Impact analysis of Housing Undersupply on the Tri-State Region

The report draws on multiple sources, including economic analysis from McKinsey & Company. RPA is responsible for the conclusions and recommendations of the research.
The shortfall between the supply and demand for housing in the Tri-State region may reach 920,000 housing units by 2035, up from 540,000 currently, if the region adds housing at the rate of current projections.

- To fully close the gap between demand and supply, the region would need to build at the rate it did in the post-World War II period.
- Building at the rate of the 1990s would close about half of the gap.

The potential impacts of maintaining the current projection of housing production until 2035 include:

- The region could miss out on $400-900B in cumulative GDP growth.
- The region may forgo a growth of 330K-730K jobs (around half are attributed to construction value chain activity).
- Residents across the area could see real housing price hikes of 25%, all else being equal.
- The number of cost burdened households may increase by 7.6% (260,000 households).
- The Tri-State region could also forgo at least $3.7B in incremental annual state and local taxes, funding that could be used to support key public services such as education, infrastructure, and public safety.
- New York region could risk its global competitiveness without more housing.
- NYC has been ranked as the world’s most competitive city since 2018 based on several measures such as business development and human capital, much of which would be at risk if other regions grew more quickly.

$30-60B of incremental annual investment would be needed through 2035 to alleviate the housing shortage.
A region that matters

23 million people
- 11.4 million jobs
- 10.5 million workers with at least a college diploma
- 1.6 million higher ed students

$2.5 trillion GDP
- One-tenth of entire US economy
- 2.5% of the world’s output

The most competitive region in the world

But...

Some of the highest housing costs in the nation

Lowest vacancy rate of US metro areas

Source: US Census, US Bureau of economic analysis, Global Competitiveness Index
A potential methodology to calculate the region’s housing gap

Cumulative housing gap (demand - supply)

Housing shortage calculations will be based on three complementary, sequential methods:

1. Overcrowding method – calculates the number of units needed to relieve overcrowding (>1 occupants per room)
2. Vacancy rate method – compares the difference between historical rates and units needed to reach 2012 U.S. vacancy rates; gap after 2012 is extended by looking at relative difference between households and housing stock
3. Homelessness – accounts for housing units needed to house 2023 homeless population in the tri-state region

1. Forecasts take into consideration housing starts forecasts from Moody’s which are lower than historical, and a housing dilapidation rate of 0.25% y-o-y taken from permanent losses over 2015-2017 years, as shown in report from the Components of Inventory Change report
2. Forecasts assume a y-o-y growth of 1.1% through 2035 as the growth observed in 1940-1960. Worth noting, matching post-WWII growth would barely exceed 1.2M housing units needed to "close gap"
3. Forecasts assume a y-o-y growth of 0.7% through 2035 as the growth observed in 1990-2000
Tri-State region housing gap could reach 920K units by 2035 if current projections of construction hold

Cumulative housing gap, Thousands of households above supply (2012 = initial estimated housing gap)

Widening gap largely caused by accelerating demographics in addition to a slowdown in housing construction

1. Forecasts take into consideration housing starts forecasts from Moody's which are lower than historical, and a housing dilapidation rate of 0.25% y-o-y taken from permanent losses over 2015-2017 years, as shown in report from the Components of Inventory Change report
2. US Decennial Census found households were underestimated for Tri-State region in their 2020 estimates. 2020 growth incorporated sample adjustment and actual population growth
3. Housing units required for households with more than 1 occupant per room (in 2012)
4. Housing units required to reach US vacancy rates (in 2012)
5. Calculated housing units needed to address homelessness using 2023 figures from HUD’s Point-In-Time Survey data
6. Difference between housing units added to market and new households formed from 2012 to 2023

Closing the housing gap could require a level of housing development matching the period post-WWII

Cumulative housing gap,
Thousands of households above supply (2012 = initial estimated housing gap)

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A growing shortage of housing could have implications for the Tri-State region.

**Decrease in economic activity**
There may be limits to labor mobility and productivity, potentially leading to decreased regional economic output.

**Forgone jobs**
Employers may continue to find difficulty in attracting and retaining workers, which may impact location decisions.

**Decline in population**
High costs and limited availability may force residents to relocate to more affordable areas with more opportunities.

**Increased cost burden**
Limited supply of available housing relative to demand could cause upward pressure on housing costs in the region.

**Potential housing shortage implications**

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*Non-exhaustive*
The Tri-State region could miss out on $400-900B in GDP growth by 2035 unless more housing is built.

### Total GDP impact by 2035, Billions USD, Real 2023

<table>
<thead>
<tr>
<th>Region</th>
<th>Total GDP for region, Trillions USD, 2022</th>
<th>Average estimated increase in yearly GDP</th>
<th>Estimated increase in GDP per capita, USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current projection</td>
<td>$2.5T</td>
<td>$21B</td>
<td>$870</td>
</tr>
<tr>
<td>1990-2000 growth</td>
<td>$2.5T</td>
<td>$58B</td>
<td>$2,460</td>
</tr>
<tr>
<td>Post-WWII growth</td>
<td>$2.5T</td>
<td>$100B</td>
<td>$4,300</td>
</tr>
</tbody>
</table>

- **Construction supply chain**: Involves the construction industry directly producing goods and services.
- **Household spending of employees**: Includes personal income from wages, salaries, and self-employment.</p>

1. Includes Initial, Direct, and Indirect impact effect
2. Impact generated by change in earnings and spending tied to change in output from construction activities
3. Impact from potential new working population, estimated using 2022 proportion of working age population, labor force and employment
4. Assumes no change in productivity levels across the region

The Tri-State region could have 330K-730K more jobs if additional housing is built to meet demand

**Total jobs impact by 2035, Thousands**

<table>
<thead>
<tr>
<th></th>
<th>Construction supply chain</th>
<th>Induced jobs</th>
<th>Added Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current projection</td>
<td>59K</td>
<td>87K</td>
<td>30K</td>
</tr>
<tr>
<td>1990-2000 growth</td>
<td>155K</td>
<td>80K</td>
<td>272K</td>
</tr>
<tr>
<td>Post-WWII growth</td>
<td>248K</td>
<td>128K</td>
<td>534K</td>
</tr>
</tbody>
</table>

**Total employment in region, Thousands 2023**

- Current projection: 11,357K
- 1990-2000 growth: 248K
- Post-WWII growth: 909K


1. Includes Initial, Direct, and Indirect impact effects
2. Impact generated by change in earnings and spending tied to change in output from construction activities
3. Impact from potential new working population, estimated using 2022 proportion of working age population, labor force and employment
The number of cost burdened households could increase by 7.6% (260K) without sufficient housing supply

Cost burdened households, thousands by scenario

<table>
<thead>
<tr>
<th>Scenario</th>
<th>In 2022</th>
<th>After income and cost effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current projection</td>
<td>3,466</td>
<td></td>
</tr>
<tr>
<td>1990-2000</td>
<td>3,466</td>
<td>3,351</td>
</tr>
<tr>
<td>Post-WWII</td>
<td>3,466</td>
<td>3,088</td>
</tr>
</tbody>
</table>

1. Cost burdened in 2022, defined as amount of households who spend more than 30% of income to pay housing obligations
2. After accounting for increases in income, product of new jobs generated by construction investment y-o-y, and for potential price adjustment resulting from supply/demand balance of housing units through 2035
3. Only includes 2023 households. New households added to region are not considered for this analysis


Takeaways

Income impact

Construction investment could lead to creation of new jobs, impacting 70-300K households by increasing their income

Cost of housing impact

Increase in supply can lead to an increase in vacancy rates across scenarios, moderating home value growth moving forward

Overcrowding is only fully relieved in the Post-WWII scenario (1990-2000s scenario addresses 50% of overcrowding)

Current projection scenario could result in continued price pressures due to supply housing markets (vacancy rate at or below 1%), causing more households to become cost burdened

Key assumptions

Inflation assumed as ~1.8% over 2023-2035

Real household grows by 1.3% p.a. over 2023-2035
Area residents could face higher housing cost increases relative to income at currently projected housing supply rates

**Current and projected monthly housing costs** and **household income for the Tri-State region**
USD, Real 2023

<table>
<thead>
<tr>
<th></th>
<th>Monthly housing costs</th>
<th>Yearly household income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current projection</td>
<td>Projected in 2035</td>
</tr>
<tr>
<td>Current projection</td>
<td>2,307</td>
<td>95,510</td>
</tr>
<tr>
<td>1990-2000</td>
<td>2,307</td>
<td>95,510</td>
</tr>
<tr>
<td>Post-WWII</td>
<td>2,307</td>
<td>95,510</td>
</tr>
</tbody>
</table>

1. US 2022 1yr Census; Average median monthly housing costs for rental units and units with a mortgage across RPA region
2. Zillow Home Value Index (ZHVI): A measure of the typical home value and market changes across a given region and housing type. It reflects the typical value for homes in the 35th to 65th percentile range. Available as a smoothed, seasonally adjusted measure and as a raw measure
3. Model estimates home value based on the panel regression that assessed relationship to household growth and real vacancy rates. Scenarios assume no additional disruption due to interest rate environment, additional migration, or other types of housing market disruptions

Housing could become less affordable across the region without adequate supply

Home value\(^1\) and median household income
growth for the Tri-State region, 2023-2035
CAGR by scenario, Percent

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Median HH income growth</th>
<th>Home value growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current projection</td>
<td>1.3</td>
<td>0.8</td>
</tr>
<tr>
<td>1990-2000</td>
<td>1.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Post-WWII</td>
<td>1.3</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Affordability for the Tri-State region,
calculated as Home value\(^1\) divided by median household income (all else equal\(^2\))

- More affordable

1. Zillow Home Value Index (ZHVI): A measure of the typical home value and market changes across a given region and housing type. It reflects the typical value for homes in the 35th to 65th percentile range. Available as a smoothed, seasonally adjusted measure and as a raw measure
2. Model estimates home value based on the panel regression that assessed relationship to household growth and real vacancy rates. Scenarios assume no additional disruption due to interest rate environment, additional migration, or other types of housing market disruptions

**Middle to low-income quintile households could benefit the most from increased housing supply**

### Distribution of change in cost burdened households

<table>
<thead>
<tr>
<th>I quintile (lowest)</th>
<th>V quintile (highest)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;$33K</td>
<td>+28</td>
</tr>
<tr>
<td>$33-70K</td>
<td>+58</td>
</tr>
<tr>
<td>$70-117K</td>
<td>+92</td>
</tr>
<tr>
<td>$117-195K</td>
<td>+67</td>
</tr>
<tr>
<td>+$195K</td>
<td>+18</td>
</tr>
</tbody>
</table>

**Current projection**

- <$33K: +28
- $33-70K: +58
- $70-117K: +92
- $117-195K: +67
- +$195K: +18

**1990-2000s**

- <$33K: -37
- $33-70K: -59
- $70-117K: -12
- $117-195K: -5
- +$195K: -1

**Post-WWII**

- <$33K: -87
- $33-70K: -150
- $70-117K: -79
- $117-195K: -49
- +$195K: -12

1. Households paying 30% or more of household income to rent or housing costs

**Takeaways**

Under the current projection, there could be an increase in cost burdened households across all income quintiles.

If housing growth rates match benchmark periods, the greatest decrease in cost burdened households would be seen by quintiles of low- to middle-income households making less than $70K (~83% in a 1990s growth rate, ~63% in a Post-WWII growth rate)

**Source:** McKinsey Global Institute analysis, US Census, American Community Survey, RSMeans, National Association of Home Builders, Lightcast, Moody’s analytics
Without additional housing growth, the region could forgo at least ~$3.7B local taxes and ~$3B federal taxes by 2035.

**Potential 2035 added tax benefits, Billions USD (Real 2023)**

<table>
<thead>
<tr>
<th></th>
<th>Current projection</th>
<th>1990-2000</th>
<th>Post-WWII</th>
</tr>
</thead>
<tbody>
<tr>
<td>State &amp; local</td>
<td>17.8</td>
<td>18.4</td>
<td>21.5</td>
</tr>
<tr>
<td>Federal</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Reflects added tax revenue vs. 2023 base; Only accounts for differences between scenarios. Federal revenue assumes 22% of added population is international migration, consistent with historical trends.
- Note: State and local taxes includes income, property and consumption taxes.

**Takeaways**

The housing shortage could include a loss of at least $3.7 billion in added taxes by 2035.

Federal tax collected in the region could be $3 billion less by 2035 without additional housing.

These taxes could be used for the vitality and prosperity of the community, impacting sectors including (non-exhaustive):

- **Education**
- **Public infrastructure** (e.g., roadways, public transportation systems)
- **Public safety**
- **Environmental protection**
- **Cultural and arts programs**
- **Social services**
Several aspects of the region's global competitiveness could be affected due to continued housing shortages.

The Tri-State region may be at risk across many of these components due to domino effects from the current housing shortage.

Credible headwinds associated with continued projection of the present scarcity include risks associated with:

- **Economics**, such as lost GDP
- **Human capital** including migration slowdown and reduction in growth of skilled labor
- **Resident wellbeing** impacted by harmful effects to physical and mental health
- **Business environment** downsizing and/or relocation of companies across sectors

### Global competitiveness measures

<table>
<thead>
<tr>
<th>Category</th>
<th>Components</th>
<th>Potential impact of housing shortage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economy</td>
<td>GDP, Housing expenses</td>
<td><img src="#" alt="Negative" /></td>
</tr>
<tr>
<td>Human capital</td>
<td>Level of education, Labor market</td>
<td><img src="#" alt="Negative" /></td>
</tr>
<tr>
<td>Resident wellbeing</td>
<td>Social cohesion, Safety, Health, Cultural experience</td>
<td><img src="#" alt="Negative" /></td>
</tr>
<tr>
<td>Business environment</td>
<td>Agglomeration of industrial sectors, Innovation and entrepreneurship</td>
<td><img src="#" alt="Negative" /></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Transportation availability via mass transit, roadways, Physical and digital connectedness</td>
<td><img src="#" alt="Neutral" /></td>
</tr>
</tbody>
</table>

Source: UN Global Urban Competitiveness Report, McKinsey Global Institute analysis, OECD Attractiveness Indicators.
New York City’s global competitiveness dominance may be at risk without more housing

Global competitiveness measures

<table>
<thead>
<tr>
<th>Category</th>
<th>Components</th>
<th>Potential housing shortage Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economy</td>
<td>GDP</td>
<td>Minimal</td>
</tr>
<tr>
<td></td>
<td>Housing expenses</td>
<td>Extensive</td>
</tr>
<tr>
<td>Human capital</td>
<td>Level of education</td>
<td>Extensive</td>
</tr>
<tr>
<td></td>
<td>Labor market</td>
<td>Minimal</td>
</tr>
<tr>
<td>Resident wellbeing</td>
<td>Social cohesion</td>
<td>Extensive</td>
</tr>
<tr>
<td></td>
<td>Safety</td>
<td>Minimal</td>
</tr>
<tr>
<td></td>
<td>Health</td>
<td>Extensive</td>
</tr>
<tr>
<td></td>
<td>Cultural experience</td>
<td>Minimal</td>
</tr>
<tr>
<td>Business environment</td>
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<td>Extensive</td>
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<td>Minimal</td>
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<td>Infrastructure</td>
<td>Transportation availability via mass transit, roadways</td>
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</tr>
<tr>
<td></td>
<td>Physical and digital connectedness</td>
<td>Minimal</td>
</tr>
</tbody>
</table>

Note: Impact is projected and estimated for 2035 based on expectations stemming from current projection (i.e., if no intervention is done)

Source: UN Global Urban Competitiveness Report, McKinsey Global Institute analysis, OECD Attractiveness Indicators

Housing shortage impact on NYC’s global competitiveness

Competitiveness ranking (indexed to 100)

- 100: Historical ranking (#1 since 2018)
- 85: Potential impacted ranking

Year (20xx)
$30-60B of incremental annual investment would be needed through 2035 to alleviate the housing shortage.

Potential annual investment required by 2035
Billions USD, Real 2023

- Current projection: $18B
  - Other land acquisition costs: $9B
  - Construction costs: $9B
  - Real estate broker fees: <$1B

- 1990-2000 growth:
  - Other land acquisition costs: $1B
  - Construction costs: $23B
  - Real estate broker fees: $24B

- Post-WWII growth:
  - Other land acquisition costs: $1B
  - Construction costs: $37B
  - Real estate broker fees: $38B

Potential investment required from 2025 – 2035 for building housing units.


1. Estimated additional population using 2022 proportion of working age population, labor force and employment.