

Housing the Next Million New Yorkers Near Transit

Planning for Growth



Executive Summary

New York City has experienced four decades of population and housing growth since the 1970's fiscal crisis, and needs continued growth to maintain its position as the nation's leading center of commerce and culture, while generating tax revenue to support public services. Properly planned growth enables the city to provide housing and economic opportunities to a diverse population.

New York City must plan for its future growth while burdened with a legacy of zoning not designed to support the population and housing stock it will need in the next three decades. But at the same time, it benefits from far-sighted rail transit investments mostly undertaken before 1940. This transit legacy is both a vital support for future needed zoning density increases and a challenge in those areas where historic transit investment was inadequate.

New York City's land use planning and its transit system have long been inextricably linked. Employment has throughout the city's history been concentrated at the core of a transit network that was initially horse-drawn, later powered by steam, and since the turn of the 20th Century, by electric traction. The subway, beginning in the early 1900's, was embroiled in political controversy and competing agendas throughout its development history. The consequence is that some areas of the city are well provided with rail transit capacity into the city's employment core while others, particularly western Queens and northern Brooklyn, are less well served and experiencing constraints on their ability to support continued large-scale housing construction.

Dense housing spread rapidly as new rapid transit lines opened. The size and shape of this housing was determined by building regulations.

Beginning in the late 19th Century, the New York State Legislature passed a series of laws – the “Old” Tenement Law of 1879, the “New” Tenement Law of 1901, and the Multiple Dwelling Law of 1929, which imposed increasingly demanding standards for yards and interior courts in an effort to ensure that all apartments had decent access to light and air. The city’s first Zoning Resolution of 1916 did not significantly improve on these standards but this changed with the creation of the City Planning Commission and two major zoning amendments. First, the citywide amendment to the 1916 zoning in 1944 effectively reduced lot coverage for apartment buildings and promoted a more open streetscape. Then, in 1961, an entirely new Zoning Resolution was instituted, for the first time providing development controls that capped future population growth effectively.

The 1961 zoning plan was based on the conclusions of two planning studies in the late 1950’s. These looked forward to 1975 and predicted that the suburbs would accommodate most population growth in the New York region in that period, with New York City’s population stabilizing. Within the city, Manhattan would lose population while Queens and Staten Island, the two least developed of the boroughs, would grow. In reality, the suburbs grew but the city’s population declined in the 1970’s. The two reports were more accurate in forecasting housing unit changes in the city through the 1970’s than population changes. New York City required more housing units for its diminished population than forecast, due to larger declines in average household size than had been predicted.

Since 1980 New York City’s population has grown by about one and a half million people. With the return of rapid population growth, the inadequacy of the 1961 zoning framework was exposed. The city began a long series of zoning changes to increase density and promote housing development, mainly in areas served by existing subway lines, but in some cases along newly constructed subway extensions.

These rezonings continue to this day, and must continue in the future, because there is no foreseeable slackening of the city's rate of population growth. The suburbs no longer serve as a growth relief valve for the city. The lower density zoning districts mapped along transit corridors, and low-density manufacturing districts near transit, represent the best opportunities for additional housing density in the coming decades. Some of these opportunities were identified in a 2007 city study, PlaNYC 2030, but have yet to be grasped.

As the city considers future zoning changes to accommodate growth, there is a greater need than before to consider transit capacity issues. Rezoning in areas served by the portions of the subway network that pass through Downtown Brooklyn, or enter the employment core from Upper Manhattan and the Bronx, are less constrained by subway capacity than rezonings in western Queens and northern Brooklyn.

In the short to medium term, technological and equipment changes proposed by New York City Transit, notably the implementation of modern signaling systems and open-gangway passenger rail cars, will provide relief on constrained subway lines. However, planning should be initiated for long-term capacity increases for western Queens and northern Brooklyn linked to the construction of increased trunk line capacity in Manhattan through future phases of the Second Avenue subway.

As the Department of City Planning considers future zoning changes, it needs to keep in mind that such changes are successful only if large amounts of new housing are actually constructed. Affordability requirements, which have become city policy in the de Blasio administration, need to be consistent with private sector investment criteria. Making a statement through restrictive zoning about the need for affordability, but then failing, due to the insufficiency of public

funding, to achieve the construction of new housing at a large scale consistent with the city's growing population, is detrimental to the city's future. As shown by rapid demographic changes in western Queens and northern Brooklyn, with an influx of college-educated adults even in some community districts that have not experienced large-scale housing construction, in the absence of new housing construction to meet demand older housing becomes inaccessible to long-standing lower income populations.

Introduction

New York City is sometimes criticized by activists for having no master plan, but it is nonetheless a planned city. The city's plan is not found in one location, nor is it the outcome of a coherent decision making process. The plan has multiple elements that establish limits on growth and determine built uses and densities in every neighborhood. For the city as a whole, the plan establishes a long-term cap on population growth by controlling the amount of housing that can be constructed.

What are the elements of this plan? The most important element is the subway system. New York City's subway system is a hub-and-spoke system that covers Manhattan, approaches the edges of the Bronx and Brooklyn and covers western and central Queens. Residential density generally follows the spokes, with the greatest residential densities closer to the core areas of the city. Commercial density congregates at the hubs, making the neighborhoods surrounding the hubs the city's most desirable residential locations. Only in Staten Island is there limited rail transit, with density concentrated only at the bus, rail and ferry hub in St. George and nearby areas.

The subway is not itself a comprehensively planned system. It is a combination of pre-1900 rail and elevated lines; new lines constructed in the early 1900's as an outcome of bargaining between the city government, two private companies, communities and elected officials; and a rival system built by the city in the 1920's and 1930's to drive the two private companies to give up their franchises, which they duly did in 1940. The city then proceeded to demolish elevated lines that represented a significant part of its acquisition. It also moved to knit its disparate transit lines together in the 1950's and 1960's but never found the resources to complete its intended subway network. The result is that some areas of the city are well-provided with subway service, relative to residential density and peak ridership, while other portions of the system are notoriously overcrowded.

The second key element of the city's plan is the rectangular street grid. Most of the city is divided up into blocks that follow the pattern set by the Commissioners' Plan of 1811¹ — about 200 feet deep and about 800 feet long. Such blocks are often neatly divided into building lots that are about 100 feet deep. This creates a characteristic pattern in residential neighborhoods, with buildings close to the street and an unbuilt open area in the center of the block, divided into private rear yards but providing shared light and air to adjacent buildings. Because blocks and lots are relatively small, for apartment buildings to be designed efficiently they generally need high lot coverage, which limits design flexibility and results in a consistent development pattern across the city. Changes to this pattern — through public assemblage of "superblocks" that allowed towers surrounded by large open areas — were restricted to a brief period of the city's history and had a limited impact on the city overall.

Zoning was for a long time a relatively less important element of the city's plan. Most of the city was built either before the city enacted zoning in 1916, or under the zoning that existed prior to 1961, which was generally permissive and allowed apartment buildings over a much larger area of the city than was deemed necessary when the city was comprehensively rezoned in 1961. The New Tenement Law and the Multiple Dwelling Law, which allowed low-cost semi-fireproof wood joist construction, but only up to a height of six stories, were far more significant in determining the pattern of development. Few areas of the city could support taller buildings economically, although they were generally permitted, because they had to be fully fireproof.

Only after the 1961 zoning went into effect did zoning become an affective cap on development densities, but by that time the city's economy had begun to decline and housing production fell off sharply. The planners who prepared the 1961 zoning anticipated a slow-growing city and enacted zoning consistent with their assumptions. The new zoning resolution was in principle as-of-right but allowed densities were greatly reduced in many areas of the city. When the city's

¹ "Grid plan," in Kenneth T. Jackson, ed. *The Encyclopedia of New York City*, Yale University Press, 1991, p. 510.

economy recovered in the 1980's and the city began, against all expectations, to grow rapidly, the city moved to modify the zoning to allow for more growth. The subway was not seen as a limiting factor in growth at that time since ridership had declined, and surplus capacity was widely available.

In 2018 both the capacity of the transit system and zoning are limiting factors in determining the pattern of future growth in New York City. A combination of population growth, employment growth, and increased labor force participation absorbed much of the excess capacity in the subway system that existed in the 1980's. Concurrently the city's housing stock has grown slowly and become increasingly costly to rent or buy, relative to incomes. Many neighborhoods where housing is in demand have few available development sites and higher-income populations are spreading into neighborhoods that have heretofore provided reservoirs of relatively low-cost housing.

The geographic spread of higher-income households is evidence that the city does not have enough housing to meet demand, in the neighborhoods where such households have in the past chosen to live. This failure to build enough housing leads to pressure on low income communities — where residents cannot compete for housing with newcomers.

New Yorkers take pride in the idea of their city as a place of opportunity. A future New York City that mostly houses those who are already successful, and no longer serves as an avenue of opportunity for upward-striving people from throughout the nation and the world, would no longer possess the qualities that many New Yorkers value. To avoid such a future, the city should seek to accelerate the production of housing in many neighborhoods throughout the city. As it has been for decades, such new housing needs to be concentrated in areas well served by transit, where more density can be accommodated without needing to accommodate a vast influx of private autos generating congestion and requiring large amounts of expensive off-street parking.

To achieve this zoning must become far more permissive in terms of where housing is permitted and how dense it can be, a dramatic turn from the policies of recent years. But this is not enough. New Yorkers need to be able to move around the city. New York planners have always understood the relation between transit capacity and the levels of residential growth the city needs. This report will explore how growth and transit investment have been linked in the past, and how they can be linked today.

Rapid Transit as a de Facto Master Plan

The expansion of the urbanized areas of New York City, beyond the crowded mid-nineteenth century port cities of New York and Brooklyn, followed the path of rapid transit lines. Prior to about 1880, when steam-powered elevated railroads began service, Manhattan's population was largely concentrated below Central Park², and residential patterns were determined by the maximum distance people could reasonably walk or travel by horse-drawn vehicles.³ Similarly, before the mid-1880's, when "els" began service in Brooklyn following the completion of the Brooklyn Bridge⁴, Brooklyn's developed area was north and west of Prospect Park and along the waterfront from Red Hook to Williamsburg.⁵

Manhattan had elevated lines on Sixth and Ninth Avenues on the West Side and Second and Third Avenues on the East Side. North of 110th Street, the Ninth Avenue "el" switched to Eighth Avenue, ending at 155th Street.⁶

In Brooklyn, an extensive network of new elevated lines and older surface lines that began as excursion lines to Coney Island came into existence by the early 20th century.⁷ The Brooklyn "els" accessed Manhattan only at the Park Row end of the Brooklyn Bridge and, after the opening of the Williamsburg Bridge, at Delancey and Essex Sts. Between 1888 and 1902, the Third Avenue elevated rail line was extended into the Bronx, extending to Bronx Park, at 200th St.⁸

The construction of the elevateds nearly coincided with the 1879 enactment of the Old Tenement Law, which effectively mandated the characteristic "dumbbell tenement" layout⁹ in which interior rooms in a walk-up apartment building, usually five or six stories, had windows on a narrow enclosed courtyard.

The combination of elevated rapid transit service and the tenement law produced a distinctively uniform pattern of land use. As areas became accessible, they were developed rapidly with tenements. Figure 1 shows tenement development, mainly Old Law, in a section of Yorkville in Manhattan in 1924, from East 86th Street at the lower left to East 91st St. at the upper right, and from Third to First Avenues, with the Third Avenue and Second Avenue Els visible.

Figure 1: Old Law Tenements in the Shadow of the Els, Yorkville, 1924



Source: <http://maps.nyc.gov/doitt/nycitymap/>

2 A visualization of Manhattan's population density over time is found at Eric Jaffe, "Watch 210 Years of Manhattan Densification in 2 Minutes," <https://www.citylab.com/equity/2015/06/watch-210-years-of-manhattan-densification-in-2-minutes/394736/>.

3 Roger P. Roess and Gene Sansone, *Wheels That Drove New York: A History of the New York City Transit System*, Springer, 2014, Chapters 4 and 6.

4 *Ibid.*, Chapter 6.

5 See a 1879 Currier and Ives view of the City of Brooklyn, <https://www.loc.gov/pictures/item/90715974/>.

6 A map of the Manhattan elevateds can be found at <http://stuffnobodycaresabout.com/wp-content/uploads/2014/09/Map-Elevated-System-Manhattan-1881.jpg>.

7 A map of the Brooklyn elevated system at its maximum extent can be found at <http://brooklynanalog.blogspot.com/>.

8 "History of the Bronx 3rd Ave El," <http://bronxtimetraveler3.weebly.com/history.html>.

9 A diagram of a "dumbbell tenement" can be found at <https://thegildedage.wikispaces.com/Dumbbell+Tenement>.

Figure 2: New Law Tenements by the Subway in Longwood, Bronx, 1924



Source: <http://maps.nyc.gov/doitt/nycitymap/>

As a consequence of the construction of the elevateds, Manhattan south of 155th Street, northern Brooklyn and the lower portions of the Bronx along Third Avenue were already densely urbanized before the first subway opened in 1904. Because the subways were expected initially to be privately operated and self-supporting, negotiation of the early subway contracts required achieving a balance between serving existing urbanized areas and opening up new areas to development. Since the existing developed areas would provide lucrative revenues and in contrast the new areas, initially, would produce little revenue, the private operators were reluctant to enter new territory.¹⁰

The contracts, known as Contracts One through Four, with the last two, which had the greatest impact, known as the Dual Contracts, succeeded in opening large areas of the city to residential development. The Dual Contracts¹¹, which opened up the northern and eastern Bronx, western Queens and parts of southern and eastern Brooklyn to residential development, finally enabled the city to ameliorate the problem of overcrowding and disperse its growing population into less dense “subway suburbs”.¹²

Like the advent of the elevateds, the construction of the subways was accompanied by changes in building regulations, and in combination, these established the land use pattern in the growing areas of the city. In 1901, the state of New York enacted the New Tenement Law¹³, which upgraded standards for light and air to interior rooms and ensured that a 25-foot-wide lot would no longer suffice for an apartment building.

In 1916, as a continuation of the same reform impulse that led to tenement reform and the construction of the subways, New York City enacted its first zoning resolution. The 1916 Zoning Resolution included standards for use, height and lot coverage, but these were generally permissive, and in the developing areas of the city served by the Dual System the most influential restriction on development was the requirement that any building taller than six stories be fireproof.¹⁴ Because new “semi-fireproof” apartment buildings built with brick fire walls, but wood joists supporting the floor and roof, were affordable to a much larger share of the population than fully non-combustible buildings that could be much taller under zoning, six stories became an effective height limit over large areas of the city.

Figure 2 shows New Law Tenements developed near the Westchester Ave. line (now the 2 and 5), in Longwood, the Bronx in 1924. While elevated, the Westchester Avenue line is considered a “subway,” constructed in the early 1900’s

¹⁰ The history of the city’s contracts in the early 1900’s with private firms (Interborough Rapid Transit and Brooklyn Rapid Transit) to build and operate the subways is retold in Clifton Hood, *722 Miles: The Building of the Subways and How They Transformed New York*, The Johns Hopkins University Press, 1993, and Peter Derrick, *Tunneling to the Future: The Story of the Great Subway Expansion That Saved New York*, New York University Press, 2001.

¹¹ An image of the Dual Subway System can be found at <http://academic.brooklyn.cuny.edu/history/burrows/NYC/Documents/Hood5.jpg>.

¹² Derrick, Chapter 7, “Impact of the Dual System.”

¹³ An image of the evolution of New York City tenement plans, with the New Law as the final plan, can be found at http://www.columbia.edu/itc/architecture/wright/6769_2002/images/week5/v01.jpg.

¹⁴ Tenement House Act of 1901, §11 and McKinney’s *Consolidated Laws of New York, Book 35A, Multiple Dwelling Law*, Edward Thomson Company, 1931, §101.

under Contract I.¹⁵ Note the high lot coverage and lack of open space. The neighborhood was hit hard by abandonment in the 1970's, and many of these buildings no longer exist. At the time the subway was built, however, the interaction of subway accessibility with the building laws of the day produced densities that, while an improvement over the conditions on the Lower East Side, remained quite high.

Beginning in the late 1920's the city undertook construction of the Independent Subway System, to be a municipally operated competitor to the two private operators, by then Interborough Rapid Transit (IRT) and Brooklyn-Manhattan Transit (BMT). To be financially viable, the Independent System largely had to serve existing built-up areas and take passengers away from the existing operators; this helped precipitate the merger of the three operators under public ownership in 1940¹⁶. The only IND line that served largely undeveloped territory was the Queensboro Line (today's E, F, M and R), which opened a series of neighborhoods along Queens Boulevard including Rego Park, Forest Hills, Kew Gardens and Briarwood to dense multifamily development.

As with the original four private subway contracts, the advent of the IND System – the first phase was largely opened between 1932 and 1940¹⁷ – was concurrent with changes to building regulations that shaped the new housing developed near its stations. In 1929 the New Tenement Law was replaced by the Multiple Dwelling Law (MDL). Because developments with building permits under the New Law at the time of enactment of the MDL were allowed to continue to completion, and the post-1929 Great Depression then brought new housing construction largely to a halt for several years, the impact of the MDL was felt only briefly in the late 1930's and early 1940's and then, after another halt to construction, after World War II. The MDL increased standards for yards and courts and provided better light and air to apartments.¹⁸

The aims of the MDL were reinforced by a 1944 citywide zoning text amendment. The City Planning Commission, anticipating a postwar building boom, and not wanting to recreate the density of the neighborhoods of six-story apartment buildings that grew in the wake of subway construction in the 1910's and 1920's, manipulated the tools provided in the 1916 zoning to effectuate a citywide reduction in zoned densities. The ubiquitous six-story apartment building would need to be set back from the street and cover less of its lot.¹⁹ The Commission wrote in its report:

Apartment house construction in the Boroughs of the Bronx, Queens, and Brooklyn has been and continues to be planned with excessive coverage, with structures placed on the building line and without setting aside a reasonable portion of the land for open space. The lack of opportunities for recreation and healthful living is self evident...

Certain opponents [of the proposed amendment] stated that six-story, non-fireproof apartment buildings, so common in New York City, would be outlawed by [the proposed changes. On the contrary], in order to build such apartments to their previous height it would be necessary merely to set the building back... One of the principal reasons for the proposed amendments is to provide more space, light and air for multiple dwellings.²⁰

The consequences of the MDL and the 1944 zoning changes were that the Queens Boulevard corridor developed markedly differently from its predecessors. While still built out with relatively dense apartment buildings, apartments had far more light and air and the streetscape was noticeably landscaped, with buildings set back, rather than lined with building facades. Figure 3 shows an early postwar neighborhood along the winding Yellowstone Boulevard in Forest Hills, Queens, near the 67th Avenue station of the Queens Boulevard subway line, at upper left.

In the postwar period, the city continued to make incremental improvements that brought subway service to the less developed outlying areas of the city. In 1956, the IND Rockaway Line opened for service, connecting the Liberty Avenue elevated in Queens, part of the IND Fulton Street (Brooklyn) line, to the Rockaway Peninsula. The Rockaway line used an old Long Island Railroad right-of-way but had much more capacity and direct service into Downtown Brooklyn and

15 Clifton Hood, "Subways, Transit Politics, and Metropolitan Spatial Expansion," in David Ward and Olivier Zunz, eds. *The Landscape of Modernity*, Russell Sage Foundation, 1992, pp. 195 and 201.

16 Hood, *722 Miles*, pp. 203-213

17 Mark S. Feinman, "History of the Independent Subway," https://www.nycsubway.org/wiki/History_of_the_Independent_Subway.

18 *McKinney's Consolidated Laws*, op.cit., §26.

19 New York City Planning Commission, *Report on Amendments of the Zoning Resolution of the City of New York Affecting Height and Area*, November 1, 1944.

20 *Ibid.*, pp. 10, 26-27

Figure 3: Multiple Dwellings in Forest Hills, Queens, 1951

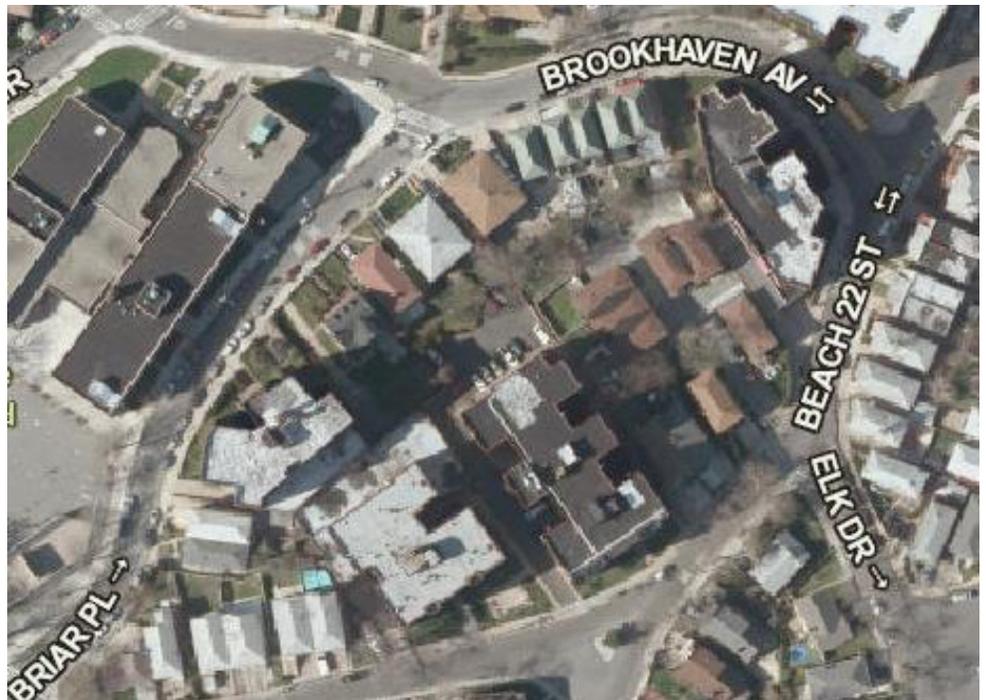


Source: <http://maps.nyc.gov/doitt/nycitymap/>

Manhattan.²¹ In 1957, the Dyre Avenue line began operations as a through service to Manhattan. Once a commuter line ending at the Harlem River Yards at the southern tip of the Bronx, the Dyre Avenue route had been operated as a subway shuttle since 1941.²²

Given the history of the linkages between transit expansion and residential growth one might expect that the areas made newly accessible by these investments would be redeveloped with apartment buildings. At first, this did occur. For example, in 1959 a certificate of occupancy was issued for a six-story apartment building at 530 Briar Place, a short walk from the then-new Mott Avenue subway station on the Rockaway Line. In 1963 a certificate of occupancy was issued for a six-story apartment building on an adjoining lot at 22-04 Collier Ave. At about the same time, a third certificate of occupancy was also granted for a six-story apartment building on a lot adjoining the Collier Avenue building, 439 Beach 22nd Street.²³

Figure 4: Three “Pre-1961” Apartment Buildings on a City Block in a Low-Density Zoning District, Far Rockaway, Queens, 2012



Source: <http://maps.nyc.gov/doitt/nycitymap/>

21 Ira Henry Freeman, “Rockaway Trains to Operate Today,” *The New York Times*, June 28, 1956, <https://timesmachine.nytimes.com/timesmachine/1956/06/28/84703811.pdf>.

22 “Subway Trains Run to Dyre Ave.,” *The New York Times*, May 7, 1957, <https://timesmachine.nytimes.com/timesmachine/1957/05/07/84726091.pdf>.

23 The certificates of occupancy can be viewed in the New York City Department of Buildings’ information system, <http://a810-bisweb.nyc.gov/bisweb/bsqpm01.jsp>.

However, these were to be the last apartment buildings in this growing neighborhood. The building rules had once again changed, and the 1961 zoning had gone into effect. (The two buildings completed in 1963 were allowed to finish construction under the old zoning). The block where these three buildings stand was formerly a D area district and a Class I height district. Those districts in combination allowed six-story residential buildings, provided that they were set back several feet from the street. In 1961 the block had been zoned R4, a low-density residence district. While in theory the district allowed an apartment building on an extremely large lot, in a moderately urbanized area like Far Rockaway, the district effectively limited new housing to small homes. Figure 4 shows the three apartment buildings in 2012, surrounded by small homes protected from redevelopment by the low-density zoning.

The 1961 Zoning: Breaking the Link between Transit and Housing

The 1961 Zoning Resolution thus broke the heretofore almost automatic linkage between subway expansion and new, dense residential construction by interposing a regulatory barrier in the form of use and bulk restrictions and increased off-street parking requirements. The 1961 zoning had a hierarchy of residential districts, from R1 and R2 (single-family detached housing only) to R9 and R10 (the highest-density residence districts, with maximum floor area ratios of 7.52 and 10, the latter of which could be increased to 12 by providing an open space amenity). The R9 and R10 districts and their commercial equivalents were mapped in Manhattan south of 110th Street and in Downtown Brooklyn. These districts allowed a high-rise tower covering 40 percent of its lot (higher on small sites). This building type became the character of many Manhattan streets, particularly north-south avenues that had been lined with Old Law tenements in the days of the “els”.

In the R6, R7 and R8 medium-density zoning districts widely mapped in the Bronx, Brooklyn and Queens, Floor Area Ratios, essentially a 1961 invention, and lot coverage requirements were established on a sliding scale that favored low-rise housing types on most available lots. Apartment buildings at the maximum permitted floor area ratios (2.43, 3.44 and 6.02, respectively) were possible on large lots in the “tower-in-the-park” configuration, but the assemblage of such large lots depended on publicly funded housing programs that became increasingly unpopular in the 1960’s due to concerns about neighborhood scale and displacement of residents and businesses. The R3-2, R4 and R5 districts were effectively attached-rowhouse districts at floor area ratios of .5, .75 and 1.25, respectively. These districts were mapped widely in the boroughs outside Manhattan.

The best source on the thinking behind the decisions on where to map the specific zoning districts is an oral history transcript by Edwin Friedman, a former New York City planner. Friedman states:

Available statistics, data from surveys on existing and emergent trends and developments, interviews with experts and practitioners and careful analysis led to the conclusion that future land demand would be determined more by internal shifts of people and jobs than by appreciable changes in total population or employment...

The single most important objective of residential recommendations was to effectuate more evenly distributed residential densities without impinging upon individual freedom of locational choices. This objective resulted from the conclusion that overbuilding in some parts of the City was only at the expense of the sterilization of other parts.²⁴

The planners of the 1961 zoning were comfortable in limiting residential densities because they saw a slow-growing city. As stated in the 1958 planning study that formed the basis for the proposed new zoning resolution:

Projections of the City’s population anticipate a total of 8,340,000 persons in 1975, an increase of 470,000 over the estimated 1957 figure of 7,870,000. It has become increasingly clear that the City is approaching a population plateau and is unlikely to experience either sharp net gains or losses in the future...²⁵

24 Edwin Friedman, *The 1961 Zoning*, p. 1, <https://archive.org/details/1961zoning00frie>.

25 Voorhees, Walker, Smith and Smith, *Zoning New York City: A Proposal for a Zoning Resolution for the City of New York*, New York City Planning

The relatively conservative projection of population growth – New York City did not in fact exceed this figure until the current decade²⁶ – understates the shortcomings of the 1961 zoning map. The 1958 planners projected a much larger average household size into the future, thus underestimating the number of housing units needed. A total of 2,854,000 housing units were projected for 1975, based on an average household size of 2.9.²⁷

By 2016 the average household size in New York City, according to the American Community Survey (ACS), was 2.68. The difference may seem small but with a population in households of 8,360,689, again according to the ACS, an additional 236,664 occupied housing units are needed with the smaller average household size.

The city in fact exceeded the Voorhees, Walker 1975 housing unit projection by 1970, and continued to gain housing units, rising to an estimated 3,463,870 by 2016 (Table 1). Manhattan's count of housing units well exceeds the 1958 plan's "zoned capacity." The borough never lost the number of units anticipated by Voorhees, Walker – likely attributable to the curtailing of large-scale urban renewal schemes in the 1960's. Moreover, likely under pressure from real estate interests, the enacted 1961 zoning mapped the highest-density, 10 FAR residential districts over a much wider area in the Manhattan core, located south of 96th Street on the East Side and 110th Street on the West Side, than originally proposed.²⁸ Despite these later changes, Manhattan became the borough most constrained by zoning, with the highest land values, market rents and sale prices. The Edwin Friedman narrative acknowledges that many areas were zoned at low densities, relative to the actual built context, in anticipation of future urban renewal:

*The philosophy underlying the R7 designation was that R7 represented the highest density district in which amenities and facilities could be provided adequately and economically for middle-income families. Implicit in this philosophy was the idea that where urban renewal write-down was used, subsidy should be provided in such a manner that desirable density levels would be possible.*²⁹

The Bronx and Brooklyn exceeded the Voorhees, Walker 1975 projection by 1970, and then lost large numbers of housing units during the city's period of population decline in the 1970's. By 2016, both boroughs' housing stock well exceeded the projection and each was over 90 percent of the theoretical "zoned capacity" calculated in the 1958 plan. Queens did not exceed its projection for 1975 until 1990, but by 2016 also exceeded 90 percent of 1958 zoned capacity. Staten Island exceeded the Voorhees, Walker projection for 1975 by 1980 but stood at only 72 percent of its theoretical 1958 zoned capacity by 2016. However, the large amount of land in that borough subsequently preserved as parks, wetlands and other open areas makes the denominator in this calculation questionable.

Calculations of zoned capacity in New York City involve difficult measures of "buildable land" and "development sites" and assumptions about the size of housing units and the amount of land needed for commercial uses and community facilities. The Voorhees, Walker calculations should not be seen as exact. What they do tell us is that the drafters of the 1961 zoning did not leave a large margin for future growth. No doubt they believed that their successors would adjust the zoning map if it proved to be inadequate. The land use process was relatively short and simple in the early 1960s; there were no community boards and no environmental review.

The 1961 zoning also created "manufacturing zones" with M prefixes, as well as C8 "general service" commercial districts, in which residences were prohibited. This was in contrast to the pre-1961 zoning's "unrestricted" use districts, corresponding to many of the same locations. Unrestricted districts permitted residences.

Commission, 1958, p.5.

26 The Department of City Planning estimates that, accounting for the 2010 Census undercount, the city's population was 8.24 million in 2010. The Census Bureau estimates that as of July 1, 2017, the city's population was 8,622,698. See <http://www1.nyc.gov/site/planning/data-maps/nyc-population/current-future-populations.page>.

27 Voorhees, Walker, Smith and Smith, op. cit., pp. 6-7.

28 The highest-density district was R9 in the original proposal and R10 in the adopted proposal. There were also equivalent commercial districts including C1-9, C2-8, C4-6, C4-7, all C5 districts and C6-4 and higher suffix districts. The Department of City Planning's Zoning History webpage (<https://www1.nyc.gov/site/planning/about/city-planning-history.page>) has scans of both the Voorhees, Walker proposal and the adopted 1961 zoning maps, allowing for comparison.

29 Friedman, op. cit., p. 46.

This use restriction was based on incompatibility of residences and industrial uses and the desire to reserve large areas for the needs of industry:

*Residential uses...are excluded from Manufacturing Districts to protect residences from industrial traffic and all other objectionable influences, as well as to prevent spotty residential development from breaking up large tracts or otherwise preempting land better suited for industrial use.*³⁰

However, the decision to separate residences and industry removed the as-of-right capacity to adjust the land use in an area consistent with market forces. From now on, a specific act by the land use authorities would be needed to change an industrial zone to residential. Thus the accuracy of the Planning Commission's guess as to the future land needs of industry became a critical issue. In fact, the industrial sector rapidly declined after 1961.³¹ Nonetheless, successive Mayoral administrations sought symbolically to demonstrate their commitment to industry by preserving manufacturing zoning and excluding residences.³²

**Table 1: Housing Units:
Voorhees, Walker
Projected and Census**

	Bronx	Brooklyn	Manhattan	Queens	Staten Island	Total, New York City
Voorhees, Walker 1958: Projected, 1975	498,000	900,000	607,000	746,000	103,000	2,854,000
Voorhees, Walker 1958: Zoned Capacity	577,000	1,129,000	710,000	930,000	249,000	3,595,000
1970	508,789	902,622	714,593	708,316	89,961	2,924,281
1980	451,118	881,399	754,796	740,129	118,968	2,946,410
1990	440,955	873,671	785,127	752,690	139,726	2,992,169
2000	490,659	930,866	798,144	817,250	163,993	3,200,912
2010	511,896	1,000,293	847,090	835,127	176,656	3,371,062
2016	525,788	1,031,125	875,990	851,576	179,391	3,463,870
2016 as a percent of 1958 zoned capacity	91%	91%	123%	92%	72%	96%

Source: Voorhees, Walker, Smith and Smith, Zoning New York City, p. 6; U.S. Census, 1970-2010; American Community Survey, 2016

30 Voorhees, Walker, Smith and Smith, op. cit., p. 177.

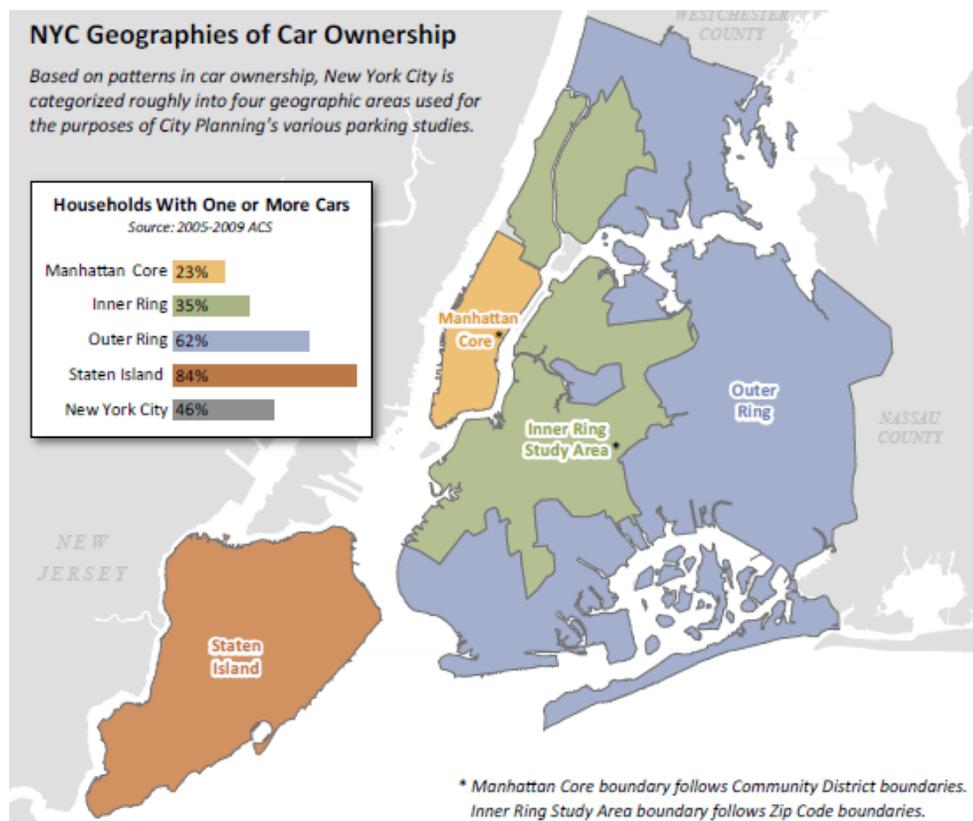
31 Department of City Planning, "Employment Patterns in New York City: Trends in a Growing Economy," July 2016, <http://www1.nyc.gov/assets/planning/download/pdf/data-maps/nyc-economy/employment-patterns-nyc.pdf>, p. 12.

32 See, e.g., City of New York, Office of the Mayor, "Mayor de Blasio and Speaker Mark-Viverito Unveil Action Plan to Grow 21st Century Industrial and Manufacturing Jobs in NYC," November 3, 2015, <http://www1.nyc.gov/office-of-the-mayor/news/780-15/mayor-de-blasio-speaker-mark-viverito-action-plan-grow-21st-century-industrial-and#0>.

Restoring the Relationship between Transit and Residential Growth

The consequence of the planning decision made in the late 1950's to jettison a permissive residential zoning framework, and enact a relatively restrictive one, was that when the city's population began to grow in the 1980's, planners faced an uphill battle to persuade communities and elected officials to create land capacity for new housing in locations appropriate for additional density. Throughout this period of planning for growth, the policy has been to concentrate new housing largely in a band of neighborhoods in the Manhattan Core, upper Manhattan, the South Bronx, Western Queens and Northern and Central Brooklyn.³³ These areas are well-served by transit and characterized in many cases by low car ownership. In a 2013 study of residential parking, the Department of City Planning characterized the neighborhoods now generally experiencing housing growth outside the Manhattan Core as the "Inner Ring," and the neighborhoods of the Bronx, Brooklyn and Queens more distant from the core the "Outer Ring."³⁴ Figure 5 shows these geographies.

Figure 5: Manhattan Core, Inner and Outer Ring Geographies



Source: New York City Department Of City Planning, *Inner Ring Residential Parking Study*, p. 19

In 1973, the city's population was still in decline. Nonetheless the City Planning Commission, alarmed by the drop in new housing construction, adopted "infill" zoning in "predominantly built-up" areas zoned R4 and R5.³⁵ This increased residential densities in many areas in the northeast and east Bronx, southern Brooklyn and western Queens, effectively permitting three-story multiple dwellings. This was still roughly half the density of the six-story apartment buildings prohibited in 1961. However, the affected zoning districts were mapped both near transit and in auto-dependent areas with high car ownership. This change, although favorable to housing production, could not be sustained in the face of community op-

33 For the period of 2010 to 2017, see New York City Department of City Planning, "NYC Housing Production Snapshot," <http://www1.nyc.gov/assets/planning/download/pdf/about/dcp-priorities/data-expertise/nyc-housing-production-snapshot-info-brief.pdf>.

34 New York City Department of City Planning, *Inner Ring Residential Parking Study*, December 2013, p. 19, https://www1.nyc.gov/assets/planning/download/pdf/plans-studies/inner-ring-residential-parking/inner_ring_complete.pdf.

35 CP21965A, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/19730117.pdf>.

position. The applicability of “infill” zoning was scaled back in 1987 in response to concerns, particularly in Queens, that it had dramatically altered the character of small-home areas.³⁶

Beginning in the 1980’s, more successful efforts to overturn, the zoning restrictions of 1961 began to be enacted, and zoning tools became available to permit mid-density apartment buildings on smaller lots. These changes were better focused on areas that were accessible to the subway.

The first major post-1961 zoning action to promote more traditional apartment buildings near transit was the Quality Housing zoning text amendment of 1987.³⁷ Quality Housing built upon an earlier, less successful zoning amendment that allowed 1961 bulk provisions to be waived, but only by special permit.³⁸ It also incorporated “contextual” districts created earlier in the 1980’s to ensure that zoning better matched traditional streetscapes, mainly in Manhattan. Quality Housing rewrote the as-of-right bulk rules for the medium-density residential zoning districts (R6, R7 and R8) that were widely mapped in the city’s subway corridors in the Bronx, Brooklyn and Queens and in upper Manhattan. By permitting increased lot coverage and a higher floor area ratio on “wide street” (75 feet or wider) frontages, Quality Housing restored the ability to construct as-of-right squat, high-coverage apartment buildings that were similar in massing to the buildings that prevailed under the zoning prior to 1961.

Quality Housing was a necessary, but insufficient condition to revive housing construction near transit outside the high-income portions of the Manhattan core. The economy needed to strengthen, broadening the scope of feasible private investment to include new apartment buildings in broad areas of upper Manhattan, the Bronx, Brooklyn and Queens, and the City needed to begin to commit substantial capital budget resources to new construction affordable housing. These conditions began to come together after the year 2000, and for the first time since the 1960’s and early 1970’s, the city had more than 20,000 new housing permits for six years in a row, 2003 to 2008, and again in the current decade (2014, 2015 and 2017).³⁹

An additional spur to new housing construction was the decision by the Department of City Planning to begin a wide-ranging program of neighborhood rezonings. For example, in 1961 the area along Broadway in Brooklyn south of the Williamsburg Bridge was zoned M1-1, a low-density manufacturing zone prohibiting residences, with a high parking requirement for new buildings. It bore little relation to the local context which included remnants of what had once been downtown Williamsburg, before the bridge, including a landmarked bank building and a well-known restaurant. The neighborhood was within walking distance of the Marcy Avenue station on the Broadway elevated line. In 1998, the area was rezoned to C4-3, equivalent to the R6 district for residential buildings.⁴⁰ The rezoning led to the construction of several residential buildings and the conversion of a large existing industrial loft building to residential.

Also in 1998, the city rezoned Downtown Flushing, In Queens. As in the Williamsburg Bridge neighborhood, a large area west of Main Street, within walking distance of the Main Street station on the Flushing subway line, had been zoned M1-1. The rezoning made a large portion of this area C4-2, also equivalent to R6 for residential buildings. The central downtown area was rezoned from C4-2 to C4-3, keeping the residential density constant but lowering the parking requirement for non-residential uses.⁴¹ The Downtown Flushing rezoning coincided with an influx of immigrants that greatly increased the demand for housing and as a result, touched off widespread development.

With the success of these rezonings, the Department of City Planning began to increase the scope and ambition of its rezoning proposals. In 2001, Long Island City was rezoned. Prior to the rezoning, the core area of Long Island City, near Queens Plaza, accessible to multiple subway lines, was zoned with a combination of 2 and 5 FAR manufacturing zones, prohibiting residential use. The rezoning increased densities and allowed residential use.⁴² By 2018 the rezoning had transformed the Long Island City core into a forest of high-rise, mainly residential buildings (Figure 6).

36 N880172ZRY, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/880172.pdf>.

37 N870197(A) ZRY and N 870385(A) ZRY, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/870385a.pdf>.

38 CP-23042, January 28, 1976, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/CP23042.pdf>.

39 New York City Rent Guidelines Board, 2018 Housing Supply Report, May 24, 2018, p. 16, <https://www1.nyc.gov/assets/rentguidelinesboard/pdf/18HSR.pdf>.

40 C 980077 ZMK, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/980077.pdf>.

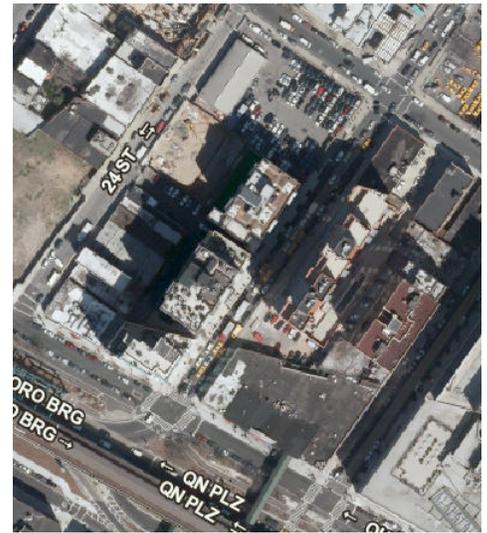
41 C 960566 ZMQ, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/960566.pdf>.

42 C 000406 (A) ZMQ, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/000406a.pdf>.

Figure 6: Residential Growth in Queens Plaza North Area, Long Island City, 1996 and 2012



1996



2012

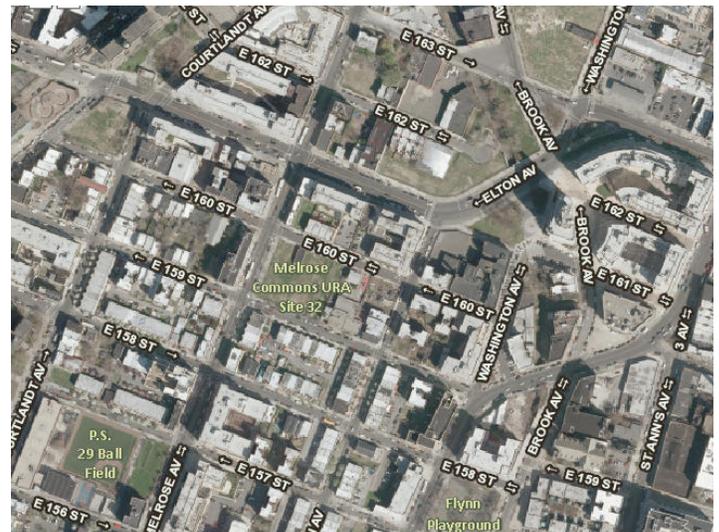
Source: <http://maps.nyc.gov/doitt/nycitymap/>

The Bloomberg mayoral administration followed with additional rezonings that were profoundly consequential for transit-oriented housing growth in Brooklyn and Queens. These included Downtown Brooklyn in 2004⁴³; Greenpoint-Williamsburg in 2005⁴⁴ and Astoria in 2010.⁴⁵

Figure 7: Melrose Commons, 1996 and 2012



1996



2012

Source: <http://maps.nyc.gov/doitt/nycitymap/>

43 C 040171 ZMK, <http://www.l.nyc.gov/assets/planning/download/pdf/about/cpc/040171.pdf>.

44 C 050111(A) ZMK, <http://www.l.nyc.gov/assets/planning/download/pdf/about/cpc/050111a.pdf>.

45 C 100199 ZMQ, <http://www.l.nyc.gov/assets/planning/download/pdf/about/cpc/100199.pdf>.

In the 1980's the South Bronx had substantial zoned capacity for residential growth, after the large housing losses in the 1970's. Additionally, the city acted to update the zoning map in the areas of greatest loss. These rezonings supported publicly-assisted affordable housing construction. The rezonings included Melrose Commons in 1994 (Figure 7)⁴⁶, Morisania in 2003⁴⁷, and Third Avenue/Tremont in 2010.⁴⁸

In the post-fiscal crisis period the MTA again began to open new subway stations in areas with the capacity to accommodate residential growth. For new transit to support population growth a specific decision had to be made to update the zoning to make it happen. For example, the Archer Avenue subway line opened in 1988⁴⁹ in an area mostly zoned for low-density housing and industry. Zoning densities were only increased in the vicinity of the new Jamaica-Van Wyck station in 2005⁵⁰ and around the two new Downtown Jamaica stations, Sutphin Blvd. and Parsons-Archer, in 2007.⁵¹

The 21st Street-Queensbridge station opened in 1989⁵² directly adjacent to the NYCHA Queensbridge Houses. The blocks to the east of 21st Street were, and remain as of mid-2018 medium-density manufacturing zones. Farther to the east, rezonings to permit new residential uses occurred in the Queens Plaza North area in 2001⁵³ and in Dutch Kills in 2008.⁵⁴

Only with the extension of the Flushing line (7 train) to 34th Street-Hudson Yards, opened in 2015⁵⁵, were a rezoning (approved in 2005)⁵⁶ and a subway extension part of a coordinated plan. The two had a common environmental review⁵⁷ and the revenues from the real estate development resulting from the rezoning, especially a very high-density commercial core, enabled the city to finance the subway.⁵⁸ The Hudson Yards subway station also serves the northern area of the West Chelsea-High Line rezoning⁵⁹, also approved in 2005, and also an area of substantial residential growth.

In contrast to these wide-ranging rezonings that increased residential densities, zoning in most of Staten Island, as well as much of the "Outer Ring" became substantially more restrictive, particularly in the 2002-13 Bloomberg years. The rezonings protected the character of low-density neighborhoods and limited growth in areas of relatively high car ownership.⁶⁰

The Bloomberg administration articulated a continued strategy of transit-oriented growth in its PlaNYC 2030 report in 2007.⁶¹ There is notable consistency between the Manhattan Core and Inner Ring geographies depicted in Figure 5, the high-growth areas in the map of a "Potential Population Growth Scenario, 2010 to 2030" from PlaNYC 2030 and the Department of City Planning's recently published map of "Completed Housing Units in New Buildings 2010-2017, by Neighborhood." These maps are shown below in Figure 8.

46 C 940227 ZMX, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/940227.pdf>.

47 C 030333 ZMX, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/030333.pdf>.

48 C 100407 ZMX, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/100407.pdf>.

49 Kirk Johnson, "Big Changes for Subways are to Begin," *The New York Times*, December 9, 1988, <https://www.nytimes.com/1988/12/09/nyregion/big-changes-for-subways-are-to-begin.html>.

50 C 050153 ZMQ, <https://www1.nyc.gov/assets/planning/download/pdf/about/cpc/050153.pdf>.

51 C 070314 (A) ZMQ, <https://www1.nyc.gov/assets/planning/download/pdf/about/cpc/070314a.pdf>.

52 MTA, "63 St Subway Extension Opened 25 Years Ago this Week," October 31st, 2014, <http://www.mta.info/news/2014/10/31/63-st-subway-extension-opened-25-years-ago-week>.

53 C 000406 (A) ZMQ, op. cit.

54 C 080429 ZMQ, <https://www1.nyc.gov/assets/planning/download/pdf/about/cpc/080428.pdf>.

55 MTA, "New 34 St.-Hudson Yards 7 Station Opens," http://web.mta.info/capital/no7_alt.html.

56 N 040500(A) ZRM, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/040500a.pdf>.

57 *No. 7 Subway Extension - Hudson Yards Rezoning and Development Program Final Generic Environmental Impact Statement*, <https://www1.nyc.gov/assets/planning/download/pdf/plans/hudson-yards/hyards.pdf>.

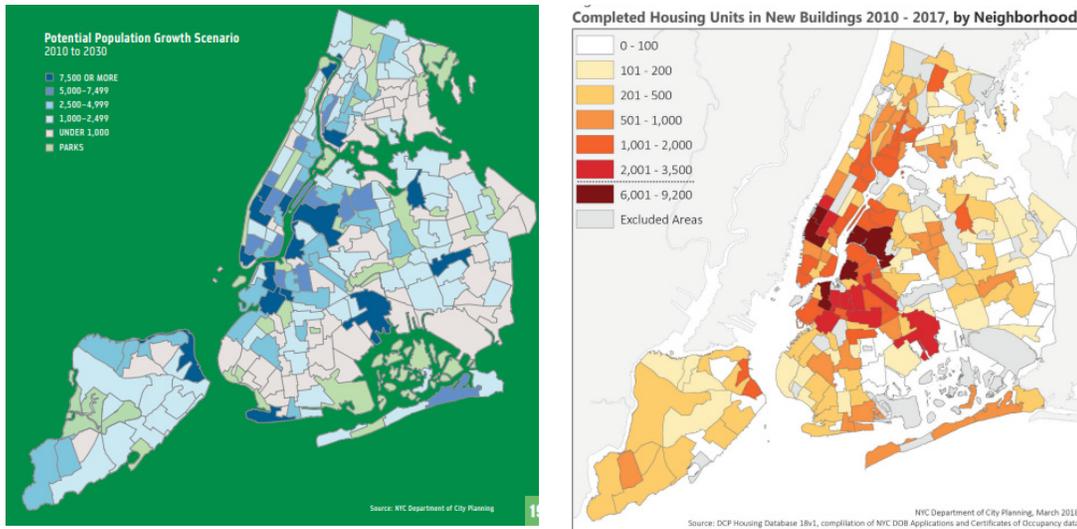
58 Lincoln Institute of Land Policy, "Innovative Financing at New York's Hudson Yards," March 22, 2017, <https://www.lincolnst.edu/es/news/lincoln-house-blog/innovative-financing-new-yorks-hudson-yards>.

59 N 050161 (A) ZRM, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/050161a.pdf>.

60 Sarah Laskow, "The quiet, massive rezoning of New York," *Politico*, February 24, 2014, <https://www.politico.com/states/new-york/city-hall/story/2014/02/the-quiet-massive-rezoning-of-new-york-078398>.

61 *PlaNYC: A Greener, Greater New York*, http://www.nyc.gov/html/planyc/downloads/pdf/publications/full_report_2007.pdf.

Figure 8: Two Maps of Transit-Oriented Growth



Source: City of New York, *PlaNYC: A Greener, Greater New York*, p. 19; New York City Department of City Planning, NYC Housing Production Snapshot, p. 1

Consequences of Transit-Oriented Growth Policies

If the 1961 zoning did much to sever the relationship between the subway system and housing growth, the zoning changes that began in 1987 with Quality Housing did much to restore it. In the R6, R7 and R8 districts, widely mapped near subway stations outside the Manhattan core, the construction of apartment buildings at the nominal maximum floor area ratio no longer depends, as it did after 1961, on the assemblage of large sites able to provide the required open space. This alone would have greatly increased potential housing production. In addition, floor area ratios were increased for development sites fronting wide streets, and widespread changes to the zoning map occurred, which in part corrected for both the excessive mapping of manufacturing zones prohibiting new housing, and for the mapping of low-density residence districts along major transit corridors that occurred in 1961. Finally, the city committed billions of dollars to subsidize new construction affordable housing.

The resulting levels of new housing construction would be impressive were New York City not already so large. Even small percentage changes in population over a decade require the number of housing units to increase by a number representing the entire housing stock of a mid-sized American city. From 2000 to 2009 the city granted new certificates of occupancy for 195,787 housing units.⁶² Total housing units, according to the U.S. Census, increased by 170,150.⁶³ While the two figures are not directly comparable, they are consistent, since the net change in housing units from one Census to the next should be smaller than the new construction total due to demolitions and conversions of housing units existing as of the beginning of the census decade. By the Department of City Planning's calculation, adjusting for 2010 Census undercount of occupied housing units, this housing unit change supported a population increase from 8,008,278 in 2000

62 Rent Guidelines Board, op. cit., p. 19

63 New York City Department of City Planning, http://www1.nyc.gov/assets/planning/download/pdf/data-maps/nyc-population/census2010/tohousing_vacant_2000-2010nyc.pdf.

to 8,242,624 in 2010⁶⁴, about 234,000 or 2.9 percent. This is about the estimated population of Fremont, California, the 96th largest American city in 2017.⁶⁵

From 2010 through 2017 the city granted certificates of occupancy for 135,476 housing units.⁶⁶ There were, as of the end of 2017, an unusually large number of units that had been issued permits but not completed – 79,000⁶⁷ – and most of these units will likely be completed before 2020 to qualify for expiring tax benefits. Thus the number of new housing units completed in this decade will likely be similar, about 200,000, to the number in the previous decade.

The Census Bureau's population estimate for New York City as of July 1, 2017 is 8,622,698.⁶⁸ This represents an increase of about 380,000 over the adjusted 2010 population, or about the estimated population of Bakersfield, California, the 53rd largest American city. The Census Bureau's population estimates have not been highly accurate in predicting Census counts in the past.⁶⁹ Whether the city will have, as currently estimated, a much larger population gain in the 2020 Census count than in the previous decade, on a similar housing unit increment, depends on subtle changes in average household size that are difficult to predict.

New York City and Regional Growth

Underlying demographic trends and New York City's strong economy propel population growth. The city's Department of City Planning undertook in recent decades two population projection exercises. The first, undertaken in connection with the drafting of PlaNYC 2030 in the mid-2000s, projected that the city's population would exceed nine million by 2030.⁷⁰ The second, scaling back this prediction in light of the effects of the post-2008 economic slowdown, pushed off the expected attainment of the nine million threshold to 2040.⁷¹

It's easier to forecast the direction of change in the future, than the level. With the city's fast growth in the 2010's, perhaps the first projection was not so far off after all. It is in any event probable that the city will pass nine million in the next two decades.

Why can one be so confident of this? The city's population is projected forward by modeling the demographic components of population change – natural increase (births minus deaths) and net migration. Natural increase is positive for the city, with an excess of births over deaths of 463,000 in the 2010-17 period.⁷² The department expects that natural increase will remain consistently very large and positive over the period to 2040.⁷³ It would seem difficult to conceive of circumstances in which this would not be the case, short of war or economic depression which might cause prospective parents to postpone childbearing.

64 New York City Department of City Planning, "The Census Challenge: The Final Statement," <http://www1.nyc.gov/site/planning/data-maps/nyc-population/census-2010.page>.

65 US Bureau of the Census, "Annual Estimates of the Resident Population for Incorporated Places of 50,000 or More, Ranked by July 1, 2017 Population: April 1, 2010 to July 1, 2017," <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>

66 Rent Guidelines Board, *op.cit.*, p. 19

67 Department of City Planning, "NYC Housing Production Snapshot," p. 2.

68 "Annual Estimates of the Resident Population for Incorporated Places of 50,000 or More, Ranked by July 1, 2017 Population: April 1, 2010 to July 1, 2017," *op.cit.*

69 Department of City Planning, "The Census Challenge: The Final Statement."

70 *PlaNYC 2030*, *op.cit.*, pp. 4-6.

71 New York City Department of City Planning, *New York City Population Projections by Age/Sex & Borough, 2010-2040*, December 2013, p. 1, http://www1.nyc.gov/assets/planning/download/pdf/data-maps/nyc-population/projections_briefing_booklet_2010_2040.pdf.

72 New York City Department of City Planning, "Current Estimates of New York City's Population for July 2017," <http://www1.nyc.gov/site/planning/data-maps/nyc-population/current-future-populations.page>.

73 *New York City Population Projections by Age/Sex & Borough, 2010-2040*, *op.cit.*, p. 7

Thus net population increase depends on net migration. In New York City, international migration (immigration) is positive, while domestic migration, to and from the fifty states, the District of Columbia and U.S. territories, is always negative. In the current decade these have just about offset, resulting in a small net outflow from the city of just 15,000 in the decade.⁷⁴

Unlike natural increase, net migration is hard to forecast, since it is influenced by political factors, particularly immigration policy, as well as cyclical economic conditions in which workers move to growing cities and away from declining cities. In 2013, the department projected negative net migration in the range of 400,000 per decade in the 2010-2040 period, far more than has been experienced this decade.⁷⁵ If current trends in net migration are sustained, the city will reach nine million much earlier than 2040. To delay the achievement of the threshold past 2040, the city's economy would likely need to decline sharply enough to curtail employment growth, so that the city would cease to beckon in-migrants as a place of economic opportunity. It is improbable that any mayor would consciously pursue such a policy, which would also curtail tax revenue growth and make the city's public services difficult to sustain. While the city's economy could undergo structural changes that make it less productive and attractive to workers, current trends run in the opposite, positive direction, with the New York region among the nation's most productive.⁷⁶

When the engine of growth finally pushes the population past nine million, it will not rest. The population will keep growing.

This long-term population growth trend has effectively repudiated the planning framework of the 1958 *Zoning New York City* report, which created a de facto population cap for the city (as we have seen, smaller than the 11 million stated, due to long-term declines in average household size well beyond those forecasted). The city's planners envisioned a future in which New York City's population would stabilize. *Zoning New York City* cites as the basis for its population forecasts a 1957 Regional Plan Association study, *People, Jobs and Land, 1955-75*.⁷⁷ This study examines birth and death rates and migration patterns to project a regional population of 18.1 to 20.9 million persons in 1975.

*After a further analysis of the population-supporting potential of the region's land areas, industrial economy, water resources and other factors we have judged that the region's likely population range will be between 18.6 and 19.6 million persons in 1975. The midpoint of this range, 19.1 million, has been selected as the most probable 1975 population level.*⁷⁸

To allocate its projected population, the RPA report makes a detailed examination of land development in the counties of the New York region up to its base year of 1954 and estimates the remaining capacity to absorb new development in each county. These data are then used as a basis for forecasting future growth.

Historically the region's major growth pattern has been continuously outward from the center...The pattern of past land development clearly reflects the factor of travel to and from the core...Another aspect of the geographic pattern of population distribution is the comparative degree of maturity of the developed areas...

*The combination of accessibility and maturity suggests the existence of three major homogeneous areas or regional rings significant to the distribution of future population. The first is the core area, where a degree of stability probably is to be expected. The second is the inner ring of counties. Here an approaching land saturation may be anticipated by the year 1975. The third is the outer ring, the area which will continue to have ample space for development beyond 1975. The outer ring... will receive a large population "overspill" as the inner ring fills up.*⁷⁹

74 "Current Estimates of New York City's Population for July 2017," op. cit. The Census Bureau's calculation of net migration does not consider undercounting in the 2010 Census.

75 *New York City Department of City Planning, New York City Population Projections by Age/Sex & Borough, 2010-2040*, December 2013, p. 17, http://www1.nyc.gov/assets/planning/download/pdf/data-maps/nyc-population/projections_report_2010_2040.pdf.

76 Joseph Parilla and Mark Muro, "Understanding U.S. Productivity Trends from the Bottom-Up," March 15, 2017, <https://www.brookings.edu/research/understanding-us-productivity-trends-from-the-bottom-up/>.

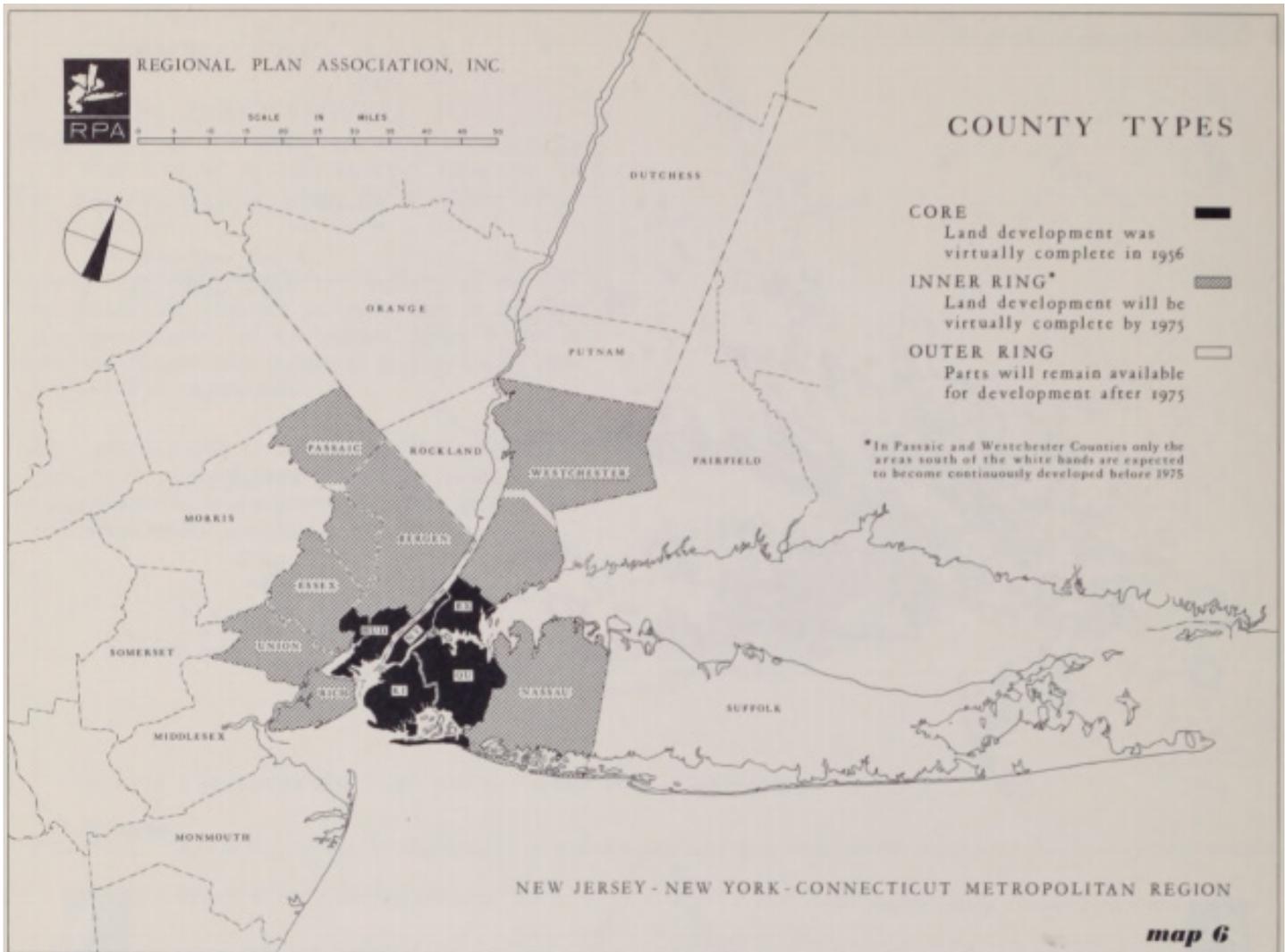
77 Regional Plan Association, *People, Jobs and Land 1955-1975, in the New Jersey-New York-Connecticut Metropolitan Region*, cited in *Zoning New York City*, op. cit., p. 6.

78 Regional Plan Association, *People, Jobs and Land 1955-1975, in the New Jersey-New York-Connecticut Metropolitan Region*, p. 21

79 *Ibid.*, pp. 27, 31

Figure 9 shows the RPA report's "Major Rings of the Metropolitan Region":

Figure 9: Major Rings of the Metropolitan Region (RPA, 1957)



Source: Regional Plan Association, *People, Jobs and Land, 1955-1975*, in the *New York-New Jersey-Connecticut Metropolitan Region*, p. 12

RPA's detailed 1957 projection of regional population growth by 1975 was not far off the mark. By 1980, the region, somewhat more broadly defined (31 rather than 22 counties) had 19.2 million people, compared with RPA's projection of 19.1 million in 1975 (Table 2). The expected split between the city and the region was off; at that time, the city was at its low point in population, at 7.1 million. The suburbs had grown faster than projected, and growth had a greater geographic spread, with outlying counties such as Suffolk in New York and Mercer and Ocean in New Jersey playing important roles.

Table 2: Total Population by County
New York City & New York Metropolitan 31-County Region, 1950 - 2050 and RPA, 1957
Projection of 1975 Population, 22-County Region

	RPA 1975		Zoning New York City		Adjusted NYC	Estimates	From NYMTC
	1950	Projection	1975 (Proj.)	1980	2010	2017	2050
New York Metropolitan Region	15,146,950	19,100,000		19,190,781	22,282,010	22,994,151	26,205,750
New York City	7,891,957	8,400,000	8,340,000	7,071,639	8,242,624	8,622,698	9,161,020
Rest of Region	7,254,993	10,700,000		12,119,142	14,039,386	14,371,453	17,044,730
New York	9,998,638	12,475,000		11,608,745	13,366,357	13,826,296	15,416,553
Bronx, NY	1,451,277	1,500,000	1,475,000	1,168,972	1,385,108	1,471,160	1,619,344
Brooklyn, NY	2,738,175	2,675,000	2,625,000	2,230,936	2,552,911	2,648,771	2,898,080
Manhattan, NY	1,960,101	1,825,000	1,725,000	1,428,285	1,585,873	1,664,727	1,701,598
Queens, NY	1,550,849	1,900,000	2,200,000	1,891,325	2,250,002	2,358,582	2,438,647
Staten Island, NY	191,555	500,000	315,000	352,121	468,730	479,458	503,351
Nassau, NY	672,765	1,400,000		1,321,582	1,339,532	1,369,514	1,627,374
Suffolk, NY	276,129	845,000		1,284,231	1,493,350	1,492,953	1,731,185
Dutchess, NY	136,781	270,000		245,055	297,488	295,568	351,790
Orange, NY	152,255	260,000		259,603	372,813	382,226	545,140
Putnam, NY	20,307	50,000		77,193	99,710	99,323	111,425
Rockland, NY	89,276	250,000		259,530	311,687	328,868	409,244
Sullivan, NY	40,731			65,155	77,547	75,485	91,596
Ulster, NY	92,621			158,158	182,493	179,417	197,651
Westchester, NY	625,816	1,000,000		866,599	949,113	980,244	1,190,128
New Jersey	3,999,314	5,825,000		5,856,787	6,946,420	7,175,322	8,406,830
Bergen, NJ	539,139	1,100,000		845,385	905,116	948,406	1,053,154
Essex, NJ	905,949	1,100,000		851,116	783,969	808,285	938,104
Hudson, NJ	647,437	600,000		556,972	634,266	691,643	845,787
Hunterdon, NJ	42,736			87,361	127,351	125,059	136,100
Mercer, NJ	229,781			307,863	367,511	374,733	484,790
Middlesex, NJ	264,872	700,000		595,893	809,858	842,798	993,675
Monmouth, NJ	225,327	600,000		503,173	630,380	626,351	678,320
Morris, NJ	164,371	400,000		407,630	492,276	499,693	531,824
Ocean, NJ	56,622			346,038	576,567	597,943	785,549
Passaic, NJ	337,093	460,000		447,585	501,226	512,607	630,541
Somerset, NJ	99,052	225,000		203,129	323,444	335,432	376,033
Sussex, NJ	34,423			116,119	149,265	141,682	158,637
Union, NJ	398,138	640,000		504,094	536,499	563,892	675,650
Warren, NJ	54,374			84,429	108,692	106,798	118,669
Connecticut	1,148,998	800,000		1,725,249	1,969,233	1,992,533	2,382,367
Fairfield, CT	504,342	800,000		807,143	916,829	949,921	1,123,422
Litchfield, CT	98,872			156,769	189,927	182,177	199,140
New Haven, CT	545,784			761,337	862,477	860,435	1,059,804

Sources: U. S. Census, 1950, 1980, 2010; 2010 Census adjustment by New York City Department of City Planning, <http://www1.nyc.gov/site/planning/data-maps/nyc-population/census-2010.page>; Regional Plan Association, "People, Jobs and Land, 1955-1975, in the New York-New Jersey-Connecticut Metropolitan Region," p. 3; Voorhees, Walker, Smith and Smith, Zoning New York City, p. 5; U.S. Census Bureau, County Population Totals and Components of Change: 2010-2017, <https://www.census.gov/data/datasets/2017/demo/popest/counties-total.html>; New York Metropolitan Transportation Council, 2050 Socioeconomic and Demographic Forecasts (population), <https://www.nymtc.org/Portals/0/Reso%202015-2%20Att%201;%202050%20SED%20Forecast.pdf>.

Since 1980 the city has recovered and by 2017 exceeded the peak populations (8.4 and 8.34 million, respectively) anticipated by RPA and the city's planners in 1957. The region continued to gain population as well, and most suburban counties are near or beyond the 1957 RPA population projection.

Population forecasts adopted by the New York Metropolitan Transportation Planning Council (NYMTC), the federally-supported transportation planning agency for an area comprising New York City and five nearby suburban counties, anticipate that New York City will gain another half million people by 2050 over its estimated 2017 population, while the rest of the region will gain just under three million. This would represent a reversal of the trend from 2010 to 2017, in which New York City's population growth was much faster (4.6 percent) than the growth in the rest of the region (2.4 percent).

It is unclear what might slow New York City's growth while speeding up the growth of the region. New York City is the region's job engine, and the number of commuters from the suburbs into the city is constrained by the capacity of the commuter transportation system. Of the portions of three states comprising New York City's suburbs, only New Jersey has been open to significant new housing construction, and its commuters are particularly constrained in terms of transit access to the city.⁸⁰ While the East Side Access project to bring Long Island Railroad service to Grand Central Terminal, and the follow-up Penn Station Access project to bring Metro North service over the Amtrak Northeast Corridor Line into Penn Station, would create additional transit capacity from the city's northern and eastern suburbs, these areas are not experiencing high levels of growth. The NYMTC forecasts imply significant changes in land use policies in these areas, which are not now on the horizon. Given the large number of regulatory jurisdictions that would need to change their policies, it is likely that such changes could be implemented only if they were facilitated at the state level.

Effectively the trend that was well understood at the time of the 1961 zoning – that the suburbs were drawing population out of the city, creating an opportunity to redistribute the city's population out of the older, denser neighborhoods to the fringes without the need to accommodate overall population growth – has played out. The suburbs are no longer a relief valve for the city; quite the opposite has occurred. The city now acts as a relief valve for the slow-growing suburbs. Historically, the city has had a net outflow of workers in higher earnings brackets. This has become markedly less pronounced in the current decade.⁸¹ By remaining in the city rather than suburbanizing, higher-income households alleviate housing price and rent increases in the supply-constrained suburbs but exacerbate them within the city, itself supply-constrained by zoning.

Policies for the Future: Coordinating Housing with Transit

No good estimate exists of the current capacity under zoning for New York City's population to grow. The zoning has become far more complex since 1961 and many new protections against redevelopment exist, including contextual zoning, rent regulation, coop and condominium ownership and designated landmarks and historic districts. However, we can infer from the high price of land that is available for redevelopment that zoning represents a significant constraint on the ability of the private real estate industry to supply the amount of housing that is needed. A 2015 consultant's report for the New York City Housing Development Corporation stated:

80 These issues are discussed in Eric Kober, *Transportation Challenges of Unbalanced Regional Growth*, Rudin Center for Transportation Policy and Management, 2018, https://wagner.nyu.edu/files/faculty/publications/TranspoChallenges_RegionalGrowth.pdf.

81 New York City Department of City Planning, *Info Brief: Migration to and From NYC*, p. 2, <http://www1.nyc.gov/assets/planning/download/pdf/about/dcp-priorities/data-expertise/migration-info-brief.pdf?r=1>.

In locations around the City, particularly in Manhattan, recent land sales prices are higher than ever...Experts consulted for this report, including developers, lenders, brokers, and appraisers cited scarcity of developable sites, the low cost of capital, and strong demand for the finished product as factors contributing to land prices.⁸²

The issue of constrained zoning driving up land prices was flagged in the 2007 PlaNYC report:

As potential building sites have become scarcer across the city, the land price component of housing costs has risen. And the supply continues to dwindle, helping to drive land prices to new levels...

But one of the biggest pressures on housing prices has been the diminishing cushion between zoned capacity—the number of units that theoretically could be built according to the zoning code—and built units. As the number of housing units continues to rise, developers have to compete for a shrinking supply of vacant or under-built land.

This means developers pay a “scarcity premium” for the remaining sites, and that premium feeds into the price of new housing. The competition also empowers land owners to hold out for the highest possible price without worrying that developers will be able to find easy, comparable alternatives.⁸³

PlaNYC 2030 estimated that, in 2007, zoning capacity existed for an additional 400,000 housing units.⁸⁴ Zoning has not remained constant in the intervening period, and capacity has likely grown over the 2007 baseline; but the city has also granted permits to about 200,000 new housing units between 2008 and 2017.⁸⁵ It is unlikely, if the city is to gain approximately 200,000 new housing units a decade, that the current zoning provides for much more than about two decades’ additional growth, and that at ever-increasing land costs.

What can be done? PlaNYC 2030 stated that

We will use upcoming rezonings to direct growth toward areas with strong transit access. Central to the City’s rezoning strategy is identifying primary avenues and boulevards near transportation hubs whose width and access to transit enable them to support additional density. With easy access to multiple transportation options, these sites can accommodate increased residential development without straining the existing transportation infrastructure.⁸⁶

The accompanying map of “areas of opportunity” for future transit-oriented rezonings has formed the basis for much of the rezoning activity that the Department of City Planning has pursued since. The map is shown in Figure 10.

82 BAE Urban Economics, Inc., et. al., *Market and Financial Study: NYC Mandatory Inclusionary Housing*, September 2015, p. 6., https://www1.nyc.gov/assets/planning/download/pdf/plans-studies/mih/bae_report_092015.pdf.

83 *PlaNYC: A Greener, Greater New York*, op. cit., p. 18.

84 Ibid.

85 Kober, op. cit., p. 10.

86 *PlaNYC: A Greener, Greater New York*, op. cit., p. 21.

Figure 10: PlaNYC Report, 2007 Framework for Residential Growth



Source: City of New York, *PlaNYC: A Greener, Greater New York*, 2007, p. 20

The report also stated that “We will use transit extensions to spark growth as the subways did more than a century ago”.⁸⁷ This is a bit off in its historical reference; most of the city’s subways were less than a century old in 2007. More to the point, the statement came with specific recommendations. A regional transit financing authority, funded with matching city and state contributions, would fund a state of good repair for the MTA and numerous capacity expansions that would permit New York City subways and commuter rail to operate without capacity constraints despite growth to 2030.⁸⁸

However, the city’s 2007 congestion pricing proposal, the centerpiece of PlaNYC’s transit funding proposal, failed to be approved by the state legislature. As of June 2018, congestion pricing is again under discussion in connections with New York City Transit’s Fast Forward plan.⁸⁹ While the costs of the Fast Forward plan remain under study as of June 2018, commentators question the adequacy of congestion pricing alone as a funding source.⁹⁰ With cost increases and perhaps a more realistic evaluation of New York City Transit’s state of good repair needs, congestion pricing and city and state contributions are unlikely to fund substantial capacity expansions for the subway system, at least in the next 10-15 years.

Rezoning thus need to be justified against a background of congested and unreliable transit service, as well as uncertainty about future fixes, and this has proved challenging for planners.⁹¹ City planners need to be sensitive to the relationships between development proposals and conditions in the transit system. Past rezonings intended primarily to produce housing have not generally needed to be linked to specific transit capacity improvements. This may change in some of the city’s major growth areas in the coming decades.

87 Ibid., p. 22.

88 Ibid., pp. 94-97.

89 New York City Transit, *Fast Forward: The Plan to Modernize New York City Transit*, http://www.mta.info/sites/default/files/mtaimgs/fast_forward_the_plan_to_modernize_nyct.pdf.

90 Aaron Gordon, “The MTA’s Plan To Fix The Subway Will Cost A Fortune. Doing Nothing Will Cost Even More,” *Gothamist*, June 5, 2018, http://gothamist.com/2018/06/05/subway_fast_foward_cost.php.

91 See, e.g. Bill Parry, “Electeds object to city’s plan to move forward with planning for Sunnyside Yards development,” *Times Ledger*, May 11, 2018, https://www.timesledger.com/stories/2018/19/yardreax_2018_05_11_q.html.

Overcrowding in the Subway System

The population increases in the city, as well as strong economic growth, have resulted in large increases in the number of employed persons in the city. According to the 2000 Census, 3,277,825 New York City residents over the age of 16 were employed.⁹² By 2016, according to the American Community Survey, 4,114,375 were employed.⁹³

The increase in employment has the effect of increasing subway ridership; many New Yorkers need to use the subway to get to their jobs. Other trends have a similar effect; for example, CUNY fall enrollment increased from 195,403 in 2000 to 274,099 in 2017.⁹⁴ In 2000, the subway system had 1.38 billion riders; by 2016, 1.76 billion.⁹⁵

The growth in ridership was distributed among stations in the communities where housing growth occurred. The Third Avenue-149th St. station in the Bronx on the 2 and 5 lines – transfer point for the bus service that replaced the Third Avenue “E1”, torn down in the 1970’s – saw its fare-paying users rise from 5.8 million in 2000 to 7.6 million in 2016. Bedford Avenue in Brooklyn, on the L line at the heart of Williamsburg growth, increased from 3.8 million in 2000 to 9.7 million in 2016. At Court Square in Long Island City, Queens, annual ridership increased from 4.7 million in 2000 to 6.8 million in 2016; at Flushing-Main St., from 16.6 million in 2000 to 19.3 million in 2016.⁹⁶

However, ridership growth was not limited to communities where the housing stock had grown substantially. Changes in demography, in which a neighborhood population that had a low labor force participation rate or mostly worked locally was replaced with a population that was better-educated and more likely to work in the city’s Central Business Districts, also impacted subway usage. The Myrtle-Wyckoff station on the Brooklyn-Queens border in Bushwick, for example, increased fare-paying ridership from 3.8 million in 2000 to 6.5 million in 2016, with little new housing. Similarly, the 181st Street station on the I train in Washington Heights increased from 2.5 million in 2000 to 3.8 million in 2016.

The consequence of this run-up in subway ridership is to make planning much more difficult. No longer is it necessary only to identify rezoning opportunities proximate to the subway system; new opportunities also have to be proximate to lines that plausibly have the capacity to accommodate additional riders.

The MTA does not publish consistent and system-wide data on subway overcrowding. Overcrowding on trains is often a secondary effect of other problems, such as signal or equipment failures.⁹⁷ Nonetheless, some subway lines are chronically overcrowded at peak commuting times and others are close to this state.

A 2015 MTA presentation⁹⁸ found ten lines to be constrained both in terms of adding trains, and in adding passengers to trains at the peak load point. These were the 2, 3, 4, 5, 6 and 7 A Division (IRT) lines and the E, L, N and Q B Division (IND/BMT) lines (see Figure 11 below).

92 New York City Department of City Planning, *Socioeconomic Profile: 1990 and 2000 Census*, <http://www1.nyc.gov/assets/planning/download/pdf/data-maps/nyc-population/census2000/socionyc.pdf>.

93 New York City Department of City Planning, DP03: Selected Economic Characteristics, 2016 American Community Survey 1-year Estimates, http://www1.nyc.gov/assets/planning/download/pdf/data-maps/nyc-population/acs/econ_2016acs1yr_nyc.pdf.

94 City University of New York, “Trends in Total Enrollment: Fall 1990 - Fall 2017,” http://www.cuny.edu/irdatabook/rpts2_AY_current/ENRL_0012_ALLYR_TRND.rpt.pdf.

95 MTA, 2000 compiled by New York City Department of City Planning, 2016, http://web.mta.info/nyct/facts/ridership/ridership_sub_annual.htm.

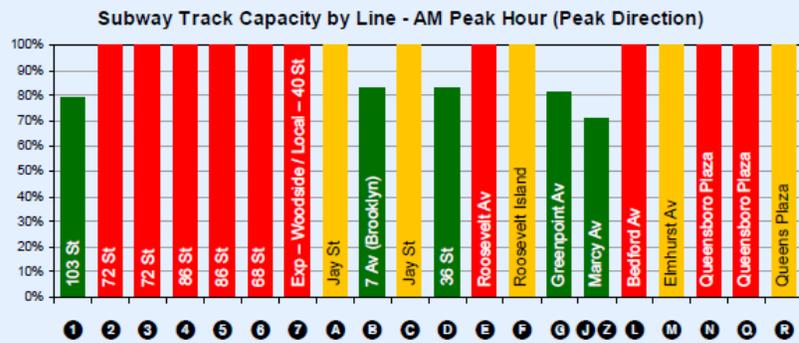
96 Ibid.

97 Sarah Maslin Nir and Brian M. Rosenthal, “‘Overcrowding’ is Not at the Root of Delays, Subway Chief Says,” *The New York Times*, February 20, 2018, <https://www.nytimes.com/2018/02/20/nyregion/subway-delays-overcrowding.html>.

98 Metropolitan Transportation Authority, “NYCT Subway Performance,” p. 5, http://web.mta.info/mta/news/books/docs/150518_SubwayPerformance.pdf.

Figure 11: MTA Slide on Subway Overcrowding

15 out of 20 lines are at peak track capacity, including ten lines already at track *and* train (passenger carrying) capacity



- Capacity measured at the **Peak Load Point**, where trains carry the heaviest load in the peak hour
 - Peak Load Point for busiest direction on each line shown above
- Colors indicate whether additional capacity is available
 - **Red** – constrained in both track and train capacity (10 lines)
 - **Yellow** – passenger capacity on existing trains but no track capacity to run more trains (5 lines)
 - **Green** – both track and train capacity available (5 lines)

Source: Metropolitan Transportation Authority, “NYCT Subway Performance,” 2015

5

A 2018 analysis by the transit blogger and commentator Alon Levy⁹⁹ combined Hub Bound Travel data from the New York Metropolitan Transportation Council¹⁰⁰ with train capacity information from the MTA. He identified a smaller number of overcrowded lines, including the 2, 3, 4 and 5 from the north into Midtown, the L, and the E (although he notes that the M train, sharing the same tunnel from Queens to Manhattan as the E, is not overcrowded). He notes that since the data were collected in 2016, the 4 and 5 have obtained relief from the Q, which now runs over the Second Avenue line. The 7 train peaks in terms of inbound passenger load before arriving at Queensboro Plaza, where more passengers exit the train on average than enter, creating additional capacity at the following stops in Long Island City.

In the fall of 2017, to reduce crowding on the E line, the MTA removed seats on some trains. The action was described as a pilot that would eventually be extended to the L and the 42nd Street Shuttle.¹⁰¹

These analyses focus attention on the 2, 3, E and L lines as the most chronically overcrowded. On the Upper West Side, however, major growth has been south of 72nd Street¹⁰², where subway riders can use local services that are not overcrowded. The E and L, in contrast, serve areas of dense development in western Queens and northern Brooklyn.

In the spring of 2018 New York City Transit released its “Fast Forward” plan to modernize the subway system and improve bus transit. The plan emphasizes signal modernization, repair and accessibility improvements at stations, and acquisition of new and upgrading of existing subway cars. The plan notes that a modern signal system “delivers greater reliability and allows for future capacity growth,”¹⁰³ without specifying how much capacity might be gained.

The city’s subway system exists as essentially five networks accessing the Manhattan core: Upper Manhattan and the Bronx, Queens, Northern Brooklyn, Downtown Brooklyn and Staten Island. The first four are joined in the Manhattan core, with additional connections in Brooklyn and Queens via the G crosstown line and, more outlying, in Broadway

99 “The Subway in New York is not at Capacity,” <https://pedestrianobservations.com/2018/02/06/the-subway-in-new-york-is-not-at-capacity/>.

100 <https://www.nymtc.org/Data-and-Modeling/Transportation-Data-and-Statistics/Publications/Hub-Bound-Travel>.

101 Jose Martinez, “Hoping to Reduce Overcrowding, MTA Tries Removing Seats from Trains,” NY1 News, October 4, 2017, <http://www.ny1.com/nyc/all-boroughs/transit/2017/10/03/to-ease-subway-overcrowding-mta-removes-seats-from-e-trains>.

102 “NYC Housing Production Snapshot”, op. cit.

103 *Fast Forward: The Plan to Modernize New York City Transit*, op. cit., p. 26.

Junction and Jamaica. The fifth is connected to the Manhattan core only by ferry. Based on the available data, the more stressed of these networks are Queens (the E, F, M, N, R, W and 7) and northern Brooklyn (the J, L, M and Z, with the M extending into Ridgewood, Queens).

A look at the Department of City Planning’s recent data brief on housing production indicates that much of the city’s recent housing production has been concentrated in areas served by these networks:

The neighborhoods that added the most new units since 2010 include Long Island City (9,150 units) [and] Williamsburg (8,200 units)...Long Island City is the neighborhood with the most extensive housing pipeline: 5,900 units in total. It is followed by Williamsburg (3,200 units), Bushwick South (3,000 units) [and] Greenpoint (3,000 units)...¹⁰⁴

Housing production alone, however, does not tell the full story of increasing pressure on available subway capacity. Demographic changes, in which generally younger and well-educated newcomers are replacing older and less-educated populations, are affecting the residents of existing housing, as well as new housing. These changes are increasing the likelihood that residents will be professional, technical or managerial workers who commute by subway to jobs in the city’s Central Business Districts. Fewer households have children, and more have more than one employed adult. As shown in Table 3, comparing American Community Survey average estimates for five community districts in northern Brooklyn and western Queens, the total increase from the 2008-10 period to the 2012-16 period in persons 25 years and older with

Table 3

College Graduates (Age 25 and Older) by Community District, 2010 and 2016

	2008-10	2012-16	Change	Percent
BK 1 (Greenpoint/Williamsburg)	33,871	50,711	16,840	50%
BK 4 (Bushwick)	11,889	20,915	9,026	76%
Q 1 (Astoria)	46,014	57,910	11,896	26%
Q 2 (Long Island City)	31,036	39,823	8,787	28%
Q 5 (Ridgewood)	23,894	31,991	8,097	34%
Total	146,704	201,350	54,646	37%

Family Households With Own Children Under 18 Years by Community District, 2010 and 2016

	2008-10	2012-16	Change	Percent
BK 1 (Greenpoint/Williamsburg)	13,518	13,146	-372	-3%
BK 4 (Bushwick)	15,866	12,832	-3,034	-19%
Q 1 (Astoria)	14,024	12,511	-1,513	-11%
Q 2 (Long Island City)	12,163	12,076	-87	-1%
Q 5 (Ridgewood)	19,133	17,762	-1,371	-7%
Total	74,704	68,327	-6,377	-9%

Employed Population 16 Years and Older by Community District, 2010 and 2016

	2008-10	2012-16	Change	Percent
BK 1 (Greenpoint/Williamsburg)	68,013	82,636	14,623	22%
BK 4 (Bushwick)	56,019	66,122	10,103	18%
Q 1 (Astoria)	89,779	97,706	7,927	9%
Q 2 (Long Island City)	69,047	75,817	6,770	10%
Q 5 (Ridgewood)	79,507	86,115	6,608	8%
Total	362,365	408,396	46,031	13%

Source: U.S. Census Bureau, American Community Survey, compiled by New York City Department of City Planning

at least a bachelor's degree or higher was 37 percent. Family households with children declined by nine percent, with the largest decreases in Bushwick, Astoria and Ridgewood. Employed persons increased by 13 percent.

In western Queens and northern Brooklyn, transit capacity remains available on some lines, but past and future commuter growth calls into question the capacity to accommodate large-scale rezoning proposals without transit capacity improvements. Some incremental improvements are possible without major changes to the physical layout of the subway system. Communications-based train control – the modern signaling system whose installation is proposed to be speeded up in the *Fast Forward* plan – will make the system more reliable and better able to maintain the existing scheduled frequency of service. While the *Fast Forward* plan does not specify increases in the number of scheduled trains, it acknowledges the possibility of such growth. Such increases in service depend on the ability to reduce spacing between trains – requiring that trains open and close their doors quickly on congested platforms.

Additionally, new subway cars to be acquired by New York City Transit will have an open-gangway design, allowing for additional passengers to stand in what are now the gaps between cars.¹⁰⁵ The completion of East Side Access, the Long Island Railroad service to Grand Central Terminal, may eliminate some transfers by LIRR commuters bound for the East Side to the 7 train at Woodside, freeing up capacity.

In contrast to Queens and northern Brooklyn, the Bronx (2, 4, 5, 6, B and D trains) and Downtown Brooklyn (2, 3, 4, 5, A, B, C, D, F, N, Q, and R) are much less capacity-constrained. Pursuit of rezonings in southern Brooklyn would seem particularly promising, given the large number of lines with available capacity that pass through Downtown Brooklyn. The network has sufficient capacity and redundancy that the year-long shutdown of the Montague tunnel under the East River (R train) to repair damage caused by Hurricane Sandy in 2012¹⁰⁶ was endured without major inconvenience to transit riders. This contrasts with the far more problematic impending shutdown of the Canarsie tunnel (L train) for the same reason, with far fewer alternative service options.¹⁰⁷

The 2007 PlaNYC “Areas of Opportunity” map identified a number of potential rezonings in southern Brooklyn that have yet to be implemented. For example, the 39th Street and 60th Street corridors are low-density manufacturing zones that do not permit housing, despite having subway lines running through them. These areas are connected by commercial corridors, including New Utrecht Avenue and 13th Avenue, that are also on or near subway lines but have not been zoned for appropriate densities reflecting their transit accessibility. These areas, which are shown in Figure 10 and in close-up in Figure 12, were in neighborhoods that had between 200 and 1,000 new housing units completed between 2010 and 2017, according to the Department of City Planning’s “NYC Housing Production Snapshot”.

Rezoning “Areas of Opportunity” are not limited to manufacturing zones. In the Sheepshead Bay neighborhood in Brooklyn, served by the Brighton (Q) subway lines, major streets including Avenues U, X and Z, Gravesend Neck Road, Coney Island Avenue and Nostrand Avenue are developed with low-rise commercial buildings and zoned with low-density residence districts or C8 districts that do not allow residences at all (Figure 13). This neighborhood had 200 to 500 new housing units completed between 2010 and 2017, according to the Department of City Planning’s “NYC Housing Production Snapshot”.

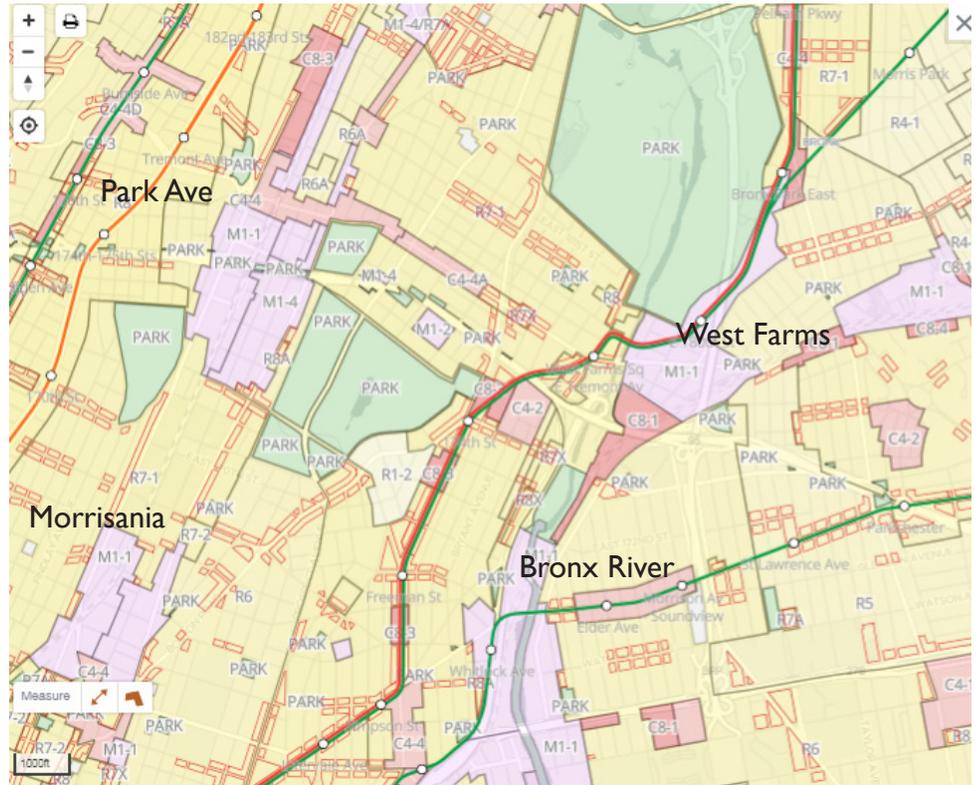
The Bronx is less constrained by land use regulations and more by the speed with which it has been able to recover from the housing losses of the 1970’s. Still, opportunities for rezonings were identified in 2007 and some remain to be grasped. For example, the Morrisania, Park Avenue, Bronx River and West Farms corridors are all low-density manufacturing zones, close to subways, that do not permit housing. These areas, shown in Figure 14, are in neighborhoods that had between 500 and 2,000 new housing units completed between 2010 and 2017, according to the Department of City Planning’s “NYC Housing Production Snapshot”.

105 Sarah Maslin Nir, “New York Set to Acquire the Next Generation of Subway Cars,” *The New York Times*, January 19th, 2018, <https://www.nytimes.com/2018/01/19/nyregion/subway-trains-kawasaki-transportation.html>.

106 Danika Fears, Michael Gartland and Rebecca Harshbarger, “R train reopens after year-long closure,” *The New York Post*, September 15, 2014, <https://nypost.com/2014/09/15/r-train-tunnel-to-reopen-after-year-long-closure/>.

107 Aaron Gordon, “The L Train Shutdown Scenario Just Got a Whole Lot Worse,” *Village Voice*, May 17, 2018, <https://www.villagevoice.com/2018/05/17/the-l-train-shutdown-scenario-just-got-a-whole-lot-worse/>.

**Figure 14: Rezoning
“Areas of Opportunity”
in the Bronx**



Source: New York City Department of City Planning, ZoLa: New York City's Zoning and Land Use Map, <https://zola.planning.nyc.gov>

These represent a few of the neighborhoods, outside the areas of the heaviest recent growth, that can be studied by the Department of City Planning for rezonings to enable New York City to accommodate its growing population without significantly expanding the capacity of its subway system. Staten Island is a special case for transit-based growth, since its single subway line is not connected to the rest of the system and most commuters to Manhattan rely on the ferry. Most ferry riders either drive to the ferry or take buses through congested local streets. The PlaNYC areas of opportunity map suggested rezonings near Staten Island Rapid Transit stations to increase train ridership but also relied on a major transit improvement – a dedicated busway along the former North Shore railroad right-of-way and an enhanced on-street bus rapid transit route along South Avenue, with access ramps to allow other local bus services faster access to the St. George ferry terminal.¹⁰⁸ The capital cost of this improvement was estimated at \$352 million in 2012 dollars, and would undoubtedly be higher today.

The busway and bus rapid transit proposals would make the ferry terminal more accessible by transit and thereby facilitate implementation of the residential rezoning recommendations of the New York City Economic Development Corporation and Department of City Planning's Staten Island North Shore¹⁰⁹ and West Shore¹¹⁰ studies. The North Shore plan was supplemented with Brownfield Opportunity Area studies of Port Richmond¹¹¹ and West Brighton.¹¹² These areas remain hindered by obsolete manufacturing and low-density residential zoning and poor transit access.

108 Systra Engineering, Inc. et. al., *NYCT North Shore Alternatives Analysis*, August 2012, pp. 55-62.

109 *North Shore 2030*, December 2011, http://www1.nyc.gov/assets/planning/download/pdf/plans-studies/north-shore/north_shore2030.pdf.

110 *Working West Shore 2030*, June 2011, <http://www1.nyc.gov/assets/planning/download/pdf/plans-studies/west-shore/wsfinalreport.pdf>.

111 Northfield Community LDC, New York City Department of City Planning and New York State Department of State, *Port Richmond Brownfield Opportunity Area Draft Recommendations*, June 2013, http://www1.nyc.gov/assets/planning/download/pdf/plans-studies/port-richmond-boa/presentation_0613.pdf.

112 West Brighton Local Community Development Corporation, New York City Department of City Planning and New York State Department of State, *West Brighton Brownfield Opportunity Area (BOA) Recommendations*, April 2016, <http://www1.nyc.gov/assets/planning/download/pdf/plans-studies/west-brighton-boa/presentation.pdf?r=1>.

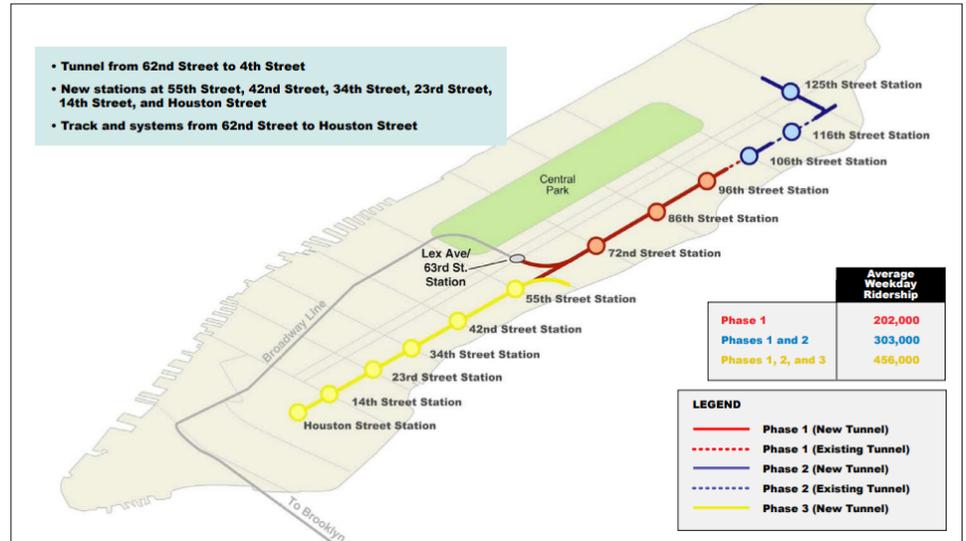
Western Queens

The 63rd Street subway tunnel, which now is used by the F train, had its origins in the Program for Action, the 1968 plan that promised to realize the potential of merging the city's subway system, along with the Triborough Bridge and Tunnel Authority and the commuter railroads, into the MTA. The tunnel would connect to the Queens Bypass, a super-express line that would follow the Long Island Railroad's right-of-way to Forest Hills, relieving crowding on the Queens Boulevard express.¹¹⁴ This plan was ultimately dropped due to cost considerations, and the tunnel was connected instead to the Queens Boulevard line at Northern Boulevard, west of Sunnyside Yards. A bellmouth was created to allow for future construction of the bypass.¹¹⁵

The truncated 63rd Street line does not provide connections at either end of the tunnel to permit its full capacity to be used. The F shares the express tracks with the E train in Queens. The local tracks are shared by the M and R. To enable additional trains in the 63rd Street tunnel, the bellmouth would need to be utilized, and at least one station would need to be built on the bypass, so that these trains can discharge passengers and reverse direction in Queens. A new study would be necessary to determine a route and station locations for a revived Queens bypass.

In Manhattan, the F train merges into the Sixth Avenue Local, shared with the M train. Again, to utilize the tunnel's full capacity there needs to be a new location where additional trains can discharge passengers and reverse direction. Phase 3 of the Second Avenue Subway would provide a connection from the 63rd Street tunnel, south along the Second Avenue right-of-way. Phase 3 (Figure 16) would incorporate six new stations, south to Houston Street. This would create the ability to operate a new service at the Manhattan end of the tunnel. The Second Avenue subway has necessary approvals but awaits Phase 2 funding, carrying its route into East Harlem. Phase 3, under current plans, would be funded yet farther in the future.

Figure 16: Phases of the Second Avenue Subway



Source: Federal Transit Administration and New York City Transit, *Final Environmental Impact Statement, Second Avenue Subway*, April 2004, Figure S-6, Proposed Phase 3, http://web.mta.info/capital/sas_docs/feis.htm.

¹¹⁴ US Department of Transportation, Urban Mass Transportation Administration and Metropolitan Transportation Authority, *Alternatives Analysis/Draft Environmental Impact Statement for the Queens Subway Options Study*, pp. 2-10 to 2-12, <https://books.google.com/books?id=Nal4QAAMAAJ&pg=PA83#v=onepage&q&f=false>.

¹¹⁵ US Department of Transportation, Federal Transit Administration, and Metropolitan Transportation Authority, *Final Environmental Impact Statement for the 63rd Street Line Connection to the Queens Boulevard Line*, pp. 2-3 to 2-12, <https://books.google.com/books?id=n943AQAAMAAJ&pg=RA3-PT95#v=onepage&q&f=false>.

Northern Brooklyn

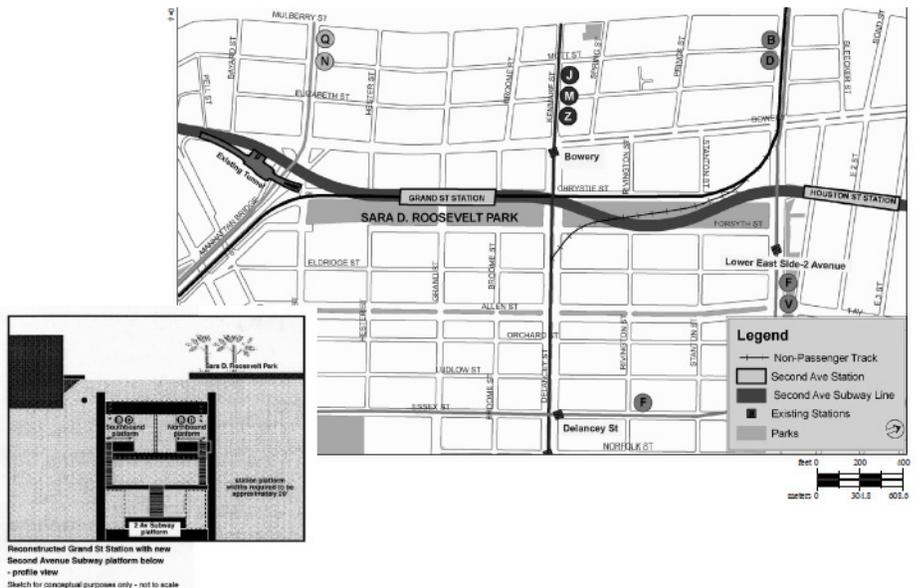
The Sixth Avenue Line express tracks under Houston Street extend to Essex St.-Avenue A, although the last station is at Second Avenue. While these tracks are sometimes used today to reverse trains, in the unbuilt IND Second System plan they were the beginnings of a tunnel to Brooklyn.¹¹⁶ A partial station shell also exists at South 4th Street and Union Ave. in Brooklyn, where the Houston Street subway tunnel would have connected to the Broadway station on the Crosstown Line (G train).¹¹⁷

In 1968 the Chrystie Street connection between the Essex St. station (J, M, and Z) west of the Williamsburg Bridge and the Broadway/Lafayette St. station of the Sixth Avenue Line opened.¹¹⁸ This connection represented a much less costly alternative to the Houston Street tunnel, allowing Broadway (Brooklyn) Line trains from Williamsburg to travel north into Midtown, where many passengers want to go, rather than being routed exclusively onto the Nassau Street Loop tracks serving only Lower Manhattan. This connection is used today by M trains. The number of Williamsburg Bridge trains that can be routed into Midtown is limited, however, by the overall capacity of the Sixth Avenue local, which is also used by the F train.

When the Second Avenue Subway Final Environmental Impact Statement was published in 2004, the Chrystie Street connection to the Williamsburg Bridge was not in regular passenger service, the subway service over the bridge was lightly used and dramatic demographic changes had not yet been experienced in northern Brooklyn. For the alignment of phase 4 of the Second Avenue Subway, south of Houston Street, the FEIS selected a “Deep Chrystie Option” that creates a two-level station at Grand Street, with a new Second Avenue Subway platform beneath the existing Grand Street station on the B and D lines. However, there is no interaction between the Second Avenue Subway alignment and the Williamsburg Bridge connection, shown as a “Non-Passenger Track” (Figure 17).

In light of the significant changes in land use and subway ridership since 2004, the MTA and New York City Transit need to reconsider the design of the Second Avenue subway in the vicinity of Houston Street. Connecting the new line just south of the Houston Street station with the Chrystie Street tunnel to the Williamsburg Bridge would allow additional trains from the bridge to turn north rather than south at Essex Street, and provide scheduling and operational flexibility. Incorporating such a connection into Phase 3 of the subway could provide long-term relief to North Brooklyn subway riders.

Figure 17: Second Avenue Subway, Proposed Alignment South of Houston Street



Source: *Second Avenue Subway FEIS*, Figure 2-6

116 https://www.nycsubway.org/wiki/IND_6th_Avenue_Line#2nd_Avenue.

117 Benjamin Kabak, “The history of a subway shell at South 4th Street,” <http://secondavenuesagas.com/2010/11/02/the-history-of-a-subway-shell-at-south-4th-street/>.

118 Paul Hofmann, “Skip-Stop Subway Begins Run Today,” *The New York Times*, July 1, 1968, <https://timesmachine.nytimes.com/timesmachine/1968/07/01/76872122.pdf>.

Housing Affordability Requirements and Planning for Growth

Because New York City's population is growing by large increments every decade, the sheer number of additional housing units constructed is an important measure of how well the city is planning for a future in which its population is socio-economically diverse, and the city continues to play its historic role as an avenue of opportunity for both residents and newcomers. Failure to build enough housing units to meet demand at the upper end of the market shifts that demand to existing units, pricing more and more housing out of reach of low- and moderate-income households.

Between 2005 and 2013 the city incorporated a voluntary inclusionary housing bonus program into many of its large rezoning proposals, including some of the most successful in terms of housing production. This program was developed to balance the need for new housing with a desire for neighborhood economic integration. A 2013 Department of City Planning study of the effectiveness of the voluntary program, no longer available on the Department's website, found a high degree of utilization of the program in strong housing market areas, particularly CD 4 in Manhattan (Hudson Yards/West Chelsea) and CD1 in Brooklyn (Greenpoint/Williamsburg).¹¹⁹ The voluntary inclusionary housing bonus program continues to be applicable in those areas where developments were eligible at the end of 2013.

The incoming de Blasio administration was dissatisfied with the voluntary program, believing both that the percentage of affordable housing in the development required to receive the bonus was too low (20 percent), that the program did not reach very low income households, and that the ability for developers to escape providing affordable housing (by declining the floor area bonus) was unacceptable. In 2016 the city implemented a Mandatory Inclusionary Housing (MIH) policy, requiring that new housing that benefits from increased zoning densities or other discretionary land use actions permitting more residential floor area to be developed at a given location, provide affordable housing in accordance with specified percentages of total residential floor area and income levels.¹²⁰

Before enacting the zoning text amendment that implements the policy¹²¹, the de Blasio administration published two reports. The first, by the Departments of City Planning and Housing Preservation and Development, offered a land use rationale for the policy. The report states that:

Creating more housing opportunities for households at a range of incomes can enhance the city's overall economic diversity, alleviating the effects of rent burden, overcrowding, and illegal housing and providing opportunities to attract and maintain a diverse workforce. At the same time, increasing economic diversity at the neighborhood level is important for improving households' access to the "package" of services and amenities that a neighborhood provides and for creating options for families outside of areas of highly concentrated poverty...

The City should mandate affordable housing where land use actions promote new housing development, to ensure that new housing created within these neighborhoods serves households at a range of incomes below those that would be served by the market alone. Requirements for units to remain permanently affordable will ensure that these affordable units remain a resource for the community into the future, even as neighborhood economic conditions may change.¹²²

The second study, by consultants to the city's Housing Development Corporation led by BAE Urban Economics Inc., examined the financial feasibility of mandatory inclusionary housing. The study's purpose was "to evaluate the financial feasibility of the MIH policy within the context of a representative range of market and development conditions to ensure that the financial feasibility of new mixed-income projects, and thus new housing production, will be supported."¹²³

119 "Inclusionary Housing Designated Areas – Production, 2005-2013," author's files.

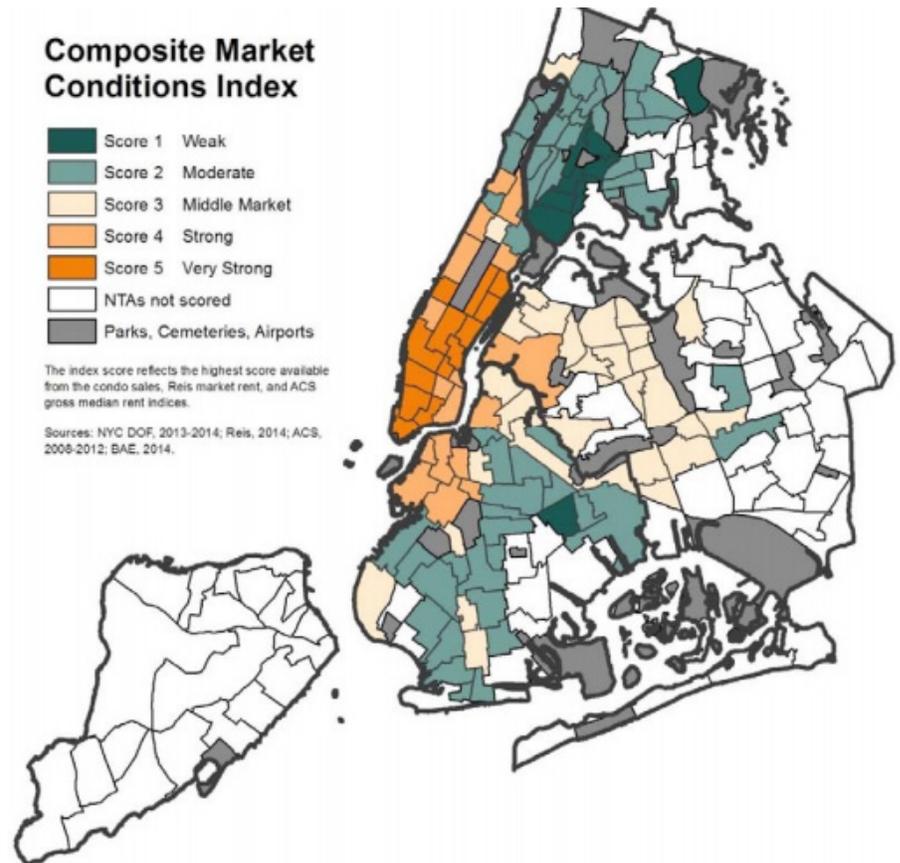
120 The policy is described at <http://www1.nyc.gov/site/planning/plans/mih/mandatory-inclusionary-housing.page>.

121 N 160051 ZRY, February 3, 2016, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/160051.pdf>.

122 *New York City Mandatory Inclusionary Housing: Promoting Economically Diverse Neighborhoods*, September 2015, http://www1.nyc.gov/assets/planning/download/pdf/plans-studies/mih/mih_report.pdf.

123 *Market and Financial Study*, op. cit., p. 1

Figure 18: Market Conditions Index



Source: BAE Urban Economics, Inc. et. al., “Market and Financial Study: NYC Mandatory Inclusionary Housing”, September 2015, p. 18

To illustrate the different housing market conditions existing in the city, the report developed a Market Conditions Index and created a score for the Neighborhood Tabulation Areas where data were available and most multifamily housing construction takes place.¹²⁴ The scores were grouped into five categories of market conditions: Weak, Moderate, Middle Market, Strong and Very Strong (Figure 18).¹²⁵

The report concludes that in the Strong and Very Strong market areas, market conditions combined with the availability of tax benefits under the Section 421a program are consistent with the development of rental housing having set-asides of mandatory affordable units at the ratios ultimately enacted, 20-30 percent. In contrast, according to the study, in the Mid-Market, Moderate and Weak market areas rental housing development would not be feasible even without mandatory set-asides; additional public subsidies would be needed.¹²⁶

The consultants’ report highlighted the importance of designing a Mandatory Inclusionary Housing program to be sensitive to market conditions in the areas on the cusp of financial feasibility. These are often the areas where rezonings take place. Stronger market areas often have well-established zoning schemes in which few sites are readily available for redevelopment in the event of a density increase.

To ensure a feasible unsubsidized MIH option in economically transitioning areas where market rents are high enough to support new construction, but do not support substantial internal cross-subsidy of units affordable to low-income households, the city’s original proposal included a Workforce Option, in which 30 percent of new units would be targeted to households in a middle-income range, set at about \$90-105,000 for a family of three in 2015. This option was intended to work in tandem with revised Section 421a Program tax incentives, known as Option C, which also required a 30 per-

¹²⁴ Neighborhood Tabulation Areas (NTAs) are a sub-Community District geography created by the Department of City Planning. See: <https://www1.nyc.gov/site/planning/data-maps/open-data/dwn-nynta.page>. NTAs not scored in this study are “primarily low-density areas with limited multifamily housing construction”. Ibid., p.18.

¹²⁵ Ibid., pp. 18-22.

¹²⁶ Ibid., p. 57

cent set-aside of units affordable in a middle-income range.¹²⁷ However, the City Council modified the zoning proposal, requiring that the Workforce Option include units targeted to lower-income households, effectively requiring internal cross-subsidy and greatly reducing the usefulness of this option in the neighborhoods to which it was targeted.

Even in the “strong” and “very strong” markets where the Mandatory Inclusionary Housing program is economically feasible in principle, the arithmetic of the program works out in unanticipated ways. In these areas, the Department of City Planning relies heavily on private applicants to identify locations for rezoning and support the costs of environmental review and shepherding applications through the land use process. Because the most commonly applied affordability options require either 25 or 30 percent of floor area in a newly constructed development to be in units that are permanently affordable to low-income households, an applicant must obtain a residential floor area increment of at least 33 or 40 percent, just to cover the affordability requirement. To make the costs of the land use process worthwhile to bear, the floor area increment must be much higher.

In these areas of the city, mostly already zoned at relatively high densities, the necessary density increment tends to be quite large in absolute terms and likely to attract vociferous objections from local community activists. Because residential floor area ratios are capped at 12 by the Multiple Dwelling Law, the necessary increment may not even be possible. The uncertainty with respect to approvals of aggressive increases in residential density probably deters private applicants from entering the land use approval process.

The upshot, thus far, of the design and implementation of the Mandatory Inclusionary Housing zoning provisions is that in most areas where the program has been made applicable, it is not feasible without public subsidies. This makes future development dependent on future funding which, even at current generous levels, will never adequately substitute for private investment. Most permits under the program are for developments that have other forms of public subsidy and thus, do not rely on zoning to fall under city regulatory agreements.¹²⁸

Two expected exceptions to this rule are private applications recently approved by the City Planning Commission. These sites, formerly located within a low-density manufacturing district, are located on the West Side of Manhattan – a “very strong” market area by the scoring system in the Housing Development Corporation consultants’ report. The approved developments are mixed-use buildings at a floor area ratio of 12, including floor area transfers from the Hudson River Park pursuant to special zoning district provisions.¹²⁹ Such extremely favorable conditions for the success of the mandatory program without public subsidy will not be widely replicated.

The shortcomings of Mandatory Inclusionary Housing are not simply academic. The higher-income households that live in newly constructed housing in the strong and very strong housing market areas have the most choice, of any New Yorkers, about where to live. As shown in Table 3, college-educated people, generally working in relatively well-paying professional, managerial and technical occupations, can quickly change the demographics of a one-time lower income neighborhood. The city should encourage private applicants to build housing for its higher-income workforce in neighborhoods where such households are already living in large numbers, without the necessity of public subsidies. For the city to achieve its goal of economic inclusion, the promise of Mandatory Inclusionary Housing to create more, not fewer housing opportunities for lower-income households needs to be matched by actual accomplishment.

127 The “new” Section 421a Program is described at <http://www1.nyc.gov/site/hpd/developers/tax-incentives-421a-main.page>.

128 The city’s Department of Housing Preservation and Development provides a map of Mandatory Inclusionary Housing sites at <http://hpd.maps.arcgis.com/apps/webappviewer/index.html?id=6d3f09240876403097c6d37a3c467917>.

129 C 180129A ZSM and C 180152A ZSM, May 7, 2018, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/180129a.pdf>, <http://www1.nyc.gov/assets/planning/download/pdf/about/cpc/180152a.pdf>.

Conclusion

New York City is faced with the challenge of housing an ever-growing population in a city with fixed boundaries, which is already the densest city in the United States. Failure to provide enough housing to meet demand exacerbates already adverse market conditions, and disadvantages those with the lowest incomes and the least ability to compete for scarce available housing.

In trying to plan for a future of ever-higher density, the city's planners have advantages and disadvantages. The greatest advantage is a far-sighted investment in urban rail transit made by the city's leaders mainly in the early years of the 20th Century. New York City has a high-capacity subway system that reaches in many areas to the city's edge. While taxed in some parts of the city, particularly Queens and northern Brooklyn, the subway system offers many opportunities for future transit-based growth that uses existing capacity and does not require substantial new investment.

In the areas of the city that are beginning to be constrained by transit capacity, planning needs to be more careful, but in the short to medium term, technological and equipment improvements may permit continued growth. For the long term, planning to increase subway capacity is needed, but the existing system provides a basis for the construction of long-term solutions to transit capacity as well.

The great disadvantage faced by planners is an obsolete zoning framework based on the assumption that the city's population could be capped and that the suburbs would represent an outlet for future population growth. This may have been a reasonable outlook in the 1950's but 60 years later, the suburbs have also, with some notable New Jersey exceptions, by and large adopted land use restrictions that cap population. New York City, the engine of the region's economy, is left to solve its population growth problem mostly on its own territory.

Several policies deserve attention by both land use and transit planners in the next two decades:

- New York City should rezone widely for more housing density. Building on the "Areas of Opportunity" identified for *PlaNYC 2030*, it should identify areas close to rail transit with low-density zoning and the potential for housing growth. At long last, it must fully grapple with the structural evolution of its economy and put every manufacturing zone and C8 district close to transit to the most beneficial use, often including housing. The city also has to look at low-density zoned commercial streets near transit, as well as mixed apartment house and small-home neighborhoods where the zoning now permits only new small homes. In these types of areas, new apartment buildings could be permitted without disrupting a consistent small-home streetscape.
- The city must reconcile its desire for zoning-based housing affordability requirements with the sheer volume of new housing required to accommodate population growth. The city's demand for more housing units won't be met only through public subsidy. A robust role for private investment is vital. Affordability requirements must be calibrated to the economics of housing construction and state-legislated tax benefits. Private rezoning applications in the city's more affluent areas should not be deterred. Where the private sector won't build low-income affordable housing without public subsidies but would build new middle-income housing if they were allowed to do so, affordability requirements need to be reconsidered.

- In the short to medium term New York City Transit should implement the Fast Forward plan, seeking subway capacity increases through modernized signaling and open-gangway subway cars.
- However, for the long term, transit expansions should support continued growth in western Queens and northern Brooklyn, geographically central areas that, by the vagaries of subway history, have been relatively poorly provided with subway capacity into the Manhattan core. This report has suggested some options; there may be others.
- The city should take advantage of housing development opportunities on the North and West Shores of Staten Island by coordinating zoning density increases with implementation of a North Shore busway similar to that studied previously by the MTA's consultants.

Implementing these policies can pave the way to continued growth, permitting New York City to maintain its economic primacy and support its generous public services while providing housing and economic opportunities to a diverse population.