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UP FROM THE RUINS

Why Rezoning New York City's Manufacturing Areas for Housing Makes Sense

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CRD
CENTER FOR RETHINKING DEVELOPMENT
AT THE MANHATTAN INSTITUTE

EXECUTIVE SUMMARY

Because New York City has space for 500,000 more manufacturing jobs than actually exist, we propose to rezone some of this manufacturing space for housing and for mixed use. By rezoning the five areas suggested in this report, the city would increase its tax revenues, raise its employment rate, and substantially alleviate its long-standing housing crisis.

These proposed changes are long overdue. Though industrial employment in New York City has been declining for nearly half a century, the city's zoning ordinance continues to reserve some 22,500 acres for industrial development. As a result, roughly 15 percent of all parcel-land area is slated for a mere 6 percent of the city's economy. The profusion of derelict properties in manufacturing (M-zoned) areas, especially along the waterfront, attests to the scandalous waste of this valuable space.

This space is increasingly valuable because the city's population has grown - and will continue to grow. If New York is to provide adequate housing for its projected population growth, the current rate of construction (25,000 new housing units a year) must continue for two decades. Vacant residential (R-zoned) land can meet only half this demand, however; thus, the urgent need for rezoning.

In this study, we offer detailed proposals for rezoning one area in each of the city's five boroughs:

- Sherman Creek / Inwood, Manhattan
- Bronx Terminal Market to Bruckner South Expansion, Bronx
- Dutch Kills, Queens
- Red Hook / Gowanus Canal area, Brooklyn
- North Shore, Staten Island

Redevelopment in just these five areas would:

- Yield capacity for 64,700 to 86,200 housing units, representing two to three years' supply in the search for housing sites.
- Increase property-tax revenues from $0.8 to $1.1 billion.
- Increase Gross City Product by 1.9 to 2.7 percent and temporary employment by 1.1 to 1.5 percent. Thereafter, permanent jobs associated with the new developments would conservatively equal half of the employment currently existing on site.

The plans presented here are practical. Our recommendations are carefully crafted for congruity with Mayor Bloomberg's housing and waterfront policies, as well as with recent area-wide rezoning initiatives, such as the Williamsburg-Greenpoint rezoning proposal. If implemented, the rezonings proposed in these pages will be a great and enduring gift to the city's workforce, its treasury, and to the quality of life of its residents.

About the Author

Regina B. Armstrong has been President of Urbanomics since 1984. From 1964 to 1984, she was Chief Economist and Vice President / Economics for the Regional Plan Association, New York. She is the author of many works on urban planning, including *The Office Industry: Patterns of Growth and Location* (The MIT Press) and *Regional Accounts: Structure and Performance of the New York Region's Economy in the Seventies* (Indiana University Press). In 1994 she received the American Planning Association Ponte Award for Economic Planning Excellence.

Tina C. Lund has been Senior Research Associate at Urbanomics since 1996. She has collected and analyzed data for many projects, including the North Jersey Transportation Planning Authority Critical Infrastructure Study; the *New York City Housing Authority Community Board Market Analyses*; the Lower Manhattan Redevelopment Master Plan; and the New York Botanical Garden Economic Impacts.

Urbanomics is a professional partnership serving business and government in economics, public finance, and urban planning. Founded in 1984 by Regina Armstrong and Marilyn Rubin, Urbanomics provides public and private sector clients with a wide array of economic development planning studies, market studies, and recommendations on public financing options for projects and programs.

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WHY REZONING NEW YORK CITY'S MANUFACTURING AREAS FOR HOUSING MAKES SENSE

THE DECLINE OF MANUFACTURING

Over the last century the city's economy, like the nation's, has become more about providing services than about making products. Nationally, all job growth in the past 35 years occurred in service sectors of the economy. Over the same period, U.S. manufacturing plunged—from 25 percent to 11 percent of all American jobs.

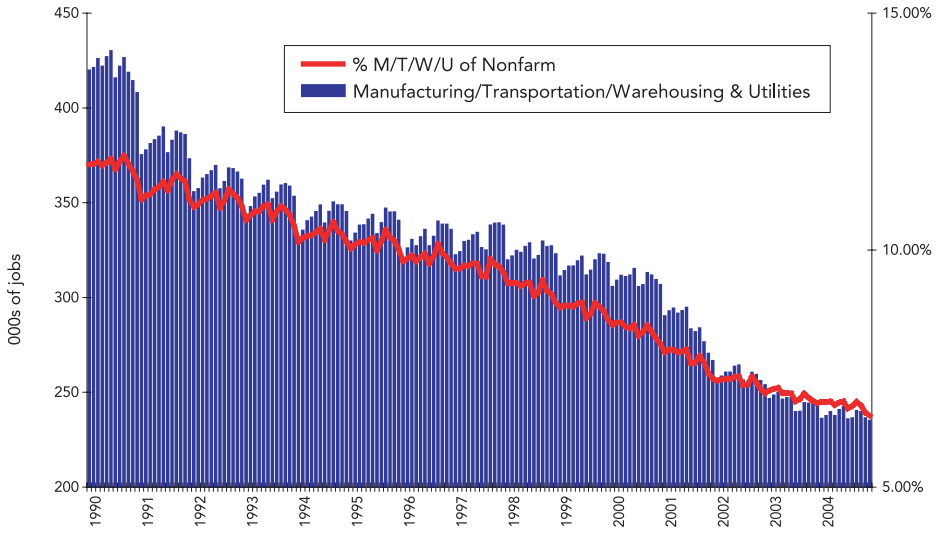
In U.S. cities, the decline has been even more severe. New York City, which had nearly half a million manufacturing jobs in the early 1970s, now has only 118,000.[1] Even when jobs in related industries (transportation, warehousing, and utilities) are added, the goods-producing sector of New York's economy accounts for only 235,000 jobs—or 6.6 percent of total employment (Chart 1).

These lost jobs are not coming back. Manufacturers, seeking to maintain a competitive edge in global markets, cannot easily survive in inner-city locations, where labor and land costs are comparatively high. Accordingly, this decline is accelerating. From the fourth quarter of 2000 through the third quarter of 2003 alone, the city lost fully 25 percent of its manufacturing job base.

This trend cannot be explained by a (reversible) flight of industrial jobs to the suburbs of the New York urban region. If anything, blue-collar job contraction has been even more pervasive in adjoining jurisdictions. Region-wide manufacturing employment declined from 1.1 million jobs in 1990 to 606,900 in 2005, as Table 1 shows. These job losses will continue for the next two decades according to forecasts of the New York Metropolitan Transportation Council—resulting in 23,600 fewer industrial jobs in New York City and 187,000 fewer jobs region-wide.[2]

Nevertheless, New York is still zoned for these lost manufacturing jobs. Its land-use policies are still effectively governed by the 1961 zoning resolution, which in turn was rooted in a 1950s conception of the economy. Even though less than 7 percent of the city's workforce is industrial (Table 2), fully 15 percent of parcel land is zoned M, for industrial

Chart 1 The Decline of Industrial Employment in New York City, 1990-2004



Source: New York State Department of Labor

Table 1 Manufacturing Employment, Past and Forecasted, in the New York Urban Region, 1990-2025 (000s of jobs)

Sector	1990	1995	2000	2005	2025 (forecasted)
			Manufacturing Employment		
New York City (5 boroughs)	265.2	207.8	176.8	117.9	94.3
Long Island (2 counties)	136.1	101.2	105.5	82.7	75.7
Mid-Hudson (7 counties)	103.2	78.5	73.5	61.0	33.8
Northern and Central New Jersey (14 counties)	448.8	376.0	353.4	248.4	122.6
Southwestern Connecticut (3 counties)	156.2	128.7	119.0	96.9	78.8
31-county NY urban region	1,109.5	892.2	828.2	606.9	419.9
			Total Nonfarm Employment		
31-county NY urban region	9,320.5	8,930.7	9,908.9	9,833.8	11,858.8
Manufacturing share	11.9%	10.0%	8.4%	6.2%	3.5%

Source: New York Metropolitan Transportation Council (NYMTC), based upon New York State Department of Labor NAICS-based CES nonfarm employment data

Table 2 Industrial Employment in New York City, 1990-2004 (in 000s of annual average jobs)

Sector	1990	1995	2000	2004	1990-04
Total nonfarm employment	3,566.2	3,339.3	3,723.1	3,541.7	-24.5
Total industrial (M/T/W/U)	420.8	339.6	309.8	238.2	-182.6
Misc manufacturing	29.1	23.4	22.3	16.1	-13.0
Other durable goods mfg	55.8	39.7	36.5	27.5	-28.3
Food manufacturing	19.0	16.6	15.8	13.9	-5.1
Apparel manufacturing	90.3	76.2	58.7	31.7	-58.6
Printing and related mfg	26.1	17.8	16.3	11.9	-14.2
Other nondurable goods mfg	44.9	34.1	27.2	18.8	-26.1
Transportation, warehousing	133.3	112.0	118.1	103.7	-29.6
Utilities	22.3	19.8	14.9	14.5	-7.8
% Industrial of total	***11.8%***	***10.2%***	***8.3%***	***6.7%***	***-5.1%***

Source: New York State Department of Labor, NAICS-based CES nonfarm employment data

usage. Of this, 65 percent is occupied by buildings classified for goods production, industrial and manufacturing, or transportation and utility. At typical occupancy ratios of 400 square feet per worker, just the industrial and manufacturing floor area of these buildings would accommodate more than 628,000 manufacturing workers. Yet the city currently has only 119,900 manufacturing jobs. In other words, the city is zoned for half a million jobs that don't – and won't — exist.

THE DEMAND FOR HOUSING

The city's current zoning regime is anachronistic not only because it is rooted in an outdated concept of the city's economy, but because it fails to reckon with the strength of residential demand.

Even as manufacturing continued to decline in New York City, demand for housing rose. Between 1990 and 2003, the city's population surged by more than 10 percent, to 8.1 million,[3] and a quarter-million new households were formed. Yet fewer than 100,000 units were available for sale or rent by 2003. Because not enough housing was being built to accommodate demand, buildings in some M-zoned neighborhoods, especially in lower Manhattan and Greenpoint/Williamsburg, were illegally converted to residential uses by thousands of inhabitants.

By the late 1990s, responding to market pressures, developers began building housing in record numbers. Annual building-permit authorizations in Manhattan rose dramatically, from about 500 in 1992 to more than 6,000 by 2001 (Chart 2).

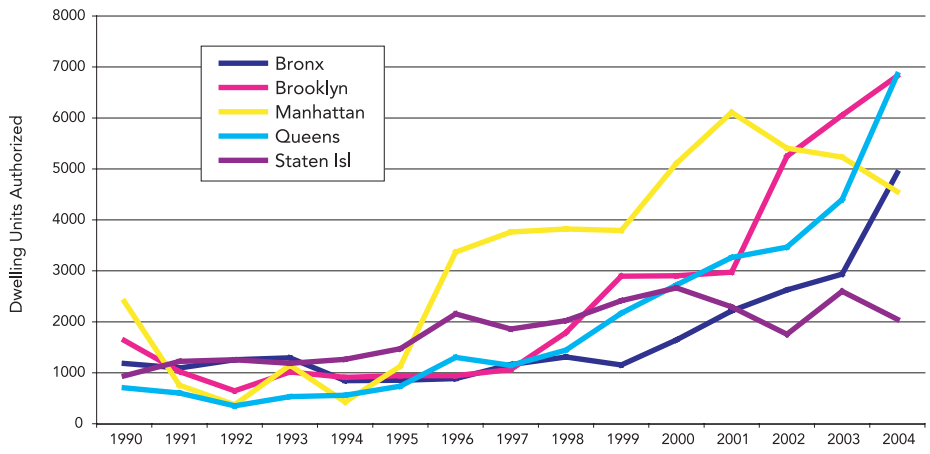
Other boroughs followed; the surge was citywide (Table 3). By 2004, authorizations for residential permits topped 25,000, a level of construction not seen since 1972.

Robust as this growth is, it must continue apace if the projected demand for housing is to be met. Simply to meet future demand created by new-household formation, 24,000 housing units will need to be built annually, or 482,100 over the next two decades (Table 3). To replace dilapidated stock, and to allow for more choice, more than 30,000 new units will need to be built annually, or 614,400 over the next 20 years.[4] Either way, between 482,000 and 614,400 new units must be built by 2025.

The existing vacant R-zoned land will not accommodate this need. Assuming that all sites meet minimum lot-size standards and that units average 1,000 square feet, existing vacant R-zoned land will accommodate only 336,800 units.[5]

The looming need for as many as 600,000 new housing units led us to evaluate the potential for rezoning M-zoned land. To that end, we consider below five areas as prototypes, one from each borough. Each area has the potential for residential development but none is currently a focus of rezoning efforts. In each case, existing conditions are described, land usage is identified, building capacity is assessed, and trends in employment and residential settlement are analyzed. Community plans, public policies, and recent investments are then considered in the context of the area's rezoning potential.

Chart 2 The Rise in Housing Construction Authorizations in New York City, 1990-2004



Source: US Census Bureau

Table 3 Resident Population, Households, and Housing-Unit Demand in New York City, Past and Forecasted, 1990-2025 (in 000s)

Sector	1990	2000	2005	2025	2005-25 (projected change)
			Resident Population and Households		
Resident population of New York City	7,322.6	8,008.3	8,209.3	9,352.5	1,143.2
Population in households	7,156.0	7,825.8	8,025.1	9,150.0	1,124.9
Total households	2,819.4	3,021.6	3,089.3	3,543.3	454.0
Average household size	2.54	2.59	2.60	2.58	-0.2
			Housing Stock		
Total housing units	2,992.2	3,200.9	3,287.4	3,769.5	482.1
Occupied housing units	2,819.4	3,021.6	3,089.3	3,543.3	454.0

Source: New York Metropolitan Transportation Council (NYMTC)

CASE STUDIES OF REDEVELOPMENT POTENTIAL

SHERMAN CREEK/INWOOD, MANHATTAN

Of the more than 1,000 acres of M-zoned land in Manhattan, the 150-acre area of Sherman Creek, in upper Manhattan's Inwood neighborhood, is a logical choice for residential redevelopment (Map 1).

The mile-long waterfront, along the Harlem River, commands views of University Heights and Fordham Landing in the Bronx, Swindler's Cove and Highbridge Park in Manhattan, and a stretch of river once known as Sculler's Row. This area is a New York State Empowerment Zone and an Environmental Tax Incentive district. The site is now dominated by the New York City Transit subway yards, a 43-acre expanse too vast to deck over, but also includes considerable vacant land to the north and underutilized industrial land to the south. Con Edison and the New York City Department of Sanitation occupy several utility-property and garage sites.

Sherman Creek's northern portion adjoins Columbia University's Baker's Field, while its southern portion borders the Sherman Creek inlet. The condition of the area blocks waterfront access from the upland Inwood neighborhood, while casting considerable blight upon its river views. Across the 207th Street Bridge, access to commuter rail service to Grand Central Terminal is available at the Marble Hill stop of Metro North's Hudson line. In the thriving residential and commercial areas of Inwood, served by subway and bus transit, property values are escalating.

The area contains nearly 4 million square feet of floor space on 151 acres (20 acres of which are in industrial and manufacturing use, and 37 acres of which are vacant). Although only five acres in Sherman Creek are in residential use, far more residential floor space exists (1.7 million square feet) than industrial and manufacturing (0.5 million square feet), attesting to the underutilized potential of this area. Between 1993 and 2002, industrial jobs here declined from 887 to 502.[6] Population, however, remained relatively level (12,639 in 1990 and 12,224 in 2000).[7]

In 2003, the city initiated an interagency planning effort to identify site opportunities for the southern portion of the area and for an upland area. Community participants called for the rezoning and redevelopment of the waterfront with mixed uses that relate to the river. The preferred scale of new housing ranged between five and fifteen stories, with

ground-floor retail space. A pedestrian esplanade was recommended, running northward along the river and potentially extending along the MTA yards.[8]

The latter recommendation mirrors that of the Comprehensive Manhattan Waterfront Plan (1995), which called for a continuous foot and bike path around Manhattan at the water's edge. The Metropolitan Waterfront Alliance likewise cited a need for greater waterfront access and for affordable ferry transportation to serve residents and attractions around Sherman Creek.[9] Councilman Miguel Martinez, of New York City Council District 10, favors rehabilitating the waterfront with housing, commercial uses, and parkland.

On the Bronx side of the Harlem River, facing Sherman Creek/Inwood, a large expanse of waterfront land known as Fordham Landing has lain dormant for years. Once the focus of a middle-income housing plan, the site now houses flatbed containers relocated from the MTA's Highbridge Yards. The Bronx Waterfront Plan recommended development of the site.[10] New housing would complement commercial development south of the 207th Street Bridge.

Given the physical proximity and visual relationship between Sherman Creek and Fordham Landing, the area proposed for housing development along the upper Harlem River should ideally contain both residential and commercial elements.

BRONX TERMINAL MARKET TO BRUCKNER SOUTH EXPANSION, BRONX

Of the 2,000 acres of M-zoned land in the Bronx, 545 acres comprising a ribbon of industrial zoning that wraps the Harlem River from 161st Street to the Bruckner South Expansion represent the most appropriate location for mixed-use development (Map 2). Because it is included within the Federal Empowerment Zone, with portions in the New York State Empire Zone and Environmental Tax Incentive district, the area is eligible for public-development subsidies that would lower costs of construction and operation.

Most of the properties in this area are industrial, manufacturing, transportation, or utility sites. Many sites are underutilized or derelict. Fully a fifth of the acreage is vacant or used for parking. Except for a small, seasonal farmers' market, the Bronx Terminal Market is largely vacant. In the blocks surrounding the Port Morris Special Mixed-Use District, utilitarian warehouses are being converted into lofts for non-industrial live/work spaces or commercial uses. Even so, over a third of the lots in that zone remain vacant or undeveloped. Residential sections behind the waterfront development are seeking access to the river's edge—so far, without success.

The area contains nearly 20 million square feet of floor space on 545 acres of land. Of this, 281 acres, with a total 13.5 million square feet of floor space, are devoted to industrial and manufacturing uses. Between 1993 and 2002, industrial jobs declined in the area, from 3,139 to 2,729.[11] During that same period, the area's population, which occupies less than 4 percent of the area's land, rose from 2,094 in 1990 to 2,163 in 2000.

Over ten years ago, the Bronx Center Plan called for redevelopment of the triangle of land along the Harlem River near Yankee Stadium. Recommending that a new improved public sports facility be built on site, near Yankee Stadium, the plan proposed a parking garage; additional retail outlets; a specialized new public high school, offering courses in sports-related fields; a sports museum; and new mass-transit facilities.

Redevelopment of the Bronx Terminal Market recently began with the execution of a planning agreement between the City of New York and the Related Companies. Related intends to develop a $300 million Gateway Center, consisting of 1 million square feet of retail and entertainment space. Structured parking will link multi-tiered buildings, fronted by a one-acre waterfront park and public esplanade. Besides creating 4,000 jobs, the proposed development will play a major role in revitalizing the Bronx waterfront, anchoring housing development to the south.

The 11 blocks surrounding the Port Morris Special Mixed-Use District are currently the subject of a rezoning action. Building upon the attraction of the Antique District and aptly suited for residential and commercial development, the district stretches from the Park Avenue Bridge to the Triborough Bridge approaches and faces the Bronx River at the Harlem River Yards. The rezoning would continue to allow light manufacturing uses, existing or new,

integrated with the permitted mixed-use development.

Despite the recent rezoning efforts, the mayor's industrial policy report, *Protecting and Growing New York City's Industrial Job Base* (2005), identified Port Morris as an Industrial Ombudsman Area (IOA).

DUTCH KILLS, QUEENS

The industrial neighborhood of Dutch Kills, north of Long Island City and adjacent to the Sunnyside Yards, is bounded by Queens Plaza North on the south, 21st Street on the west, and 36th Avenue on the north. Unlike most M-zoned areas in Queens, Dutch Kills has no waterfront access.

Seven blocks in the southern portion of Dutch Kills, fronting on Queens Plaza North and East, were included in the 2001 Long Island City Rezoning. The zoning change replaced low-density light manufacturing uses with higher-density mixed commercial and residential zones to allow as-of-right development of offices with large floor plates. Long Island City, once the city's most viable concentration of industry, is now a major office subcenter, having attracted Citicorp and MetLife.[12] A decline in blue-collar tenants, along with the disinvestment in buildings that eventually follows a loss in rental income, introduced market forces for change. Some multistory industrial buildings leased upper-story space to nonmanufacturers. Residential occupancy rose.

The neighborhood intermingles large with small footprints, factory with residential uses, in a relatively intense pattern with few buffers and open spaces (Map 3). Public-transit access is excellent (serviced by eight subway lines). Vehicular access to midtown Manhattan is provided by the 59th Street Bridge.

The area contains 428 acres of land, with over 20 million square feet of floor space. Over half of the floor space (11.4 million square feet) is in industrial and manufacturing usage.[13] Between 1993 and 2002, industrial jobs declined in Dutch Kills, from 4,834 to 3,178.[14] With 2.2 million square feet in housing, yet without much housing construction, population in the area increased markedly from 1990 to 2000 (from 6,050 to 7,761).

A 1993 report of the City Planning Department, *A New Framework for Development of Long Island City*, recommended creation of a Long Island City Central Business District (CBD).[15] In 2001, this recommendation was implemented under the Long Island City Rezoning. The rezoning and *Framework* followed a succession of mixed-use planning proposals.[16]

Enhanced rail service is on the way. With public investment in East Side Access, a Long Island Rail Road (LIRR) initiative to provide direct service to Grand Central Station, the Sunnyside Yards will soon house an intermodal station serving the LIRR—and possibly the Metro-North Railroad, Amtrak, and New Jersey Transit. Sites adjacent to a station in the rezoned area, including existing transit and the proposed intermodal station, would be allowed a development bonus if direct access is afforded to the building or another station.[17]

This improved access and added development capacity make Dutch Kills attractive for residential and office development. Yet the mayor's industrial policy report, *Protecting and Growing New York City's Industrial Job Base* (2005), recently identified the area as an Industrial Business Zone (IBZ).

In 2003, the Dutch Kills Civic Association joined forces with the Hunter College Urban Planning Studio to prepare a comprehensive plan.[18] They called for zoning and economic mechanisms to create more residential space.

RED HOOK/GOWANUS CANAL AREA, BROOKLYN

With a growing concentration of new construction, historic restoration, arts-and-crafts activity, and future cruise-line development, Red Hook and Gowanus (Map 4) offer immense potential for new residential and commercial uses.

Once a single neighborhood known as South Brooklyn, Red Hook and Gowanus have since the late 1950s been separated by the Brooklyn-Queens Expressway and the Gowanus Expressway approach to the Brooklyn Battery Tunnel. Gowanus has subway access to Manhattan; Red Hook is served only by bus and water taxi. Both areas are included in the Southwest Brooklyn Empire Zone, and portions are eligible for State Environmental Tax Incentives.

The dominant features of Red Hook are the Atlantic Basin, off the Buttermilk Channel, and the Erie Basin, off Gowanus Bay. The Brooklyn Piers and Red Hook Container Terminal, owned by the Port Authority, no longer experience a high volume of shipping. In the 1980s, ineffective urban renewal resulted in vacant lots, abandoned housing, open storage, and dumping on harbor-view sites. Until recently, three out of every four Red Hook residents lived in public housing.

The inland Gowanus Canal neighborhood is more diverse, containing industrial, commercial, vacant, and residential developments. Improved flushing mechanisms have resulted in a cleaner canal, allowing some recreational usage. With neighborhood improvements, the land uses of the Gowanus area are undergoing rapid change.

The M-zoned sections of Red Hook and Gowanus contain nearly a thousand acres of land developed by nearly 30 million square feet of floor space. The more intensely developed Gowanus area houses 15.7 million square feet of industrial and manufacturing, transportation and utility, and parking facilities, on 484 acres. Red Hook contains 8.4 million square feet on 397 acres. Some 35 acres are vacant, while 46 acres are devoted to residential usage in the combined areas. Between 1993 and 2002, broad industrial jobs increased in the Gowanus area, from 3,219 to 3,549, while also gaining in Red Hook, from 670 to 998. Both increases are attributable to wholesale, transportation, and utility gains, which offset manufacturing and other industrial losses.[19] Although residential floor space amounts to 2.9 million square feet, typically adequate to house 7,500 inhabitants, the resident population has increased markedly in both areas (jumping from 12,849 in 1990 to 14,605 in 2000).

Private investment is fueling Red Hook's revival. The Beard Street warehouses and Pier 41, the last remaining nineteenth-century warehouse piers in the New York harbor, have been transformed into artist studios, digital technology offices, gallery spaces, and a soon-to-be-completed Fairway food emporium. Also under development is a 350,000-square-foot Ikea Red Hook outlet, facing the Erie Basin.

The greatest impact, however, will come from New York City's lease of Piers 11 and 12 from the Red Hook Marine Terminal. The city intends to create a $30 million Atlantic Basin Cruise Ship terminal for the Carnival Corporation and the Norwegian Cruise Lines. One berth will be operational by 2008, and two additional births by 2014, to promote Caribbean cruise activity from the New York port.

Red Hook: A Plan for Community Regeneration (1996) proposed the construction of some 2,600 housing units.[20] The need for a mixed-use rezoning study was identified for 13 blocks in the southwest corner, with a proposal for continuous waterfront access wrapping a portion of the area. Proposals to link the Red Hook waterfront with other harbor communities by a harbor-loop ferry network would strengthen this area as a prime residential location.

In the Gowanus Canal neighborhood, preparation of a comprehensive plan supported by a community visioning process has been under way since 2004.[21] With general agreement that residential development is to occur, the preference is for residential development on the western side of the canal; commercial, mixed-use, and live-work spaces on the eastern side in the north; and industrial retention in the south. Public access to the water has been endorsed.

The designation of a South Brooklyn Industrial Business Zone (IBZ) by the mayor's industrial policy report essentially targets Sunset Park but calls for inclusion of as-yet-undetermined industrial areas in Red Hook and Gowanus.

NORTH SHORE, STATEN ISLAND

The historic waterfront communities of Staten Island's North Shore, where M-zoned land is virtually continuous and views of the New York harbor are most spectacular, provide prime housing-development sites for mixed-use rezoning.

The North Shore contains 2.6 million square feet of building space, on 579 acres of M-zoned land (Map 5). Over a million square feet of industrial building space are enclosed in this area. Between 1993 and 2002, industrial jobs increased slightly, from 1,230 to 1,254, in 1.9 million square feet of industrial, transportation, and parking floor space.[22] Over the same period, the resident population grew sharply, from 3,937 to 6,055.

Many North Shore properties are in a state of disrepair. West of the Coast Guard facilities and the Snug Harbor Cultural Center, a band of M-zoned land is cluttered with abandoned industrial buildings, derelict sites, rotting piers, and discarded materials. Some viable marine uses are interspersed, such as tugboat docks. Little access to the waterfront is publicly available. Even so, townhouse development has absorbed available sites over the past ten years.

Lack of transportation is currently a decided disadvantage. Appropriate densities, however, could support express bus or light rail services, on existing rail freight lines, to the Saint George Ferry Terminal and the Staten Island Rapid Transit. The communities are also traversed by the former route of the North Shore Railroad, a 5.1-mile line between the Arlington Yard in Port Ivory and Saint George. Passenger service was terminated in 1953, but a recent study conducted by the Port Authority and the borough president of Staten Island forecast sufficient ridership for light rail transit service to the Staten Island Ferry Terminal.

Concerns over rapid population growth and limited mass transit were instrumental in a 2004 down-zoning of portions of Staten Island to lower-density residential development. The Staten Island Growth Management Task Force, created in 2003, recommended rezoning changes that were subsequently approved by the City Council. These changes sought to increase lot size and encourage detached housing development. The task force has recently focused on Staten Island's West Shore, considering opportunities there for rezoning underutilized commercial and manufacturing land for residential redevelopment.

Proposals for the North Shore were advanced in 1989 by the North Shore Waterfront Greenbelt.[23] The plan proposed connecting the residential communities with the water's edge, by acquiring land for parkland and preserving historic sites on both sides of Richmond Terrace.

A growth in imports from Asia has helped revive the Howland Hook Marine Terminal, a container and cargo facility directly west of the area. More growth in port-related employment and a demand for housing in northern Staten Island will result from further efforts to dredge the shipping channels and port facilities (for larger and deeper ships), as well as from reactivation of the westbound Staten Island Railroad (to carry rail freight from the port to New Jersey).

CONCLUSIONS

ILLUSTRATIVE DEVELOPMENT POTENTIAL

The benefits of rezoning are apparent when we analyze conditions in the five areas studied. While the publicly available occupant and ownership data do not show whether each particular property is market-ready for redevelopment, the data do permit a broad-brush assessment of the potential in each of the five areas.

Candidates for rezoning in M-zoned land include industrial and manufacturing sites, parking facilities, and vacant land. Lot size, tax liabilities, floor area, ownership, and land-use classification of these sites can be determined through property-tax records. Reverse phone directories, used to profile occupants of the industrial buildings, indicate an array of nonmanufacturing operations as well as property owners and small industrial tenants.

In each study area, our assessments are based on the following five assumptions:

1. M-zoned land would be rezoned to permit mixed uses, primarily residential and commercial in character.

2. Land uses classified as industrial and manufacturing, parking facilities, and vacant would be the subject of residential redevelopment.

3. Residential densities would be highest at the waterfront and lowest in more inland areas, ranging from HD (higher density) at 6.02 FAR, to MD (mid-density) at 3.44 FAR, to LD (lower density at 2.43 FAR. Maps 8 to 13 depict the bands of housing density assumed.

4. Dwelling-unit size would vary directly with density, ranging from HD at 1,200 square feet / unit, to MD at 1,000 square feet / unit, to LD at 800 square feet / unit.

5. Common areas in residential buildings are 10 percent of total area.

Table 4 Illustrative Housing Yield by Study Area

	Sherman Creek	BTM/ Bruckner	Dutch Kills	Red Hook	Gowanus Canal	North Shore
			All Properties			
HD1(HD)	1,376	13,441	2,723	4,728	-	26,342
HD2	1,615	-	-	-	-	-
HD3	3,757	-	-	-	-	-
MD1(MD)	494	3,656	791	694	10,146	-
MD2	93	-	4,882	480	-	-
MD3	-	-	-	-	-	-
LD1(LD)	-	1,056	1,938	1,615	246	2,249
LD2	-	1,545	-	-	445	317
LD3	-	-	-	-	1,517	-
LD4	-	-	-	-	71	-
Total	***7,336***	***19,699***	***10,334***	***7,517***	***12,426***	***28,908***
			All Privately Owned Properties (excluding public, transportation, and utility sites)			
HD1(HD)	555	6,658	2,622	4,689	-	17,748
HD2	812	-	-	-	-	-
HD3	3,034	-	-	-	-	-
MD1(MD)	494	3,607	658	45	7,838	-
MD2	93	-	4,823	480	-	-
MD3	-	-	-	-	-	-
LD1(LD)	-	845	1,931	1,615	246	2,249
LD2	-	1,393	-	-	445	315
LD3	-	-	-	-	1,397	-
LD4	-	-	-	-	71	-
Total	***4,988***	***12,503***	***10,034***	***6,829***	***9,998***	***20,312***

Source: Urbanomics Estimate

No assumptions are made regarding affordable housing bonuses or housing finance incentives.

HOUSING YIELD

This assessment determines the yield for two property types in the selected land uses: all properties; and privately owned properties (excluding publicly owned, transportation, and utility sites). Table 4 presents the estimates by study area, housing density, and density-coded sub-areas (see Maps 6 to 11). If all industrial and manufacturing sites, parking facilities, and vacant lands are redeveloped at high/medium/low densities, consistent with the proposed FARs and dwelling-unit sizes, significant housing development could be accommodated in the selected M-zoned areas.

Assuming that all properties are available for redevelopment, the five case-study areas have a capacity for 86,200 housing units. Again, this total reflects the density and dwelling-size assumptions given above. A more conservative estimate—excluding properties in public, transportation, and utility uses, including idle dry docks, non-generator utility sites, and parcels owned by various New York City government

offices—would yield 64,700 housing units. Under either assumption, the more spacious and costly high-density (HD) units would predominate.

ECONOMIC AND FISCAL IMPACT

The economic and fiscal impact of the housing yield can be estimated using representative development costs, which are determined by structure type and prevailing tax rates. Of course, some associated costs, such as remediation for adverse environmental conditions or infrastructure requirements, cannot be estimated. The following values, however, can be reliably assumed:

• Construction costs are assumed to range from $290 per square foot (psf) for large units in high-density (HD) buildings, to $220 psf in mid-density (MD), to $150 psf in low-density (LD) buildings.

• The aggregate construction costs can be assumed to range from $16.6 to $23.1 billion, in 2005 dollars, for all units based upon property-type assumption, or $238 to $244 psf. As Table 5 shows, the associated market values of $20.7 to $28.9 billion for 64,663 to 86,217 dwelling units average $320,448 to $334,968 per unit.

• Assuming that high-density (HD) and mid-density (MD) developments are eligible for partial property-tax exemptions, the taxable assessed value of all properties is estimated to range from $6.3 to $8.7 billion.

Under these assumptions, the most direct fiscal benefit of rezoning would be annual property taxes of $0.8 to $1.1 billion. This compares with a current tax liability on privately owned properties under existing industrial and manufacturing, parking, and vacant land uses of just $21.4 million.

NET BENEFIT TO THE NEW YORK CITY ECONOMY

In addition to the enhanced property-tax revenues, economic benefit will accrue from the construction and operation of new developments.

We can estimate this associated benefit by applying economic-impact multipliers to construction costs, and by weighting the jobs potentially displaced against the new opportunities created by redevelopment. Over a three-year period, the aggregate value of construction will:

• Increase Gross City Product by 1.9 to 2.7 percent, depending upon property-type assumption.

• Increase temporary employment by 39,000 to 55,000 jobs, or 1.1 to 1.5 percent of total employment.

Table 5 Illustrative Housing Values and Property Taxes of Study Area Sites

	All Properties	Private Properties
Total number of dwelling units	86,217	64,663
Gross square feet of floor space	94,815,600	69,785,200
Construction cost ($millions)	$23,103.9	$16,577.2
Constr $/psf	$244	$238
Market value of properties ($millions)	$28,879.9	$20,721.4
MV$/psf	$305	$297
MV$/dwelling unit	$334,968	$320,448
Taxable assessed value ($millions)*	$8,694.2	$6,296.8
Property-tax liability ($millions)	$1,092.7	$791.4

Source: Urbanomics estimate
* 35 percent of all HD and MD properties are assumed to be exempt.

• Increase worker earnings (associated with the temporary construction impact) from $1.8 to $2.5 billion annually.

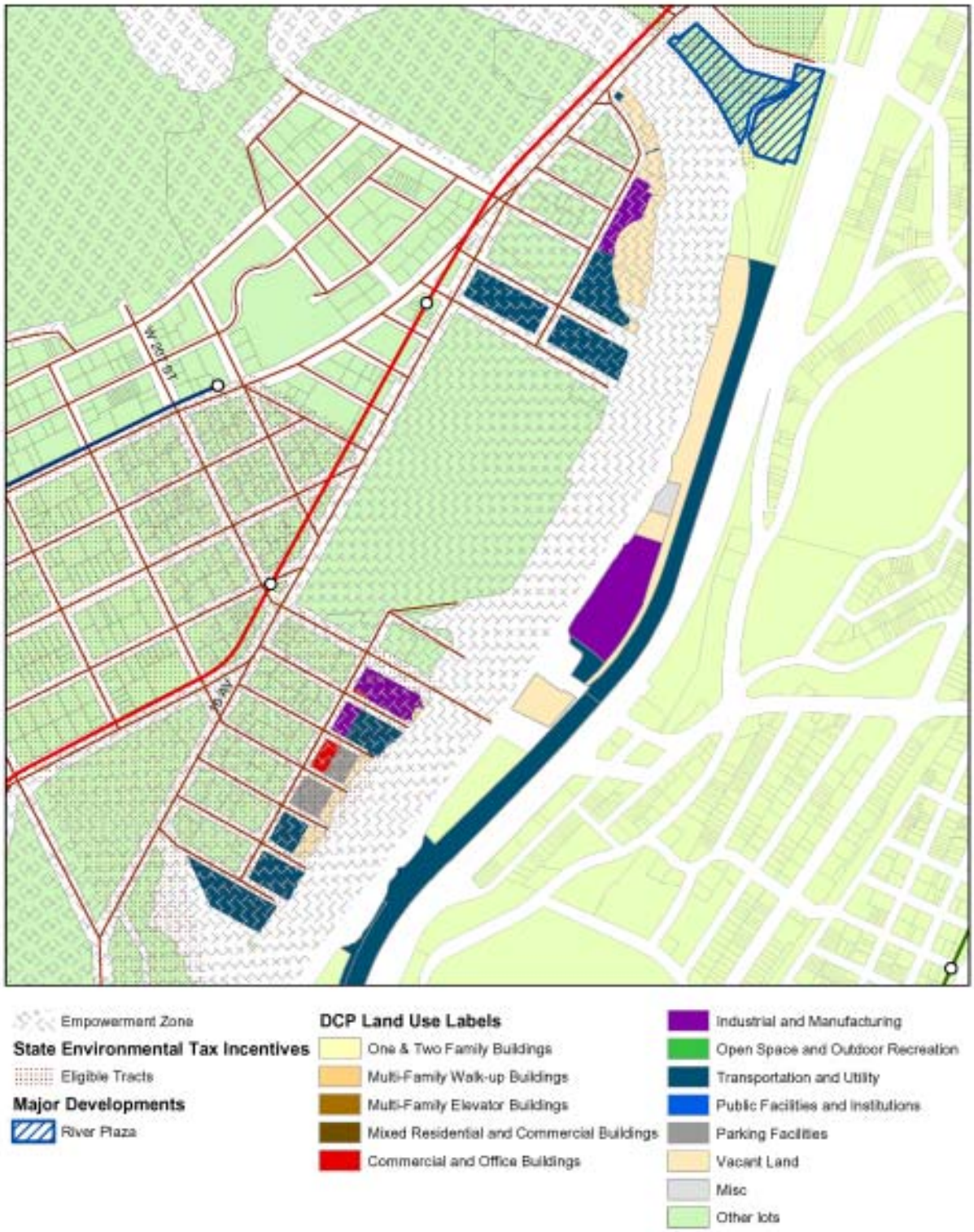
• Replace about half of the displaced permanent employment, or 2,000 to 2,500 workers, assuming two employees per new building. Based upon area-wide measures and anecdotal evidence, it would appear that adequate vacancies exist in industrial and manufacturing facilities in New York City to accommodate the remainder of the displaced employment.

Given all these factors, rezoning the five M-zoned areas considered above is a good deal for New York City. The negative effect on permanent direct-site employment will be low. The positive effect on employment and permanent tax revenues will be high. The result will be a considerable net positive benefit to the city's economy.

NOTES

[1] As reported on a NAICS (North American Industrial Classification System) basis, by the New York State Department of Labor through December 2004. On a SIC (Standard Industrial Classification) basis, which terminated with 2002 data, manufacturing jobs in New York City exceeded 535,000 in 1975.
[2] Forecasts of the New York Metropolitan Transportation Council (NYMTC) are the official forecasts required for all federally funded transportation investment-planning purposes in the region. As such, they are adopted by NYMTC members, including federal, state, and local government agencies, and contained in the *Regional Transportation Plan*. The current forecasts (shown) are reported in the 2005 *Regional Transportation Plan*.
[3] In addition to growth, the population gain includes an increase in Census Bureau coverage as the city's undercount was lessened by the addition of previously excluded households from the Master Address File.
[4] To meet household formation rates, 184,000 housing units must be built between 2005 and 2015, and 298,100 must be built between 2015 and 2025. To provide more choice and quality, 250,200 housing units must be built between 2005 and 2015, and 364,200 housing units must be built between 2015 and 2025. At 1 percent, the rate of dilapidation is quite low in New York City's housing stock, but at 2.7 percent, the vacancy rate is well below the 6 percent norm for clearing markets and providing greater housing choice.
[5] Based on New York City *Zoning Handbook* maximum FARs by zoning code, assuming that all allowances and bonuses apply for the 7,230 acres of vacant R-zoned land.
[6] New York State Department of Labor, ES-202 data reported on an SIC basis. Industrial jobs were defined as manufacturing, wholesale trade, transportation, communications and public utilities, and other industrial.
[7] U.S. Bureau of the Census, 1990 and 2000.
[8] Sherman Creek Interagency Working Group, *Sherman Creek Planning Initiative*, 2004.
[9] Manhattan borough president Virginia Field's office, *Waterfront Revitalization and Access Plan*, 1995. Metropolitan Waterfront Alliance, "Waterfront Issues: NYC Council District 10," 2001.
[10] Bronx borough president Adolfo Carrion's office, Bronx Waterfront Plan, 2004.
[11] New York State Department of Labor, ES-202 data reported on an SIC basis. See n. 6 above for definition of industrial jobs.
[12] Senator Schumer Commission, Group of 30 Report, 2002.
[13] Commercial and office buildings constitute the next most prominent use in Dutch Kills, at 4.2 million square feet, but industrial land is more intensely developed than office uses, built at an average 1.6 FAR (floor area ratio). Transportation and utility uses and parking facilities add another 2.5 million square feet of floor space, for a combined 65 percent industrial building capacity in the study area.
[14] New York State Department of Labor, ES-202 data reported on an SIC basis. See n. 6 above for definition of industrial jobs.
[15] New York City Department of City Planning, *A New Framework for Development of Long Island City*, 1993.
[16] Regional Plan Association, *First Regional Plan*, Municipal Arts Society, 1976. The earlier proposals included an early Regional Plan Association advocacy for decking over the Sunnyside Yards and a subsequent call by the Municipal Arts Society for connecting streets through the yards.
[17] FAR of 2.0.
[18] Hunter College Urban Planning Studio, *Making Connections: A New Comprehensive Plan for Dutch Kills*, 2003.
[19] New York State Department of Labor, ES-202 data reported on an SIC basis. See n. 6 above for definition of industrial jobs.
[20] Brooklyn Community Board 6, *Red Hook: A Plan for Community Regeneration*, 1996.
[21] The plan is sponsored by the Gowanus Canal Community Development Corporation, with technical services provided by the Columbia University Urban Design Studio and private planning, engineering, and architectural consultants (Ferrandino & Associates, Inc., Ehrenkrantz Eckstut & Kuhn Architects, Langan Engineering & Environmental Services, ACP-Visioning and Planning, Ltd.).
[22] New York State Department of Labor, ES-202 data reported on an SIC basis. See n. 6 above for definition of industrial jobs.
[23] North Shore Waterfront Greenbelt, *Waterfront Revitalization and Access Plan*, 1989.

Map 1 Inwood/Sherman Creek Study Area



Map 2 Bronx Terminal Market/Bruckner South Study Area

State Environmental Tax Incentive

- Eligible Tracts

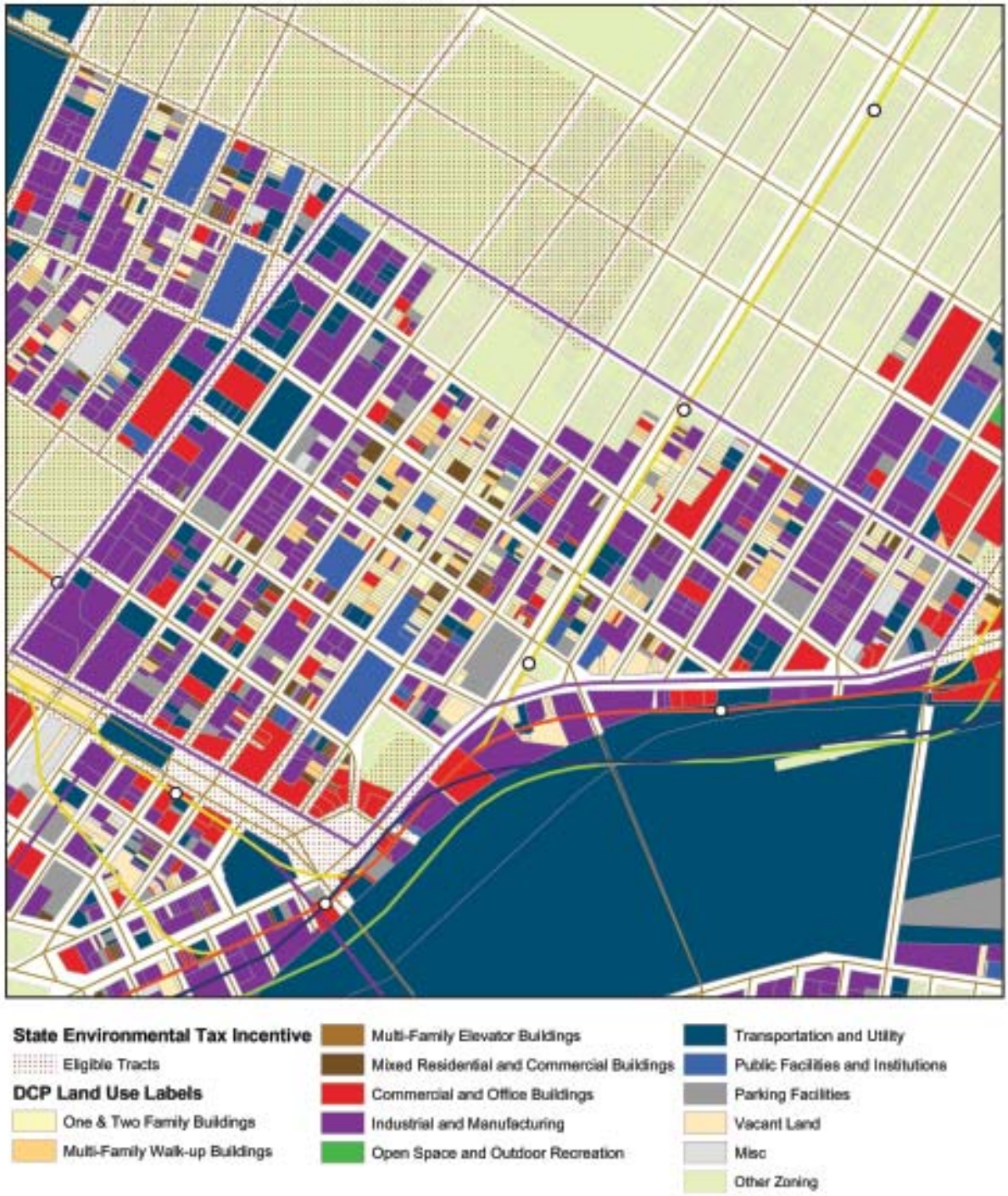
Empire Zones

- Hunts Point
- Port Morris
- Federal Empowerment Zone

DCP Land Use Labels

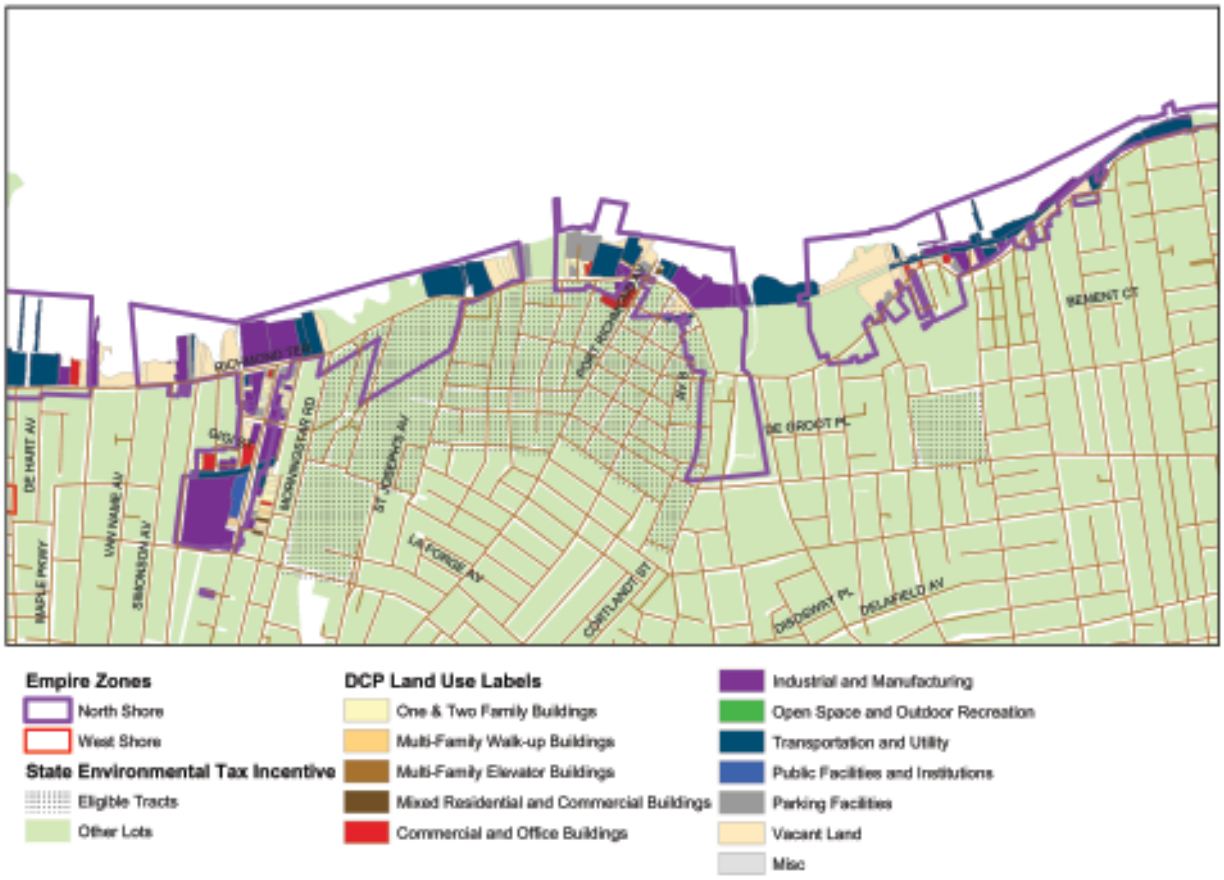
- One & Two Family Buildings
- Multi-Family Walk-up Buildings
- Multi-Family Elevator Buildings
- Mixed Residential and Commercial Buildings
- Commercial and Office Buildings
- Industrial and Manufacturing
- Open Space and Outdoor Recreation
- Transportation and Utility
- Public Facilities and Institutions
- Parking Facilities
- Vacant Land
- Misc

Map 3 Dutch Kills Study Area

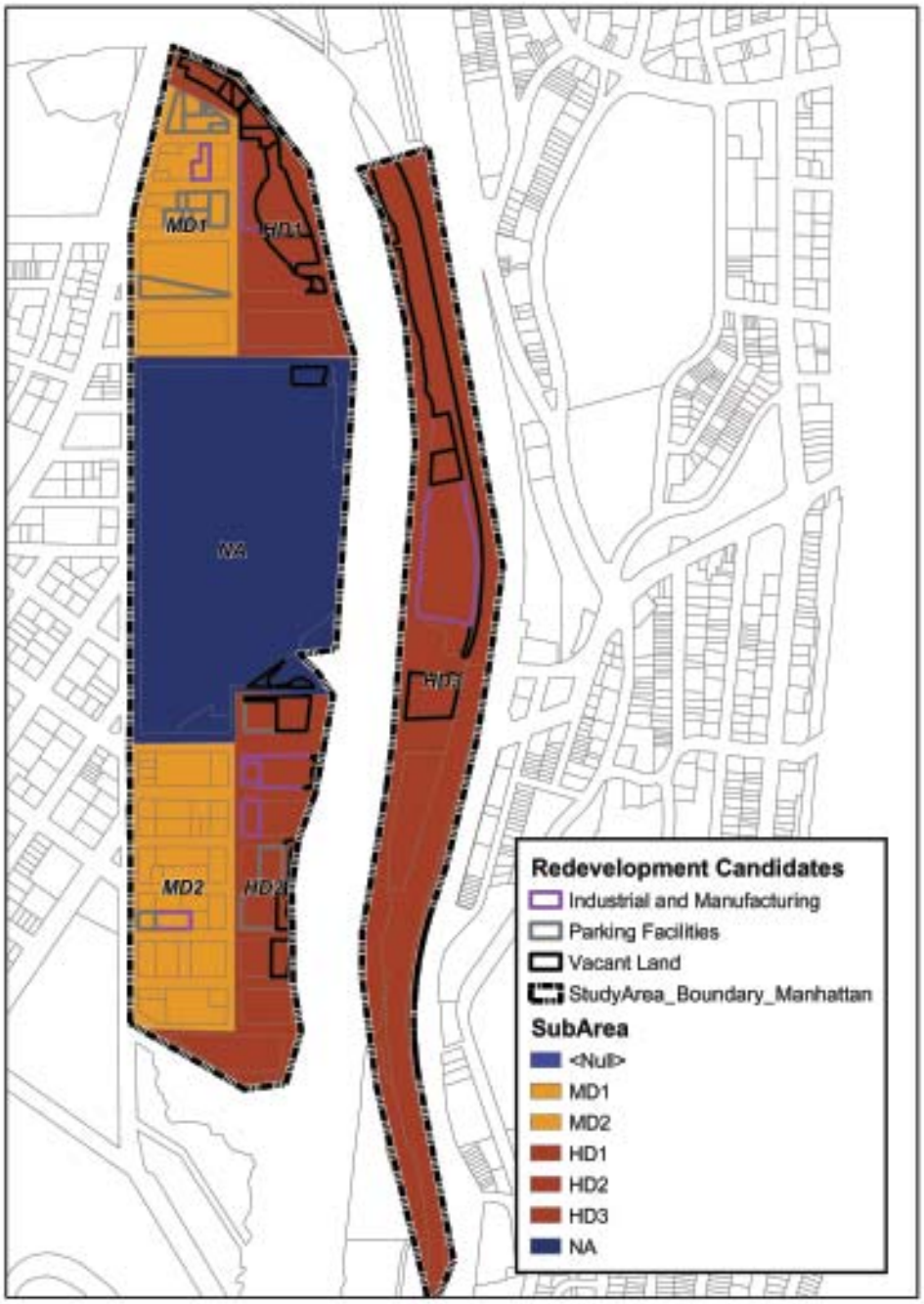


Map 4 Gowanus/Red Hook Study Area

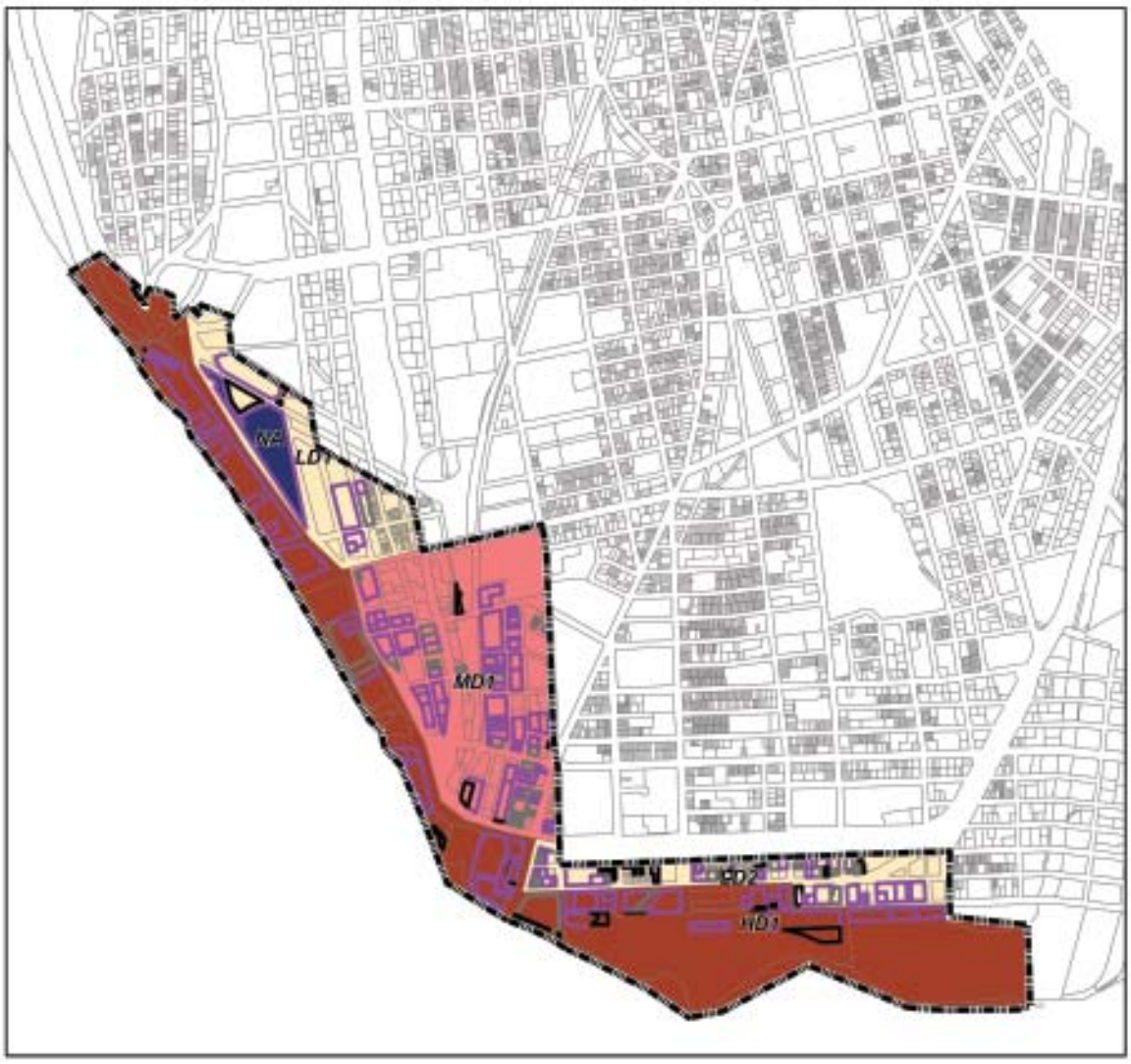
Map 5 North Shore Staten Island Study Area



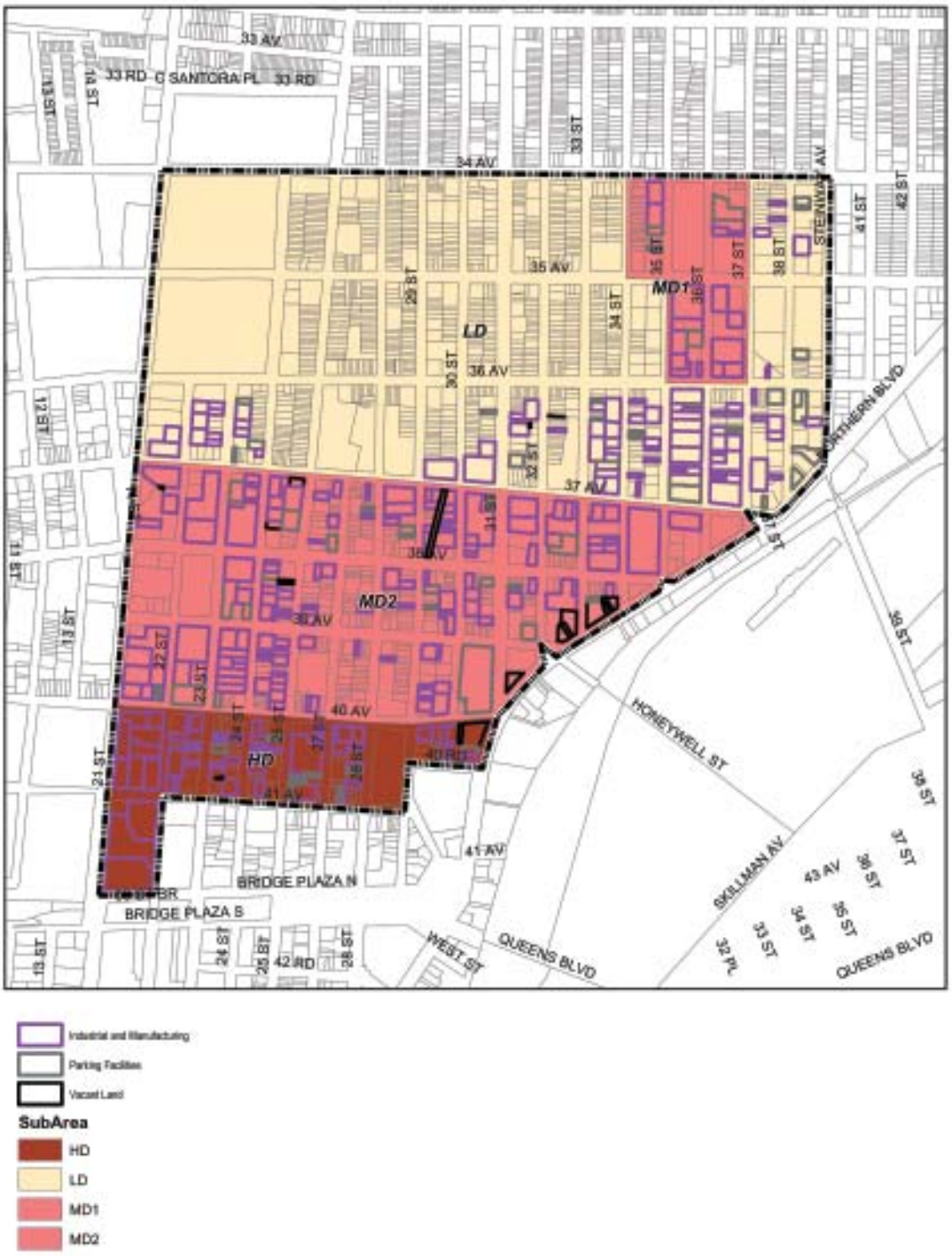
Map 6 Sherman Creek Study Area: Illustrative Housing Development Potential



Map 7 Bronx Terminal Market/Bruckner South Expansion Study Area: Illustrative Housing Development Potential

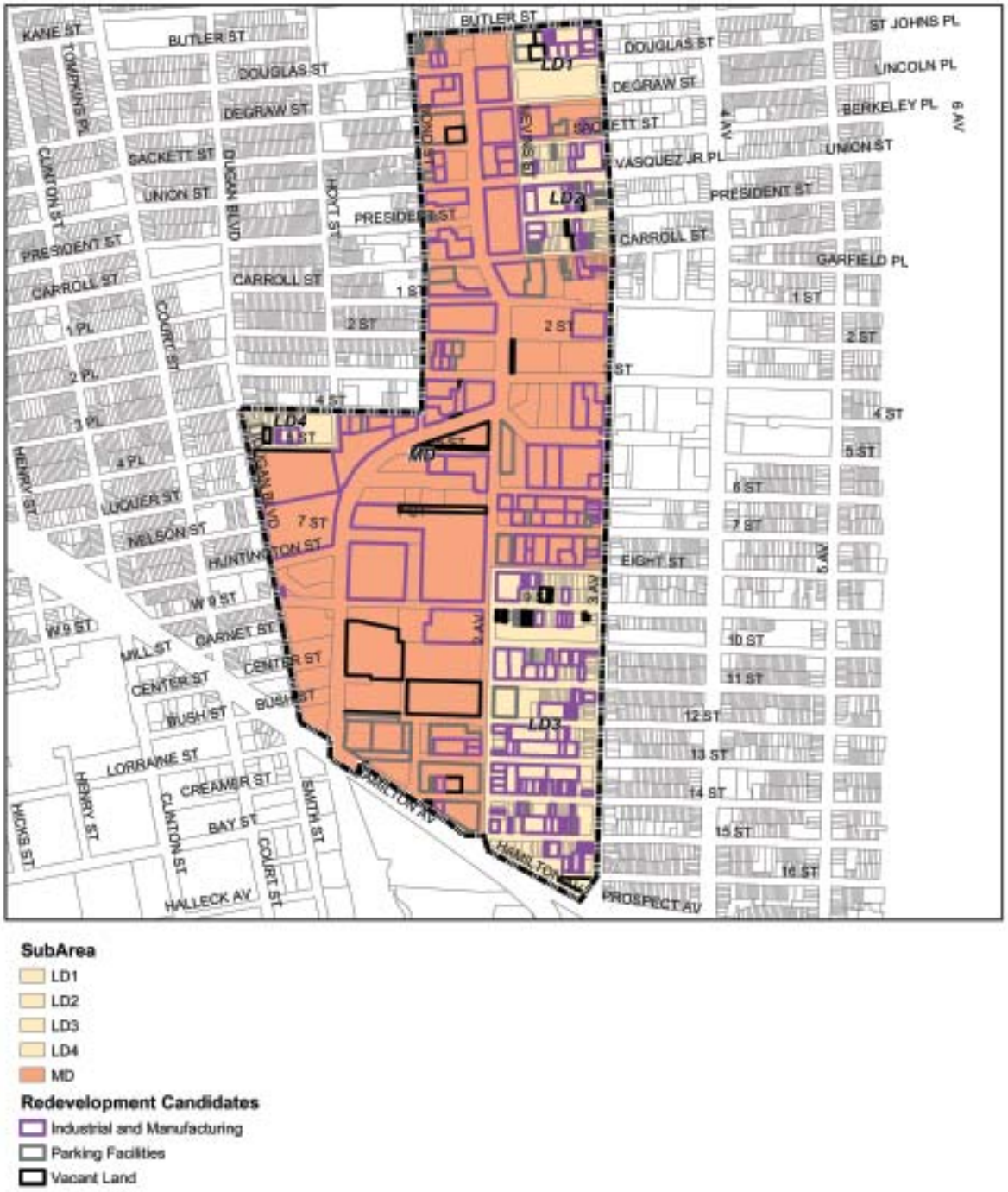


Map 8 Dutch Kills Study Area: Illustrative Housing Development Potential



Map 9 Red Hook Study Area: Illustrative Housing Development Potential

Map 10 Gowanus Study Area: Illustrative Housing Development Potential



Map 11 North Shore Study Area: Illustrative Housing Development Potential

CENTER FOR RETHINKING DEVELOPMENT

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