				
Diverse and thriving neighborhoods _____	X	X	X	X
Create a Pro Growth, Pro Jobs Environment				
Treating businesses like customers _____				
Neighborhood and commercial revitalization _____	X	X	X	X
Supporting small businesses _____	X	X	X	X
Supporting strategic industries _____	X		X	
Invest in the Future				
Transportation _____				
Housing _____				
Commercial real estate _____				X
Distribution networks _____				
Other infrastructure _____	X		X	
Supporting human capital and development _____	X		X	
Foster Innovation and Inter-Regional Cooperation				
Real estate _____	X	X	X	
Access to early stage capital _____				
Talent _____	X		X	

/ REDC Alignment

The redevelopment strategies for each of the priority sites described above is closely aligned with the goals of the Regional Economic Development Council (REDC), which supports and develops long-term strategic plans for economic growth by putting in place community based bottom up approach. The council can provide a critical source of capital and planning funds for the redevelopment opportunities in the BOA and was identified as one of the Opportunity Zones in the initial 2011 5-year plan. Recently, the REDC approved \$600,000 to develop the Sunset Park Upland Connector, connecting the upland community and the Sunset Park to the waterfront (see Figure 85 on page 118). This funding is leveraging an additional \$600,000 in funding from local city council member to DOT. The total \$1.2M grant will go toward streetscape improvements and will establish pedestrian and bicycle connectivity to the Bush Terminal Park and the Brooklyn Waterfront Greenway.

The four priority sites and their alignment with the REDC goals is detailed below.

- 1. Bush Terminal- 5201 1st Ave:** The proposed programming for 5201 1st Ave aligns with all four of the overarching Regional Economic Development Council (REDC) goals. The proposed multi-use facility program will “improve quality of life” by providing education and cultural space; “create a pro-growth pro-jobs environment” by supporting small businesses and

strategic industries; “invest in the future” through the development of human capital; as well as “foster innovation and inter-regional cooperation” by redeveloping real estate and attracting innovation.

2. **Bush Terminal- 38 43rd St:** The redevelopment of the 38 43rd St property aligns with the REDC goal to create a pro-growth, pro-job environment. The proposed artisanal manufacturing center and showroom will support small businesses and lead to further neighborhood and industrial revitalization.
3. **AM Cosmetics Building:** The proposed redevelopment of the AM Cosmetics Building as a green incubator space aligns with the REDC goals of investing in the future, creating a pro-growth pro jobs environment, as well as fostering innovation and inter-regional cooperation. The proposed green industry clusters will support small businesses, human capital development and attract talent for further neighborhood and industrial revitalization.
4. **Moore McCormack Building:** The redevelopment of Moore-McCormack aligns with the REDC goal of improving quality of life. The proposed program will provide additional cultural space, and access to the waterfront for a diverse and thriving neighborhood.

In addition to the priority sites, the six goals determined by the community for the Sunset Park BOA also further REDC’s long term vision. These goals have formed the basis for the area wide redevelopment framework and strategies that are detailed in the following pages.

AREA WIDE REDEVELOPMENT FRAMEWORK AND ALIGNMENT WITH REDC GOALS

Community Goal	Alignment with REDC Goal:
Increase job opportunities for local residents especially through the encouragement of sustainable industry and green jobs.	Creates a pro-growth, and pro-jobs environment, as it seeks to attract innovative industries to assist in industrial and community revitalization.
Decrease environmental hazards and facilitate the remediation and redevelopment of key brownfield properties in the BOA study area.	Improves quality of life; it aims to encourage and support redevelopment of industries that will in turn support a diverse and thriving neighborhood.
Work with area businesses, the City and the State to develop environmentally friendly business practices.	Fosters innovation and inter-regional cooperation, as well as investing in the future by establishing clusters of innovative industries through the reuse of existing real estate that will draw upon concentrations of talent.
Create public access links to BOA waterfront.	Improves quality of life, as it aims to increase access to recreation and green space, and options in transportation for residents, workers as well as visitors.
Preserve existing affordable housing and encourage new housing development on brownfield sites where appropriate.	Invests in the future, as it seeks to ensure lifestyle assets through the development and preservation of infrastructure for generations to come.
Build for greater climate resiliency	Improves quality of life by creating a more sustainable and clean environment.

1/

INCREASE JOB OPPORTUNITIES FOR LOCAL RESIDENTS ESPECIALLY THROUGH THE ENCOURAGEMENT OF SUSTAINABLE INDUSTRY AND GREEN JOBS

/ Key Findings

1. Despite a substantial decline in jobs in the health care and traditional industrial sectors, overall employment in the BOA stayed relatively stable due to incremental growth in a range of other non-industrial sectors, including professional services and education.
2. The BOA will benefit from substantial government investment in the Brooklyn Army Terminal, South Brooklyn Marine Terminal, Bush Terminal Park, and the rail line extension.
3. The BOA has several strong anchor institutions and businesses that can support additional growth through suppliers and/or customers.
4. Future employment growth in the BOA is dependent upon the re-use and re-positioning of industrial real estate that may need to be reconfigured for growing, modern businesses.
5. The Sunset Park community values its status as a “live-work” neighborhood, but many residents still commute to higher paying jobs in Downtown Brooklyn and Lower Manhattan. Maintaining and growing a live-work neighborhood requires the development of new employment opportunities at a range of skill levels.

/ Key Recommendations

- A. Facilitate skill development in neighborhood residents to meet the needs of growing industries in the BOA.
- B. Define and market the key assets within the BOA.
- C. Facilitate exchanges among existing businesses to identify potential new businesses for the BOA.
- D. Encourage new economic opportunities within the existing building stock.
- E. Explore zoning mechanisms that allow property owners, including the City, to realize the full development potential of their investments while bringing economic benefit to the BOA.

DETAILED RECOMMENDATIONS

A. Facilitate skill development in neighborhood residents to meet the needs of growing industries in the BOA.

While the BOA will continue to be an important industrial center through its designation as an IBZ, the distribution of employment within the BOA nonetheless reflects macroeconomic trends with diversification away from primarily industrial uses. In order to continue to be known as a “walk to work” community, the skill levels in the neighborhood must evolve to meet the skills required by new industries in the BOA. This can best be accomplished by the establishment of workforce development programs as well as supporting existing programs that help Sunset Park residents gain skills to match future job demands. There are a number of existing workforce development programs available to people of a range of backgrounds and ages, including programs specific to youth. These help employees learn computer skills, create resumes, learn job search techniques, and learn specific job skills, such as health care record management. The local employment base for residents could be enhanced if existing programs expanded opportunities for apprenticeships with local businesses and specialized skills training. In addition to connecting potential employees with businesses, these types of programs provide tailored training that is difficult to obtain in a general classroom setting.

B. Define and market the key assets within the BOA.

The BOA is one of few dedicated industrial areas in New York City with waterfront, rail, and road assets. In addition, it has strong community amenities with the new Bush Terminal Park, Medical Center, and adjacency to a thriving neighborhood. Finally, it benefits from significant government investment in SBMT, BAT, and the Brooklyn Greenway. However, many people outside of the immediate area are not aware of the neighborhood’s significant assets. The redevelopment of at least one priority site, in conjunction with other marketing efforts, could help start to brand the BOA as an innovative location for business growth.

C. Facilitate exchanges among existing businesses to identify potential new businesses for the BOA.

A dialogue between the community, existing businesses and with business outside the BOA can promote partnerships and growth opportunities. Discussions with existing businesses can help tease out opportunities for customers or suppliers to locate in the BOA. These conversations can also identify how existing businesses can promote growth through shared resource networks. Sims recycling presents growth opportunity that should be explored further. Sims produces plastic material from old bottles, but all of this material is shipped out of state. The BOA could support additional businesses that use the material to produce new products. Entities such

as SBIDC could play a role in helping develop new businesses by understanding the growth needs of existing businesses and space/asset needs of new ones.

D. Encourage new economic opportunities within the existing building stock.

The market-based studies for the BOA show an increasing demand for small niche manufacturing, food production and design spaces. Existing historical warehouses offer good potential space for these businesses. Furthermore, these new kinds of businesses can potentially be developed in connection with retail space or showrooms. This hybrid approach of niche manufacturing and showroom can increase foot traffic in the area and further improve public realm and amenities that will help draw businesses into these spaces. Federal Building 2, currently under development, is exploring a similar kind of approach.

E. Explore zoning mechanisms that allow property owners, including the City, to realize the full development potential of their investments while bringing economic benefit to the BOA.

Zoning accommodates retail around Lutheran Medical Center through a C1-3 commercial district. Current zoning regulations would also allow for more retail uses in the M1 districts between 2nd and 3rd Avenues. Within limitations that support the goal of maintaining and growing industrial jobs, commercial uses can add amenities, jobs and accessibility to the Sunset Park waterfront industrial area.

PRIORITIES

ACTIONS

1. Increase awareness about the diverse industrial assets in the BOA by:
 - Compiling and updating a handbook of existing real estate, funding opportunities, contacts, and information on nature of business
 - Conducting workshops, tours and forums for business owners interested in locating within BOA
 - Conducting a study of building typologies and their reuse potential
2. Work with municipal agencies to provide incubation spaces and encourage green industries to locate within the BOA.
3. Partner with major investors and provide early input on large scale industrial developments like potential Bush Terminal industrial campus to ensure that these investments also represent needs of BOA residents.
4. Form a community coalition that includes BOA investors and developers to catalyze key redevelopments and ensure balance between needs of industries and residents and workers.
5. Connect Sims Recycling with BOA manufacturers who can use recycled materials.

PROJECTS

1. Reuse of Bush Terminal and A M Cosmetics strategic sites as incubators to provide low-cost start up space for small scale industries.
2. Partner with East of Hollywood Studios to determine feasibility of redevelopment of E. W. Bliss Building and secure funding for clean up.
3. Develop hybrid niche manufacturing / showroom spaces in A M Cosmetics and Bush Terminal gateway sites at 43rd Street.

FUNDING and PARTNERSHIPS

FUNDING

Federal

1. New Market Tax Credits
2. EB-5 Regional Center low-cost financing

New York State

1. NYSERDA New Construction Program

New York City

1. Industrial and Commercial Abatement Program

POTENTIAL PARTNERSHIPS

1. New York City Economic Development Corporation
2. Port Authority of New York and New Jersey
3. Cultural institutions focusing on environmental education
4. Local businesses looking to expand
5. Local resident community and workers
6. Cultural and arts institutions like Groundswell

2/

DECREASE ENVIRONMENTAL HAZARDS AND FACILITATE THE REMEDIATION AND REDEVELOPMENT OF KEY BROWNFIELD PROPERTIES IN THE BOA.

/ Key Findings

1. Approximately 91 parcels are underlain with historic fill material, which may contain PAHs and metals.
2. Several strategic sites are known or suspected to have contaminated structures as well as soil and groundwater containing varying concentrations of VOCs, SVOCs, PCBs and metals.
3. Unknown costs associated with clean up of brownfield sites poses a barrier to redevelopment.
4. Heavy freight movement dependent on conventional fuel sources degrades the air quality and risks incidence of respiratory disorders for BOA workers and residents.
5. Contaminated surface runoff may be degrading the water quality of New York Harbor.

A. Partner with local developers, key municipal organizations and interested owners to spur key catalytic redevelopment opportunities.

While the BOA contains a number of assets, redevelopment is still financially challenging due to the age of the building stock and the possible and / or confirmed presence of environmental contamination. Thus, it is challenging for any

/ Key Recommendations

- A. Partner with local developers, key municipal organizations and interested owners to spur key catalytic redevelopment opportunities.
- B. On strategic sites, determine nature and extent of contamination and quantify costs for remediation through Phase I and Phase II investigative work.
- C. Explore more sustainable environmental remediation techniques for cleanup
- D. Encourage the use of transportation and energy with the lowest environmental impact in the area.
- E. Implement stormwater mitigation techniques to reduce contaminated stormwater runoff (see Recommendation 6)

organization to “go it alone” in undertaking redevelopment efforts. There should be a dialogue between private sector organizations demonstrating interest in the BOA and agencies such as NYCEDC, PANYNJ, and the DOS to understand how the public sector can enhance private sector redevelopment efforts.

DETAILED RECOMMENDATIONS

B. On strategic sites, determine nature and extent of contamination and quantify costs for remediation through Phase I and Phase II investigative work.

A preliminary evaluation of the strategic sites indicates the confirmed presence of a wide range of contaminants on several sites (including PCBs, SVOCs and metals) and the suspected presence of contamination (petroleum and urban fill related) on other sites. However, potential remediation costs have not been quantified and must be for redevelopment to move forward. Phase I ESAs will be required for all redevelopment sites followed by Phase II ESAs where necessary to define the nature and extent of contamination and issues of concern. A Brownfield remediation program should be developed based upon information obtained from Phase I and Phase II ESAs and the end-use/redevelopment scenarios for each site. Redevelopment strategies such as hybrid uses and alternative zoning mechanisms described in Goal 1/ can potentially be used as incentives and help reduce overall re-development costs.

C. Explore more sustainable environmental remediation techniques for cleanup.

Traditional remediation techniques can be energy intensive and create significant carbon footprints and cause environmental degradation even as soil and groundwater contamination are cleaned up. Where possible, more sustainable remediation techniques that seek to reduce energy consumption (by using wind and solar power) and green house gas emissions and

incorporate water conservation measures should be considered.

D. Encourage the use of transportation and energy with the lowest environmental impact in the area.

The Sunset Park rail spur is benefiting from a major City investment. Future development in the area should seek to leverage this asset to reduce highly polluting truck traffic. City agencies should continue to support and advocate for maritime dependent industries at the Sunset Park waterfront. There is also the possibility of increasing the use of alternative energy through the potential development of a new anaerobic digestion plant at Sims and the installation of wind turbines on industrial buildings.

PRIORITIES

ACTIONS

1. Conduct a Phase I ESA and determine nature and extent of contamination and need for regulatory oversight of investigation/remediation activities on all sites scheduled for redevelopment.
2. Develop cost-effective remediation programs based on the nature and extent of contamination as well as the end-use for each site.

PROJECTS

1. Determine schedule for cleanup of E W Bliss Building and analyze feasibility of employing alternative remediation techniques to preserve the site.
2. Determine need for additional remediation on Bush Terminal site.
3. Conduct Phase I ESA on strategic sites and determine need for Phase II ESA
4. Advocate for electric vehicle (EV) charging station at Verizon site and encourage Verizon to utilize their new electric vehicles at this facility. Create additional sites for EV charging (e.g. Bush Terminal and SBMT).

FUNDING and PARTNERSHIPS

1. Office of Environmental Remediation
2. NYC Department of Environmental Protection
3. New York State Environmental Facilities Corporation
4. EPA grant program: Community Action for a Renewed Environment (CARE)
5. EPA Site Assessment and Cleanup Grants

3/

PROMOTE ENVIRONMENTALLY FRIENDLY BUSINESS PRACTICES

/ Key Findings

1. Green businesses include both those that develop and market green products as well as those that use green business practices.
2. The City and State have undertaken several environmental policy initiatives that could support development efforts in the BOA.

/ Key Recommendations

- A. Brand the area as a green business cluster.
- B. Work with City and State governments to promote environmentally friendly business practices.

DETAILED RECOMMENDATIONS

A. Brand the area as a green business cluster.

The Sunset Park neighborhood benefits from several major and growing green businesses with SIMS recycling and AXIS automotive. The BOA may also be home to the world's largest rooftop farm that is planned atop the renovated Federal Building #2. The success of these businesses and plans for the future demonstrates the potential for green business growth. Further, this growth could be accelerated if the PANYNJ advances its plans to develop a green business incubator. This type of facility would support the BOA's green brand and attract new businesses. Further a broad definition of green business should be embraced; it should include businesses that manufacture green products and businesses that utilize green processes that can be shared with others. For example, within the BOA neighborhood Verizon could develop a green vehicle charging center for both its vehicles and others.

B. Work with City and State governments to promote environmentally friendly business practices.

Both New York City and New York State governments have undertaken a number of initiatives that spur the growth of green businesses. For example, the City adopted a greener greater buildings plan that requires large buildings to annually benchmark their energy performance. Across industries, owners and tenants are realizing the value of energy efficiency measures. As the BOA is home to a number of construction firms, these firms could benefit by adopting green construction practices, installing energy efficiency measures, and promoting green design practices. Building owners in the BOA could install solar panels and benefit from state and federal tax incentives. Finally, buildings in the BOA could support wind turbines, which are now permitted under a recent zoning change to promote green uses.

PRIORITIES

ACTIONS

1. Encourage the conversion to alternative fuel trucks and support alternative fuel stations and charging infrastructures.
2. Support the initial stages of an eco-industrial park that starts with practical steps such as area-wide stormwater management approaches, coordinated waste management, and coordinated truck movements where possible.
3. Support the evaluation of existing facilities to understand how to make them more energy efficient through improvements, such as:
 - (a) Rationalized industrial processes
 - (b) Retrofits to existing buildings
 - (c) Addition of renewable energy technologies.

PROJECTS

1. Coordinate free energy audits of existing businesses.
2. Encourage NYCEDC, as a key landowner of Bush Terminal and South Brooklyn Marine Terminal, to take the lead on an area-wide stormwater management approach.
3. Support the growth of businesses related to anchor tenants such as SIMS recycling and AXIS automotive. This will encourage green business clusters within the BOA which in turn will help attract more green businesses to the area.
4. Work with PANY/NJ to promote green incubator at AM Cosmetics Building.

FUNDING and PARTNERSHIPS

FUNDING

Federal

1. US DOE Energy Efficiency and Renewable Energy Program
2. EPA Pollution Prevention Grants
3. National Science Foundation

New York State

1. NYSERDA Industrial and Process Efficiency Program
2. NYSERDA Existing Facilities Program (for Small Simple Equipment Changeouts and Large Custom Improvements)
3. FlexTech Program
4. NY Truck Voucher Incentive Program
5. Green Jobs-Green New York Program
6. Green Innovation Grants (New York State Environmental Facilities Corporation)
7. Industrial Finance Program (New York State Environmental Facilities Corporation)

New York City

1. New York City Energy Efficiency Corporation Programs
2. Energy Cost Savings Program (NYC Dept. of Small Business Services)

4/

CREATE PUBLIC ACCESS LINKS TO BOA WATERFRONT

/ Key Findings

1. There has been a significant amount of investment at the Bush Terminal Piers and Park sites, but accessibility remains challenging
2. The waterfront is a precious public realm amenity for neighborhood residents and workers. But the development of sorely needed open space and parks along the waterfront is challenged by the predominance of industrial uses, utilities and terminal infrastructure.
3. Streetscapes within the BOA are all designed and suited for vehicular movement, with most of them being dominated by loading docks and in some cases lacking sidewalks altogether. Blank industrial facades that are mostly opaque add to the uninviting pedestrian environment.
4. Currently there are high instances of vehicular and pedestrian conflicts close to all subway stops and under the Gowanus Expressway indicating that the western boundary of the BOA is a major barrier for workers and residents who want to cross 3rd Avenue to get to the BOA area.
5. Sunset Park BOA has rich architectural resources that create interesting “places” in the BOA and are worthy of restoration and preservation.

/ Key Recommendations

- A. Encourage mobility by creating safe environments for both pedestrians and bicyclists.
- B. Establish waterfront as a public realm destination
- C. Revitalize industrial-commercial corridors for a dynamic and compatible mix of industry, services and retail.
- D. Increase public transportation accessibility for workers and residents.
- E. Capitalize on historic resources and create more places within the BOA that are inviting for residents and workers.

DETAILED RECOMMENDATIONS

A) Encourage mobility by creating safe environments for both pedestrians and bicyclists.

One of the BOA's assets is its rich infrastructure for multimodal freight movement, well connected with the region's distribution system. However, this infrastructure is also an impediment to safe pedestrian and bicyclist movement in the BOA. Measures should be taken to address challenging conditions through a set of street improvements targeted to key entrances to the BOA. These locations include 3rd Avenue's intersections with 24th, 30th, 36th, 39th, 42nd, 43rd, 50th, 51st, 52nd, 58th and 59th Streets, which need increased lighting, proper crosswalk marking, pedestrian refuge islands and extensions to reduce crosswalk distances. In addition, these streets should be studied further for their potential to include bike lanes, bike racks, wider sidewalks, greening and street furniture.

Given potential future plans for rail improvements along 1st Avenue, the area between 43rd and 50th Streets that marks the northern and southern entrances to Bush Terminal Park should be considered a shared street and designed in conjunction with rail improvements. This work would also inform the design of the Greenway and how pedestrian and industrial traffic can coexist.

B) Establish waterfront as a public realm destination.

The waterfront is one of the most valuable public realm assets in the BOA, particularly the new Bush Terminal Park, but remains largely inaccessible primarily because of heavy industrial uses along the waterfront, gated campuses, lack of pedestrian connectivity, and in some cases lack of information about accessibility. Improvements should be prioritized for 24th, 43rd, 50th, 52nd and 58th Streets as key waterfront access points.

These corridors would also link sites at end of 52nd Street, and Piers 5, 6 and 7, and the Moore McCormack Building.

C) Revitalize industrial-commercial corridors for a dynamic and compatible mix of industry, services and retail.

The improvement of mobility and waterfront access in the BOA will provide impetus for an increase in demand for services and retail.

Building on the prioritized corridors for waterfront access, but concentrating on those corridors within the Service and Residential and Small-Scale Business subzones, economic opportunities can be created by connecting access routes and destinations through streetscape, community uses and retail. "Anchoring" these short corridors are the redevelopment sites that are strategically located along pedestrian routes: Bush Terminal, AM Cosmetics and the Verizon Fleet Parking

site. Developing and implementing guidelines for adaptive reuse of existing industrial typologies for ground-floor retail would further enhance a sense of connectivity within these core areas. These ground-floor retail uses could include key services such as food stores or pharmacies that can be complemented by preferential non-retail uses, such as community or health facilities. Once these amenities have been specifically identified for the Sunset Park neighborhood and their economic feasibility has been determined, utilizing a measure - like the open space index developed by New Yorkers for Parks - can provide guidelines for the location of these facilities by providing standards for accessibility, walking distances and catchment areas.

D) Increase public transportation accessibility for workers and residents.

While the BOA is served by three bus routes (B11, B35, and B70), access is limited because they run along the east-west streets, not the north-south avenues. Portions of the BOA are relatively close to four subway stops along 4th Avenue, but high traffic, combined with a poor pedestrian and bicycle environment, have contributed to a high number of conflicts. These factors create an unsafe environment that deters people from entering the neighborhood, even to get to the waterfront. In addition to the improvements suggested earlier, wayfinding signage, bus stops, bike racks and a potential neighborhood shuttle with stops at key subway stops will increase accessibility to public

transportation.

E) Capitalize on historic resources and create more places within the BOA.

As discussed throughout the report, the BOA has a unique industrial history that is an important story to New York City as a whole. As the area is redeveloped, care should be taken when possible to preserve elements of its industrial past. This can be accomplished in several ways. First, key historic assets, such as architectural detail on building facades and critical infrastructure should be preserved, if possible. In addition, efforts should be made to tell the story of the area through signage, information displays in open spaces, and community spaces. These efforts will support the creation of a dynamic, waterfront area that is an attractive place to work and visit.

The following pages illustrate specific design solutions that address a myriad of public realm improvements coordinated with specific recommendations for greater connectivity to the waterfront. Built in these recommendations and solutions for climate adaptation and greater environmental resiliency.

PRIORITIES

ACTIONS

1. Conduct an area wide traffic survey to determine movement of truck traffic and designate truck routes. Enforce the use of designated truck routes to minimize conflicts with pedestrian and bicycle traffic.
2. Conduct a study to determine installation of proper pedestrian and traffic signage throughout the BOA
3. Conduct feasibility study for bike routes on 42nd, 43rd, 50th and 51st Streets.
4. Determine feasibility of a shuttle between subway stops on 4th Avenue and key locations within the BOA.
5. Conduct a study to identify locations within the BOA for preservation, conduct programs to generate more awareness of the history of these areas and install educational signage.

PROJECTS

1. 43rd Street improvements including a green wall with educational signage at the Verizon Parking Lot
2. 24th Street improvements
3. Moore McCormack Strategic Site
4. Improvements at key intersections along 3rd Avenue
5. Repair and preserve cobble stone streets and unused railway lines

FUNDING and PARTNERSHIPS

1. NYCDOT
2. Federal Tiger Grants Program

WATERFRONT CONNECTOR STREETS

1. Plan for pedestrians and bicyclists in the streetscape
2. Introduce convenience and neighborhood retail where possible
3. Restore ecological balance through bioswales, green roofs, green fencing and tree planting to prevent stormwater pooling, clean water and air and reduce heat island effect
4. Introduce green fencing with way finding signage to screen large loading docks.

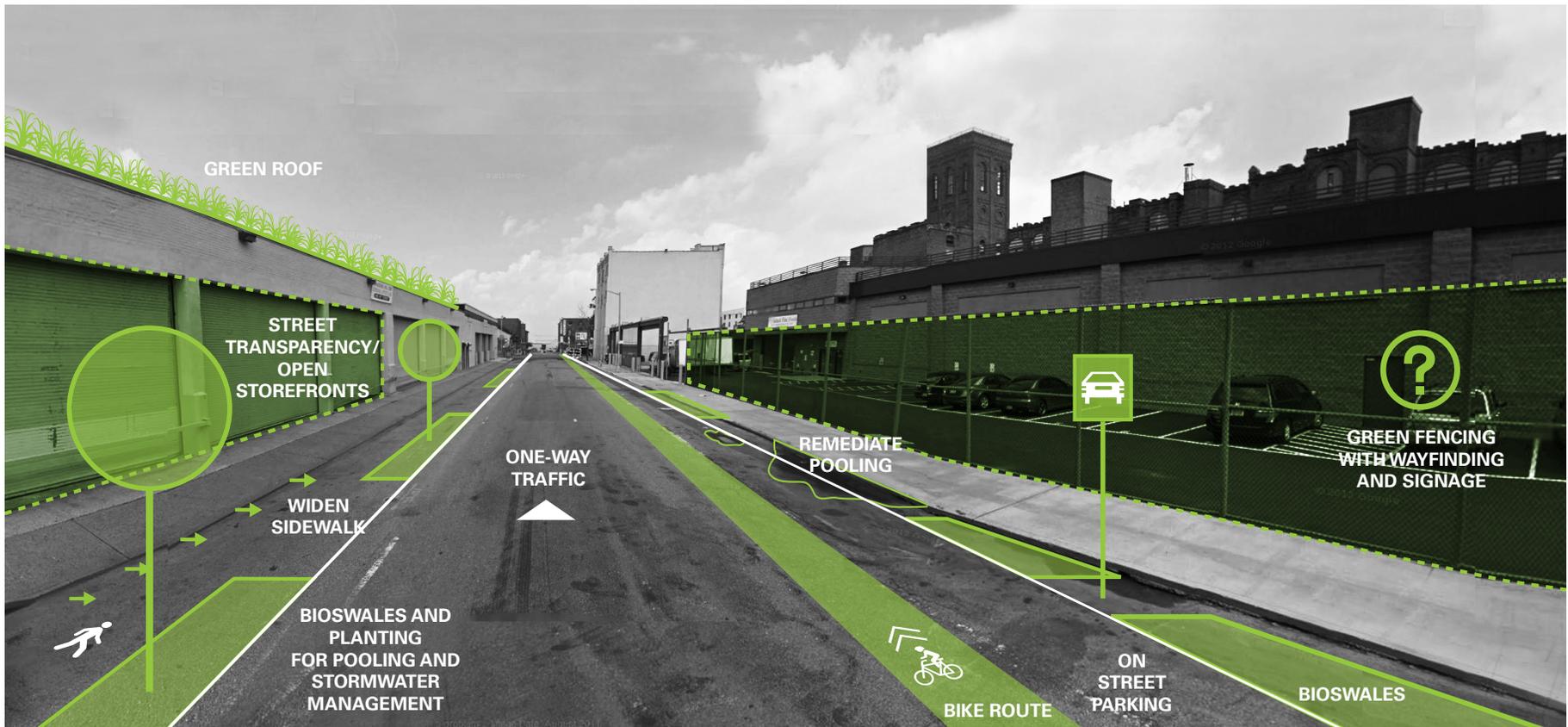


Figure 85: 43rd Street Sunset Park Upland Connector

WATERFRONT OPPORTUNITIES

1. Enhance pedestrian environments on waterfront approach streets through coordinated ecological, public realm and community programming opportunities.
2. Provide public accessibility along waterfront and provide community programming where possible.
3. Restore degrading bulkhead and piers through renaturalization and program for passive recreation

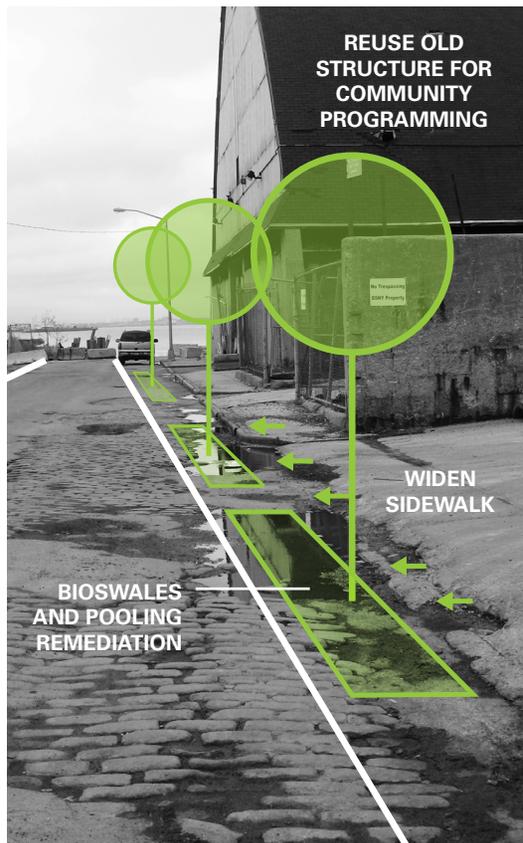


Figure 86: Typical waterfront approach (52nd Street)



Figure 87: Typical edge condition improvements along waterfront

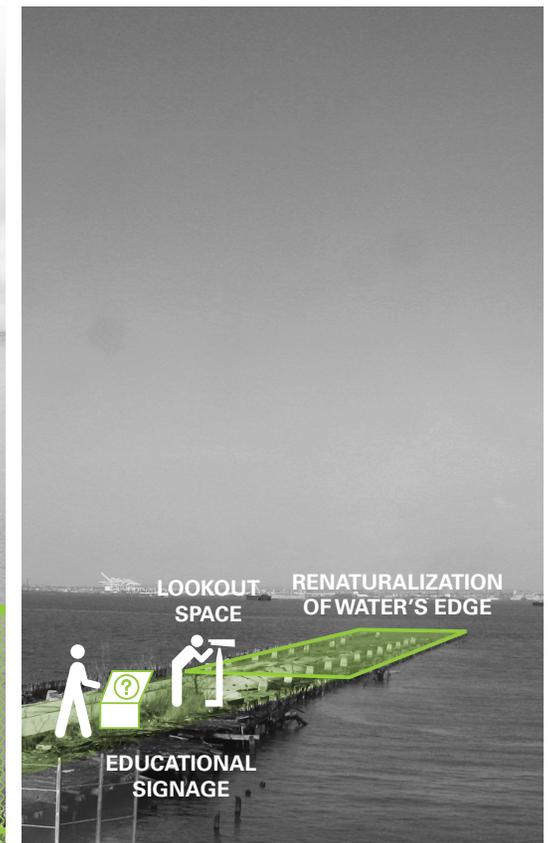


Figure 88: Typical degrading pier improvements

3rd AVENUE IMPROVEMENTS

1. Create safer environment for pedestrians and facilitate E-W movement
 2. Introduce measures to mitigate harsh pedestrian environment under elevated Gowanus Expressway
 3. Prevent pooling by capturing stormwater run off from Gowanus Expressway and treating in bioswales
- through increased lighting and public art

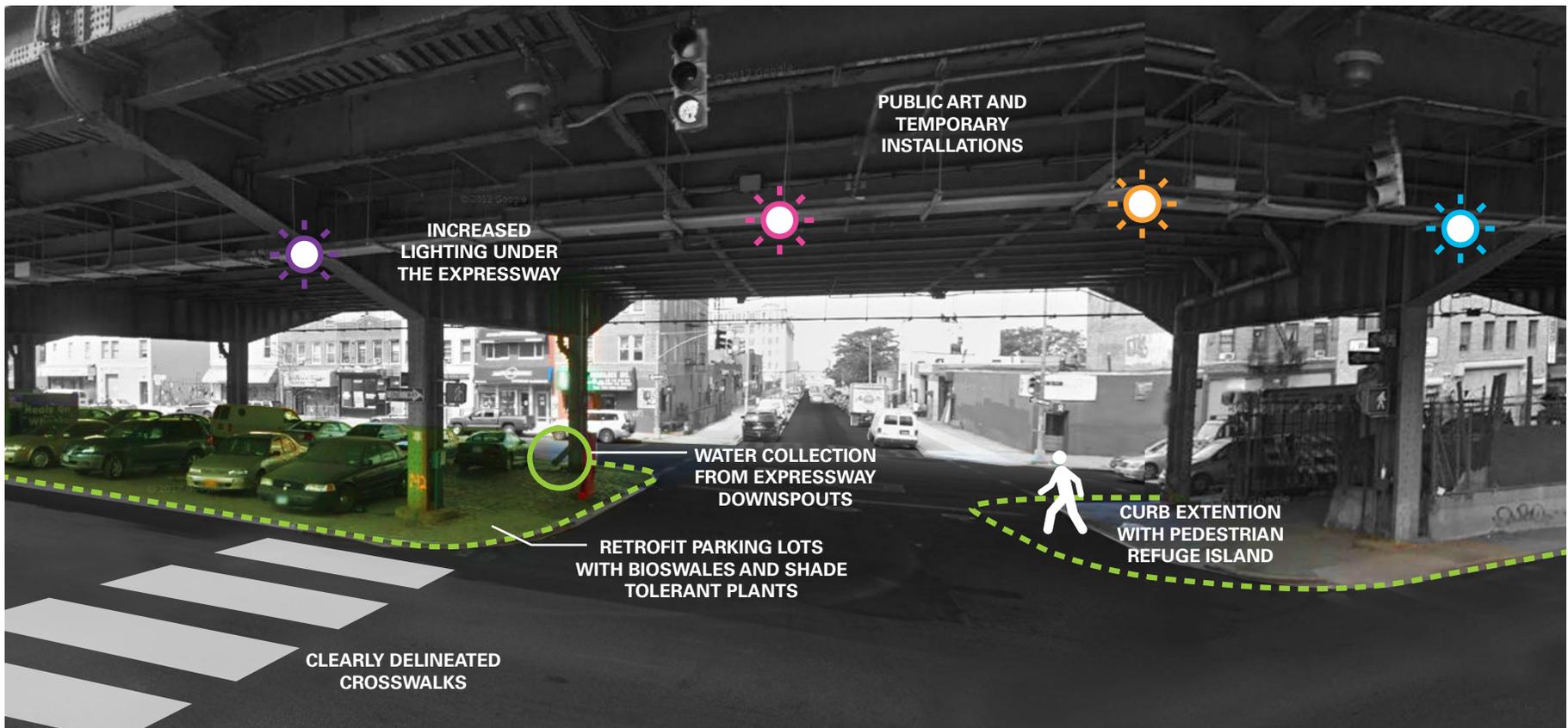


Figure 89: 43rd Street and 3rd Avenue intersection

1. Repurpose incidental spaces for public realm opportunities coordinated with ecological restoration
2. Introduce measures to mitigate harsh pedestrian environment under

elevated Gowanus Expressway through increased lighting and public art

3. Create safe pedestrian environments on 3rd Avenue through planning pedestrian friendly streetscapes

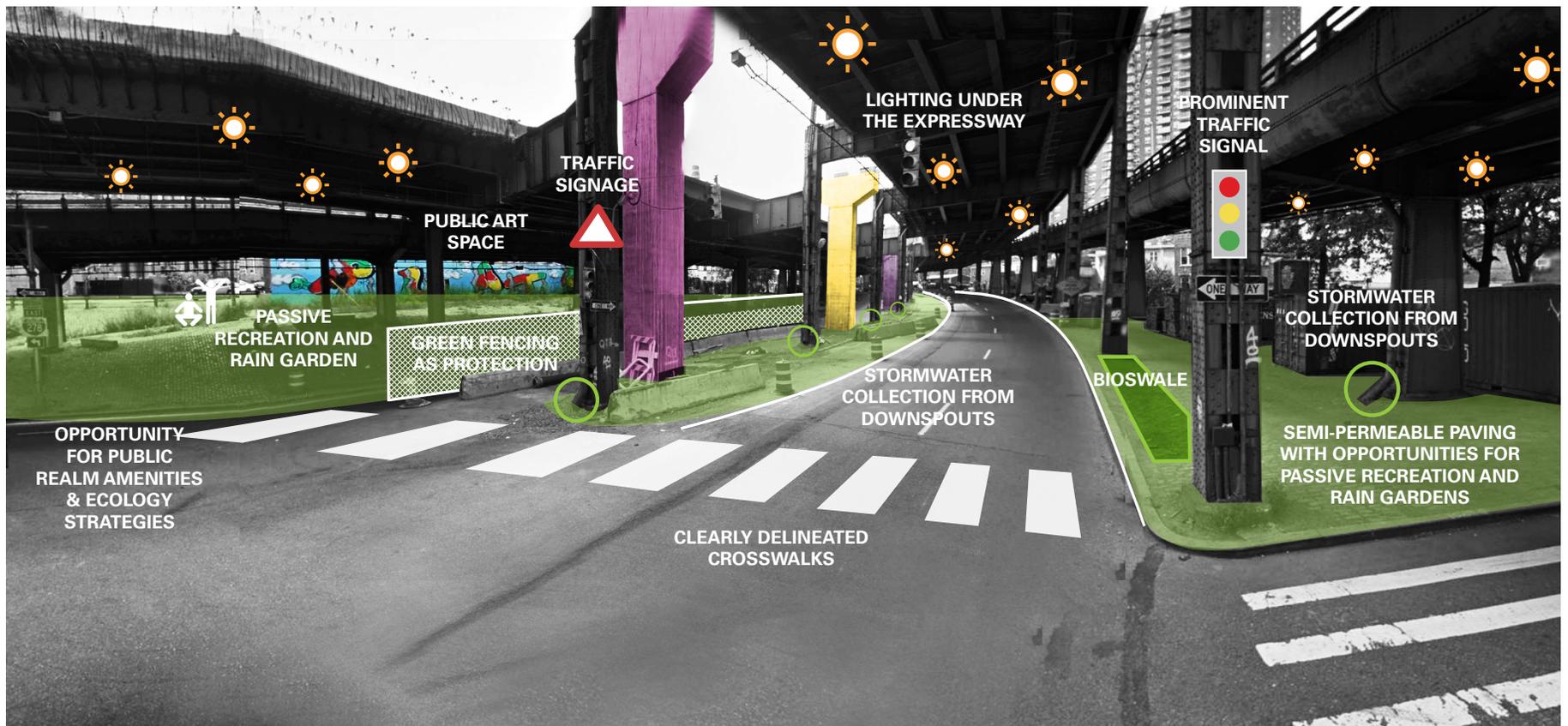


Figure 90: 3rd Avenue under Belt Parkway and Gowanus Expressway

5/

PRESERVE EXISTING AFFORDABLE HOUSING AND ENCOURAGE NEW HOUSING DEVELOPMENTS ON BROWNFIELDS WHERE APPROPRIATE

/ Key Findings

1. While the Sunset Park neighborhood remains more affordable than other parts of Brooklyn, there are growing market pressures that make it challenging for long-time residents to continue to afford the neighborhood.

/ Key Recommendations

- A. Support the development of affordable housing in the BOA on select sites.

The clean up of Brownfield sites, development of clean, green businesses, and other recommended public realm improvements would help improve the residential environment. The development of affordable housing in the BOA would provide a significant resource for the neighborhood and provide residents with more housing options very close to jobs. The proximity could be particularly attractive to staff at Lutheran Medical Center who work non-standard hours. Further, increasing the population density in the BOA could stimulate additional retail development that would help the area transform into a more vibrant location.

Note: Community feedback during the Step 2 process indicated that affordable and senior housing were less a priority than industrial preservation and access to the BOA. Additionally, none of the strategic sites selected in this step of the BOA process seemed appropriate for senior or affordable housing. Therefore, it is assumed that this goal will be addressed with more emphasis in Step 3 of the BOA process.

6/

BUILD FOR GREATER CLIMATE RESILIENCY

/ Key Findings

1. The BOA study area is susceptible to storm surges and flooding and forecasters predict an increase in the frequency of extreme storm events putting Sunset Park at an increased risk of flooding.
2. Originally developed for heavy industries, the BOA is primarily covered with impermeable surfaces that do not allow for stormwater infiltration and contribute to a high amount of runoff. These large swaths of paved surfaces and associated runoff have a number of implications some of which include –
 - Making it difficult to cross 3rd Avenue as downspouts from the Gowanus Expressway discharge runoff directly onto this street, creating unsafe surface ponding conditions for pedestrians
 - Adding to the urban heat island effect
 - Degrading water quality as stormwater carries with it surface contaminants deposited by automobiles, fertilization practices, aerial deposition and trash, which drain into New York Harbor
3. The BOA is no longer active in its role as a permeable floodplain marshland

/ Key Recommendations

- A. Adapt the waterfront and waterfront structures to accommodate/mitigate the effects of storm surges and sea level rise.
- B. Conduct site-wide assessment to determine and categorize sources of runoff and mitigation measures.
- C. Revive waterfront's ecological role in buffering storm surges and sea level rise and in cleaning stormwater runoff by constructing wetlands along the waterfront and diverse habitat niches in upland areas.

A. Adapt the waterfront and waterfront structures to accommodate/mitigate the effects of storm surges and sea level rise.

Adaptation strategies vary somewhat for existing and new construction along the waterfront. Damage from sea level rise and increased storm surges to new and existing buildings and infrastructure can be reduced by constructing hard structures such as levees, seawalls, and dams on the coastline. For new construction, new foundations can be built at elevations above the flood surge zone. For example, recycled glass and crushed rock can be used to raise building foundation above the current 100-year flood plain.

Existing at-risk structures may also be moved further upland and out of the storm surge inundation zones leaving behind intermediate vacant areas that are typically fit with salt marsh, dunes, or other coastal habitat.

A third approach, usually integrated with the use of hard structures and moving at-risk structures is to design for flooding and allow for periodic flooding of structures. In existing buildings, the damage from periodic flooding can be greatly reduced by taking following measures:

1. Relocate electrical and mechanical equipment that are typically located at the basement level, to higher floors where they are above flooding levels.
2. Implement waterproofing measures such as installing floodgates and building with concrete at lower levels.

3. Develop storm preparation plans including installation of back-up generators and temporary relocation if needed.

B. Conduct site-wide assessment to determine and categorize sources of runoff and mitigation measures.

Recent storms surges brought by hurricanes such as Sandy and Irene have caused substantial damage in NYC. Given that the BOA is dominated by impervious street-level and roof surfaces, and paved elevated surfaces that contribute to stormwater runoff, this area is particularly vulnerable to storm surges. Stormwater runoff from all these sources is directed into the City's combined sewer or drains to New York Harbor and there is very little infiltration. Moreover, where infiltration does occur, untreated subsurface pollutants have the potential to leach into groundwater. Several environmental interventions can be completed in the BOA to improve stormwater management and thus mitigate the effect of storm surges. Improvements can be made at the neighborhood level and by individual property owners -

- Large parking lots, like Verizon Fleet Parking, can be retrofitted with stormwater chambers that detain or retain stormwater without utilizing the surface spaces dedicated to parking.
- Constructed wetlands and rain gardens can be designed to capture stormwater discharge from the elevated Gowanus Expressway and adjacent street-level roadways between 17th Street and 65th

Streets. A network of deep and shallow wetland basins can be programmed within the underutilized spaces beneath the Expressway and Belt Parkway extension.

- Curbside bioswales along streets that have been identified as waterfront connectors (41st, 43rd, 44th, 50th, 51st, 58th and 59th Streets) can capture and treat street and sidewalk stormwater runoff.
- The large, flat-roofed manufacturing and industrial buildings located between 39th and 58th Streets and 1st and 2nd Avenues provide opportunity for on-site storm water management, urban farming, energy production and greening.

C. Revive waterfront's ecological role in buffering storm surges and sea level rise and in cleaning stormwater runoff by constructing wetlands along the waterfront and diverse habitat niches in upland areas.

In addition to the opportunities listed above, where site conditions restrict the installation of green infrastructure, habitat restoration can revive a part of the neighborhood and waterfront's ecological role.

Shrub habitat can be restored along the waterfront (such as at the Sims Recycling pier) and native species hardy to the area can be planted to create a series of diverse habitat niches throughout the BOA. Open spaces along the waterfront, such as near the salt shed area between 47th and 50th Streets, the entrance into Bush Terminal, and Piers 5, 6, and 7 can

become stormwater detention and retention facilities in the form of constructed wetlands. Bulkhead improvements can be implemented in tandem with a “re-naturalization” of the water’s edge. These areas can also be programmed for passive recreation and ecological education.

Additionally, areas located within low points across the site can serve the dual function of stormwater management and mitigating pollution, by serving as stormwater collection basins densely planted with freshwater wetland species. These basins can take the form of bioswales or rain gardens constructed within the public right of way or within the underutilized pockets of open space throughout the site (such as under the Belt Parkway). Dense stands of vegetation planted within the collection basins can include native wetland species that can uptake nutrients and sequester contaminants typically found in urban stormwater.

PRIORITIES

ACTIONS

1. Evaluate the effectiveness of stormwater abatement systems, drainage plans, and the potential for impacts from contaminated onsite surfaces.
2. Create an integrated stormwater management plan addressing the different types of runoff sources and possible solutions such as street bioswales, blue-green roofs, rain gardens, stormwater chambers etc.
3. Encourage the adoption of green infrastructure by area businesses and industries by incentivizing them. Businesses can secure funding through the NYC Department of Environmental Protection’s Office of Green Infrastructure, which administers an annual green infrastructure grant program.
4. Create solutions to collect and transport stormwater discharged from Gowanus Expressway that currently releases runoff onto 3rd Avenue.
5. Develop best practices for new construction along the waterfront, including recommendations for siting foundations, building materials and key utilities.

PROJECTS

1. Prioritize feasibility of installation of stormwater chambers on Verizon’s parking lot on 43rd street.
2. Conduct feasibility study for green-blue roof and urban farming on A M Cosmetics and Bush Terminal sites.
3. Conduct feasibility study for constructed wetlands under Gowanus Expressway and repurposing 3rd Avenue parking lots to function as rain gardens.

FUNDING and PARTNERSHIPS

1. Office of Environmental Remediation
2. NYCEDC
3. NYC Department of Environmental Protection
4. New York State Environmental Facilities Corporation
5. EPA grant program: Community Action for a Renewed Environment (CARE)
6. NOAA Habitat Conservation, Northeast Region Funding Opportunities (<http://www.habitat.noaa.gov/funding/index.html>)

SUNSET

PARK

Step 2

Nomination

Study

