



AKRF Brief

New York City Housing Production Needs Study

INTRODUCTION

For over a decade New York City's housing production has failed to keep pace with population and job growth, leading to higher rates of overcrowding and other indicators of housing deficiency. Without substantial new residential development, the City's housing deficit could worsen, as pipeline development does not yet support growth anticipated through 2030.

ANALYSIS OBJECTIVE

AKRF quantified and characterized New York City's existing and future housing production needs through trends and projections analyses of residential growth; employment growth and workforce commute patterns; overcrowding; unaccounted-for (illegal) unit occupancy; and homelessness.

PRINCIPAL FINDINGS

AKRF identified a need to produce 560,000 housing units in the City by 2030, including an immediate need for over 227,000 units. Known pipeline development covers approximately 14% of total projected need.

- 227,000 housing units are needed to attract and retain labor force members who cannot afford to live within reasonable proximity of their workplace, and to mitigate existing deficiencies related to overcrowding.
 - 50,000 of these units are specifically needed to replace unsafe unaccounted-for (illegal) occupancies.
 - 16,000 of these units are needed to mitigate the increase in homelessness experienced since 2000.
- 333,000 units are needed to meet future demand for housing based on AKRF employment projections.

With 79,500 units currently in the development pipeline, there is an incremental need for over 485,000 units by 2030.

METHODOLOGY

To quantify existing and future housing production needs, AKRF estimated the amount of additional housing that would be necessary to improve housing conditions to "pre-crisis" levels; for most analyses, the selected benchmark year was 2010.¹ Year 2010 housing conditions were not a panacea, nor is the 2010 benchmark suggested as a City goal; rather, it was identified as a point in time prior to more rapid population and employment growth, when key housing metrics suggested a healthier supply/demand balance.

The resulting quantified housing needs estimates were then refined and further characterized to identify the reasons for, and types of housing needed. AKRF's characterizations relied on trends and projections in residential and employment growth as well as housing "health" metrics including overcrowding, unaccounted-for (illegal) unit occupancy, and homelessness.

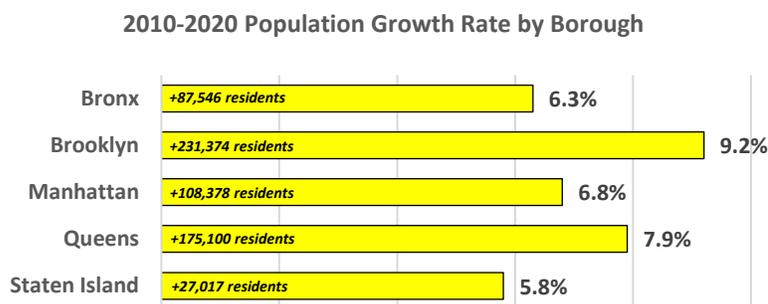
See full Methodology section at the end of this report for more information on approach, sources, and analysis limitations.

POPULATION AND EMPLOYMENT GROWTH COMPARED TO HOUSING PRODUCTION

LOOKING BACK – BETWEEN 2010 AND 2020:

Population

Between 2010 and 2020, New York City's population grew by approximately 7.7%—from nearly 8.2 million residents to over 8.8 million residents—well outpacing the 2.1% growth rate of the previous decade. As shown in the graph (to right), Brooklyn was the fastest-growing borough and saw the greatest absolute population increase with over 230,000 net new residents.ⁱⁱ

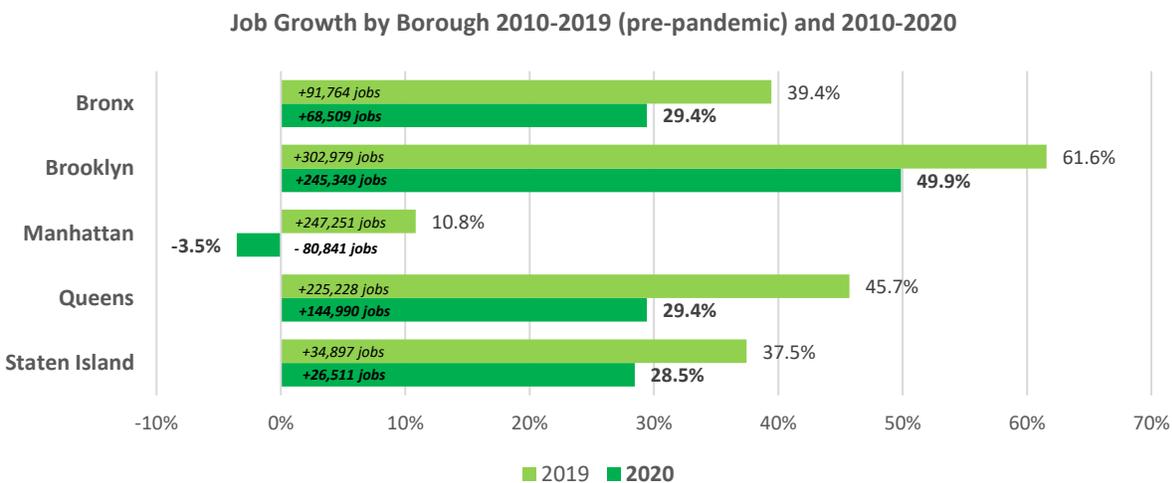


Source: U.S. Census Bureau, 2010 and 2020 Census.

Jobs

The number of New York City jobs grew by approximately 10.2%—from 3.75 million in 2010 to 4.13 million jobs in 2020—outpacing the 8.8% growth of the prior decade. Before the pandemic-induced economic downturn, the City's employment had grown by 24% (approximately 900,000 jobs) since 2010. Office-based sectors such as Information and Professional, Scientific, and Technical Services experienced fewer pandemic-related job losses relative to more public-facing and tourism-based job sectors. The Accommodation and Food Services sector, which before the pandemic had grown by 46% since 2010 (gaining about 118,000 jobs), lost approximately 160,000 jobs between 2019 and 2020.ⁱⁱⁱ

As shown in the chart below, Brooklyn experienced the fastest rate of job growth (including conditions pre-pandemic in 2019 and through 2020), followed by the Bronx and Queens.



Source: U.S. Bureau of Labor Statistics, QCEW data files.

Housing

Between 2010 and 2020, New York City's total housing stock grew by approximately 7.3%, from 3.37 million to 3.62 million units, a net growth of approximately 248,000 units.^{iv} This exceeded the 5.3% growth in units between 2000-2010, but that decade experienced only 2.1% population growth.

2010-2020 Housing Unit Growth by Borough



Source: U.S. Census Bureau, 2010 and 2010 Census.

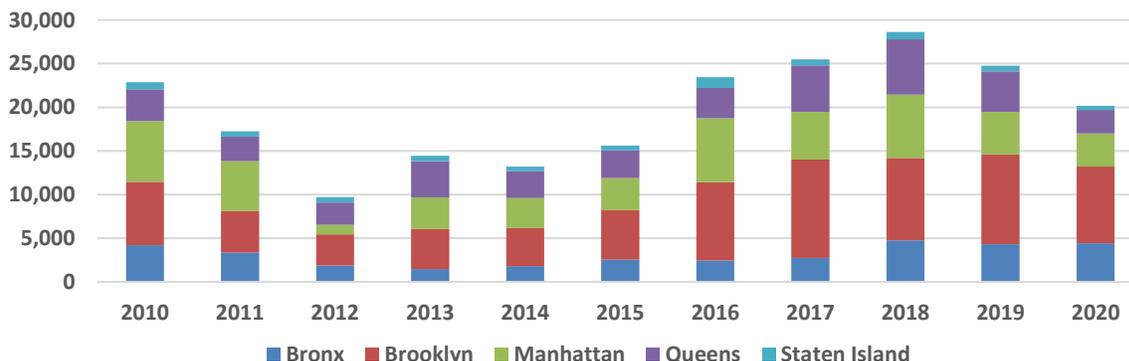
As shown in the graph (left), Manhattan experienced the fastest net unit growth; Brooklyn saw the greatest absolute increase with over 77,000 additional units.

Between 2010 and 2020, the City’s average household size for owner and renter-occupied units did not substantively change. However, unit occupancy rates increased, with New York City’s overall vacancy rate declining from an estimated

7.8% in 2010 to 6.9% in 2020, and the rental vacancy rate declining from an estimated 3.7% in 2010 to 3.4% in 2019.^v

There were approximately 216,000 housing units completed between 2010 and 2020, representing about 6.0% of total supply. Brooklyn experienced the largest absolute number of newly completed units since 2010 (nearly 79,000, or 37% of total), and has led in production each year since 2012. Approximately one-quarter of units (53,300 units) were built in Manhattan.^{vi} The graph below depicts pace of production by borough between 2010 and 2020.

Completed Housing Units by Borough 2010 - 2020



Source: NYC Housing Production Snapshot, 2020.

LOOKING FORWARD – 2020 TO 2030

Population

Based on New York Metropolitan Transportation Council (NYMTC) 2055 Socioeconomic and Demographic (SED) forecasts, New York City’s residential population is expected to grow by approximately 5.3% between 2020 and 2030.^{vii} Applying this growth rate to 2020 Census population estimates suggests that by 2030 New York City’s population could approach 9.3 million residents (nearly 500,000 new residents). NYMTC projects similar growth rates as the previous decade for the Bronx and Brooklyn, with slower growth predicted for Manhattan, Queens, and Staten Island.

NYMTC 2020-2030 Projected Population Growth Rate by Borough



Source: NYMTC 2055 SED Forecasts.

The NYMTC 2055 SED projections were largely developed prior to the 2020 Census and pre-pandemic, with some adjustments made following the pandemic’s onset to reflect short-term economic conditions. In its 2055 SED Forecasts documentation, NYMTC recognizes that the highly unusual nature of the pandemic and economic crisis may result in as-yet unforeseen changes, and that there is a stronger basis for the long-term projections and the use of 20- to 30-year change increments for analytic purposes. For purposes of this analysis AKRF assumes NYMTC’s 5.3% growth rate and notes the uncertainty of shorter-term projections.

Jobs

The pandemic has fundamentally altered short-term job forecasts and creates uncertainties in estimating longer-term job growth by 2030. NYMTC 2055 SED projections largely developed pre-pandemic forecast 4.9% job growth by 2030, or about 250,000 net new jobs.^{viii} The New York State Department of Labor (NYSDOL) projections for 2018-2028 (developed pre-pandemic) predicted approximately 600,000 new jobs in the City by 2028, a 12.2% increase over 2018.^{ix}

Nationally, job “growth” through 2030 is expected to be largely comprised of jobs recovered from losses during the pandemic. The U.S. Bureau of Labor Statistics predicts 7.7% job growth nationally by 2030, with over three-quarters of that growth attributable to pandemic recovery following low 2020 base-year employment.^x For purposes of this assessment, AKRF assumed that the City could return to pre-pandemic (2019) jobs levels by 2030, gaining approximately 500,000 jobs over 2020 levels (or about 370,000 additional jobs over October 2021 job estimates).

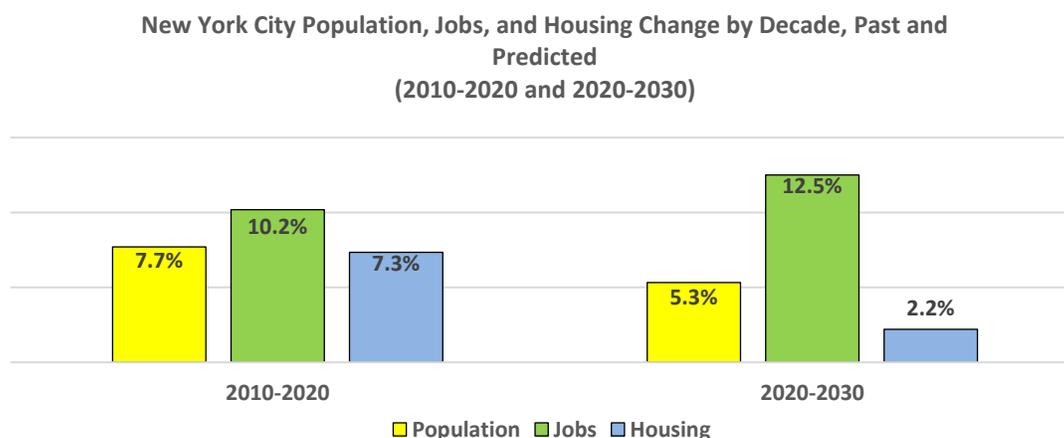
Housing

The housing pipeline represents active permits for new buildings. As of year-end 2020, the Citywide pipeline stood at about 79,500 new units. Historically, over 95% of permitted buildings are completed within four years, which roughly aligns with the 20,000-per-year pace of completions between 2010 and 2020.^{xi}

About two-thirds of pipeline development is planned for Brooklyn or Queens. At a neighborhood level, the Hunters Point/Sunnyside/West Maspeth Neighborhood Tabulation Area (NTA) has over 6,200 units planned, well above the next-highest NTA—Hudson Yards/Chelsea/Flat Iron NTA with 3,306 planned units.^{xii}

Summary – Population, Employment, and Housing Growth

The graph below summarizes the past decade’s pace of development, and AKRF’s projected growth rates based on sources and assumptions described above, with housing growth reflecting only known pipeline projects.



Source: AKRF, Inc. based on sources and assumptions described above.

HOUSING PRODUCTION NEED

To estimate housing need, AKRF applied a housing units-to-jobs ratio commonly used for macro-level assessment of housing supply/demand balance.^{xiii} If the units/jobs ratio is too low, adequate housing may be unaffordable or unavailable to workers, leading to longer commuting times and outmigration of workforce. If a units/jobs ratio is too high, this may indicate inadequate job availability for area residents. Examining the change in this ratio over time can help identify positive or negative changes in workforce housing balance. Recommended targets for this ratio vary by municipality, and any standard/benchmark should be based on analysis of local data on workers per household.^{xiv}

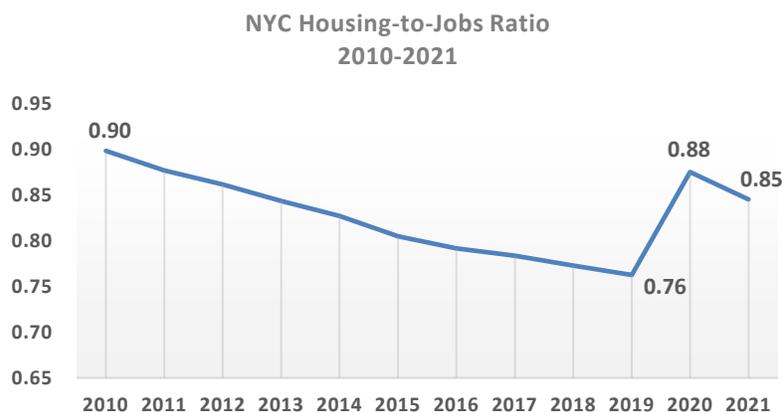
EXISTING NEED

In 2010, there were 0.90 housing units for every job in New York City (see chart below). By 2019, that ratio dropped to 0.76 housing units per job, with the average number of workers per household increasing. However, job losses with the pandemic skewed the ratio back upward, to 0.88 housing units per job in 2020. Year 2020 job estimates would suggest the need for a relatively small amount of additional housing (approximately 96,000 units) to return to 2010's 0.90 units/job balance.

Job numbers have begun to rebound since 2020, with 4.28 million jobs as of October 2021, and a 0.85 units/job ratio. This would suggest an existing need for approximately 227,000 new units to return to 2010's 0.90 units/job balance.

The rapid decline in this ratio over time suggests that existing demand for workforce housing is currently driving the City's housing production needs. More young people are working, and more residents aged 65 and over are staying in the City as

labor force participants. The growth in employment has not fully translated into new households, as there has been a notable increase in the numbers of workers per household since 2010.^{xv} Low vacancy rates and high rents have not allowed many new working families to move out on their own.



FUTURE NEED TO 2030

AKRF estimates that by 2030, there would be approximately 370,000 additional jobs in the City over October 2021 employment levels. Applying 2010's 0.90 units/job ratio to this employment suggests the need for an additional 330,000 units by 2030 beyond the 225,000 units identified as an existing need. The pandemic could generate longer-term shifts in workforce housing needs with growth in remote working as a feasible and safer option for workers in certain industries, thereby reducing overall need. At this time, it would be speculative to quantify this potential effect, and it is therefore not accounted for in AKRF's future need estimate.

The following sections refine and characterize these needs estimates through trends assessment of workforce commute trends, overcrowding, homelessness, and unaccounted-for units.

WORKFORCE COMMUTING TRENDS

AKRF analyzed trends in commuting patterns by industry and occupation to determine whether there are any identifiable correlations between the City's housing shortage and changes in commuting patterns. Summary findings are as follows:

Slightly more in-commuters: Since 2010 there has been only a slight increase (1.2%) in the overall proportion of City jobs filled by non-City residents. In 2010, approximately 27.6% of City jobs were held by in-commuters, while in 2019, approximately 27.9% of jobs were held by in-commuters.^{xvi}

Industry sectors that experienced relatively large increases in out-of-City workforce included Construction (5% increase in commuters from outside New York City since 2010); Education and Health Care (+4%); and Public Sector workers (+3%).^{xvii} However, in-migration trends within the public sector and education sectors were more likely influenced by adjustments to City employee residency requirements as a result of Local Law 48 in 2009.

There were larger increases of in-migration within lower-wage employment sectors; the proportion of City jobs filled by City residents earning \$1,250 or less per month decreased by 16.7%, while the proportion of City jobs filled by residents earning between \$1,251 and \$3,333 per month decreased by 8.5%.^{xviii}

Slightly longer commutes: While there was not a pronounced increase in worker out-migration that could be linked to housing supply, increases in commute times suggest that resident-workers are being pushed farther from their jobs within the City due to a lack of proximate affordable housing. Between 2010 and 2016, the proportion of City residents-workers commuting less than 30 minutes decreased by approximately 1%, while 30- to 60-minute commute times increased by 14%, 60- to 90-minute commute times increased by 8%, and commute times over 90 minutes increased by 16%, while the proportion working from home increased by 13%.^{xix}

Top 5 Occupational Growth Sectors, 2018-2028

Occupation	Predicted Job		Median
	Growth	New Jobs	Wage
Healthcare Support Occupations	55.6%	137,020	\$33,720
Personal Care and Service Occupations	35.7%	100,300	\$36,660
Community and Social Service Occupations	22.9%	24,180	\$55,020
Healthcare Practitioners and Technical Occupations	22.7%	55,480	\$94,770
Education, Training, and Library Occupations	17.7%	59,400	\$75,330

Source: NYS DOL Long-Term Occupational Employment Projections, 2018-2028.

The projected highest growth occupational sectors are "public-facing" and critical to our City's health and education (see table). However, commuting trends suggest that workers within these sectors, as well as lower-wage earners generally, have had difficulty finding affordable housing near their place of work,

and are increasingly locating outside the City. The median wages for these highest growth job sectors suggest that a substantial amount of the housing will need to be affordable to those earning less than the Area Median Income. Without affordable housing located within and proximate to job centers, critical workers suffer from higher rents and longer commutes, and residents suffer higher costs for important services.

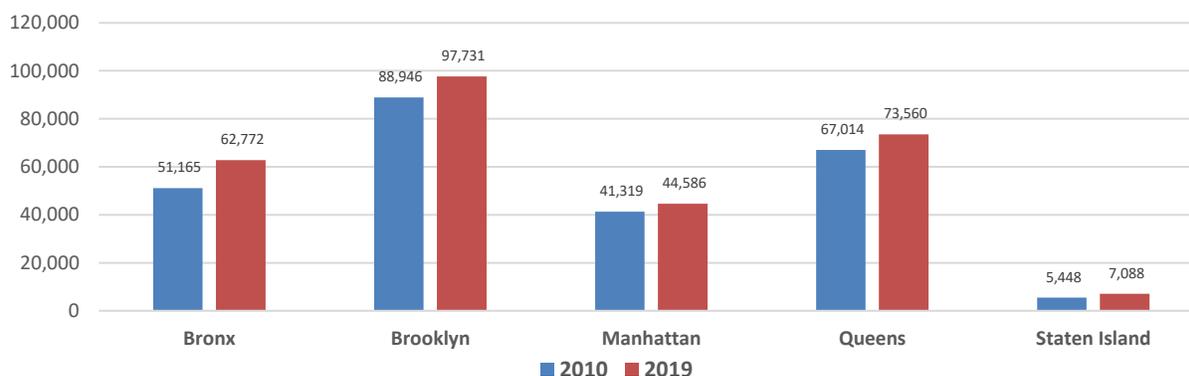
OVERCROWDING

Overcrowding is an established predictor of homelessness and a critical indicator of health, safety and economic household risk factors. Studies since the pandemic have shown that it is overcrowding, and not density, that better explains why the virus took hold in urban areas.^{xx}

More than one occupant per living space constitutes overcrowding (not including bathrooms and most kitchens). Severe overcrowding is defined as more than 1.5 occupants per living space. Based on Census ACS estimates, over 285,000 housing units were overcrowded in 2019, representing 9% of all occupied housing Citywide. Approximately 114,000 of these units were severely overcrowded, representing 3.6% of all occupied units.^{xxi}

New York City's overall crowding rate has increased by approximately 12% between 2010 and 2019, with nearly 32,000 more overcrowded units. The percentage of units experiencing severe crowding has increased by 20% since 2010, with over 23,000 severely crowded units in 2019. The graph below presents overcrowding by borough in 2010 and 2019. The Bronx experienced the greatest absolute increase with nearly 12,000 more overcrowded units in 2010 than 2030. About 12.5% of the Bronx's occupied housing is overcrowded, the highest rate among all boroughs.^{xxii}

Overcrowded Units by Borough, 2010 and 2019



Source: U.S. Census Bureau American Community Survey (ACS) 2010 and 2019 Five-Year estimates.

While the Bronx has the highest overall rate of overcrowding among boroughs, neighborhoods outside of the Bronx have experienced the greatest increases in crowding since 2010. The table below presents New York City Community Districts that are crowding the fastest.

New York City Community Districts Crowding Faster than Others (2010-2019)

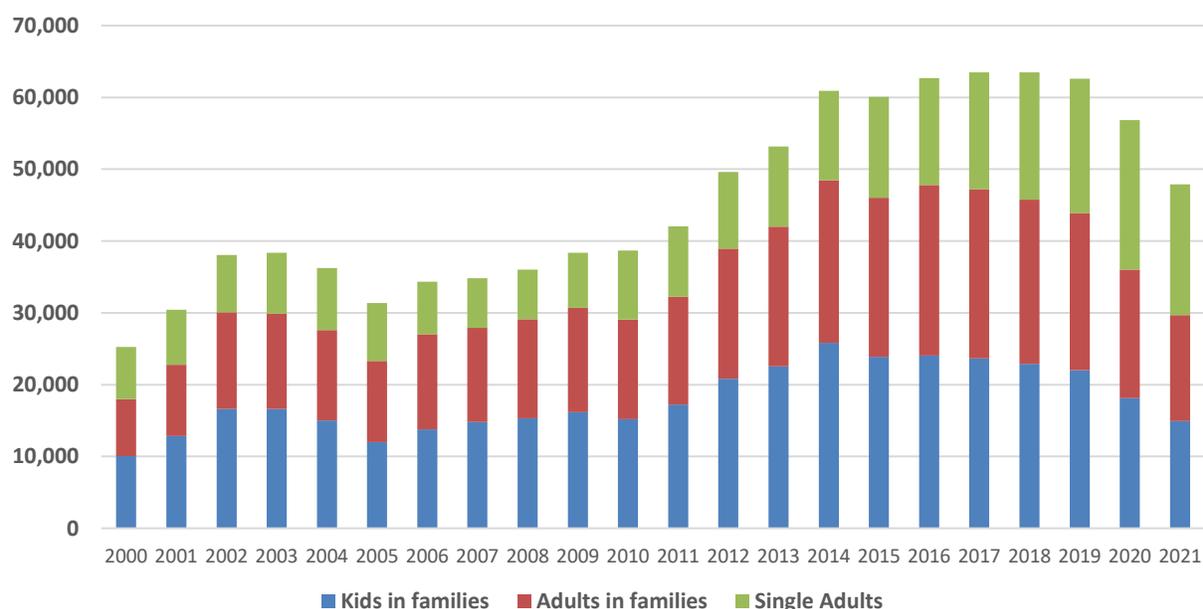
Community District	% Increase in Crowding Rate
Queens CD4 - Elmhurst & South Corona	16.8%
Brooklyn CD11 - Bensonhurst & Bath Beach	14.6%
Brooklyn CD9 - Crown Heights South, Prospect Lefferts & Wingate	13.1%
Manhattan CD9 - Hamilton Heights, Manhattanville & West Harlem	10.8%
Brooklyn CD12 - Borough Park, Kensington & Ocean Parkway	10.8%

HOMELESSNESS

In recent years, homelessness in New York City has reached the highest levels since the Great Depression of the 1930's. Based on data from the Coalition for the Homeless, as of September 2021 approximately 48,000 people are sleeping in City shelters, including over 10,000 families (nearly 15,000 kids in families and 14,800 adults in families), 4,300 single women, and 14,000 single men.^{xxiii} This does not include an unspecified number living on the streets. The peak number of homeless staying in shelters was reached in January 2019 (63,839), prior to the housing of some homeless in hotels to combat the spread of COVID-19.

The number of homeless NY residents sleeping in shelters has increased by approximately 24 percent since 2010, and by approximately 90 percent since 2000.^{xxiv} Approximately 16,000 housing units would be needed to provide housing for homeless families and individuals in order to return homeless rates to year 2000 levels (about 5,000 units for homeless families and 11,000 units for homeless single adults).

Number of Homeless People Sleeping Each Night in New York City Shelters



Source: Coalition for the Homeless

UNACCOUNTED-FOR UNITS

Unaccounted-for units—those not regulated by the Department of Buildings through a certificate of occupancy—are largely found in basements of residential buildings. They provide an affordable housing option for many New York residents; however, many are unsafe. As these units are unregulated, it is difficult to accurately estimate their numbers. However, according to City estimates, there are at least 50,000 basements that have been illegally converted to dwelling units throughout the five boroughs.^{xxv} In comparing the 2020 U.S. Census count of housing units, which includes unaccounted for units, against residential building permits from the DOB, there are an estimated 25,652 units in the City that are not accounted for.

An analysis conducted by the Pratt Center for Community Development found that unaccounted-for units are overwhelmingly located in rent burdened communities of color. Highest concentrations by Community District are shown in the table below.

Highest Concentrations of Unaccounted-For Units

Community District	Unit Estimate
Brooklyn CD5 East New York/Starret City	5,086 units
Manhattan CD12 Washington Heights/Inwood/Marble Hill	4,945 units
Queens CD8 Briarwood/Fresh Meadows/Hillcrest	4,897 units
Brooklyn CD18 Carnarsie/Flatlands	4,716 units
Brooklyn CD16 Brownsville/Ocean Hill	4,685 units
Queens CD3 Jackson Heights/North Corona/East Elmhurst	4,106 units
Brooklyn CD9 Crown Heights South/Prospect Lefferts/Wingate	1,255 units
Brooklyn CD17 East Flatbush/Farrugut	705 units
Source: Pratt Center for Community Development, <i>New York's Housing Underground: 13 Years Later</i> , October 2021.	

In 2016, the Citizens Housing Planning Council (CHPC) Hidden Housing study found that between 10,000 and 38,000 potential basement apartments citywide that could be brought into safe, legal use without changing the Zoning Resolution.^{xxvi} The amount of new housing needed for families living in unaccounted-for units would depend on a more precise accounting of total need, and the ability to legalize existing units. Without a program to facilitate legalizing units, the need to provide safe, legal housing could well exceed 50,000 units.

ANALYSIS METHODOLOGY

To quantify existing and future housing production needs, AKRF estimated the amount of additional housing that would be necessary to improve housing conditions to “pre-crisis” levels; for most analyses, the selected benchmark year was 2010.^{xxvii} Year 2010 housing conditions were not a panacea, nor is the 2010 benchmark suggested as a City goal; rather, it was identified as a point in time prior to more rapid population and employment growth, when key housing metrics suggested a healthier supply/demand balance. In developing production targets for 2030, it is also helpful to consider the potential for change that can occur over a roughly 10-year period (i.e., since 2010).

The resulting quantified housing needs estimates were then refined and further characterized to identify the reasons for, and types of housing needed. AKRF's characterizations relied on trends and projections in residential and employment growth as well as housing “health” metrics including overcrowding, unaccounted-for (illegal) unit occupancy, and homelessness.

DATA SOURCES

AKRF relied on numerous data sources and studies, cited independently as presented in this reporting through endnotes. Key data sources for analysis included the following:

- U.S. Census Bureau 2000, 2010, and 2020 Decennial Census.
- U.S. Census Bureau American Community Survey (ACS) 5-year and 1-year data (most current as of this report is 2019 ACS)

- New York Metropolitan Transportation Council (NYMTC) 2055 Socioeconomic and Demographic (SED) Forecasts, published October 2020
- NYC Planning's Housing Production Snapshot, New York City Department of City Planning | Housing and Economic Development Division, April 20, 2021
- NYC Housing Database (<https://www1.nyc.gov/site/planning/data-maps/open-data/dwn-housing-database.page>)
- New York City Housing and Vacancy Survey (NYCHVS), a U.S. Census Bureau product sponsored by the New York City Department of Housing Preservation and Development
- U.S. Census Bureau Longitudinal Employer-Household Dynamics (LEHD) data available through OnTheMap
- New York State Department of Labor (NYSDOL) Long-Term Industry Employment Projections, 2018-2028

ANALYSIS LIMITATIONS

The COVID-19 Pandemic presents analytic challenges in two key respects: 1) most current demographic and employment data generally range from 2018 to 2021, inviting comparisons between a pre- and post-Covid world; and 2) mid-pandemic it is difficult to project long-term effects on housing demand and supply. AKRF was mindful of these challenges and qualifies several estimates with potential pandemic influences.

AKRF performed a "top down" City-wide analysis, without full assessment of important borough- and neighborhood-specific challenges and needs. The analysis presents some borough-level housing health metrics but does not provide estimates of housing need by borough.

AKRF does not estimate the effects of new supply on rents or rent burden. From a macroeconomic perspective, additional supply can lower prices and the analysis assumes that a greater supply of housing could have a stabilizing effect on rents. However, the analysis does not prescribe an amount of housing necessary to make housing more affordable for market-rate renters. Rather, it suggests amounts of additional affordable housing needed to meet existing and future needs.

In estimating housing production need, AKRF considered several housing challenges faced by the City, but did not tackle the critical consideration of racial equity, including housing discrimination. Racial equity and housing discrimination demand careful accounting in the City's plans for growth; some progress has been made with the City's recently legislated requirement to perform racial impact studies for rezonings and large-scale projects under ULURP. Also promising is the legislation's requirement to provide a data tool from the Department of Housing Preservation and Development and the Department of City Planning.

ENDNOTES

ⁱ AKRF's estimate of housing need specific to homelessness did not use 2010 as a benchmark. The assessment used a year 2000 benchmark when there were roughly half as many residents living in shelters as in 2021, based on Coalition for the Homeless data (<https://www.coalitionforthehomeless.org/>).

ⁱⁱ U.S. Census Bureau, 2010 and 2020 Census.

ⁱⁱⁱ New York State Department of Labor, New York City Current Employment Statistics, 2021. <https://dol.ny.gov/labor-statistics-new-york-city-region>

^{iv} U.S. Census Bureau, 2010 and 2020 Census.

^v U.S. Census Bureau, 2010 and 2020 Census and 2015-2019 American Community Survey (ACS).

^{vi} NYC Housing Production Snapshot, 2020.

<https://storymaps.arcgis.com/stories/1c9138dc24064b2e8142ff156345a719>

^{vii} New York Metropolitan Transportation Council (NYMTC) 2055 Socioeconomic and Demographic (SED) Forecasts, published October 2020.

^{viii} *Ibid.*

^{ix} New York State Department of Labor (NYSDOL) Long-Term Occupational Employment Projections, 2018-2028.

^x U.S. Bureau of Labor Statistics, *Employment to grow 7.7 percent from 2020 to 2030; 1.7 percent excluding COVID-19 recovery*, September 23, 2021. <https://www.bls.gov/opub/ted/2021/employment-to-grow-7-7-percent-from-2020-to-2030-1-7-percent-excluding-covid-19-recovery.htm>

^{xi} NYC Planning's Housing Production Snapshot, New York City Department of City Planning | Housing and Economic Development Division, April 20, 2021.

^{xii} *Ibid.*

^{xiii} The inverse of this ratio is sometimes used (i.e., jobs/units rather than units/jobs), as well as other variations. For example, the Citizens Budget Commission released an August 2020 report that considered recently issued building permits against incremental job growth over the same period. The analysis found that New York City issued fewer housing unit permits on a per capita basis than nearly every other large city. New York issued permits for 40 percent fewer units per capita than San Francisco, half as many as Boston, and nearly two-thirds less than Washington, D.C. For more on this study see https://cbcny.org/sites/default/files/media/files/CBC_NYC-Housing-Production_08262020_0.pdf

^{xiv} Weitz, Jerry, Jobs-Housing Balance, American Planning Association Planning Advisory Service Report Number 516, November 2003. http://planning-org-uploaded-media.s3.amazonaws.com/publication/download_pdf/PAS-Report-516.pdf. As noted in this report, the notion of balancing jobs and housing goes well beyond trying to attain numerical equality. Ideally, the jobs available in a community should match the labor force skills, and housing should be available at prices, sizes, and locations suited to workers who wish to live in the area. Hence, there is a qualitative as well as quantitative component to achieving jobs-housing balance. Jobs-housing balance is a planning technique rather than a regulatory tool.

^{xv} Based on Census ACS data, between 2010 and 2019, the proportion of households with no workers and one worker decreased (by 1.3 and 3.6 percentage points, respectively), while the proportion of households with two workers and two or more workers increased (by 2.5 and 2.4 percentage points, respectively).

^{xvi} U.S. Census Bureau Longitudinal Employer-Household Dynamics (LEHD) 2010 and 2019 inflow/outflow data available through OnTheMap (<https://onthemap.ces.census.gov/>).

^{xvii} U.S. Census American Community Survey (ACS) 2006-2010 and 2012-2016 Census Transportation Planning Package (CTPP) Part 3.

^{xviii} U.S. Census Bureau Longitudinal Employer-Household Dynamics (LEHD) 2010 and 2019 inflow/outflow data available through OnTheMap.

^{xix} U.S. Census American Community Survey (ACS) 2006-2010 and 2012-2016 Census Transportation Planning Package (CTPP) Part 3.

^{xx} Shima Hamidi, Sadegh Sabouri, Reid Ewing. *Does Density Aggravate the COVID-19 Pandemic?* Journal of the American Planning Association, 2020; 1 DOI: 10.1080/01944363.2020.1777891

This June 18, 2020 study led by researchers at the Johns Hopkins Bloomberg School of Public Health found that denser places are not linked to higher covid infection rates.

^{xxi} U.S. Census Bureau American Community Survey (ACS) 2010 and 2019 Five-Year estimates.

^{xxii} *Ibid.*

^{xxiii} The Coalition for the Homeless (<https://www.coalitionforthehomeless.org/>)

^{xxiv} Research conducted by the Coalition for the Homeless shows that the primary cause of homelessness, particularly among families, is lack of affordable housing. Surveys of homeless families have identified the following major immediate, triggering causes of homelessness: eviction; doubled-up or severely overcrowded housing; domestic violence; job loss; and hazardous housing conditions.

^{xxv} Stephanie Lai, Vera Haller, Samira Sadeque and Marc Fisher. *Life and death underground: N.Y. immigrants perish in flooded basements*. Washington Post, September 4, 2021.

^{xxvi} Citizens Housing & Planning Council. Hidden Housing; The Case for a Conversion Program for Basement Apartments in NYC. Published in 2016 (<https://chpcny.org/assets/Hidden-Housing.pdf>).

^{xxvii} AKRF's estimate of housing need specific to homelessness did not use 2010 as a benchmark. The assessment used a year 2000 benchmark when there were roughly half as many residents living in shelters as in 2021, based on Coalition for the Homeless data (<https://www.coalitionforthehomeless.org/>).