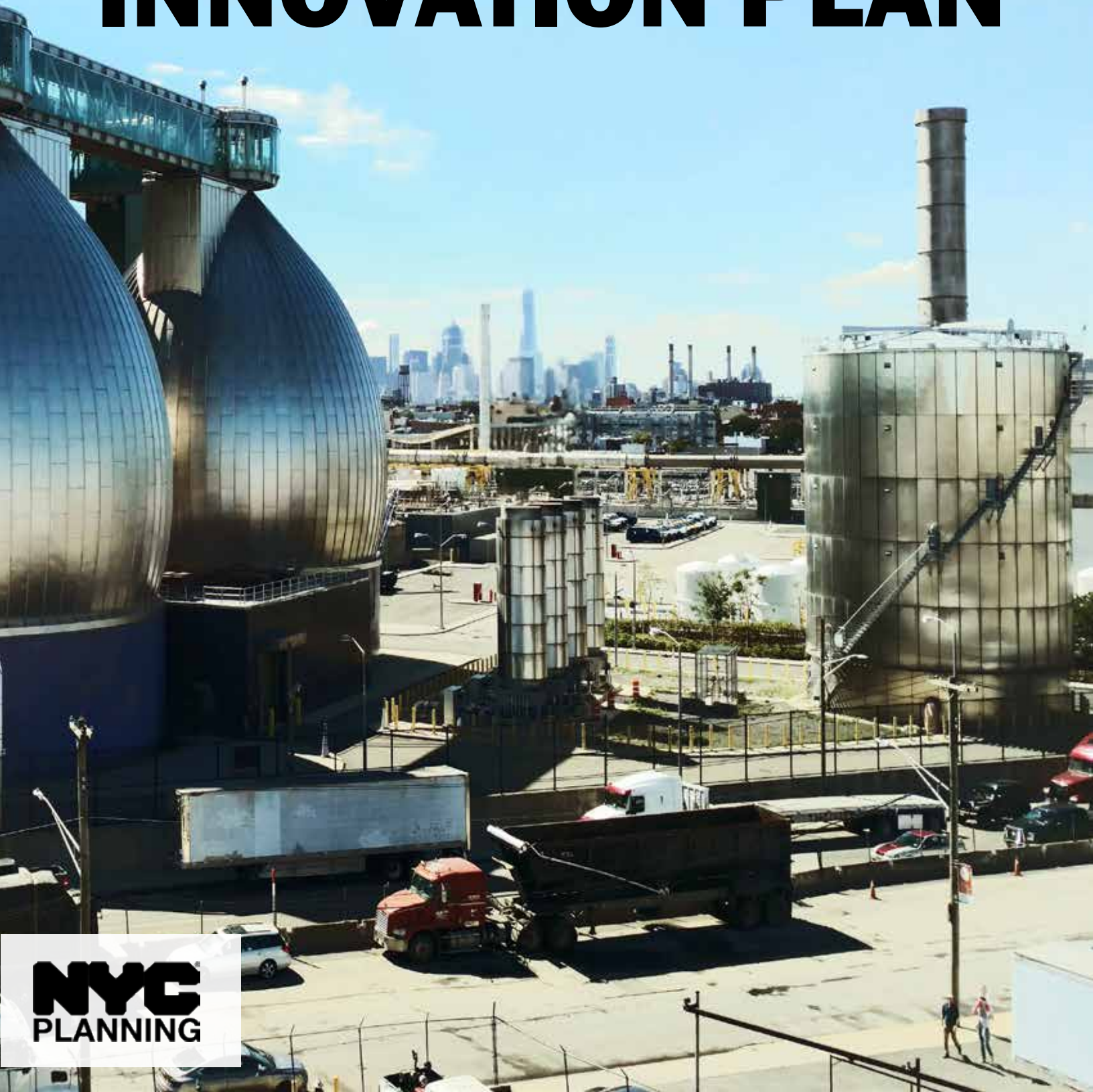
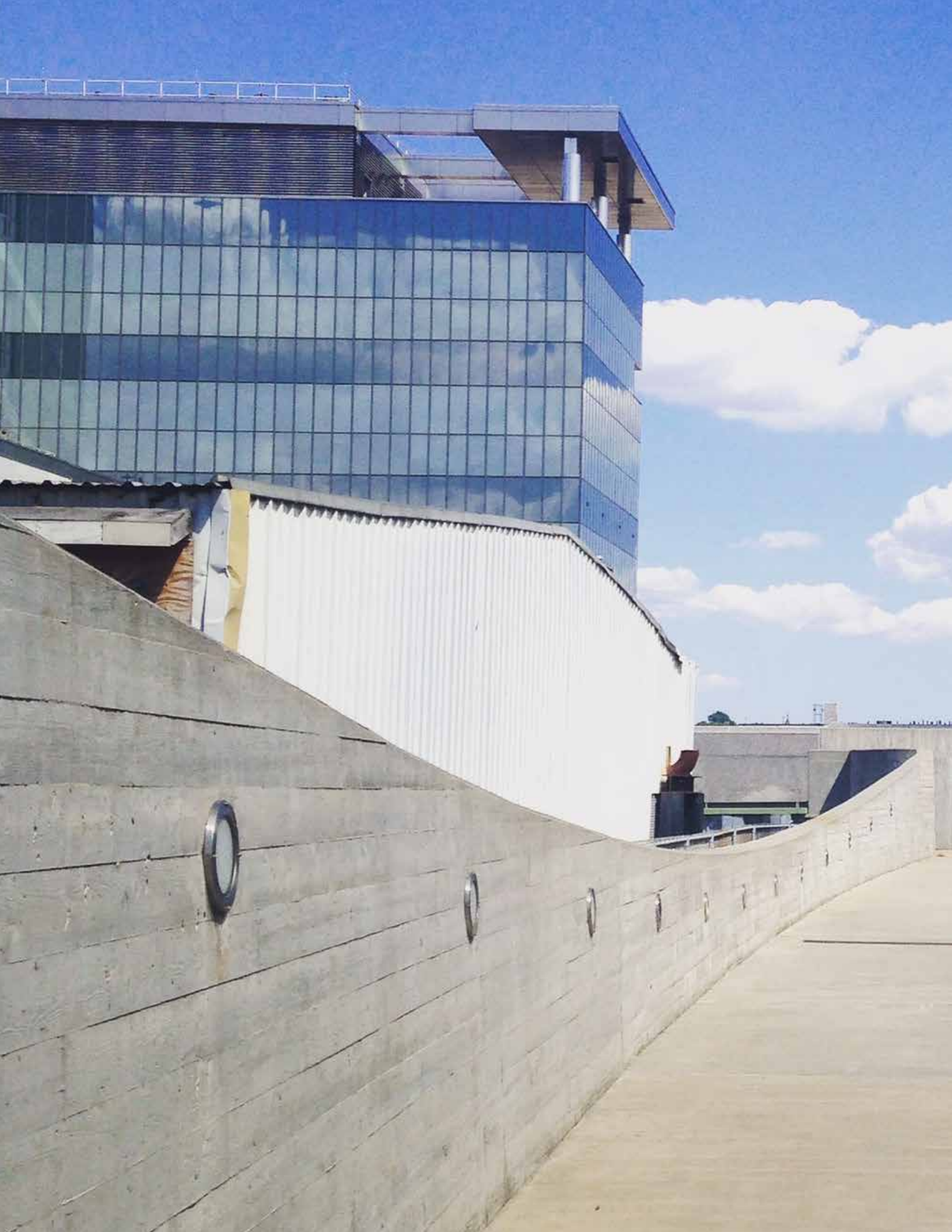


North Brooklyn **INDUSTRY & INNOVATION PLAN**





The background of the document is a photograph of a long, grey stone wall that recedes into the distance. To the left of the wall is a paved walkway. Above the wall, a flagpole with a flag and some equipment are visible against a blue sky with white clouds.

North Brooklyn INDUSTRY & INNOVATION PLAN

The City of New York
Bill de Blasio, Mayor

Department of City Planning
Marisa Lago, Director
November 2018

www.nyc.gov/northbrooklyn

NYC
PLANNING

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CONTENTS

Executive Summary	i
--------------------------------	----------

Citywide Context.....	1
------------------------------	----------

- > New York City's Industrial Areas
- > Shifting Geography of Employment
- > Evolving Manufacturing Districts
- > Updating Manufacturing Zoning

Planning Process for North Brooklyn	17
--	-----------

North Brooklyn Existing Conditions	27
---	-----------

- > History
- > North Brooklyn Economy
- > Land Use and Zoning
- > Residential Neighborhoods
- > Transportation Conditions
- > Environmental Conditions

Doing Business in North Brooklyn	55
---	-----------

North Brooklyn Land Use Framework	77
--	-----------

- > Core Industrial Area
- > Growth District
- > Transition Areas
- > Stable Areas

Transportation & Infrastructure Recommendation	121
---	------------

Workforce Development Recommendations.....	131
---	------------

Implementation.....	141
----------------------------	------------

Appendix.....	143
----------------------	------------



Executive Summary

The *North Brooklyn Industry & Innovation Plan (North Brooklyn Plan)*, announced as part of Mayor de Blasio's *Industrial Action Plan* and supporting the *New York Works* jobs plan, identifies strategies to better align local land use policy in the North Brooklyn Industrial Business Zone (IBZ) with the needs of today's businesses while supporting citywide policies for a diverse and equitable 21st century economy.

Based on the most comprehensive study of an industrial area the NYC Department of City Planning (DCP) has conducted in decades, the *North Brooklyn Plan* includes a Land Use Framework that proposes to increase space for jobs and economic activity by both supporting essential industrial businesses in an industrial core, which constitutes two-thirds of the *North Brooklyn Plan's* Study Area, while also increasing job density in transit-accessible areas adjacent to residential neighborhoods.

The *North Brooklyn Plan* originated in the 10-point *Industrial Action Plan*, released in 2015, which proposed

updating land use policy and making \$115 million in City investments to help ensure that industrial and manufacturing businesses have the space to evolve and grow. The City also committed to investing significant resources to provide training to help workers access quality industrial jobs.

The *Industrial Action Plan* proposed updating land use policy in several ways: (1) Strengthen Core Industrial Areas, (2) Create New Models for Flexible Workspace and Innovation Districts, and (3) Limit New Hotels and Personal Storage in Core Industrial Areas.

In connection with the first and second goals, the City launched the *North Brooklyn Plan* in order to conduct an in-depth study of business needs and to develop policy tools for core industrial areas and mixed industrial and office districts. Addressing the third initiative, limitations on self-storage in IBZs were approved by City Council in December 2017, and limitations on hotels in M1 districts (areas zoned for light industrial uses) are undergoing public review as of the publication of this report.

The *North Brooklyn Plan* also supports the *New York Works* jobs plan released in 2017, which proposed initiatives to combat economic inequality, grow middle class jobs, and adapt the economy to ongoing changes in technology. It committed to supporting growth in both emerging and established sectors, including tech and cybersecurity, life sciences and healthcare, industrial/manufacturing, and creative activities. The *North Brooklyn Plan* supports *New York Works*' goals of growing good-paying jobs in these sectors, as well as promoting the creation of new work space that meets the needs of the city's economy.

The *North Brooklyn Plan*, the *Industrial Action Plan*, and *New York Works* all propose strategies to take advantage of a rapidly growing and diversifying citywide economy in order to create better economic

opportunities for New Yorkers. The city's economy is larger than ever, having gained 660,000 jobs between 2010-2017 with growth in almost every sector.¹ While the city remains a global center for finance, other sectors such as healthcare, education, tech, and media are ever-increasing contributors to the local economy.

New geographic patterns of employment are also emerging as office-based businesses, particularly in fields such as TAMI (technology, advertising, media, information), are moving into more affordable space outside of established commercial districts in Manhattan, close to their Brooklyn- and Queens-based workforces. This is happening in many M districts (areas generally zoned for industrial as well as some commercial uses) near transit in neighborhoods such as Gowanus, DUMBO, Long Island City, Greenpoint-Williamsburg, and the Study Area.

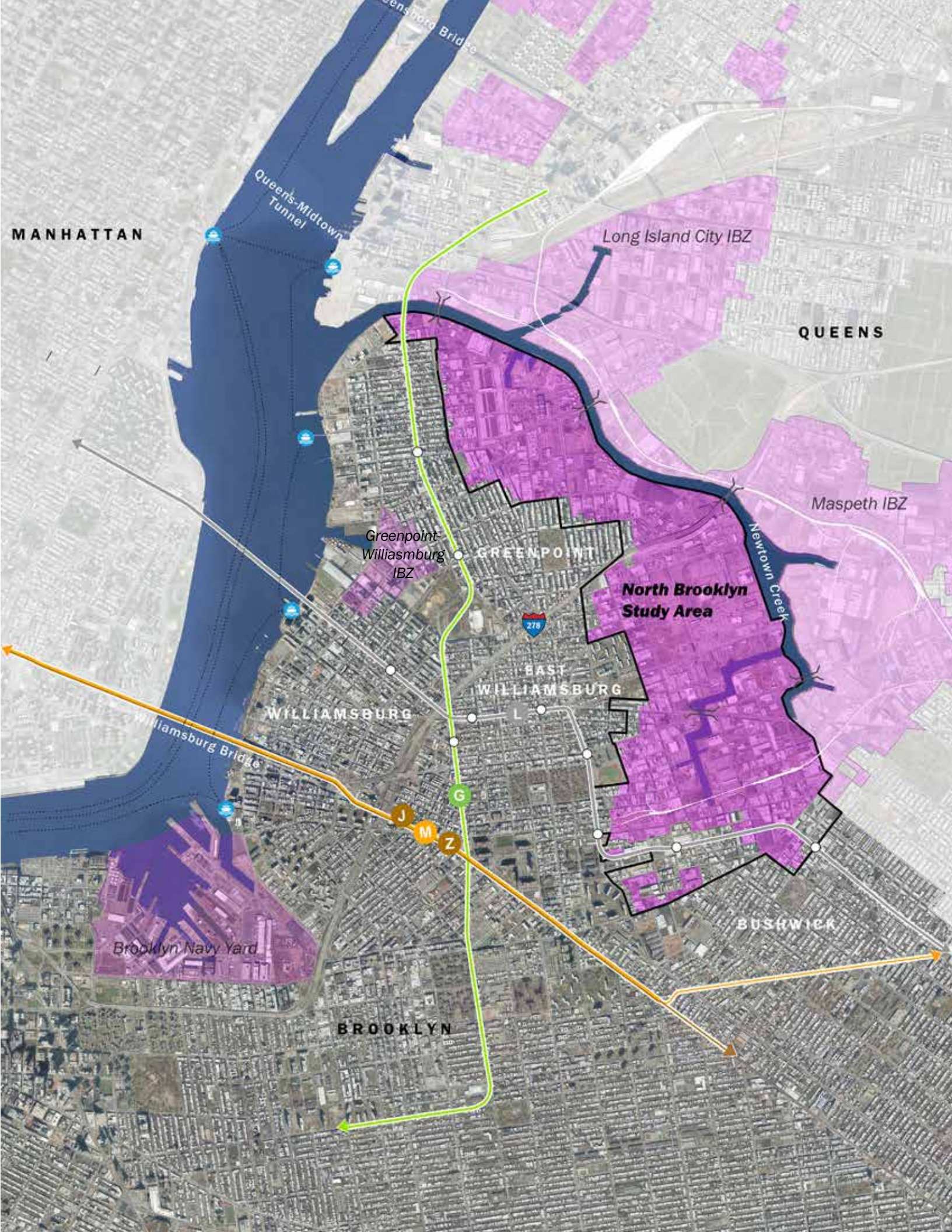
At the same time, some traditional industrial sectors — such as wholesale, transportation, construction, and waste management — are also growing, albeit at a slower pace. Further, after dramatic decades-long decline, manufacturing employment has essentially stabilized.

These trends are contributing to growing demand for space in New York City's industrial areas, from both industrial and non-industrial businesses. However, industrial

zoning districts have changed little since put into place in 1961, and existing use, bulk, and parking regulations often hamper the expansion of existing space or the creation of new space.

The City must revisit industrial zoning to better align it with the needs of today's businesses. Land use policy should identify areas for retention of heavy, truck-intensive industrial sectors that provide essential services to a growing New York City population as well as a significant number of jobs. It should also identify targeted transit-accessible portions of industrial areas where zoning can be modified to encourage creation of office space for the city's fastest growing sectors.

The *North Brooklyn Plan* identifies updates to existing zoning that can achieve these goals in the Study Area. Based on the findings of this *Plan*, DCP has also begun to analyze potential changes to parking, use, and bulk regulations that could apply to other commercial and industrial areas throughout the city.



Why Study North Brooklyn?

The Study Area is the third largest industrial hub in the city by employment, containing 19,500 jobs as of 2016, 77 percent of them industrial, and spanning 1,066 acres across the neighborhoods of Greenpoint, East Williamsburg, and Bushwick, adjacent to Newtown Creek and Queens. The Study Area consists of the North Brooklyn IBZ as well as small adjoining M districts outside the IBZ.

The Newtown Creek waterfront has been a major hub of large-scale industry since the early 1800s when industries such as shipbuilding and kerosene and petroleum refineries were attracted by both strategic waterway access and a location in the geographic center of New York City. Portions of the Study Area farther from Newtown Creek also have a long history as eclectic mixed-use areas; they were initially developed with both residential and industrial uses, adjacent to the residential neighborhoods of Greenpoint, Williamsburg, and Bushwick, forming truly walk-to-work neighborhoods.

After a long decline in industrial and manufacturing jobs since the mid-20th century, which paralleled citywide trends, the Study Area has seen job growth for the first time in decades, driven by a diversification of jobs and growth in both industrial and non-industrial sectors.

While between 2000-2010 the Study Area lost 1,570 jobs, it gained 2,270 jobs between 2010-2016, and approximately half of new jobs were in office and retail, arts, and entertainment sectors. (Available data may underestimate office-based jobs, as it does not capture self-employed workers or contractors and is less likely to capture companies based in coworking spaces.)

Along the Newtown Creek waterfront, large lots and large blocks support an active hub of industrial activities. This includes not only manufacturing, but also essential industrial services that keep the city running: wholesalers delivering food to New York's restaurants and supermarkets; depots providing fuel for residents; recycling companies carting and processing waste; construction supply companies helping to build major projects, such as Hudson Yards and the Second Avenue Subway; and a wastewater treatment plant serving more than one million people.

Located in the center of city, the Study Area offers a unique advantage for businesses seeking access to customers and suppliers in Brooklyn, Queens and Manhattan. Together, the North Brooklyn, Long Island City, and Maspeth IBZs clustered around Newtown Creek contained 41 percent of jobs in IBZs citywide as of 2014, while they only constitute 14 percent of the total land area of IBZs.

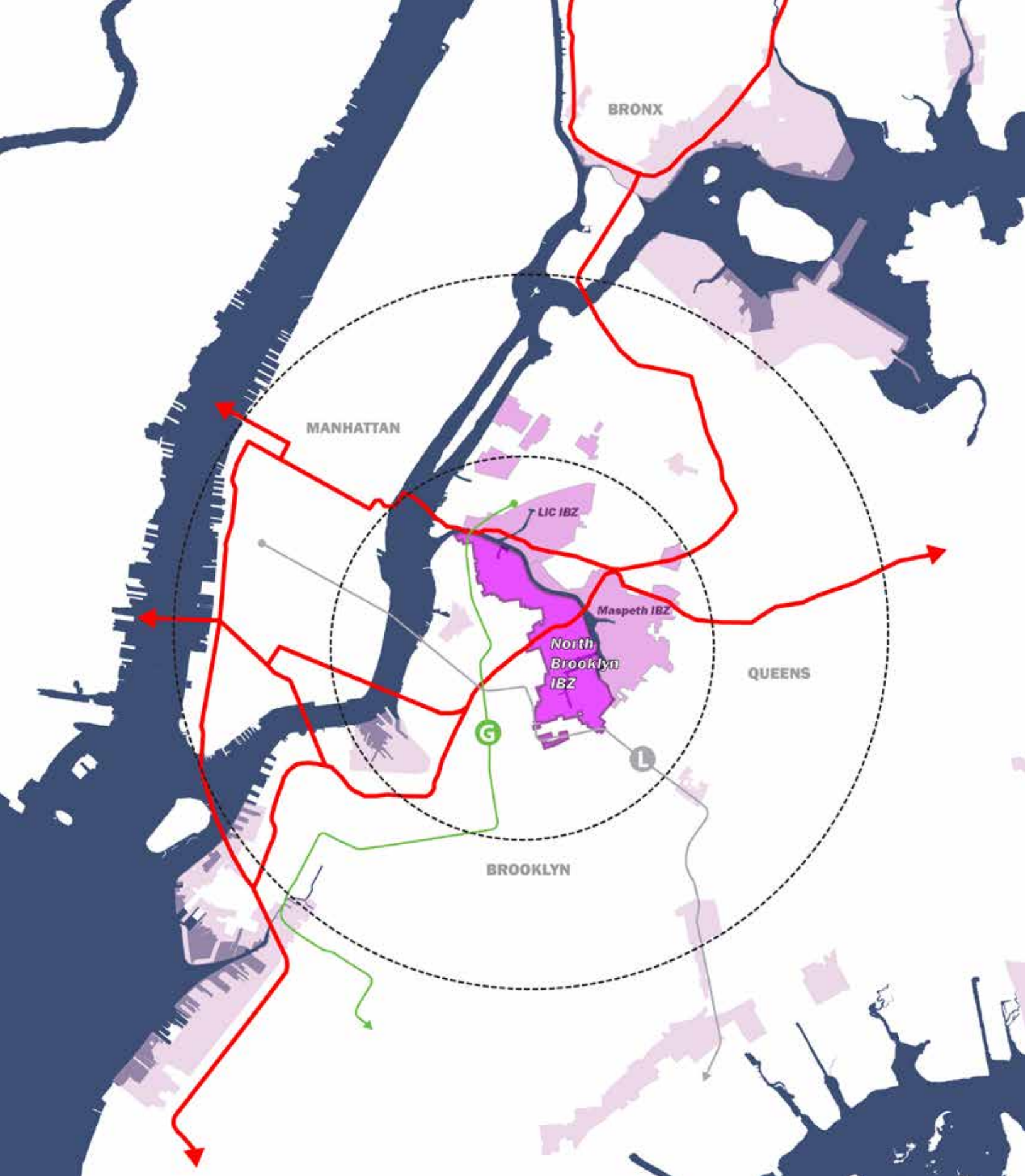
STUDY AREA JOB GROWTH (2010-2016)

INDUSTRIAL

+1,200 jobs (+8%)
+85 businesses (+12%)

NON-INDUSTRIAL

+1,070 jobs (+23%)
+219 businesses (+61%)



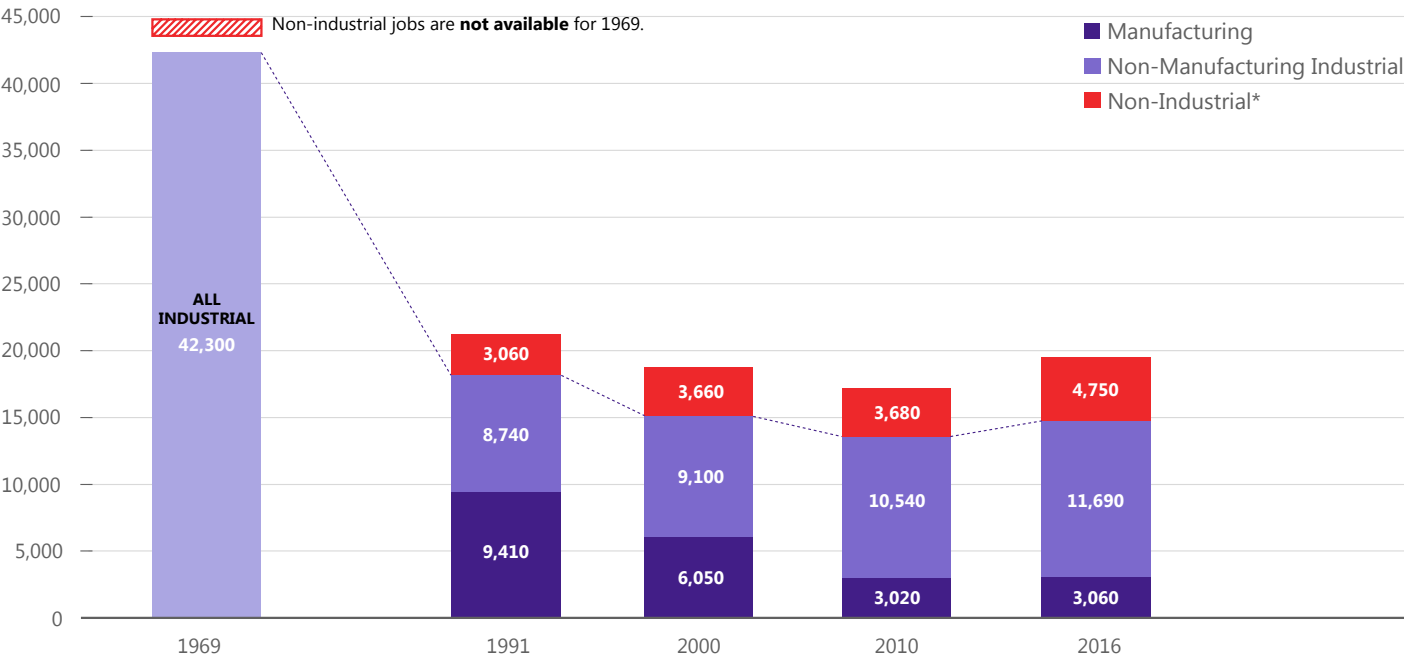
The North Brooklyn IBZ is located in the geographic center of New York City with excellent subway and highway connections.

The growth in non-industrial jobs has been concentrated in areas close to established residential neighborhoods and the L train subway line. In those areas, there is a vibrant, rapidly changing neighborhood with a stock of historic industrial loft buildings — generally three to five stories with large, easily divided floorplates, large windows, and high ceilings — that have been repurposed for a diverse mix of artist studios, light artisanal manufacturing, film and photography, advertising, media, and tech.² These portions of the Study Area also contain restaurants, entertainment venues,

and art galleries, as well as large and small industrial activities.

However, development in both areas has become increasingly haphazard, leading to increased competition for land and conflicts between different types of land uses. Further, growth has led to increasing strains on local transportation and other infrastructure. Updates in zoning can help to channel and facilitate growth of industrial and non-industrial jobs into different portions of the Study Area, while key infrastructure improvements can help to better support growth.

NORTH BROOKLYN PRIVATE EMPLOYMENT, 1969-2016



"Non-Industrial" jobs data not available for 1969. "All Industrial" 1969 data includes Construction, Manufacturing, Transportation, Wholesale Trade.

Source: NYS Department of Labor. QCEW, 2000, 2010, 2016 (3Q), ES-202, 1991 (3Q); NYC Department of City Planning. "Planning for Jobs." 1971. "Citywide Industry Study." 1993. North Brooklyn defined as M-zones along Newtown Creek, approximately the same geography as the Study Area.

TYPICAL NORTH BROOKLYN BUSINESS ACTIVITIES



CRITICAL CITY FACILITIES

Newtown Creek Waste Water Treatment Plant



TECH/MEDIA COMPANIES

Remezcla



MANUFACTURERS

Sightline Fabricators



RESTAURANTS

Roberta's



DISTRIBUTION

Frito Lay distribution facility



FILM/PRODUCTION

Broadway Stages

The North Brooklyn Plan

The *North Brooklyn Plan* is the most in-depth industrial area study that DCP has conducted in decades. Launched in late 2015, it relied on substantial input from local stakeholders, including businesses, workers, residents, and community organizations, as well as detailed analysis of economic, land use, and infrastructure conditions. The *North Brooklyn Plan* aims to:

- **Create a better business environment** for all by preserving and growing industrial jobs, as well as compatible jobs in emerging TAMI and other office-based sectors.
- Create a balanced strategy that channels businesses into different subareas where they can thrive and **reduces competition for space** and potential for conflicts between industrial and non-industrial businesses.
- **Improve the quality of life for workers and residents** within the Study Area and nearby and connect workers with a variety of skill levels to quality jobs.
- **Identify improvements to transportation and infrastructure** to support economic growth.

In order to maximize availability of sites for industrial and commercial uses and limit land use conflicts, the *North Brooklyn Plan* does not propose to allow for development of new housing in the Study Area, apart from limited blocks on the periphery with predominantly residential uses today.

The North Brooklyn Plan relied on a substantial amount of community outreach.

This included: **three** public Open Houses with over **150** attendees; stakeholder roundtables and one-on-one interviews that reached **50** businesses, and multiple small meetings and presentations with local advocates and community groups.



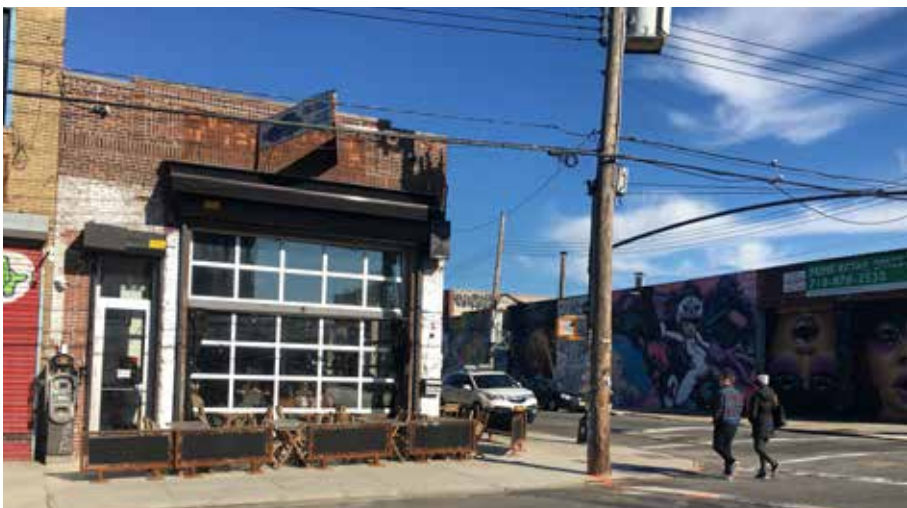
Signs & Decals (custom sign manufacturing)

Recommendations

The recommendations of the *North Brooklyn Plan* fall into four categories:

- **A Land Use Framework for North Brooklyn:** a vision for the future of the Study Area with a balanced strategy for land use changes to encourage the creation, expansion, or retention of workspace for industrial and office-based businesses, including areas for heavy, truck-intensive industrial businesses and a transit-accessible district for job growth in diverse sectors.
- **Zoning tools** that reflect the needs of modern businesses and ensure that workspaces can be created to accommodate growth in the Study Area.
- **Transportation and other infrastructure recommendations** to serve businesses, workers, and residents.
- Identification of opportunities to **leverage existing and new workforce force development strategies** to connect nearby residents and other New Yorkers to quality jobs in a variety of sectors.

The *North Brooklyn Plan's* land use policy recommendations are intended to provide guidance for future land use actions. A City-led rezoning reflecting these recommendations will be developed based on further analysis and outreach to stakeholders about the details of a rezoning proposal, including boundaries. It will also be subject to a comprehensive environmental review and full public review.



Sea Wolf restaurant on Wyckoff Avenue

Land Use Framework for North Brooklyn

The North Brooklyn Land Use Framework identifies subareas based on existing trends and assets. Recommendations for the future development of each subarea are conceived of as pieces of a balanced overall strategy.

.....

Core Industrial Area

A central hub for essential industrial businesses that create jobs and keep New York City running.

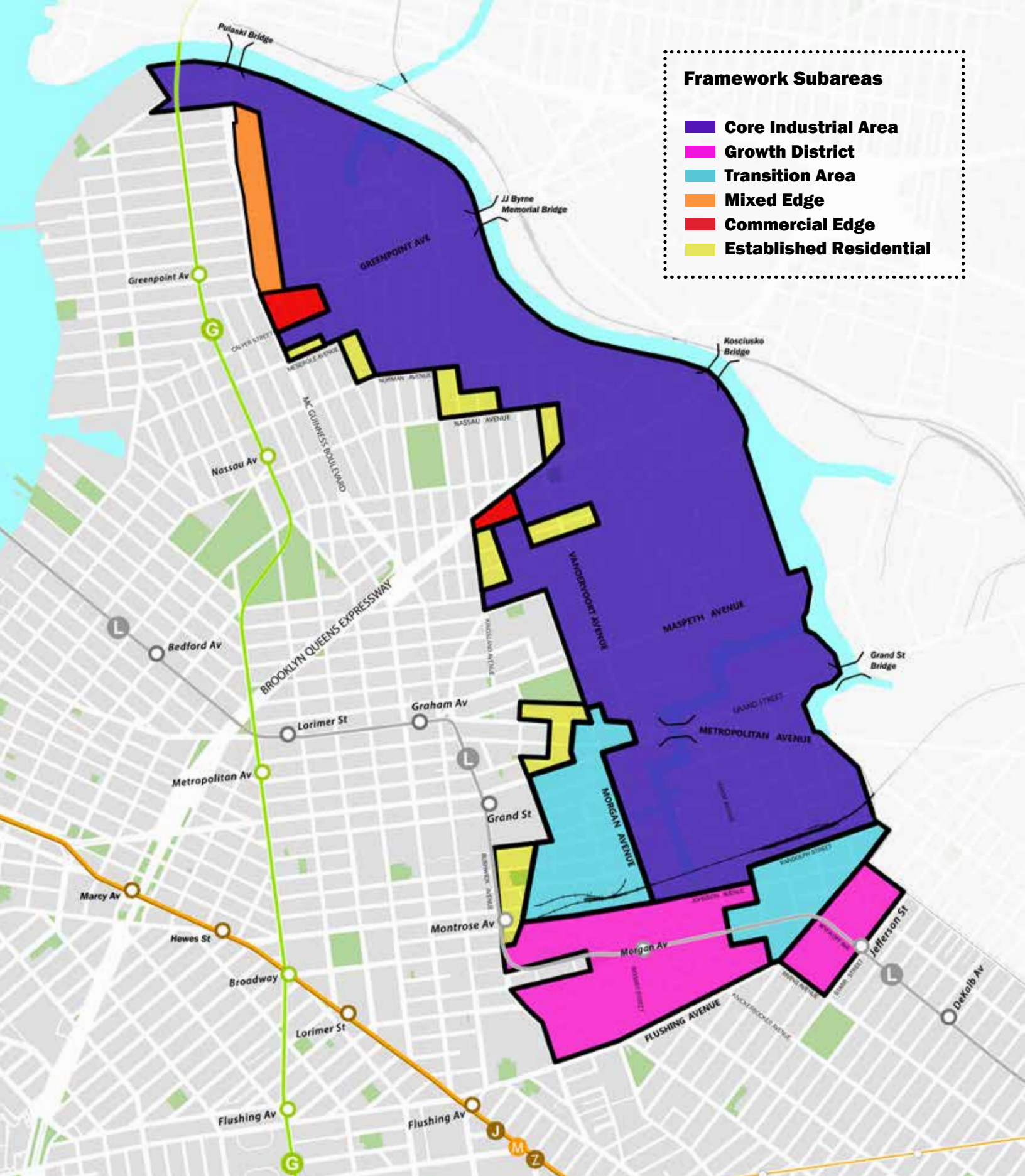
North Brooklyn's Core Industrial Area makes up over two-thirds of the Study Area and is located along Newtown Creek, away from residential neighborhoods and pedestrian-heavy areas. Core industrial areas play an important economic role in the city and contain hubs for heavy, truck-intensive industrial businesses that provide essential services, such as wholesale, recycling, construction materials storage, open industrial uses, and utilities. Core industrial areas also have key strategic advantages, such as access to truck routes, alternative freight modes, and other transportation infrastructure. They have large lots that can accommodate land- and truck-intensive industry and are generally separated from non-industrial uses.



Goal: Retain as a hub for essential industrial businesses, balanced by growth in diverse sectors in the Growth District.

Key Land Use Recommendations:

- Implement appropriate limitations on targeted non-industrial uses, including entertainment uses.
- Increase permitted industrial FAR to at least 2.0 across the subarea to allow for multi-story industrial buildings.
- Rightsize industrial parking and loading requirements to better align with business' needs and remove obstacles to creation of industrial space.



Growth District

A dynamic, transit-accessible district for creative and tech-driven jobs of the future.

The Growth District is the most transit-accessible subarea with the greatest concentration of multi-story industrial loft buildings. It has a rapidly evolving mix of artist studios, restaurants, TAMI, other office-based businesses, artisanal manufacturing, and other industrial uses. While zoning does not allow for new residential development, the subarea contains limited residential uses in the form of both historic rowhouses and converted industrial loft buildings.



Goal: Grow an ecosystem of creative and tech-driven jobs in office-based and industrial sectors near transit, balanced by reinforcement of the Core Industrial Area for essential industrial uses.

Key Land Use Recommendations:

- Increase density for commercial and industrial uses.
- Create new loft-like building envelopes.
- Reduce parking requirements to reflect excellent transit access.
- Rightsize loading requirements to reflect business needs and facilitate development.

Transition Area

A mix of industrial and non-industrial uses serving as a buffer between subareas.

Separating the Core Industrial Area from other subareas as well as residential neighborhoods, the Transition Area is a predominantly industrial subarea with some commercial and artistic uses. It is mostly characterized by low-scale buildings but has a small number of scattered multi-story loft buildings. While it is more transit-accessible than the Core Industrial Area, it is generally less proximate to the subway than the Growth District.



Goal: Support a continued mix of industrial and commercial uses while channeling substantial commercial development to the Growth District.

Key Land Use Recommendations:

- Modestly increase density for commercial and industrial uses and create new mechanism to incentivize industrial space.
- Create new loft-like building envelopes.
- Reduce parking requirements to reflect moderate transit access.
- Rightsize loading requirements to reflect business needs and facilitate development.

Stable Areas

Small peripheral areas where no change in land use is recommended.

Stable Areas are portions of the Study Area where substantial zoning changes would not advance the job growth goals of the *North Brooklyn Plan* and are generally not recommended.



Mixed Edge: A longstanding mix of residential and industrial uses with no predominant use. No zoning change recommended.

Commercial Edge: Selected active commercial properties adjacent to residential neighborhoods outside the Study Area. No zoning change recommended.

Established Residential: Peripheral, predominantly residential areas that are currently zoned for industrial uses but are similar in character to adjacent residential neighborhoods. New residential zoning is appropriate to match existing conditions in these small areas.

Additional Recommendations

Transportation and Infrastructure

- Implement transportation pilots to advance innovative planning for industrial areas citywide, including new on-street design solutions for freight loading, enhanced truck wayfinding for truck routes, business incentives for usage of clean trucks, and roadway reconstruction with more durable materials.
- Prioritize high-impact capital projects, including replacement of Grand Street Bridge.
- Invest in state of good repair and operational improvements to transportation infrastructure, including improving pedestrian safety to reflect increases in pedestrian activity in some areas, creating additional bicycle infrastructure, and restriping and resurfacing roadways.
- Improve the public realm and create green infrastructure such as rain gardens and bioswales.
- Expand broadband access.

Workforce Development

- Develop a broader Newtown Creek Valley workforce development strategy that connects to the Long Island City and Maspeth IBZs.
- Connect workers to fast-growing creative and tech-driven sectors.
- Reinforce and coordinate existing programs and organizations.
- Connect with local schools to prepare youth for strong career pathways.



Citywide Context

Shifts in the sectors that drive New York City's economy and changes in where businesses choose to locate are increasingly at odds with the M district zoning that has changed little in the past half century.

New York City's Industrial Areas

Many of New York City's industrial areas, including the Study Area, were developed prior to 1961 under far more permissive land use controls than exist today, which imposed no use restrictions or environmental standards, and allowed businesses and residential uses to locate alongside heavy industry. Many of the buildings that exist in industrial areas were also developed under rules that allowed higher densities and had minimal requirements for yards and off-street

loading and parking. This changed in 1961 when a comprehensive overhaul of the Zoning Resolution established three main types of zoning districts: residential, commercial, and manufacturing, the latter of which separated industrial from residential uses. The architects of the 1961 Zoning Resolution envisioned these newly established M districts as becoming more typical of modern, suburban industrial or office parks, characterized by low-rise factories and warehouses with ample off-street parking. However, the development as envisioned under the 1961 zoning largely

failed to happen as the large-scale manufacturing that once characterized industrial areas in the city began to decline when firms sought lower-cost and more transportation-accessible locations in the region, rural areas, or abroad.

This left industrial areas, including the Study Area, with zoning that did not match the needs of existing businesses and discouraged new development. In 1950, manufacturing accounted for over one million jobs and represented one-third of New York City's total employment. By 1969, however, employment in the sector had declined by over 20 percent, and jobs in the steadily growing service sector exceeded those in manufacturing

for the first time. Steep job losses in manufacturing, which had long been the backbone of the city's economy and a reliable source of middle-wage for lower-skilled workers, was a concern to city planners, many of whom saw a need to protect manufacturing through land use restrictions on competing uses.

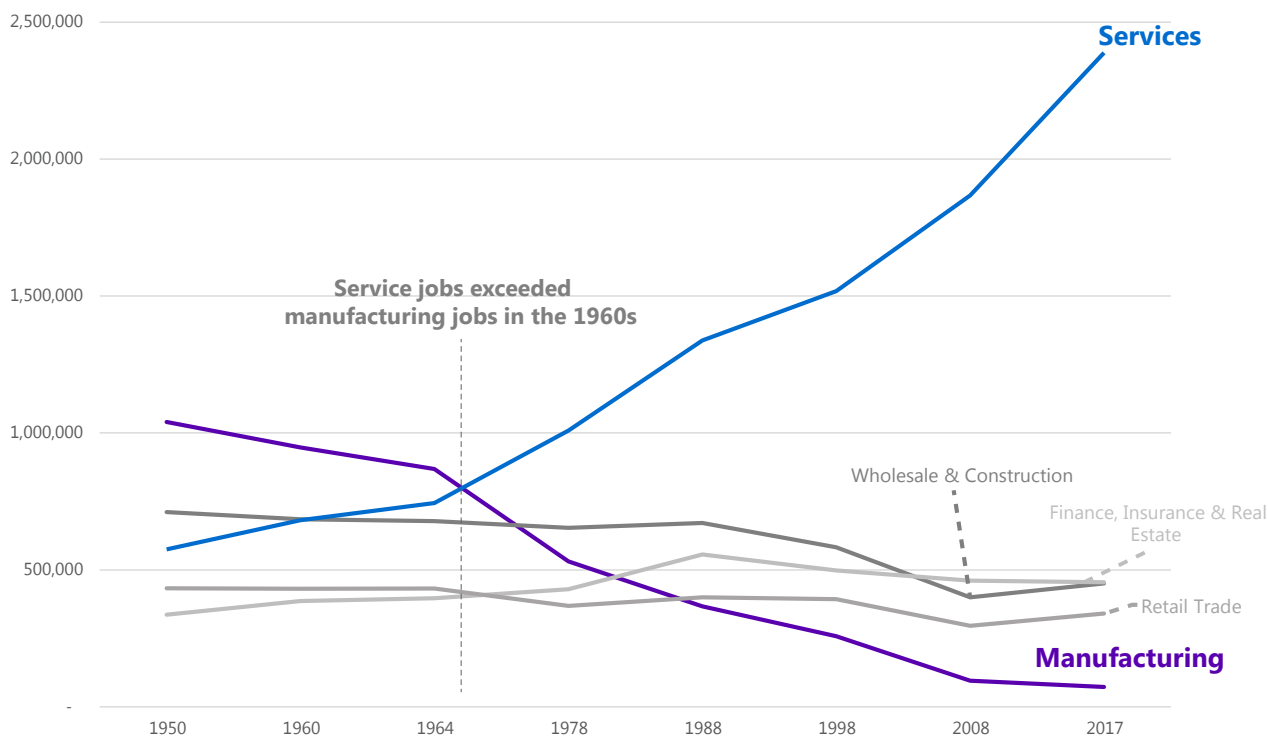
Planning for Jobs, a 1971 report for the New York City Planning Commission, laid out the case for industrial urban renewal to promote site assemblages for modernized industrial facilities that would make manufacturing more competitive in New York City. Although few of the recommendations in this plan were adopted, it did argue for land use policy to address land costs for manufacturing uses: "...competition

for [land] is fierce," its authors claimed. "Unless industrial land is protected it will continue to decline and manufacturing jobs will disappear along with it."³

Planning for Jobs, however, did usher in an era of new land use restrictions aimed at preserving manufacturing jobs. Beginning in the 1970s, in response to non-industrial uses expanding in M districts, new restrictions were created for large retail establishments and community facilities. Nonetheless, manufacturing uses in the city and in the Study Area continued to decline further.

In 1993, DCP's *Citywide Industry Study* proposed strategies to foster job creation and adapt to new industry

EMPLOYMENT BY MAJOR SECTOR, NYC, 1950-2017*



Source: NYS Department of Labor. QCEW, 2008 (Q3), 2017 (Q2); ES-202/QCEW historical estimates 1978-1999; "Jobs in Transition," 1966. Some of the shift in employment between 1998 and 2008 is due to a reclassification of industry codes from SIC to NAICS. Most significantly, most publishing companies once classified as manufacturing would have moved to "Information"; manufacturing headquarters may also have shifted to "management of companies and enterprises."

by relaxing restrictions on commercial uses in M1 districts and allowing for some light industrial uses in certain commercial districts. Although narrowly adopted by the City Planning Commission, the changes were turned down by the City Council due to ongoing concerns about the potential for introducing uses that would compete with manufacturing for space.⁴

In 1987, amendments to the New York State Loft Law allowed the legalization of prior conversions of industrial loft buildings throughout the city, including in the Study Area, to residential use. In 1997, a special mixed-use zoning district was created to allow for new residential, commercial, and community facility uses within appropriate areas

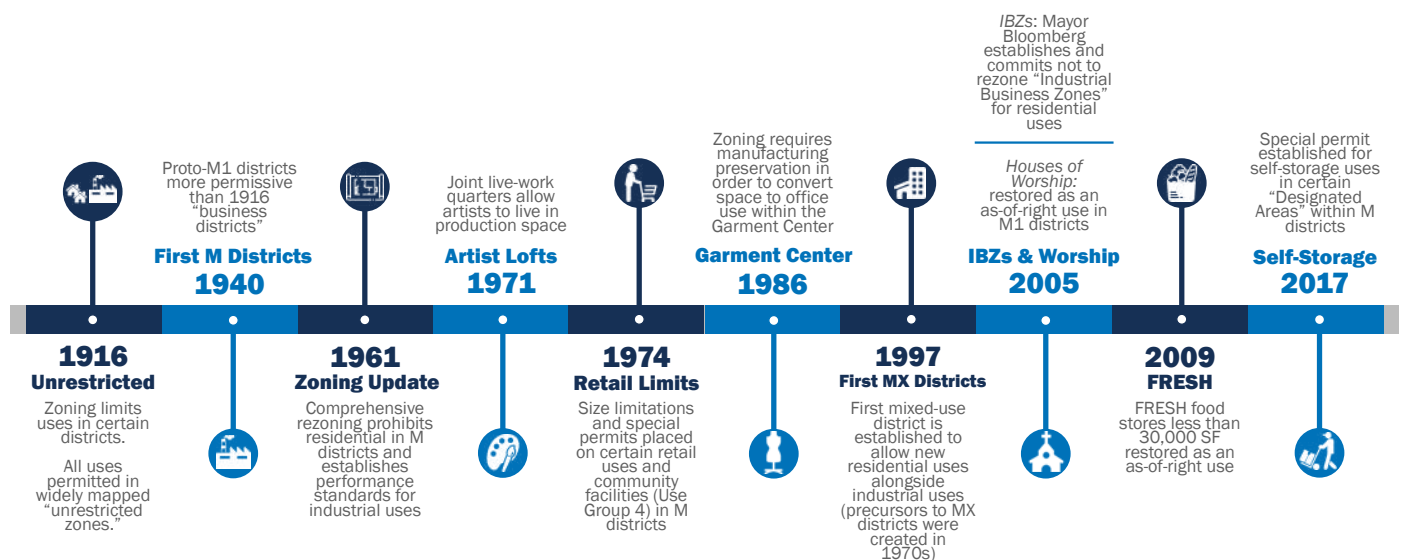
previously zoned for industrial use to facilitate adaptive reuse of vacant loft buildings generally unsuitable for modern industry. These districts were not mapped within the Study Area, but have contributed to the diversification of uses in neighboring Williamsburg.

In 2006, IBZs were instituted under the Bloomberg administration. IBZs are non-zoning designations that demonstrate a commitment to land use and public policies that encourage the retention and growth of industrial businesses, including financial incentives, designation of local ombudsmen, and a resolution not to support residential rezonings within their bounds. Recent efforts to limit uses in industrial areas include

limitations on self-storage in IBZs, approved by City Council in 2017, and limitations on hotels in M1 districts currently undergoing public review.

After a steep decline, manufacturing employment has finally become relatively stable, while other industrial sectors – construction, transportation, and warehousing in particular – have grown. At the same time, rapid growth in non-industrial sectors has driven total employment in the city to an all-time high, and non-industrial jobs are growing in M districts across the city. Zoning in M districts must be reassessed once again in order to create suitable business environments for job growth in a range of industries within these areas.

EVOLUTION OF ZONING IN M DISTRICTS



About M Zoning Districts

Zoning

Zoning districts define the permitted size and use of buildings, such as residential, commercial, community facility, or industrial/manufacturing. Zoning also contains provisions around building size and bulk, urban design, parking, loading docks, and open space requirements.

Floor Area Ratios (FAR)

The floor area ratio controls the size of buildings. Each zoning district has an FAR which, when multiplied by the lot area of the zoning lot, produces the maximum amount of floor area that can be built. For example, on a 10,000 SF zoning lot in a district with a maximum FAR of 2.0, the floor area on the zoning lot cannot exceed 20,000 SF.

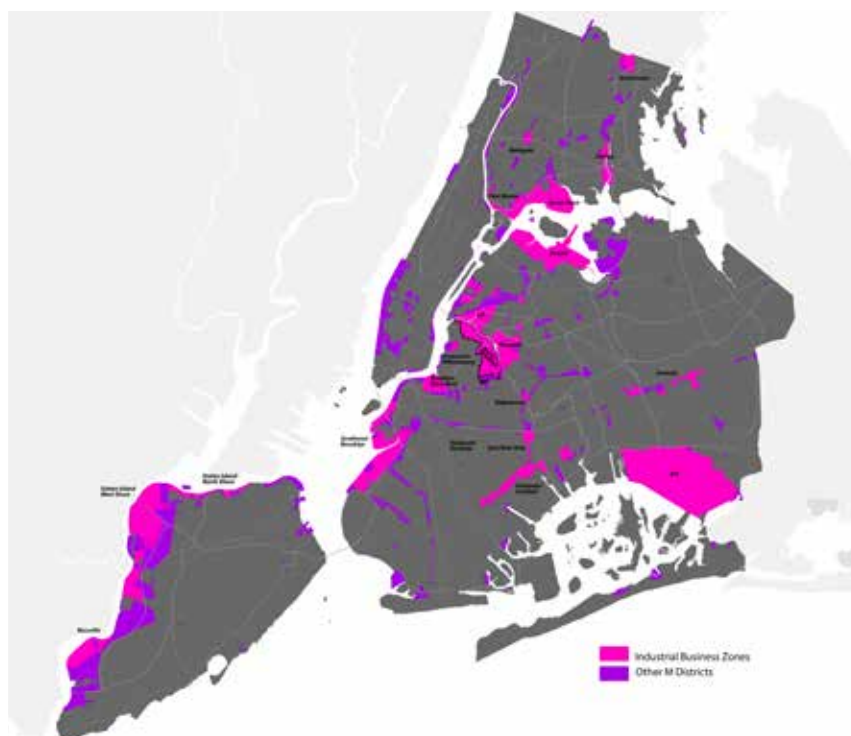
M Zoning Districts

An M district is a zoning district in which industrial uses, most commercial uses, and some community facility uses are permitted. New residential development is typically not allowed.

There are three M districts: M1, M2, and M3, on a spectrum from M1 districts that permit light industrial uses (such as woodworking, auto repair, and wholesale) to M3 districts for heavy industrial uses that generate noise and pollutants (such as power plants, waste transfer and recycling, and fuel depots).

Today's M districts allow for 1.0, 2.0, 5.0, and 10.0 FAR, with no districts allowing for medium-density buildings that may be more appropriate for some industrial areas. Further, the building envelopes in today's M districts tend to encourage taller buildings, rather than squatter and bulkier buildings that resemble historic industrial loft buildings.

M Districts and IBZs



Types of M Districts

	M1	M2	M3
Permitted Uses	• Industrial/Manufacturing • Most Retail <i>(some limited to 10,000 SF)</i> • Nightlife/Entertainment • Office • Self-Storage <i>(limited in IBZs)</i> • Hotel* • Limited Community Facility	• Industrial/Manufacturing • Limited Retail <i>(some limited to 10,000 SF)</i> • Nightlife/Entertainment • Office • Self-Storage <i>(limited in IBZs)</i>	• Industrial/Manufacturing • Limited Retail <i>(some limited to 10,000 SF)</i> • Nightlife/Entertainment • Office • Self-Storage <i>(limited in IBZs)</i>
Permitted FAR	• 1.0 FAR (M1-1) • 2.0 FAR (M1-2, M1-4) • 5.0 FAR (M1-3, M1-5) • 10.0 FAR (M1-6)	• 2.0 FAR (M2-1, M2-3) • 5.0 FAR (M2-2, M2-4)	• 2.0 FAR (M3-1, M3-2)
Parking	M1-4, M1-5, M1-6: • No parking requirements All other M1 districts: • Industrial/Manufacturing: 1/1,000 SF • Storage: 1/2,000 SF • Food Stores: 1/200 SF • Retail/Office: 1/300 SF <i>Parking requirements for other uses depend on capacity of establishment.</i>	M2-3, M2-4: • No parking requirements All other M2 districts: • Industrial/Manufacturing: 1/1,000 SF • Storage: 1/2,000 SF • Food Stores: 1/200 SF • Retail/Office: 1/300 SF <i>Parking requirements for other uses depend on capacity of establishment.</i>	M3-2 district: • No parking requirements M3-1 district: • Industrial/Manufacturing: 1/1,000 SF • Storage: 1/2,000 SF • Food Stores: 1/200 SF • Retail/Office: 1/300 SF <i>Parking requirements for other uses depend on capacity of establishment.</i>

*A zoning text amendment currently in public review would require a special permit for new hotel development in M1 districts.

New York City's Growing Economy

New York City's economy is growing rapidly. Between 2010 and 2017 the city gained 660,000 private sector jobs, exceeding the rate of growth nationwide and far outweighing job losses experienced during the post-2007 recession. In tandem, New York City's population has been growing and is larger than it has ever been. Between April 2010 and July 2017, the city gained 447,600 residents, an increase of 5.5 percent, a rate of growth not experienced since the 1920s.⁵

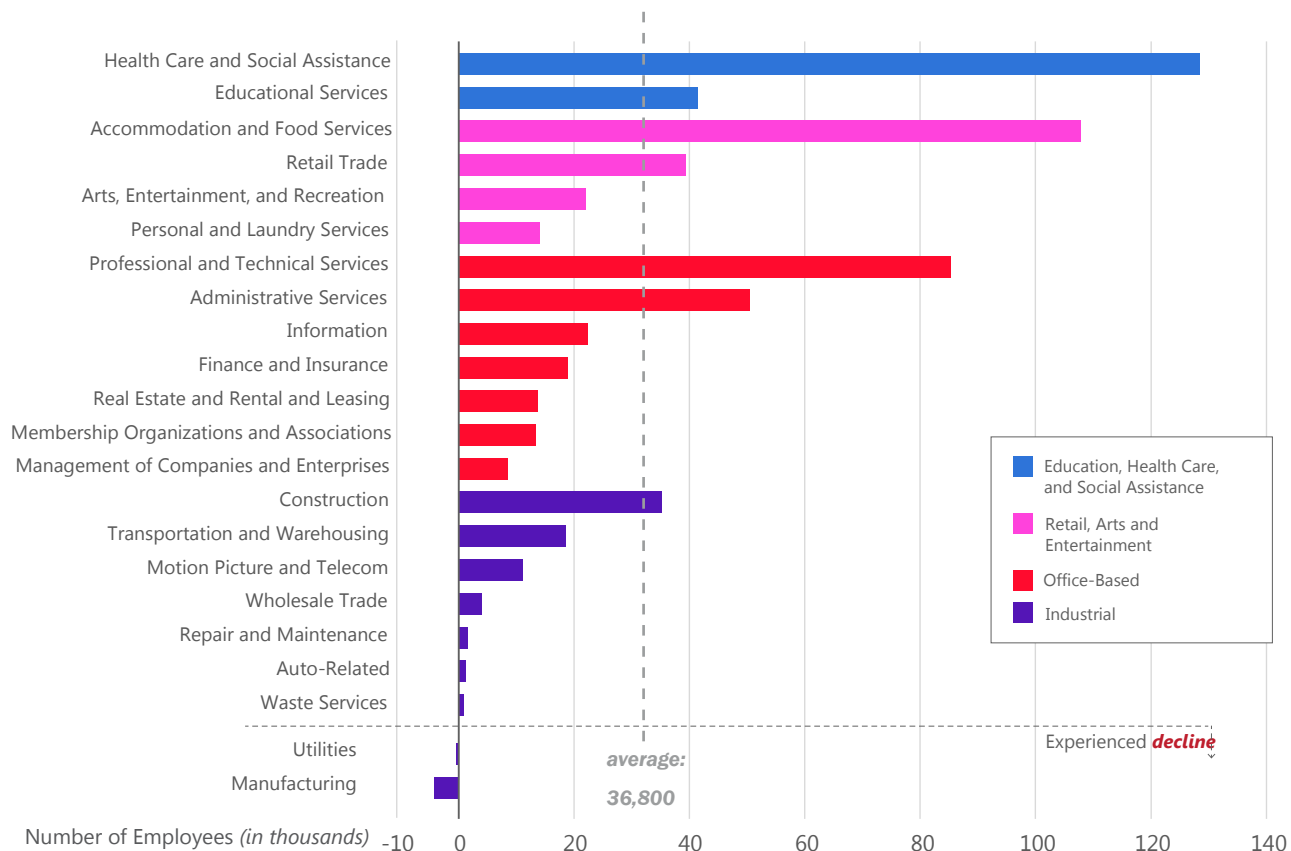
New York City's job gains since 2010 occurred in almost all sectors except for the utilities and manufacturing sectors, which showed small declines. The growth was highly concentrated in three major sectors: accommodation and food services, professional services, and health care. These sectors contributed 48 percent of the employment growth from 2010-2017 and currently constitute 39 percent of all private sector jobs.

While the service economy is leading growth, many industrial sectors are also faring well. Between 2010 and 2017, the major non-manufacturing industrial sectors experienced substantial growth,

with construction, transportation and wholesale, adding 57,600 jobs, or 9 percent of citywide growth. Many industrial firms that have stayed in the city have done so despite the narrow streets, aging industrial buildings, and limited off-street loading that characterize many of the city's historic industrial areas due to locational advantages such as proximity to customers or suppliers.

The decades-long decline of manufacturing jobs has slowed in recent years. Manufacturing employment, which constitutes 2 percent of citywide employment, had a net loss of 3,800 jobs, or 5 percent, during this time period.

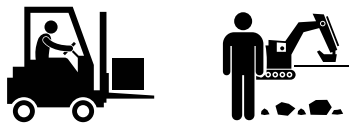
CHANGE IN PRIVATE SECTOR EMPLOYMENT, NYC, 2010-2017



Source: NYS Department of Labor. Quarterly Census of Employment and Wages (QCEW), 2010 (annual averages), and 2017 (Q2). Excludes Unclassified jobs, which constitute less than 2% of citywide employment.

Defining Sectors in a Changing Economy

As technology continues to rapidly change our economy, it is difficult to establish clear definitions of economic sectors. For the purposes of land use planning, the following four “macrosectors” are used in this report, based on a combination of space needs and business activities. *(These categories do not directly correlate to Use Group definitions in the NYC Zoning Resolution, most of which were defined decades ago.)*



Industrial

Businesses that produce, repair, and/or distribute goods, many of which require large, flexible ground floor space for production, equipment, loading, storage, and parking, and rely on trucks.

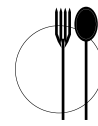
- **Heavy, truck-intensive businesses**, which includes Essential Industrial Businesses that provide services that keep the city running such as **Wholesale; Transportation; Construction; Auto Repair; Utilities; and Waste Management**; it also includes other businesses that create large volumes of truck traffic, odors, and/or noise such as **Film Production** and larger-scale **Manufacturing**.
- **Light industrial**, which includes lower-impact and lower-volume businesses such as smaller-scale **Manufacturing**.



Office

Businesses that provide commercial services and occupy office space.

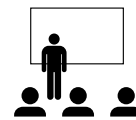
- **TAMI, or Technology, Advertising, Media, Information**, fast-growing creative and tech-driven industries, often described by real estate professionals as driving a change in demand for different types of office space.
- **Traditional office users**, such as **Finance, Insurance, and Real State Estate**, historically the largest office-based industries in the city.



Retail, Arts Entertainment

Businesses that sell merchandise or provide accommodation, food, cultural, entertainment, or recreational services.

- **Retail Stores; Food and Beverage Services; Hotels; Art Galleries; and Music Venues.**



Education, Health Care, Social Services

Businesses that provide educational, health care, or religious services that may occupy either offices or more specially-designed facilities.

- **Education; Health Care; Social Assistance; and Not-For-Profit Organizations.**

New York City's Opportunities for Middle-Wage Jobs

The decline in middle-wage manufacturing jobs and the rapid growth in low-wage, lower-skilled occupations in food services, home health care, and retail has fueled a national debate about how to increase opportunities available to workers without a college degree – which comprise the majority of the workforce living in New York City. A recent information brief by DCP, “Middle-Wage Jobs in NYC,” analyzed the availability of middle-wage jobs, defined as jobs paying more than

\$40,000 a year that do not require a college degree, using detailed employment data generally unavailable to researchers.⁶

The study found that across the city's economy there were 715,000 middle-wage jobs, constituting about one-fifth of the city's total private employment.⁷ While these jobs did not require a college degree, most required some training beyond high school, such as a vocational school, an associate's degree, or on-the-job training.

Approximately 40 percent of all middle-wage jobs were in three sectors, all of

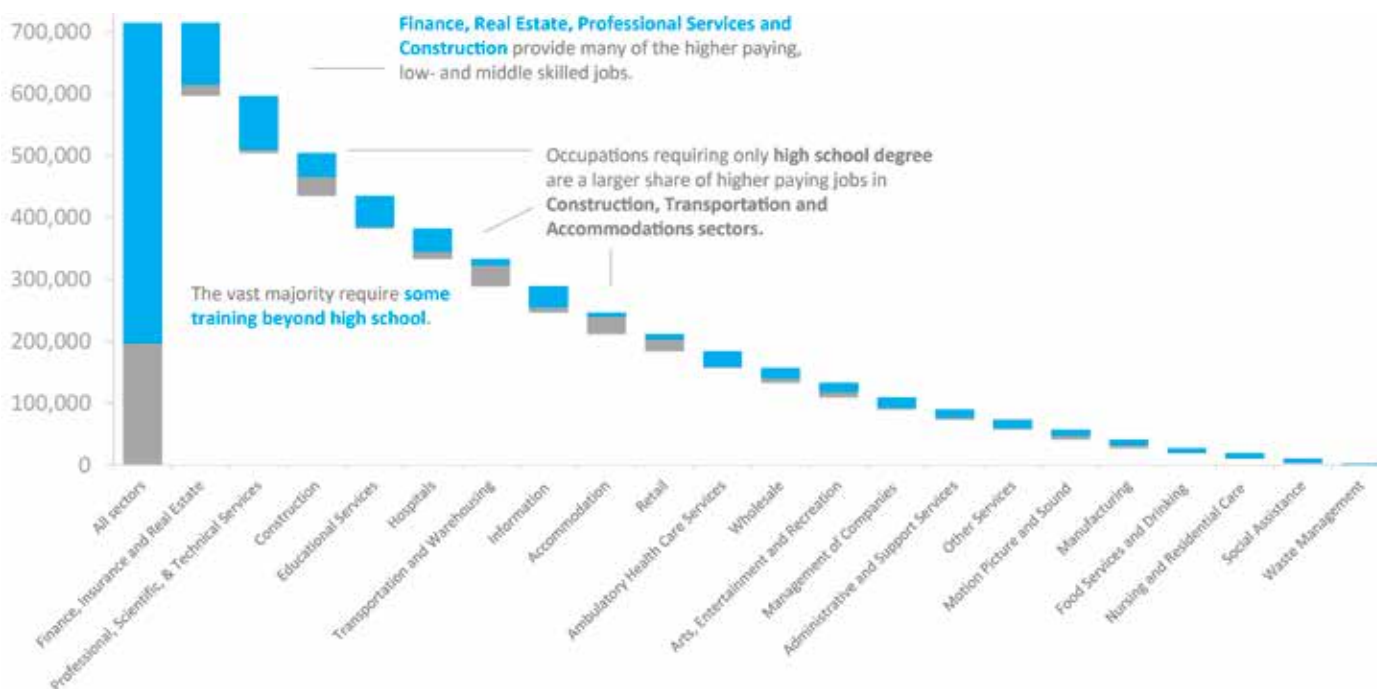
which are growing: finance, insurance and real estate services; professional, scientific and technical services; and construction.

These jobs include occupations such as secretaries, legal assistants, bookkeeping, and customer service representatives.

While manufacturing was historically a source of middle-wage jobs for New Yorkers, it currently makes up a very small share of today's economy: only 2 percent of middle-wage jobs. Instead, jobs offering above average wages requiring only a high school

MIDDLE-WAGE JOBS IN NYC

(with annual wages > \$40,000 that do not require a college degree)

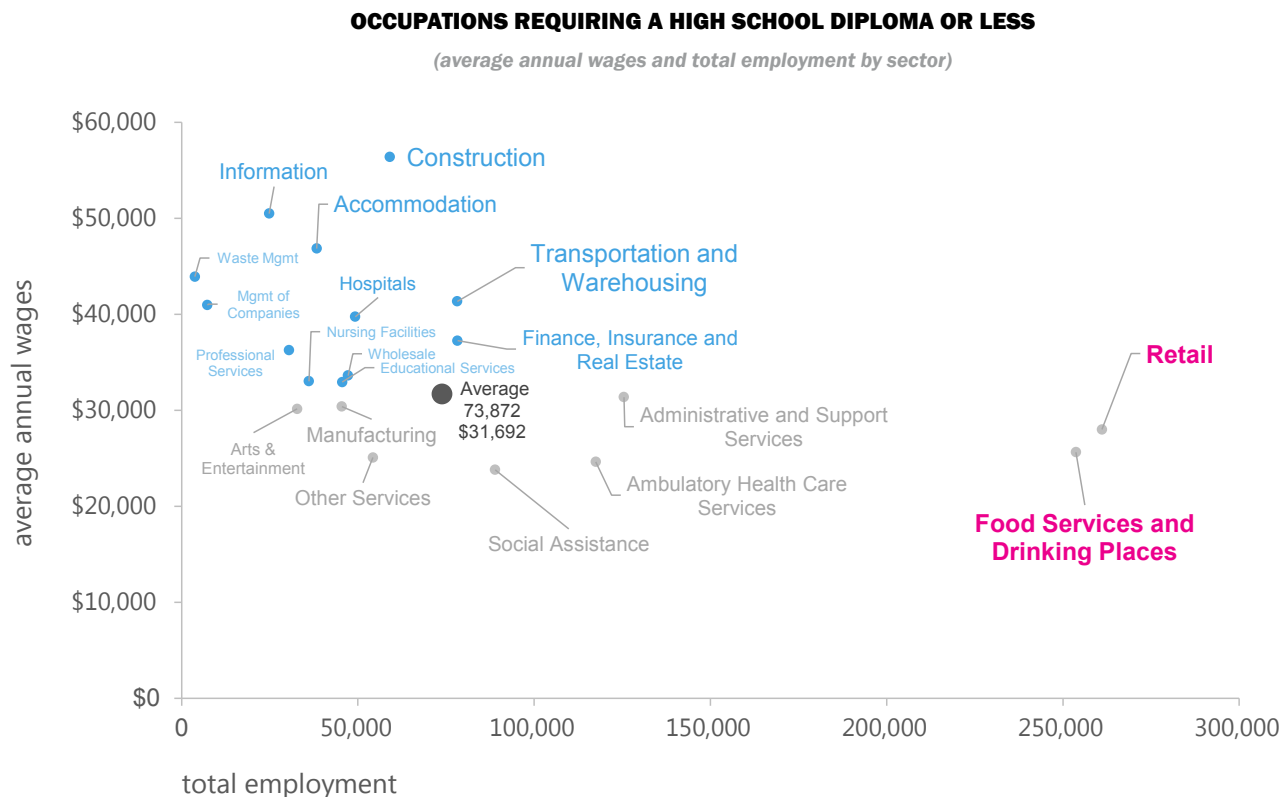


Source: NYS Department of Labor. Occupational Employment Statistics (OES), 2011, 2012, 2013, 2014. Wages updated to the first quarter of 2015 by making cost-of-living adjustments; O*NET OnLine.

degree – with no additional training – were concentrated in accommodation, construction, transportation, and real estate.

strategy to connect local workers with quality jobs across both industrial and non-industrial sectors.

This suggests that, today, there are opportunities for entry-level jobs that extend beyond the manufacturing sector. As such, the City's workforce development programs focus on preparing and connecting workers to jobs in a broad range of growing sectors – such as technology, healthcare, food service, media, and construction. The job growth goals of the *North Brooklyn Plan* should be coupled with a workforce development



Source: Employment and wage data by are based on the Occupational Employment Statistics (OES) survey, which collected information in 2011, 2012, 2013 and 2014 and then updated the wages to the first quarter of 2015 by making cost-of-living adjustments. Occupational Employment Statistics, educational requirements from O*Net.

Shifting Geography of Employment

Job Growth Outside Manhattan

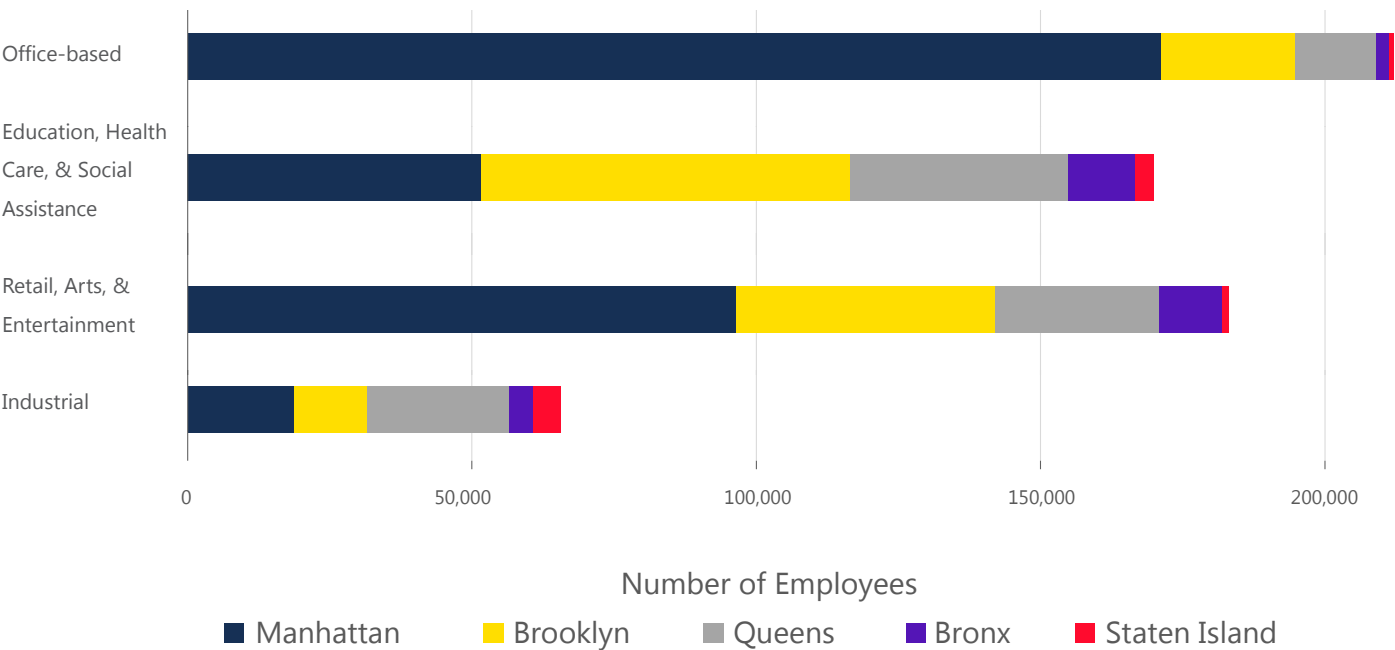
Another notable economic trend is the expansion of job centers in boroughs outside Manhattan, where almost half of the city’s job growth between 2010 and 2017 occurred. This includes 19 percent of growth in office-based jobs; 46 percent of growth in retail, entertainment, accommodation, and food services; 72 percent of growth in industrial sectors; and 70 percent of growth in education, health care, and

social assistance.⁸ Brooklyn gained the most jobs of all the boroughs outside Manhattan — an additional 155,000 jobs between 2010 and 2017.

The estimated net population growth between 2010 and 2017 was also most dramatic in Brooklyn, which gained 144,100 people, a 5.8 percent total gain.⁹ The profile of the labor force living in Brooklyn and Queens is also changing: between 2010 and 2015, the number of residents with a college degree increased by 219,380, and the proportion of workers in management and professional occupations grew from 33 to 37 percent.¹⁰

The types of workspace some businesses seek are shifting. Established companies in the financial services, legal services, real estate, and accounting sectors – important bedrocks of the city’s economy – have traditionally preferred to locate in Manhattan. These traditional office users are the largest occupants of office space in the city in terms of total employment.¹¹ However, TAMI businesses – those in sectors driven by creativity and technology such as software development, sound production and video, biomedical research, architecture, engineering, and advanced manufacturing – are contributing to new demand for

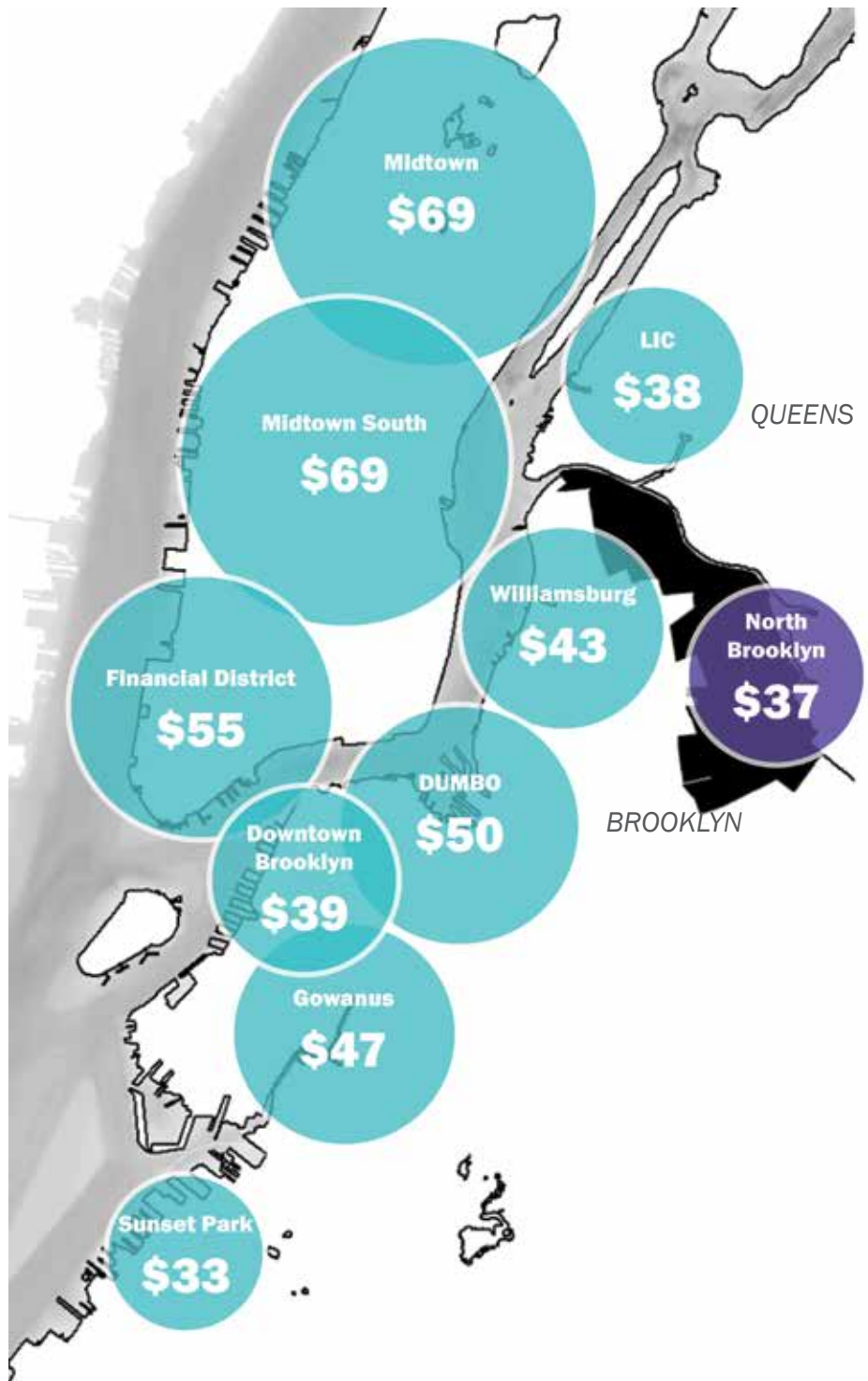
CHANGE IN PRIVATE EMPLOYMENT BY NYC BOROUGH, 2010-2017



Source: NYS Department of Labor. Quarterly Census of Employment and Wages (QCEW), 2010 (annual averages), and 2017 (Q2). Excludes Unclassified jobs, which constitute less than 2% of citywide employment.

office space. These businesses have different economic and workspace considerations, and are more likely to seek space outside of Manhattan in areas near transit and growing residential neighborhoods. These neighborhoods – such as Downtown Brooklyn, DUMBO, Williamsburg, and Long Island City – offer lower rents than established Manhattan office clusters.

The NYC Economic Development Corporation (NYCEDC) estimates that employment in TAMI sectors has grown nearly 28 percent between 2005 and 2015 to a total of 343,000 jobs, or 10 percent of total jobs.¹² Advances in technology and the city's global competitiveness are expected to continue to drive TAMI growth and the need for space that meets their needs.¹³



AVERAGE OFFICE SPACE ASKING RENTS PER SF, 2017

Costar Group, www.costar.com. 2018.

Evolving Industrial Areas

Mixed Industrial- Commercial Areas

Many firms choosing to locate outside of Manhattan have been attracted to M1 districts, which were established by zoning as light industrial buffer areas close to residential neighborhoods. Especially in more transit-accessible portions of M1 districts, aging multistory industrial loft buildings are being repurposed to accommodate office-based, retail, arts, and entertainment businesses. Limitations on entertainment and nightlife uses in many other zoning districts have also encouraged the growth of these uses in these areas.

While this trend began in neighborhoods within one to two subway stops of Manhattan, such as DUMBO and Greenpoint-Williamsburg, the trend is now appearing in neighborhoods such as Gowanus, Sunset Park, and portions of the Study Area in East Williamsburg and Bushwick. As residents look for reduced commute times and walk-to-work opportunities, and as pedestrian activity and retail amenities grow, these neighborhoods are likely to continue to see this diverse job growth.

Predominantly Industrial Areas

Many of New York City's industrial areas, however, have remained decidedly industrial with limited commercial growth. This has occurred in areas primarily zoned for heavier industrial uses (i.e., M2 and M3 districts) and in IBZs, which are typically farther from housing and the subway. IBZs, encompassing 7,070 acres of land (excluding airport properties), represent the industrial base of New York City and have outperformed other M districts in maintaining and, to a certain extent, growing the industrial job base.¹⁴ Industrial jobs as a share of total private employment was over 68 percent in IBZs, compared to 46 percent in M districts beyond IBZs in 2014.



Mixed industrial-commercial area: Gowanus

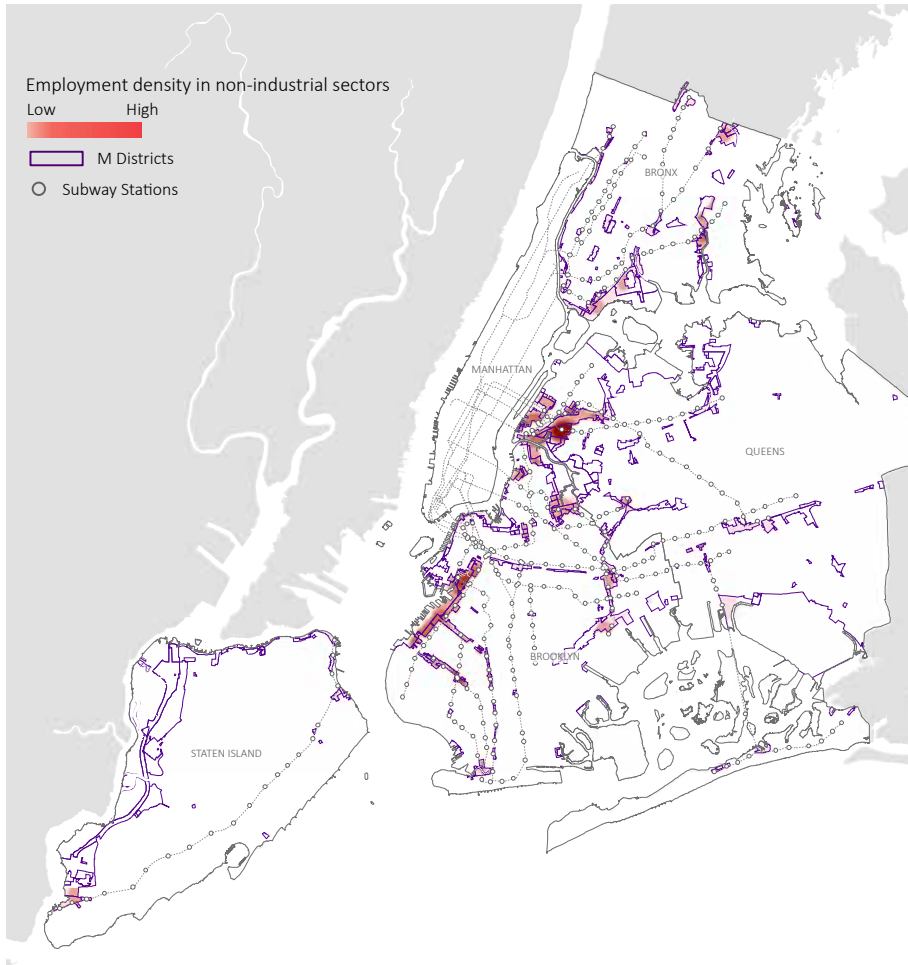


Predominantly industrial area: Hunts Point IBZ



Coworking space in Astoria

Updating Industrial Zoning



DENSITY OF NON-INDUSTRIAL EMPLOYMENT IN M1 DISTRICTS OUTSIDE MANHATTAN, 2015

Source: NYS Department of Labor. Quarterly Census of Employment and Wages (QCEW), 2015 (3Q).

Economic growth in M districts has, in certain instances, created new pressures on industrial sectors that rely heavily on intensive trucking and depend on the limited siting options provided within M districts, far from residential neighborhoods. At the same time, existing zoning creates impediments to the construction of new commercial space in light industrial areas where it may be appropriate. In the Study Area and elsewhere, the growth in both industrial and non-industrial jobs has occurred at times haphazardly.

The *North Brooklyn Plan*, in accordance with the City's *Industrial Action Plan* and the *New York Works* jobs plan, supports DCP's efforts to identify appropriate ways to modify zoning to create suitable business environments for job growth in a range of industries within M districts. In order to create capacity for new work space and jobs within the Study Area, the *North Brooklyn Plan* recommends new zoning that can channel commercial growth into appropriate mixed commercial and industrial areas, while also retaining the majority of the Study Area for large industrial businesses.

Policy Considerations:

Industrial Mixed-Use Building Typologies

Incentivizing or requiring provision of industrial space within buildings for uses that generate higher rents — such as office, residential, retail, and/or self-storage uses — has been proposed as a way to produce new industrial space that would not otherwise be built by the private market. While intriguing, these mixed-use models are largely untested. DCP conducted an in-depth study — [Can Industrial Mixed-Use Buildings Work in NYC?](#) — to determine the feasibility of these buildings in selected M districts, including in the Study Area. The study assessed:

1. **Financial Feasibility:** How likely is it that the private market could create these buildings at a broad scale without public subsidy?
2. **Tenanting and Operations:** What types of industrial businesses and use mixes work best?
3. **Physical Feasibility:** What are the building design and site requirements of an efficient industrial mixed-use building?
4. **Broader Policy Implications:** Are there policy and planning tradeoffs associated with encouraging these buildings?

Overall, the study found that under the right conditions, private construction of industrial mixed-use buildings may be feasible, but requires suitable, flexible development sites, favorable real estate market conditions, and relatively low-volume light industrial tenants.

This suggests that requirements for mandatory inclusion of industrial space in new developments across a neighborhood risk stifling investment. However, the City can update zoning to remove obstacles to the construction of such buildings, such as reducing parking and loading requirements, modifying building envelopes, and increasing allowable FAR; it can also create mechanisms to encourage such developments when feasible in targeted locations (as recommended for the Transition Area in this *Plan*).

FINDINGS

Based on market analysis, interviews with businesses and industrial experts, design of building prototypes, and financial analysis, the study found:

Financial Feasibility

> Industrial mixed-use development is financially feasible without subsidy under certain favorable conditions. Factors include real estate market conditions and development costs, which increase with building design inefficiencies, provision of parking and loading, environmental remediation, and floodproofing.

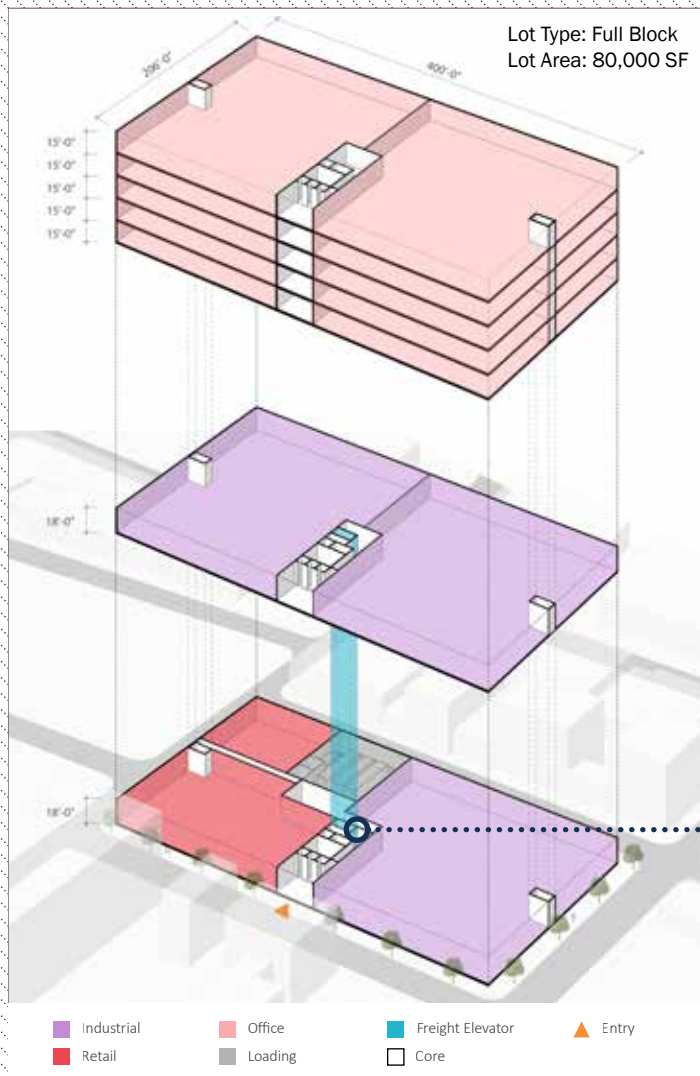
Feasibility also depends on the mix of uses, depth of demand for different types of spaces, and size of development.

Tenanting and Operational Feasibility

> Mixing industrial with office and/or retail results in fewer conflicts and more efficient buildings than mixing with residential. Residential tenants are more sensitive to noise, odors, and other impacts of industrial activities, thus requiring greater separation, increasing costs, and decreasing operational and design

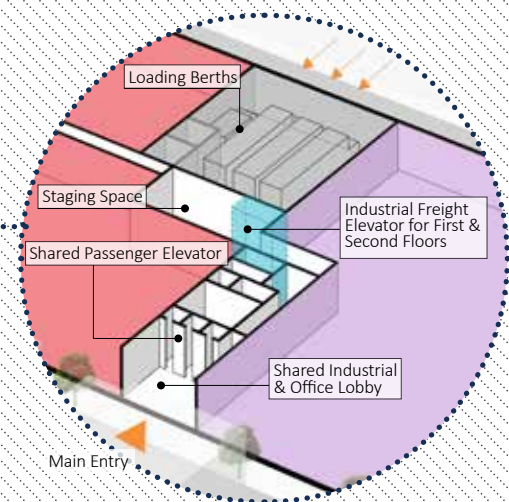
efficiency. Office uses also have similar space needs to industrial businesses, such as large floor plates and wide column spans. Retail can generate additional revenue, but prefers to locate on ground floors also preferred by industrial businesses.

> The types of industrial businesses that can occupy these buildings are generally small, niche manufacturers, including artisanal manufacturing (such as apparel or jewelry making), advanced manufacturing (such as 3D printing), and food manufacturing,



Mixed-use prototypes were tested on different lot types. While mixed-use buildings are generally less efficient than single-use ones, certain conditions made this prototype a relatively efficient building with fewer conflicts:

- > Large site allows for an efficient ground floor design that accommodates retail and light industrial.
- > Office/industrial can occupy similar, large floorplates and share a lobby and core, unlike a residential mix.
- > Multiple frontages allow separation of entryways and loading.
- > Few loading berths and no parking also avoids inefficiencies and costs but requires transit access and tenants with lower loading/parking needs.



which generally generate less fumes, noise, and truck traffic. Artisanal and advanced manufacturing can also often occupy upper floors, freeing ground floors for retail space. Large, truck intensive industrial businesses are more difficult to accommodate.

Physical Feasibility

- > Mixed-use buildings are more complex and less efficient than single-use buildings. Lots over 20,000 SF can increase building flexibility and efficiency, and multiple street frontages can

facilitate separation of uses.

- > Off-street parking and loading occupy valuable ground floor space, increasing costs and decreasing efficiency. Targeting industrial business tenants with lower parking and loading needs and reducing minimum parking and loading requirements in M districts could help address this.

Broader Policy Implications

- > Policy tradeoffs associated with promoting industrial mixed-use buildings should be considered

carefully by policymakers and communities. Mixing industrial uses with other uses may increase the potential for conflicts between trucks, pedestrians, and cyclists. Given financial constraints, providing both affordable housing and industrial space within a development is likely to be challenging without additional subsidy for the industrial space. There is also a tradeoff between providing ground-floor industrial space and providing retail space that serves a neighborhood. Some communities, however, may conclude that these tradeoffs are worthwhile.

THE INNOVATION DISTRICT
TRANSIT ACCESSIBLE NEIGHBORHOOD WITH
NOTABLE INDUSTRIAL, RESIDENTIAL, COMMERCIAL, AND RETAIL
LAND USES

Lane
Tables
And
Chairs
As Is

SUB AREA C | Innovation District | Existing Conditions

A transit accessible neighborhood with notable industrial, residential, commercial, and retail

LAND USE



BUILT ENVIRONMENT

Transit accessible and walkable with a variety of building and lot types

- Small commercial and residential lots
- Small art
- Industrial and commercial with 10 traditional
- Large industrial
- Small art
- Medium office



WORK IN PROGRESS

Planning Process for North Brooklyn

The *North Brooklyn Plan* is based on a robust community engagement process and an in-depth analysis of economic, real estate, land use, and infrastructure conditions.

Community Outreach

The *North Brooklyn Plan* was informed by extensive stakeholder outreach to identify the needs and challenges of local stakeholders and by feedback over time as recommendations were developed. Over the course of late 2015 and 2016, DCP held three large public Open Houses with over 150 attendees, including business owners, local residents, and other stakeholders. DCP also engaged over fifty businesses located within the Study Area and fifteen developers/brokers through interviews and roundtables. DCP presented to and received feedback

from Community Boards 1 and 4 and other local community groups focused on issues of workforce development, environmental preservation, waterfront access, and environmental justice. Much of the outreach was conducted in coordination with Evergreen, the local Industrial Business Service Provider, which was conducting outreach for its Brownfield Opportunity Area (BOA) planning study. Evergreen also contributed its extensive knowledge of the IBZ and was instrumental in connecting DCP with local stakeholders.

Outreach kicked off at an Open House in December 2015, hosted jointly with Evergreen, designed to gather input on benefits and challenges of working or living in or near the Study Area. At the June 2016 Open House, DCP shared a preliminary Land Use Framework informed by input from the first Open House and other outreach to businesses and community groups. At the Open House in September 2016, DCP shared a revised Land Use Framework and recommendations for infrastructure investments.

Seven roundtables, also hosted in collaboration with Evergreen, were organized by discussion topic: large industrial businesses, small industrial businesses, open industrial uses, commercial office businesses, retail and entertainment businesses, transportation issues, and resident issues. Through these roundtables and many one-on-one interviews, DCP was able to speak to fifty different businesses about their needs and plans for the future.

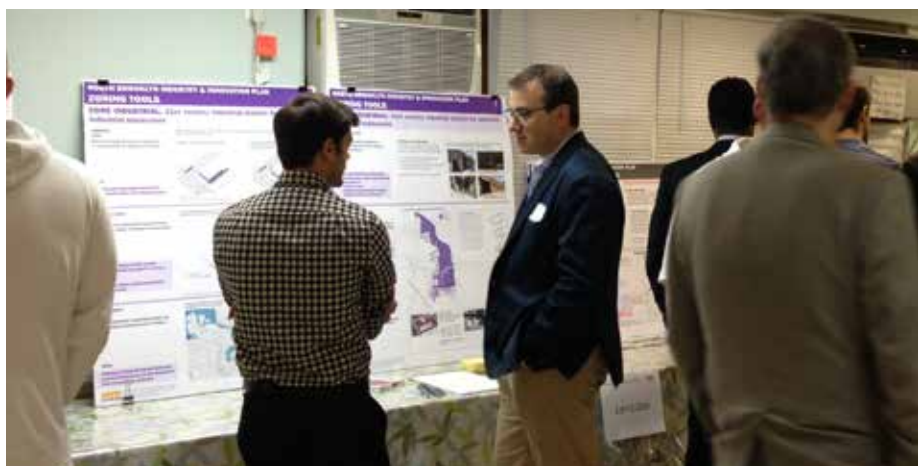
DCP also worked with local elected officials as well as other City agencies such as the NYC Department of Transportation (DOT), the NYC Department of Small Business Services (SBS), and NYCEDC on infrastructure, workforce development, and economic development issues.



Public Meeting #1: December 2015



Public Meeting #2: June 2016



Public Meeting #3: September 2016

Why are Businesses Located in North Brooklyn?

What we heard in interviews, roundtables, and public meetings

Location & Access



"Lots of talented people can easily commute to this location. Half of our employees live in Brooklyn and love their commute, taking the L train in the opposite direction of rush hour. It's a dream."

– Tech company

"It's good to be close to our clients in Manhattan. When we do custom interior installations, we need to go back and forth from the site to our shop. Because we are close, designers are also willing to come to us, and our employees love being near the subway."

– Woodworking company

"Access to the water is key for us. We rely on the water to move fuel."

– Energy distribution company

Character



"We are in New York because we need to access our clients... and in Bushwick because we don't like wearing ties."

– Media company

"We are trying hard to bond our brand with Bushwick and Brooklyn."

– Tech company

"The appeal of this area is its diversity of uses. We should encourage new development and building that supports this."

– Local business

Workforce



“We have been in North Brooklyn since the 1990s, and half of our employees have worked here for more than ten years. We want to stay here because most of our customers are in New York, and we feel loyal to our employees.”

– Large food manufacturing company

“A lot of artists, photographers, and creatives live within a ten minute radius of here; we could put together a whole crew within the neighborhood.”

– Film company

Business Community



“It’s good to be in an industrial area with similar businesses that don’t mind truck traffic and noise.”

– Recycling business

“Residents in the East Village no longer want venue space; you can be louder out here, and don’t have 500 neighbors above complaining.”

– Music venue

“Local woodworking and metal shops helped to build out our space! We have a symbiotic relationship with local industry and want to see them stay. Their workers are some of our favorite customers.”

– Restaurant

Workspace



“Our space is a lovely place to work; it’s a former industrial building with great light, tall ceilings, and glass block walls.”

– Media production company

“We ended up here because I found a large space with gas lines, good truck access, and high ceilings, and I was able to sign a 10 year lease.”

– Distillery

“We’re opening a second location in a warehouse. We like these spaces; they’re easy to convert and provide lots of room.”

– Music venue



What are Community Members' Concerns?

What we heard in interviews, roundtables, and public meetings

Maintaining & Growing the Local Economy



"Local businesses are important because they help to grow employment in the area. We need to keep people living and working in Brooklyn."

– Public meeting attendee

"We need spaces for the heavy industrial businesses because there is nowhere else for them to go."

– Public meeting attendee

Space Constraints & Zoning Issues



"Current zoning doesn't allow us to expand up – we need more height and FAR."

– Small manufacturing company

"It's becoming harder to get long-term leases and affordable space. This makes industrial business planning difficult for existing tenants and impossible for new tenants that need to invest in large build-outs."

– Public meeting attendee

"M1-2 parking requirements really prevent creation of commercial/creative uses with any street presence. For a two-story building, we might need to devote a third of the space just to parking."

– Property owner

Quality of Life & Conflicts



"Just because you're in an industrial zone doesn't mean you need to breathe bad air."

– Large industrial company

"Newtown Creek pollution, illegal dumping, standing water, and noxious emissions and smells need to be addressed."

– Public meeting attendee

"We need more trees and green space!"

– Public meeting attendee

Transportation Challenges



"The area is easy to get to, slow to get through."

– Large industrial company

"Because of congestion, we are paying truck drivers to sit in traffic and our deliveries are delayed."

– Construction supply company

"We need more crosswalks, improved sidewalk conditions, dedicated bike lanes, street trees, and speed bumps."

– Retail store

"There are a lot of safety concerns around truck traffic for pedestrians and cyclists. We need to find a better way to coexist."

– Beverage distribution company

Infrastructure Issues



"We need high speed internet access – sometimes it's easier to FedEx our files on a hard drive!"

– Tech company

"The sewers are inadequate to handle all the stormwater run off."

– Public meeting attendee

"We need more green infrastructure and wetlands at the shoreline to improve water quality."

– Public meeting attendee



Relevant Studies and Planning Efforts

The *North Brooklyn Plan* builds upon and complements recent and ongoing studies by the City and local advocacy organizations.

Mayor's Economic Development Strategy

Industrial Action Plan

Mayor de Blasio's *10-Point Industrial Action Plan*, released in November 2015 in coordination with the City Council, committed to investing in City-owned industrial properties, creating affordable industrial space, and providing key support services to industrial businesses. To prepare New Yorkers for the industrial jobs of the future, the City committed to investing significant resources to provide training in these jobs, which included creating the Industry Partnerships program to align workforce programs and creating career centers in IBZs. The *North Brooklyn Plan* is a direct output of two of the plan's ten points: "Strengthening Core Industrial Areas" and "Creating New Models for Flexible Workspace and Innovation Districts." Other land use policy initiatives included limiting self-storage in IBZs and limiting hotels in M1 districts.

New York Works

In June 2017, Mayor de Blasio released *New York Works*, a plan to catalyze the growth of 100,000 good-paying private sector jobs over the next ten years. *New York Works* identified economic development challenges including rising inequality and fast-changing technologies driving automation and new skillset requirements. The City committed to target jobs in both emerging and established sectors, including tech and cybersecurity, life sciences and healthcare, industrial/manufacturing, and creative ventures.

The City agreed to look to its toolbox of programs and approaches to economic development, including activating City-owned property for commercial and industrial use, financing and tax incentives, capital investments in infrastructure that benefit business growth, directing investment to growing industries, and expanding workforce development programs and tools. To ensure that there is space for these jobs, the City committed to zoning changes that remove barriers to commercial and industrial space and supporting growth of established office districts in Manhattan, emerging commercial centers (e.g., Downtown Brooklyn and Long Island City), and smaller-scale, neighborhood employment districts such as the Study Area.



Mayor de Blasio announcing the Industrial Action Plan



New York Works jobs plan

Other Studies & Plans

Evergreen Brownfield Opportunity Area Plan

Evergreen was awarded funding by the New York State Department of State's Brownfield Opportunity Area (BOA) program to create a revitalization plan for the North Brooklyn IBZ. DCP and Evergreen launched their respective studies of the IBZ in late 2015, and conducted several joint outreach sessions, including a public Open House and stakeholder roundtables. Released in February 2018, the *Evergreen BOA Plan's* vision is "a thriving 21st century industrial area that is diverse and inclusive, adaptable yet stable, and environmentally responsible, allowing businesses to grow in place and continue providing the neighborhood with high quality jobs, the city with essential services, and the world with excellent products."

Similar to the *North Brooklyn Plan*, the *BOA Plan* identified challenges to the IBZ's current capacity for high quality job growth due to space constraints, land use conflicts, and infrastructure needs. While some of the area-wide policy interventions proposed in the *Evergreen BOA Plan* differ from those in the *North Brooklyn Plan*, there is alignment on the Study Area's economic importance and its unique strategic advantages for employment growth. Evergreen's continued input and collaboration will play an important role in the development of any future land use changes or other City actions within the Study Area.

Brooklyn Chamber of Commerce Comprehensive Economic Development Strategy (CEDS)

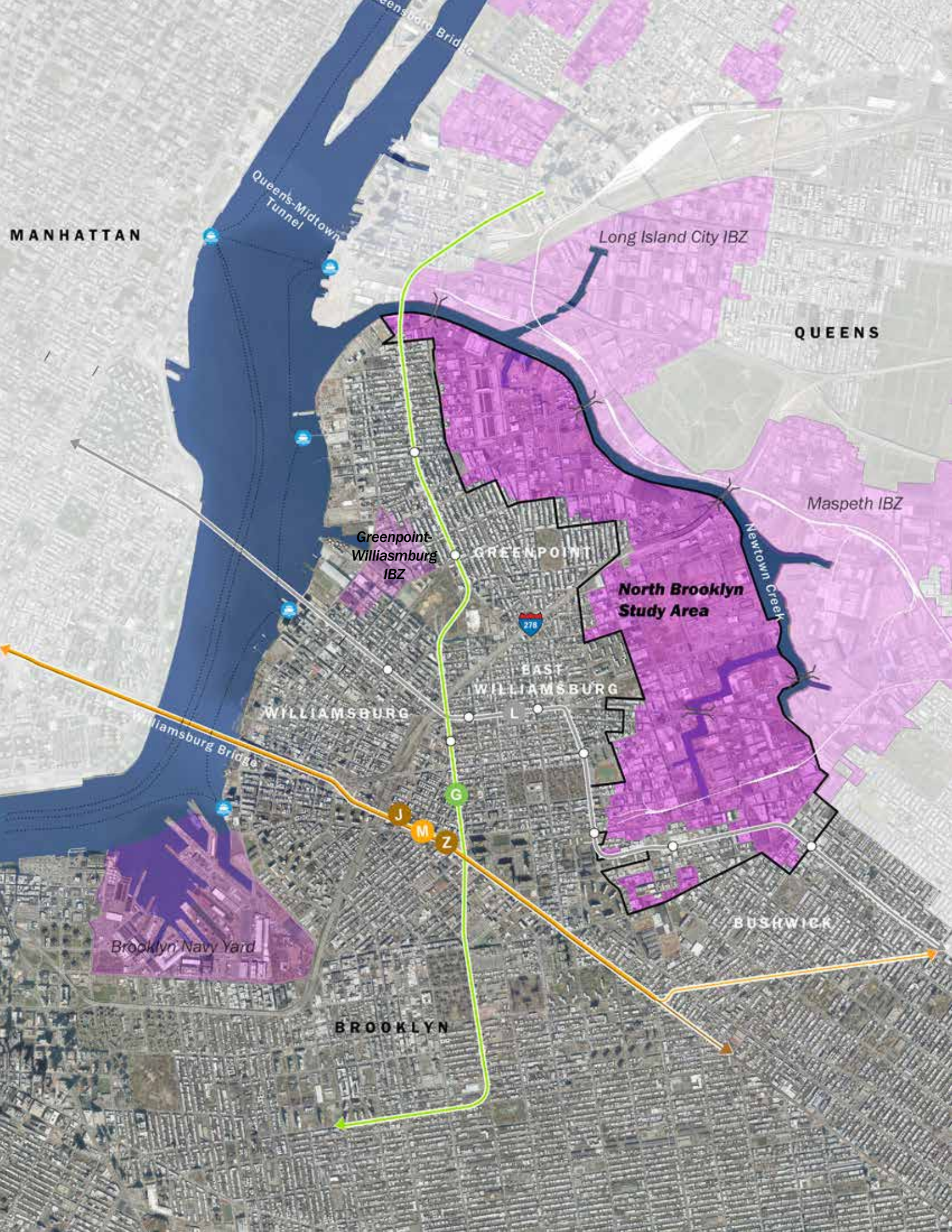
In February 2018, the Brooklyn Chamber of Commerce released a *Comprehensive Economic Development Strategy* (CEDS) with an agenda to "support Brooklyn's continued economic growth and to ensure future growth is equitable, sustainable, and resilient" for the next one hundred years. The *CEDS* proposed initiatives for employer attraction and retention, workforce development, infrastructure, and housing and neighborhood vitality. This included a new vision of a network of expanded commercial centers forming a ring around Downtown Brooklyn, including industrial areas in North Brooklyn, Broadway Junction, Coney Island, and a Central Brooklyn Wellness District. Supporting the objectives of the *North Brooklyn Plan*, the *CEDS* recommended unlocking commercial space with new zoning in transit-accessible industrial areas to foster the growth of creative and innovative businesses emerging there.

Engines of Opportunity

In November 2014, New York City Council's Land Use Division released the *Engines of Opportunity* report, which provides recommendations on how to protect and grow the industrial economic base, support new kinds of economic activity, and promote a diversity of uses. Recommendations seek to update zoning to provide protections for essential industry, as well as provide a framework for job growth and districts that integrate manufacturing with other uses. This report was in part informed by the research and policy guidance of the Pratt Center. The North Brooklyn Study was announced at the City Council hearing on the report.

NYC DOT North Williamsburg Transportation Study

The *North Williamsburg Transportation Study* was conducted by DOT in response to growing congestion as well as requests from community members and elected officials to address other transportation-related problems. The study aims to comprehensively examine and improve travel conditions for all users, and enhance the quality of life for residents and visitors to the area. DOT will develop recommendations to relieve congestion, expand travel choices and enhance safety for all travelers by various modes (surface transit, ferries, automobiles, trucks, bikes and walking).



North Brooklyn

The Study Area is an active 1,066-acre employment hub located in the geographic center of city, offering a unique strategic advantage for businesses seeking access to customers and suppliers in Brooklyn, Queens and Manhattan. It has been one of New York City's most important industrial assets since the early 1800s. Today, the Study Area contains a dynamic mix of industrial and manufacturing activities, creative and artistic uses, and office-based businesses.

History

1800s through World War II

Newtown Creek was once one of the most heavily industrialized waterways in the country. Industry and maritime uses, attracted by waterfront access, first developed in the Study Area beginning in the 1800s, and the area became a major hub for shipbuilding. Industry diversified in the late 19th century with additional, noxious uses that included oil refineries, natural gas, scrap metal, waste treatment and storage, metal plating, chemical companies, and warehouses.¹⁵

Movement of freight was first by horse-drawn carriages and eventually by small trucks that ferried goods and materials along narrow streets between the Study Area, the Greenpoint waterfront, and the freight rail yard at Johnson Avenue. The street network reflects this era before tractor trailers and is characterized by narrow streets and an irregular grid.

Portions of the Study Area were historically mixed-use. The area developed at first without land use restrictions with a mix of small-scale industrial and residential buildings close to the surrounding neighborhoods of Greenpoint and Bushwick, functioning as a walk-to-work community.

In the 1920s, the City extended the Canarsie subway line to Manhattan through the Study Area, which made it more accessible to workers and residents alike. Aerial photographs from the 1920s and 1950s show an area teeming with industry and tenements side-by-side. However, after industrial zoning was put into place in 1961, worker housing dwindled due to attrition and disinvestment. Especially in the southern portion of the Study Area, the remaining tenements, small residential buildings, and presence of narrow and irregular tax lots are a testament to this mixed-use legacy.

The Newtown Creek waterfront, originally marsh wetlands, was gradually filled in over time, but remained substantially undeveloped until construction of the Brooklyn-Queens Expressway in the late 1940s, providing important interstate highway access. Large, open land — ideally sited away from residential areas — was developed in this area with new street infrastructure, new large-scale industrial buildings, and large utility facilities such as gas and oil storage tanks and municipal water pollution control plants.

Post-World War II

Following World War II, macroeconomic forces and the city's infrastructure limitations caused industrial firms to migrate from New York City to the region, the nation's South, or abroad. These factors included lower labor,



1924 Aerial Image of North Brooklyn. Source: NYCityMap.



Newtown Creek, 1930s. Federal Art Project (Photographic Division). Courtesy NYC Municipal Archives.



1966 Aerial Image of North Brooklyn. Source: NYCityMap.



Newtown Creek, 1966. Courtesy NYC Municipal Archives.

tax and operating costs; constrained transportation access due to the city's narrow streets; congestion; and physical separation from the nation's mainland. Despite City policies to support industry, including zoning restrictions and financial incentives, New York City's industrial economy steadily declined from its peak in 1954. In the Study Area and citywide, industrial buildings and lots became vacant and jobs declined.

In the 1980s, vacant industrial loft buildings in the Study Area began attracting artists and other residents looking for affordable live/work space. These conversions were originally illegal, but the Loft Law and subsequent amendments established procedures by which tenants in some of these dwellings could be granted rights and rent protections and required that these buildings comply with residential building and fire codes.¹⁶

Since that time, the Study Area's economy has shifted and grown, driven by citywide economic growth that has buoyed industrial businesses, as well as an influx of non-industrial uses. Today, vacant loft buildings in the Study Area are rare, and the Study Area is evolving into a new kind of employment hub.

The North Brooklyn Economy

Between 2010 and 2016, private employment in the Study Area grew by 13 percent, adding 2,270 new jobs for a total of 19,500 jobs. Even as non-industrial businesses moved into the neighborhood, industrial sectors gained a net of over 1,200 jobs between 2010 and 2016, driven by growth in telecommunications, utilities, construction, and motion picture recording. (While film studios may not be a traditional industrial use, they are similar to other industrial businesses in that they require large footprint sites with wide column spacing and storage warehouses, and larger ones

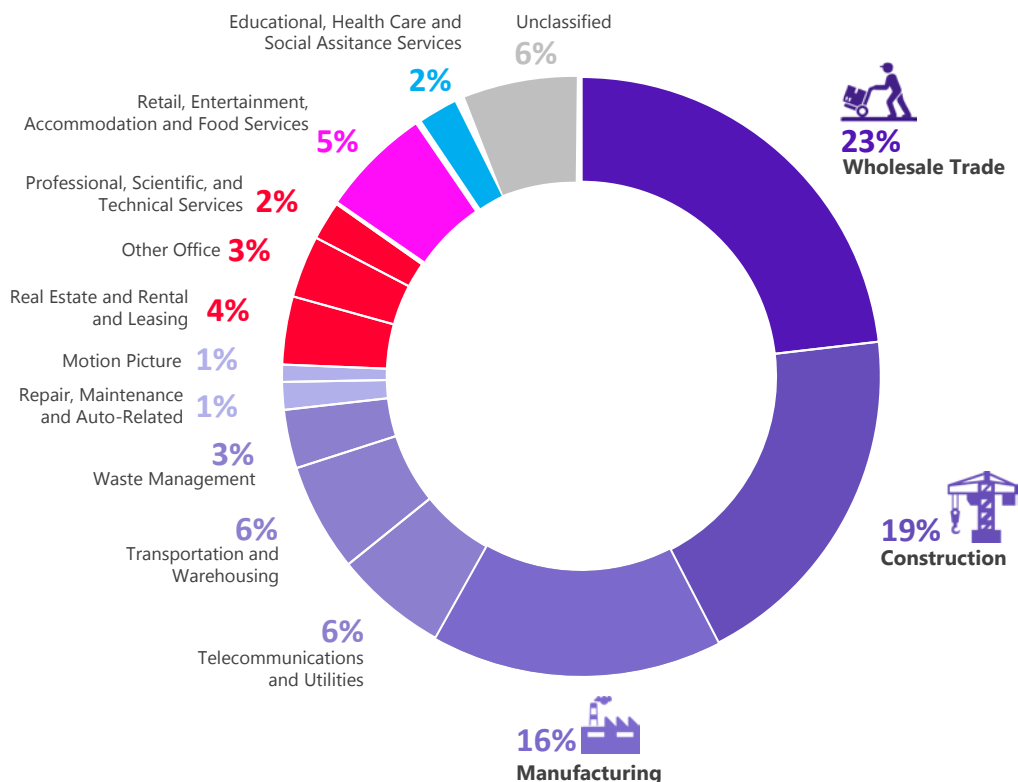
produce significant truck traffic. The number of motion picture soundstage jobs are likely underestimated, as many are employed by companies with headquarters outside of the Study Area. On the other hand, available data locate jobs based on business addresses and may count off-site workers, especially in the case of construction companies.)

Continuing a long-term trajectory since 2010, food manufacturing also grew, gaining 180 jobs between 2010-2016. This was offset in a decline in other types of manufacturing, making overall manufacturing employment essentially stable, with an increase of forty jobs.

This growth has reversed a decades-long trend of job losses across the Study Area. In 1969, the Study Area had 42,000 industrial jobs, but over the next 40 years, the area lost more than 25,000 jobs.¹⁷

In recent years, 51 percent of job growth in the Study Area was in non-industrial sectors located almost exclusively south of Metropolitan Avenue, closer to transit. This was driven by retail, arts, and entertainment (+970 jobs), followed by office-based sectors (+530 jobs) including professional services (particularly computer systems design), administrative and support services, and real estate.

NORTH BROOKLYN PRIVATE EMPLOYMENT, 2016



Source: NYS Department of Labor. Quarterly Census of Employment and Wages (QCEW), 2016 (3Q). "Other Office" includes Administrative Support, Finance and Insurance, Information, Management of Companies, Other Services. "Unclassified" contains unclassified firms and sector data that could not be disclosed due to disclosure rules.

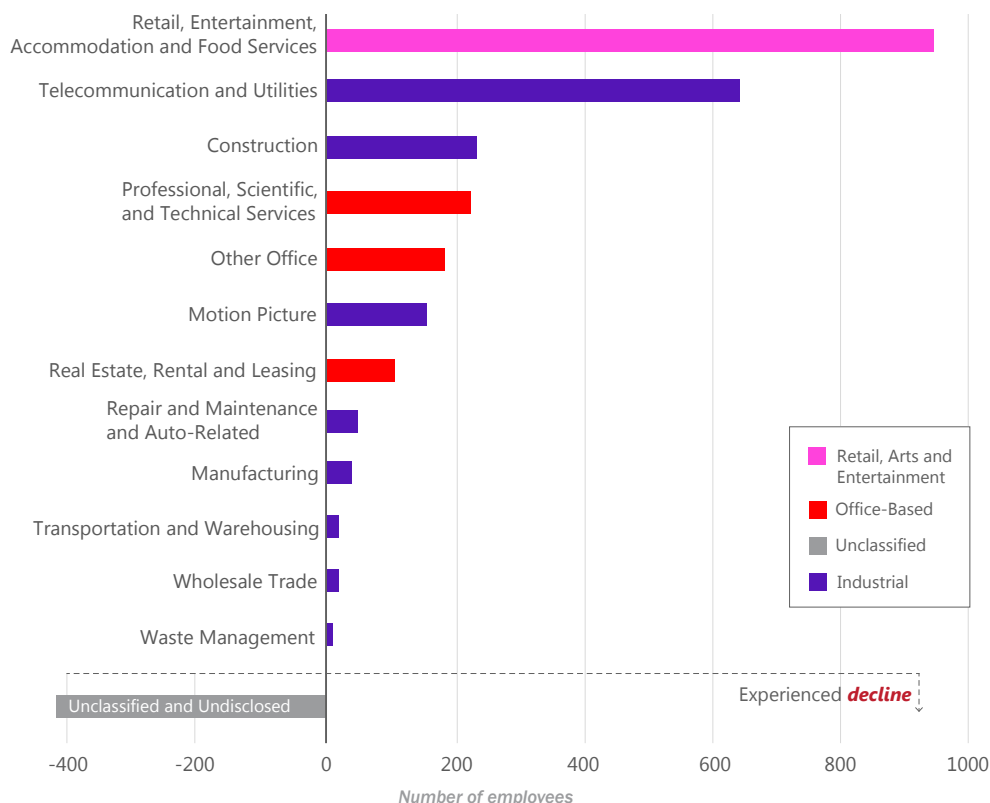
Workers in North Brooklyn

The most recent available demographic data on workers in the Study Area are from 2014. They indicate that more than 72 percent of people working in the Study Area at that time over the age of thirty did not have a college degree, as compared to 60 percent in New York City as a whole.¹⁸ This reflects the largest employment sectors in the Study Area (wholesale trade, construction, and manufacturing), for which most occupations do not require a college degree.

Data also show that there is a disproportionate share of Hispanic workers in the Study Area; they constitute 34 percent of all workers, as compared to 23 percent in the city as a whole. Almost three quarters of workers live within ten miles of the Study Area (in one of the city's five boroughs or in northern New Jersey). In comparison, in the city as a whole, only two-thirds of workers live within ten miles of their workplaces.



CHANGE IN NORTH BROOKLYN PRIVATE EMPLOYMENT, 2010-2016



Source: NYS Department of Labor. Quarterly Census of Employment and Wages (QCEW), 2016 (3Q). "Other Office" includes Administrative Support, Finance and Insurance, Information, Management of Companies, Other Services. "Unclassified" contains unclassified firms and sector data that could not be disclosed due to disclosure rules.

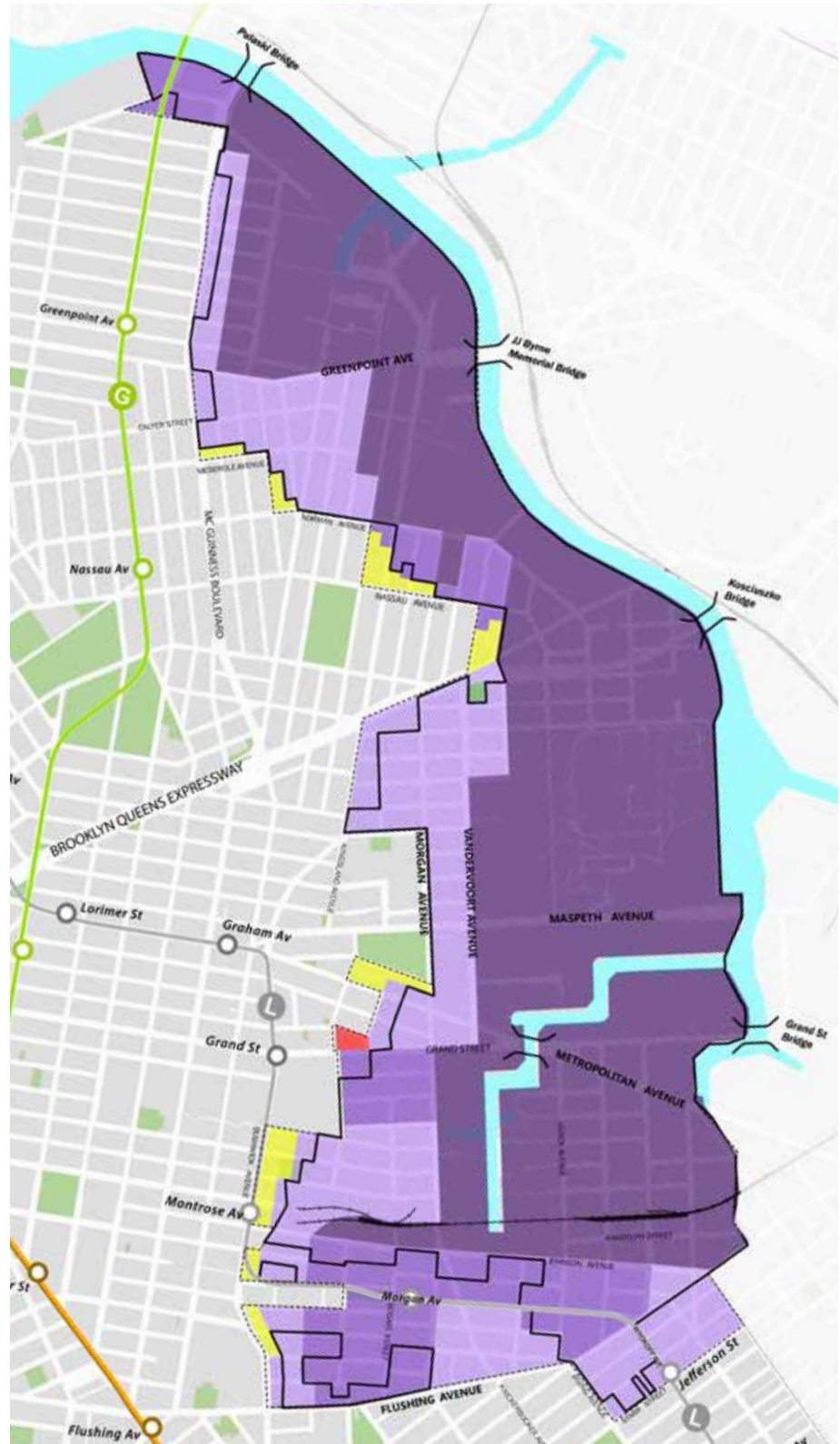
Land Use and Zoning

Already an industrial hub, the Study Area was zoned as an M district by New York City's 1961 Zoning Resolution. Land use in the Study Area today generally continues to reflect the different zoning districts that were applied. The zoning is M3 where there are heavy industrial uses concentrated along Newtown Creek, and M1 where more mixed-use areas are located, south of Metropolitan Avenue. There are also some predominantly industrial M1 districts that serve as a buffer between the M3 districts and residential areas along Morgan Avenue and north of the Brooklyn-Queens Expressway. A small portion of the Study Area is mapped C8, a zoning district that accommodates auto-related and other commercial uses. There have been minimal changes to the zoning in the Study Area since it was put into place, apart from rezoning small areas from M1-1 to M1-2 to better align with existing character.

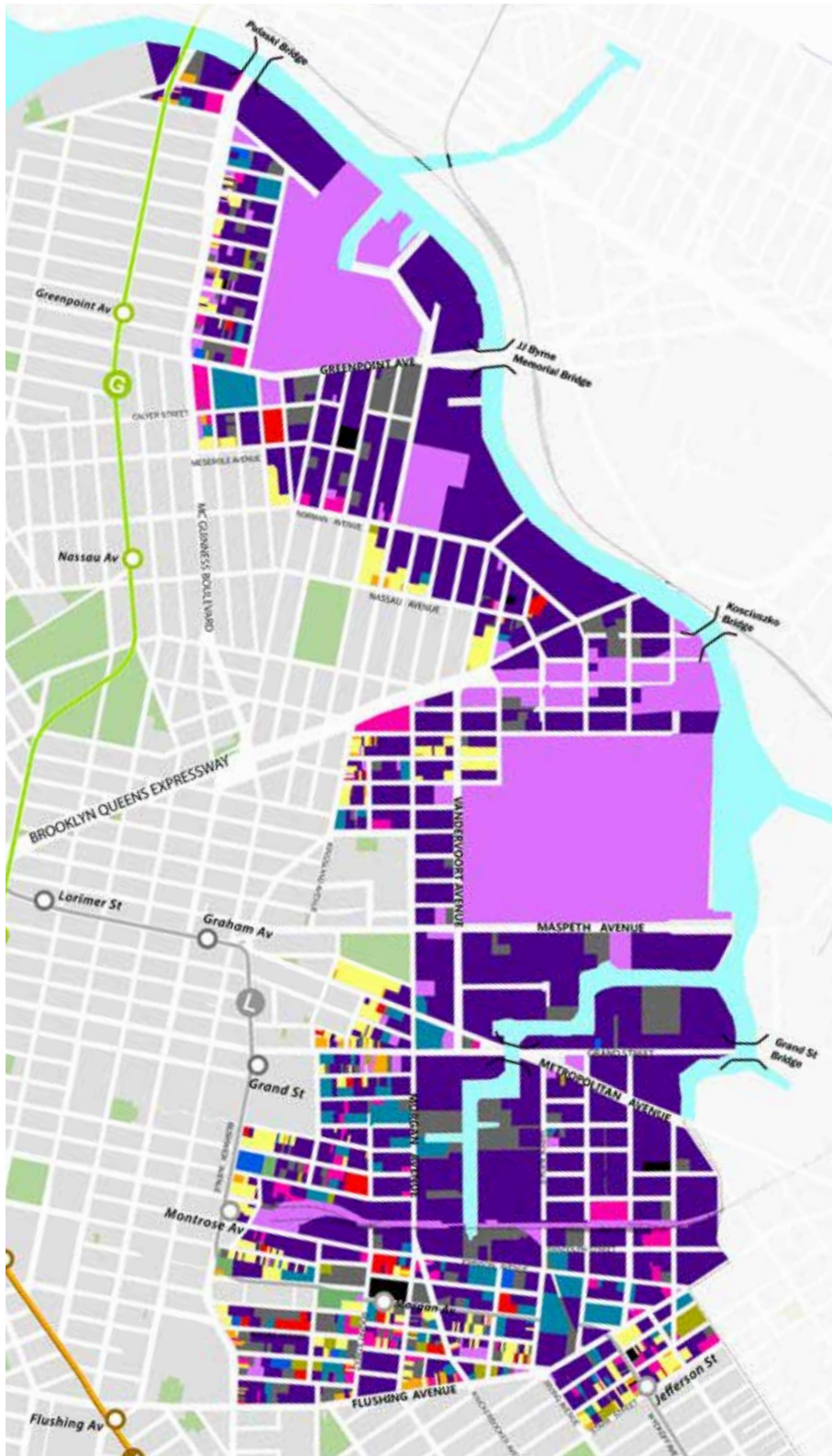
 **Industrial Business Zone**

Zoning Districts in Study Area

-  **M3-1** (heavy industrial, 2.0 FAR)
-  **M1-2** (light industrial, 2.0 FAR)*
-  **M1-1** (light industrial, 1.0 FAR)*
-  **C8-1** (auto-oriented, 1.0 FAR)*
-  **R6** (residential, 2.0-2.43 FAR)*



* For certain community facility uses, FARs are higher in some zoning districts than for other uses. M1-1 districts allow for 2.4 FAR of some community facility uses; M1-2 districts allow 4.8 FAR. In C8-1 districts, all community facility uses are permitted at 2.4 FAR, and R6 districts allow for 4.8 FAR of all community facility uses.



Today, over 75 percent of the land in the Study Area (calculated based on tax lot area and excluding streets) contains industrial uses (including auto-oriented and utility uses), and an additional 9 percent is undeveloped (including parking lots, open industrial uses, and vacant lots). Although most of the land in the Study Area is industrial, over 15 percent is a mix of commercial (including office, hotels, and mixed-use loft buildings), residential, community facility, and open space, concentrated in areas close to public transit.

Land Uses*

- residential**
- residential + commercial**
- residential + mixed-use**
- industrial + commercial**
- office**
- retail/entertainment/arts/hotel**
- manufacturing/industrial**
- transportation/utility**
- community facility**
- open space**
- undeveloped** (includes parking)
- major vacant building**

**This land use map reflects the Study Area's buildings with eclectic mixes of uses that defy traditional land use categories. "Residential + mixed-use" denotes live/work loft buildings or buildings with residential and a mix of other uses, and "industrial + commercial" predominantly denotes multi-story loft buildings that may include a mix of artistic, creative office, media uses. Both categories may include ground floor retail.*

Heavy Industrial Areas Adjacent to Newtown Creek

The heavy industrial uses along Newtown Creek include the Newtown Creek Wastewater Treatment Plant and National Grid sites, construction materials storage, open industrial uses, wholesale, manufacturing, and film studios. Many of these uses take advantage of the large lots here. Seventy percent of the Study Area is made up of lots of over 20,000 SF and 40 percent is made up of very large lots of over 100,000 SF, with a greater concentration of large lots closer to Newtown Creek. Heavy industrial uses also benefit from the separation from residential uses and excellent transportation access that this portion of the Study Area offers.

Buildings are predominantly low-scale and many lots are underbuilt (i.e., less than 75 percent of the allowable floor area under existing zoning has been built). More than 80 percent of the buildings were built prior to 1961 zoning regulations, and many do not contain the off-street loading berths required by zoning today, leading to on-street loading and congestion.

In this part of the Study Area, mostly zoned M3, there has been little development over the last twenty years. Recent development has been predominantly sound stages, one-story warehouses, and City-owned facilities. Industrial businesses have indicated that the high parking requirements for



Open industrial use

commercial space imposed by existing zoning limit their ability to create office space they need, and that parking and loading requirements prevent those businesses from expanding.

These areas characterized by a concentration of heavy, truck-intensive industrial businesses generally constitute the Core Industrial Area in the Land Use Framework.

Emerging Mixed Commercial Areas Near Transit

Portions of the Study Area south of Metropolitan Avenue contain a diverse mix of uses and are changing rapidly. These areas have a long mixed-use legacy, reflected by the prevalence of small lots that originally contained rowhouses. Today, a neighborhood with an eclectic mix of uses and a robust creative arts scene has emerged.

In 2010, approximately 80 percent of the land in the Study Area closest to public transit (south of Metropolitan Avenue west of Morgan Avenue, and south of Randolph Avenue east of Morgan Avenue) contained industrial uses, with an additional 7 percent undeveloped or used for parking.¹⁹ Just over five years later, only 50 percent of the land contained industrial uses, largely due to conversions to retail and office uses. Significant numbers of building permits indicate the scale of recent investment: between 2010 and 2017, nearly 100 permits were issued or filed for major alterations to existing buildings, and over twenty-five issued or filed for new buildings.²⁰

These mixed areas contain a concentration of loft buildings that have been converted for live/work space, artist studios, small niche manufacturing, and office users. Today, 15 percent of the land in these areas contain mixed-use loft buildings. As



Commercial uses in a converted loft building on Flushing Avenue

attractive as these buildings are, nearly all of the neighborhood's loft buildings exceed today's zoning envelopes and maximum allowable floor area and could not be built today. Low-scale warehouses are also increasingly being converted for arts, food and beverage, entertainment, and office spaces, alongside legacy small and large industrial businesses.

These areas also contain the greatest concentrations of housing within the

Study Area, with over 1,200 housing units. This includes units in historic rowhouses and over twenty buildings legally converted pursuant to the Loft Law.

Areas with the greatest concentrations of non-industrial uses closest to the subway comprise the Growth District, while mixed areas with moderate transit access constitute the Transition Area within the Land Use Framework.

Preexisting Residential Uses

The Study Area as a whole contains approximately 400 residential buildings (not including residential conversions of industrial lofts) that predate zoning and are located within M districts, many located on predominantly residential blocks at the periphery of the Study Area, although others are scattered within the Study Area. While legal, their status as non-conforming uses can present challenges to property owners seeking to secure mortgages or make significant building improvements.

The Study Area also contains Loft Law buildings and what appear to be non-conforming conversions of industrial loft buildings. There has also been a small number of new residential buildings developed pursuant to variances from the NYC Board of Standard and Appeals (BSA).

There were approximately 3,300 residential units and 8,700 residents in the Study Area as of 2010.²¹

Residential Uses

- Grandfathered** (residential uses in buildings that pre-date zoning)
- Loft Law** (residential uses in buildings with Loft Law status)
- BSA** (new residential uses pursuant to a BSA variance)





Predominantly residential block



Historic residential building adjacent to industrial uses



Justice Gilbert Ramirez Park

Open Space

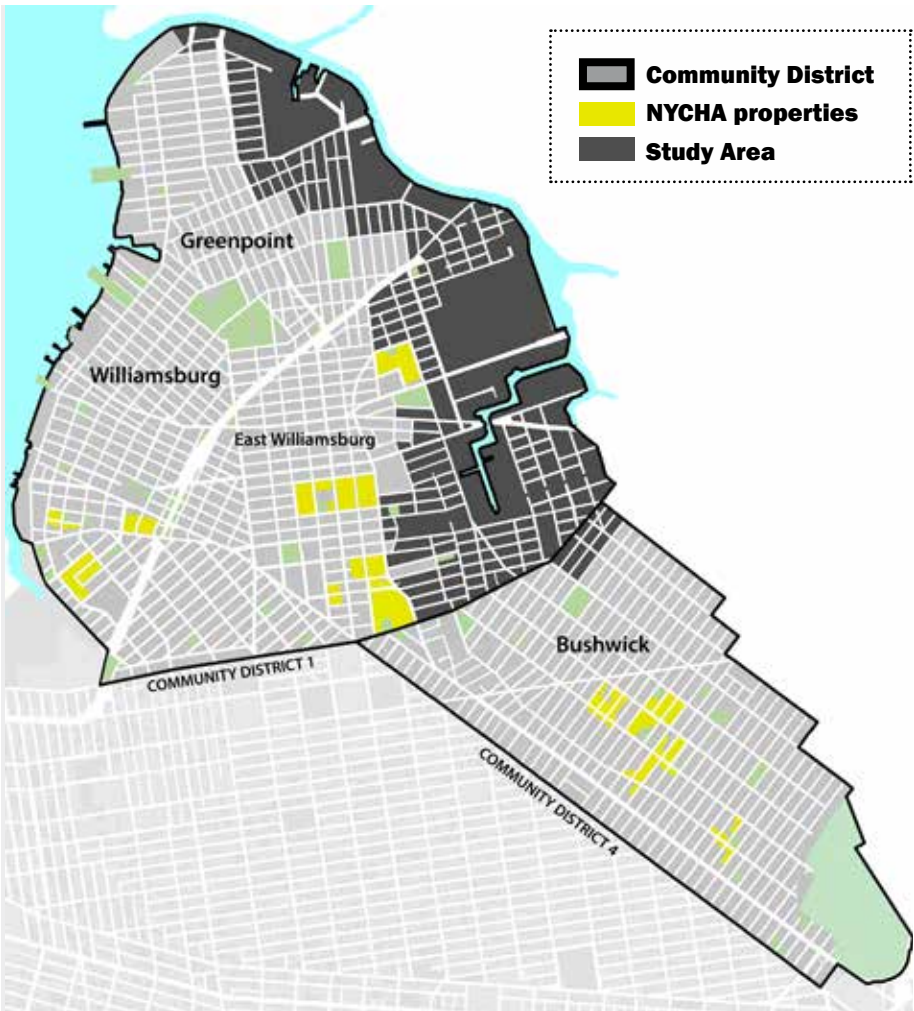
There is little open space in the Study Area. Justice Gilbert Ramirez Park is a small park located on McKibbin Street between Bogart Street and White Street, and Ten Eyck Playground, associated with P.S. 196, is located on Meserole Street.

Other open spaces include the Newtown Creek Nature Walk, a quarter-mile public walkway built as part of the Newtown Creek Wastewater Treatment Plant. The Newtown Creek Alliance has also led the creation of small waterfront pocket parks at street ends along the Creek, such as the Manhattan Avenue Street End. Further, the New York State Department of Transportation is undertaking the reconstruction of Sgt. William Dougherty Park, located just south of the Brooklyn-Queens Expressway.

Surrounding Residential Neighborhoods

The Study Area is surrounded by the residential neighborhoods of Bushwick, East Williamsburg, Williamsburg, and Greenpoint.

Greenpoint-Williamsburg (defined here by the boundaries of Brooklyn Community District 1) includes the area of Brooklyn north of Flushing Avenue and contains mostly residential and commercial uses, as well as a small area of legacy industrial uses near the East River waterfront. In 2005, 183 blocks were rezoned to allow for new housing and mixed-use development. There is now a significant number of new waterfront residential units in the pipeline. There are also three New York City Housing Authority (NYCHA) public housing developments immediately adjacent to the Study Area.



DEMOGRAPHIC PROFILE OF GREENPOINT-WILLIAMSBURG, BUSHWICK, AND BROOKLYN RESIDENTS

	Greenpoint-Williamsburg			Bushwick			Brooklyn		
	2000	2010	2015	2000	2010	2015	2000	2010	2015
Young adults (20-34)	26%	33%	36%	25%	30%	33%	23%	24%	25%
Share of non-family households	39%	51%	52%	24%	37%	39%	34%	37%	38%
Population 25+ with bachelor's degree or greater	18%	37%	46%	7%	16%	28%	22%	28%	35%

10

20

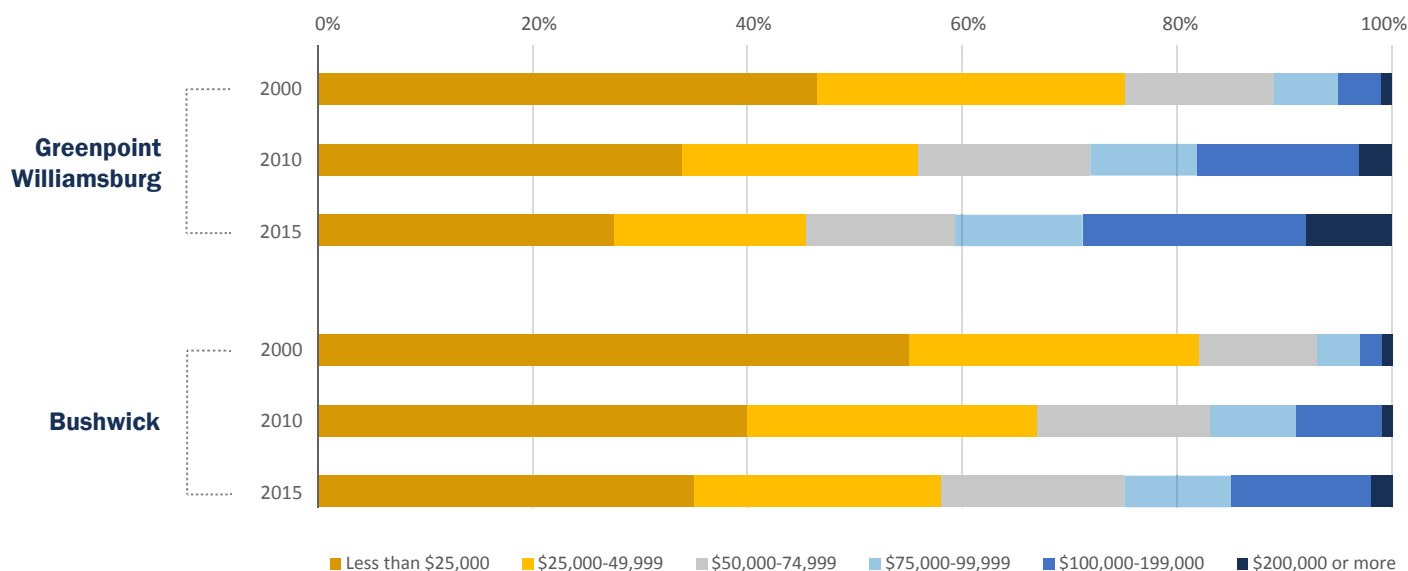
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Source: U.S. Census Bureau. 2000 Census; American Community Survey 2006-2010 5-year period estimates, and 2012-2016 5-year period estimates. Greenpoint-Williamsburg defined as PUMA 4001, approximately the geography of Brooklyn CD 1; Bushwick defined as PUMA 4002, approximately the geography of Brooklyn CD 4.

MEDIAN INCOME (% OF HOUSEHOLDS), 2000-2015



Source: U.S. Census Bureau. 2000 Census, 2010 Census, 2010 American Community Survey-Summary File, and 2015 American Community Survey-Summary File.

Bushwick (defined here by the boundaries of Brooklyn Community District 4) located south of Flushing Avenue. A small number of blocks south of Flushing Avenue zoned as M districts are included in the Study Area.

Both neighborhoods experienced demographic change between 2000 and 2015 and increases in housing costs. The change in Greenpoint-Williamsburg has been more dramatic, with a significant increase in incomes and education levels, as well as more young adults and non-

family households. Bushwick has seen modest increases in income and education levels as well, although it still contains a significant population with low incomes (56 percent of households have an income below \$50,000) and lower educational attainment (24 percent of residents have a college degree).

As populations with higher incomes move to these areas, housing costs are likely to continue to rise, putting pressure on lower-income residents. The *North Brooklyn Plan* offers an

opportunity for local residents with different skill sets and education levels to access quality jobs in both industrial and non-industrial sectors that can allow them to earn a living wage.

Transportation Conditions

One of the Study Area's greatest assets is its strategic location: access to major truck routes and highways, the Bushwick Branch rail freight line, the Newtown Creek waterway, and two subway lines. However, outreach has indicated that transportation conditions are also one of the greatest concerns for industrial businesses, as well as for other types of businesses, workers, and residents.

Street Network and Congestion

The Study Area's narrow and irregular street grid dates to when horse-drawn carts and box trucks were the primary means of moving goods. While the truck route network is extensive, narrow streets make it difficult for today's modern tractor trailers to navigate. Further, physical barriers – such as Newtown Creek, English Kills, and the large National Grid and Newtown Creek Wastewater Treatment Plant sites – result in few north-south street connections. This funnels traffic onto a few critical through streets, especially Morgan Avenue. Truck route signage is also limited in certain areas, leading to further navigational challenges.

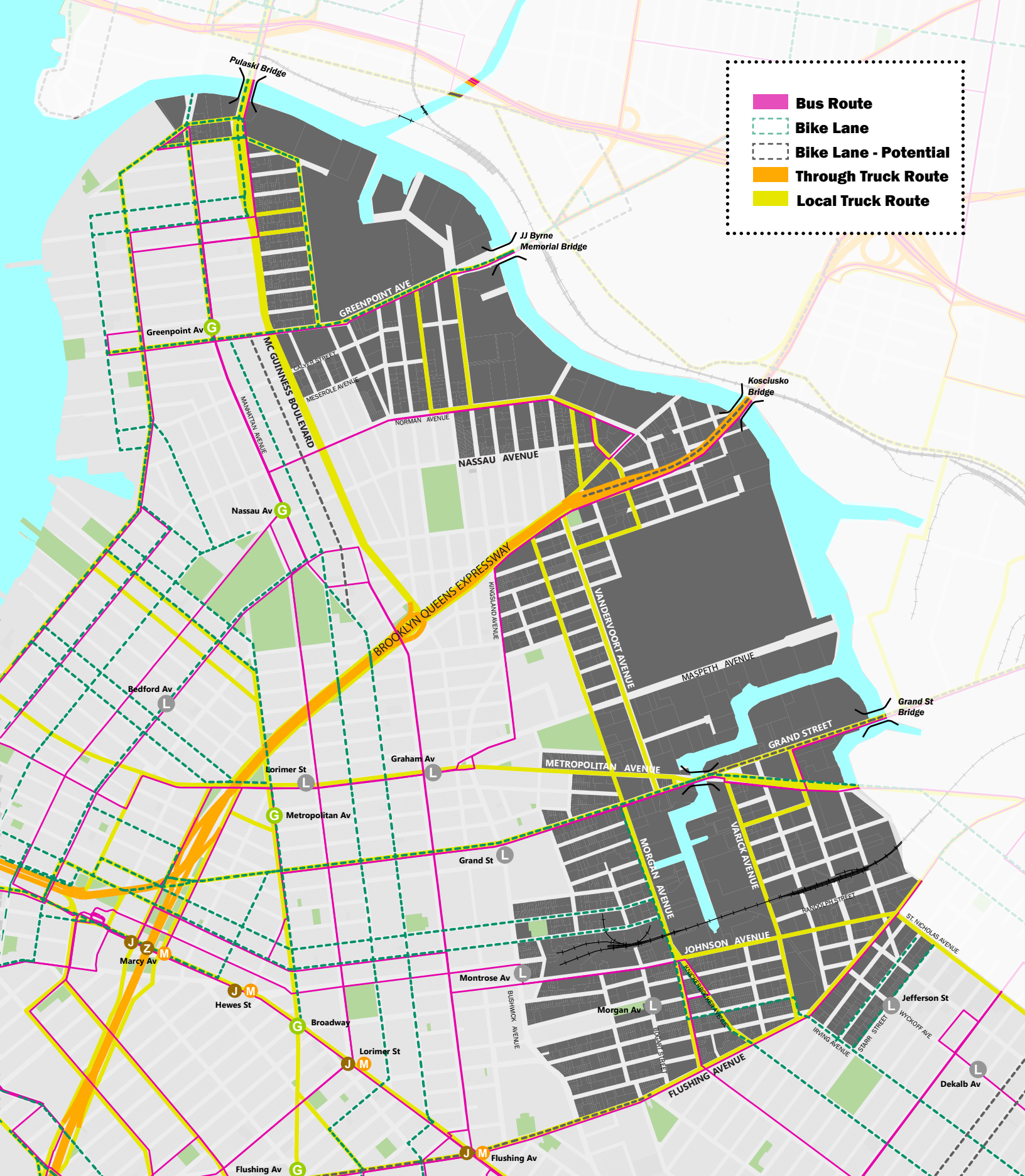
There is also a limited number of connections to Queens, which causes the Greenpoint Avenue, Kosciuszko, and Grand Street bridges to be routinely congested. The Grand Street Bridge, in particular, is too narrow for

trucks to pass one another, resulting in backups on Grand Street, a major truck thoroughfare.

The Kosciuszko Bridge is currently being replaced with a new structure that will meet modern interstate standards. Phase 1, the Queens-bound bridge, opened in 2017 and will operate as a two-way crossing until the Brooklyn-bound bridge is completed as part of Phase 2, expected in 2020. Together, the two new bridges will contain nine wide travel lanes and are expected to reduce vehicle delays.

Transit Access

Approximately 50 percent of the Study Area is within a half-mile of a subway station. Transit access in the southern portions of the Study Area is excellent: two L train stations are located within it (Morgan Avenue and Jefferson Street), with three additional L train stations at the periphery (Grand Street, Montrose Avenue, and DeKalb Avenue). The northwestern edge of the Study Area is within walking distance of the Greenpoint Avenue and Nassau Avenue G train stations. This leaves the north, central, and eastern portions of the Study Area with poorer access. This contributes to a reliance on personal vehicles for transportation, leading to additional congestion and competition between on-street employee parking and on-street commercial loading.



In recent years, entries during the evening peak period at nearby stations have increased significantly. The L train is operating at capacity during peak periods and the Canarsie Tunnel, which carries trains between Manhattan and Brooklyn, is scheduled to be closed for repairs starting in 2019. The G train is currently operating, on average, at 75 percent capacity at peak AM hours and 63 percent at peak PM hours.²²

There are nine bus routes that provide access to the Study Area. Ridership on these lines varies, with highest ridership at the edges of the Study Area and fewer riders in the IBZ. Average bus frequency in the morning ranges from every five to thirty minutes, and on-time performance in the Study Area is low.²³

Bicycle Infrastructure

Commuting by bicycle increased in Brooklyn by 83 percent between 2010 and 2015 (from 10,500 cyclists to over 19,000), a trend that is likely to continue as businesses and residential populations grow.²⁴ Some bike routes exist in the northern tip of the Study Area, including the protected route that crosses the Pulaski Bridge and the buffered route that crosses the Greenpoint Avenue bridges. In late 2016, DOT installed a bike route on Metropolitan Avenue, connecting the Grand Street route in Brooklyn with a one-way pair in Queens. In general, however, there are very few routes in the Study Area, leaving



Tight turning radius on a major truck route



Narrow two-way street



Street congestion near the Brooklyn-Queens Expressway



Major north-south street without bike lane



Shared bike lane



New bike lane on Scholes Street

cyclists to risk conflicts with trucks and other vehicles. The top bike-involved crash locations are on truck routes and on streets without bike lanes. Between 2012 and 2016, there were seventeen crashes at Bushwick Avenue and Flushing Avenue, eleven at Johnson Avenue and Bushwick Avenue, and nine at Knickerbocker Avenue and Flushing Avenue.²⁵

In response to the upcoming L train closure, DOT has improved pedestrian safety and bike access on and around the Williamsburg Bridge in anticipation of a substantial increase in ridership. This includes two pairs of new bike lanes along Scholes Street/South 3rd Street and Meserole Street/South 4th Street, connecting East Williamsburg to Manhattan. DOT is also connecting bike lanes on Grand Street to the Bushwick bike network through the Study Area.

Other efforts to improve bike connections include adding bike lanes on the new Kosciuszko Bridge to provide an additional connection to Queens.

Pedestrian Conditions and Public Realm

The streetscape and public realm do not yet reflect the increased levels of pedestrian activity south of Metropolitan Avenue. A lack of marked crossings, intersection controls, and curb ramps create a challenging walking environment and sometimes dangerous conditions.

Between 2012 and 2016, the most vehicle crashes involving pedestrians were clustered in the more transit-accessible and mixed-use portions of the Study Area: eight at Flushing Avenue and Knickerbocker Avenue, seven at Bushwick Avenue and Johnson Avenue, and six at Flushing Avenue and Bushwick Avenue.²⁶

Sidewalks and curbs are in poor condition, often caused by heavy trucks using the curb for turns, and are also frequently blocked by on-street loading. There is also a lack of public realm amenities, such as street trees, trash cans, bicycle racks, and benches, which are essential to creating attractive, walkable areas.



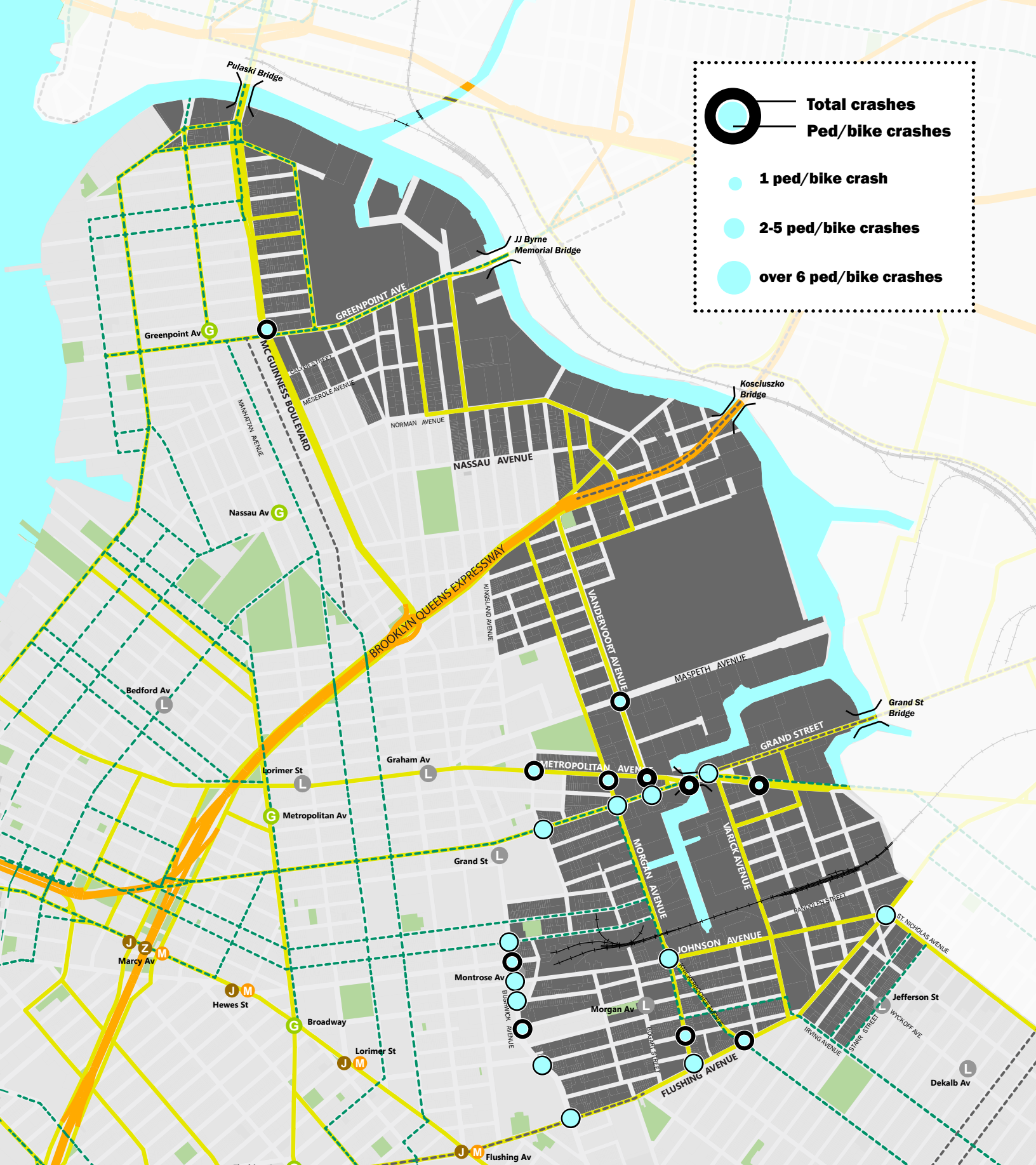
Intersection without crosswalk near the Jefferson St station



Loading and parking on sidewalks



Pedestrian block lacking street amenities



INTERSECTIONS WITH MORE THAN 10 CRASHES (2012-2016)

NYC Department of Transportation, 2010-2016.

Loading Conditions

Truck loading in a dense, urban industrial area is challenging, with space constraints leading to conflicts and congestion. While today's zoning code requires loading berths in new buildings, most industrial businesses reuse existing buildings, most of which lack adequate loading berths and were built before current zoning was put into place.

The many businesses without loading berths (as well as businesses that simply prefer to load on the street) load curbside, on sidewalks, or double park. Businesses with shallow berths load with trucks jutting out into the street, blocking traffic and pedestrians. In new buildings, zoning requires berths be a minimum 50 feet in length, while large tractor trailers up to 55 feet long are legally allowed in New York City. Despite the 55 foot limit, some businesses seem willing to risk incurring fines in order to use even larger tractor trailers.

Further, current on-street designated loading zones do not always reflect the existing needs of businesses or are sporadically placed. Some businesses do not use the loading zones adjacent to their buildings and would prefer to use the space for employee parking. Other issues include unused curb cuts that reduce space for parking and loading and a lack of space for trucks to queue.



Outdated loading facilities that cannot accommodate modern tractor trailers



On-street loading



Difficulty backing trucks into loading berths on narrow streets



Potholes in areas with heavy truck usage



Roadways in need of resurfacing



Drainage issues

Roadway Conditions

Reflecting the impacts of intensive truck usage, many roadways and sidewalks are in poor condition. Several streets are marked by potholes, cracks, and damage to cobblestones, including Varick Avenue south of English Kills, Grand Street, and Morgan Avenue. Other streets have faded striping, including Provost Street and Metropolitan Avenue. There are also subsidence, flooding and drainage issues, particularly around the northern portions of Provost and McGuinness Streets and further south around Jefferson Street and Varick Avenue.

In general, infrastructure improvements such as roadway repairs are often driven and prioritized by community requests. In industrial areas, there may be fewer requests received than in surrounding residential areas.

Alternative Freight Modes: Rail and Waterborne Freight

One of the Study Area's unique assets is its access to two alternative freight modes to truck transportation: rail and waterway.

The Bushwick Branch, operated by New York & Atlantic (NY&A) Railway, is an important freight asset for the city that reduces truck vehicle miles traveled, particularly on Hudson River crossings such as the George Washington and Verrazano bridges. The Bushwick Branch is used by thirty to forty industrial businesses along the length of the rail line in the Study Area, Maspeth, and Long Island City. Current operations include inbound building supplies, industrial raw materials such as ink, metal and plastic, and non-perishable food and beverages; outbound shipment of waste; and trans-load activity — transferring the contents of a railcars to trucks for local deliveries. Approximately 1,800 railcars are handled on the Bushwick Branch each year, the equivalent of 7,200 truck trips, supporting better air quality in New York City.

Using rail for freight is most efficient for adjacent businesses that have room for loading on their properties; however, many businesses adjacent to the rail cannot, or do not, use the rail. Expanding use of the rail faces some constraints: limited availability



Rail cars on the Bushwick Branch



Rail crossing at Morgan Avenue

of properties adjacent to the rail, limited space available for loading, competition with the cost of trucking driven by low fuel prices, the need to ship goods that do not spoil quickly, and the need to work with and store large enough shipments to fill rail cars (three to four railcars minimum, equivalent to twelve to sixteen tractor trailers). Nevertheless, there appears to be unmet demand for use of the rail. NY&A has negotiated a lease of the rail line recently and has plans to increase activity by 5 to 10 percent annually through 2027.

Newtown Creek is the most heavily used borough waterway in New York City, moving over one million tons of predominantly scrap metal, aggregates and fuel, or the equivalent of 38,000 truck trips.²⁷ Overall, New York City's borough waterways contribute to an economic output of \$300 million each year and support over 700 jobs.²⁸

Increasing use of the Creek could help to reduce the number of trucks on the road. Yet many of the properties along the Creek are occupied by businesses that do not transport goods by barge. Waterborne freight is most cost-effective when shipment origins and destinations are convenient to water.

Further, poor conditions of bulkheads can also preclude barge loading and unloading on some properties, and addressing this requires high levels of investment.



Barge on Newtown Creek



Aging bulkhead

Environmental Conditions

Newtown Creek has functioned as an industrial hub for several centuries and has a long history of noxious uses resulting in environmental contamination.

Greenpoint Oil Spill

Newtown Creek is home to one of the largest oil spills in American history. Between seventeen and thirty million gallons of gasoline, fuel oil, and chemicals — mainly from operations of ExxonMobil, Chevron/Texaco, and BP (formerly Standard Oil) dating back to as early as 1947— had been streaming into the Creek and the Brooklyn-Queens Aquifer when the spill was identified in 1987.²⁹ ExxonMobil led the collection of spilled oil using containment booms and skimmers from 1993 to 2005. Since then, Chevron/Texaco has continued the remediation at the Peerless Importers site.³⁰

Superfund and Contaminated Sites

Newtown Creek was enrolled in the United States Environmental Protection Agency (EPA) Superfund program in 2010 to authorize the federal government to implement cleanup of contaminated sites and to recover costs from responsible parties.³¹

In addition to the Superfund program, many sites are currently enrolled in

the NYS Department of Environmental Conservation's Brownfield Cleanup Program and the Voluntary Cleanup Program, which preceded it.

The contamination of Newtown Creek and other areas in the Study Area is not only a problem of the past. In 2010, the EPA determined that over one million tons of contaminants were entering the Creek annually.³² In 2016, the Newtown Creek Alliance identified over twenty-four sources of pollution, including dumping and runoff, directly impacting Newtown Creek.

Combined Sewer Overflows

During heavy rainstorms, a portion of wastewater that cannot be handled by wastewater treatment facilities is expelled directly into nearby waterbodies via combined sewer overflows (CSOs). There are twenty-one CSO outfalls in Newtown Creek, which receives 1.2 million gallons per year of discharge.³³ This is one of the greatest sources of ongoing pollution in the Creek.³⁴ In June 2017, the NYC Department of Environmental Protection (DEP) released a *Long Term Control Plan* for Newtown Creek, which recommended the following to mitigate CSO impacts and improve water quality: continue with currently planned improvements, build green infrastructure, increase control of the annual CSO volume at one of the

largest outfalls, and construct a new CSO Storage Tunnel to provide control of three of the other largest outfalls. DEP has begun building an aeration system to increase dissolved oxygen levels in the water and has built some green infrastructure in the Study Area.

Concentration of Waste Transfer Stations

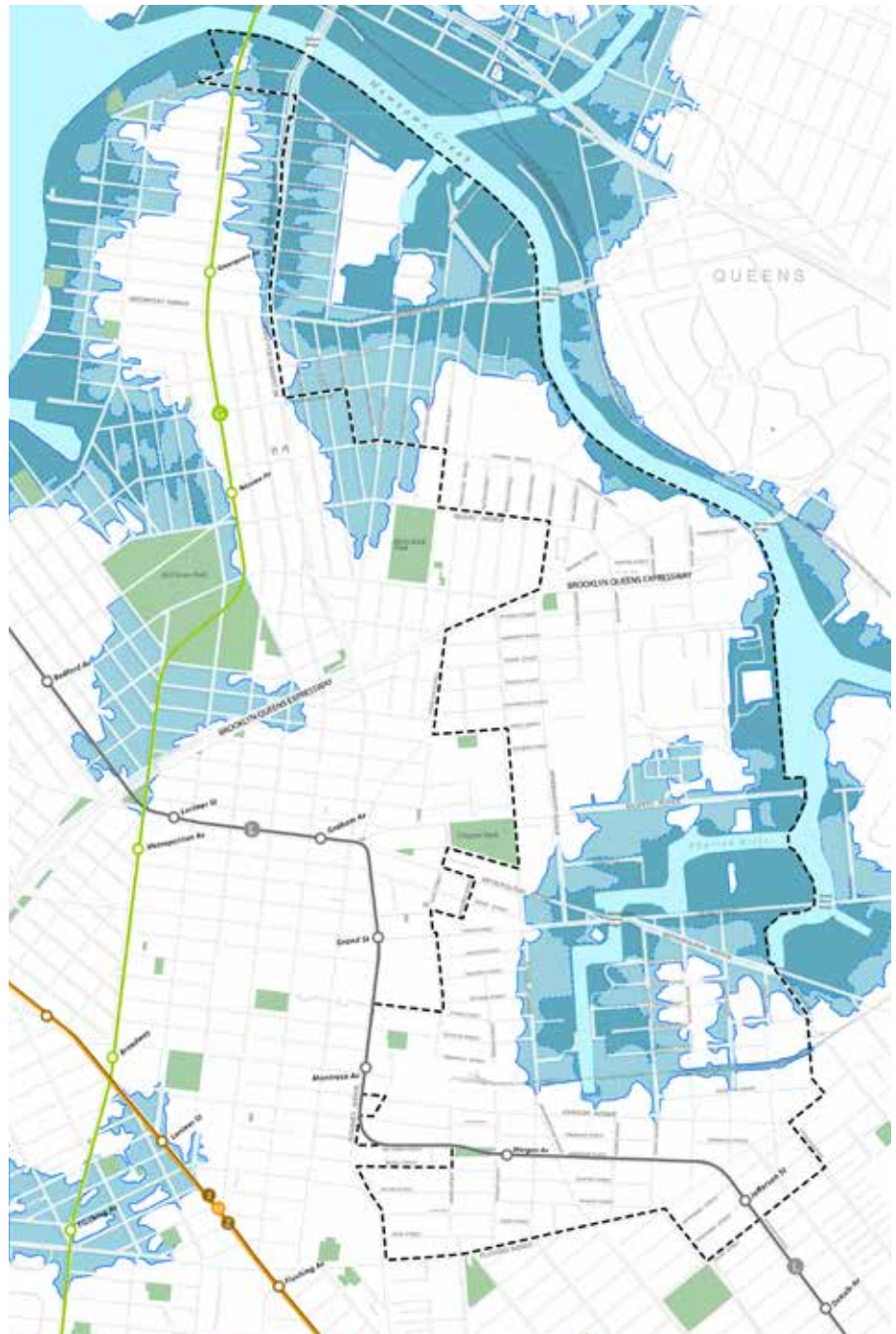
Areas around Newtown Creek contain nineteen waste transfer stations, which handle 40 percent of New York City's commercial putrescible waste, or 4.8 million tons a year.³⁵ This generates truck traffic, odors, and noise that impact surrounding residential areas. The City's *Comprehensive Solid Waste Management Plan*, released in 2006, seeks to more equitably disperse waste transfer stations throughout New York City. In April 2017, the NYC Department of Sanitation announced the plan to open a new marine transfer station in Gowanus and in Gravesend Bay, both of which have since opened. Further, in August 2018, the Mayor signed the Waste Equity bill (Intro 157-C), which will put a cap on the amount of waste trucked into waste transfer stations in areas with a concentration of these facilities, including North Brooklyn. This would be achieved by redistributing waste processing to new facilities, eliminating a significant amount of truck trips a day in North Brooklyn.

Flood Risk

Areas surrounding Newtown Creek lie within FEMA's Flood Zone A (the 100-year floodplain with a 1% annual chance of a major storm event) and Zone X (the 500-year floodplain with a 0.2% annual chance of a major storm event). As most industrial buildings in this area predate flood-resistant construction requirements, many are vulnerable to future flooding.

The area was significantly affected by flooding during Hurricane Sandy, experiencing 6 to 10 feet of water in some areas, and faced sewer backups. Deteriorating bulkheads exacerbate the vulnerability to flooding, and reconstruction can be cost prohibitive.

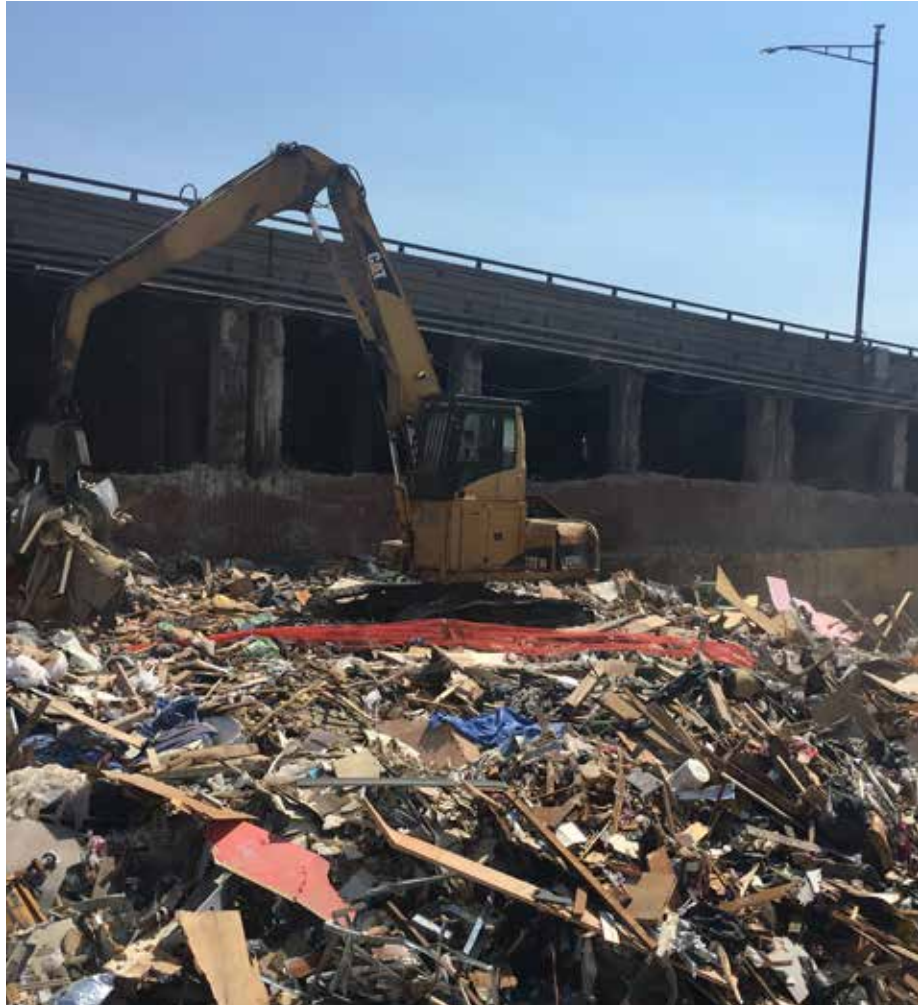
DCP's [*Resilient Industry Study*](#), released in March 2018, identifies ways to reduce industrial business' vulnerability to flooding, focusing on cost-effective floodproofing measures, such as elevating or wet floodproofing work spaces, innovative approaches to storing hazardous materials, and preparedness plans to protect expensive equipment.



- Zone A: 100-year floodplain** (1% annual chance)
- Zone X: 500-year floodplain** (0.2% annual chance)

Open Industrial Uses

There are many open industrial uses throughout the Study Area, such as concrete manufacturing, auto salvage, scrap metal salvage, waste transfer, and open storage. While some of these uses are only allowed as-of-right today in M3 districts, a number of these uses are also allowed in M1 districts, many of which are located closer to residential uses. Further, in the Study Area, there is a number of non-conforming, intensive open industrial uses in M1 districts. These uses can have a negative impact on the neighborhood, producing air pollutants, noise, and material runoff. This is compounded by the fact that these facilities often do not comply with existing regulations for numerous reasons, and enforcement is challenging. Open industrial uses in the flood zone, of which there are a few in the Study Area, are even more problematic, as any flood event has the potential to carry unsecured materials as well as contaminants from these sites into residential areas.



Brooklyn C&D (recycling)



Concrete manufacturing

Ecological Restoration Efforts and Waterfront Access

Before industrialization, Newtown Creek was home to banks of wetlands and marshes. There are several ongoing efforts to improve the natural habitat. The Newtown Creek Alliance monitors the conditions of the Creek and advocates for habitat restoration, bioremediation, and green infrastructure. It also pursues creation of open space and Creek access. Crabs, fish, birds, and plants can now increasingly be found in the Creek.

New access points to the Creek have been created, such as the Newtown Creek Nature Walk and smaller projects like street end gardens.

Other Infrastructure Issues

Some industrial users report sewer capacity issues. Despite the proliferation of technology uses in the Growth District, businesses have indicated that there is a lack of broadband access in portions of the Study Area.



Sign for Newtown Creek Nature Walk



Newtown Creek Nature Walk waterfront access



Doing Business in North Brooklyn

Extensive outreach to a wide variety of businesses helped to identify the benefits and challenges of doing business in the Study Area.

Business in North Brooklyn

The *North Brooklyn Plan* was informed by conversations with three major groups of businesses in the Study Area: industrial businesses; TAMI and office-based businesses; and retail, arts and entertainment businesses. Businesses provided input – through one-on-one interviews, in small group roundtables with similar businesses, and at large public meetings – on two overarching questions. *Why did you choose to locate here? What are the greatest challenges of doing business here?*

This section summarizes trends and feedback that informed the development of a Land Use Framework and helped to identify infrastructure improvements and workforce development strategies to better support businesses and encourage balanced job growth.

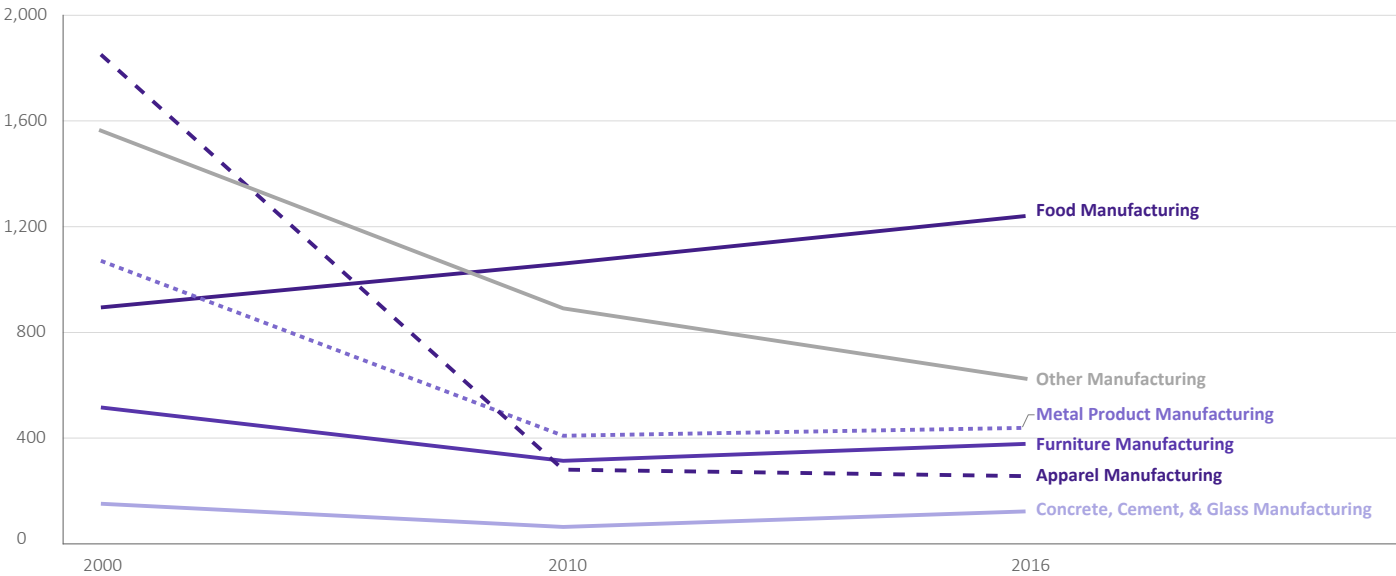
Industrial Businesses: Essential Services that Keep the City Running

	TOTAL JOBS (2016)	JOB GROWTH (2010-2016)
NYC	580,000	12%
NBK	14,750	9%

Industrial businesses are distributed throughout the Study Area, with heavy, truck-intensive industrial businesses generally clustered along Newtown Creek. The three largest industrial sectors are wholesale, construction, and manufacturing. The Study Area also contains waste management and recycling, utilities, and an ecosystem of film and television studios.

The Study Area’s food manufacturing sector is strong. Despite an overall decline in citywide manufacturing employment between 2000-2016, food manufacturing rose steadily in the Study Area over that period.

MANUFACTURING EMPLOYMENT IN THE STUDY AREA (2000, 2010, 2016)



Source: NYS Department of Labor. Quarterly Census of Employment and Wages (QCEW), 2000, 2010, 2016 (3Q).

Why are industrial businesses in North Brooklyn?

- The Study Area is positioned in the geographic center of New York City, with direct access to Brooklyn, Queens, and Manhattan.
- The Study Area is accessible to customers and suppliers via major truck routes and transportation infrastructure.
- Large sites and separation from residential areas are ideal for many larger-scale industrial operations.
- Newtown Creek and the freight rail provide alternative modes for moving goods.
- For some businesses, site ownership means that remaining in place makes more economic sense than looking for alternative locations at affordable prices, which are limited.



Martin Greenfield Clothiers (custom suit manufacturing)



New Yung Wah Trading (food wholesale)



Bayside Fuel (fuel distribution)

What are the challenges of industrial business in North Brooklyn?

- Congestion, poor roadway conditions, and difficulty navigating a narrow, inefficient street network result in delays that impose costs on business operations.
- The lack of adequate off-street loading berths in existing buildings leads some businesses to load on the streets and sidewalks, blocking traffic and exacerbating congestion.
- Constrained sites and existing zoning regulations limit expansions of existing buildings. On many properties, it is not possible to expand buildings horizontally beyond their current footprint or to expand vertically.
- Businesses that do not own their spaces face unpredictability in terms of rent increases and tenure, which limit their ability to make long-term investments. While industrial rents have risen from an average of \$14 per SF in 2008 to \$23 per SF as of early 2018 in the Study Area, industrial rents along Newtown Creek have remained more stable.³⁶
- The most heavily industrial portions of the Study Area have limited public transit access for employees.
- Many sites necessitate costly environmental remediation if they are redeveloped. Additionally, Newtown Creek is a Superfund site and some businesses along the Creek may be responsible for cleanup costs.
- Bulkheads along Newtown Creek are deteriorating, but many businesses cannot afford the expense of repairs; the Creek's Superfund status also makes approvals for repairs more complex and onerous.
- Many businesses lie within the 1 percent annual chance floodplain and are at risk of flooding during storm events. Most buildings and open storage uses pre-date regulations requiring resilient construction in the floodplain.³⁷
- Competition for large lots exists between industrial businesses and other non-industrial uses, a particular concern in the M3 portion of the Study Area, which is especially suitable for industrial uses and where there is a concentration of large lots.



Deteriorating bulkheads

Feldman Lumber

An essential industrial business dependent on a central location and access to major truck routes

Located in New York City since 1912, Feldman Lumber is a full line building materials distributor and the largest supplier of lumber to contractors and industrial companies in the tri-state area. Originally located in Greenpoint, it moved to its current East Williamsburg location ten years ago so that it could have more space while remaining centrally located, with close proximity to Manhattan, where the majority of the construction sites are.

Feldman Lumber provides materials to significant real estate and infrastructure projects in New York City – such as Hudson Yards and the Second Avenue Subway – and businesses like it are critical to the ongoing growth of the city.

Even with five acres of land and approximately 50,000 SF under its roof, Feldman Lumber is space constrained. The company has had to make its operations highly efficient, making deliveries twenty-four hours a day, seven days a week, storing materials as compactly as possible, and adopting technology that improves the efficiency of its logistics and delivery times. Congestion and poor roadway conditions in the Study Area slow deliveries and increase costs, but the advantage of the location keeps Feldman Lumber here.



Signs + Decals

A small, space-constrained manufacturing company increasingly relying on new technology

Signs + Decals is an architectural signage fabricator that has been serving the tri-state area since 1972. It purchased its property on Morgan Avenue thirty years ago, relocating from Queens. The company, which has forty employees, manufactures custom signs for a wide variety of projects, including many major construction projects such as the World Trade Center.

Due to the highly customized and high end nature of its products, the company's close proximity to customers and suppliers in New York City has been critical to its business. The company contemplated moving to New Jersey ten years ago in order to obtain expanded production space, but it decided to remain at its current site due to its locational advantages.

Signs + Decals' property currently contains a single-story building. As it grows, it has become increasingly space constrained. Further, as its production methods change and become increasingly technology-driven, such as using waterjets and laser cutters, it may be able to use upper floors. However, the current zoning is M1-1, limiting FAR to 1.0, precluding Signs + Decals from building vertically to create the space it needs.



Cooper Recycling

An essential industrial business that benefits from its separation from non-industrial uses

Cooper Recycling operates the largest construction and demolition (C&D) debris recycling facility in New York City. Its facility on Maspeth Avenue, which was in operation from 1986 - 2017, processed 1,200 tons per day, of which 80 percent was recycled to beneficial end uses. In September 2017, it opened a new, state-of-the-art recycling facility on Varick Avenue that employs seventy workers.



The new facility is designed to process 2,000 tons per day and recycle 95 percent of that material. With its immense volume, Cooper Recycling operates twenty-four hours per day, six days a week.

Cooper Recycling relies on its proximity to Manhattan, where most of the construction feeding its business occurs. C&D facilities do not emit odors or cause emissions, but are required to be sited in heavy industrial areas. This benefits operations as the trucks entering and exiting the facility at all hours do not conflict with other types of businesses or residences.

The Bushwick Branch rail line runs adjacent to the Varick Avenue property. The company hopes to be able to use rail to send its recycled material to secondary processors. Cooper Recycling is located on Newtown Creek and will be able to use its barge access to ship aggregate once Superfund cleanup is complete.

TAMI and Office-Based Businesses: Major NYC Growth Drivers

	TOTAL JOBS (2016)	JOB GROWTH (2010-2016)
NYC	1,323,000	17%
NBK	1,780	42%

Available data suggest that in the Study Area between 2010 and 2016, office-based employment grew by 530 jobs, including 80 new computer systems design jobs – although as previously discussed, this is likely to be

an underestimate. One of the largest TAMI companies is Livestream, one of the largest video streaming service providers, which currently leases 30,000 SF of space at a lower cost than it did in its previous, smaller office in

Chelsea. Another notable businesses is ConsenSys, a blockchain software technology company that developed a virtual currency called Ethereum, located at 49 Bogart Street.

Many of the office-based companies in the Study Area were able to find affordable, flexible spaces with short-term leases in converted industrial buildings. Some of these businesses are on the spectrum between commercial and manufacturing, such as advanced manufacturing and film and photo studios. Some are in stand-alone buildings, while others are in multi-story loft buildings that contain a mix of tech, media, arts, and manufacturing, such as 195 Morgan Avenue, which is home to Livestream, artisanal manufacturing, artist studios and Voodoo Manufacturing, a 3D printing company.

There is a number of coworking spaces, such as Bathaus, a community-oriented model that has capacity for approximately thirty-five users in a small unfinished warehouse. These co-working arrangements provide flexible, shared space to startups, freelancers, and self-employed workers, many of whom live in nearby neighborhoods.



Paper Mill, loft office conversion on Johnson Avenue

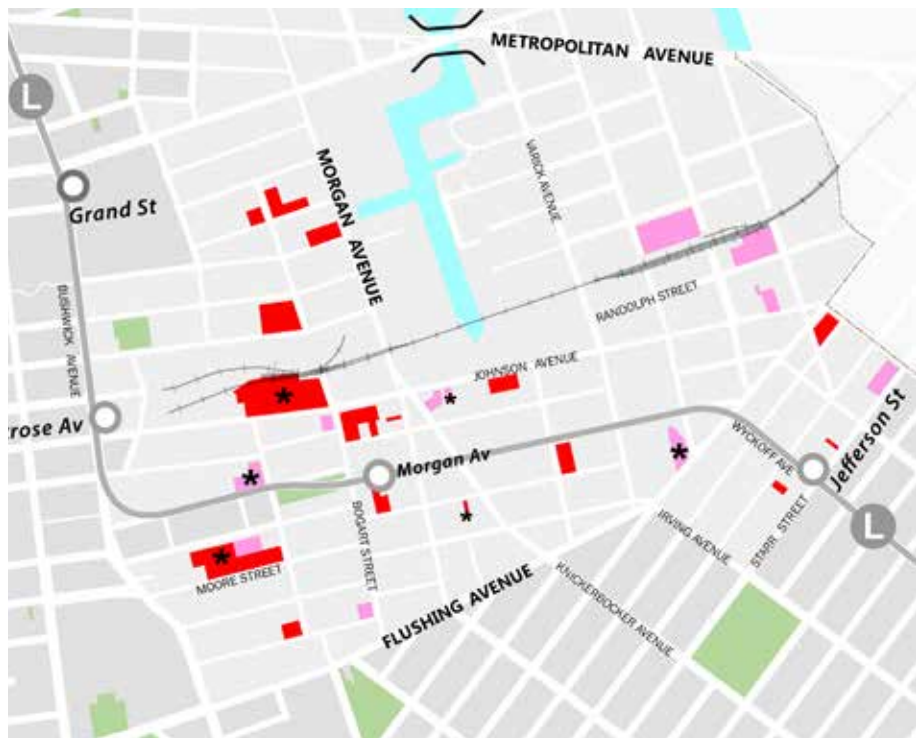
Real estate trends³⁸

Average office rents in the Study Area have been climbing from \$20 per SF in 2008 to \$37 per SF as of early 2018, although they remain competitive compared to more established markets in Manhattan, Williamsburg, DUMBO, or Downtown Brooklyn.³⁹ Property sales prices have also been rising. Data indicate that the average sales price for industrial and office buildings was \$340 per buildable SF in East Williamsburg in 2017 compared to \$252 in 2012; it was \$398 per buildable SF in Greenpoint in 2017 compared to \$144 in 2012. Across Brooklyn, sales prices were \$409 per buildable SF in 2017 and \$177 in 2012.⁴⁰

Based on interviews and public media sources, there was over one million SF of office and retail space announced, under way, or completed in the past five years in the Study Area as of the fall of 2017. This consists almost exclusively of conversions of existing buildings. Were zoning to allow for greater density with lower parking requirements, more new construction might be feasible.



New coworking space on Bogart Street



Major retail/entertainment/hotel ***** **Planned**
Office/studios

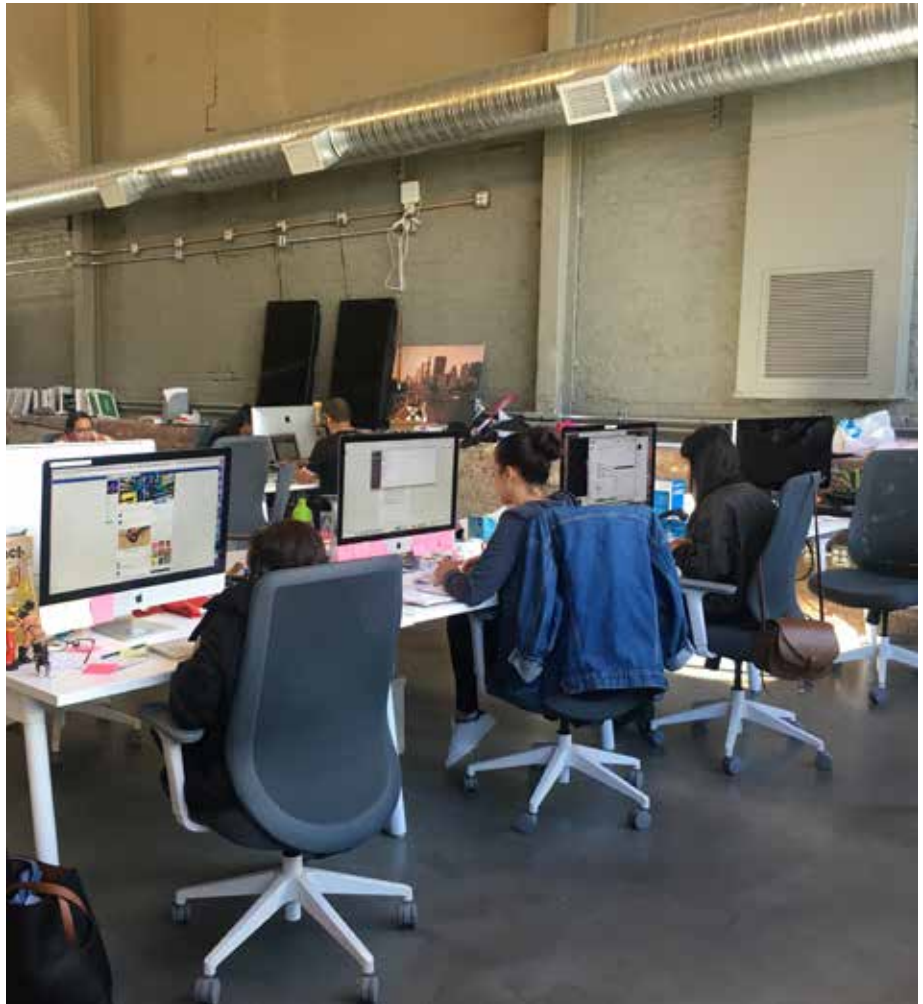
Commercial pipeline: planned, under construction, or completed in the past five years.

Why are TAMI and other office-based companies in North Brooklyn?

- Available warehouses and lofts provide flexible space that is affordable compared to more established commercial districts.
- Businesses say that many workers live in nearby Greenpoint, Williamsburg, and Bushwick and prefer to work nearby, avoiding a commute into Manhattan.
- The L train provides businesses access to customers and partners in Manhattan. Union Square is just 15 minutes from the Morgan Avenue stop and is a major transit hub proximate to the concentration of tech tenants in Midtown South.
- The Study Area has a distinct creative and industrial character and neighborhood services, including restaurants and retail, are growing.
- Some TAMI businesses find synergies with local industrial businesses, allowing them to procure materials and manufactured goods for projects or their workspaces.



Bat Haus (coworking space)



Remezcla (media)

What are the challenges of office-based business in North Brooklyn?

- Despite the growing investment momentum and demand for commercial space, there has been limited new construction:
 - > High parking requirements and low permitted density in existing zoning make it difficult to expand or develop new space.
 - > Many smaller firms locating in the Study Area cannot sign leases years in advance, making it difficult for developers to secure financing for new speculative office space.
 - > While some recently signed leases are reportedly in the high \$40 per SF or low \$50 per SF range, interviews and analysis suggest that, in general, the rent threshold for new construction is \$50-60 per SF. However, some new buildings have been built, potentially facilitated by purchases when land costs in the area were lower, such as the 100 Bogart coworking space. Rapid rent growth has incentivized some landlords to restrict lease lengths, which reduces certainty for businesses.
- The quality of the public realm is much lower than other active areas in New York City, and employees have cited transportation, lighting, and pedestrian safety concerns.
- Portions of the Study Area do not have the quality and speed of broadband internet that businesses expect in a modern commercial district.
- While the L train provides excellent connectivity, it is one of New York City's busiest subway lines and is operating at capacity.

Significant office development could be unlocked if zoning were to be modified. Because many sites in the Study Area are underbuilt, the capacity for new construction is substantial.



Given zoning constraints on new buildings, conversions of existing buildings are likely to continue to dominate the office development pipeline in the near term.

Madwell

A growing media firm with a strong Brooklyn brand

Madwell is a full-service advertising and marketing agency that has been located in East Williamsburg since 2010. Like other TAMI businesses that have moved to the Study Area, Madwell was attracted to the neighborhood due to relatively affordable, large, and flexible space.

The neighborhood is also close to creative talent that Madwell observes primarily lives in Brooklyn. Many of the company's clients are located in

Union Square and the Flatiron District, easily accessed by the L train. But it is the cache of the neighborhood character that reinforces Madwell's creative identity. While much of its work is computer-based, Madwell occasionally fabricates trade show materials in its basement studio and collaborates with local manufacturers.

Flexibility of space has accommodated the company's rapid growth. In 2013 Madwell moved into 7,500 SF of space on Boerum Street with twenty-five employees. As it grew, employees were increasingly in close quarters, and in 2015, it began to lease an additional 7,000 SF in an adjacent building. As of 2017, Madwell had 100 employees.



Carto

A tech firm with flexible space for growth, offering local employees a reverse commute

Founded in Madrid, the company opened an office in October 2015 in New York City where the “geo” community is strong. It considered space in Williamsburg, Greenpoint, and Bushwick – areas less expensive than Manhattan. It selected its location on Moore Street because it was able to afford a larger space, enabling it to dedicate half of its space to events, such as gatherings for local tech and other types of entrepreneurs. For this fast-

growing company, this large, flexible space will allow for future employee growth. Brooklyn and Bushwick also provide a strong brand that aligns well with company culture that “wouldn’t work well in Midtown.”

The owners of Carto have said that they have been able to find many qualified workers in nearby neighborhoods, and many of their Brooklyn-based employees love their commute because it allows them to take the L train in the opposite direction from Manhattan during rush hour.



MediaWorks

A media firm that relies on local talent

Iris MediaWorks is a video content strategy and video production company that works with a wide range of clients, from startups to global brands. Its space, within the Brooklyn Brush Studios loft building a few blocks from the Jefferson L station, includes a studio, an office, and multiple editing stations. The building has great natural light and large windows as well as high ceilings, which create a “lovely place to work.”

The company has been in East Williamsburg for ten years. Its owners chose to locate in the Study Area because they were able to afford much more space than in Union Square, where many media companies are located. The creative industrial character is attractive to some clients who are increasingly willing to come to their offices for meetings.

Further, the location is convenient to the homes of the owners and a qualified and diverse workforce. The company works with hundreds of contractors, such as location scouts, directors of photography, graphic designers, and makeup artists. The owners say that there are many creatives that live within a ten minute radius, and they can “put together a complete crew within the neighborhood.” The business also benefits from being part of a physical goods production culture and works with local studios large and small.



Retail, Arts, and Entertainment: Essential to NYC’s Culture and Economy

	TOTAL JOBS (2016)	JOB GROWTH (2010-2016)
NYC	811,000	26%
NBK	2,270	74%

New York City’s rich cultural offerings and neighborhood retail amenities contribute to the city’s quality of life and economy, enabling it to attract talent and businesses. In the Study Area, growth in retail, arts, and

entertainment appears to be driven by growing demand in nearby residential areas, a strong creative culture, and affordable space, with an increase of 970 jobs between 2010 and 2016.

Restaurants, bars, art galleries, performance venues, and retail stores are generally clustered near the Morgan Avenue and Jefferson Street L train stops, with a concentration along Bogart Street and Wyckoff Avenue. These businesses are commonly located in standalone one-story converted warehouses, but also on the ground floors of some pre-existing residential rowhouses and loft buildings.

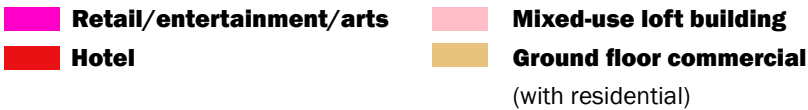
A number of multi-story loft buildings have been converted to artist studios. The Study Area has a notable number of small music venues, small theaters, and rehearsal spaces. This includes two very large venues, Brooklyn Steel (a 1,800 capacity music venue near the Brooklyn-Queens Expressway), and Brooklyn Mirage (a 6,000 capacity nightclub on Stewart Avenue near active heavy industrial businesses).

In New York City, larger venues are permitted in few zoning districts — predominantly M districts that are separated from residential areas. These limitations, in part, explain the concentration of nightlife uses in the Study Area and other industrial areas.



Kings County Brewing Collective

The City recently eliminated one hurdle by repealing the Cabaret Law, which required businesses with dancing to hold a cabaret license, in 2017, and established an Office of Nightlife led by a “Nightlife Mayor,” which will provide support to these businesses and develop policy recommendations.



Why are retail, arts, and entertainment business in North Brooklyn?

- The Study Area has a longstanding creative and arts community, attracting artists and visitors from New York and beyond with galleries, event venues, and widespread street art.
- The Study Area is surrounded by growing residential neighborhoods whose residents patronize these businesses; the L train provides access to a wider customer base.
- Locating in an M district allows nightlife venues to operate apart from residential uses, where they might otherwise receive nuisance complaints.
- Existing building types are easily converted for these uses, and rents can be comparatively lower than in many other areas.
- Surrounding industrial businesses provide customers, and in some cases, resources, such as custom work for space fitout or materials for artwork.

What are the challenges for retail, arts, and entertainment business in North Brooklyn?

- The public realm is not pedestrian-friendly, which impacts customers and workers. Poor sidewalk conditions, lack of pedestrian safety improvements, and lack of street lighting are especially problematic in areas with concentrations of active uses.
- Like other sectors, these businesses are facing rising rents and some have trouble securing longer-term leases.
- As is the case citywide, many nightlife and entertainment businesses face rising operating costs, significant permitting costs and regulatory hurdles. The costs of upgrading spaces to code standards can be significant, and industry experts have stated that it can cost up to \$1 million to open a small venue.⁴¹



Street art near Jefferson Avenue L train stop

Pine Box Rock Shop

A music venue making plenty of noise without complaints

Opened in 2009, Pine Box Rock Shop is a bar and music venue located in a former casket factory, about one block from the Morgan Avenue L train station.

Pine Box was attracted to the Study Area for a few reasons. In residential areas, nightlife and music venues can create noise and attract traffic that draws complaints from neighbors. In its current location, the venue is able to

stay open late with no complaints. Pine Box was able to secure space in an existing warehouse. The large floorplates and high ceilings commonly found in these spaces make them relatively inexpensive to convert.

Locating in an industrial zone created proximity to many of the suppliers one needs to open a bar. The owners describe a “symbiotic” business relationship with woodworking and metal shops and also appreciate these businesses as good neighbors.

Pine Box was also attracted to the strong creative character of the neighborhood. Initially drawing a local crowd from the surrounding area, it is increasingly attracting guests from beyond the neighborhood, facilitated by excellent access to the L train. Most of its employees live in the neighborhood.



International Studio & Curatorial Program (ISCP)

A a non-profit arts organization that has blossomed in a large, flexible space within a strong arts community

ISCP is a comprehensive international visual arts residency program, the fourth largest worldwide, located in a former factory building on Morgan Avenue at Metropolitan Avenue. With thirty-five work studios and two gallery spaces, ISCP supports contemporary artists and curators and promotes



cultural exchange through residencies, exhibitions, and public programs.

Originally located in Midtown Manhattan, ISCP was attracted to its new location because of the opportunity to expand its programming and activities within a larger (17,000 SF), more affordable, and flexible space. The high ceilings and natural light typical of historically industrial loft buildings also create an attractive environment for producing art.

The move to its current space from West 39th Street allowed ISCP to create common areas and other spaces to facilitate more events, increasing its visibility and involvement in the arts community.



North Brooklyn Land Use Framework

North Brooklyn

Land Use Framework:

A Plan for Balanced Growth

This Land Use Framework aims to retain areas for industrial businesses that benefit from separation from other uses while channeling commercial growth to areas near transit. It also aims to update land use regulations to better support today's businesses in line with *New York Works* goals. The recommendations presented here are conceived of as pieces of a balanced overall strategy, interdependent and intended to reinforce one another. Because the Land Use Framework enables an increase in the amount of workspace in the Study Area to accommodate growth in multiple sectors, the overall intended effect of these recommendations would be conducive to job growth.

The Land Use Framework does not put into place zoning regulations on development but, rather, will inform the development of a zoning proposal for the Study Area. A City-led rezoning will reflect the recommendations of the *North Brooklyn Plan* and will include further analysis and outreach to stakeholders about the details of a rezoning proposal, including boundaries.

Subareas were identified based on employment trends and physical characteristics such as concentrations of large lots and subway access:

Core Industrial Area

A central hub for essential industrial businesses that create jobs and keep New York City running.



Growth District

A dynamic, transit-accessible district for creative and tech-driven jobs of the future.



Transition Area

A mix of industrial and non-industrial uses serving as a buffer between the Core and other areas.



Stable Areas

Mixed Edge

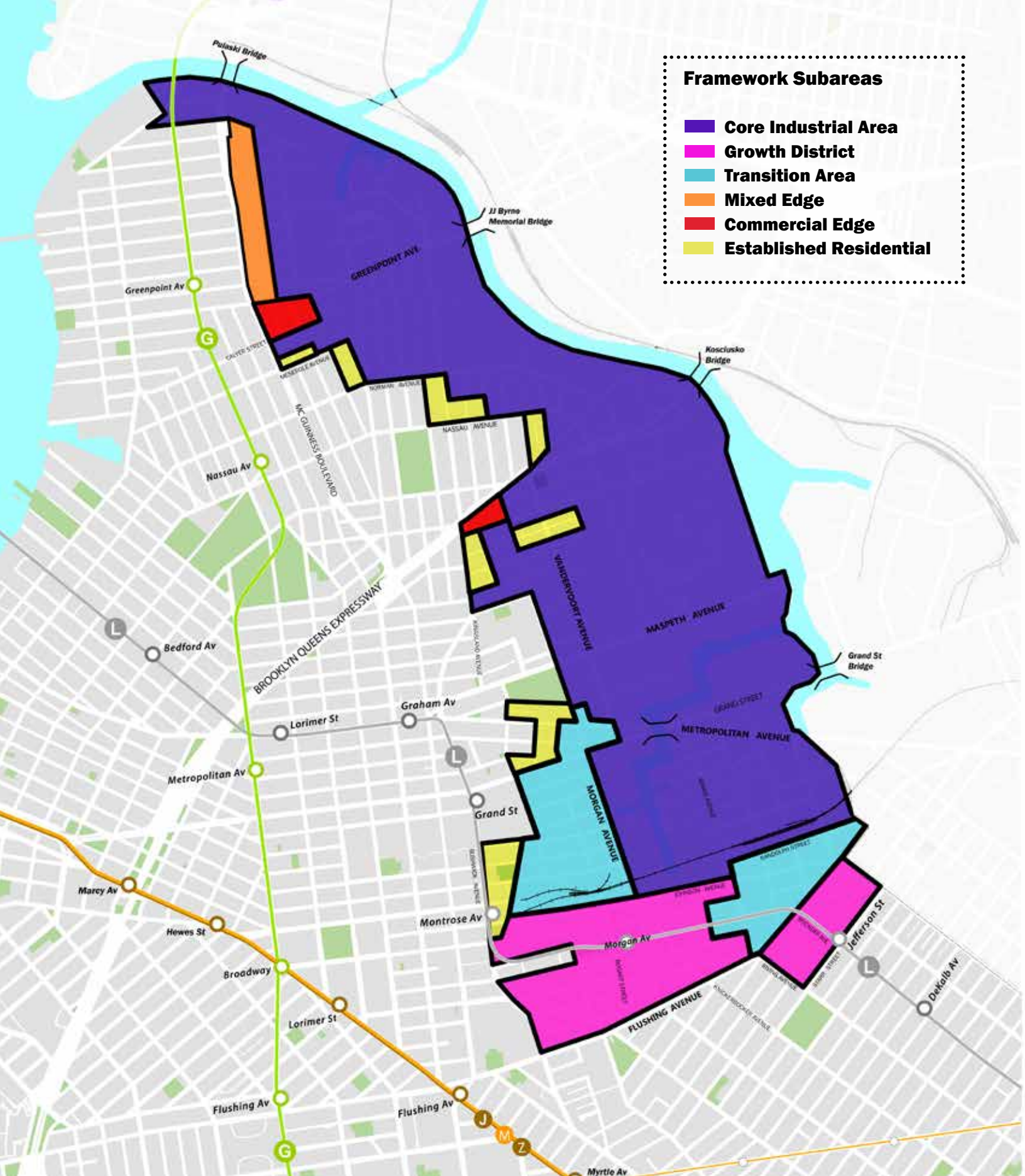
An area with no predominant use between industrial and residential neighborhoods.

Commercial Edge

Selected active commercial properties at the edge of residential neighborhoods.

Established Residential

Predominantly residential blocks located in M districts.



Core Industrial Area

A central hub for essential industrial businesses that create jobs and keep the city running.



KEY METRICS

ACRES

733

69% of Study Area

% INDUSTRIAL

90%

by lot area

BUILT CHARACTER

55%

of lots contain 1-story buildings

JOBS (2016)

10,230

52% of jobs in the Study Area

JOB GROWTH: Industrial

4% (+320)

between 2010-2016

JOB GROWTH: Non-Industrial

-31% (-715)*

between 2010-2016
*net decline driven by a small
number of large companies

BUSINESS ACTIVITIES

**Heavy, truck-intensive
industrial uses**

- Wholesale trade
- Construction
- Transportation and warehousing

- Waste management
- Manufacturing
- Film stages
- Utilities

CORE INDUSTRIAL AREA: DEFINING FEATURES



> Concentration of truck-intensive businesses



> Utilities and essential industrial services



> Open industrial uses



> Large lots



> Maritime freight and rail

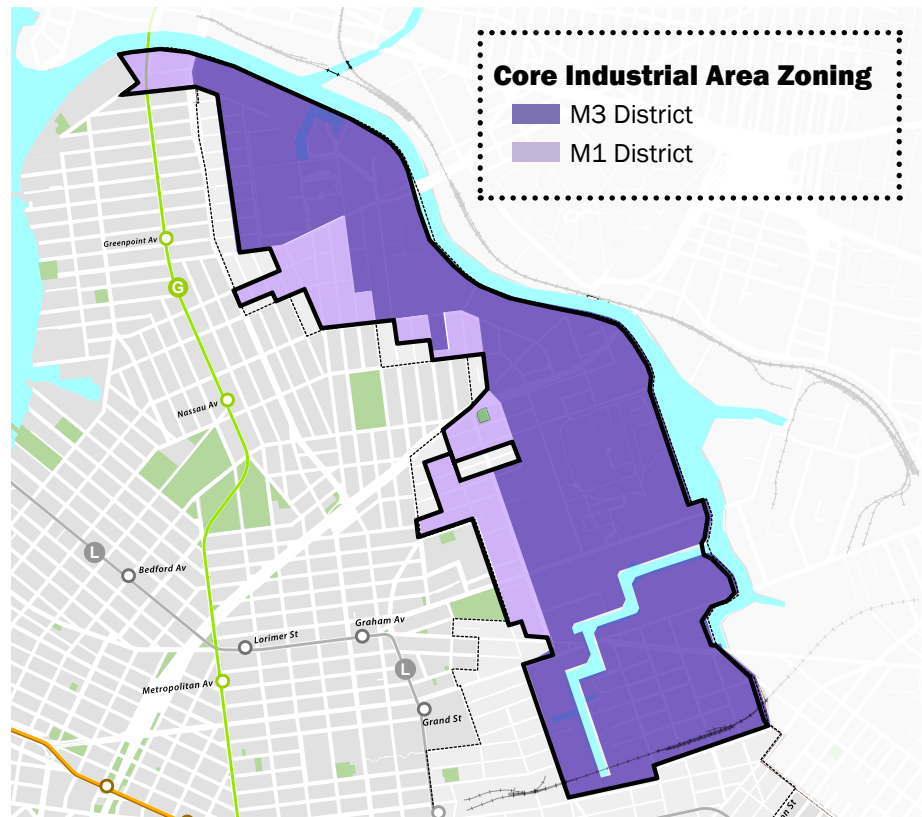


> Low-scale warehouses

Core Industrial Area

A Concentration of Heavy, Truck-Intensive Industrial Businesses

The Core Industrial Area constitutes over two-thirds of the Study Area and spans the length of the Brooklyn side of Newtown Creek. DCP defined the Core Industrial Area based on the location of the most significant concentrations of truck-intensive businesses that provide essential industrial services to the city and benefit from separation from non-industrial uses. The Core Industrial Area was also defined by key strategic assets: large lots appropriate for siting truck-intensive industry, distance from residential areas, and location in the geographic center of the city with access to highways and other transportation infrastructure.



The majority of the Core Industrial Area is zoned M3-1. However, in buffer areas proximate to residential uses, some portions of the Core Industrial Area are zoned M1-1 and M1-2, where some of the most noxious industrial uses are not permitted. Any zoning treatment for the Core Industrial Area will need to differentiate between the M1 and M3 areas so that these noxious industrial uses continue not to be permitted near residential areas.

Industrial Uses

The industrial businesses in the Core Industrial Area generally require large sites for loading, unloading, or open storage. Most occupy low-scale buildings, with the most intensive activity on the ground floor. Many of

these businesses generate truck traffic, noise and odors. However, some can be lower impact, such as small-scale wholesale, and may be appropriate for buffer areas closer to residential uses.

While industrial employment has grown in parallel with the citywide population, new construction has been relatively limited. Businesses have invested primarily in building reuse, renovations, and expansions, with new construction limited to one-story warehouses and sound stages.

Other Land Uses

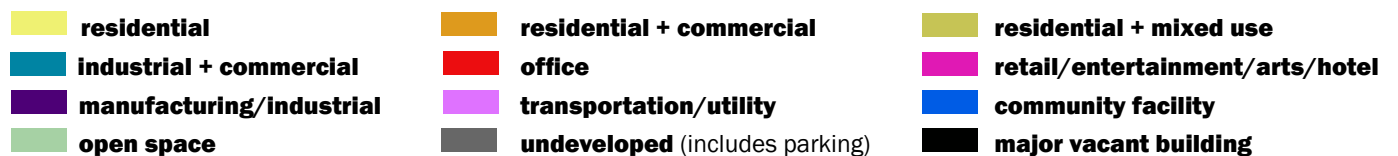
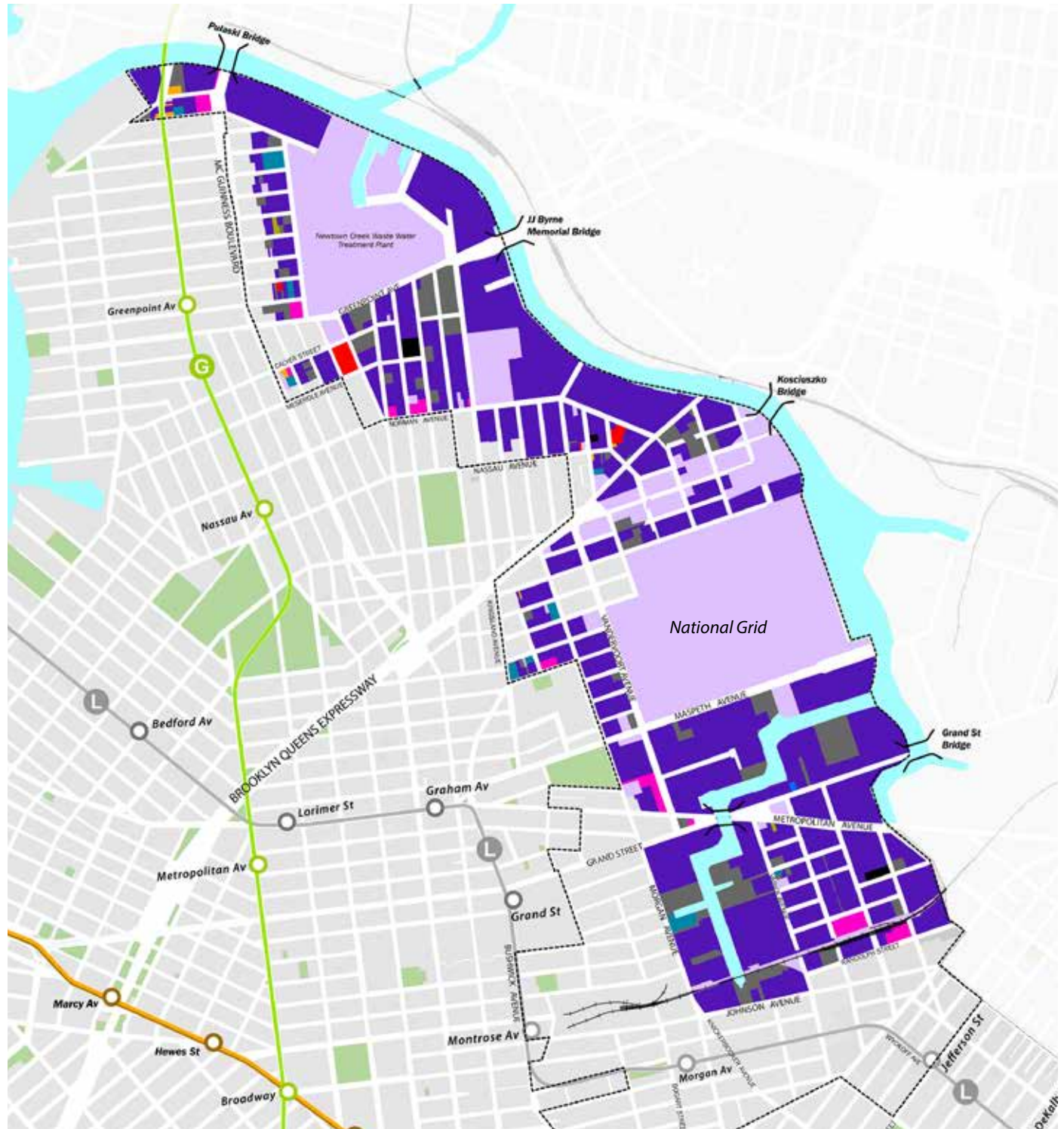
The growth of office space (excluding accessory office) in the Core Industrial Area has been limited given a combination of market preferences,

geography, and existing zoning regulations.

There are few retail, arts, or entertainment establishments in the Core Industrial Area. However, some nightlife and entertainment uses have similar space preferences to heavy industrial businesses: large lots, ground floor space, and separation from residential neighborhoods. Two large-footprint event venues recently located at the periphery of the Core Industrial Area.

There is little housing, with the exception of two predominantly residential blocks on Beadel Street (part of the Established Residential Subarea).

Land Use



Built Environment



- Lot Area**
- less than 5,000 SF
 - 5,000 - 9,999 SF
 - 10,000 - 19,999 SF
 - 20,000 - 49,999 SF
 - more than 50,000 SF

Large lots:

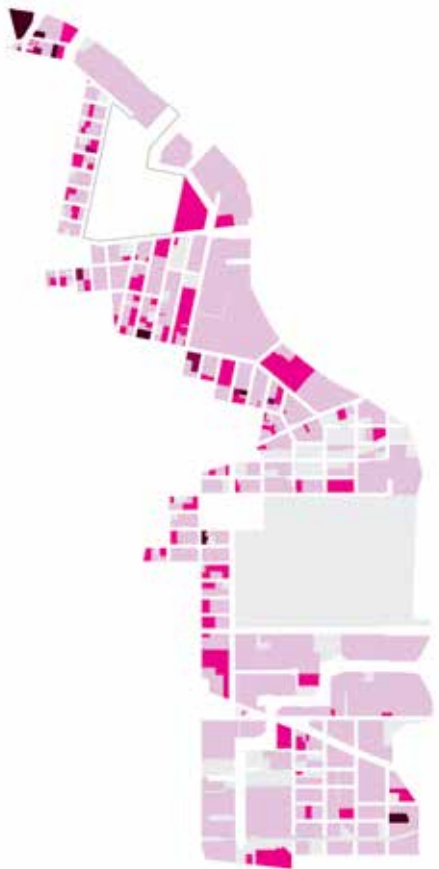
**OVER 85% OF LOT AREA
COMPRISES LOTS OVER
20,000 SF**



- Floors**
- undeveloped
 - 1 story
 - 2 stories
 - 3 stories
 - 4 stories or more

Low-rise:

**OVER 50% OF LOTS CONTAIN
1-STORY BUILDINGS**



- Built FAR**
- undeveloped
 - 0.01 - 1.00 FAR
 - 1.01 - 2.00 FAR
 - 2.01 - 3.00 FAR
 - more than 3.01 FAR

Underbuilt:

**OVER 60% OF LOTS ARE
UNDERBUILT PER CURRENT
ZONING**

What We Heard:

Why are businesses here?

Key Advantages

- > **Geographic location in the center of the city and proximity to major transportation infrastructure** provide access to broad areas of the city.
- > **Separation from residential and other uses** allows businesses to avoid complaints or conflicts that hinder their operations.
- > **Large lots and low-scale buildings** serve the needs of businesses that require significant ground floor space for parking, loading/unloading, heavy machinery, and storage, with less use for upper floor space.
- > **M3 zoning permits heavy industrial uses** that may not be allowed by zoning to locate elsewhere.

What could be improved?

Key Challenges

- > **The aging building stock** does not consistently provide high ceilings, wide column spans, and substantial space for off-street loading, which are more easily found outside New York City.
- > **Obsolete zoning** creates obstacles to expansion or creation of space for industrial businesses.
- > **Transportation infrastructure constrains business operations**, with roadways in need of repair, congestion, a narrow, inefficient street grid, and limited crossings of Newtown Creek.
- > **Location within the 1% annual chance floodplain** poses risks of flood damage to industrial businesses that rely heavily on ground floor space.

GOAL for the Core Industrial Area

Retain as a hub for essential industrial businesses, balanced by growth in diverse sectors in the Growth District.

The Core Industrial Area plays an important role in the city's industrial economy, with a unique set of strategic advantages for essential industrial businesses that keep the city running. Zoning and infrastructure improvements in this subarea can provide a location where such businesses can continue to operate away from other uses. In order to leverage the full economic growth potential of the Study Area, an industrial reinforcement strategy in the Core Industrial Area must be paired with a growth strategy that channels commercial density and investment to the transit-rich Growth District.

////////////////////////////////////



ISSUE:

Retention of large sites for heavy, truck-intensive industrial uses.

Across much of the Core Industrial Area, existing zoning restricts an array of uses and allows a relatively limited amount of FAR. Most of the Core Industrial Area is M3-1, which permits up to 2.0 FAR for industrial, office, eating and drinking establishments, limited types of retail (some of which, such as grocery stores, are limited to 10,000 square feet in size) and entertainment uses. Community facility uses and hotels are not allowed in M3 districts. The Core Industrial Area also contains some M1 areas, which permit a broader array of retail uses, some of which are limited to 10,000 square feet in size. M1 zoning prohibits most community facilities, but those that are allowed – most significantly ambulatory healthcare facilities and houses of worship – are allowed more FAR than are industrial and commercial uses. M1-1 zoning allows for up to 2.4 FAR of community facility use and only 1.0 FAR of commercial or industrial use; M1-2 zoning allows for up to 4.8 FAR of community facility use and only 2.0 FAR of commercial or industrial use.

In policy conversations about planning for industrial areas, some have proposed placing additional restrictions on non-industrial uses, especially in heavy industrial areas such as the Core Industrial Area.

Limiting Self-Storage and Hotels

In 2017, the City Planning Commission and City Council approved a zoning text amendment that limits self-storage

in IBZs citywide, including in the IBZ portions of the Study Area. Currently, a zoning provision that would require a special permit for any new hotel development in the vast majority of M1 districts is pending before the City Council as part of the public review process.

Limiting Nightlife and Entertainment

Proponents for further use limitations in the Core Industrial Area have called for restrictions on large-scale entertainment uses, such as night clubs and music venues. Given the Core Industrial Area's unique economic importance as a center for goods-movement and critical functions for the city, targeted limitations on large-scale entertainment within this particular area could help ensure that large lots and ground floor spaces remain available for essential industrial uses in the future, without impairing the economic and cultural functions that entertainment and nightlife contribute within the city.

Limiting Office, Retail, and Eating & Drinking Establishments

Additional use regulations on offices, retail, and eating and drinking establishments in the Core Industrial Area have also been suggested during the outreach process. The City must consider the tradeoffs between protecting a select set of industries while imposing land use restrictions on other sectors of job-

generating activity. Office uses remain an important source of jobs for New Yorkers, serve an important function as an accessory or complementary use to industrial businesses, and can be a vital source of revenue for industrial business owner-occupants. Unlike many other uses, offices have the ability to locate on upper floors where many industrial uses cannot, and therefore do not necessarily compete directly with these uses while helping to increase job densities for an area. DCP found that office uses often prefer larger lots to facilitate larger floorplate developments, similar to industrial users within the Core Industrial Area, and therefore could consider targeted limitations on the size of office uses, their location on large lots, or their location on ground floors, as an appropriate way to retain large, ground floor space for industrial uses.

Retail and eating and drinking establishments, many of which are already limited to 10,000 square feet in size, have the ability to locate on smaller lots that are less suitable for larger footprint industrial businesses, and can serve the needs of local employees, businesses, and residents of adjoining areas while facilitating job-generating use of smaller sites throughout the area. However, although industrial businesses in the area have reported few direct conflicts with these activities, it may be prudent to consider strategies to prevent future concentrations of these uses in order to maintain the long-term stability of

the Core Industrial Area. Therefore, DCP will consider appropriate size limitations for retail and eating and drinking establishments in order to reduce the potential for concentrations of these uses that could conflict with industrial business operations.

districts. DCP agrees that zoning that favors community facilities over other uses does not align with the economic development goals for the Study Area, and recommends the alignment and re-balancing of FAR for job-generating uses.

Limiting Community Facilities

Some area stakeholders have also called for the elimination of the preference that existing zoning gives to community facility uses in M1

RECOMMENDATION:

Explore appropriate limitations on targeted uses.

In recognition that it is necessary both to protect the economic role of intensive industrial activities and to enable a wider range of businesses to find suitable locations within the city, DCP will examine targeted limitations on certain uses intended to preserve the availability of ground floors and large lots for industrial and truck-dependent activities. While retaining locations for core industrial activities is vital to the city's economy, in this rapidly growing, space-constrained city, reserving large amounts of land for the low-density development and parking typical of many industrial businesses may be a costly strategy for job growth. Therefore, limitations on office, retail, and entertainment uses in the Core Industrial Area will be balanced by increasing FAR in the Growth District to allow for job generating office and commercial growth.

Because the M3 portions of the Core Industrial Area contain the greatest concentrations of large lots and essential industrial activities, limitations on other non-industrial uses may be particularly appropriate in M3 areas. Therefore, DCP proposes amending the permitted M3 uses within the Core Industrial Area to include the following new use limitations:

- > Limit new large-footprint entertainment uses in M3 portions of the Core Industrial Area (e.g., Use Group 12).**
- > Establish appropriate size limitations on retail and eating and drinking establishments to limit potential for future conflicts with industrial and truck-dependent activities.**
- > Establish appropriate limitations on new stand-alone office space by, for example, limiting in size, on large lots, or on ground floors.**
- > Reduce FAR permitted for community facilities to equalize with FAR permitted for other uses.**

ISSUE:

Low allowable floor areas in M1-1 districts for industrial uses.

While many industrial businesses prefer to operate on the ground floor, some businesses do use upper-floors for activities such as light production, storage, and office space.

Core Industrial Area, only 1.0 FAR is permitted in M1-1 areas. This zoning limits the creation of upper-floor industrial space.

While 2.0 FAR for commercial and industrial uses is permitted in the M3-1 and M1-2 portions of the

Example:

Limited floor area for expansion of existing warehouse in an M1-1 district

Mezzanine added to create additional storage space in a one-story warehouse



RECOMMENDATION:

Allow at least 2.0 FAR for industrial uses across the Core Industrial Area.

Increasing allowable FAR for industrial uses could facilitate building expansion or new construction to create multi-story buildings for industrial businesses. Any additional floor area increases would apply to industrial uses (e.g., in M1-1 districts, allowable floor area for industrial uses would be increased to 2.0; floor area for other uses would remain at the current maximum FAR of 1.0).

ISSUE:

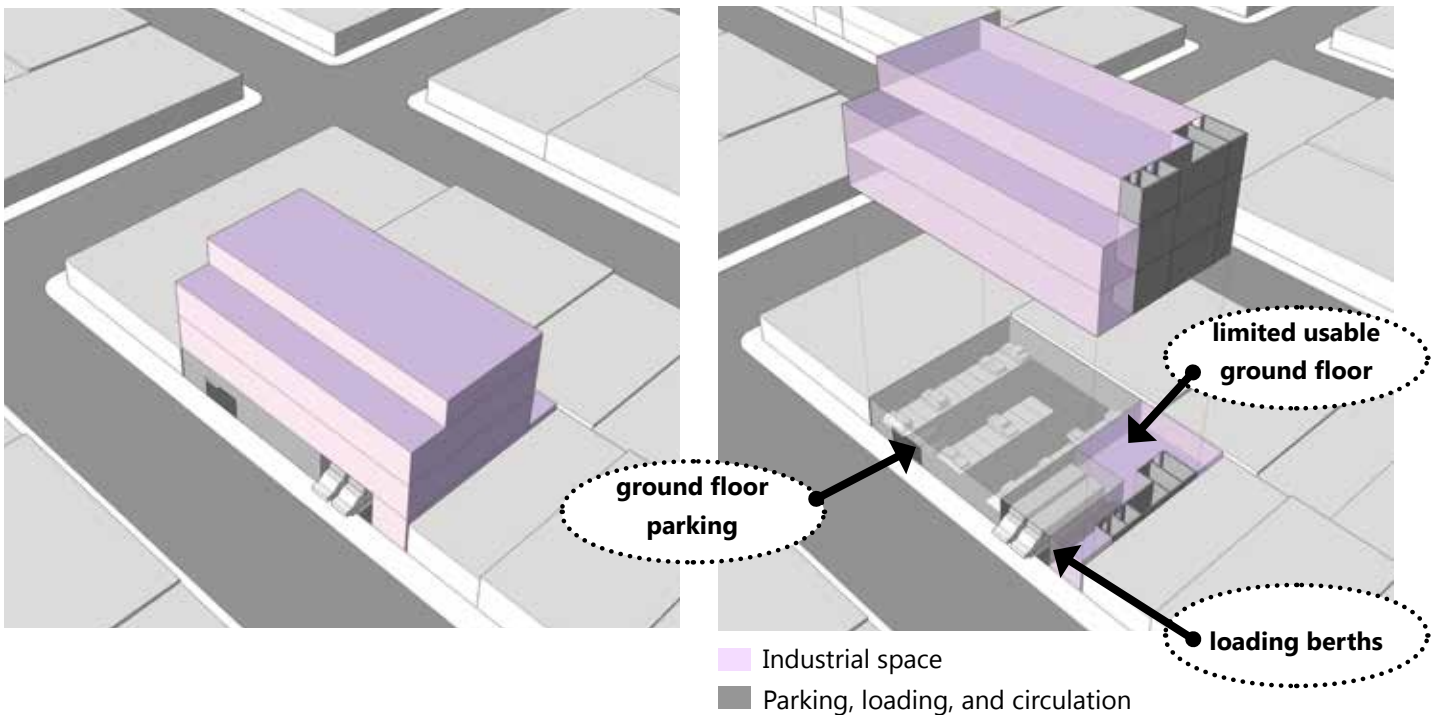
High parking and loading requirements that may discourage investment.

PARKING

Current zoning requires a minimum of one off-street parking space per 1,000 or 2,000 SF of industrial use (varying by use). This can make building expansions and new development infeasible because surface parking displaces valuable ground floor

industrial space, and constructing decked- or below-grade parking is often cost-prohibitive, especially in the flood zone. At the same time, the Core Industrial Area's distance from subways and bus routes encourages employees and customers to drive to the area, and on- and off-street parking appear to be well-utilized.

Additional study is required to understand how to balance provision of adequate parking in the neighborhood while addressing the physical constraints posed by off-street parking requirements.



Example: Industrial Building in a M1-2 District

150' x 100' lot | 2.0 FAR allowed | 30,000 SF building

Required parking spaces: **30** / Required loading berths: **2**

Issues:

- > Current zoning includes significant minimum parking requirements that effectively assume 1 car per worker, at 1 space per 1,000 SF of industrial use.
- > The required 30 parking spaces would likely be located on the ground floor. Underground and above grade parking are generally prohibitively expensive for industrial businesses.
- > Parking and loading almost entirely absorb the ground floor, the most valuable space for industrial businesses.

LOADING

Current zoning requires off-street loading berths in proportion to the size of a building: one berth is required for 8,000 to 25,000 SF of floor area, a second at 40,000 SF, a third at 60,000 SF, and so on. These requirements have changed little since 1961.

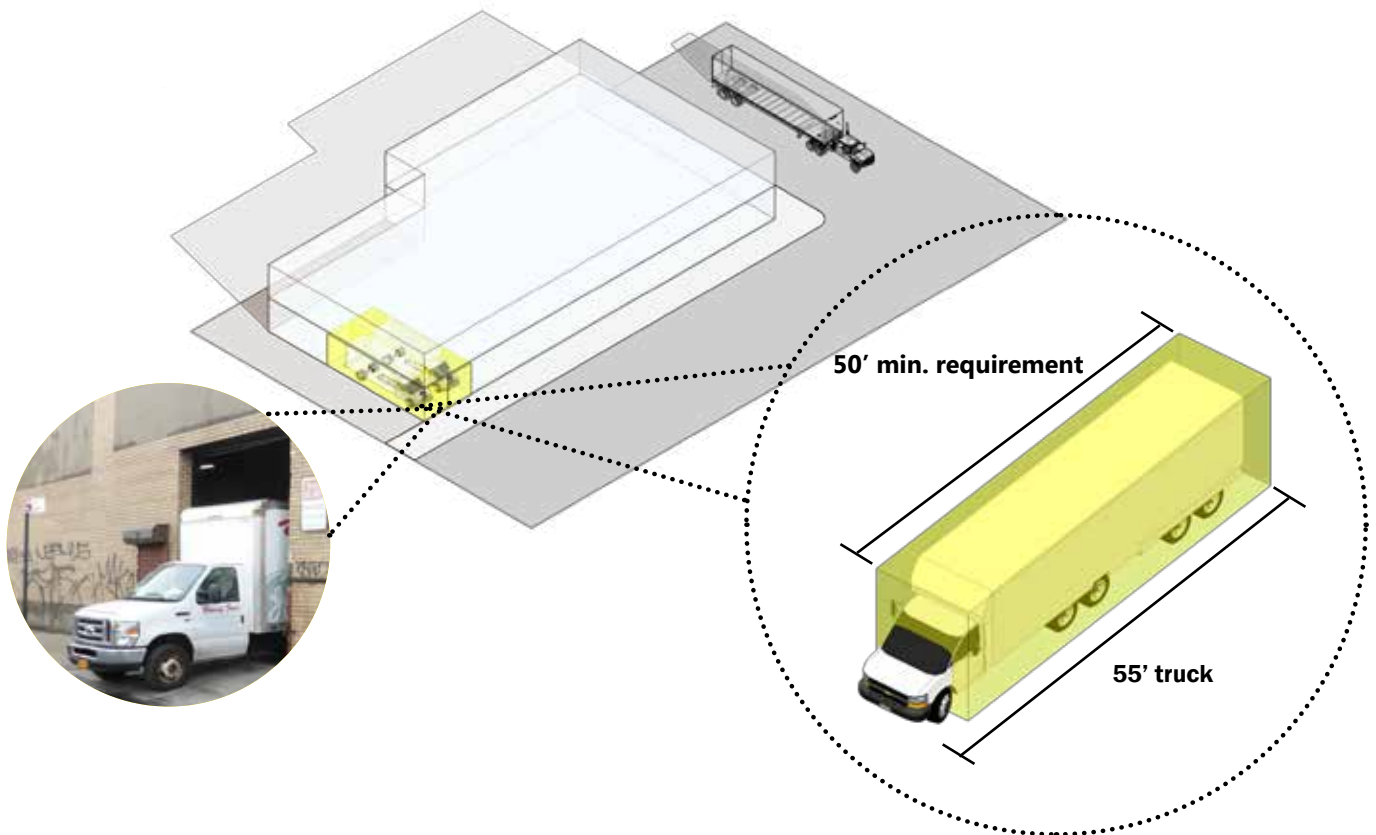
While today's truck-intensive industrial businesses rely heavily on loading berths, these berths also take up a

significant amount of valuable ground floor space within a building, which could discourage creation of new industrial space. This may be especially true in expansion of existing buildings: an increase in size can trigger requirements for new loading docks, which would be both expensive and impractical to provide.

Today's loading dock requirements also do not accommodate modern trucks. The minimum loading bay depth for

industrial buildings under 10,000 SF is 33 feet, and the minimum for buildings over 10,000 SF is 50 feet. However, the maximum legal truck size in New York City for single-unit box trucks is 35 feet in length, and for multi-unit tractor trailers is 55 feet in length. Loading dock requirements should reflect the dimensions of today's trucks.

Off-street loading requirements today



RECOMMENDATION:

Rightsize off-street parking requirements for industrial uses that create obstacles to new construction or expansion of industrial buildings.

- > **Study whether industrial parking requirements for new buildings can be reduced while still providing adequate parking for the subarea.**
- > **For expansions of existing industrial buildings, waive or reduce additional required parking spaces if they would reduce ground-floor industrial space, and/or reduce parking requirements for upper-floor uses.**

RECOMMENDATION:

Encourage shared parking across the subarea.

- > **Increase the allowable distance for off-site parking.**
- > **Allow waivers or reductions in required parking when dedicated car-sharing spaces are provided.**

RECOMMENDATION:

Update loading berth requirements for industrial uses to better align with business needs and avoid discouraging expansion of industrial buildings.

- > **Study business loading needs and rightsize loading berth requirements in relation to size and use of building.**
- > **Address obstacles to building expansions created when an increase in building size triggers requirements for additional loading berths.**
- > **Update loading berth depth requirements based on the dimensions of modern trucks.**



Growth District

A dynamic, transit-accessible district for creative and tech-driven jobs of the future.



KEY METRICS

ACRES

139

13% of Study Area

% INDUSTRIAL

40%

of lot area

BUILT CHARACTER

28%

of lots contain 1-story buildings

JOBS (2016)

3,880

20% of jobs in the Study Area

JOB GROWTH: Industrial

17% (+320)

between 2010-2016

JOB GROWTH: Non-Industrial

155% (+990)

between 2010-2016

BUSINESS ACTIVITIES

**Eclectic mix of
industry, innovation,
and arts**

- **Artists studios & galleries**
- **TAMI, other office-based businesses and coworking**
- **Accommodation and food services**

- **Retail and entertainment**
- **Large-scale and small niche manufacturing**
- **Wholesale trade**

GROWTH DISTRICT: DEFINING FEATURES



> TAMI and other office



> Street art, studios, and galleries



> Light manufacturing and some large industrial uses



> Retail and entertainment



> Concentration of loft buildings



> Existing housing adjacent to industrial uses

Growth District

A dynamic, mixed-use district for creative and tech-driven jobs of the future

The Growth District is the most mixed-use, rapidly changing portion of the Study Area. Between 2010 and 2016, jobs in the Growth District grew by 53 percent, including 990 new non-industrial jobs and 320 new industrial jobs, vastly outpacing job growth in the rest of the Study Area.

Transit access, adjacency to residential neighborhoods, a strong creative culture, and a concentration of approximately forty industrial loft buildings has made the Growth District attractive to a wide array of creative and innovative uses. Over twenty years ago, artists and others looking for affordable live/work space began moving into the area's loft buildings. Today, the subarea is characterized by lively and distinctive street art and a growing mix of art galleries, restaurants and bars, music venues, TAMI and other office-based businesses, legacy large-scale industrial uses, and small manufacturers. The Growth District has also historically been the most mixed-use portion of the Study Area, and contains the greatest concentration of housing, including townhomes that predate zoning. Reflecting this highly mixed-use condition, portions of this subarea were not included within the IBZ boundaries when they were drawn.

The Morgan Avenue and Jefferson Street subway stations, located centrally within the Growth District, are valuable assets that can continue to support job growth and serve a rapidly growing number of workers. But a finite supply of multi-story loft buildings, the predominance of low-scale warehouses, and zoning that discourages new construction constrain the supply of space. Zoning can be updated to channel continued investment and economic growth into the Growth District while relieving development pressure on other areas.

Office

The Growth District is seeing dramatic growth of TAMI businesses such as Carto, a mapping software company; Remezcla, a Latin American media brand; and ConsenSys, a blockchain software technology company. Some TAMI businesses, such as Madwell, lie on the spectrum between commercial and manufacturing, using space for both digital design and fabrication.

There is also a significant amount of office development in the pipeline: a total of one million SF has been announced, planned, or built in the past five years. These projects are predominantly

building conversions, but the Growth District also includes a small number of ground-up construction projects, including 100 Bogart Street, a 56,000 SF coworking space, and 13 Grattan Street, a 30,000 SF office and retail building.

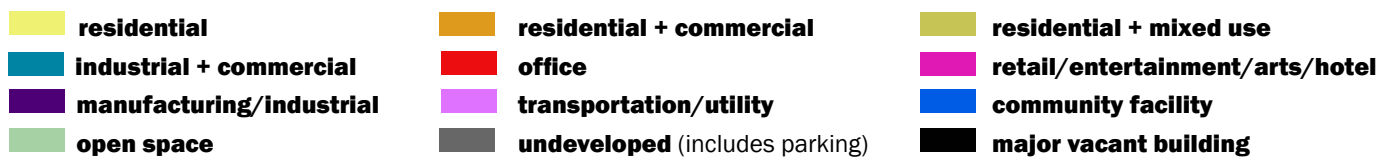
Retail, arts, and entertainment

The Growth District contains one of the city's major artistic hubs, with studio spaces, such as the BogArt at 56 Bogart Street and Brooklyn Brush Studios; live/work spaces, such as the McKibbin Street lofts; studios and galleries in converted low-scale warehouses; and an abundance of street art.

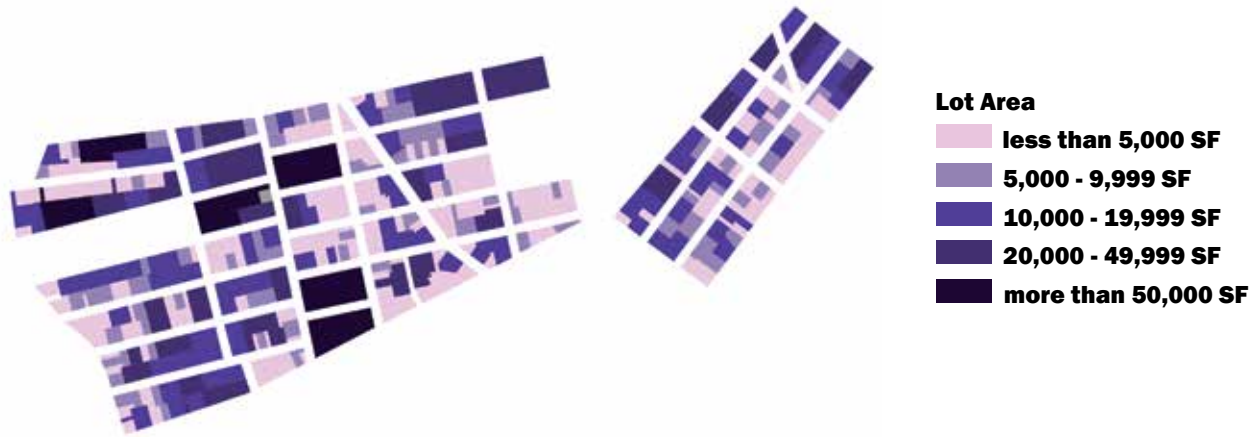
Anchored by subway stations, Bogart Street and Wyckoff Avenue are emerging retail corridors. They contain restaurants, such as the well-known Roberta's Pizza; entertainment venues, such as the Pine Box Rock Shop and the House of Yes; a combined restaurant and movie theater called Syndicated; and some retail stores, such as vintage clothing and a small grocery.

The Growth District contains several food manufacturers whose operations offer some crossover between retail and manufacturing. Some examples are Ichiran Ramen, which has a restaurant

Land Use



Built Environment



Small lots:

**OVER 70% OF LOT AREA
COMPRISES LOTS UNDER
20,000 SF**

Multi-story buildings:

**45% OF BUILDINGS ARE
OVER 1 STORY**

Overbuilt:

**35% OF LOTS ARE
OVERBUILT PER CURRENT
ZONING**

attached to its noodle manufacturing plant; Tortilleria Mexicana Los Hermanos, which runs a small restaurant adjacent to tortilla manufacturing; and Kings County Brewers Collective, which contains both a brewery and taproom.

Residential

This subarea has the most housing of all subareas and is directly adjacent to established residential neighborhoods. Residential uses are located on approximately 30 percent of lots in the subarea, most of which are small lots. Residential buildings in the subarea include 175 houses built before 1961, 20 Loft Law buildings, and two buildings constructed pursuant to a variance. Residential uses generate more pedestrian activity as well as more conflicts with industrial uses.

Industrial

A variety of large and small manufacturing businesses are located here, ranging from the largest manufacturer of dumpling wrappers in the United States (Wonton Food), to small-batch, highly specialized artisanal businesses serving the local market. These small manufacturers include chocolate makers, custom woodworking, lighting fabrication and restoration, high end glassworks, a bespoke high-end suit tailor (Martin Greenfield), and makers of high end window displays.

Other major industrial business types are wholesale and distribution (Boars Head), transportation, and construction, which generally occupy low-scale warehouse buildings of various sizes. There also remain open lots used actively for cement mixing, open storage and parking.

Hotels

A number of new hotels have been constructed or are planned for the subarea. However, a new zoning provision that would require a special permit for any new hotel development in an M1 district is expected to be applicable to the entire Growth District.

What We Heard:

Why are businesses here?

Key Advantages for Office-Based Businesses

- > **The creative and tech business ecosystem** is appealing to TAMI and other office-based uses.
- > **Subway stations** located within the boundaries of the subarea make it accessible to business owners, employees, and Manhattan-based clients; almost 90 percent of the subarea is within ¼ mile of the subway.
- > **Geographic proximity to workers** helps business owners attract talent from a workforce living in nearby Brooklyn neighborhoods.
- > **Unique neighborhood character** helps create a brand that appeals to customers.
- > **Stock of multi-story loft buildings** makes for desirable and affordable office space.
- > **Local restaurants, bars, and other services are growing.**

Key Advantages for Retail, Arts, and Entertainment Businesses

- > **Transit access** makes the subarea easily accessible to customers.
- > **Geographic proximity to workers** helps business owners find employees.

- > **Creative neighborhood culture** allows music venues and other entertainment businesses to thrive.
- > **Industrial building stock** with high ceilings and large open floorplans can be easily converted to bars and restaurants.

Key Advantages for Industrial Businesses

Industrial businesses in the Growth District vary greatly in terms of business model, size, and space needs. Some businesses moved into the subarea before the growth in non-industrial uses, while others have moved to the subarea more recently.

- > **Access to major truck routes.** Morgan Avenue and Flushing Avenue serve as important connectors.
- > **Transit access** makes the subarea easily accessible to workers and customers.
- > **Local services are growing** and beginning to provide workers with places to eat lunch in an area that previously had few options.

What We Heard:

What could be improved?

Key Challenges

- > **Zoning constrains construction of new workspace.** Low density limitations and high parking requirements make development of new office space challenging or infeasible.
- > **Conflicts between industrial and non-industrial users** are increasing as non-industrial uses grow. Industrial business operations may be impeded with the addition of new non-industrial uses in the subarea, while large trucks on the subarea's narrow streets can lead to unsafe pedestrian conditions.
- > **Public realm and pedestrian conditions** are generally poor due to a lack of investment in public amenities in industrial areas

GOAL for the Growth District

Grow a transit-accessible, dynamic ecosystem of creative and tech-driven jobs in office-based and industrial sectors, balanced by reinforcement of the Core Industrial Area for essential industrial uses.

Channeling commercial growth momentum into the Growth District can support a diversity of jobs in the Study Area's most transit-accessible locations, while relieving pressure to convert industrial space for other uses in other subareas. Given the predominance of low-density buildings in the subarea, allowing for new development at a greater FAR and with less parking than permitted in zoning today could potentially create millions of net new square feet of space for jobs.

Growing a business district here also serves broader citywide policy goals and the *New York Works* jobs plan. Creating transit-accessible tertiary business districts outside of New York City's more established office districts can meet the needs of growing TAMI and other office-based businesses. More dispersed office districts can bring jobs closer to populations, including the college-educated tech-savvy population that is growing outside of Manhattan, as well as local, lower-income communities that would benefit from new job opportunities. With proximity, training/internship linkages can be more easily created between growing businesses and local high schools and colleges that serve local residents. Further, growth would bring workers to the Growth District that might otherwise be Manhattan-bound. This reverse commuting would particularly help to relieve pressure on the L train line.

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100 Bogart Street: new construction coworking space

ISSUE:

Low permitted density near transit and building envelopes that do not reflect existing character.

DENSITY

The Growth District is currently mapped with M1-1 and M1-2 zoning districts that allow a maximum FAR of up to 1.0 or 2.0, respectively, for commercial and industrial uses. This relatively low density limits building expansions and discourages development of small or infill sites. Many of the existing loft buildings that have attracted TAMI and small manufacturing tenants to the Growth District could not be built today under current zoning. More broadly, the New York City Zoning Resolution's existing M1 districts offer a limited gradient of allowable FAR's,

offering 1.0 and 2.0, and then jumping to 5.0 and 10.0 FAR. The lack of zoning districts with intermediate densities prevents the creation of mid-sized non-residential buildings in the Study Area and other M districts in the city where there is a growing commercial market.

BUILDING ENVELOPE

Originally designed for horizontal, auto-oriented businesses, existing building envelope regulations in M1 districts encourage creation of buildings with set-backs and towers, in contrast to the bulkier preexisting industrial loft buildings. Shorter, bulkier loft-like buildings with fewer setbacks can provide larger floorplates that are more accommodating for a wide range of office-based and industrial firms.

Loft buildings in the Study Area could not be built today: most are between 3.0-4.0 FAR and do not comply with current zoning regulations on base heights, setbacks, lot coverage, and parking and loading facilities.

M1-1

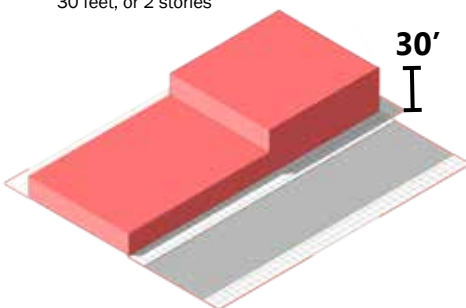
Maximum FAR:

1.0 FAR for industrial/commercial

2.4 FAR for community facility

Maximum base height:

30 feet, or 2 stories



M1-2

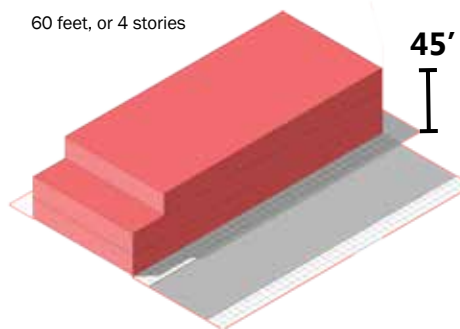
Maximum FAR:

2.0 FAR for industrial/commercial

4.8 FAR for community facility

Maximum base height:

60 feet, or 4 stories



Existing loft buildings:

Built FAR:

3.0 - 4.0 FAR (overbuilt under current zoning)

Building heights:

vary, up to



RECOMMENDATION:

Develop new M districts or land use tools that allow for densities between 2.0 and 5.0 FAR.

- > **Increase maximum permitted floor area to between 2.0 and 5.0 FAR for commercial and industrial uses in order to encourage new development, allow for greater building variety and volume, and facilitate increased job density near transit.**
- > **Conduct an urban design analysis to determine appropriate locations for greater density while maintaining a high quality environment and neighborhood character.**

RECOMMENDATION:

Create new, more “contextual” building envelopes to allow for loft-like buildings.

- > **As part of new M districts or land use tools described above, create new building envelopes that: allow for bulkier loft-style buildings that reflect existing neighborhood character, facilitate larger, more flexible floorplates for diverse commercial and industrial uses, reduce the ability to build towers on large sites, and create a more consistent street wall that contributes to a higher quality pedestrian realm.**

ISSUE:

Greater density permitted for community facility space.

As discussed in the Core Industrial Area zoning recommendations, in M1 districts, existing zoning favors construction of community facility space over commercial and

industrial space by allowing greater FAR for community facility uses. The community facility uses permitted as-of-right in M1 districts are ambulatory healthcare and houses of worship,

although other uses are permitted by Special Permit.

RECOMMENDATION:

Equalize FAR permitted for community facilities with FAR permitted for other uses.

- > **Eliminate the preference for community facility uses in zoning today by allowing the same amount of FAR for community facility, commercial, and industrial uses.**

ISSUE:

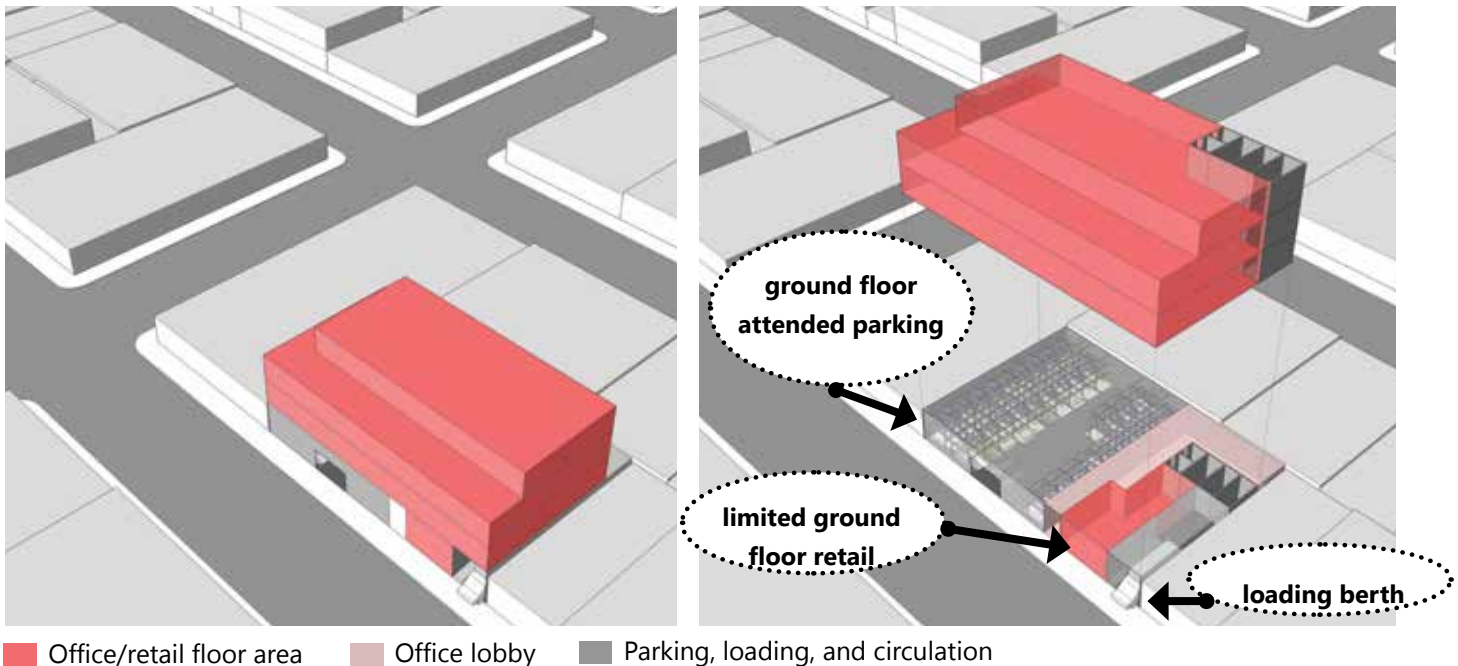
High parking and loading requirements that may discourage investment.

PARKING

Minimum parking requirements in the subarea do not reflect its excellent transit access and discourage creation of new space. Current zoning requires one parking space for every 300 SF of commercial use, significantly limiting the feasibility of new construction or

expansions. Fitting required parking on a commercial development site requires either giving over ground floors to parking, or building expensive underground parking. While there is a special permit from the Board of Standards and Appeals (BSA) available to halve parking requirements for office uses, this process can add time

and cost to a project and ultimately still requires a substantial amount of parking that may not be appropriate in areas close to transit.



Example: New Commercial Building in a M1-2 District

150' x 100' lot | 2.0 FAR allowed | 30,000 SF building

Required parking spaces: **100** / Required loading berths: **1**

Issues:

- > Current zoning includes extremely high minimum parking requirements that effectively assume 1 car per worker, at 1 space per 300 SF of commercial use.
- > The 100 required parking spaces could fit on the ground floor with the use of an attendant and stackers. While this increases development costs, underground parking is significantly more expensive.
- > This largely limits the availability of space for revenue-generating ground floor retail.

LOADING

(See also Core Industrial Area zoning recommendations for more detail.)

In M districts in the Study Area, loading requirements for most retail and service uses are similar to those for industrial uses and are relatively high. Loading requirements for office

uses are less onerous: office buildings between 25,000 SF and 100,000 SF are required to provide one loading berth, whereas an industrial building of that size would need to provide multiple loading berths.

As discussed in the Core Industrial Area recommendations, these loading requirements have not been updated since 1961, but business needs have

likely changed. Loading requirements may also discourage investment in new space, especially in expansions of existing buildings that trigger requirements for additional berths. Minimum depth requirements also do not reflect the sizes of today's trucks.

RECOMMENDATION:

Rightsize off-street parking requirements for commercial and industrial uses to better reflect proximity to transit.

- > Reduce off-street parking requirements to better reflect the subarea's excellent access to transit and to remove obstacles to new construction or expansion of existing buildings.**

RECOMMENDATION:

Update loading berth requirements for industrial and commercial uses to better align with business needs and avoid discouraging expansion of existing buildings.

- > Study business loading needs and rightsize loading berth requirements in relation to size and use of building.**
- > Address obstacles to building expansions created when an increase in building size triggers requirements for additional loading berths.**
- > Update loading berth depth requirements based on the dimensions of modern trucks.**

ISSUE:

Large-scale industrial users operate in an evolving employment district.

A number of large footprint industrial businesses, such as Boars Head, are located in the Growth District, some of which are a considerable source of jobs in the area. Ongoing planning efforts should account for these important stakeholders and ensure that future actions support their growth. Current zoning may be an impediment to their ability to upgrade or expand existing

facilities, and additional outreach will be needed to better understand business needs today and in the future.

RECOMMENDATION:

Support large-scale industrial users in the Growth District

- > Work with businesses to develop a zoning approach that supports the growth of valuable large-scale industrial users that exist in the Growth District today.**

Transition Area

A mix of industrial and non-industrial uses serving as a buffer between the Core Industrial Area and other subareas.



KEY METRICS

ACRES			% INDUSTRIAL			BUILT CHARACTER		
111			62%			50%		
11% of Study Area			of lot area			of lots contain 1-story buildings		
JOBS (2016)			JOB GROWTH: Industrial			JOB GROWTH: Non-Industrial		
3,610			4% (+100)			138% (+420)		
19% of jobs in the Study Area			between 2010-2016			between 2010-2016		
BUSINESS ACTIVITIES								
Mix of industrial & emerging non-industrial uses			• Construction • Manufacturing • Wholesale			• TAMI, other office-based businesses • Artist studios & galleries • Retail and entertainment		

TRANSITION AREA: DEFINING FEATURES



> **Light manufacturing**



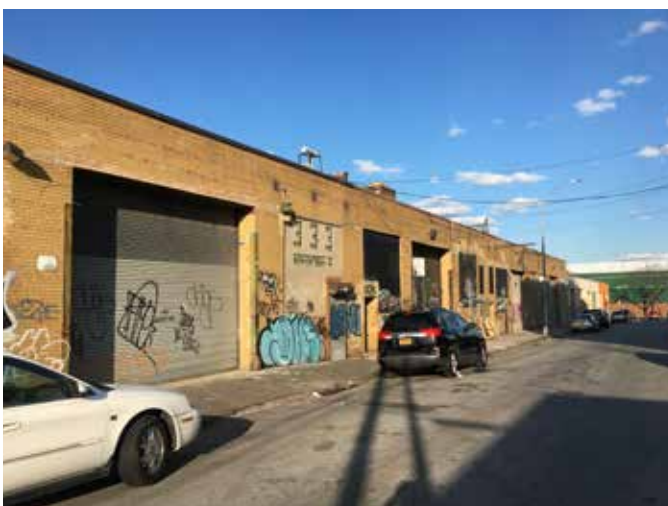
> **Truck-intensive businesses**



> **Limited retail and entertainment**



> **Limited TAMI and other office**



> **Low-scale character with some loft buildings**



> **Street art, studios, and galleries**

Transition Area

A mixed-use area serving as a buffer between heavy industry and other uses

The Transition Area consists of two non-contiguous areas — Transition Area West and Transition Area East — and serves as a buffer between the Core Industrial Area and the Growth District and residential neighborhoods. Industrial uses are more clearly the dominant land use than in the Growth District although, especially in Transition Area West, creative, TAMI, and retail and entertainment uses are emerging. Compared to the Growth District, the Transition Area has more moderate access to public transit. Further, this subarea, and Transition Area East in particular, contains more large lots, providing opportunities for continued industrial use or mixed industrial/commercial buildings. As significant growth is channeled into the Growth District, the Transition Area can serve as a stable area that allows for modest continued growth in commercial and creative uses, with new mechanisms to encourage retention and creation of industrial space.

Industrial Uses

In the Transition Area, industrial businesses are present on every block. The largest industrial sectors are manufacturing, wholesale trade, and construction. There is a wide variety of manufacturing types and sizes, ranging from large-scale noodle and dumpling wrapping manufacturing, to small-scale

luxury furniture and metalworking. City of Saints Coffee spans both manufacturing and commercial activities with a café located within its roasting facility. There are also film and photography studios in Transition Area East such as the 1896 and BabyBlue Brooklyn.

Office Uses

The Transition Area contains some TAMI and other office-based tenants. Livestream is one of the larger tech employers in the subarea, on Morgan Avenue. Businesses on the spectrum between office and manufacturing include Voodoo Manufacturing, a 3D printing company located in the same building as Livestream.

While investment activity in Transition Area West has been less significant than in the Growth District, a number of plans for the creation of space for commercial uses have been announced or are under way, such as the Breeze, a conversion of an 82,000 square foot, three-story building at 314 Scholes Street to office and retail space by Hudson Companies.

Retail, arts, and entertainment

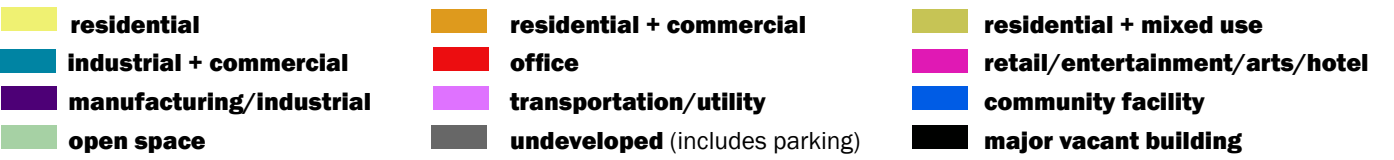
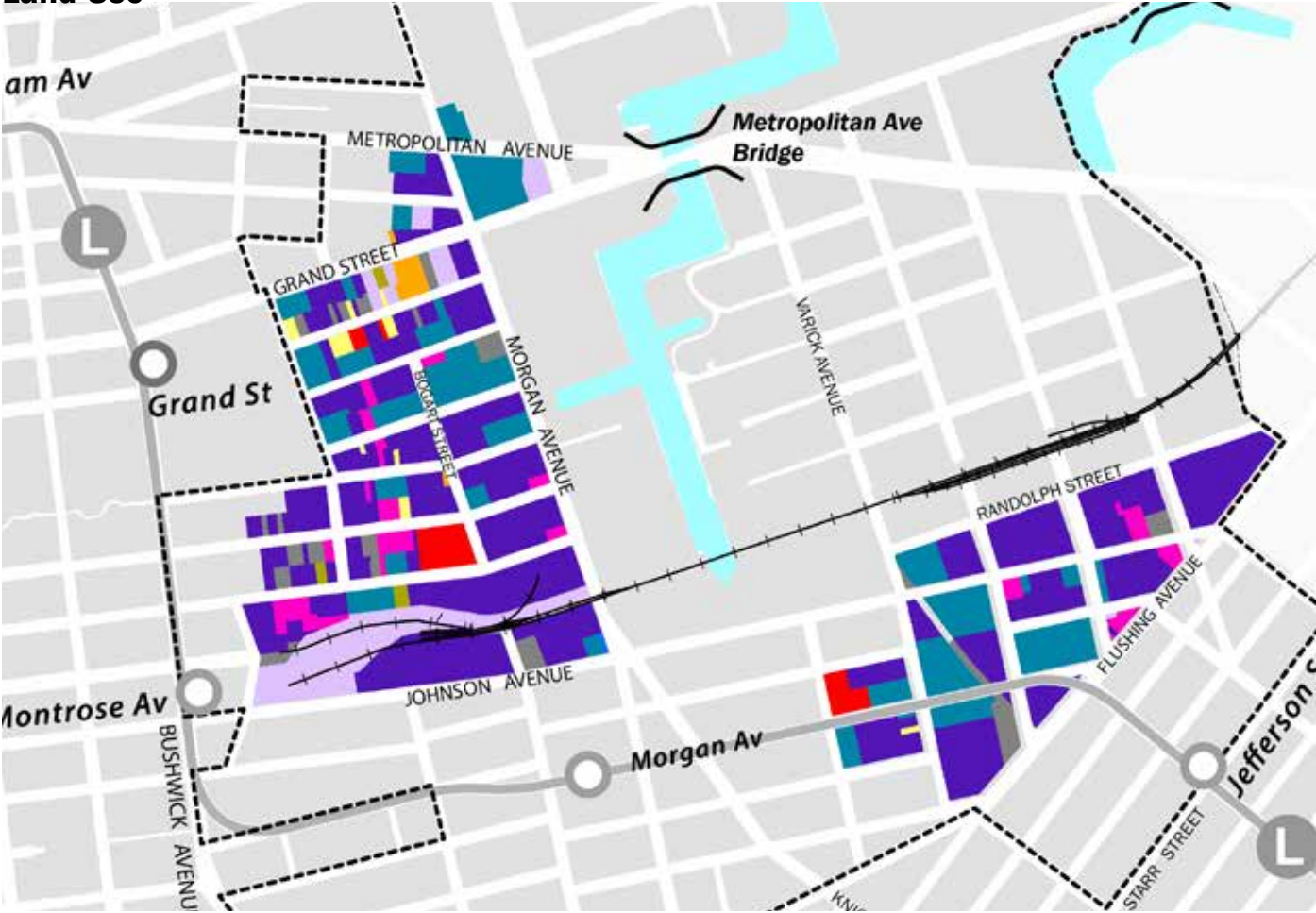
While less concentrated than in the Growth District, the Transition Area contains some artist studios, galleries, and live/work lofts. Some artist studios are located within the Transition Area's fourteen loft buildings, while others are in one to two story warehouses.

Transition Area West contains a number of restaurants, bars, and entertainment venues, such as the Wick, a large music venue, adjacent to rehearsal spaces at the Sweatshop, both on Meserole Street. Transition Area East, farther from the subway and residential areas, contains little retail; Caffè Vita coffee roasting and café on Johnson Avenue is an exception. A new music venue/arts space, Elsewhere, opened in a converted warehouse on Johnson Avenue in 2017.

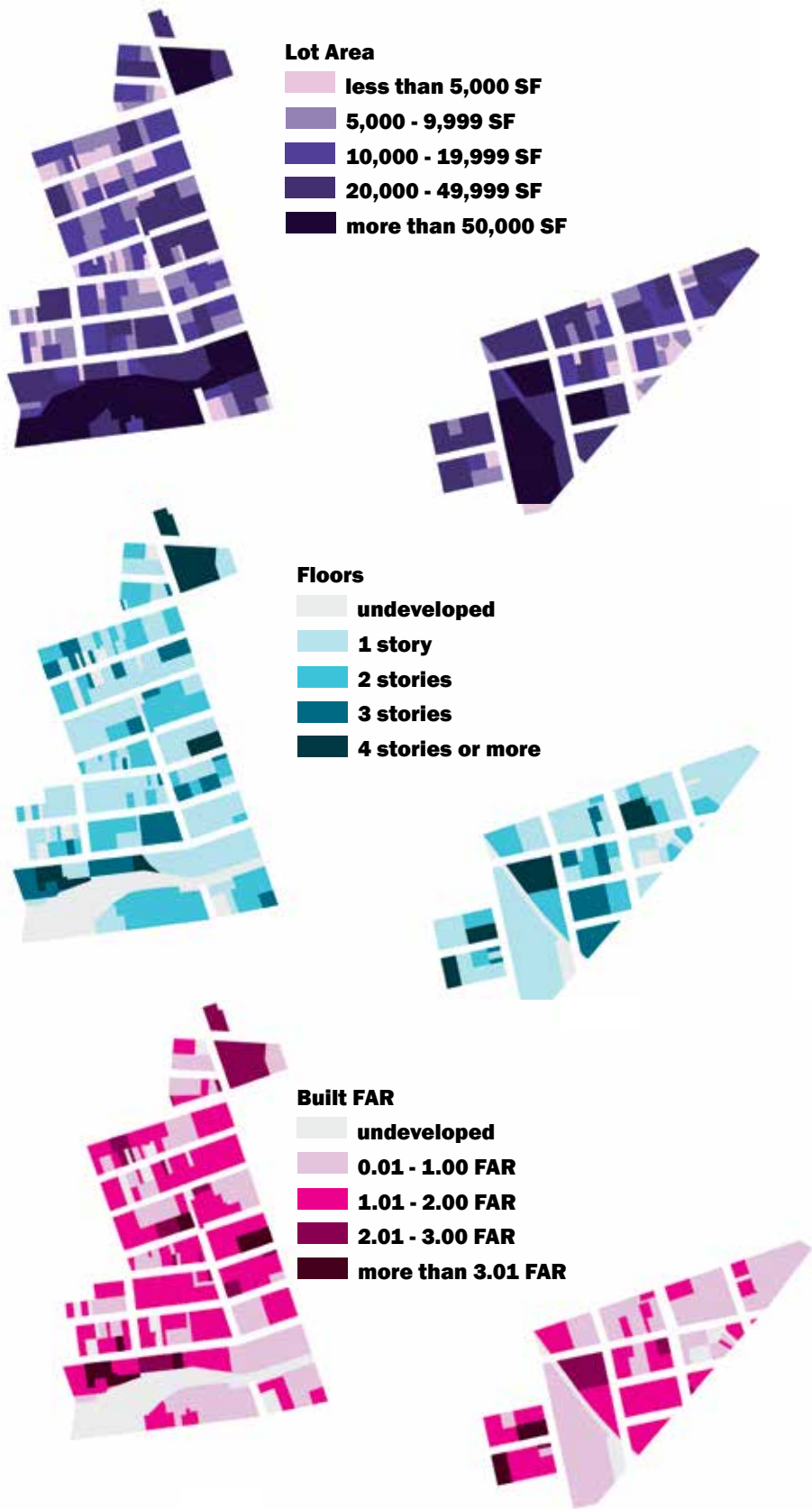
Residential

Transition Area West contains several Loft Law buildings and some scattered historic townhomes, especially along Maujer Street. There are no residential uses in Transition Area East.

Land Use



Built Environment



Flexible lots:

OVER 50% OF LOT AREA
COMPRISES LOTS OVER
20,000 SF

Low-rise:

50% OF BUILDINGS ARE
1 STORY

Underbuilt:

OVER 40% OF LOTS
ARE UNDERBUILT PER
CURRENT ZONING

What We Heard:

Why are businesses here?

Key Advantages for Industrial Businesses

- > **Proximity to major truck routes**, such as Morgan Avenue, Flushing Avenue, and Johnson Avenue.
- > **Limited number of residential uses** reduces the potential for conflicts. Transition Area East is not adjacent to residential areas.
- > **Some large lots** in Transition Area East can be used for space-intensive industrial activities.

Key Advantages for Office-Based Businesses

- > **A small stock of multi-story loft buildings** can be converted to commercial use.
- > **Creative culture and character** are attractive to TAMI and other office-based firms.
- > **Moderate transit access** serves the subarea.
- > **Emerging retail uses** in Transition Area West offer services to workers.

Key Advantages for Retail, Arts, and Entertainment Businesses

- > **Proximity to, but separation from, residential areas** helps nightlife businesses avoid residential complaints while still attracting nearby residents.
- > **Creative neighborhood culture** allows music venues and other entertainment businesses to thrive.
- > **Moderate transit access** serves the subarea.

What could be improved?

Key Challenges

- > **Conflicts between industrial and non-industrial uses** arise given the true mix and proximity of industrial and non-industrial uses.
- > **Zoning constrains construction of new workspace.** While the *North Brooklyn Plan* does not aim to unlock substantial new growth in the Transition Area, high parking requirements and low allowable FAR do not reflect the subarea's moderate proximity to public transit.

GOAL for the Transition Area

Support a continued mix of industrial and commercial uses while channeling substantial commercial development to the Growth District.

The Transition Area has fewer of the assets that have driven the momentum of change in the Growth District: centrally located subway stations, a concentration of loft buildings, and activity generated by substantial existing residential uses. Further, Transition Area East contains assets for industrial businesses that the Growth District does not: larger lots that can accommodate industrial uses and mixed industrial and commercial uses. A light touch that removes some zoning barriers to new development, while also putting into place tools to encourage creation or retention of industrial space, can help encourage a continued mix of uses. This will allow for this subarea to continue to serve as a buffer for the Core Industrial Area, while also channeling development to the Growth District.

Land Use Tool Recommendations

Many of the recommended zoning tools for the Transition Area are similar to those recommended for the Growth District. Where indicated, refer to Growth District recommendations for more information.



ISSUE:

Market forces that discourage creation or retention of industrial space.

A new zoning mechanism can be put into place to encourage creation of new industrial space or retention of existing industrial space when a property is redeveloped.

As described in the “Industrial Mixed-Use Building Typologies” discussion on page 14, specific conditions

are required for a new mixed-use commercial and industrial building to be both physically and financially feasible. As such, broad requirements for industrial space set-asides across an entire neighborhood can have unintended consequences, hampering investment. However, there are ways for zoning to incentivize property

owners to provide industrial space within new development by making it more physically and financially feasible.

RECOMMENDATION:

Create new mechanism to incentivize creation or retention of industrial space.

- > **Develop an appropriate zoning mechanism to strongly incentivize the provision of industrial space, such as preferential FAR, which would allow more FAR for industrial uses than for commercial or community facility uses.**

ISSUE:

Low permitted density and building envelopes that do not reflect existing character.

Like the Growth District, the Transition Area is currently mapped with M1-1 and M1-2 zoning districts that allow for up to 1.0 - 2.0 FAR. While significant increases in density should be put

into place in the Growth District to channel commercial growth there, a more modest increase in density is appropriate in those portions of the Transition Area close to subway

stations so as to tap potential provided by our subway system.

RECOMMENDATION:

Develop new M districts or land use tools that allow for greater density than today, though at a lower maximum density than in the Growth District.

RECOMMENDATION:

Create new, more “contextual” building envelopes to allow for loft-like buildings. (See Growth District zoning recommendations for more detail.)

ISSUE:

Greater density permitted for community facility space.

RECOMMENDATION:

Equalize FAR permitted for community facilities with FAR permitted for commercial uses.

(See Growth District zoning recommendations for more detail.)

ISSUE:

High parking and loading requirements that may discourage investment.

RECOMMENDATION:

Rightsize off-street parking requirements for commercial and industrial uses to better reflect proximity to transit.

> Reduce off-street parking requirements in proportion to the subarea's moderate access to transit, removing obstacles to new construction or expansion of existing buildings.

RECOMMENDATION:

Update loading berth requirements for industrial and commercial uses to better align with business needs and avoid discouraging building expansions.

(See Growth District zoning recommendations for more detail.)



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Stable Areas

Mixed Edge

A historic mix of residential and industrial uses, with no predominant use, between established industrial and residential areas.

The Mixed Edge subarea is a walkable, dense area comprised of a strip of half-blocks located between McGuinness Boulevard, a busy transportation corridor, and the Newtown Creek Wastewater Treatment Plant. The Mixed Edge contains an ad hoc mix of industrial and residential uses and is within walking distance of the Greenpoint Avenue G train station.

The current zoning is M1-1. The lack of a dominant land use suggests that a zoning change to tip the balance to residential use is not warranted, as this would increase the amount of housing close to the Newtown Creek Wastewater Treatment Plant on the eastern edge of the Mixed Edge.



Mixed uses on McGuinness Boulevard

Commercial Edge

Selected active commercial properties at the residential edge of the Study Area.

The Commercial Edge consists solely of commercial properties at the edge of the Study Area for which no intervention is recommended. On Greenpoint Avenue, this includes a Key Food grocery store that serves local residents and the former Leviton factory buildings, which currently contain a mix of small manufacturers and creative tenants. One of the overall objectives of the *North Brooklyn Plan*, is to preserve such buildings, which offer opportunities for high employment density.

The other portion of the Commercial Edge is a shopping center containing a McDonald's, Staples, and Autozone store. This block is located between the elevated Brooklyn-Queens Expressway, the Core Industrial Area, and residential neighborhoods. Serving local residents and workers in an appropriate location, no land use change is necessary to accommodate the existing use and built typology of big-box retailers.



Retail uses on Lombardy Street

Residential Edge

Predominantly residential blocks located in M districts, similar in character to adjacent residential neighborhoods.

The Study Area includes peripheral blocks outside the IBZ that are wholly or partially zoned M1-1 or C8-2 (a designation for auto-related uses). These blocks comprise the Established Residential subarea, and are dominated by low-scale rowhouses despite the underlying industrial or commercial zoning. One portion of the subarea, along Beadel Street, is located in the middle of the Core Industrial Area.

The character of these blocks is generally consistent with the low-scale character of adjacent residential neighborhoods. Zoning that better matches the existing character of these predominantly residential blocks is needed to allow residents to modestly expand their properties and allow for limited new low-scale residential that aligns with existing context.



Beadel Street



Jewel Street



Bushwick Avenue

ISSUE:

Current zoning is not aligned with predominant residential use.

Being located in an M district burdens homeowners by making it more difficult to obtain insurance or mortgages. In addition, major alterations and investment in homes are disincentivized.

RECOMMENDATION:

Adjust zoning to reflect existing residential character.

Any residential rezoning should be consistent with the density and character of adjacent residential neighborhoods and would be strictly for areas with predominantly residential uses. As is the case with the Land Use Framework as a whole, subarea boundaries are conceptual and any future rezoning or land use actions would require site-by-site analysis and stakeholder outreach to create a final zoning proposal, including zoning boundaries.



Transportation & Infrastructure Recommendations

To support the Land Use Framework for the Study Area and ensure a well-functioning employment district, the *North Brooklyn Plan* proposes to:

- **Make improvements that can support operations of industrial businesses.**
- **Manage conflicts between different modes, including trucks, cars, bikes, and pedestrians, to improve safety.**
- **Improve the public realm and pedestrian experience.**

These recommendations are based on a preliminary, on-the-ground assessment of existing conditions and interviews with businesses stakeholders. Confirmation of specific geographies for implementation will require further analysis and coordination with DOT. Further, DOT is conducting two studies with implications for the *North Brooklyn Study*: the *North Williamsburg Transportation Study* (study completed in Summer 2018), the goal of which is to improve pedestrian safety, congestion, and parking, and the *Smart Truck Management Plan* (anticipated completion in Winter 2019), a plan to improve quality of life for all New Yorkers through the safe, reliable, and environmentally responsible movement of goods. The latter will also feature specific borough action plans to improve freight truck management.

NYCEDC also conducted *Freight NYC*, a comprehensive, multimodal freight plan to identify ways of creating thousands of freight-related jobs, improve air quality, reduce roadway congestion through truck diversion, and expand urban distribution space across New York City's five boroughs. Key elements include the preservation of legacy rail, maritime, and distribution infrastructure, particularly east of the Hudson in Queens and Brooklyn.

1.

Pilot innovative approaches to addressing transportation challenges in urban industrial areas.

ISSUE:
For trucks, navigating the Study Area efficiently is a challenge.

There are numerous challenges facing trucks moving through the Study Area, including insufficient truck routes and signage, poor roadway conditions, and congested streets.

RECOMMENDATIONS:

Develop enhanced truck wayfinding for truck routes.

Circulation in the Study Area would benefit from clearer signage for the designated truck routes. DOT has recently recommended installing more colorful and frequent signage and is awaiting approval from the Federal Highway Administration. While not included in DOT's recommendations, DOT's treatment of Select Bus Service dedicated lanes, which includes painted roadways and gantries, could be a potential model for truck routes.

Explore roadway reconstruction with durable materials.

There are numerous streets in the Study Area, particularly along the truck route, that have potholes and other types of wear. Maintaining roadways is difficult in areas where heavy tractor trailers wear down asphalt. The reconstruction of heavily used roadways, such as Morgan Avenue, to current DOT specifications that include concrete beneath the asphalt, could potentially save the City resources in the long-term.

Explore installation of mountable curbs to facilitate truck turns.

Although DOT does not routinely install mountable curbs, portions of the Core Industrial Area with light pedestrian traffic may be an appropriate location to test this as a solution to truck turning radius challenges.

Use low-cost technology to improve freight operations.

Explore opportunities to use video capture technology to improve data on freight activity, as well as low-cost GPS for improved truck navigation. Another approach would be to pursue adding large vehicle guidance to web-based navigational tools.

ISSUE:

Loading activities are uncoordinated and often informal, leading to inefficient business operations and unsafe pedestrian conditions.

On-street loading is prevalent in the Study Area due to a lack of adequate loading facilities as well as some business' preference to load on the street. As there are limited opportunities for the construction of new industrial buildings with modern loading berths, innovative solutions are needed.

RECOMMENDATION:

Study and pilot new on-street design solutions for freight loading.

A toolkit of interventions can help to improve the efficiency and safety of truck loading and unloading. *See following page.*



On-street loading activity



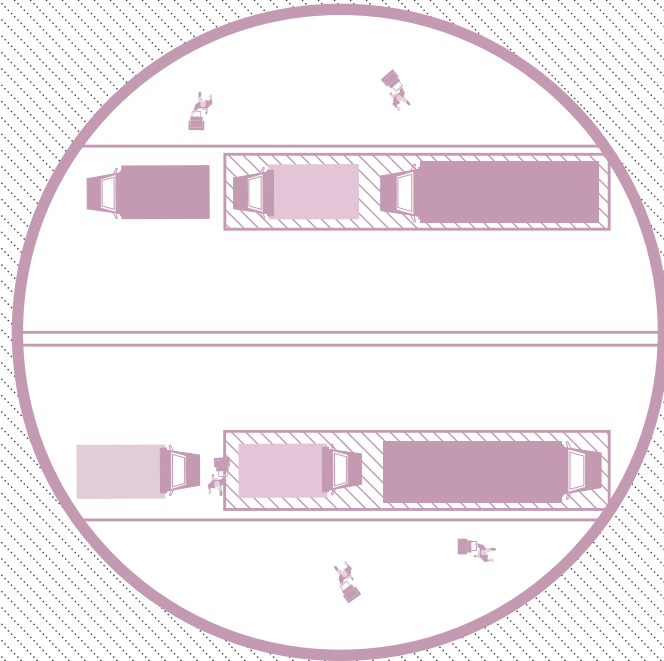
Loading activity blocking sidewalk

LOADING TOOLKIT

A toolkit of interventions can help to improve the efficiency and safety of truck loading and unloading.

Consolidated loading and staging zones to formalize and organize loading activity

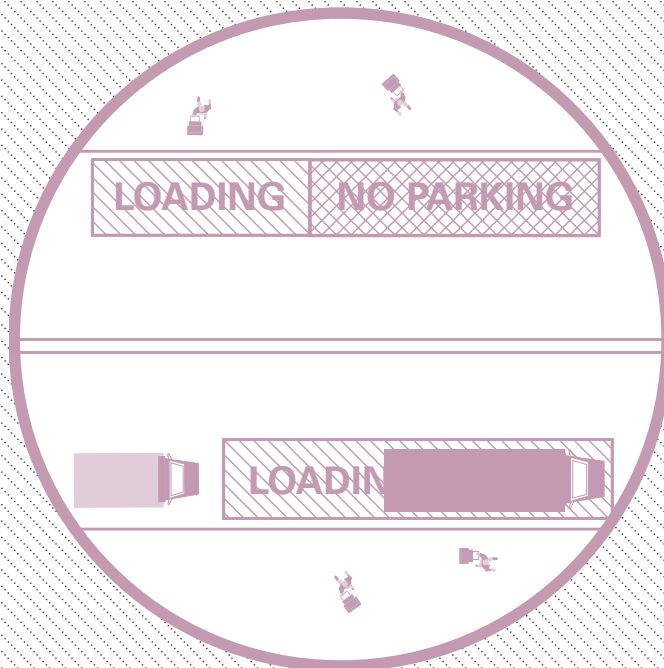
Dedicated areas located mid-block can be utilized for loading during peak loading hours. These areas can be designated on the curb, street or sidewalk with paint, signage or other materials.



CONSOLIDATED LOADING ZONES

“Pop-up” consolidation centers to increase space for loading and queueing

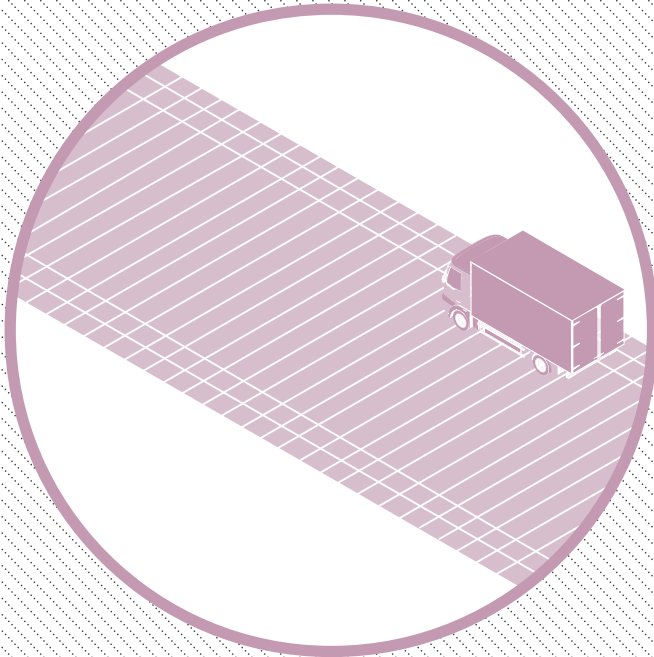
Vacant or underutilized lots in strategic locations could serve as temporary loading consolidation centers. Shifting on-street loading activity to a nearby center could bring an active use and economic opportunity to underutilized sites.



CURBSIDE REGULATIONS

Improved loading coordination between businesses

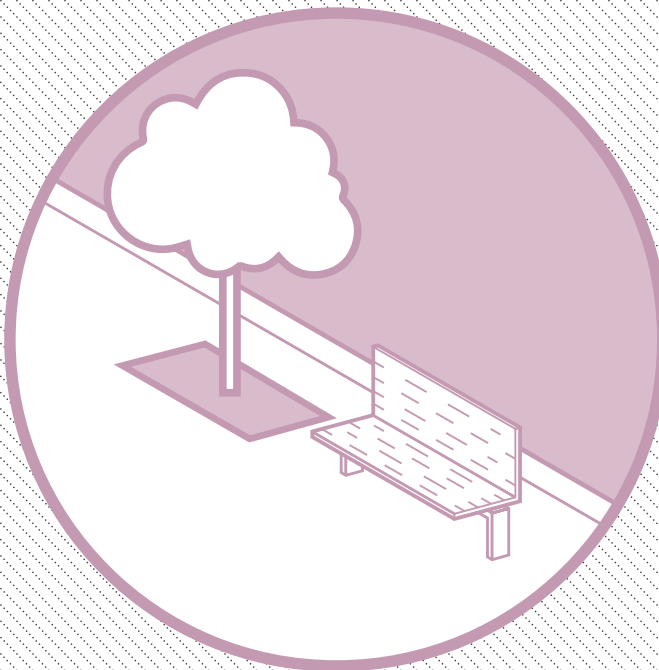
City protocol could be established, in collaboration with DOT and 311, for gathering input from businesses on the block when an individual business requests a loading zone or any changes to curb regulations.



FLEXIBLE STREETS

Flexible industrial streets to increase space for loading and queueing

On exclusively industrial streets with little pedestrian activity in the Core Industrial Area, flexible streets with proper signage and painted curb designations to allow loading equipment and vehicle use in sidewalk area can formalize existing activity and expand space for loading and queuing.



PEDESTRIAN IMPROVEMENTS

Pedestrian-oriented streetscape designs to delineate pedestrian passageways apart from heavy loading activity

In areas with high — and increasing — pedestrian activity and loading activity, it may be appropriate to delineate pedestrian passageways using paint and streetscape elements such as trees, seating, and bollards.

ISSUE:

Existing bike network is limited, despite increased ridership among employees and residents.

The bike network in the Study Area faces numerous challenges: there are few north-south connections, and those that exist are designated truck routes. Truck traffic in the Study Area creates unsafe cycling conditions, with bikes competing for space with vehicles. Further, existing bike lanes are located on the edge of the existing bike network, and thus have limited connections to other areas.

RECOMMENDATION:

Analyze opportunities for additional bicycle infrastructure.

DOT is working on creating new bike lanes in the area, such as the lanes installed the summer of 2017 that connect the Williamsburg Bridge to Morgan Avenue in the Study Area via Meserole and Scholes streets. DOT also recently extended the Grand Street bicycle network to connect with the networks in Queens and Bushwick, and will make further improvements to bike lanes on Grand Street in advance of the L train closure

Additional opportunities for expanding the bike network should be identified, especially

routes that create north-south connections, promote safety for cyclists, and ensure sufficient roadway space for trucks. Ideally, new bike lanes would be separated from roadways with heavy truck traffic. However, given the limited opportunities for north-south connections in the Study Area, this type of separated bike lane may only be possible through a street rebuild, a potentially costly project that would be difficult to implement in the near-term.

The network should also be evaluated near the Kosciuszko Bridge, which will include a new bike path as part of Phase 2 (anticipated to open in 2020).

ISSUE:

Heavy truck traffic produces emissions that are harmful to the environment and negatively impact residential areas through which they navigate.

RECOMMENDATION:

Implement the Clean Trucks Program.

DOT's pilot Hunts Point Clean Trucks Program provides incentives in Hunts Point and Port Morris in the Bronx to trucking companies to encourage use of technologies that reduce emissions. The program has been highly successful, with replacement of 500 heavy-polluting diesel trucks.



Roadway without bike lane

ISSUE:
Portions of the Study Area lack adequate transit access.

Over 60 percent of the Core Industrial Area is beyond a half-mile walk from a subway station, which likely encourages car usage and traffic in this area.

RECOMMENDATION:
Encourage shuttle bus service.

Shuttle bus services between business clusters and nearby subway stations could help to increase transit access. One private sector precedent is a shuttle bus run by the Factory, a large manufacturing space in Long Island City, which connects to several subway lines and the Long Island Rail Road. News reports suggest that in preparation for the L train shutdown, some businesses in the Study Area are considering coordinating private shuttle service.

2. Advance high-impact capital projects.

ISSUE:
Major infrastructure is outdated, resulting in additional congestion.

RECOMMENDATION:
Prioritize replacement of the Grand Street Bridge.

The Grand Street Bridge, built in 1902 to the design standards of that age, has lane widths that are now too narrow for modern vehicles. The bridge is nearing the end of its useful life and currently has several substandard features which leads to trucks, buses, and many vehicles destined for the jobs in the industrial areas surrounding the bridge queuing on either side of the Bridge. A contract for total

design and support services for the reconstruction is expected to commence in June 2019. This complex project will require the coordination of many agencies; a full environmental review is expected. As part of this process, alternatives will be investigated to address all the substandard features and keep traffic moving and eliminate queuing. DOT has programmed the reconstruction of the Grand Street Bridge in the 10 Year Capital Plan. Construction for a replacement bridge is programmed for 2023 through 2027.



Grand Street Bridge

3. Prioritize state of good repair and operational improvements.

ISSUE:
Narrow streets lead to difficult turning radii for trucks.

RECOMMENDATION:
Daylight selected street corners.

Establish “No Standing” zones at corners to facilitate truck turning, paired with the relocation of obstructions such as stop signs and utility poles. Locations for daylighting could be selected through coordination with businesses that use longer trucks in their daily operations.



Narrow street

ISSUE:
Many streets are in poor condition, and missing necessary street markings.

RECOMMENDATION:
Repair and restripe streets in poor conditions.

Prioritize the restriping and resurfacing of priority corridors vital to the IBZ, especially along key truck routes.



Poor roadway condition

ISSUE:
Much of the Study Area experiences flooding during rain events.

RECOMMENDATION:
Install green infrastructure.

Rain gardens and bioswales, which NYC DEP is currently installing throughout New York City and the Study Area, can be coordinated with street repairs. These small areas can prevent flooding by collecting rain water after significant rain events or when snow melts in areas where there are significant drainage issues.



Bioswale in Growth District

4. Improve pedestrian conditions in the Growth District and Transition Area.

ISSUE:

Conflicts between trucks and pedestrians occur as pedestrian activity increases in certain areas.

RECOMMENDATION:

Improve pedestrian safety.

In line with the goals of *Vision Zero*, pedestrian safety should be improved in pedestrian-heavy areas. The Study Area includes one priority corridor in the *Vision Zero Brooklyn Pedestrian Safety Action Plan* (Flushing Avenue, also a major truck route), which should be prioritized for improvements.

Installing traffic controls at uncontrolled intersections, a number of which are near subway stations, can improve safety in these areas. High-visibility or raised crosswalks could be placed appropriately and striping refreshed. Traffic calming measures such as speed humps, raised crosswalks, and neckdowns can also improve safety.

Other areas for improving both pedestrian access and safety should include connections to and around bridges in the Study Area, including Metropolitan Avenue, Greenpoint Avenue, and the new Kosciusko bridges.



Need for improved pedestrian crossings

ISSUE:

Pedestrian improvements have not kept up with new pedestrian activity.

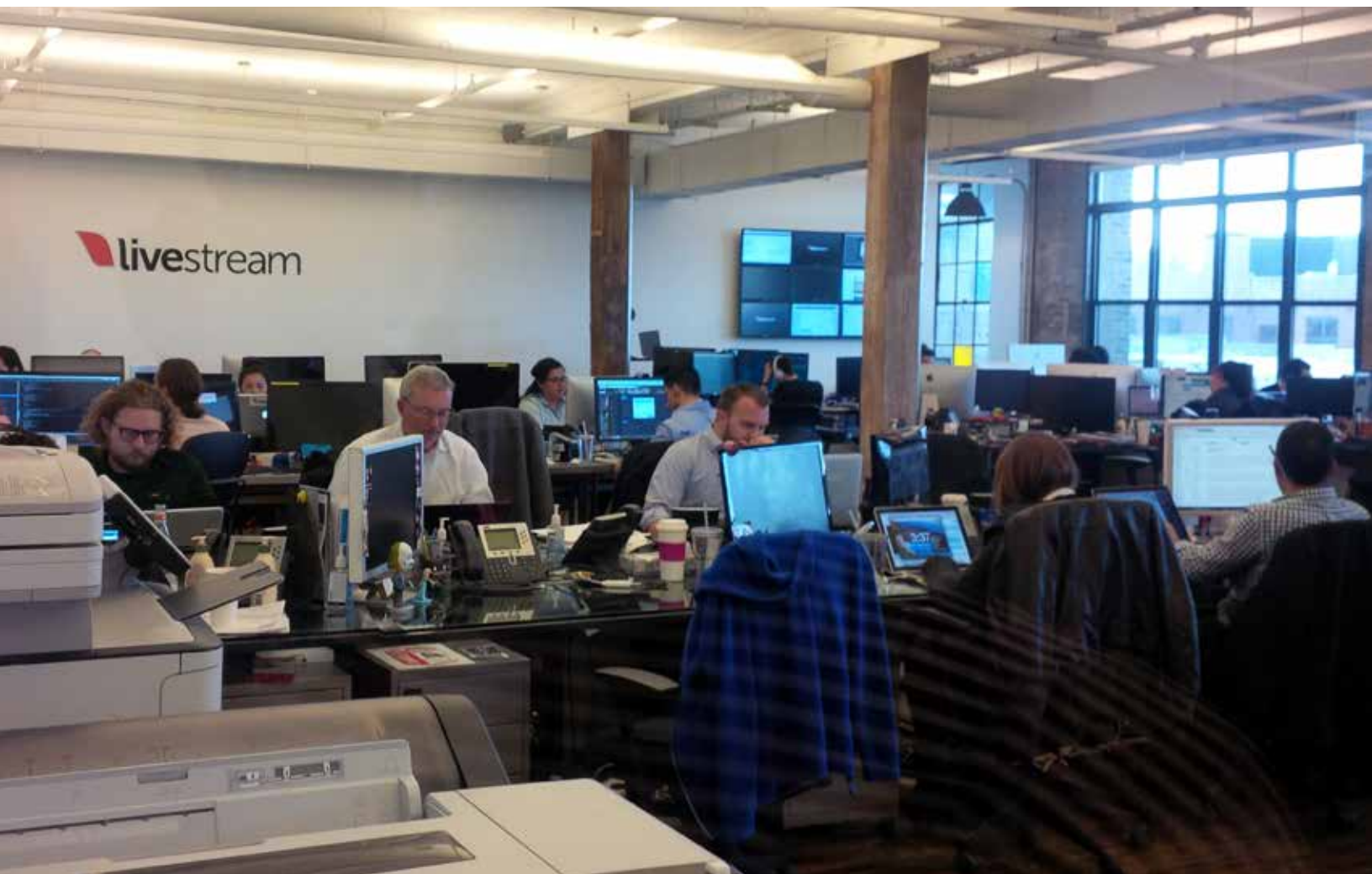
RECOMMENDATION:

Improve the public realm.

The pedestrian realm could be improved through the installation of street trees, street lamps, seating areas, bicycle racks, and expanded sidewalks. To highlight the arts in the Study Area, programs such as DOT's Community Commissions could be explored.



Opportunity for new pedestrian amenities



Workforce Development

Helping New Yorkers Access the Jobs of the Future

The *North Brooklyn Plan* seeks to grow a diverse mix of jobs in areas accessible to both local residents and New Yorkers throughout the city. While land use policy can help create space for growing sectors, it must be complemented by workforce development programs to ensure that residents, including those with lower educational attainment or from lower-income communities, have the skills necessary to access good jobs.

There are many long-established programs that focus on connecting residents to jobs in industrial and manufacturing sectors. However, tech-driven and professional services

sectors are among the fastest growing and highest paying sectors in New York City, but businesses have said that there is a shortage of homegrown talent with the right education and skillsets.⁴² Workforce development efforts in the Study Area should provide services to connect workers to opportunities in both industrial and non-industrial sectors to reflect the evolving job landscape in the area and citywide.

Workforce in North Brooklyn: What We Heard

The following issues related to connecting local workers to jobs were identified through the *North Brooklyn Plan's* public outreach process:

- **New jobs, especially in the Growth District, may not be available to many residents in the surrounding communities.** Some residents are concerned that the job growth in the Study Area may not benefit current residents, as TAMI-related jobs often require a specialized skillset.
- **Businesses are not aware of local recruiting resources.** Businesses that are new to the Study Area may not know where to find local skilled workforce or be aware of existing programs that can help them recruit local residents.
- **Businesses looking to hire locally are unable to find qualified employees.** Some businesses in the Study Area require very specific skillsets, such as advanced manufacturing, making local hiring a challenge. Employees often require on-the-job training or customized training programs.
- **Workers are moving farther from job centers.** A number of businesses have stated that local employees cannot afford to live in the area and are moving farther from their current jobs, thereby increasing commute times.



Citywide Workforce Development Policy + Initiatives

There is a great wealth of relevant economic development policy and initiatives that can support the goals of the *Plan*.

OneNYC

OneNYC, a comprehensive plan for a sustainable and resilient city released in 2015, committed to growing jobs through capital investments, zoning, and other policies, including in innovative and tech-driven sectors, FIRE (finance, insurance, and real estate) sectors, and emerging industries such as life sciences and advanced manufacturing. *OneNYC* addresses the need for a robust, inclusive workforce development system. By doing so, it builds on *Career Pathways: One City Working Together*, a report released in 2014 that lays out the City's framework for workforce development. One of the approaches highlighted in *Career Pathways* is sector-based training that provides New Yorkers, including low- and middle-skill workers, with skills needed to enter the workforce and secure quality jobs.

Career Pathways and Industry Partnerships

In 2014, the *Career Pathways* report provided ten recommendations to

help New Yorkers develop skills that today's employers seek, to improve job quality, and to improve coordination between workforce development programs and the City's economic development investments. The report launched the Industry Partnership initiative, an innovative model that draws on industry experts to identify the skills needed for today's workforce.

SBS has developed a series of Industry Partnerships and training programs in the following sectors, many of which are growing in the Study Area:

- **Technology:** NYC Tech Talent Pipeline (*see profile*).
- **Healthcare:** New York Alliance for Careers in Healthcare, a public-private partnership that brings together stakeholders of the healthcare industry in order to address the sector's rapidly changing labor force needs.
- **Food Service:** The NYC Food & Beverage Hospitality Council launched Stage NYC, an apprenticeship-style program targeted at young adults that is designed to address the shortage of skilled back-of-the-house talent in full-service restaurants.

- **Industrial/Manufacturing:** The de Blasio administration committed to launch ApprenticeNYC as part of the *New York Works* report. The Manufacturing and Industrial Partnership has launched ApprenticeNYC for CNC Machinists, and is in the process of running its second cohort. ApprenticeNYC for Industrial positions is a new employer-training partnership model that allows New Yorkers to get the paid while they learn in a hands-on environment in advanced manufacturing and other fields.
- **Construction:** The Mayor's Committee on Construction has focused on establishing a common set of core skills needed for workers seeking entry into the sector.

Non-Partnerships Sector Training

- **Media:** Made in NY Production Assistant Training and Post Production Programs, aimed at providing unemployed and low-income New Yorkers with training and placement in entry-level positions in film and television production.

New York Works

In its *New York Works* report, the City made a commitment to growing jobs in diverse sectors, while acknowledging that access to jobs is equally important. Building on *Career Pathways*, *New York Works* identifies five approaches to helping New Yorkers get on career paths to the middle class: continue working with businesses to develop meaningful training programs; provide training at public higher education institutions; deliver “bridge” training combined with adult basic education; create targeted outreach to ensure diversity across growing sectors; and develop ApprenticeshipNYC — a new training model that provides on-the-job training in the tech, industrial, and healthcare sectors.

Workforce1 Career Centers

Workforce1 Career Centers are the City’s major workforce hubs, providing New Yorkers with training services, job readiness coaching, and job placement assistance. There are three Workforce1 Centers in Brooklyn: Downtown Brooklyn, East New York, and Coney Island. There are also several Workforce1 Industrial and Transportation Career Centers across the city, including in Jamaica, Sunset Park, Long Island City and Port Morris.

Opportunity NYCHA

NYCHA’s Office of Resident Economic Empowerment and Sustainability (REES) partners with local workforce development organizations to directly connect NYCHA residents with training and job prep programs tailored to their needs. REES also hosts the TechPortal, an IT training program aimed at NYCHA youth. For NYCHA residents near the Study Area, REES partners with St. Nick’s Alliance and Opportunities for a Better Tomorrow.

Youth-Targeted Education

A major City priority is exposing students to a variety of career paths at an early stage and providing early computer skills and hands-on experiences. There are programs underway that aim to meet that goal and help to connect students to the types of TAMI jobs growing in the Study Area:

Career and Technical Education

The NYC Department of Education (DOE) offers Career and Technical Education (CTE) programs in high schools to prepare students with the skills needed to establish a career path in growing industries. CTE programs are offered in a variety of fields, from tech to culinary arts to multi-media production. Students also receive exposure to the work environment.

There are two CTE schools near the Study Area: Automotive High School in Greenpoint, and the Williamsburg High School for Architecture and Design.

Youth Employment

The NYC Department of Youth & Community Development (DYCD) provides employment opportunities for youth between the ages of fourteen and twenty-four to further their education and training. Programs include connections to internships, mentorships with businesses, summer employment, and job training for at-risk and out-of-school youth.

Computer Science for All NYC (CS4All: NYC)

CS4 All:NYC is a City initiative to create a solid education foundation in the city’s public schools. A partnership between DOE and Computer Science for All NYC, the ten-year initiative aims to ensure that all public school students will receive computer science education at every school level by 2025.

NYC Tech Talent Pipeline

The NYC Tech Talent Pipeline (TTP), an Industry Partnership aligned with the City's *Career Pathways* approach, is a public-private partnership to provide quality jobs for New Yorkers and quality talent for New York businesses.

Together with over 250 industry partners, the initiative works to increase the pool of homegrown tech talent through defining employer needs, developing education, training, and hiring solutions, and connecting New Yorkers with the skills needed to succeed. The goal is to create a comprehensive pipeline — from a strong K-12 foundation to innovative local colleges that are able to deliver qualified New Yorkers for jobs at growing tech businesses.

Among the programs incubated and launched by TTP and its industry partners are ten new and expanded training and education programs that include the NYC Web Development Fellowship (a full-time intensive training program), CUNY Tech Prep (a year-long program for tech majors at all eleven CUNY senior colleges with applied projects and connection to employers), and Bridge-to-Tech (part-time training programs designed for New Yorkers with no prior tech experience).

Each of these programs is designed to deliver qualified candidates while surfacing best practices for equipping candidates that can be taken to scale across the city's 1.1 million public school students, 125+ colleges, and the 500,000 New Yorkers served by the public workforce system.

Achieving the Mayor's vision for a tech ecosystem fueled by homegrown talent requires a comprehensive higher education pipeline that can effectively prepare students for jobs that are in demand. Through the Tech Talent Pipeline Academic Council, sixteen Presidents and Provosts of local public and private colleges have committed to aligning tech education with industry to improve pathways to careers in tech for 1,300+ students. In response to this Council and TTP industry partners, in June 2017, the City announced that by 2022, the number of public college graduates with tech bachelor's degrees will double.

North Brooklyn Workforce Organizations

There are a number of local organizations that provide workforce development support for residents in and around the Study Area, including:

- **St. Nick's Alliance**, the largest workforce development provider in the Study Area, offers diverse programs, including skills training in targeted industries, job prep and placement assistance, adult education, and career counseling.

St. Nick's, with support from DYCD, has launched two pilot programs aimed at providing out-of-school youth with training and paid internships in sectors with strong career pathways: certified nursing assistant (CNA) and information technology. The latter program is twelve weeks long and consists of training in IT computer skills, computer-assisted graphics, and coding (Certifications in A+ and Adobe Photoshop), as well as a required 5-week paid internship with a local company. The goal of this program is to expose young adults to the diverse opportunities that these skills can deliver, while providing on-the-job experience necessary to secure a quality job.

- **Evergreen**, a membership organization that champions manufacturing, creative production, and industrial service businesses in North Brooklyn that is also NYC SBS's Industrial Service Provider for the North Brooklyn Brooklyn and Greenpoint-Williamsburg IBZs, links businesses in these areas to jobseekers, both directly and through partner workforce organizations.
- **Opportunities for a Better Tomorrow** (OBT) provides job training, placement services, and internship experiences for local residents in Williamsburg, Bushwick, and other communities.

Training North Brooklyn High Schoolers in Architecture and Design

Local partnerships between schools and the private sector can connect students to growing sectors, such as design and architecture. In 2016, a partnership was created between the Williamsburg High School for Architecture and Design and Heritage Equities, a local developer whose tenants on Moore Street include tech and media companies.

Launched in 2016, the goal of the partnership is to provide students with exposure to different types of jobs in the architecture and design field, while providing them with hard and soft skills attractive to potential employers. The partnership has connected students with a lecture series by practitioners, mentors in the field, and internships working at the construction sites of real projects. This program can serve as a model for other apprenticeship-style programs in emerging sectors with strong career pathways

New Opportunities for Workforce Development in the Study Area

While workforce development efforts exist citywide and in the Study Area, there are opportunities to strengthen existing programs and advance new initiatives that prepare and connect local residents to jobs in growing, 21st century sectors.

1. Develop a Broader Newtown Creek Valley Workforce Development Strategy

The North Brooklyn IBZ is located in close proximity to two other IBZs in Long Island City and Maspeth, which together contain over 40 percent of all industrial jobs in IBZs citywide. By approaching workforce development in these IBZs comprehensively through an umbrella workforce development organization, more jobs can become accessible to a diverse group of people with a wide array of skills.

A potential model for this type of organization is LESEN (Lower East Side Employment Network), which was established in 2007 as a network of organizations that provide workforce development services. The organization has engaged over 100 local businesses and has placed over

300 local residents. LESEN is a success because of the strong leadership of local community organizations such as Henry Street Settlement and University Settlement, which receive City support for workforce and education programs.

Local community organizations and the Mayor's Office of Workforce Development, in conjunction with SBS, should work with stakeholders in all three IBZs to understand the current workforce challenges in order to develop ways to better connect local residents to employment opportunities.

2. Connect Workers to Fast-Growing Sectors

Industry Partnerships convene and engage stakeholders through industry advisory councils, academic councils, and alumni councils to establish a common agenda and ensure that employer demands and skills requirements are the focus of workforce development investments. Through industry engagement, the Partnerships are able to identify gaps in the labor market and develop new training models that can be replicated by providers throughout the city.

SBS will help New Yorkers in the Study Area find new and better jobs through its network of Workforce1 Career Centers. Services provided at Workforce1 Career Centers allow individuals to connect directly to jobs and training opportunities informed or developed by Industry Partnerships.

3. Reinforce and Coordinate Existing Programs and Organizations

There are a number of organizations that provide critical workforce development services today. These organizations, along with the City's workforce agencies and local elected officials, should work together to identify workforce development needs and opportunities to leverage local resources like the City's Workforce1 Career Centers.

4. Connect With Local Schools to Prepare Youth for Strong Career Pathways

As part of the City's commitment to providing youth with skills and experience that can lead to strong career pathways, the City should continue growing partnerships with local organizations, businesses, and schools to advise on the most useful educational and training opportunities for the future workforce in tech and other growing sectors.



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North Brooklyn Plan Implementation

The *North Brooklyn Plan* establishes a Land Use Framework for the Study Area, outlining goals for future development and job growth across different subareas. It lays out policy recommendations to provide guidance for future land use actions. As outlined in *New York Works*, the City is seeking to update zoning to support economic growth and the creation of new workspace in appropriate areas throughout the city.

Based on the extensive outreach and analyses conducted to date in the Study Area, DCP is implementing a three-pronged approach: 1) take immediate steps towards limiting self-storage uses within IBZs (approved in 2017) and limitations on hotels in M1 districts

(currently under public review) in both the Study Area as well as citywide; 2) identify broad changes to use and bulk regulations, as well as parking and loading requirements, which have wider applicability to commercial and manufacturing districts throughout the city; and 3) advance zoning and land use actions specific to the Study Area, which would be subject to a full public review under both the City Environmental Quality Review (CEQR) process and the Uniform Land Use Review Procedure (ULURP). These reviews would include a site-specific analysis of existing land uses, building forms, and street widths. The CEQR and ULURP processes would present multiple opportunities for stakeholder input, including numerous public hearings.

A rezoning based on the recommendations of the *North Brooklyn Plan* will include conducting further analysis and outreach to stakeholders to develop consensus around the details of a rezoning proposal, including boundaries. A DCP-led rezoning will also include coordination with other City and State agencies such as DOT, EDC, SBS, DEC, and DEP on complementary measures that would advance the economic development goals of the *North Brooklyn Plan*. The City aims to certify a rezoning proposal for public review by the end of 2019.

Prior or parallel to a rezoning, individual property owners or other parties would be entitled to apply for zoning changes to facilitate new commercial and/or industrial development. These applications would also be subject to full CEQR and ULURP review. The City Planning Commission and City Council could look to the goals and vision in the *North Brooklyn Plan's* Land Use Framework to inform their consideration of any rezoning application that is advanced within the Study Area.

Appendix + References

Appendix

About QCEW Data and Macro-Sector Analysis

This analysis relied on *Quarterly Census of Employment and Wages (QCEW)* 3rd quarter data from 2000 to 2015, provided to the NYC Department of City Planning (DCP) by the New York State Department of Labor. The QCEW serves as a near census of wage and salary employment, thus being a highly reliable source. However, the QCEW excludes the self-employed, the armed forces, proprietors, domestic workers, unpaid family workers and certain railroad workers. (BLS, 2014).

Under an agreement with NYSDOL permitting local governments to access firm-level data for economic development purposes, provided that certain confidentiality requirements are maintained, the Department of City Planning has geocoded the QCEW data to the tax lot. Accordingly, only QCEW records that were successfully geocoded to the lot were included in this analysis. Furthermore, non-privately-owned businesses and master records for multi-establishment employers were omitted.

The QCEW data were classified according to the North American Industry Classification System (NAICS) definitions (US Census, n.d.). Additionally, this analysis adopted a classification of “office-based, industrial, retail/entertainment/accommodation, and community facilities” as summarized below:

NAICS Code	NAICS (3-digit) Title	Macro-Sector
111	Crop Production	Agriculture
112	Animal Production	Agriculture
113	Forestry and Logging	Agriculture
114	Fishing, Hunting and Trapping	Agriculture
115	Support Activities for Agriculture and Forestry	Agriculture
611	Educational Services	Education, Health Care & Social Assistance
621	Ambulatory Health Care Services	Education, Health Care & Social Assistance
622	Hospitals	Education, Health Care & Social Assistance
623	Nursing and Residential Care Facilities	Education, Health Care & Social Assistance
624	Social Assistance	Education, Health Care & Social Assistance
221	Utilities	Industrial
236	Construction of Buildings	Industrial
237	Heavy and Civil Engineering Construction	Industrial
238	Specialty Trade Contractors	Industrial
311	Food Manufacturing	Industrial
312	Beverage and Tobacco Product Manufacturing	Industrial
313	Textile Mills	Industrial
314	Textile Product Mills	Industrial
315	Apparel Manufacturing	Industrial
316	Leather and Allied Product Manufacturing	Industrial
321	Wood Product Manufacturing	Industrial
322	Paper Manufacturing	Industrial
323	Printing and Related Support Activities	Industrial
324	Petroleum and Coal Products Manufacturing	Industrial
325	Chemical Manufacturing	Industrial
326	Plastics and Rubber Products Manufacturing	Industrial
327	Nonmetallic Mineral Product Manufacturing	Industrial
331	Primary Metal Manufacturing	Industrial

332	Fabricated Metal Product Manufacturing	Industrial
333	Machinery Manufacturing	Industrial
334	Computer and Electronic Product Manufacturing	Industrial
335	Electrical Equipment, Appliance, Component Manufacturing	Industrial
336	Transportation Equipment Manufacturing	Industrial
337	Furniture and Related Product Manufacturing	Industrial
339	Miscellaneous Manufacturing	Industrial
423	Merchant Wholesalers, Durable Goods	Industrial
424	Merchant Wholesalers, Nondurable Goods	Industrial
425	Wholesale Electronic Markets and Agents and Brokers	Industrial
441	Motor Vehicle and Parts Dealers	Industrial
447	Gasoline Stations	Industrial
481	Air Transportation	Industrial
482	Rail Transportation	Industrial
483	Water Transportation	Industrial
484	Truck Transportation	Industrial
485	Transit and Ground Passenger Transportation	Industrial
486	Pipeline Transportation	Industrial
487	Scenic and Sightseeing Transportation	Industrial
488	Support Activities for Transportation	Industrial
491	Postal Service	Industrial
492	Couriers and Messengers	Industrial
493	Warehousing and Storage	Industrial
512	Motion Picture and Sound Recording Industries	Industrial
517	Telecommunications	Industrial
562	Waste Management and Remediation Services	Industrial
811	Repair and Maintenance	Industrial
211	Oil and Gas Extraction	Mining, Oil/Gas Extraction
212	Mining (except Oil and Gas)	Mining, Oil/Gas Extraction
213	Support Activities for Mining	Mining, Oil/Gas Extraction
511	Publishing Industries (except Internet)	Office-based
515	Broadcasting (except Internet)	Office-based
518	Data Processing, Hosting and Related Services	Office-based
519	Other Information Services	Office-based
521	Monetary Authorities-Central Bank	Office-based
522	Credit Intermediation and Related Activities	Office-based
523	Securities, Commodity Contracts, & Other Financial Investments & Related Activities	Office-based
524	Insurance Carriers and Related Activities	Office-based
525	Funds, Trusts, and Other Financial Vehicles	Office-based
531	Real Estate	Office-based
532	Rental and Leasing Services	Office-based
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	Office-based
541	Professional, Scientific, and Technical Services	Office-based
551	Management of Companies and Enterprises	Office-based
561	Administrative and Support Services	Office-based
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	Office-based
921	Executive, Legislative, and Other General Government Support	Office-based
922	Justice, Public Order, and Safety Activities	Office-based
923	Administration of Human Resource Programs	Office-based
924	Administration of Environmental Quality Programs	Office-based
925	Administration of Housing Programs, Urban Planning, and Community Development	Office-based
926	Administration of Economic Programs	Office-based

927	Space Research and Technology	Office-based
928	National Security and International Affairs	Office-based
442	Furniture and Home Furnishings Stores	Retail, Arts, Entertainment
443	Electronics and Appliance Stores	Retail, Arts, Entertainment
444	Building Material & Garden Equipment & Supplies Dealers	Retail, Arts, Entertainment
445	Food and Beverage Stores	Retail, Arts, Entertainment
446	Health and Personal Care Stores	Retail, Arts, Entertainment
448	Clothing and Clothing Accessories Stores	Retail, Arts, Entertainment
451	Sporting Goods, Hobby, Book, and Music Stores	Retail, Arts, Entertainment
452	General Merchandise Stores	Retail, Arts, Entertainment
453	Miscellaneous Store Retailers	Retail, Arts, Entertainment
454	Nonstore Retailers	Retail, Arts, Entertainment
711	Performing Arts, Spectator Sports, and Related Industries	Retail, Arts, Entertainment
712	Museums, Historical Sites, and Similar Institutions	Retail, Arts, Entertainment
713	Amusement, Gambling, and Recreation Industries	Retail, Arts, Entertainment
721	Accommodation	Retail, Arts, Entertainment
722	Food Services and Drinking Places	Retail, Arts, Entertainment
812	Personal and Laundry Services	Retail, Arts, Entertainment
814	Private Households	Unclassified
999	Unclassified	Unclassified

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- 1 Source of all employment data (unless otherwise noted): NYS Department of Labor. *Quarterly Census of Employment and Wages (QCEW)*, 2000, 2010, 2014, 2015, 2016 (annual averages), and 2017 (Q2). <https://www.labor.ny.gov/stats/ins.asp> (2000–2016 queried March and August 2017; 2017 Q2 queried February 2018). The most recent data available for New York City and its boroughs is from 2017; most recent data available for the Study Area is from 2016.
- 2 A loft building is a building of three or more stories, originally designed to accommodate factories or warehouses. Most of the city's loft buildings outside Manhattan were constructed post the 1913 factory code and are of reinforced concrete fireproof construction. Buildings constructed before 1913 often have wood floors and joists and in some cases, wood or cast-iron interior columns.
- 3 NYC Department of City Planning. "Planning for Jobs." 1971.
- 4 NYC Department of City Planning. "Citywide Industry Study: Geographic Atlas of Industrial Areas." January 1993.
- 5 U.S. Census Bureau. 2010 Census; Census Bureau Current Estimates Program.
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- 7 NYC Department of City Planning. "Middle Wage Jobs in NYC." 2017.
- 8 Companies are typically classified by sectors established by the North American Industry Classification System (NAICS), which groups businesses according to hierarchy of based on common activities. For the purposes of this study, which describes the relationship of employment trends to development and land use, major NAICS sectors are often categorized into four overarching sectors relating to common land use classifications: office-based, industrial, retail/entertainment accommodation, and community facilities. For more information, see Appendix.
- 9 U.S. Census Bureau. 2010 Census; Census Bureau Current Estimates Program.
- 10 U.S. Census Bureau. "Educational Attainment for Population 25 Years and Over, Occupation for Population 16 Years and Over, Self-Employed Population 16 Years and Over." *American Community Survey—Public Use Microdata Sample. 2010 and 2015*. New York City Department of City Planning Population Division Estimates.
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- 15 NYS Department of Transportation. "Newtown Creek Navigation Analysis" (Appendix to Kosciuszko Bridge EIS.) 2005.
- 16 The Loft Law is a New York State law first established in 1982 and amended several times since that enables the legalization of commercial or factory buildings previously converted to residential use. The law's intent is to bring the buildings up to residential safety and fire codes, and to give rights and rent protection to the tenants who live there. The Loft Law has been applied to buildings occupied by residential tenants in 1980–1981. A subsequent amendment to the Loft Law expanded eligibility to buildings occupied residentially in 2008–2009. Because restrictions on rent increases limit the incentive for owners to bring buildings up to code, many buildings become IMDs under the Loft Law but do not achieve permanent status as legal residences. Other residential conversions of loft buildings continue to be occupied without formal legal status, which may raise safety concerns if hazardous conditions exist in buildings.
- 17 NYS Department of Labor. *Quarterly Census of Employees and Wages (QCEW)* 2008 (3Q); NYC Department of City Planning. "Planning for Jobs." 1971; NYC Department of City Planning. ES-202 (3Q) in "Citywide Industry Study" 1993. North Brooklyn defined as M zones along Newtown Creek, approximately the same geography as the North Brooklyn Study Area. "All Industrial" 1969 data includes the Construction, Manufacturing, Transportation and Wholesale Trade Sectors. Non industrial jobs data not available for 1969.
- 18 U.S. Census Bureau, *OnTheMap Application and LEHD Origin-Destination Employment Statistics* (Beginning of Quarter Employment, 2nd Quarter of 2010–2014). Data include private primary jobs.
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- 20 NYC Department of City Planning. 2016 Land Use Survey and MapPLUTO 16v2.
- 22 U.S. Census Bureau. 2010 Census.
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- 42 NYC Tech Talent Pipeline. "NYC Industry Insights: Key Skills and Competencies Needed for In-Demand, Entry-Level Tech Jobs in New York City." 2016.

