An Analysis of Its Economic Impact and **Opportunities for Replication**

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"Helicopter Shot" 2011 © BNYD

Acknowledgments

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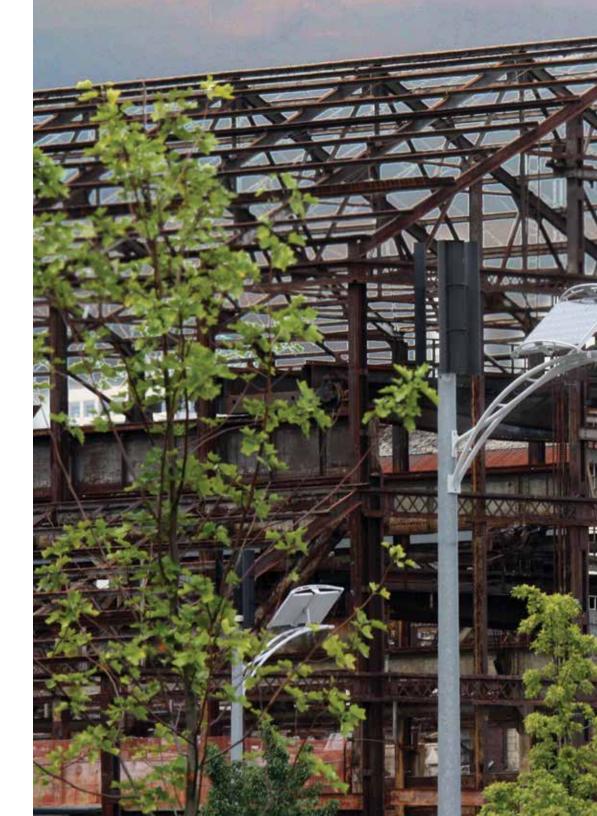
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Executive Summary







Revitalizing American manufacturing is increasingly recognized by leaders across the political spectrum as a core economic strategy to create well-paying jobs and restore our nation's prosperity. Cities throughout the United States are testing new and varied ways to advance these objectives, for example, modernizing long-underused industrial space, launching local branding and sourcing campaigns, and undertaking industry-guided workforce development. In many ways, the success of national policy regarding the manufacturing sector depends on our cities' ability to pilot new initiatives, share

"Community Mural at Brooklyn Navy Yard" 2011 © Elisabetta Di Stefano

experiences, learn from each other, and identify ways to replicate successful efforts.

New York City's Brooklyn Navy Yard ("the BNY," "the Navy Yard," or "the Yard") presents such an opportunity. The BNY is an active industrial park that occupies 300 acres along the Brooklyn waterfront. It houses over 330 businesses and 5,800 employees and supports several of New York City's key industries, including film, media, arts and culture, architecture, and design.



"Steiner Studios" 2012 © Elisabetta Di Stefano



"Sustainable Bike Racks by Sculptor Michelle Greene" 2012 © Elisabetta Di Stefano



"Satellites" 2012 © Elisabetta Di Stefano

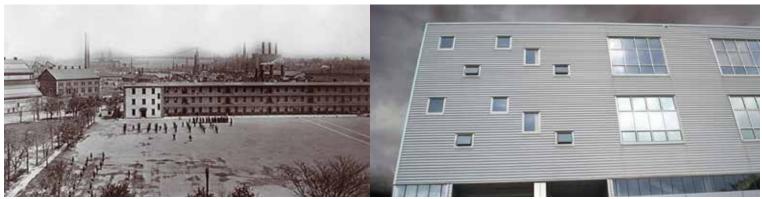


"Architecture & Engineering at BNYDC" 2012 © Elisabetta Di Stefano

City-owned and managed by the Brooklyn Navy Yard Development Corporation (a nonprofit organization with a board of directors appointed by the mayor), the Yard has emerged as a successful model for urban industrial development, with an emphasis on sustainability, that other cities can evaluate and use to inform their own efforts to retain and grow industrial jobs. The New York City Regional Economic Development Council, established by Governor Cuomo, recently identified the Navy Yard as a "transformative project" that is a model for 21st-century advanced manufacturing.

Nowhere are the challenges to urban manufacturing more evident than in New York City, which has high labor and utility costs, strained transportation and waterfront infrastructure, an extraordinarily dense urban fabric, and porous zoning and land-use policies that aggravate real estate speculation. Nonetheless, in the past 15 years, the BNY has emerged as a major economic force, with Yard tenants taking advantage of the City's major assets: a prime location, a diverse and talented workforce, and a large and sophisticated local consumer base. The BNY's annual economic output, that is, its "gross domestic product" for New York City, is nearly \$2 billion. It is responsible for 10,350 direct and indirect jobs and \$390 million in earnings. That economic activity in turn induces another \$2 billion in earnings in the local economy and another 15,500 jobs. By 2015, these impacts are expected to increase to \$2.35 billion in recurring annual output; over 30,000 direct, indirect, and induced jobs; and \$2.37 billion in induced additional earnings.

The formidable economic impact the BNY has achieved despite its high-cost environment provides insight into the future of manufacturing in cities in which high costs or other conditions pose similar challenges. In this report, the Pratt Center team identifies and evaluates the factors that have driven the BNY's success and discusses how these factors might be applied in other cities. We describe the particular cases of Philadelphia, Chicago, and Detroit to illustrate how city leaders can assess the possibility of replicating the Yard's key features, identify relevant local assets and opportunities, and consider what resources they would need to similarly catalyze urban manufacturing efforts.



"Brooklyn Navy Yard: Birds Eye view showing barracks and men doing exercises, harbor in the background" 1909 © Library of Congress

"Perry Building" 2012 © Elisabetta Di Stefano

From Naval Shipyard to Modern Industrial Park

The Brooklyn Navy Yard, a naval institution dating back to 1801, served as a key defense facility in the mid-20th century but was decommissioned by the federal government in 1966. The City of New York purchased the Yard in 1969 and an Urban Renewal Plan was approved for the site in 1971, codifying the City's goal to create a "modern industrial district, which will retain and attract manufacturers to the City."¹ Originally managed by the Commerce Labor Industry in the County of Kings (CLICK), the Yard came under the management of the then newly formed Brooklyn Navy Yard Development Corporation (BNYDC), after a 1981 City comptroller audit found widespread mismanagement practices at CLICK. Despite the management change, the City invested little or no capital each year in the Yard to improve its buildings and infrastructure. The Yard's infrastructure continued a steady decline until an initial 1996 capital allocation under the Giuliani Administration. BNYDC then completed a capital-needs assessment that highlighted the dire need to upgrade the Yard's subsurface infrastructure and antiquated buildings.

BNYDC put in place a new leasing strategy, focusing on attracting small, light industrial firms and niche manufacturers rather than chasing the large manufacturers and warehouse distributors who were unlikely to locate in New York City. By 1998, the Yard had grown to 200 businesses and had fully leased its 4 million sq. ft. of available space. Based on this evidence of success, in 1999 the City began to fund a multiyear capital dollar investment plan to modernize the Yard's buildings and basic infrastructure. When the Bloomberg Administration came into office in 2002, there was a deliberate effort to professionalize BNYDC's board of directors and staff and to actively pursue real estate development opportunities within the Yard. (The importance of strong governance and on-the-ground leadership relatively free of the inefficiencies of government bureaucracy and independent of outside political pressure as major factors in the Yard's successful growth cannot be overstated.)

At the same time, industrial tenants were increasingly attracted to the Navy Yard because of the City's challenging real estate conditions; porous zoning and multiple rezonings sparked real estate speculation that both drove up land costs and destabilized the industrial areas. New York City's manufacturing zones permit a wide variety of nonindustrial uses such as hotels, superstores, and offices, all of which can typically pay higher land costs than manufacturers. Numerous zoning changes, strong residential demand, and lax enforcement to prevent illegal residential conversions all signaled to owners of industrial space that the rewards from conversion were great while the risks were modest. In this environment, the City's investment in the Yard and BNYDC's efforts to develop additional industrial space demonstrated to many industrial firms a commitment to industrial retention in the Brooklyn Navy Yard. This commitment was critical to creating the stability that the Yard's industrial tenants needed to make their own investments in their businesses.

In fact, under the Bloomberg Administration, annual City capital investment has averaged over \$15 million per year, which positioned BNYDC to leverage over \$500 million in private investment since 1996. As the Yard revitalization gained momentum, additional public capital funding was invested by the New York City Council, the Brooklyn Borough President, the State of New York, and the Federal Economic Development Administration.

In addition to serving as landlord and property manager, BNYDC is an active real estate developer. BNYDC has used a variety of financing tools to underwrite real estate development, from conventional debt financing to the Immigrant Investment Program (also known as EB-5). BNYDC's nonprofit status, however, differentiates it from a private developer, because its bottom line is measured not solely by its profitability but also by the extent to which it is able to foster tenant reinvestment and job growth while rebuilding the Yard's aging infrastructure, yet maintain the Yard's financial stability.

BNYDC works with its tenants in ways that a private developer or landlord likely would not: building multitenanted buildings on spec with returns on investment much lower than the private market would tolerate, readily working with tenants to right-space as their operations contract or expand, procuring goods and services from tenant companies, maintaining an extended eviction process affording tenants opportunities to pay back-rents, and encouraging business-to-business activity among Navy Yard companies.

BNYDC's entrepreneurial culture is just as critical to its success as is its nonprofit, mission-oriented status, and today the Yard is in the midst of a significant expansion effort. In addition to the ongoing campus-wide infrastructure improvements such as surface transportation and building upgrades, BNYDC, in partnership with several large tenants, is planning several new construction and building rehabilitation projects. Notable developments include the future phases of Steiner Studios to create a Media Campus on the site of the former Naval Hospital, a 220,000 sq.-ft. Green Manufacturing Center, the renovation of the 1-million sq. -ft. Building 77, and an adaptive reuse of Building 268 for Duggal Visual Solutions.

An underlying feature of BNYDC's expansion efforts is a commitment to sustainable development. Over the past several years, BNYDC has begun to market itself as an eco-industrial park, striving to become the choice location for green manufacturers and other businesses. To this end, BNYDC has already put in place a number of sustainability initiatives, including a commitment to pursue LEED Silver certification for all new construction projects, the adaptive reuse of historic structures and materials, and the implementation of wind and solar street lights, a rooftop farm, hybrid and low-emission vehicles for the management's fleet, a waste-management program to encourage recycling, and setbacks along the Yard's perimeter to enable the first phase of the Brooklyn Waterfront Greenway for bicyclists and pedestrians. The vast majority of BNY tenants support these efforts; in fact, many tenants report that the Yard's sustainability initiatives have influenced the greening of their own operations.

BNYDC has also recently increased public access to the Yard with the opening of BLDG 92, a new \$25 million, LEED–Platinum–certified exhibition and visitor center. BLDG 92 also houses the Yard's Employment Center, which every year places 200 job seekers—particularly residents of local public housing, veterans, and formerly incarcerated individuals—in well-paying industrial jobs in the Yard.



BNY Tenants

The Brooklyn Navy Yard today is a thriving hub of businesses of all types that together illustrate the future of urban manufacturing: from small, artisanal manufacturers to very sophisticated mediumsized manufacturers who integrate design and production, and from large fulfillment enterprises to movie studios. The Yard's approximately 330 tenants do not easily fall into a single category (e.g., manufacturing or office; see sidebar, "Dynamic Clusters at the BNY"). Rather, many firms integrate varying types of activities under a single business, creating business models that add sufficient value to overcome the obstacles to an urban location. The tenants can be generally classified as one of eight main business types:

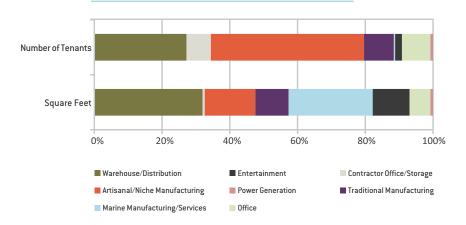


FIGURE ES1: BNY Tenants by Number of Tenants and Square Footage, 2011

1. ARTISANAL/NICHE MANUFACTURING: Companies that produce either one-of-a-kind or customized products, often with very limited production runs, including manufacturing of sets and custom installations for the entertainment industry and fine-art pieces. These companies often have in-house design capacity and use high-tech manufacturing equipment to help their clients take a new product from a concept to production.

2. TRADITIONAL MANUFACTURING: Companies that produce standardized products, often in larger production runs.

3. MARINE MANUFACTURING/SERVICES: Companies engaged in ship repair and other marine services serving the wide range of vessels essential to sustaining activity in the Port of New York & New Jersey.

4. POWER GENERATION: Principally the cogeneration plant at the Navy Yard that produces power and steam for the New York City grid and the Navy Yard.

5. ENTERTAINMENT PRODUCTION: Studios and related services for the production of motion picture and sound as well museum-based entertainment.

6. CONTRACTOR SHOPS/STORAGE: Companies involved in the construction trades such as electricians, plumbers, and general contractors.

7. STANDARD OFFICE: Companies that use their space for administrative back-office services or for general office uses.

8. WAREHOUSE/DISTRIBUTION: Companies that use their space primarily for the storage and distribution of goods

Since 2000, the Navy Yard has seen a rise in the number of artisanal/ niche manufactures that today account for 45% of tenants, but due to their smaller footprints—only 15% of the leased space. The opening of Steiner Studios in 2005 marked the start of a burgeoning entertainment production sector, which—while only accounting for 2% of tenants—commands 10% of the leased space. This number is expected to grow with the planned expansion of Steiner Studios in the next few years. Most recently, there has been an influx of foodrelated businesses as well.

As part of this study, 170 direct BNY tenants and 17 subtenants completed an extensive survey that was used to better understand the BNY companies. Over 50% of respondents are artisanal/niche manufacturers, almost 10% are traditional manufacturers, and 2.7% are companies serving the entertainment and media sector. Altogether, manufacturing-related tenants account for 63% of survey respondents.

DYNAMIC CLUSTERS AT THE BNY

A dynamic mix of companies is operating and generating a creative buzz at the Navy Yard. From manufacturers of custom lighting fixtures to set designers for the City's film and TV industry, Navy Yard tenants are part of the supply chain for two of the City's most important industries: architecture and design, and film and media. Just under 60% of surveyed tenants fit into one of these clusters. Brooklyn Navy Yard tenants also fall into clusters related to the goods and services they produce: 65% of surveyed tenants fit into one or more of the artisanal, green, and/or high-tech clusters.

Key survey findings include:

BUSINESS TENURE AND LOCATION CHOICE

64% of respondents have been located in the Yard for 10 years or fewer, and 16% have been located in the Yard since business inception. Overall, artisanal/niche manufacturers make up the youngest category of firms.

94% of respondents cited affordable rent as a key factor in locating at the Yard, followed by 24/7 entry/accessibility (89%), parking (85%), size/pace of rent increases (79%), 24/7 security (75%), and fenced perimeter (70%).

EMPLOYEES

44% of respondents have hired employees in the past year and 64% expect to hire within the next five years. Hiring plans are relatively consistent across all types of Navy Yard tenants.

GROWTH PROJECTIONS & BUSINESS ACTIVITY

42% of respondents anticipate requiring additional space in the next three to five years, 94% of which would look to expand within the Navy Yard.

88% of respondents sell goods and services inside New York City, representing a 71% average of total company sales.

44% of respondents sell to the surrounding region, 44% sell nationally, and 25% sell internationally.

SUSTAINABILITY

19% of firms market themselves as green or environmentally sustainable; 53% of these believe this helps increase sales.



Economic Impact

The Navy Yard is an engine of economic activity that has a significant impact on New York City's economy. Using the Regional Input-Output Modeling System (RIMS II),² the Navy Yard's economic output for 2011 is \$1.93 billion. It is responsible for 10,350 direct and indirect jobs and \$392 million in earnings. That economic activity in turn induces another \$1.96 billion in earnings and another 15,500 jobs. The Navy Yard also contributes construction-related, economic impacts that vary from year to year depending on construction activity. In 2011, the Navy Yard was responsible for an additional \$100 million in earnings. These annual impacts are expected to significantly grow in the coming years as new developments come on line.

The City's contribution of approximately \$250 million in capital dollars over the past 15 years was a major catalyst to the Navy Yard's success and economic output. In general, roughly 75% of the Yard's economic impact on the City economy would likely not have occurred without that injection of City capital. In terms of direct and indirect effects on the NYC economy and its supply chains, taking one-time construction and ongoing impacts together, each dollar of City investment drives on average more than \$10 in economic output, \$2 in direct earnings to employees, and \$7.50 in induced earnings.

The economic output of the Brooklyn Navy Yard has corresponding fiscal impacts on the New York City budget. In 2011, the Navy Yard generated \$139 million in taxes to New York City.

FIGURE ES2: Economic Impact of the Brooklyn Navy Yard on the NYC Economy in 2011

IMPACTS	Economic Output	Jobs (direct & indirect)	Earnings (direct & indirect)	Induced Earnings	Induced Jobs
Ongoing Impacts	\$1,934,000,000	10,350	\$392,000,000	\$1,960,000,000	15,479
Construction-Related Impacts	\$100,500,000	454	\$21,425,000	\$29,800,000	611

The Brooklyn Navy Yard Model

Eight core elements emerged as fundamental to the successful functioning of the Brooklyn Navy Yard:

1. MISSION-DRIVEN, ON-THE-GROUND NONPROFIT MANAGEMENT

Property management provided by an organization whose primary goal is to retain and grow industrial jobs not only protects the long-term industrial use of the property but also enables the nonprofit manager to make strategic decisions about tenant selection, capital improvements, rents, and services that encourage growth. Manufacturing tenants have the long-term security they need to reinvest and grow. In addition, the presence of a nonprofit, mission-driven manager can facilitate adaptive reuse of historic buildings as well as new green construction. Infrastructure combined with tenant-support services such as workforce development, local procurement, and tenant-to-tenant business activity can also create a unique sense of community within the Yard campus.

2. PUBLICLY OWNED PROPERTY

The Navy Yard has benefited greatly from its City ownership. The Yard is free of property taxes; government can easily invest in it; and BNYDC can leverage private investment by providing long-term leases for its tenants. While the City can invest in private property owned by a nonprofit, it likely would not have invested as deeply or consistently as it did in the publicly owned Navy Yard. Similarly, the powerful combination of public ownership with nonprofit management ensures long-term security for companies to invest. (In the absence of public ownership, a nonprofit-owned and -managed property would provide a similar level of assurance for tenant companies.)

3. CONSISTENT CITY CAPITAL

The steady financial support the Navy Yard has received from the City since 1996 has been a major catalyst for the Yard's evolution to the successful industrial park it is today. This capital infusion has enabled BNYDC to successfully plan and implement comprehensive infrastructure improvement and redevelopment plans, leverage private investment, and free up the Yard's surplus to be directed to expansion efforts and tenant services that would be more limited if basic infrastructure maintenance was not otherwise covered.

4. ABILITY TO REINVEST ITS SURPLUS AND LEVERAGE ITS RENT ROLLS

BNYDC's contract with the NYC Department of Small Business Services permits the Yard to reinvest its surplus and pledge its rental income as collateral for private debt. This has been a key component of the Yard's expansion efforts.

5. CAMPUS SETTING

BNYDC achieves management efficiencies through a single, albeit large, project area. The Navy Yard's walled perimeter, a vestige from the federal government, supports the provision of 24/7 entry and 24/7 security—two critical features for industrial and other tenants that operate multiple shifts and/or house expensive equipment.

6. INDUSTRIAL LAND USE & PRIORITY

The manufacturing zoning and political will to retain that zoning, as well as the campus's walled perimeter, ensure that the BNY will remain a home for industrial uses. Inside the Yard's walls, it is clear that the needs of the industrial tenants are the highest priority. They can make noise, load and unload trucks, and generally operate industrial businesses free of complaints from neighbors and burdensome ticketing that they might otherwise encounter on City streets.

7. DIVERSE TENANT BASE

The Navy Yard's diverse tenant base fosters a vibrant, creative environment. The mix of tenants enables BNYDC to rent out the totality of its portfolio (which includes some space no longer suited to manufacturing uses) and to offer rents at levels the market will bear by tenant type and/or space size. The diversity that leads to success at the Yard would, in an unregulated situation, lead to real estate speculation, in which private property owners change the tenant mix in favor of high-rent nonindustrial tenants and exceed a tipping point that actually undermines growth. The Yard's mission acts like a check on speculation, which preserves a diverse balance of uses.

8. GREEN DEVELOPMENT

BNYDC's commitment to sustainable development supports a resource-efficient management approach and encourages tenants to manage their own companies with efficiency and long-term goals in mind. In addition, a focus on green development garners public support for the Yard in particular and for a new image of manufacturing in general that turns its back on the old smokestack factory and toward an environmentally and fiscally healthy enterprise.

Recommendations for Replicating the Navy Yard Model:

A Look at Philadelphia, Chicago, & Detroit

As cities across the country develop new strategies for revitalizing their economies, they should consider the Brooklyn Navy Yard model. This report includes a preliminary analysis of how the eight core characteristics described above could be applied to three major cities: Philadelphia, Chicago, and Detroit. All three cities have either recently completed or are in the process of completing comprehensive studies of their own industrial bases and are actively looking to identify strategies to grow industrial development. This study offers the Brooklyn Navy Yard model as one such strategy that can be implemented to meet their goals. This study does not suggest that these particular cities should create a Navy Yard-type facility but rather offers a tool to consider opportunities to build upon the BNY experience and replicate some or all of its key elements.

Figure ES3 summarizes which of the eight major elements of the BNY already exist or could be created relatively easily and quickly in each of the three cities and where gaps might have to be addressed. It is important to note that the presence or absence of a check mark does not conclude that element's viability; missing elements will likely require more attention as part of the planning or development process. FIGURE ES3: Comparison of Opportunities to Replicate the Brooklyn Navy Yard

Replication Opportunity	Philadelphia	Chicago	Detroit	
Mission-driven, non-profit organization	 ✓ 	1	✓	
Publicly-owned property			✓	
Consistent city capital	✓	 Image: A second s		
Ability to reinvest surplus and leverage rent roll	✓	 Image: A second s		
Campus setting	✓		✓	
Industrial land use and building character	✓	✓	✓	
Diverse tenant base		 ✓ 	√	
Green development	✓			



PHILADELPHIA

Philadelphia's established support for the industrial sector combined with its experience with the Philadelphia Navy Yard (a similar development to the Brooklyn Navy Yard) is a strong foundation for exploring the BNY model in the Lower Schuylkill River District, a 4,000-acre area that contains 68% of the city's underutilized industrial land.³ The Lower Schuylkill's history as a hub for major oil refineries and heavy manufacturing has left a legacy of environmental contamination on large parcels with limited interior road access. Building off the structure, experience, and resources of the nearby Philadelphia Navy Yard, all but two of the eight core BNY elements—public ownership and a diverse tenant base—can be readily applied to the Lower Schuylkill. The area is likely to attract, at least initially, large, heavy manufacturers, and its lack of existing building stock will not drive tenancy of a mix of smaller, artisanal firms. Philadelphia is also a relatively weak market city; as such, building spec industrial development in the Lower Schuylkill area may be difficult, especially given the level of remediation required.

CHICAGO

Chicago's strong political support for industrial retention and growth and its sound financial and policy tools make the BNY model an intriguing strategy to explore. The initial hurdle will be to form a nonprofit or quasi-public entity with the ability to acquire land with the mission to foster industrial development with terms and conditions for it to be successful. While a specific neighborhood that could accommodate a campus setting was not identified in this study, Chicago's active evaluation for land assemblages could result in the identification of publicly owned properties able to support that type of environment. Conversely, a group of scattered, but proximate, buildings, if managed effectively and collectively, could approximate many of the elements of the BNY model—except, of course, the benefits of the campus setting.

DETROIT

Detroit is a great candidate for the BNY model as it has a burgeoning creative sector, numerous, underutilized industrial properties, and strong political support for industrial employment. While land assemblage is difficult to complete in Detroit, the Milwaukee Junction neighborhood, an area adjacent to both I-75 and I-94, is relatively "off the radar" of current development efforts and therefore may be more affordable than other similar properties. The neighborhood's current mix of publicly owned land and properties in tax foreclosure creates an environment in which a city-owned campus may be built in multiple phases. In addition, its location, in close proximity to anchor institutions such as the Russell Industrial Center and local art schools, supports opportunities to develop a cluster of artisanal manufacturing developments.



Additional Recommendations

As discussed above, the success of a BNY-type initiative absolutely depends on the leadership of a mission-driven nonprofit manager combined with public or nonprofit ownership, or other measures to insulate leasing decisions from real estate speculation. Rent revenues must be reinvested in buildings and infrastructure; individual companies must be assured real estate stability to invest and keep competitive; and management must engage with the companies to facilitate business decisions that advance public objectives.

Unfortunately, the industrial nonprofit sector generally does not today have the capacity to play the role of a real estate developer and manager in economic development as it does in other sectors such as affordable housing. Therefore, it is recommended that governments at all levels look for ways to nurture and expand a nonprofit industrial development sector. Toward this end, governments should:

1. Establish an "Industrial Development Fund" for nonprofit acquisition and development of industrial space.

One of the biggest hurdles nonprofit developers face is obtaining the upfront capital needed to purchase privately and publicly owned sites. A fund should be established that nonprofits can access to use as equity when acquiring sites. While it is envisioned that this fund will primarily provide grants, in some instances the grants could be replaced by permanent financing and recovered by the fund to be lent again. In addition to grants, a funding pool could include soft loans and loan guarantees or other credit enhancements that could leverage additional private and philanthropic capital.

2. Consider net leasing publicly owned industrial sites, rather than selling them outright.

Many governmental entities, particularly cities, choose to invest in infrastructure and site remediation efforts for their publicly owned industrial properties so that the parcels are "market-ready" and then sell them to private developers. An alternative approach would be to offer long-term leases that recover the city's investment through the lease and reinforce cities' industrial development goals. The leasing strategy gives the city a degree of control over the ongoing operations of the building, allowing the city to enforce policy well beyond measures typically available through land-use regulations or other disposition alternatives. By retaining ownership and providing a long-term lease, the city can implement default provisions if the developer is not managing the property effectively. Lease terms can also enable developers to preserve capital for needed improvements, rather than for acquisition, lowering a key barrier to nonprofit industrial development.

3. Encourage partnerships between for-profit & nonprofit developers.

Cities that continue to dispose of industrial properties should require or give preference to proposals that include partnerships with nonprofit organizations. Such partnerships should include providing the nonprofit partner equity in the project in exchange for economic development services and linkages to the surrounding community giving the nonprofit partner the opportunity to develop experience and build equity toward future projects.

4. Adapt traditional economic development tools such as tax credits, loan guarantees or other credit enhancements, and bonds so that developers of industrial rental space are eligible.

Currently, many public incentives and programs that stimulate real estate development are not readily applicable to industrial developers, whether nonprofit or private. For example, Industrial Revenue Bonds (IRBs) are only available for owner-occupied buildings, inhibiting both private and nonprofit developers from renovating older single-tenant industrial buildings for reuse as multitenanted rental industrial buildings. Additionally, to qualify for the New Market Tax Credit, a program designed to spur investments that will serve low-income communities, a project must meet certain income criteria for the population in the project's census track. However, industrial projects often need to locate in areas with few residents (to comply with local zoning and/or to avoid undesirable local impacts) and therefore are not always able to meet the program's requirements, despite fulfilling the intent to provide economic opportunity for low-income residents.

5. Align zoning & land-use policies and infrastructure investments to advance economic development strategies.

Greater coordination is needed among zoning, land-use policies and infrastructure investments for cities to derive the maximum public returns and catalyze industrial development. Coordinated and geographically targeted strategies can improve access to workforce and transportation, avoid conflicts between incompatible uses and promote clusters of similar companies to generate even greater economic development activity.



Conclusion

The Brooklyn Navy Yard has been transformed from a naval shipyard to a modern industrial park fueled by a culture of innovation, entrepreneurship, and increasing sustainability. As demonstrated in this report, the Yard has proved successful in providing a stable environment for manufacturers and a variety of other types of industrial firms to grow and succeed in New York City, and it offers a viable model for other cities to consider as a strategy to cultivate a strong, local industrial base.

The Yard's transformation and success is also a reminder of the evolving nature of manufacturing—a sector that is fundamentally linked to New York City's most prominent and creative industries, that continues to provide employment opportunities and career ladders, and that should be nurtured through city, state, and federal policies.



"Construction Workers" 2012 © Pratt Center

¹ New York City Board of Estimate, "Urban Renewal Plan for the Brooklyn Navy Yard Urban Renewal Area," City of New York, **1971**, p. 9

² The RIMS II Input-Output model was developed and is maintained by the U.S. Bureau of Economic Analysis.

³ Philadelphia Industrial Development Corporation

