

NAA
NATIONAL APARTMENT ASSOCIATION
— We Lead the Way Home

U.S. Barriers to Apartment Construction Index

With appreciation to all survey responders, Association Executives of the National Apartment Association, and the American Planning Association for your input and responses to this survey.

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EXECUTIVE SUMMARY

The U.S. renter population increased by more than 19.6 million people over the past ten years¹. Despite new construction, the growing rental population put upward pressure on rents, driving renter housing affordability issues to the top of community concerns in many areas. In major markets such as Denver, San Jose, Seattle, Boulder, Oakland, San Francisco, Portland and Seattle, rents have risen by more than 18% in just the past four years.²

Of the current rental households in the U.S., 37.5% spend 35% or more of their income on rent and 23% spend 50% or more of their income on rent. This issue is exacerbated in states such as Florida, California, Hawaii, New York, New Jersey, Oregon and Louisiana where 40% or more of rental households spend over a third of their income on rent.

Affordability is a complex issue and can be driven by diverse factors including income levels, land and natural resource availability, population growth and housing supply-demand balances, among other issues. As noted in our previous publication, “U.S. Apartment Demand – A Forward Look³,” rental demand and growth prospects vary significantly by market. We thus turn to the supply side of the market in this publication to better understand factors that impact new supply, and particularly the ability of new supply to meet demand in specific markets.

The National Apartment Association with input from the American Planning Association conducted a national survey to better understand factors that impact new supply of apartments. The survey included 91 questions and 5 external data points that were aggregated into ten subindices to measure development complexity in each market, including the impact of community involvement, construction costs, residents and affordability issues, infrastructure, density & growth restrictions, land supply, environmental restrictions, approval process complexity, political structure complexity and time to develop a new property. We received 883 responses from government entities as well as private developers and owners, covering 241 metropolitan markets.

By far, survey respondents responded that the land development process is a local process that is influenced by local councils and the local community. This in fact was the largest complexity in creating a national survey. We maintained the same baseline approach to a metro market from our previous study by using established MSA boundaries. Often, these larger housing trade areas mask even higher barriers seen in urban cores. In addition to multiple zoning categories within a market, one of the most interesting parts of the study was the uniqueness of each metro area. We thus began the study with an objective measure of land availability, as many (but not all) populated job-growth centers are coastal-oriented with limited land availability. Thus, policy in these areas must address long-term sustainability issues which differ from interior locations with more abundant land and other natural resources, e.g. water.

¹ U.S. Census, 2017 American Community Survey

² U.S. Census, 2017 American Community Survey

³ Available with 2030 demand forecasts for all states and 50 markets at <http://www.weareapartments.org>; cosponsored with the National Multifamily Housing Council

We caution that while ranking areas is always interesting, the intent of this study was to provide data to identify differences in land management and to provide a more holistic and fact-based review of best practices and factors that impact housing availability and affordability. Our index rankings are not intended to apply judgment as to whether these policies are either good or bad⁴.

Input from local citizens significantly influences development. In addition to the importance of land availability, most survey respondents indicated that local resident involvement is important in influencing residential building activities and/or growth and that citizen opposition to growth / NIMBYism is important in regulating the rate of residential development in their community.

Rising land and labor costs are inhibiting the production of affordable housing. Some 33% of survey respondents indicated that construction costs including labor, hard and soft costs have increased by more than 20% in the past five years, with another 45% indicating that construction costs are up by 11 to 20%. Similarly, 30% of survey respondents indicated that the cost of undeveloped land rose by more than 20% in the past five years, with 36% reporting costs are up by 11 to 20%.

Complex approval systems are correlated to affordability issues. The report covers 58 metro markets in addition to the U.S., including a detailed review of 29 major markets. We find significant differences by market with high development complexity in markets such as New York, Baltimore, Washington DC, San Diego, Honolulu, San Francisco, Sacramento, Philadelphia and San Jose. Many of these are large coastal markets and correspond with states that have low renter affordability. Invariably, the complexity of approvals and impact fees will challenge the smaller, more affordable housing developments in any market and can only be reasonably sustained by larger, scaled and higher-rent projects.

We hope that this report provides facts and focus for local discussions by rental housing advocates, both public and private. Our previous study found a sustained demand for new multifamily housing in every major metro in the nation. Here, we find that the barriers to new developments that could hinder supply serving this demand begin with the expected factors that cannot be controlled: topography, and the rising costs of labor generally beyond the control of local policy providers and leadership. Communities also face highly varying environmental conditions and infrastructure qualities. However, community residents have significant influence on new development, and other important barriers are malleable and subject to change and best practices, including approval structure and process complexity, timelines for entitlements, density and growth restrictions and development impact fees. Together, our studies find that the tide of sustained rental demand and challenges to meet this demand must be addressed by those who can influence policies at the local level with cooperation from residents, policy makers and developers towards mutual goals.

-The Hoyt Advisory Services Research Team⁵

⁴ We encourage readers to review the variances of common land management techniques as measured in this study as compared to markets with similar geographic and growth characteristics and to consider unique aspects of those markets that may not be captured in the report. Small differences in total index scores are unlikely to be meaningful.

⁵ Hoyt Advisory Services is an independent, non-profit research and educational foundation established in 1967 to improve the quality of public and private real estate decisions by expanding and disseminating the real estate body of knowledge, stimulating innovation in the discipline of real estate and land economics, building bridges among academia, industry, and government, and developing innovative approaches to the solution of real estate problems. Research Team details are provided on the last page of the report.

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BACKGROUND ON HOUSING SUPPLY CONSTRAINTS

Housing analysts understand that housing supply elasticity is an important indicator of how housing markets will respond to changes in demand. Elasticity here refers to the ability to add new units within a reasonable period of time. Constraints that make markets less elastic, or less responsive, include physical limitations or political and regulatory limitations. These considerations are independent of and in addition to capital market and other economic drivers of the housing market.

As of 2018, there is ample anecdotal evidence that adding new housing units has become more difficult, especially denser, smaller-unit developments that provide more affordable types of units for owners and renters. However, this is by no means a new development; we can find articles from three decades ago that taut the problems with regulatory constraints. For example, in 1991, Tony Downs wrote on the difficulty of adding housing in the face of regulation, particularly in wealthy areas preferring exclusivity that used local zoning laws to restrict new supply.⁶

More recently, in an article titled “The Fight Against Small Apartments: Why Neighborhood Groups Are Uniting to Stop Developers from Building Tiny, Affordable Units”,⁷ Dominic Holden outlined a current movement against micro-units in Seattle. Paraphrased below is an excerpt from the article:

“Homeowners on Capitol Hill were furious about a construction project.... One neighbor was Alan Gossett. Gossett was trying to sell his blue Craftsman house, which shared an alley with the new development. Standing on the corner of his rear deck, Gossett pointed through the trees to the half-built structure and said, “I think this is going to be a magnet for very sketchy people.”

Why sketchy? According to permitting paperwork, the building was a commonplace cluster of six town houses. Inside each town house, the developer was building up to eight tiny units (about 150 to 250 square feet each, roughly the size of a carport) to be rented out separately. The tenants would each have a private bathroom and kitchenette, with a sink and microwave, but they would share one full kitchen for every eight residents. The rent would be cheap—starting at \$500 a month, including all utilities and Wi-Fi—making this essentially affordable private market housing in the heart of the city. Gossett and other neighbors felt hoodwinked. There was no public notification and no review process that allowed neighbors to pose objections. This was due to a loophole in the permits: The city and developers classified the building as six units (with up to eight bedrooms each), instead of as an apartment building with dozens of units, which would have required a more public process. Neighbors said they feared that the area wasn't ready for so many new residents and that the influx of newcomers would usurp on-street parking. But Gossett also seemed concerned by who his new neighbors might be.

⁶ See <http://www.tandfonline.com/doi/abs/10.1080/10511482.1991.9521082> The advisory commission on regulatory barriers to affordable housing: Its behavior and accomplishments.

⁷ See <http://www.thestranger.com/seattle/the-fight-against-small-apartments/Content?oid=16701155>

'Anyone who can scrape up enough money to live month-to-month can live there,' he said, worried that low-income interlopers would jeopardize his chances to sell his own house. 'I don't think most people want to live next to a boarding house with itinerant people living in it.'

Similar stories abound throughout the country. The two seemingly ubiquitous claims of neighborhood residents against development are 1) that traffic will increase dramatically and threaten the safety of children, and 2) that there will be insufficient parking. Further claims against such developments depend on the neighborhood at issue, but generally will involve concerns of adverse impacts on 3) property values, 4) crime, 5) school systems and infrastructure, and 6) water supply.

Despite the similarity of these complaints over the last decades, what is different today compared to 1991, or even 2006, is that it has become exponentially easier to use political pressure to stop development, especially against anything perceived to potentially interfere with the comfortable status quo. This can likely be attributed to the widespread use of internet applications that connect neighbors and communities of people with similar interests. While we do not yet have a measure for the impact of political activism on the process of adding new housing, especially the more affordable type, one might surmise it is correlated with income and wealth. Specifically, political activism, along with profit margins on high-end housing, might explain why there appears to be a national trend towards approving only the larger high quality and higher priced housing or rental units with the lowest densities.⁸

While none may be indicative of the *true* severity of challenges developers face today, and that they could be viewed as historical in context, there are a number of indices worth discussing that measure the challenges of adding new housing:

Geographic Housing Constraints

One major constraint on development can be described as physical in nature, based on the presence of water or topography and preserve areas that simply reduce the potential area where any development is possible.

Urban Land Price: The Extraordinary Case of Honolulu, Hawaii

In an early study of geographic constraints on housing, Louis Rose and Sumner La Croix analyzed the factors contributing to the price of residential land in Honolulu being much higher than mainland areas of the United States. They concluded that a peculiar combination of market constraints and land prices existed. These included: environmental amenities, isolation from the United States mainland, highly restrictive state and local land use regulations, prominence of private land ownership; and heavy foreign investment in the city's business and residential markets contribute to the high residential land prices.⁹ Later, building on his previous study of Honolulu, in 1989, Louis Rose published "Topographical Constraints and Urban Land Supply Indexes". Based on the observation that half of the 40 most populous urban areas in the United States are land-locked, while the other half are bounded by a water body, this article summarized the implications that variations in available land supply have on land price.

⁸ Another factor to be discussed later, are fixed fees per unit, not prorated by size or price. In order to make fixed fees a smaller percentage of price, developers must build larger higher quality units.

⁹ Rose, Louis A., and Sumner J. La Croix. "Urban Land Price: The Extraordinary Case of Honolulu, Hawaii." *Urban Studies*, vol. 26, no. 3, 1989, pp. 301–314.

Specifically, Rose developed and applied a method to measure the extent to which large water bodies restrict urban supply by calculating indexes for the 40 most populous U.S. urban areas from 1980. Each urban area was given a 30-mile radius and, after subtracting out water, the amount of net available land was measured.

Each index is a percentage of the actual amount of urban land supply in each city over the amount that would be available in the absence of water restrictions. For example, when the article was published, New York had an index value of 0.703, “indicating that its urban land supply was 70 percent of what would be available in the absence of water restrictions.”¹⁰ Atlanta and Phoenix had the highest indexes at 1.000, while the lowest indices of the top forty areas were San Francisco, Norfolk, and Chicago at 0.521, 0.546, and 0.561 respectively.

Admittedly, one aspect of Rose’s method that may need to be reconsidered is his inclusion of wetlands in the amount of land available in each area.¹¹ This is slightly surprising, in that Section 404 of the 1972 Clean Water Act requires individuals to obtain permits under a strict review process before draining wetland areas. Specifically, applicants have to show that no practical alternative exists which would have less adverse impact on the aquatic ecosystem, and that the discharge cannot cause or contribute to significant degradation of wetlands by adversely impacting wildlife, ecosystem integrity, recreation, aesthetics, and economic values.¹² Despite this permitting process, Rose may have included wetlands as part of the physical land because they were still *potentially* developable even after the passage of the 1972 Clean Water Act.¹³

Since the Clean Water Act, regulations on wetlands have only tightened. Most states have enacted laws that offer some manner of protection specifically for wetlands and many have included wetlands in the definition of state waters.¹⁴ Furthermore, if Rose’s analysis was re-calculated today, many of these indexes would decrease because wetlands would be removed from the measure of developable land. Other than this readjustment however, Rose’s methodology was the first of its kind and set the stage for further studies on housing supply constraints.

Albert Saiz and Sumner La Croix

In his 2010 study, titled “The Geographic Determinants of Housing Supply”, Saiz examined the physical limits of developable land within 50 miles of the center of each urban market based primarily on water and slope. He found that steep-sloped terrain effectively curtails residential development, and that most areas with inelastic housing supplies are also severely land-constrained by their geography, leading to the conclusion that supply elasticities are functions of both physical and regulatory constraints.

¹⁰ Louis A. Rose. 1989. Topographical constraints and urban land supply indexes, *Journal of Urban Economics*, 26(3): 335-347, 343

¹¹ Louis A. Rose. 1989. Topographical constraints and urban land supply indexes, *Journal of Urban Economics*, 26(3): 335-347, 342.

¹² See <http://www.water.ncsu.edu/watershedss/info/wetlands/protect.html#sec402>

¹³ Note also that in the 1960’s swamp lands in Florida were being sold to speculative investors with the idea of future development, once drained. This practice continued even in 2006. See The Washington Post, “Heated Bidding for A Slice of Fla. Swamp Sales of Unbuildable Lots Are Often Scams” by Mark Pino September 9, 2006

¹⁴ Salvesen D. 1990. *Wetlands: Mitigating and Regulating Development Impacts*. Washington (DC): Urban Land Institute. Retrieved from <http://www.water.ncsu.edu/watershedss/info/wetlands/protect.html#sec402>

Following his work with Rose and the work of Saiz, Sumner La Croix more recently wrote a paper titled, “New Perspectives on Land and Housing Markets in Hawaii,” that extends his previous studies to a more current timeframe, again analyzing why prices and lease rents are so much higher in Honolulu than most other US cities.¹⁵ He used methodology developed by Saiz. His three central findings were that (1) increases in U.S. housing prices between 1980 and 2004 were largest in markets where shares of land as a percentage of housing prices were already relatively high in 1980; (2) U.S. housing prices tend to be more volatile in markets where the share of land in housing prices was high; and (3) prices in U.S. residential, commercial, and industrial land markets tended to move together over the 1990- 2009 period and all were volatile.

La Croix also concluded that land and housing prices continue to remain high in Honolulu due to its high levels of regulation on residential development, the small natural supply of developable land, and the regular lobbying done by homeowners for greater restrictions to preserve their already-high property values.¹⁶

Regulatory Constraints and Green, Malpezzi’s and Mayo’s Contribution to Supply Indices:

Along with geographic constraints, and as included by some of the previously-mentioned studies, the other significant constraint on housing development is regulatory in nature. A number of important studies have analyzed the impact that government regulation has on the ability to build housing.

In December 2004, Richard Green, Stephen Malpezzi and Stephen Mayo published “Metropolitan-Specific Estimates of the Price Elasticities of Supply of Housing, and their Sources”, which, as the title indicates, studied the metropolitan differences in the supply responsiveness of housing. Using regression models on complete data for 44 Metropolitan Statistical Areas (MSAs), the authors found that heavily-regulated metropolitan areas always exhibited low elasticities (high inelasticity), while the elasticities of lightly-regulated areas depended on whether they exhibited slow or high growth demand. The authors conclude that while “regulation and density (urban form) work largely as expected in explaining variation in elasticities, other variables like MSA growth rates and city size did not match the predictions of the model.”¹⁷

The Wharton Regulatory Index¹⁸

In a 2007 article published in *Urban Studies*, titled “A New Measure of the Local Regulatory Environment for Housing Markets: The Wharton Residential Land Use Regulatory Index”, Joseph Gyourko, Albert Saiz, and Anita A. Summers laid out an index which compared many geographic areas based on a host of regulatory constraints. Specifically, based on survey responses of over 2000 jurisdictions across all major housing markets in the US, the authors documented (1) how regulation of residential building varies across space, and (2) how the stringency of land use control varies across markets. They found that Coastal markets tended to be more highly regulated, with communities in the

¹⁵ See http://www.uhero.hawaii.edu/assets/LaCroix-Land_Housing.1.27.pdf New Perspectives on Land and Housing Markets in Hawaii, 2016.

¹⁶ LaCroix, S. 2016 New Perspectives on Land and Housing Markets in Hawaii. UHERO Working Paper, University of Hawaii.

¹⁷ Malpezzi, S. 1996. Housing Prices, Externalities, and Regulation in U.S. Metropolitan Areas. *Journal of Housing Research* 7(2): 209-241.

¹⁸ See <http://real.wharton.upenn.edu/~gyourko/WRLURI/The%20Wharton%20Zoning%20Regulation%20Index-July%20202007.pdf>

Northeast region of America were the most highly regulated on average, followed by those in the West region (California especially). This work followed the work of Glaeser, Scheutz, and Ward (2006) where the authors studied submarkets in the Boston metropolitan area, examining differences in local zoning codes, and permitting precise calculations of potential housing supply across communities. The authors of the Wharton study standardized the scores of the survey responses so that index has mean score of zero and a standard deviation of one, with positive numbers for more restrictive markets, and negative for those which are less. While the index is certainly out of date with local current resistance levels, it may still provide a reasonable relative proxy for political regulatory constraints on housing development.

A More Recent Regulatory Index (Regulatory Climate Index 2014)

A more recent regulatory index is aptly called the 2014 Regulatory Climate Index, focusing on the impact of five areas of regulation: (1) Starting a Business, (2) Dealing with Construction Permits, (3) Registering Property, (4) Paying Taxes, and (5) Enforcing Contracts. Lower values indicate greater regulatory burdens.

Of the five areas analyzed by the index, the “Dealing with Construction Permits” scores could help discern whether older regulatory indices such as the WRI are outdated. That being said, this index only covers ten US cities, specifically Dallas, St. Louis, Raleigh, Boston, Atlanta, Detroit, Chicago, Los Angeles, San Francisco, and New York City. Comparing the results of the WRI to the more recent Regulatory Climate Index looks as follows:

Ranked from Hardest to Easiest in Adding Housing

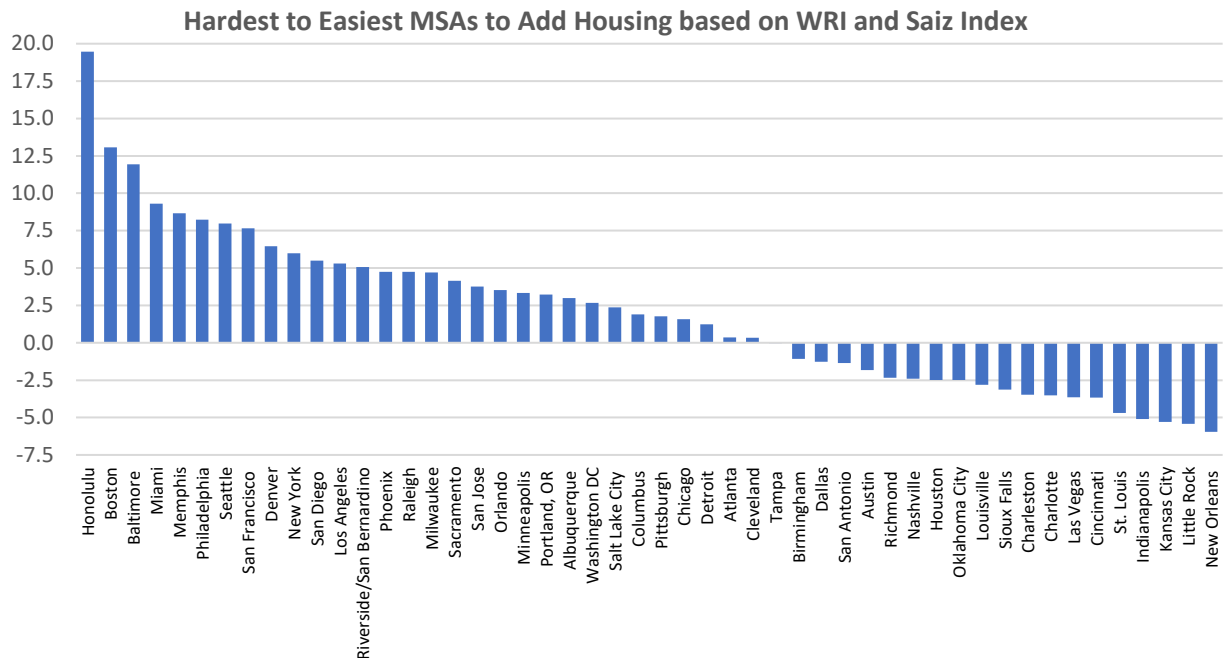
| WRI | Regulatory Climate Index |
|---------------|---------------------------------|
| Boston | San Francisco |
| San Francisco | Los Angeles |
| NYC | Detroit |
| Los Angeles | Chicago |
| Raleigh | Atlanta |
| Chicago | New York City |
| Detroit | Boston |
| Atlanta | St. Louis |
| Dallas | Dallas |
| St. Louis | Raleigh |

While the methodology between the two studies varied, the rankings of these cities are fairly different from one index to another.

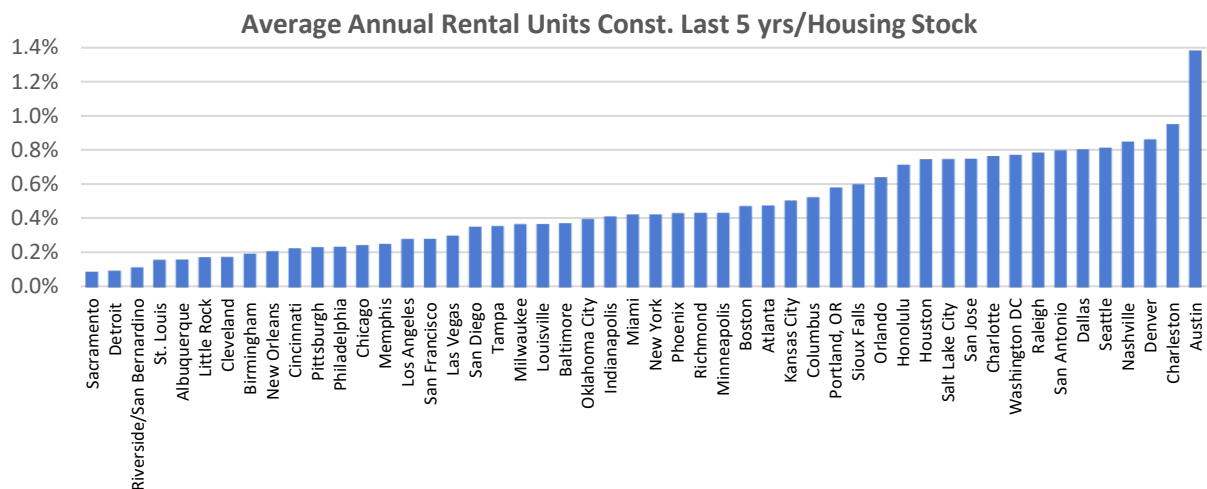
Blended WRI / Saiz Index Compared to Market Growth

Based on this Saiz physical limit index constructed for most metro markets and the WRI index, we developed a 50/50 blended index. Next, we applied this same methodology for the 50 metros below considering both political and physical constraints on developable land in each market. See the Figure below, where the higher the column, the harder it is to develop anything based on these two indices. It should be no surprise that Honolulu is top on the list with both steep topography and surrounding water,

providing little area for new development, and then add on top of this severe zoning restrictions that take many years to appeal. At the other end of the spectrum we see that anything to the right of Cleveland is relatively easy (developer friendly) and faster to achieve entitlement rights for new development. One might notice that the markets where development is more difficult are also markets with higher growth rates and stronger economies. Those markets with weaker economies and slower growth, are by nature, friendlier to new development.



While it is not exactly parallel to the chart above, the below Figure shows the new supply of 5+ unit multifamily housing added in the past 5 years relative to the existing stock of housing. Those markets to the right have added the most new housing. Still, the percentages are quite low in most markets.



Source: CoStar

FURTHER EXTENSION OF NEW SUPPLY CONSTRAINT INDICES

Working with the National Apartment Association (NAA), the aim of an updated survey is to re-visit these indices, especially, the WRI which is focused on political and regulatory barriers to development. Building upon previous works, our goal is to use new methodologies to develop a current index, one that is both more current and more relevant to the approval process system in place in 2018 and beyond.

Land management is a complex issue beginning with natural barriers to land supply. While some markets have expanses of flat, workable soil, others are mired by natural geographic barriers such as oceans, lakes, mountains or other topography issues. Some of these issues may be compounded by climate factors that make water and other natural resources of limited availability. And while some of these markets may have a sparse population base, others are major metropolitan areas that have significant population growth that stress both natural resources and topography. Man-made infrastructure has been built to adapt to these environments, in some cases over hundreds of years. Many of these systems are now becoming physically or functionally obsolete, creating further burdens to support growth. Thus, the new supply restrictions index begins with a survey of both natural topography as well as a review of infrastructure support needed to support the local population base.

In the U.S., land management is a local effort. This was one of the most universally agreed upon concepts in the survey. Thus, within a single metro area, there may be many different methods of managing land. While one municipality may have a series of rent control issues, density and growth restrictions and complex processes to approve new development, another municipality within the same metropolitan area may have a much simpler and growth-friendly approach.

Appendix A illustrates the number of incorporated and unincorporated municipalities within each metropolitan area. The potential for significant land management variations within a metropolitan area increases for markets with a higher number of individual municipalities. For metropolitan areas with high ranks (few people per city or more cities per population base), we caution that significant variations may exist within the metropolitan area. Note that in addition to cities, other towns, wards and other political boundaries exist that have significant decision-making powers that can influence land decisions. Thus Appendix A should be considered as a preview to a complete geographic review. In the City of Chicago for example, 50 wards exist, each with independent zoning and decision-making powers¹⁹. Thus, some markets were pulled from the index score tables because either 1) we did not have enough responses given the potential variation within the metropolitan area and/or 2) because there was so much variation in the responses that we did receive that we could not calculate a comprehensive index for the metropolitan area.

In addition to local municipality variations, the complexity of land management systems was the most challenging impediment to creating a national index. Our total index score is a reflection of *common* land management techniques. It is not a comprehensive evaluation of every possible method used to manage land, many of which are created in response to unique challenges faced by local markets. As an example, Honolulu, one of the most complex and geographically challenged markets, considers limiting unit sizes on new development to create affordable housing for local residents because smaller unit sizes would be less appealing to wealthy retirees who move to Hawaii from other states or countries.

¹⁹ “A City Fragmented, How Race, Power and Aldermanic Prerogative Shape Chicago’s Neighborhoods,” Chicago Area Fair Housing Alliance in partnership with Sargent Shriver National Center on Poverty Law.

In addition to unique circumstances, many municipalities have multiple zones within their market that allow for various zoning models. For example, higher density may be allowed near city centers, or markets may have more severe restrictions for coastal or historic areas. Survey participants were asked to respond to the survey based on where they most likely would develop new multifamily housing, or else would have to average out multi-zone issues in survey responses.

While addressing all of these issues would have required an unwieldy and impractical approach, the intention of the survey was to identify at a high level, which markets have more complex common land management methods including views from both public and private market participants. Also note that the index is intended to identify how common land management factors vary by market and provide an objective view of how land is managed differently in local markets given natural boundaries and other geographic limits to new supply. It is not intended to apply judgment as to whether these policies are good or bad.

High total scores thus represent markets in which a number of common physical, political and structural measured factors exist that create more complex systems to managing land for new development. *Given the complexity of the topic, total index scores should be viewed as general categorization of land management complexity. We put little relevance on a score of 1.15 vs. 1.19, although both would be reasonably viewed as markets that have above average land management complexity.*

SURVEY METHODOLOGY

A pilot survey was sent in February 2018 to 1,077 individuals in private real estate companies with multifamily exposure as provided by the National Apartment Association and another 2,911 individuals in the government / non-profit sector as provided by the American Planning Association for four multifamily markets: Austin, Miami, New York and San Diego.²⁰ These markets represent diverse market sizes, geographic locations, demographics and growth dynamics. A total of 147 responses were received; 17 of those were removed because of significantly incomplete survey responses. Thus, 130 responses were used in the pilot market index creation, representing more complete survey responses, including 13 in Austin, 29 in Miami, 45 in New York, 43 in San Diego and 10 from other markets. The percentage of respondents from government or non-profit agencies ranged from 14% in San Diego to 46% in Austin. The New York market encompassed both Manhattan and the more urban parts of the New York metropolitan area as well as more suburban locations in New Jersey that also fall within the New York metropolitan area. In New York, 14 or 32% of the respondents were from the more urban parts of New York. 41% of respondents were government or public agencies.

The pilot survey included 79 questions. Of these, seven questions were similar but focused on single family housing and were not included in the index. Question responses were checked for completion and dispersion in results. For example, where responses varied widely on the 0 to 3 scale, we concluded that either the question was not clear or the issue was too complex, or varied too much at the local level within the metro area market to provide a clear response. Many questions had some skewness in variation towards one direction, e.g. with responses primarily around a “1” response but ranging generally around 0 to 2. Preliminary results were discussed with local market experts to determine reasonableness of the results. Seven of the questions were eventually removed from the index calculation because of a number of factors including wide dispersions in answers, low answer frequency or no

²⁰ A test survey was sent to a smaller subset of NAA Affiliates in December 2017 to test the survey instrument.

dispersion in answers / clarification of the question intent. The remaining pilot analysis was based on 64 questions in ten categories, plus one open-ended question not included in the subindices.

In addition to survey questions, we included several external data points in the index scores as indicated below.

Two external data sources are included in the cost subindex: an effective apartment tax rate and a rent index. Apartment effective property tax rates are provided by the 50-State Property Tax Comparison Study by the Lincoln Institute of Land Policy and Minnesota Center for Fiscal Excellence. The June 2017 study was used for the pilot study and updated in the following year for the national study. The effective tax rate assumes a \$600,000 apartment building and calculates an effective rate by adjusting the tax rate for the area's sales ratio, classification rate, property tax credits and other exemptions. Effective tax rates for metro markets in this study ranged from 0.33% (Honolulu) to 5.47% (New York). Average apartment rents were derived primarily from CoStar and Marcus & Millichap for each market.

A measure of land developability as calculated by landdevelopability.org is included in the Land subindex. This measure considers surface water, wetlands, federal/state-owned land, Indian reservations, built-up land and steep slopes as of 2010 for states and counties. County data is aggregated to the metropolitan statistical area for this study.

In the Environment subindex, the number of conservation bonds passed from 2008 to 2017 at the state, county, municipal, or special district level within a metropolitan statistical area is calculated as provided by the Trust for Public Land (landvote.org). The LandVote Database tracks the number of measures proposed and passed each year through the voting process to raise public funds in support of land conservation, including total funds approved and conservation funds approved.

The Process subindex also includes a land use regulation state rank as provided by the Cato Institute²¹. An average rank is calculated from the Cato Land Use and Zoning rankings for each state. Zoning and land-use regulations have different but overlapping meanings. Land-use regulation is an umbrella term that includes zoning as well as subdivision regulations; building codes; and national, state, or regional rules on land development and permitting (e.g., National Environmental Policy Act or California Environmental Quality Act). Zoning is an important subset of land-use regulation and includes land use regulation associated with a city or county zoning ordinance.

Pilot survey results were reviewed and further discussed with NAA representatives in each market and reviewed by representatives of the American Planning Association. A number of questions either had no explanatory value or needed clarification. Based on this feedback, fourteen questions were added to the pilot index for the national study and two were removed²². The time to develop questions were further defined into categories of zoning compliance resulting in an expansion of 15 questions, but remained similar in concept to the pilot study.

A summary of the final subindex categories is listed below. A complete list of survey questions is provided in Appendix B.

²¹ Zoning, Land-Use Planning, and Housing Affordability, Vanessa Brown Calder, Cato Institute, Policy Analysis Number 823, Oct 18 2017

²² Question addition and subtractions from pilot study to national index based on Subindex code: CI (0), C (+2), AH (+3, -1), I (+3), D (0), L (0), E (+1), P (+3, -1), PS (+2), T (+15); e.g. (+2, -1) means two questions added to pilot index and 1 question removed from pilot index to calculate national index.

| SubIndex Categories | Questions in Pilot Index | Questions in Natl Index | External Data Points |
|-------------------------------|--------------------------------|-------------------------------|-------------------------|
| Community Involvement | 5 | 5 | 0 |
| Construction Costs | 7 | 9 | 2 |
| Affordable Housing & Tenants | 3 | 5 | 0 |
| Infrastructure | 4 | 7 | 0 |
| Density / Growth Restrictions | 10 | 10 | 0 |
| Land Supply | 1 | 1 | 1 |
| Environmental Restrictions | 4 | 5 | 1 |
| Process Complexity | 10 | 12 | 1 |
| Political Structure | 9 | 11 | 0 |
| Time to Develop | 11 | 26 | 0 |
| TOTAL | 64 | 91 | 5 |

The subindices are defined as follows:

Community Involvement: This factor measures citizen opposition to growth and structures that give citizens more power in the development process such as public votes that circumvent a local council or planning commission vote, required community meetings or votes as part of the zoning or rezoning process, and frequency of lawsuits that delay the development process.

Construction Costs: The construction cost subindex captures factors such as impact fees, land costs and union wages that increase construction costs as well as increases in those costs over the past five years. Nine survey questions are included in this measure, including estimates of the total cost per unit to construct an average Class A apartment as well as the percentage of that cost that is attributable to land and fees. This subindex also includes two factors from other data sources that provide insight into cost trends: average apartment rents²³ and the effective tax rate²⁴ for multifamily properties.

Tenants & Affordable Housing Requirements: Affordable housing and rent control are complex topics that can be highly localized and have significant variation even within the same metro area. The complexity of these types of systems are the subject of many other studies. A number of questions were included in the original questionnaire that were not used in the final metro market level index because of the disparity of question responses. For the purposes of this study, we simply attempted to identify at a very high-level, the presence of affordability efforts at the metro market level. The subindex thus includes just three questions that address whether any sort of rent control is present in the market, and if so, does it impact only new buildings or other buildings as well. Housing can also be more expensive for a municipality to support if it is spread over a large geographic area which requires more infrastructure to support. Thus, a third question asks if density bonuses are provided for more density if affordable housing is included.

²³ CoStar and Marcus & Millichap 4Q 2018

²⁴ Lincoln Institute 2017

Infrastructure: This subindex includes four questions that measure the importance of certain factors in regulating the rate of residential development, including impact fees, school crowding or under crowding or city budget constraints.

Density & Growth Restrictions: This subindex measures density and growth restrictions that are used to limit the volume or density of construction in a market. It also includes factors such as parking requirements. Specifically, this measure looks at minimum lot sizes, maximum floor area requirements, height restrictions and any maximum limits on building permits. Survey respondents are also asked to rate the importance of each of the following factors in regulating the rate of residential development: density restrictions, moratoriums or growth limitations, unit size mix, and frequency in which redevelopment of an existing site / building cannot be undertaken because the existing structure does not meet current code. The survey also asks for the average number of parking permits per bedroom and whether there are exceptions for transit oriented developments.

Land Supply: While many land supply indices exist, most have not been updated for a decade or more. The Land Supply index primarily weights a 2010 index developed by researchers at several universities that measures undevelopable land including surface water, wetland, federal/state-owned land, Indian reservation, built-up land where impervious surfaces cover 20% or more of land, and steep slopes²⁵. The index was provided at the county level and aggregated up to the metropolitan statistical area level (metropolitan division level for New York) by weighting each county index by the land area per county. It also applies a 25% weight to a survey question to rate the importance of land availability in regulating the rate of residential development.

Environmental Restrictions: The environmental restrictions index asks survey respondents to rate the importance of each of the following factors in regulating the rate of residential development: environmental restrictions in general, coastlands / wetlands, water availability or restrictions and flood zone restrictions. It also includes the number of conservation bonds passed from 2008 to 2017²⁶.

Process Complexity: This subindex measures things that create complexity in the approval process for new multifamily developments, and particularly focuses on complexity that may increase time or create uncertainty in the development process. It specifically asks questions about how long the approval process takes, whether the process is easy to understand or requires a professional advocate to shepherd it through the process, how many submissions are required and the clarity of any appeals processes if present. It also includes a Land Use Regulation Index²⁷ that measures zoning and land-use regulations. Zoning and land-use regulations have different but overlapping meanings. Land-use regulation is an umbrella term that includes zoning as well as subdivision regulations; building codes; and national, state, or regional rules on land development and permitting (e.g., National Environmental Policy Act or California Environmental Quality Act). Zoning is an important subset of land-use regulation and includes land use regulation associated with a city or county zoning ordinance.

Political Complexity: New multifamily developments often require a number of approvals from different agencies and the process becomes even more complex where zoning changes or variances are required. The Political Complexity subindex measures the number of layers of approvals at the local, county and state levels as well as influence of local residents and environmental or design review boards.

²⁵ Landdevelopability.org

²⁶ Landvote.org. Data provided at the county and aggregated up to the metropolitan area level.

²⁷ Source: “Zoning, Land-Use Planning, and Housing Affordability”, Vanessa Brown Calder, Cato Institute, Policy Analysis Number 823, Oct 18 2017

Approval processes that require multiple submissions and layers of approval tend to take longer to approve and increase construction costs, particularly where those processes are not clear or certain.

Time to Develop: Projects that take longer to develop result in higher costs to the developer. The Time to Develop Index includes eleven survey questions regarding the time it takes for both small and large projects for land development approvals and to zone, receive building permits, and address non-conforming projects. The survey also asks if the time to approve has increased over the past ten years, and how long it takes to approve changes in the General Plan.

Summary Questions: Survey respondents were also asked some general qualifying questions regarding general ease of building and the (one to three) most significant issues affecting multifamily development. The survey also included questions related to the location and experience level of the survey respondent, and type of company (private or government / non-profit. These factors are discussed in further detail in the next section.

Scoring: Each question or data element used in the survey was given a scoring range of 0 (not important) to 3 (very important). With a few exceptions, questions were equally weighted in the subindex construction. Thus subindex scores range from 0 indicating that those factors were of little importance or presence in the market to 3 indicating that those factors were extremely pervasive or important in regulating multifamily development in the market. The subindices were weighted to determine a Total Index with higher weights on issues that are more policy oriented. Thus, the subindex scores for Tenants & Affordable Housing, Density /Growth Restrictions, Environmental Restrictions, Process Complexity and Political Complexity were weighted by 15% each with the remaining subindices weighted by 5% each. The Total Indices were then adjusted proportionally to a U.S. Total Index Score of 1.0.

NATIONAL RESULTS

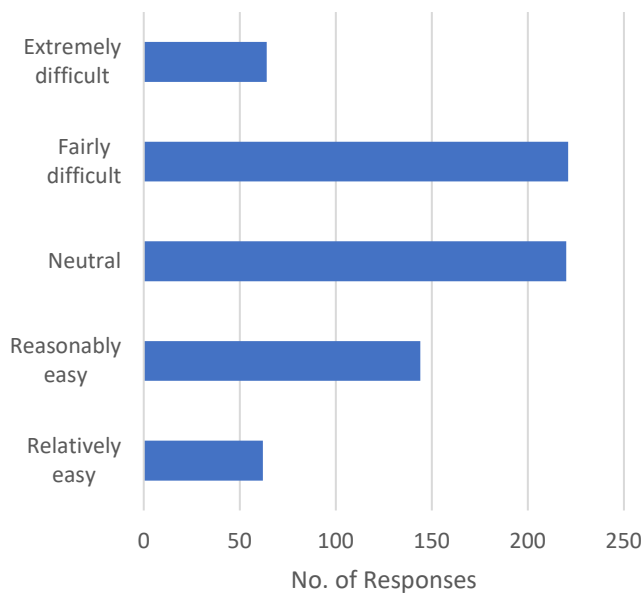
A national survey was sent in October 2018 to more than 5,254 private companies and potential respondents from the National Apartment Association as well as 37,000 potential respondents from the American Planning Association throughout the U.S. The survey remained open through December 2018 with clarification and data clean-up in certain markets through early February 2019. 764 responses were received, including 274 from private companies including development, property management, consulting or investment firm, 449 from public entities including city, county, township, town, village, borough or planning and economic development agencies, and 31 from other non-governmental agencies and non-profits. A few responses were removed from the sample for duplicates and incompleteness resulting in a total of 753 responses. Including 130 responses from the pilot studies, 883 responses in total are included in the final index report. Responses represented 241 metropolitan or micropolitan statistical areas. A breakdown of survey responses by market is provided in Appendix C.

Survey respondents were highly experienced in their markets. 75% of respondents have more than 10 years of experience developing or reviewing development projects in their market. 42% have 21 or more years of experience. 18% have 16 to 20 years of experience and 15% have 11 to 15 years of experience.

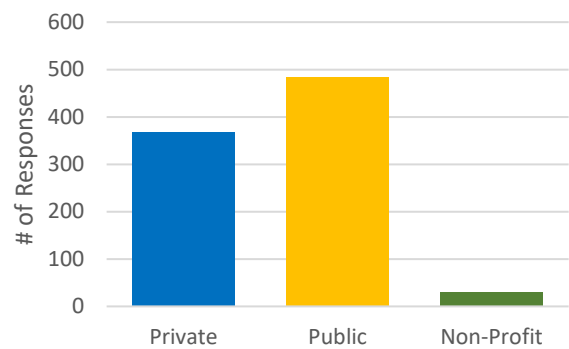
Survey respondents work across a wide range of project sizes. 22% of survey respondents reported that the typical size of a multifamily development that they review or develop is less than 20 units while 44% reported that the typical project size is 100 or more units.

Overall, 40% of survey respondents indicate that it is fairly to extremely difficult to get new multifamily residential projects approved for development²⁸. Another 31% of respondents are neutral while 29% of respondents indicate that it is easy to get new projects approved. For the private sector only, 48% said that it is fairly to extremely difficult while 22% said that it is reasonable to relatively easy.

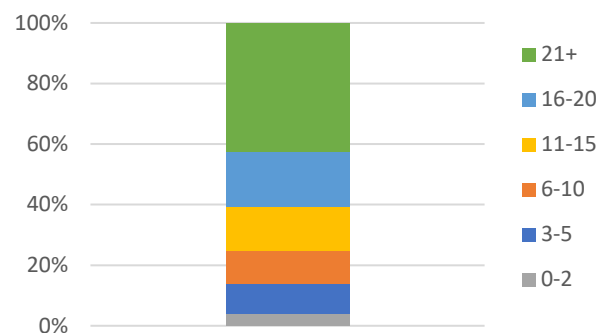
Overall how do you rate your metro market in terms of relative ease to get new multifamily residential approved?



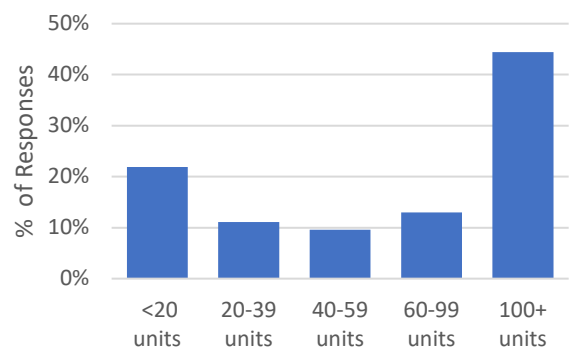
Respondents by Type of Firm



Respondents Years of Experience

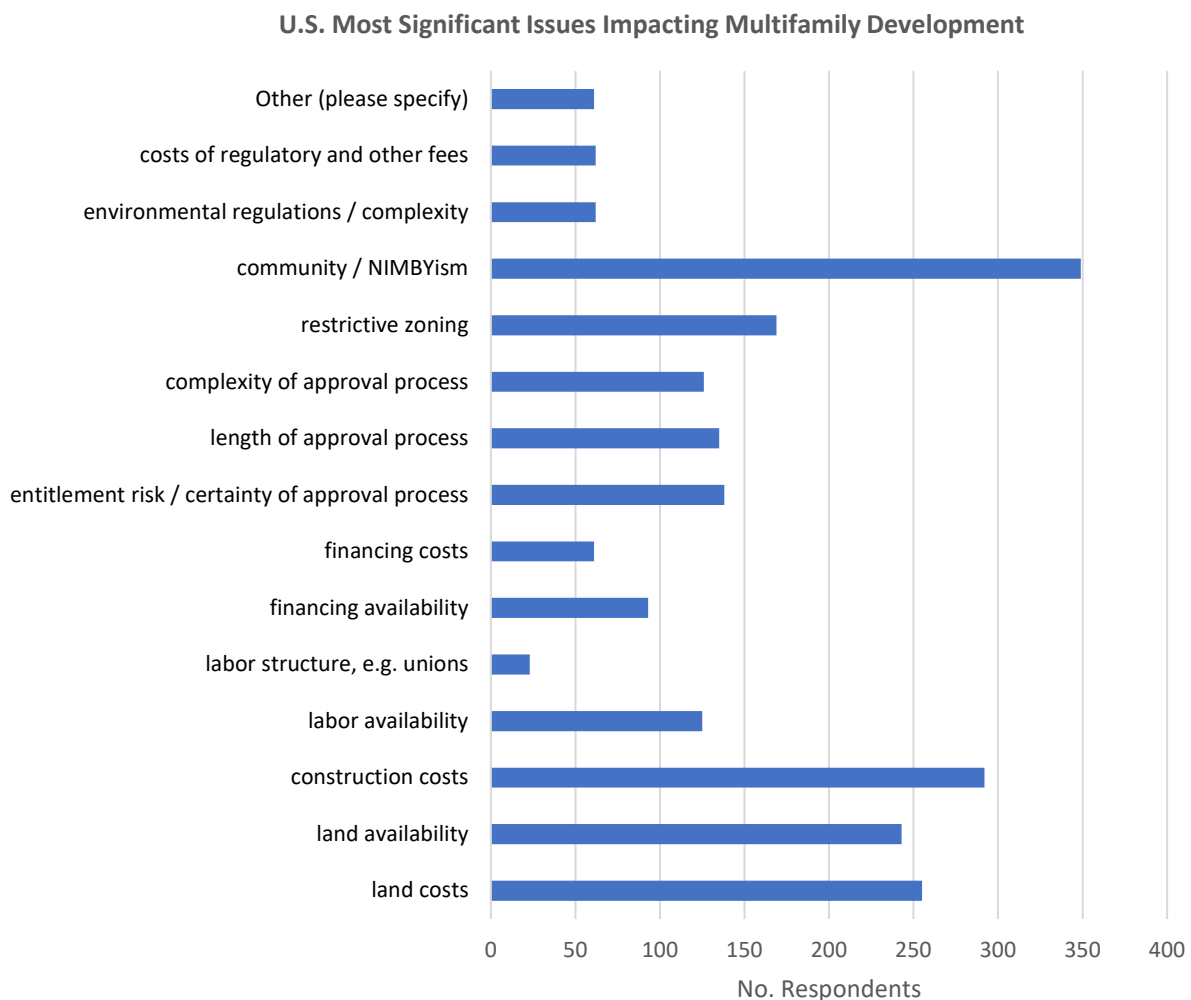


Respondents - Typical Project Size

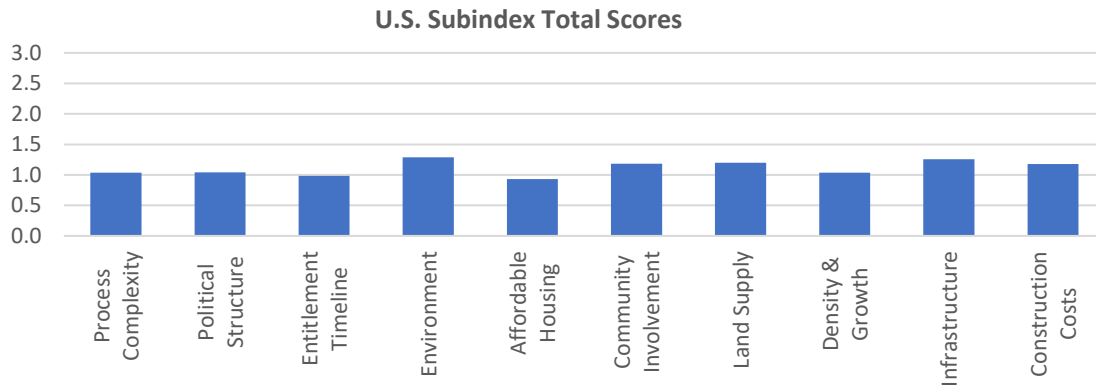


²⁸ This graph and the remaining graphs in the National Results section of this report refer to responses from the national survey only, although pilot survey results indicated similar responses.

When survey respondents were asked “What are the (one to three) most significant issues affecting multifamily development in your area?” community involvement / NIMBYism was by far the most common response followed by construction costs and land availability and land costs. Interestingly, labor structure, e.g. unions was ranked least important with less importance also placed on financing costs and availability, environmental regulations and costs of regulatory or other fees. Note however, that some of these issues, especially environmental issues, are ranked as very important for some metropolitan areas. Regional variations are discussed later in the report. Survey respondents also commonly mentioned in the “Other” category various infrastructure and affordable housing issues.



A total 91 questions and 5 external data sources were aggregated into 10 subindices based on the 753 responses to the national survey. External data was entered as the U.S. figure or U.S. market average. The U.S. total index averaged to close to 1.0 for each subindex. However, the importance of each question within the subindices varied significantly as shown in the graphs on the following page. High scores indicate that survey respondents felt that issue is important in influencing multifamily development

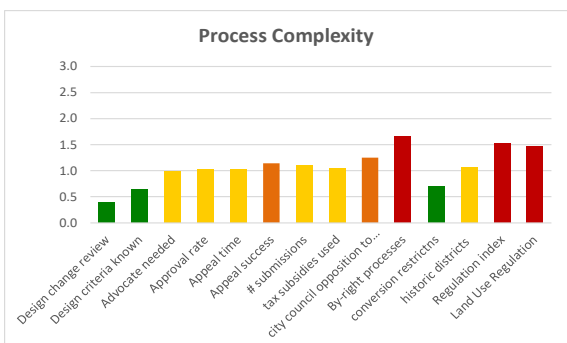
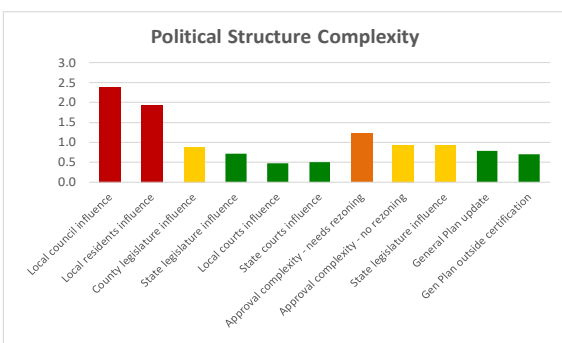
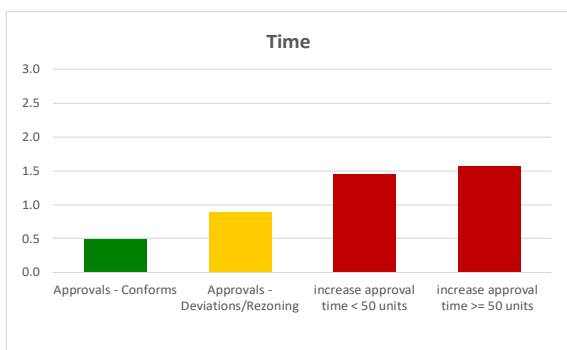
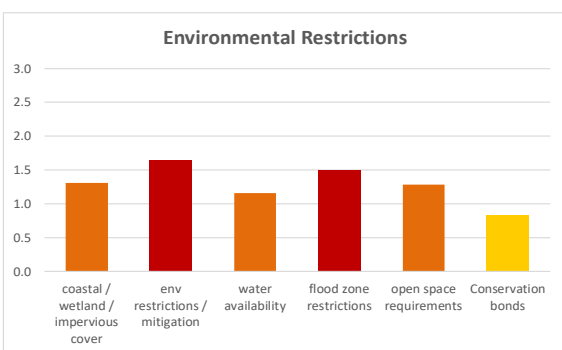
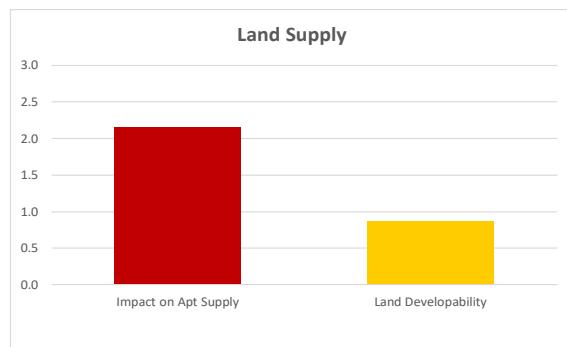
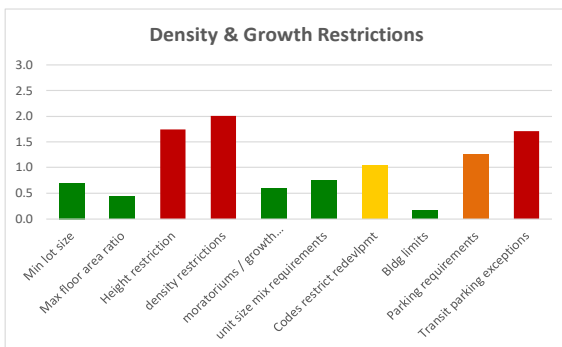
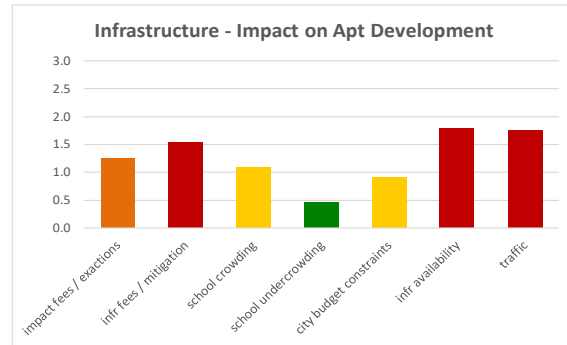
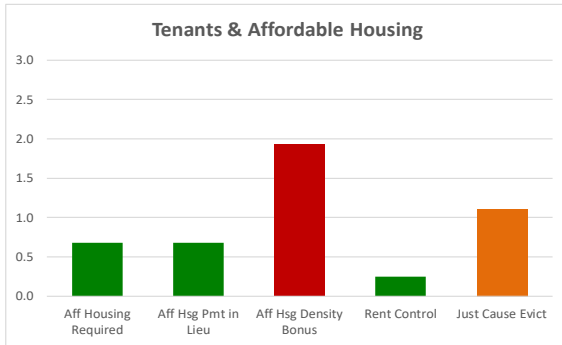
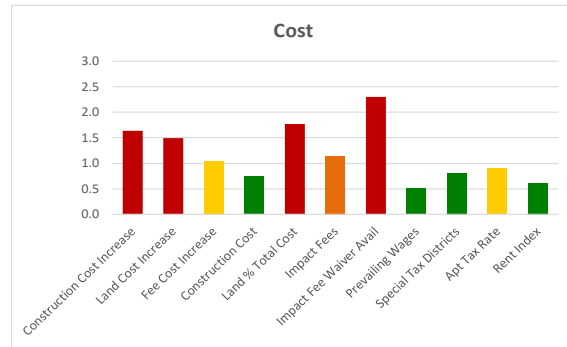
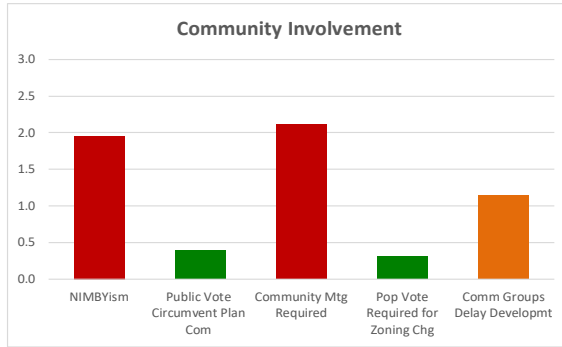


and/or is prevalent in the market. All questions are scored with 0 as a minimum score and 3 as a maximum score.

By far, survey respondents responded that the land development process is a local process that is influenced by local councils (2.40 score) and the local community. Most survey respondents indicated that local resident involvement is important in influencing residential building activities and/or growth (1.95 score) and that citizen opposition to growth / NIMBYism is important in regulating the rate of residential development in their community (1.96 score). Community meetings are generally required before which any zoning or rezoning requests must be presented (2.11 score).

33% of survey respondents indicated that construction costs including labor, hard and soft costs have increased by more than 20% in the past five years, with another 45% indicating that construction costs are up by 11-20%. Similarly 30% of survey respondents indicated that the cost of undeveloped multifamily land rose by more than 20% in the past five years, with 36% reporting costs are up by 11 to 20%.

Fees, studies and other soft costs however are not believed to be increasing as quickly as only 10% of respondents indicated a 20%+ increase in fees, studies and other soft costs over the past five years, and 26% indicating a 11-20% increase. The most common impact fees noted were sewer and water followed by fees for public facilities or services such as police, fire, libraries and such, then transport, schools and parks. Overwhelmingly, waivers are not available in place of impact fees (2.30 score). Land costs vary widely and are skewed heavily on the high side. On average for the markets covered in the detailed index, land and permit costs are considered to be approximately 35% of total building costs, a significant component and 1.77 index score for the U.S. on average. While the availability of land is considered a very important factor in multifamily development (2.16 score), land topography as indicated by a developability index indicates that land should be plentiful (0.87 score).



Communities frequently use height (1.74 score), density (2.01 score), environmental (1.65 score) and flood zone (1.50 score) restrictions to guide growth. Infrastructure is also commonly listed as an important issue, particularly the availability of infrastructure such as sewer and water capacity or connections to support growth (1.78 score). Traffic issues are also frequently important in regulating the rate of development (1.74 score). Infrastructure improvement fees and mitigation are commonly used (1.53 score).

We touched lightly on the affordable housing issue in this survey which is a complex topic in and of itself that varies significantly by market. While most markets in the survey do not have rent control measures of any sort in place (0.25 score), we commonly saw rent control mentioned in California markets as well as the New York metropolitan area. Affordable housing requirements are used slightly more, but also infrequently (0.68 score), and are often seen in California as well as Washington DC and Boston. Density bonuses are sometimes provided if affordable housing is included, but often a bonus is not provided, resulting in a high score of 1.93 for this factor. A number of markets did indicate the presence of more tenant favorable restrictions such as requiring just cause to evict a multifamily tenant (1.11 score).

At first glance, neither process nor political structure complexity issues generally rank highly as important factors in influencing multifamily development at the U.S. level. However, as mentioned previously, the regulation process is a complex process that varies widely and these factors are likely to be ‘averaging out’ important variations between markets. Many markets have by-right processes that allow a fast-track review process for projects that meet guidelines (1.66 score). For the most part, markets indicated no change in the time required to complete the review and approval of residential projects (1.46 score for projects that are less than 50 units and 1.57 score for projects that are larger than 50 units.) Markets such as San Jose, Seattle, Philadelphia, Phoenix and Salt Lake City did indicate a significant amount of city council opposition to growth (scores of 2 to 2.5).

METRO AREA RESULTS

We received enough responses to calculate market level indices for 59 markets. Of these, four markets are the pilot markets and another 25 Major Markets are covered in detail at the end of the report. To be included in the following metro market table, the market needs to have a minimum of two responses that are not widely varied in response. While several markets have more than two responses, they were not included in the following individual index calculation tables because the responses were either incomplete, varied widely or only represented a certain municipality within a larger metro area and were not representative of the broader market. A summary of the metro market index scores is provided on the next page. The table represents a wide variety of markets ranging in population size from 29,000 in the Silverthorne, CO micropolitan statistical area to more than 20 million in the New York metropolitan area.

Metro Market Index Scores

| MSA | CI | C | AH | I | D | L | E | PC | PS | T | Index | Rank |
|------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|------|
| Albuquerque, NM | 1.6 | 1.0 | 0.8 | 1.0 | 0.5 | 2.3 | 0.7 | 1.3 | 0.7 | 0.8 | 0.80 | 1 |
| Greenwood, SC | 0.5 | 1.3 | 0.3 | 1.2 | 1.5 | 1.0 | 1.0 | 0.8 | 1.0 | 0.5 | 0.80 | 2 |
| Dayton, OH | 0.9 | 1.0 | 0.9 | 1.0 | 0.7 | 2.5 | 1.2 | 0.8 | 0.7 | 0.5 | 0.82 | 3 |
| Kansas City, MO-KS | 0.6 | 1.3 | 0.9 | 1.4 | 1.2 | 1.5 | 0.9 | 0.9 | 0.7 | 0.6 | 0.83 | 4 |
| Billings, MT | 1.3 | 1.1 | 0.6 | 1.4 | 1.3 | 1.0 | 0.6 | 1.0 | 1.0 | 0.9 | 0.84 | 5 |
| Eugene-Springfield, OR | 1.1 | 1.3 | 1.0 | 1.1 | 0.6 | 2.0 | 1.3 | 0.6 | 0.9 | 0.5 | 0.84 | 6 |
| Cleveland-Elyria-Mentor, OH | 0.9 | 1.0 | 0.9 | 0.4 | 1.5 | 1.0 | 0.4 | 1.2 | 1.0 | 1.2 | 0.86 | 7 |
| Milwaukee-Waukesha-West Allis, WI | 1.1 | 1.4 | 0.6 | 0.8 | 1.2 | 2.0 | 1.2 | 1.0 | 0.7 | 0.4 | 0.88 | 8 |
| Chicago-Joliet-Naperville, IL-IN-WI | 1.1 | 1.1 | 1.0 | 1.1 | 1.0 | 2.1 | 0.8 | 1.0 | 0.8 | 0.9 | 0.88 | 9 |
| Dallas-Fort Worth-Arlington, TX | 0.9 | 0.9 | 0.8 | 1.3 | 1.1 | 2.3 | 0.9 | 0.9 | 1.0 | 0.8 | 0.89 | 10 |
| Portland-Vancouver-Hillsboro, OR-WA | 1.2 | 1.0 | 1.0 | 1.1 | 0.9 | 1.8 | 0.9 | 0.9 | 1.1 | 1.1 | 0.90 | 11 |
| Des Moines-West Des Moines, IA | 0.8 | 1.6 | 0.8 | 1.1 | 1.3 | 2.3 | 1.0 | 1.0 | 0.6 | 0.8 | 0.90 | 12 |
| Indianapolis-Carmel, IN | 1.2 | 1.2 | 0.8 | 1.4 | 0.9 | 1.8 | 1.1 | 1.1 | 0.9 | 0.9 | 0.91 | 13 |
| Houston-Sugar Land-Baytown, TX | 0.7 | 1.4 | 1.2 | 0.7 | 0.9 | 2.2 | 1.3 | 0.9 | 0.9 | 0.8 | 0.93 | 14 |
| Seattle-Tacoma-Bellevue, WA | 1.4 | 1.5 | 0.7 | 1.1 | 0.8 | 2.8 | 1.1 | 1.2 | 0.6 | 1.5 | 0.94 | 15 |
| Santa Rosa-Petaluma, CA | 1.4 | 1.2 | 0.9 | 1.4 | 0.8 | 1.5 | 1.7 | 0.7 | 1.1 | 0.8 | 0.95 | 16 |
| Punta Gorda, FL | 1.2 | 1.5 | 0.6 | 1.7 | 1.3 | 0.5 | 1.9 | 0.6 | 1.0 | 0.5 | 0.95 | 17 |
| Reno-Sparks, NV | 1.1 | 1.4 | 0.4 | 2.0 | 0.6 | 2.7 | 1.7 | 0.8 | 1.0 | 1.1 | 0.95 | 18 |
| Akron, OH | 1.2 | 1.4 | 0.8 | 1.1 | 1.4 | 1.5 | 1.7 | 1.1 | 0.4 | 0.7 | 0.96 | 19 |
| St. Louis, MO-IL | 1.3 | 1.4 | 0.8 | 0.9 | 0.9 | 2.4 | 1.2 | 1.3 | 0.8 | 0.9 | 0.97 | 20 |
| Austin-Round Rock, TX | 1.2 | 1.5 | 0.2 | 1.2 | 1.0 | 2.0 | 1.9 | 1.0 | 1.0 | 0.9 | 0.97 | 21 |
| Sioux Falls, SD | 1.3 | 1.4 | 1.0 | 1.3 | 0.8 | 1.7 | 1.3 | 1.4 | 0.8 | 0.9 | 0.97 | 22 |
| Nashville-Davidson--Murfreesboro--Franklin, TN | 1.1 | 1.7 | 0.8 | 1.6 | 1.2 | 1.0 | 1.5 | 0.9 | 1.2 | 1.0 | 0.99 | 23 |
| New Orleans-Metairie-Kenner, LA | 1.1 | 0.9 | 0.6 | 0.7 | 1.2 | 1.3 | 1.8 | 1.0 | 1.4 | 0.7 | 0.99 | 24 |
| Atlanta-Sandy Springs-Marietta, GA | 1.4 | 1.4 | 1.0 | 1.1 | 1.2 | 2.1 | 0.9 | 1.2 | 1.1 | 0.8 | 1.01 | 25 |
| Detroit-Warren-Livonia, MI | 1.1 | 1.4 | 0.6 | 1.0 | 1.0 | 2.5 | 2.2 | 0.6 | 1.1 | 0.6 | 1.02 | 26 |
| Anchorage, AK | 1.4 | 1.4 | 0.9 | 0.9 | 0.8 | 3.0 | 1.5 | 1.0 | 0.9 | 1.5 | 1.03 | 27 |
| Phoenix-Mesa-Glendale, AZ | 1.3 | 1.6 | 1.1 | 1.5 | 0.8 | 1.5 | 1.2 | 1.3 | 1.1 | 1.1 | 1.03 | 28 |
| Tampa-St. Petersburg-Clearwater, FL | 0.8 | 1.4 | 0.4 | 1.3 | 1.0 | 2.8 | 2.1 | 0.9 | 1.1 | 1.0 | 1.03 | 29 |

| Subindex Key | |
|---------------------------------|----|
| Affordable Housing Requirements | AH |
| Construction Costs | C |
| Community Involvement | CI |
| Density & Growth Restrictions | D |
| Environmental Restrictions | E |
| Infrastructure Constraints | I |
| Land Availability | L |
| Entitlement Process Complexity | PC |
| Political Structure Complexity | PS |
| Approval Timeline | T |

Metro Market Index Scores, continued.

| MSA | CI | C | AH | I | D | L | E | PC | PS | T | Index | Rank |
|----------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|------|
| Madison, WI | 1.3 | 1.1 | 0.6 | 1.3 | 0.9 | 1.7 | 1.7 | 1.3 | 1.0 | 1.4 | 1.04 | 30 |
| North Port-Bradenton-Sarasota, FL | 0.8 | 1.6 | 0.4 | 0.9 | 1.4 | 1.7 | 1.9 | 1.0 | 1.1 | 1.2 | 1.04 | 31 |
| Denver-Aurora-Broomfield, CO | 1.0 | 2.1 | 1.1 | 1.4 | 1.3 | 2.7 | 1.1 | 1.1 | 0.6 | 1.1 | 1.04 | 32 |
| Charlotte-Gastonia-Rock Hill, NC-SC | 1.4 | 1.4 | 0.8 | 1.3 | 0.7 | 2.2 | 1.5 | 1.3 | 1.2 | 1.4 | 1.05 | 33 |
| Fort Collins-Loveland, CO | 1.2 | 1.6 | 0.9 | 1.3 | 0.8 | 2.5 | 1.8 | 0.9 | 1.1 | 1.0 | 1.06 | 34 |
| Salem, OR | 1.3 | 1.8 | 0.8 | 1.3 | 0.9 | 3.0 | 1.2 | 0.9 | 1.5 | 1.0 | 1.06 | 35 |
| Hartford-West Hartford-East Hartford, CT | 1.4 | 1.1 | 0.5 | 1.0 | 1.2 | 2.3 | 1.9 | 1.1 | 1.0 | 1.1 | 1.07 | 36 |
| Miami-Fort Lauderdale-West Palm Beach, FL | 1.4 | 1.7 | 0.2 | 1.3 | 1.1 | 2.7 | 1.9 | 0.9 | 1.4 | 0.7 | 1.07 | 37 |
| Las Vegas-Paradise, NV | 1.1 | 1.2 | 1.2 | 1.2 | 1.2 | 2.3 | 1.1 | 1.1 | 1.2 | 1.1 | 1.08 | 38 |
| Orlando-Kissimmee-Sanford, FL | 1.6 | 1.6 | 1.1 | 1.6 | 0.8 | 2.3 | 1.8 | 1.0 | 1.1 | 0.9 | 1.10 | 39 |
| Cincinnati-Middletown, OH-KY-IN | 1.7 | 1.6 | 1.0 | 1.3 | 0.9 | 1.8 | 1.1 | 1.7 | 1.1 | 1.5 | 1.10 | 40 |
| Columbus, OH | 1.3 | 1.4 | 1.5 | 1.3 | 1.0 | 2.0 | 1.2 | 1.3 | 1.1 | 1.1 | 1.13 | 41 |
| Jacksonville, FL | 0.5 | 1.4 | 1.1 | 1.0 | 1.3 | 2.3 | 1.9 | 1.1 | 1.3 | 0.9 | 1.14 | 42 |
| Cape Coral-Fort Myers, FL | 1.2 | 1.6 | 0.9 | 1.1 | 1.2 | 2.7 | 1.7 | 1.0 | 1.4 | 1.0 | 1.14 | 43 |
| Silverthorne, CO | 1.2 | 1.4 | 1.1 | 1.0 | 1.1 | 2.8 | 1.9 | 1.1 | 1.3 | 0.8 | 1.16 | 44 |
| Boston-Cambridge-Quincy, MA-NH | 1.6 | 0.8 | 1.3 | 1.1 | 1.1 | 2.6 | 1.5 | 1.4 | 1.1 | 1.0 | 1.17 | 45 |
| Providence-New Bedford-Fall River, RI-MA | 1.2 | 1.2 | 2.1 | 0.9 | 1.0 | 2.3 | 1.7 | 1.1 | 0.9 | 1.2 | 1.19 | 46 |
| Salt Lake City, UT | 1.4 | 1.2 | 1.5 | 1.5 | 1.3 | 2.1 | 1.2 | 1.3 | 1.3 | 1.5 | 1.22 | 47 |
| Los Angeles-Long Beach-Santa Ana, CA | 1.3 | 1.5 | 1.7 | 1.2 | 1.0 | 2.4 | 1.4 | 1.2 | 1.4 | 1.5 | 1.23 | 48 |
| Salinas, CA | 1.9 | 1.6 | 1.2 | 1.6 | 1.3 | 2.5 | 1.6 | 1.1 | 1.2 | 1.5 | 1.23 | 49 |
| New York-Newark-Jersey City, NY-NJ-PA | 1.3 | 2.3 | 1.6 | 0.8 | 1.3 | 2.6 | 1.4 | 1.5 | 1.1 | 1.0 | 1.26 | 50 |
| Baltimore-Towson, MD | 1.2 | 1.2 | 1.0 | 1.7 | 1.2 | 2.8 | 1.7 | 1.5 | 1.3 | 1.8 | 1.26 | 51 |
| Washington-Arlington-Alexandria, DC-VA-MD-WV | 1.3 | 1.8 | 1.4 | 1.6 | 1.0 | 2.3 | 1.6 | 1.4 | 1.5 | 1.4 | 1.27 | 52 |
| San Diego-Carlsbad, CA | 2.0 | 2.0 | 0.2 | 1.3 | 1.2 | 2.6 | 2.2 | 1.6 | 1.7 | 1.4 | 1.30 | 53 |
| Honolulu, HI | 1.5 | 1.4 | 1.8 | 1.7 | 1.0 | 3.0 | 1.0 | 1.9 | 1.5 | 1.5 | 1.34 | 54 |
| San Francisco-Oakland-Fremont, CA | 1.7 | 1.9 | 1.7 | 1.5 | 0.9 | 2.3 | 1.6 | 1.4 | 1.7 | 1.6 | 1.35 | 55 |
| Sacramento--Arden-Arcade--Roseville, CA | 2.4 | 1.4 | 0.6 | 2.2 | 1.2 | 2.5 | 2.3 | 1.5 | 1.5 | 1.1 | 1.35 | 56 |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD | 1.2 | 1.5 | 1.0 | 1.8 | 1.3 | 2.6 | 2.2 | 1.5 | 1.4 | 1.7 | 1.36 | 57 |
| San Jose-Sunnyvale-Santa Clara, CA | 2.6 | 2.0 | 2.1 | 1.9 | 0.6 | 3.0 | 1.9 | 1.8 | 1.3 | 2.1 | 1.52 | 58 |
| United States | 1.2 | 1.3 | 0.9 | 1.3 | 1.0 | 2.2 | 1.4 | 1.0 | 1.0 | 0.9 | 1.00 | |

| Subindex Key | |
|---------------------------------|----|
| Affordable Housing Requirements | AH |
| Construction Costs | C |
| Community Involvement | CI |
| Density & Growth Restrictions | D |
| Environmental Restrictions | E |
| Infrastructure Constraints | I |
| Land Availability | L |
| Entitlement Process Complexity | PC |
| Political Structure Complexity | PS |
| Approval Timeline | T |

A total index score was calculated as shown in the below table by weighting policy and process factors more heavily than more static factors such as land and infrastructure or output factors such as cost and time. All questions were weighted equally within each subindex with the exception of the time index which weighted the average length of approval time by 66% (2.75% to each question) and the increase in time by 34% (17% to each question). Because data was not always available from outside data sources for all markets, the index scores include only survey questions, not data from outside data sources. Additionally, the cost to build and land costs as a percent of total cost questions in the cost subindex were omitted from both the cost subindex and the total index score. Markets are ranked in the table in order from low scores (less complex markets) to high scores (more complex markets). While the availability of land is a universally important factor influencing multifamily supply, environmental and cost issues begin to first most frequently show up in markets with lower scores. Markets with high scores tend to have multiple subindices with high scores, indicating a labyrinth of different factors that influence the ability of local markets to introduce new multifamily projects to the market.

| Subindex Code | SubIndex Category | Index Weight |
|---------------|--------------------------------|--------------|
| CI | Community Involvement | 5% |
| C | Construction Costs | 5% |
| AH | Affordable Housing & Tenants | 15% |
| I | Infrastructure | 5% |
| D | Density / Growth Restrictions | 15% |
| L | Land Supply | 5% |
| E | Environmental Restrictions | 15% |
| PC | Process Complexity | 15% |
| PS | Political Structure Complexity | 15% |
| T | Time to Develop | 5% |

Several markets rank high for process complexity including New York, San Diego, Honolulu, Cincinnati, Baltimore and San Jose. While conditions vary by market, these markets have complex approval systems where market participants feel that design criteria are more ad hoc and projects may not be approved even though they seem to meet all guidelines. Developers often need an advocate and/or community relations professional to aid in the approval process. Appeals have mixed results and may require a significant amount of time, sometimes in excess of a year. These markets frequently lack a "by-right" process that allows a fast track review process when a project meets all guidelines.

San Diego and San Francisco, followed by DC, Honolulu and Sacramento ranked highly for political structure complexity. In addition to local councils, managers and commissioners, both county and state governments may be active in influencing residential building activities and/or growth management in these local communities. For example, in one extreme recent example, the state of California sued Huntington Beach for not providing enough affordable housing²⁹. Local residents and advocacy groups may also play an active role in influencing housing supply in these markets.

Environmental factors often rank highly in the Index market table. Often respondents listed environmental restrictions or mitigation in general as being important in in regulating the rate of

²⁹ "Gavin Newsom takes wealthy Southern California city to court over its lack of housing," Sacramento Bee, January 25, 2019

residential development in their community. Frequently these issues were related to coastal, wetland areas or flood zone restrictions.

High infrastructure scores are most often related to sewer and water connections, traffic issues or infrastructure improvement fees or mitigation. However, conditions vary by market. While school crowding and under-crowding are usually not listed as important issues, they are important in certain markets. Washington DC, Indianapolis and Baltimore rated school crowding as a fairly significant factor influencing multifamily development (scores in the 2.2-2.3 range). School undercrowding was mentioned less frequently and primarily by small, low growth markets, although it was occasionally mentioned in high growth markets such as Austin and San Diego, particularly in gentrifying neighborhoods where young single professionals are moving in.

MAJOR MARKET DETAILED INDEX CALCULATION

We had enough survey responses to calculate Detailed Indices for 25 major markets. These markets had a minimum of six responses and complete responses to all survey questions. The major market detailed indices are more expansive than the base index calculations in that they include both the current cost to build an average Class A apartment unit in the market as well as the land as a percent of total cost estimate. The cost to build was estimated from survey responses as well as a check on survey responses calculated by applying an average Class A infill cap rate³⁰ to the market's average rent³¹ and assuming a 30% expense ratio. Average rents ranged from \$808 per month to \$2,601, averaging \$1,338 for the major markets. The average cost to build ranged from \$89,000 to \$530,000 per unit, averaging \$227,722 for the major markets.

The major market detailed indices also include external data sources including:

Cost subindex: effective apartment tax rate and rent index

Land subindex: land developability index

Environment subindex: number of conservation bonds passed from 2008 to 2017

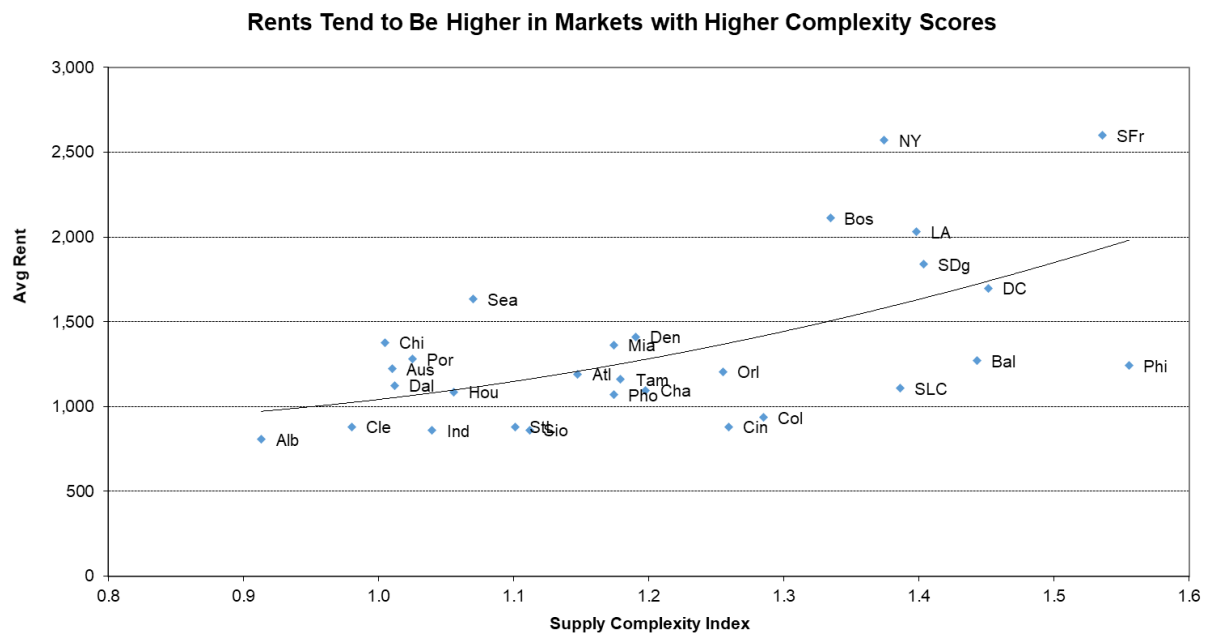
Process subindex: land use regulation state rank

A one-page report is provided for each of these major markets. Survey results were compared against other data for each market in the one-page reports as a quick check on the validity of the survey results. For example, all else equal, markets with a number of criteria that rank highly in the survey are expected to have more restrictive supply conditions. These markets are expected to have less new supply and thus older housing stock. They may also be more expensive where new housing supply is not meeting demand. However, all other factors are never equal when comparing across markets. So for example, metro markets that have higher population growth and in-migration trends are likely to have more supply to meet that demand, even with restrictive housing barriers. These cross-influences are multiple and complex, and are worth further study. The purpose of this study was to gather the underlying data, and thus we did not intend to fully analyze these trends. However, to add some explanatory data to the study, we did present some of these factors as a reminder of the local demand and growth conditions that also vary significantly across markets. For further details regarding market

³⁰ Source: CBRE 2018 H1

³¹ Source: CoStar and Marcus & Millichap year-end 2018.

demand among the 50 states and 50 metro markets, see www.weareapartments.org, *U.S. Apartment Demand—A Forward Look (2017)*.



We also ran a quick check to see how the total index compares to local multifamily rents with the expectation that higher rents will be associated with markets with higher index scores (more complexity to deliver new product). The total index is positively correlated (0.57 correlation) to average rents. More complex markets have wider deviations in total index scores. This is expected as more complex markets are likely to have a multitude of land management techniques, some of which may not be included in the survey methodology. While more research is needed in regards to the complexity of land management and how it affects housing supply and affordability, our initial view indicates a positive correlation between multifamily housing costs and the complexity of land management in that market.

The below data is presented in the one-page summary for each metro market:

BARRIERS RANKING is the relative ranking among 58 major metro apartment markets based upon the average index of each metro from the least restricted to the most; ranges from 1 (Albuquerque) to 58 (San Jose). Rankings consider expert responses from throughout the extended metro that includes but not isolates the urban core.

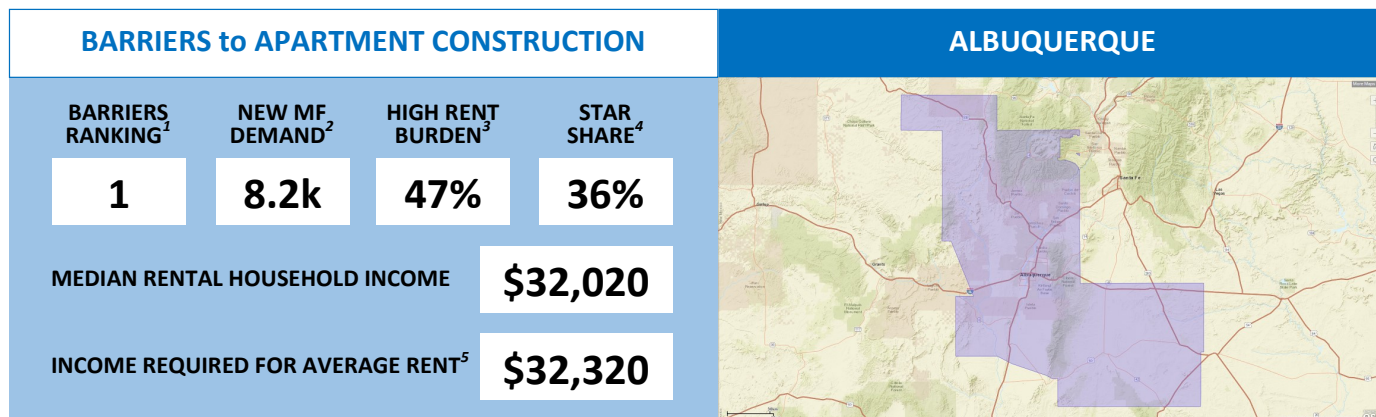
NEW MF DEMAND is the updated total demand for new multifamily units (in thousands) from year-end 2018 through 2030 based upon the previous forecasted total rental housing demand 2017-2030 from the NAA-NMHC demand study by HAS: *U.S. Apartment Demand—A Forward Look (2017)*; ranges from 3,890 (Sioux Falls) to 222,589 (New York).

HIGH RENT BURDEN refers to that share of households spending over 35% of combined household income on rent; and ranges from 54% and median rents of \$1,200 (Miami) to 31% and median rents of \$750 (Sioux Falls) with a metro average of 41%. This is an affordability measure for rental housing and represents the extreme as measured by the U.S. Census. High numbers represent low affordability and potential issues with supply being able to meet demand for rental apartments. Note that industry standards often view rents that represent more than 30% of gross household income as an unaffordable level. This (30% of gross household income) is the measure we used to calculate household rent need to afford the average apartment rent in the market.

STAR SHARE is that share of metro rental housing stock with five or more units that HAS qualified as Second-Tier Affordable Rentals or those non-institutional sites of typically lower unit count, lower quality and greater age, often overlooked as crucial affordable housing already in place. Using CoStar® ratings of 1-5 for sites of five units or more, STAR is the lower ratings of 1-2. This share ranges from 61% (Los Angeles) to 17% (Austin) with a Metro average of 36%. This measure is likely to be highly related to age, but adds a quality component in consideration. Thus, this factor would capture older stock that has been renovated and is of high quality in the non-STAR Share category.

INCOME REQUIRED FOR AVERAGE RENT calculates the gross household income needed to afford the average apartment market rent, assuming a conservative 30% of combined rental household income is used to pay the average metro rent. It is a rough calculation and intended for relative comparison purposes only and is estimated by dividing the current average market rent, rounded up to the nearest hundreds. Average rents were determined as of 4Q 2018 from a number of sources including CoStar, Marcus & Millichap and other brokers. The income required for average rent figure is compared to the 2017 median household income for renters in the metropolitan area³².

³² Source: U.S. Census Bureau, most current data as of the time of writing.

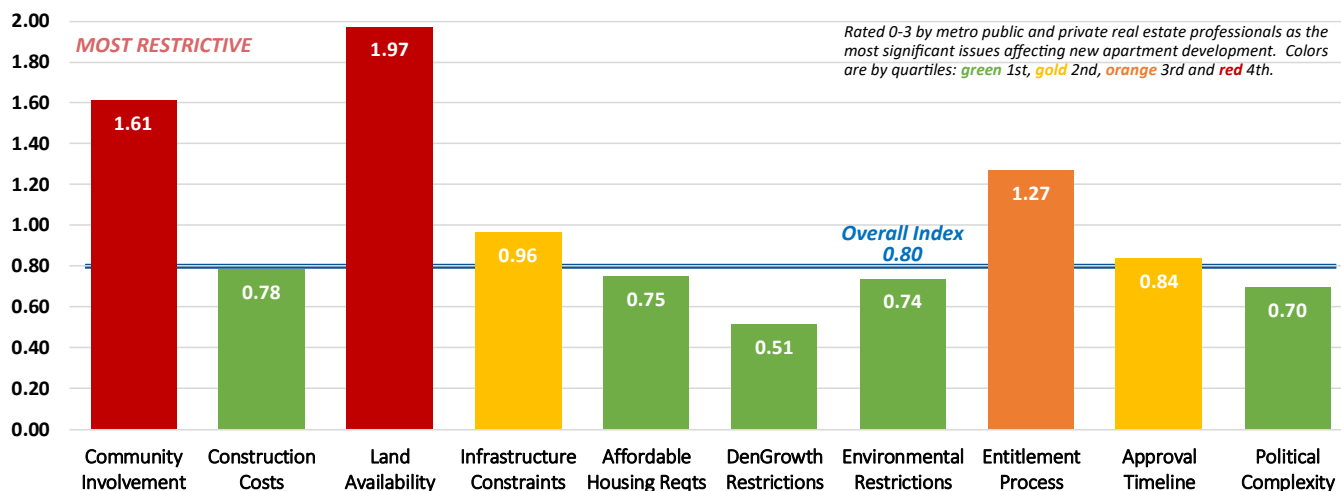


MOST RESTRICTIVE APARTMENT CATEGORIES:

- LAND AVAILABILITY
- COMMUNITY INVOLVEMENT
- ENTITLEMENT PROCESS

A slower, sprawling housing market, Albuquerque metro is the least restrictive of major markets surveyed but with expected factors ranked high for their impact on apartment development. Respondents cite that land availability and citizen opposition to growth influences the development process the most, with an emphasis on general community opposition and the number of public meetings required. Also noted is the above-index factor of the local entitlement process with mention of lower approval rates that often require a third-party advocate. Median rents rank near bottom of the major markets, though align well with the requirements for the average market rents of \$810. This metro housing market expands only westward, as mountains and Native American/government reservations bound its limits. Similar to most major metro markets in this initial Index, these top two issues present formidable relative barriers to new apartment supply amid consistent demand ahead.

Barriers to Apartment Construction Subindices



BARRIERS INDEX METHODOLOGY:

These NAA HAS Barriers to Apartment Construction indices were created from over 90 apartment development, process and timing questions in ten categories and sourced digitally from real estate professionals in both the public and private realms. An initial overall metro **Barriers to Apartment Construction Index** is also plotted above.

DEFINITIONS and NOTES:

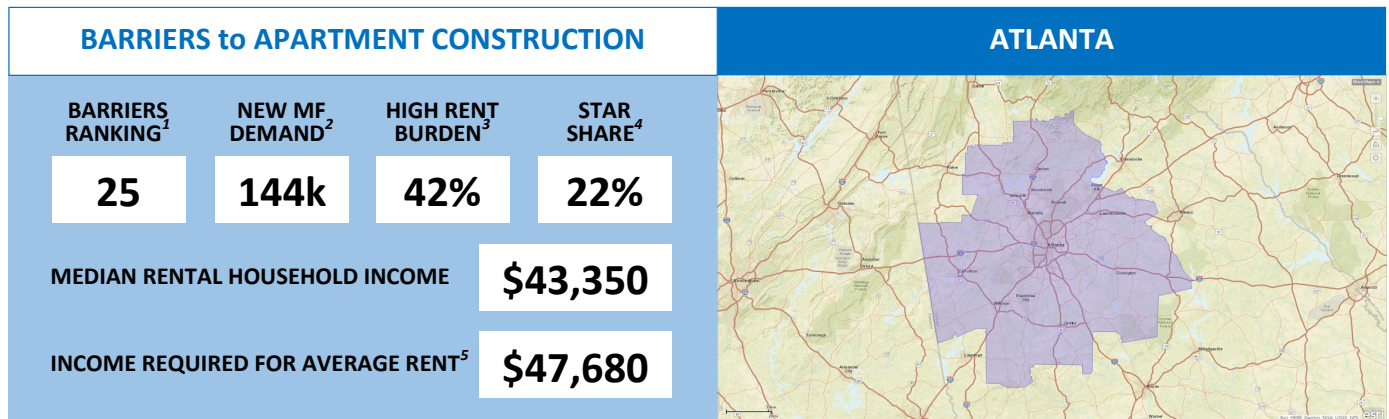
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⁴**STAR SHARE** is that share of metro rental housing stock with five or more units HAS qualified as ***Second-Tier Affordable Rentals** or those non-institutional sites of typically lower unit count, lower quality and greater age, often overlooked as crucial affordable housing already in place. Using CoStar® ratings of 1-5 for sites of five units or more, STAR is the lower ratings of 1-2. This share ranges from 61% (Los Angeles) to 17% (Austin) with a major metro average of 36%.

⁵**INCOME REQUIRED FOR AVERAGE RENT** assumes a more conservative 30% of rental household income needed for the average metro contract rent.

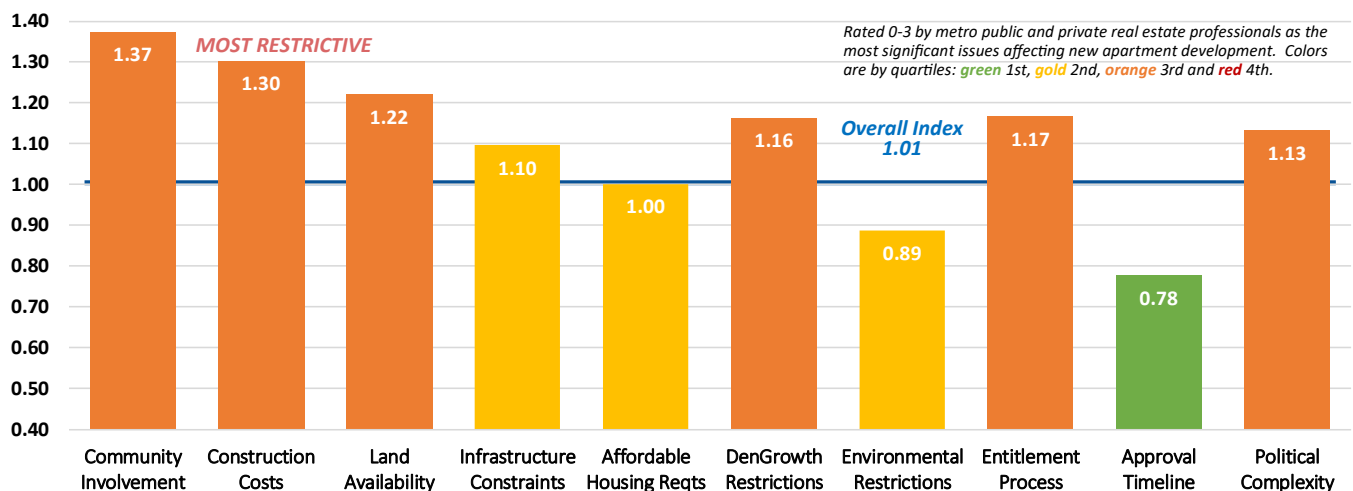


MOST RESTRICTIVE APARTMENT CATEGORIES:

- COMMUNITY INVOLVEMENT
- CONSTRUCTION COSTS
- LAND AVAILABILITY

Atlanta metro ranks above median of major metros for fewer barriers to new apartments, along with strong sustained multifamily demand. Developers face an array of new construction issues, the most impactful outside of civic planning and process. Respondents cite community involvement as the most restrictive, driven by community opposition and the number of public meetings required. Construction costs are led by land prices and the inability to waive significant impact fees. Height and density restrictions are cited, along with political complexity wrought from the influence of local councils and outdated general plans. Median rental incomes are 9.0% below the requirements for average market rents of \$1,195, though 42% of renters pay more than 35% of income on their lease.

Barriers to Apartment Construction Subindices

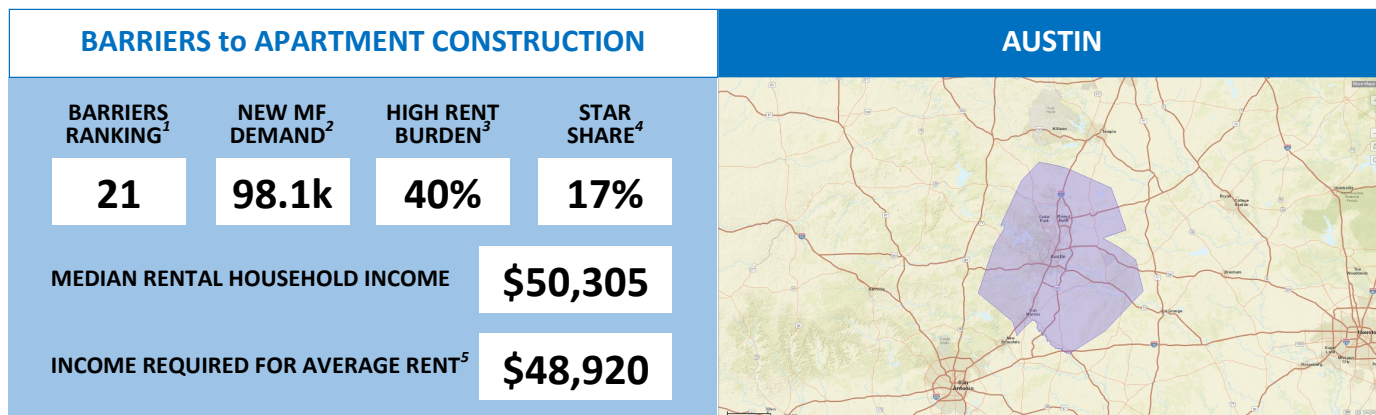


BARRIERS INDEX METHODOLOGY:

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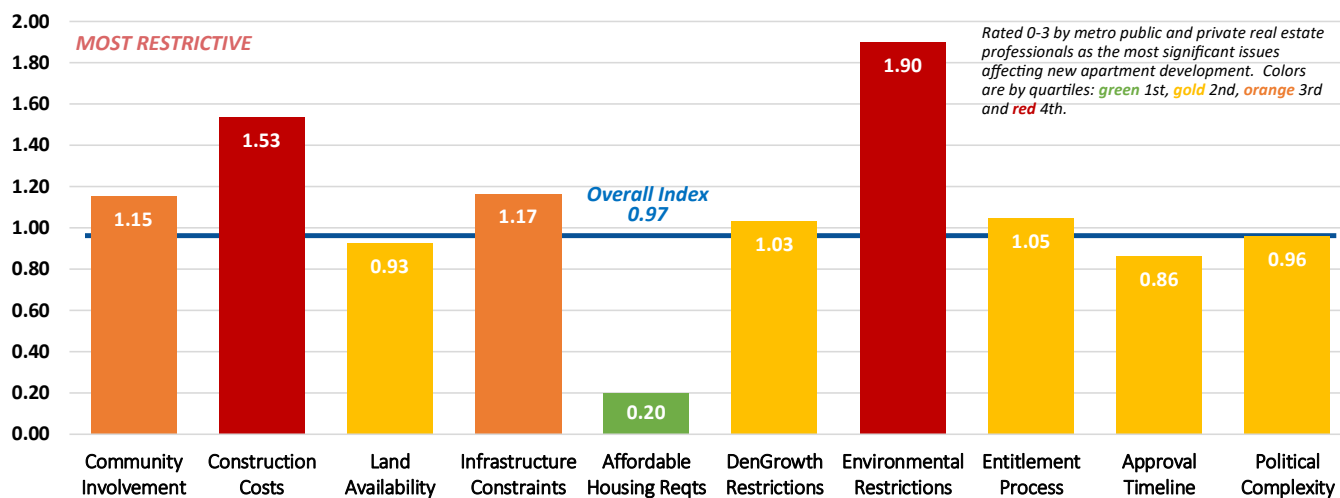
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- ⁵**INCOME REQUIRED FOR AVERAGE RENT** assumes a more conservative 30% of rental household income needed for the average metro contract rent.



MOST RESTRICTIVE APARTMENT CATEGORIES:  **ENVIRONMENTAL RESTRICTIONS**
 **CONSTRUCTION COSTS**

Austin was one of four pilot metro markets explored with an earlier survey and is recast below with updated indexing. A young and growing housing market, Austin metro is in the top third least restrictive of major markets with a supply index of 0.97 and ranked sixth among metro demand. Austin was one of four pilot metros for a national approach and the original subindices plotted below. Respondents cited heavy environmental restrictions as their top barrier, followed by high construction costs and increased land costs. Other above-index issues were community involvement and constraints on infrastructure. All others were below index, including a slight 0.20 for affordable housing requirements. Current median incomes for rental households rank in the top sixth of major markets, while their income requirement for today's average rent is a slight 3.0% below the median. Yet, some 40% of renters are paying over 35% of incomes on the average market rents of \$1,225.

Barriers to Apartment Construction Subindices



BARRIERS INDEX METHODOLOGY:

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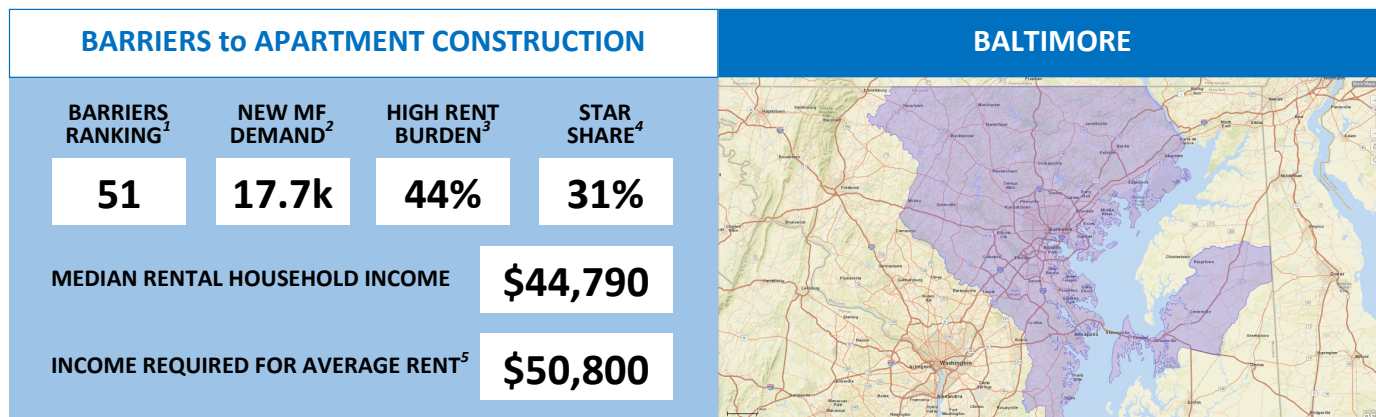
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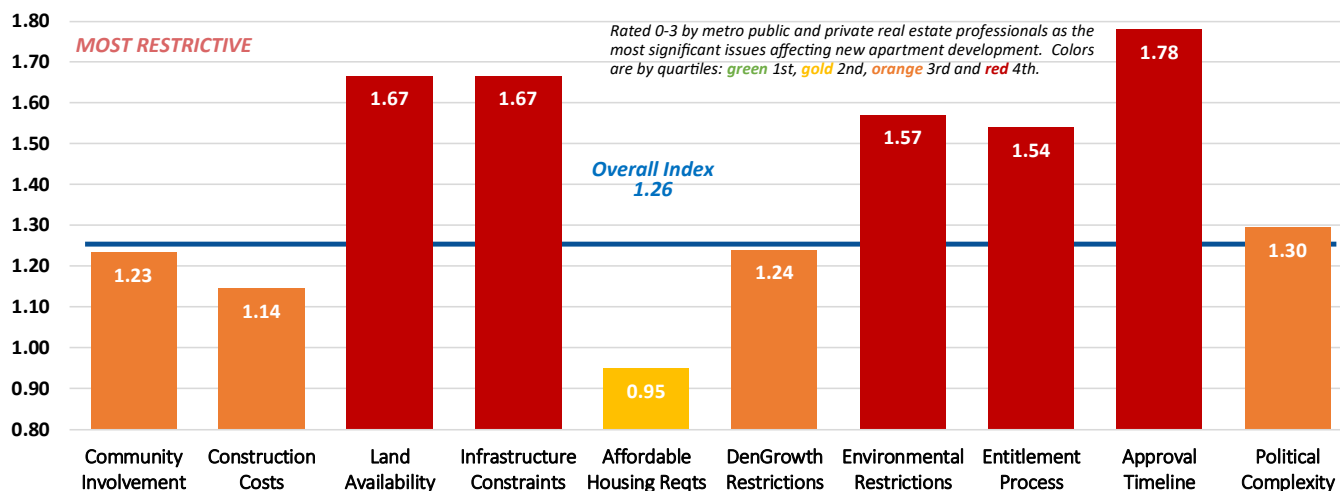


MOST RESTRICTIVE APARTMENT CATEGORIES:

- APPROVAL TIMELINE
- LAND AVAILABILITY
- INFRASTRUCTURE CONSTRAINTS

Baltimore ranks highly restricted in the bottom fourth amid softer demand when measured against other major markets. Survey respondents cite an array of barriers that shadowed the typical barriers of cost, community opposition and politics with a higher 1.26 overall index. Land availability is expectedly restrictive, along with infrastructure constraints seen in both availability and school crowding. Environmental issues center on coastal restrictions, wetlands and mitigation. Entitlement process issues include a range of council opposition, historic district and design criteria unknowns. Yet most restrictive is the typical timelines for rezoning and discretionary use permits. Metro rental incomes trend 12% below the requirement for average market rents of \$1,270. City Council has recently passed an affordable housing trust fund using future transfer taxes with a source of income provision expected in March 2019.

Barriers to Apartment Construction Subindices



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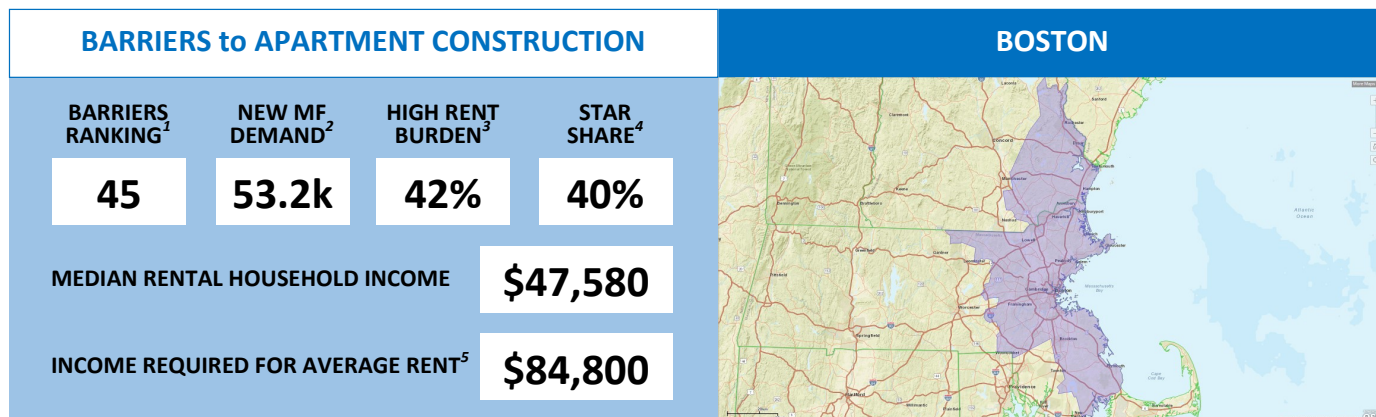
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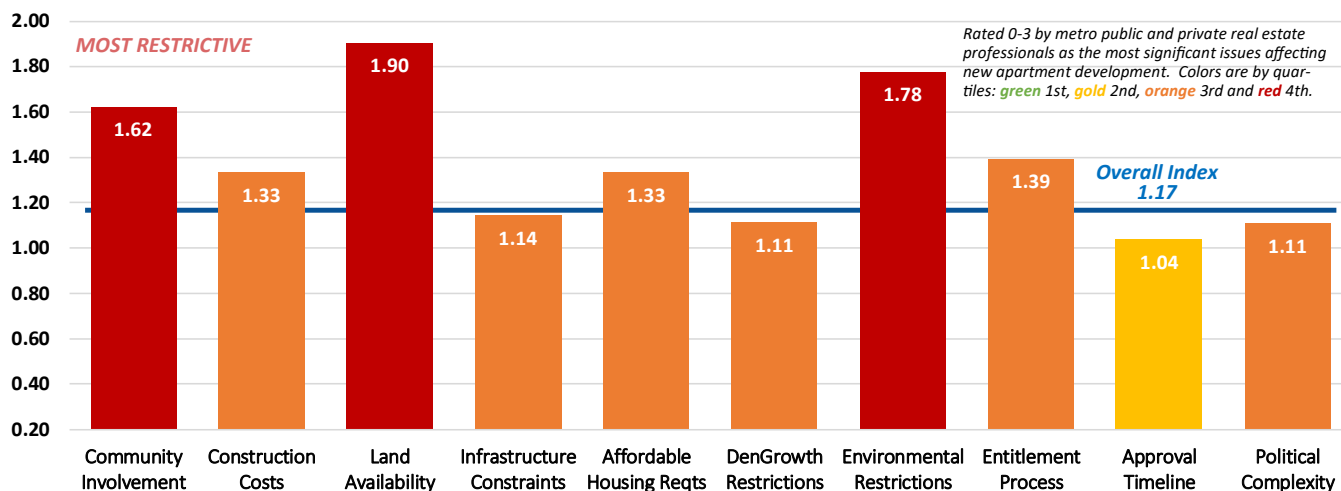


MOST RESTRICTIVE APARTMENT CATEGORIES:

- LAND AVAILABILITY
- ENVIRONMENTAL RESTRICTIONS
- COMMUNITY INVOLVEMENT

Boston respondents cite land availability and environmental issues as most important to regulating land for multifamily development, followed closely by community involvement. Other indices of costs, infrastructure and policy restrictions are seen as more restrictive than the U.S. average. As with many scaled metros like Boston, these barriers become more pronounced in the urban core relative to outlying housing sectors. The MA 40B law is a good example of the complexity of zoning issues within such a region. The law eases zoning when subsidized units are included in development in municipalities where less than 10 percent of available housing is affordable. This in effect pushes development to suburban areas that have yet to meet this quota and where zoning laws vary significantly from urban Boston. Given expected demand of more than 53,000 new rental households in this area through 2030, the mayor prioritized \$26 million in new and recommended funding for affordable housing early in 2019.

Barriers to Apartment Construction Subindices



BARRIERS INDEX METHODOLOGY:

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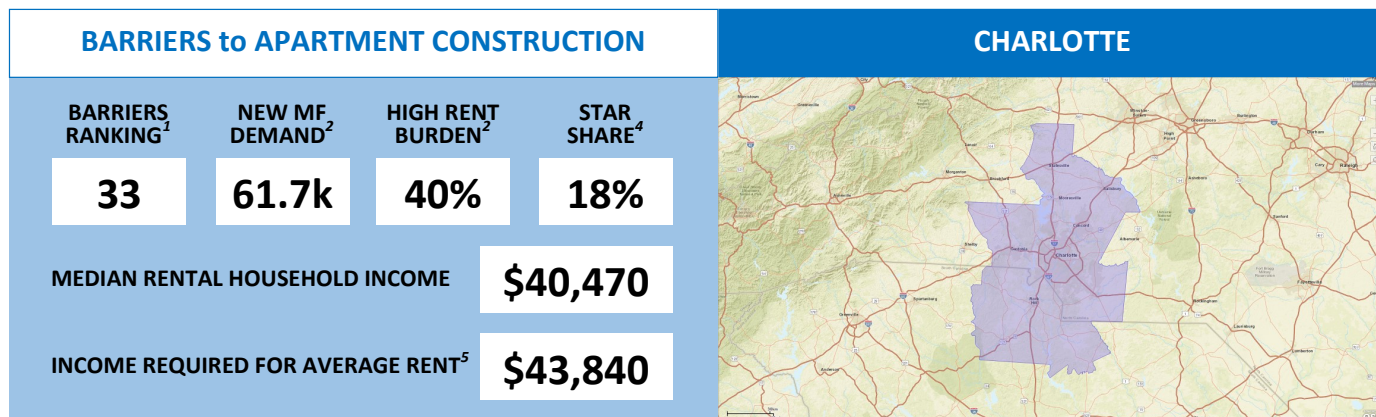
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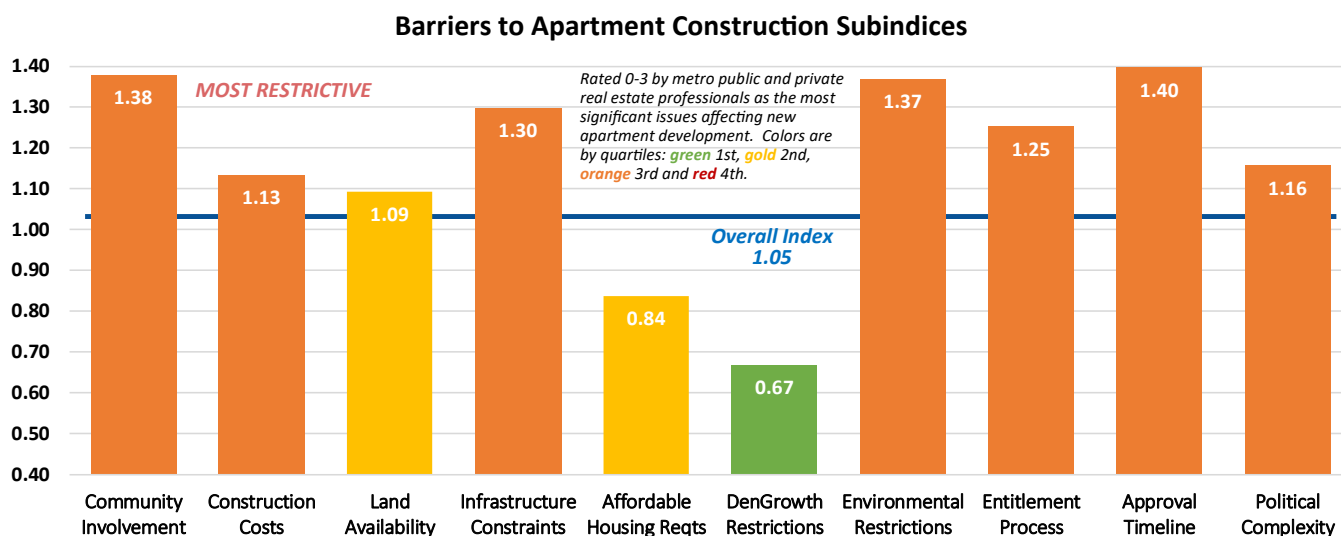
⁵**INCOME REQUIRED FOR AVERAGE RENT** assumes a more conservative 30% of rental household income needed for the average metro contract rent.



MOST RESTRICTIVE APARTMENT CATEGORIES:

- APPROVAL TIMELINE
- COMMUNITY INVOLVEMENT
- ENVIRONMENTAL RESTRICTIONS

With an overall supply index of 1.05, Charlotte is ranked below the median of other major metros. Survey respondents highlight many restrictive issues as shown below. Community involvement is based upon public opposition and the number of public meetings required. Infrastructure constraints are led by high traffic, fees and school crowding, while environmental restrictions are driven by open space and coastal water requirements, plus their mitigation. Approval timelines are cited as the most restrictive. Median rental incomes are fairly aligned with average metro rents, some 8.0% below the requirements for average market rents of \$1,095. However, some 40% of renters will pay over 35% of income on their lease.



BARRIERS INDEX METHODOLOGY:

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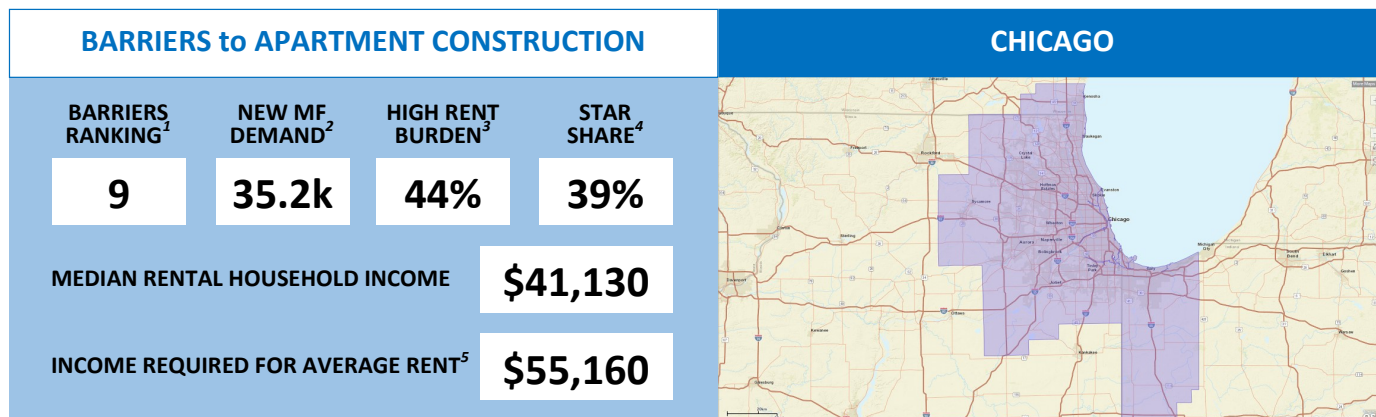
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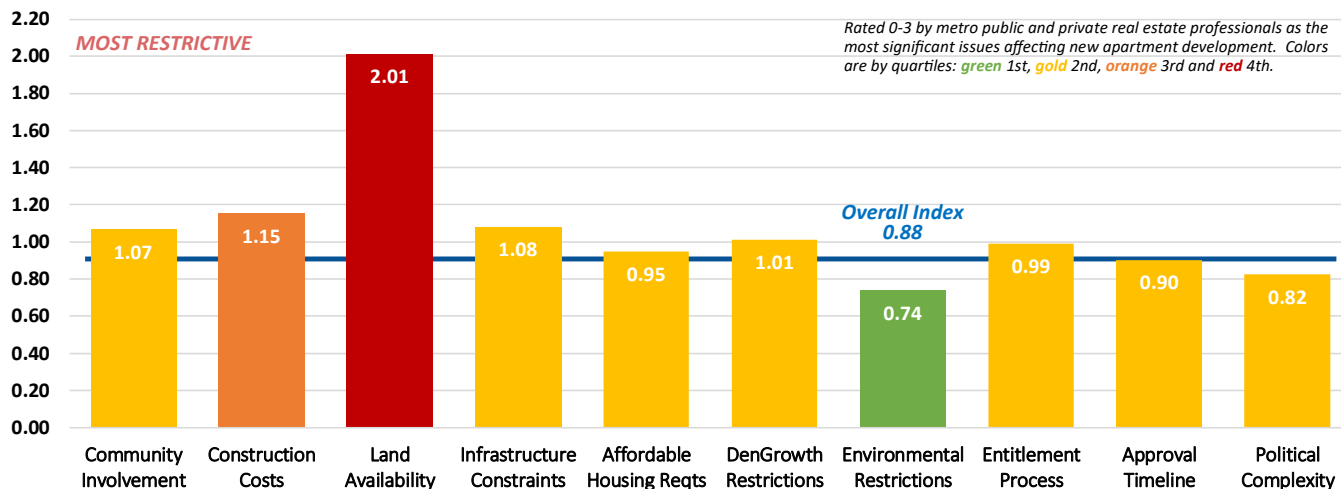
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MOST RESTRICTIVE APARTMENT CATEGORIES: LAND AVAILABILITY

The sprawling Chicago metro ranks in the top fourth of other major markets for least restrictive supply barriers and an index of 0.88. Most of the subindices below align with the index, save for the glaring restriction of land availability and its suitability for development. Other key issues cited are the number of public meetings needed for community engagement, high impact fees and their waiver, general density restrictions and the heavy influence of local councils. The median metro rental incomes are a significant 25% below the required for average market rents of \$1,380. Some 44% of renters pay over 35% of income on their lease. As with scaled metros like Chicago, these barriers become more pronounced in the urban core relative to outlying housing sectors. Affordable housing requirements Downtown drive project values lower and restrict underwriting, while entitlements are often delayed by arbitrary zoning conditions among 50 Wards. Development teams also suffer from high property taxes and a lack of confidence in the local fiscal conditions.

Barriers to Apartment Construction Subindices



BARRIERS INDEX METHODOLOGY:

These NAA HAS Barriers to Apartment Construction indices were created from over 90 apartment development, process and timing questions in ten categories and sourced digitally from real estate professionals in both the public and private realms. An initial overall metro **Barriers to Apartment Construction Index** is also plotted above.

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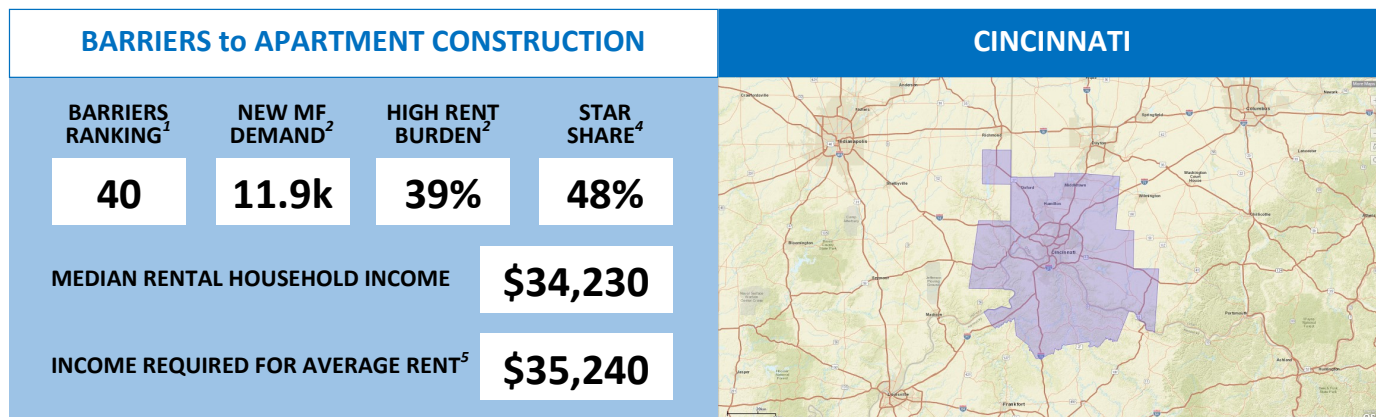
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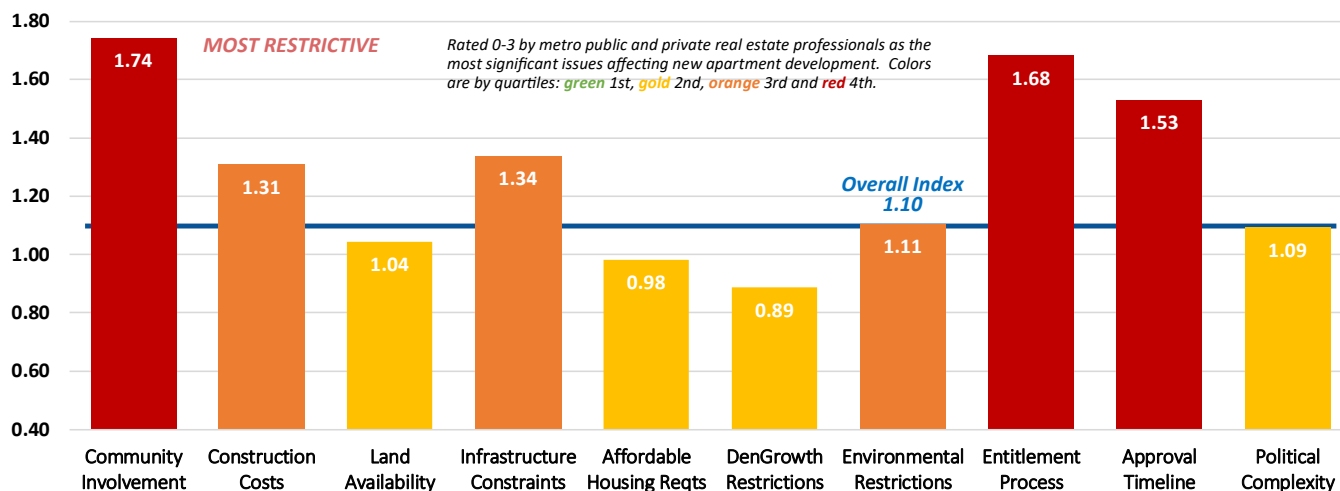


MOST RESTRICTIVE APARTMENT CATEGORIES:

- COMMUNITY INVOLVEMENT
- ENTITLEMENT PROCESS
- APPROVAL TIMELINE

The older and fragmented Cincinnati metro ranks more restrictive than most major markets with an overall supply index of 1.10. Survey respondents cite community involvement as most restrictive, tied to strong public opposition and the number of public meetings. The metro counts well over 400 distinct jurisdictions overseeing new apartment development. The entitlement process is restrictive, led by land use restrictions, reliance on public subsidies and the need for third-party advocates. Approval timelines are considered long, tied to rezoning, discretionary use and permitting. Expectedly, construction costs are high and include tax district impacts. Infrastructure constraints include availability, fees and growing traffic concerns. These barriers restrict the opportunities for workforce and affordable housing critical to replace aging housing stock near the Cincinnati urban core. Rents and rent burdens are seen increasing. A significant 48% share of existing rental stock is seen as STAR units located in these more distressed neighborhoods.

Barriers to Apartment Construction Subindices



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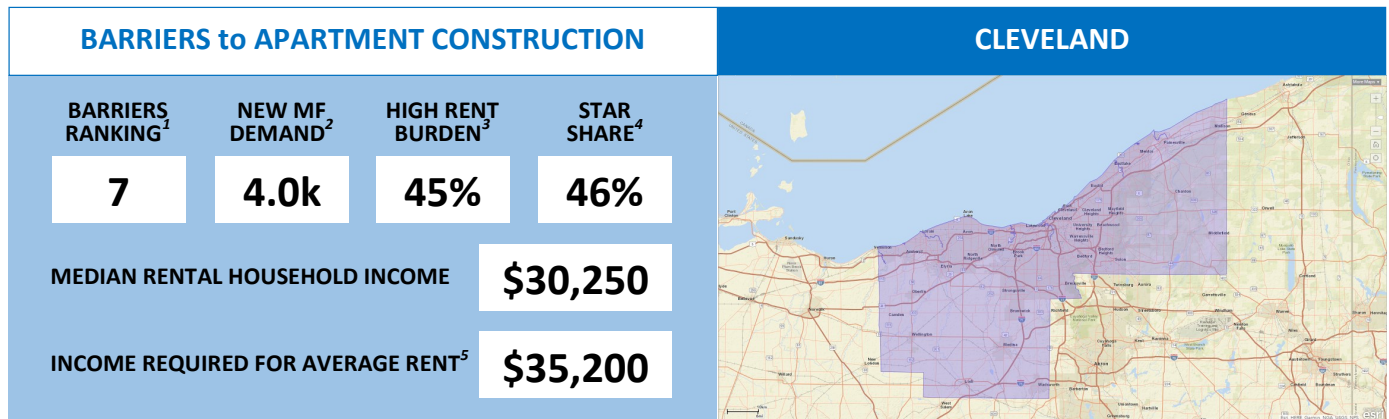
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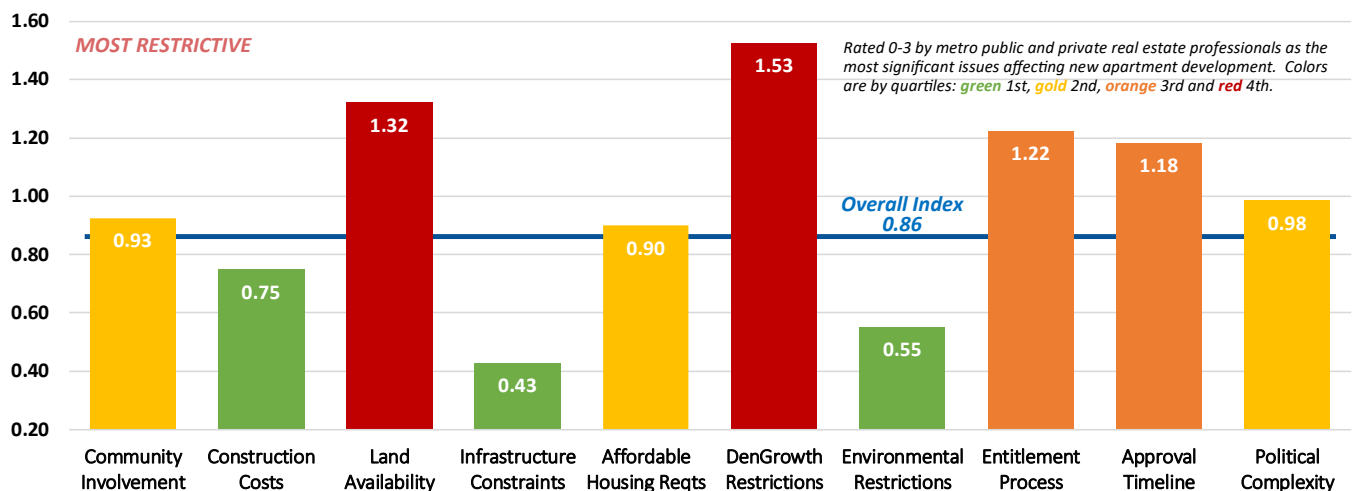
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MOST RESTRICTIVE APARTMENT CATEGORIES: **DENSITY & GROWTH RESTRICTIONS**
LAND AVAILABILITY

The older Cleveland metro ranks better than most major markets on supply barriers with an overall index of 0.86, though overall apartment demand is the lowest of the larger national metros surveyed (Sioux Falls is lower). Respondents cite the expected land availability as most restrictive, mostly on heavy land use regulations, along with density restrictions driven by height and parking restrictions. Also cited as restrictive are land use regulations that burden the entitlement process and a generally lengthy approval timeline. Political complexity noted the heavy influence of local councils on the apartment development outcomes. Cleveland posts the lowest median rental incomes of major markets and these incomes are 14% below the requirement for average rents of \$880. A significant 46% of metro rental stock is seen as more affordable STAR units found in older, distressed neighborhoods.

Barriers to Apartment Construction Subindices

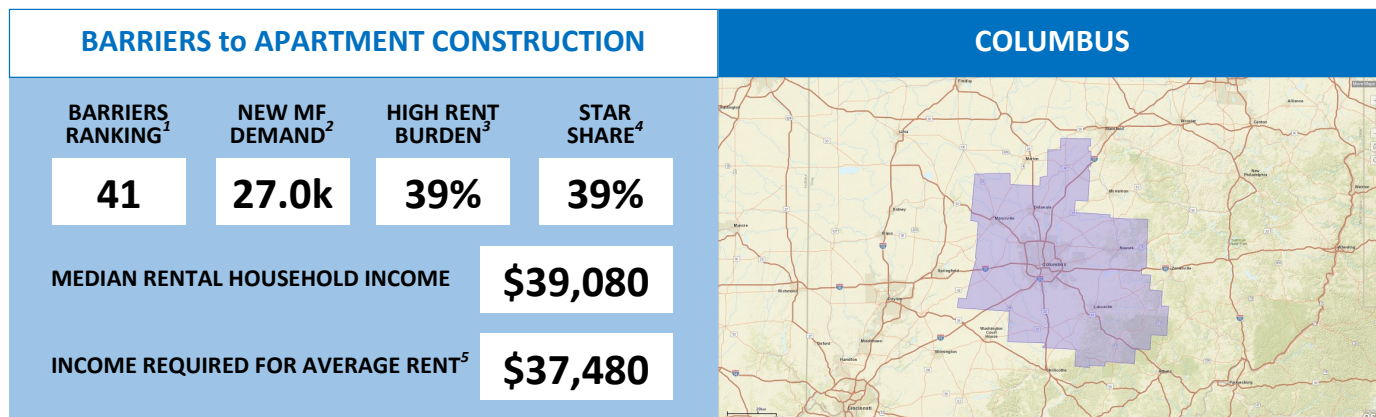


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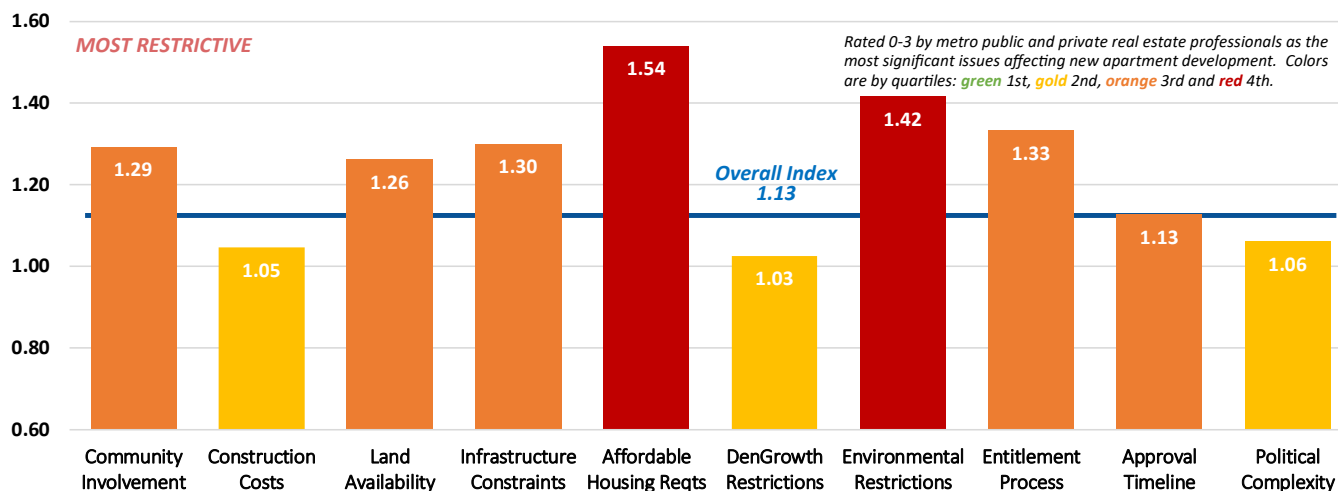
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MOST RESTRICTIVE APARTMENT CATEGORIES:  **AFFORDABLE HOUSING REQUIREMENTS**
 **ENVIRONMENTAL RESTRICTIONS**

Columbus metro surveyed more restrictive than other Midwestern markets with an overall index of 1.13. Respondents cite the greatest restrictions of affordable housing requirements relative to density bonuses and environmental restrictions driven by general mitigation and open space requirements. Other specifics include community opposition and public meetings, general land supply, traffic constraints and heavy use of tax subsidies within project entitlements. Construction costs, growth restrictions and political complexity are below metro index, though respondents noted the heavy influence by local councils. Median rental incomes that rank lower than other markets are some 4.0% above the requirements for average market rents of \$940.

Barriers to Apartment Construction Subindices



BARRIERS INDEX METHODOLOGY:

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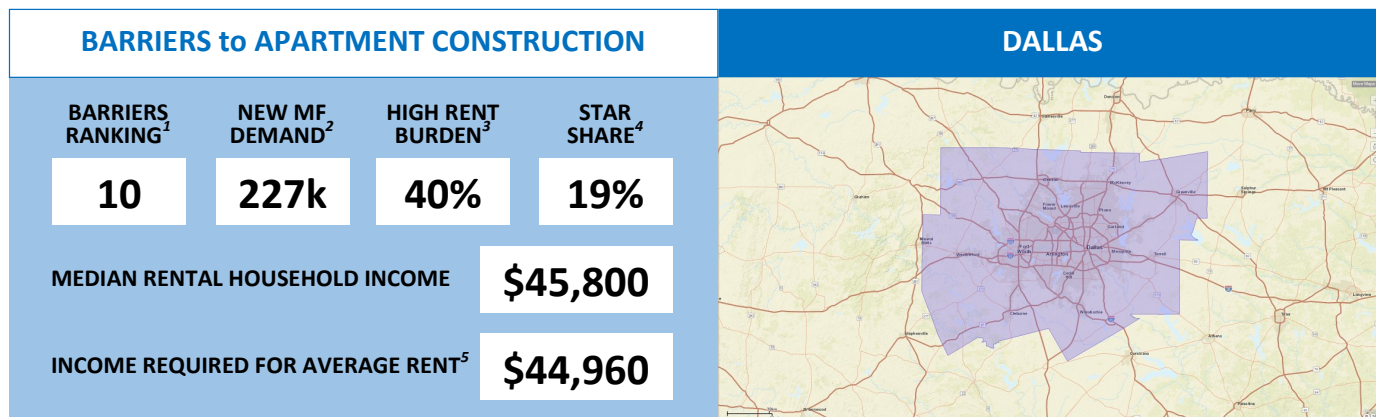
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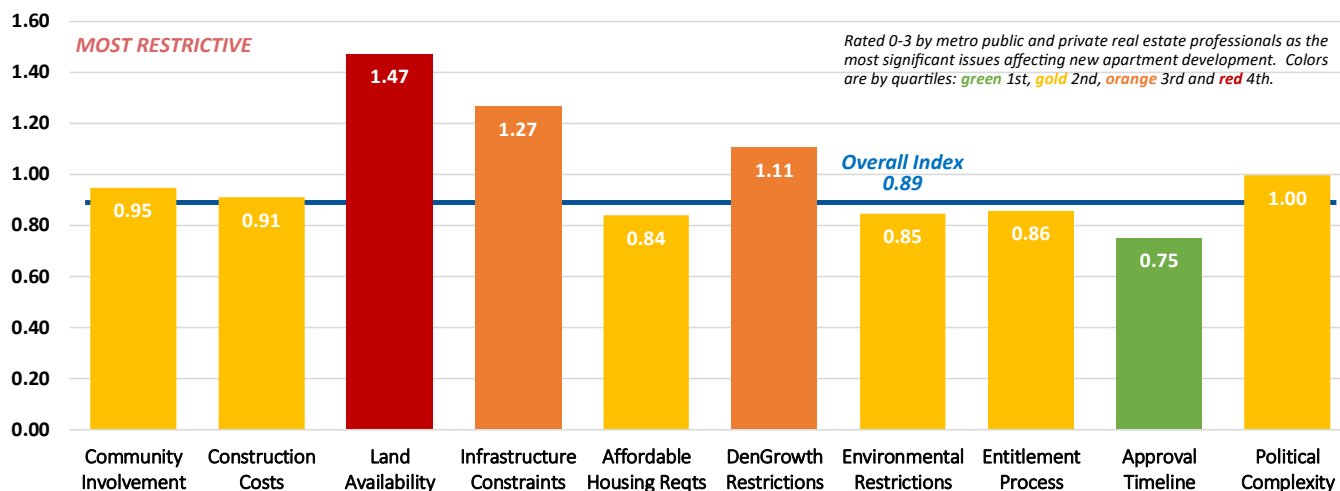


MOST RESTRICTIVE APARTMENT CATEGORIES:

- LAND AVAILABILITY
- INFRASTRUCTURE CONSTRAINTS
- DENSITY and GROWTH RESTRICTIONS

Metro Dallas-Fort Worth enjoys both the greatest apartment demand among major national markets and ranks in the top fourths of lowest barriers to new apartments with an overall supply index of 0.89. Survey respondents in this sprawling metro cite land availability as the greatest restriction. Also cited is infrastructure constraints relative to availability, impact fees and traffic, plus general density restrictions tied to lot, height and parking limits. Above the index, political complexity is specific to the heavy influence of both local councils and their residents. Typical supply restrictions from other community, construction and land costs, affordable housing, environmental and entitlement issues are nominal. The median rental income in Dallas is just above the income requirements for their average market rents of \$1,125.

Barriers to Apartment Construction Subindices



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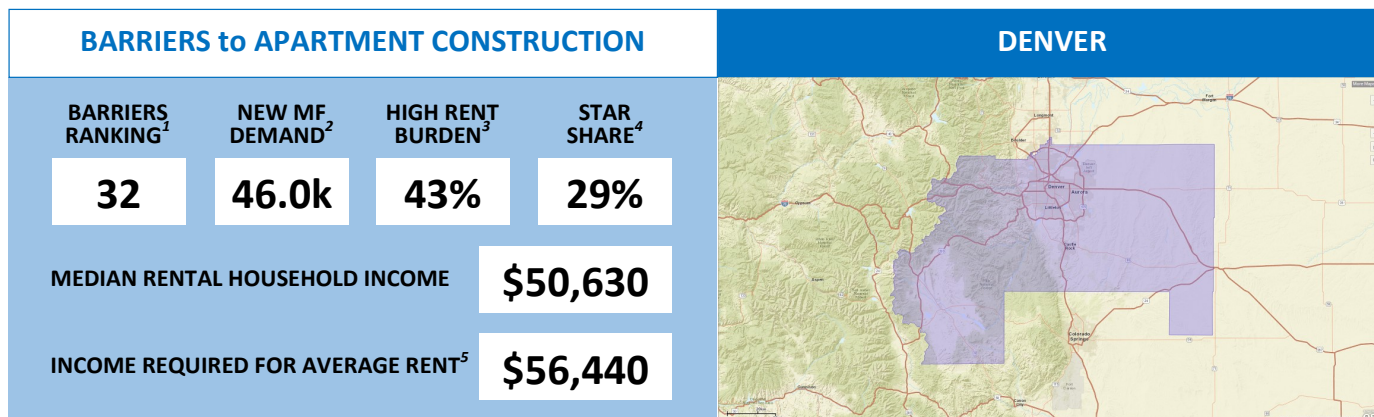
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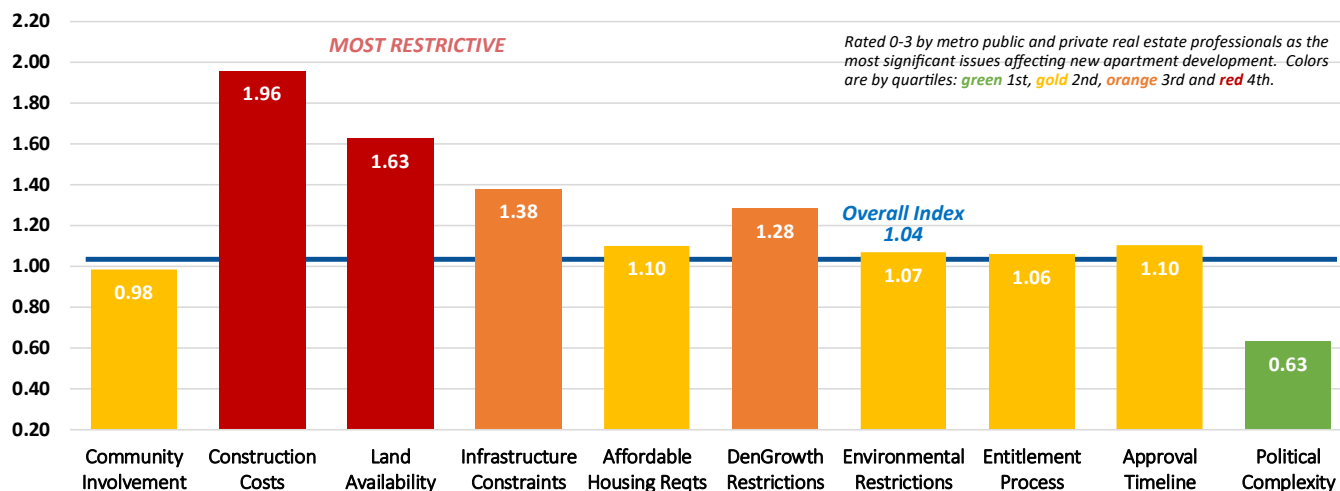
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MOST RESTRICTIVE APARTMENT CATEGORIES:  **CONSTRUCTION COSTS**
 **LAND AVAILABILITY**

The Denver metro ranks below median of major markets for overall new apartment barriers with a supply index of 1.04. Sustained demand ranks in the first third of national markets. Survey respondents cite construction and land costs as the most restrictive issue, specifically land as the share of total costs, rising land costs and growing impact fees. Also highlighted is general land availability, followed by infrastructure constraints led by fees and traffic, then general density restrictions and height limits. Other typical metro barriers of community involvement, affordable housing and environmental restrictions are below index. Lowest was restrictions tied to political complexity, though local council influence is seen as high. Median rental incomes ranked fifth of major markets and yet remain 10% below the requirements for average market rents of \$1,415.

Barriers to Apartment Construction Subindices



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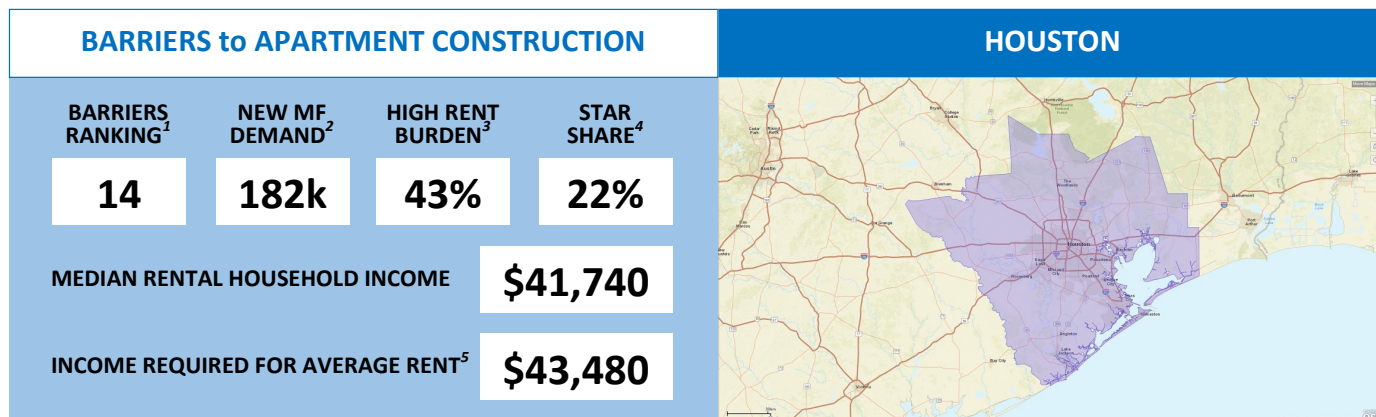
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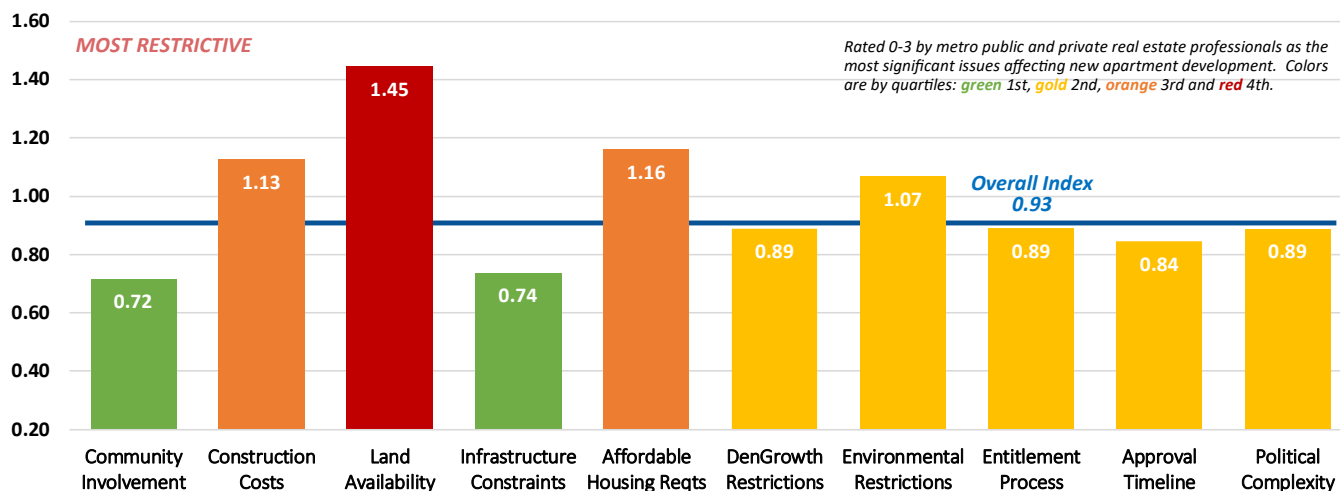


MOST RESTRICTIVE APARTMENT CATEGORIES:

- LAND AVAILABILITY
- AFFORDABLE HOUSING REQUIREMENTS
- CONSTRUCTION COSTS

Houston metro ranks in the top fourth least restricted among major markets with a supply index of 0.93. Sustained apartment demand also ranks in the top 10% of national markets. Survey respondents cite general land availability as the greatest barrier to supply, followed by affordable housing requirements, specifically the lack of density bonuses, and rising construction costs, specifically land costs. Environmental issues are tied to flood zone restrictions. Political complexity is driven by lack of general plan updates. Other typical metro barriers categorized as community involvement, infrastructure and entitlement processes are below index and comparatively low for all major markets. Some 43% of renters spend at least 35% on rent and their median rental incomes are 4.0% below the requirements for average market rents of \$1,090.

Barriers to Apartment Construction Subindices



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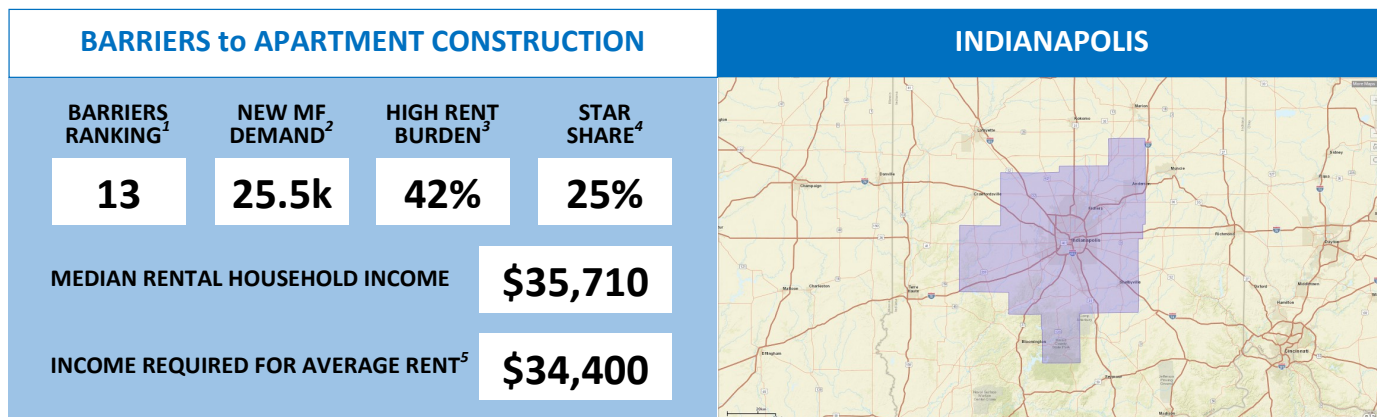
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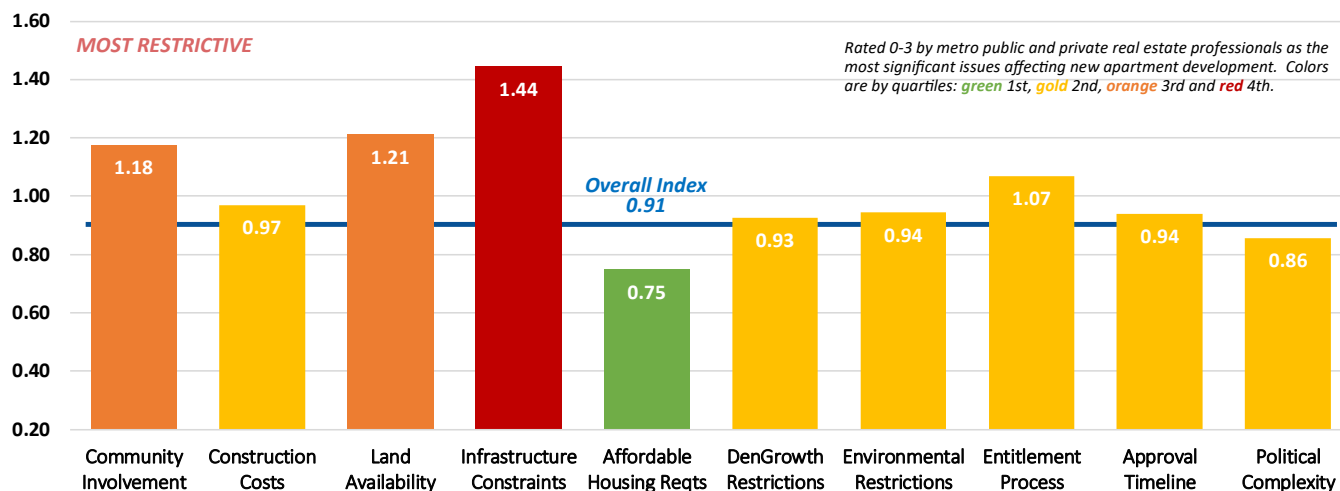
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MOST RESTRICTIVE APARTMENT CATEGORIES:  **INFRASTRUCTURE CONSTRAINTS**
 **LAND AVAILABILITY**

Metro Indianapolis ranks in the top fourth of the major markets as least restrictive to new apartment development with an overall supply index of 0.91. However, demand ranks in the bottom third of national metros. Survey respondents cite infrastructure constraints as the top restriction category, driven by general availability, associated fees, growing traffic and school crowding. Land availability is also cited, along with community involvement, specifically the lengthy public engagement required amid strong local opposition. Construction and land costs are above index, while the other indices aligned to index. Least restrictive is local affordable housing requirements. Median rental income is in the bottom third of major markets and 4.0% above the requirements for average market rents of \$860.

Barriers to Apartment Construction Subindices



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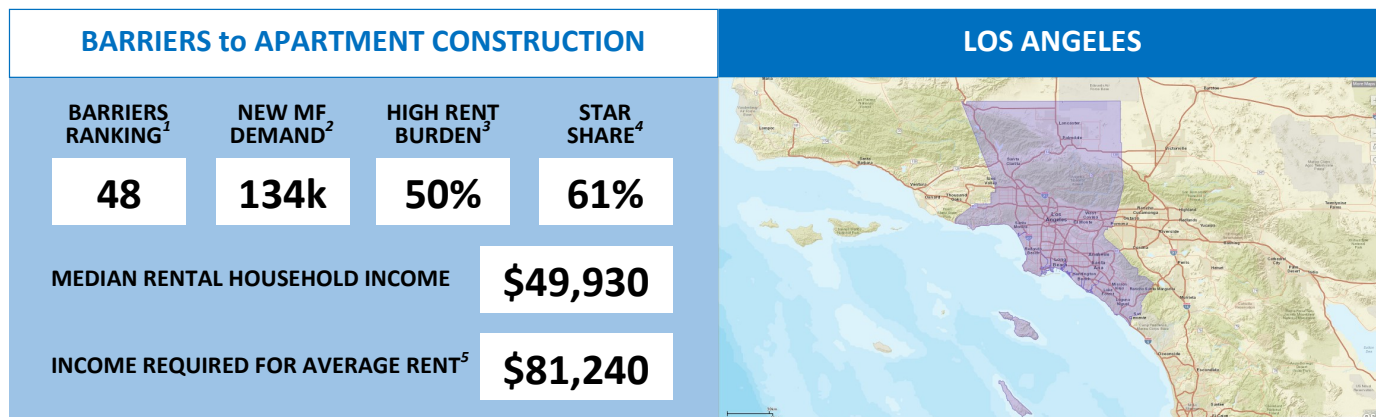
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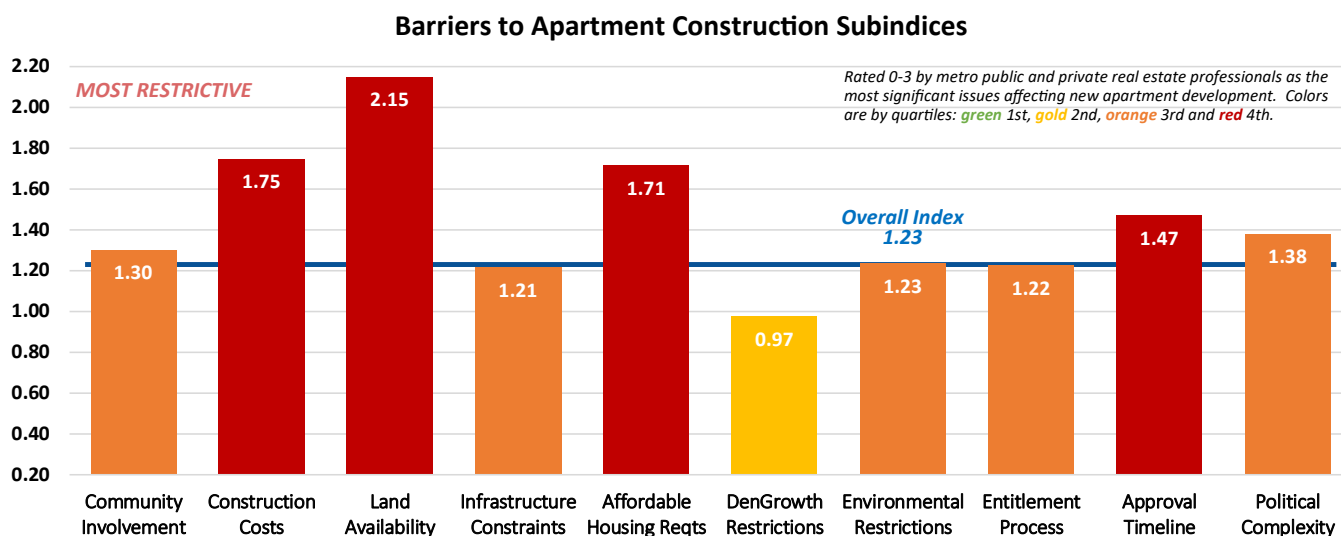
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MOST RESTRICTIVE APARTMENT CATEGORIES:

- **LAND AVAILABILITY**
- **CONSTRUCTION COSTS**
- **AFFORDABLE HOUSING REQUIREMENTS**

The sprawling Los Angeles metro ranks in the bottom fourth of new apartment construction with an overall supply index of 1.23. Sustained demand for multifamily is in the top third of national metros and half of current renters pay over 35% of incomes on their lease. Respondents cite land availability as the most restrictive issue, followed by affordable housing requirements. Construction and land costs are well above index, driven higher by heavy impact fees, as was the approval timeline for rezoning and discretionary use permits. All other subindices are of significance, in the third index quartile, save for slightly lower restrictions on density and growth. Median rental incomes are in the top third of major metros, yet remain a significant 39% below the income required for their average market rents of \$2,035.



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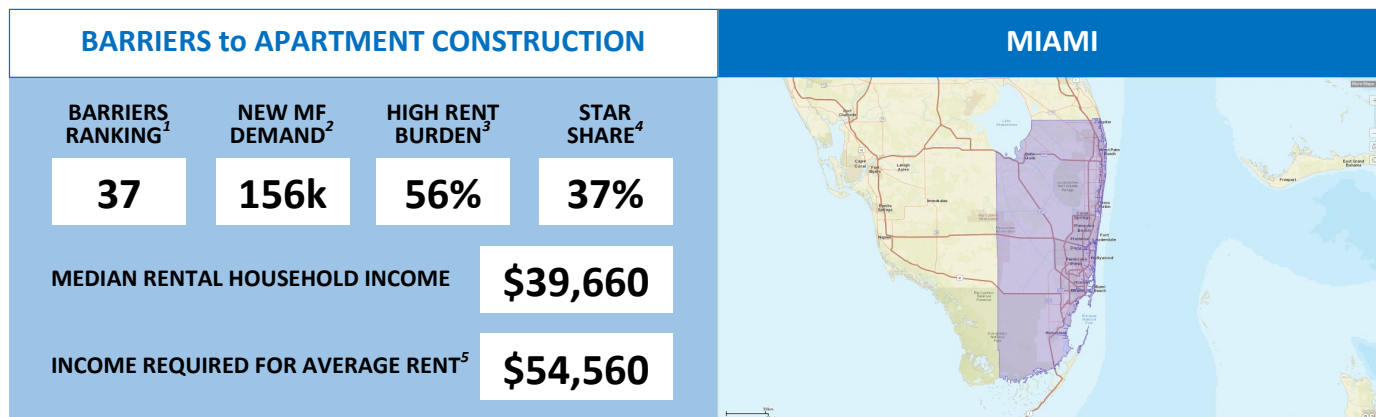
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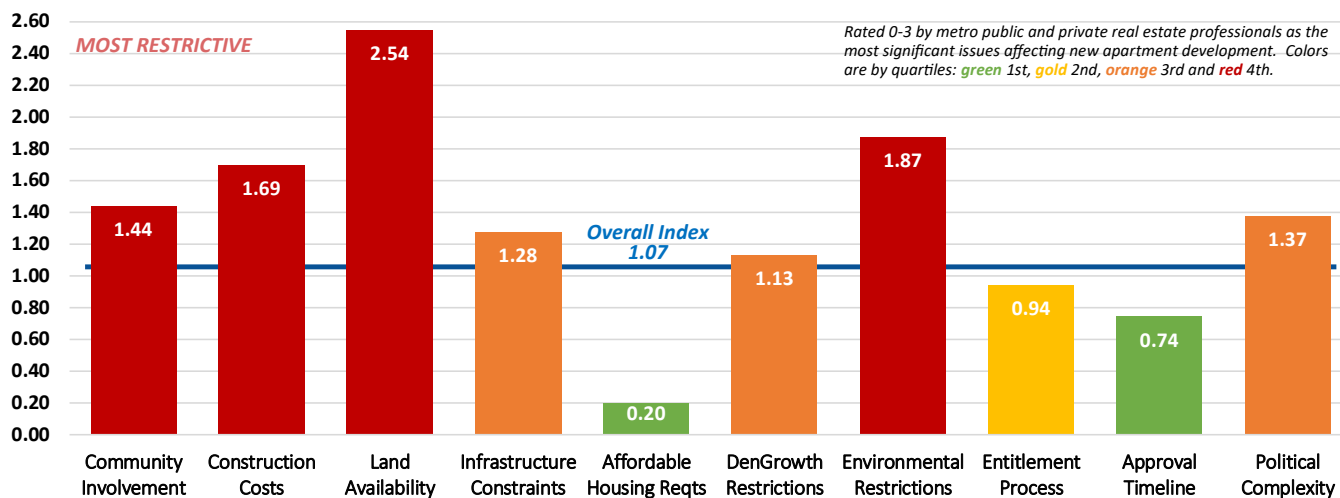


MOST RESTRICTIVE APARTMENT CATEGORIES:

- LAND AVAILABILITY
- ENVIRONMENTAL RESTRICTIONS
- CONSTRUCTION COSTS

Miami was one of four pilot metro markets explored with an earlier survey and is recast below with updated indexing. Miami metro ranked third among national metro demand yet is near the bottom third of major markets for barriers with a supply index of 1.07. Respondents cited very heavy restrictions on land availability and its feasibility for development as their top barrier, followed by high environmental restrictions, construction and land costs, then community involvement. Other near-index issues were infrastructure constraints, density and growth restrictions, and local political complexity. Entitlement process, approval timelines and affordable housing requirements were seen lower. Median renter incomes rank low among major markets and is a significant 27% below the requirement for today's average market rents of \$1,225. Miami has the peak high rent burden among national metros, with 56% of renters paying over 35% of incomes on these rents.

Barriers to Apartment Construction Subindices



BARRIERS INDEX METHODOLOGY:

These NAA HAS Barriers to Apartment Construction indices were created from over 90 apartment development, process and timing questions in ten categories and sourced digitally from real estate professionals in both the public and private realms. An initial overall metro **Barriers to Apartment Construction Index** is also plotted above.

DEFINITIONS and NOTES:

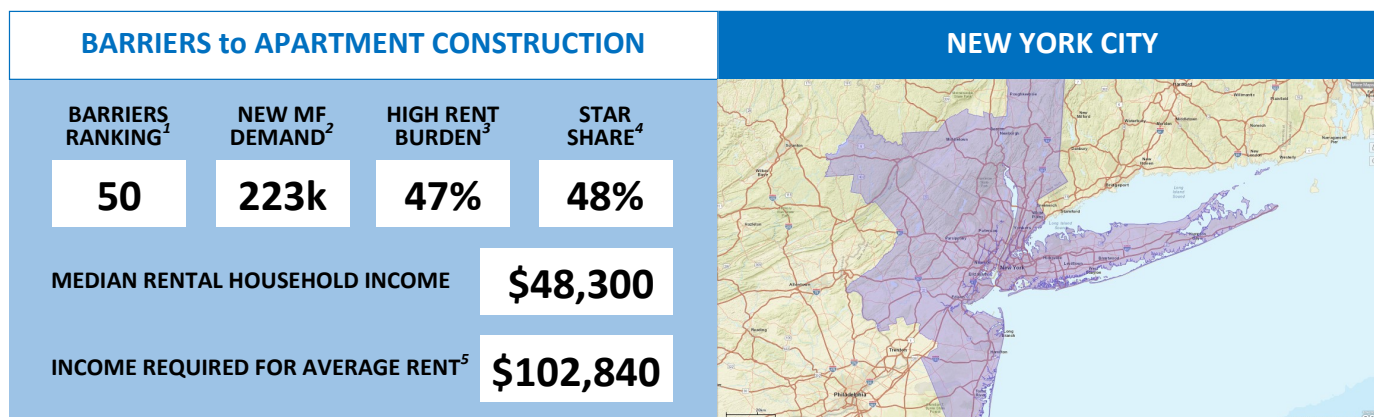
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⁴**STAR SHARE** is that share of metro rental housing stock with five or more units HAS qualified as ***Second-Tier Affordable Rentals** or those non-institutional sites of typically lower unit count, lower quality and greater age, often overlooked as crucial affordable housing already in place. Using CoStar® ratings of 1-5 for sites of five units or more, STAR is the lower ratings of 1-2. This share ranges from 61% (Los Angeles) to 17% (Austin) with a major metro average of 36%.

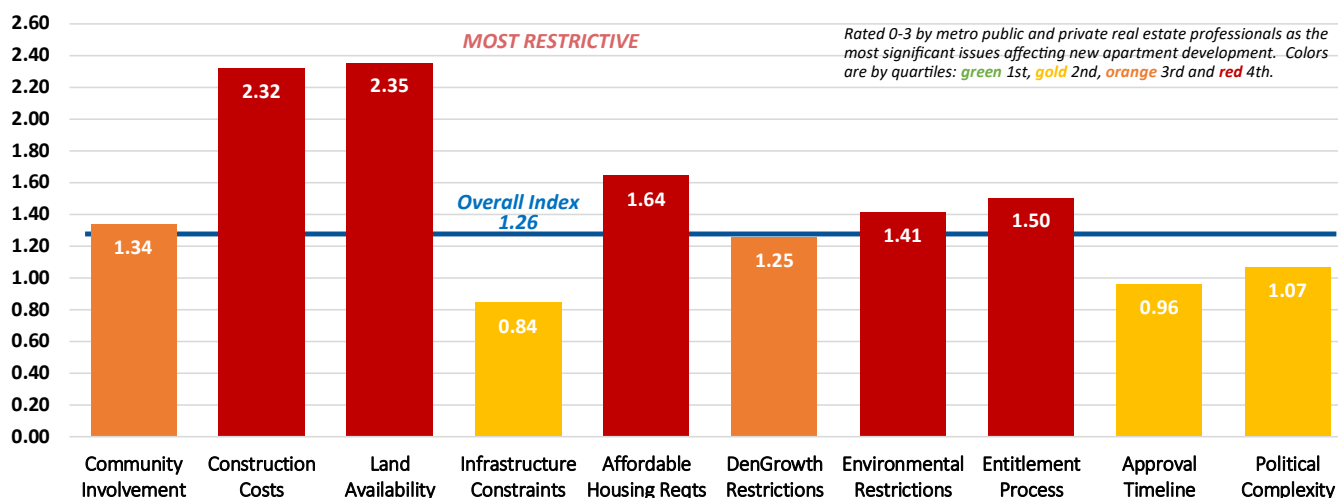
⁵**INCOME REQUIRED FOR AVERAGE RENT** assumes a more conservative 30% of rental household income needed for the average metro contract rent.



MOST RESTRICTIVE APARTMENT CATEGORIES:  **LAND AVAILABILITY**
 **CONSTRUCTION COSTS**

New York was one of four pilot metro markets explored with an earlier survey and is recast below with updated indexing. New York metro is near the bottom major markets for barriers with a supply index of 1.26 while ranking in the top third of national metro demand. Respondents cited very heavy restrictions on land availability and its feasibility for development as their top barrier, followed by high construction and land costs. Three other subindices of affordable housing, environmental restrictions and entitlement process were scored in the fourth quartile. Other near-index issues were community involvement and density and growth restrictions. Today's median renter income is a significant 53% below the requirement for today's average market rents of \$2,575. Not the greatest share nationally, but 47% of renters are paying over 35% of incomes on these rents. A significant 47% of rental housing stock is seen as more affordable STAR units in existing, typically distressed neighborhoods.

Barriers to Apartment Construction Subindices



BARRIERS INDEX METHODOLOGY:

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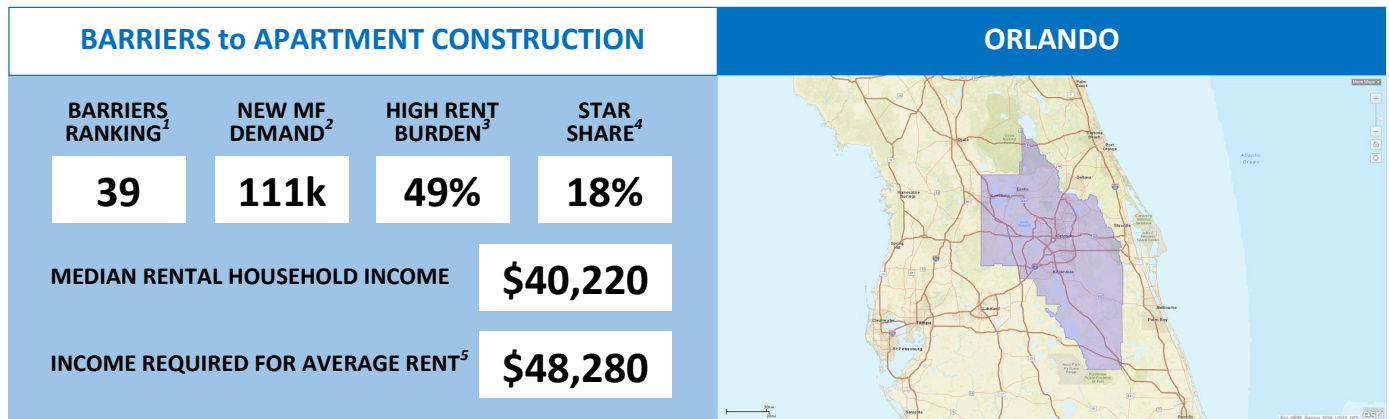
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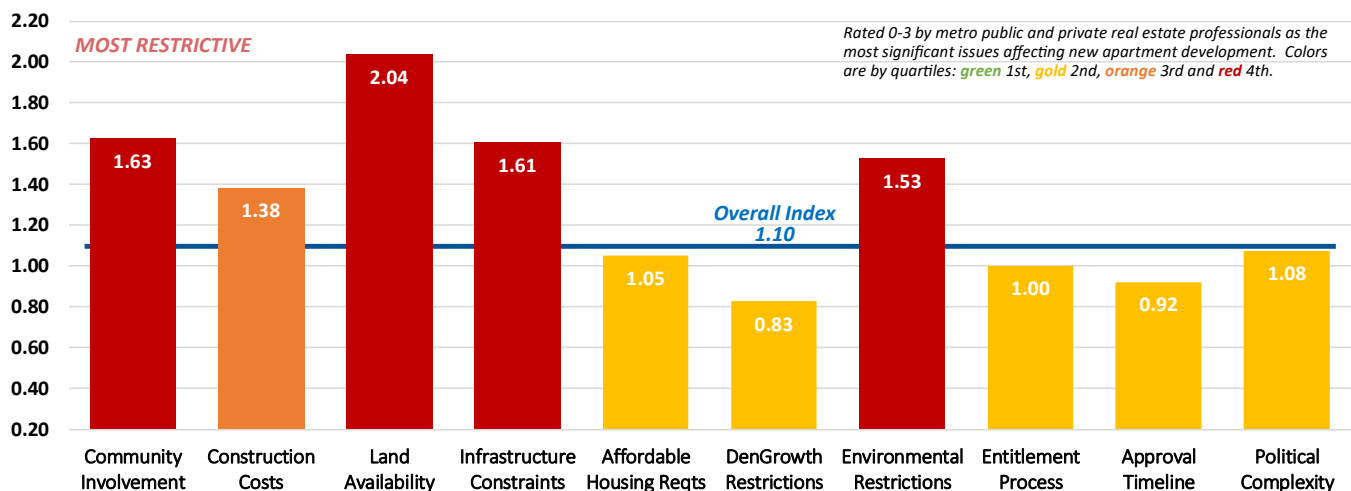


MOST RESTRICTIVE APARTMENT CATEGORIES:

- **LAND AVAILABILITY**
- **COMMUNITY INVOLVEMENT**
- **INFRASTRUCTURE CONSTRAINTS**

Though Orlando enjoys the second best demand among national metros, the metro ranks in the bottom third for barriers to new apartments with an overall supply index of 1.10. Survey respondents cite land availability and its feasibility as the top restriction, followed by community involvement driven by local opposition and the lengthy public meetings required. Infrastructure constraints include traffic, impact fees and school crowding. Environmental issues are based in coastal and wetlands, flood zone limits and mitigation measures. Save for the expected construction and land costs, the other indices are cited below index. Median rental incomes rank in the bottom third of major markets, some 17% below the income requirement for average market rents of \$1,210.

Barriers to Apartment Construction Subindices

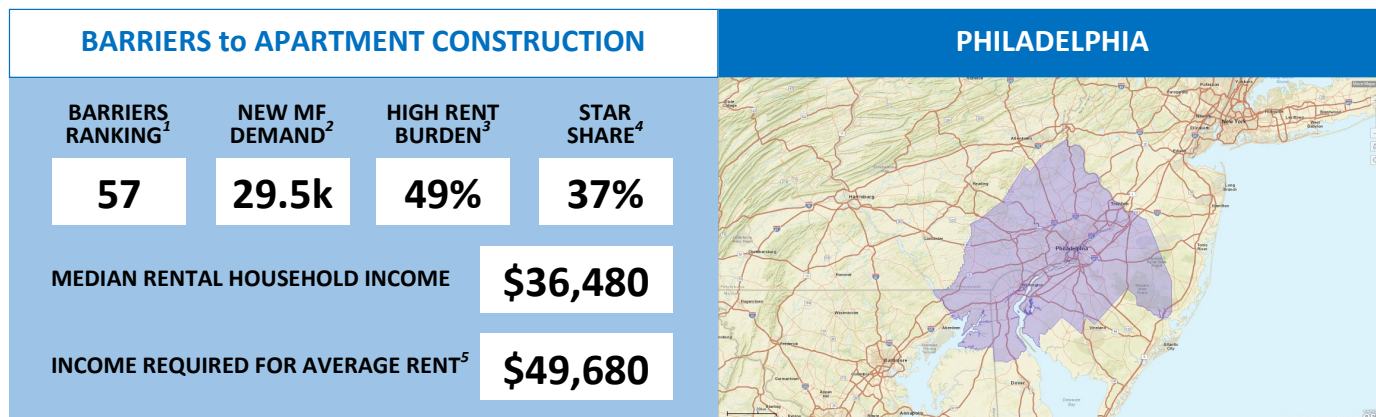


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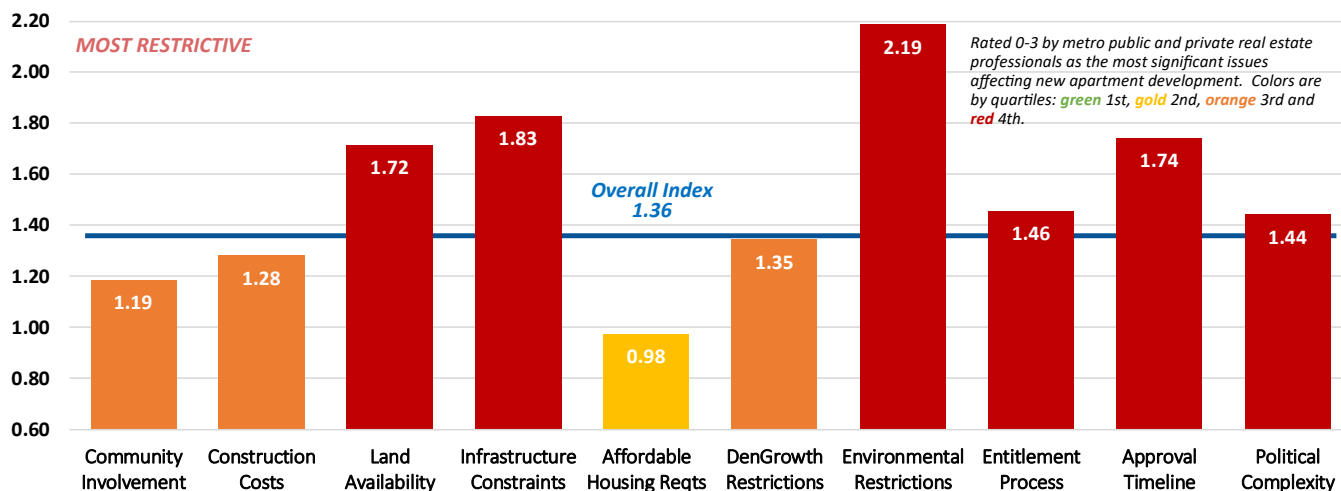


MOST RESTRICTIVE APARTMENT CATEGORIES:

- ENVIRONMENTAL RESTRICTIONS
- INFRASTRUCTURE CONSTRAINTS
- APPROVAL TIMELINE

Philadelphia metro ranks in the bottom third of national apartment demand and near bottom for barriers to development with a supply index of 1.36. Only San Jose ranks a more restrictive major market. Survey respondents cite environmental restrictions highest, driven by coastal and wetland issues, flood zone restrictions and their mitigation. Infrastructure constraints led by impact fees are also cited, along with general land availability and lengthy approval timelines. Political complexity is led by the heavy influence of both local councils and their public constituents. Legislation and tax increases need assessment of their housing impact ahead. Other research cites that housing affordability is less about rents and more tied to lower worker incomes; the median rental income ranked in the lower third of major markets and is a significant 27% below the requirement for the average market rents of \$1,245. As with scaled metros like Philadelphia, these barriers become more pronounced in the urban core relative to outlying housing sectors.

Barriers to Apartment Construction Subindices



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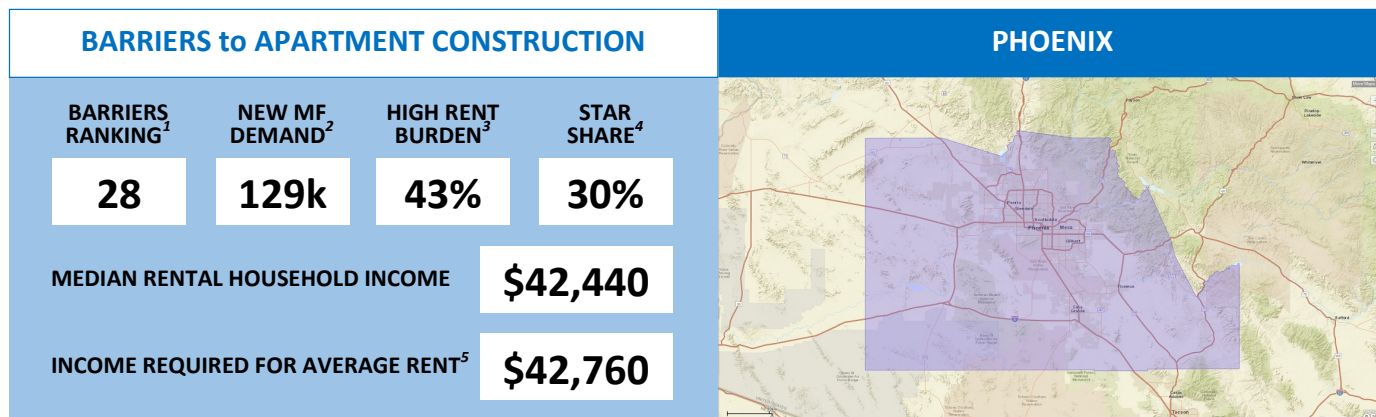
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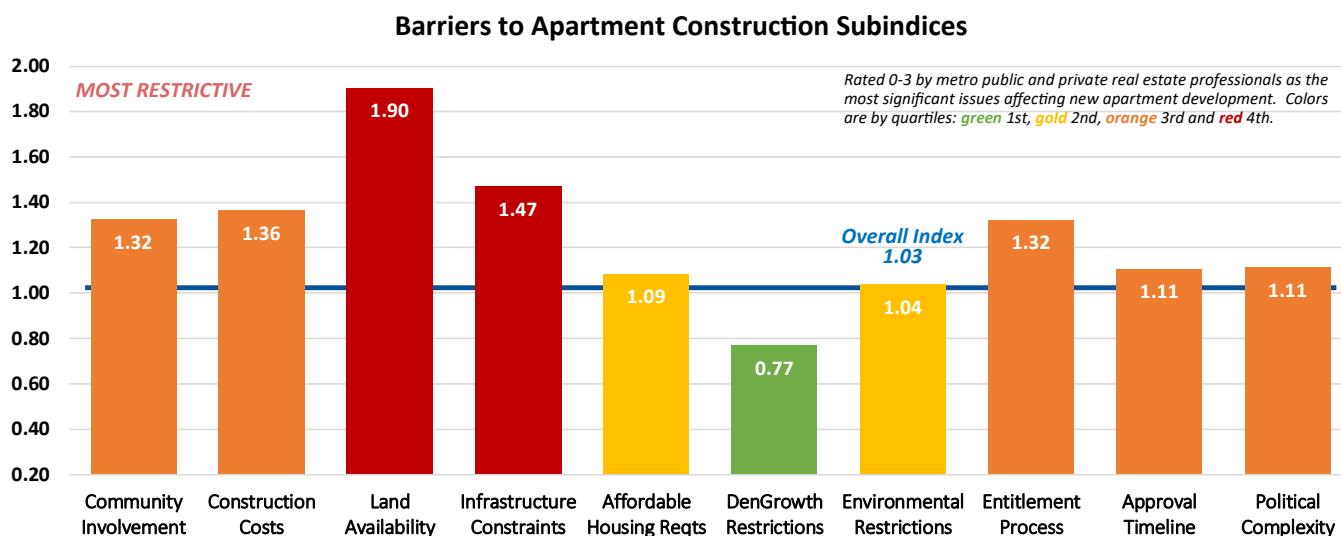
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MOST RESTRICTIVE APARTMENT CATEGORIES:  **LAND AVAILABILITY**
 **INFRASTRUCTURE CONSTRAINTS**

The vibrant southwest Phoenix metro ranks fifth of national markets for demand, yet is just above median for restrictions to metro apartment development with a supply index of 1.03. Survey respondents cite land availability and specifically its feasibility as the most restrictive issue, followed by infrastructure constraints driven by impact fees and their mitigation. Most other supply indices are above index, save for multifamily density and overall growth restrictions. Community involvement restrictions are led by local opposition and the number of public meetings. Construction costs are driven by constant increases and heavy impact fees. Their metro median rental income ranks at the middle of major markets and is aligned with the income requirement for the average market rents of \$1,070. Some 43% of renters are spending over 35% of income on their lease.



BARRIERS INDEX METHODOLOGY:

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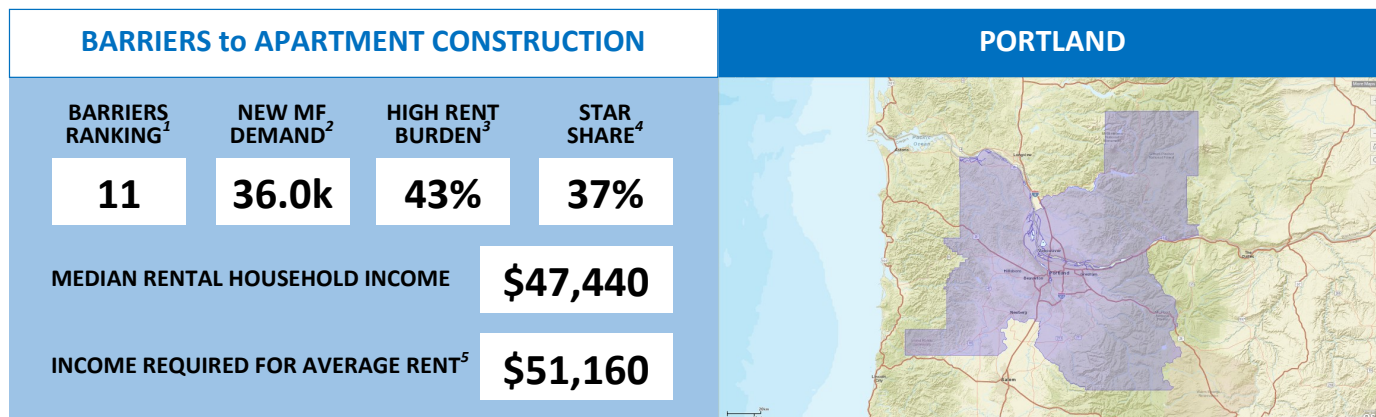
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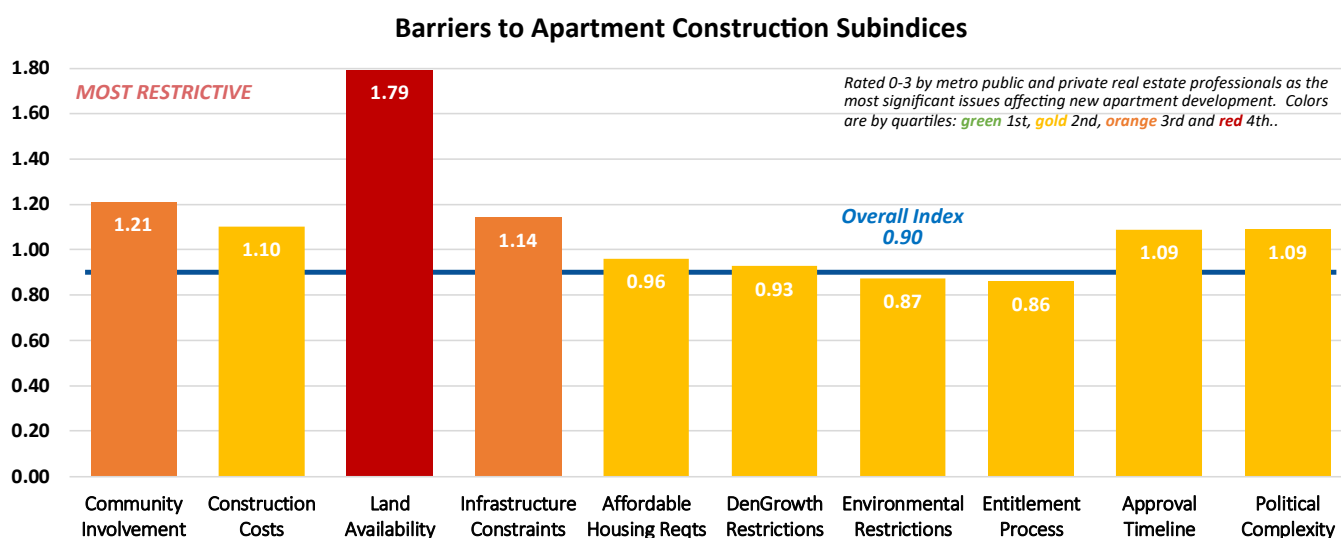
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MOST RESTRICTIVE APARTMENT CATEGORIES: **LAND AVAILABILITY**
COMMUNITY INVOLVEMENT

Portland metro ranks in the top fourth of least restrictive major markets with an overall index of 0.90. Demand for new multifamily is ranked near median with national metros. Survey respondents cite land availability and its development feasibility as the top barrier to new apartments, followed by community involvement, specifically the amount of public engagement required and local opposition. Also noted is infrastructure constraints driven by general availability, impact fees and their mitigation, and traffic. Construction costs, approval timelines and political complexity are just above index. Median rental income ranks in the upper third of major markets and is 7.0% below the requirement for average market rents of \$1,280.



BARRIERS INDEX METHODOLOGY:

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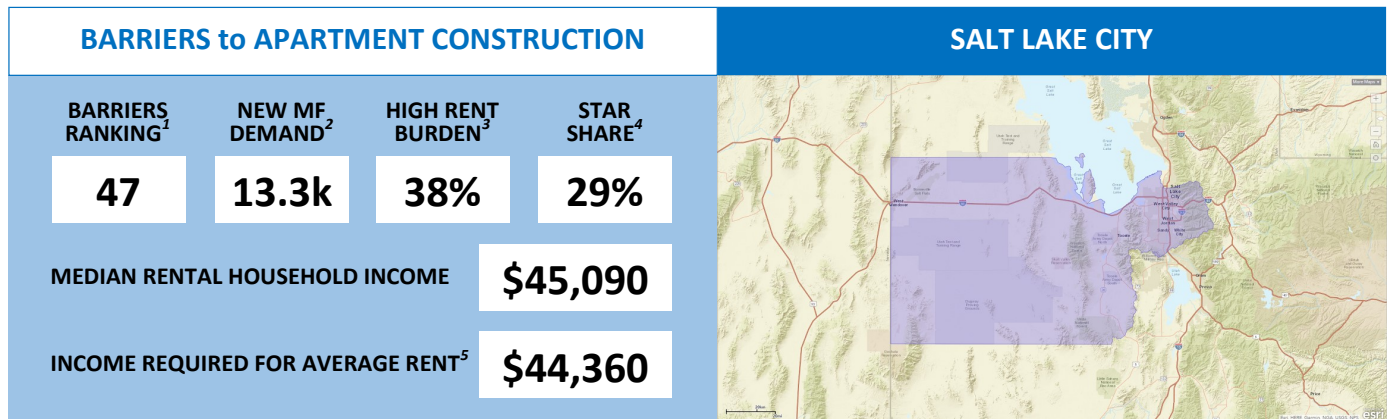
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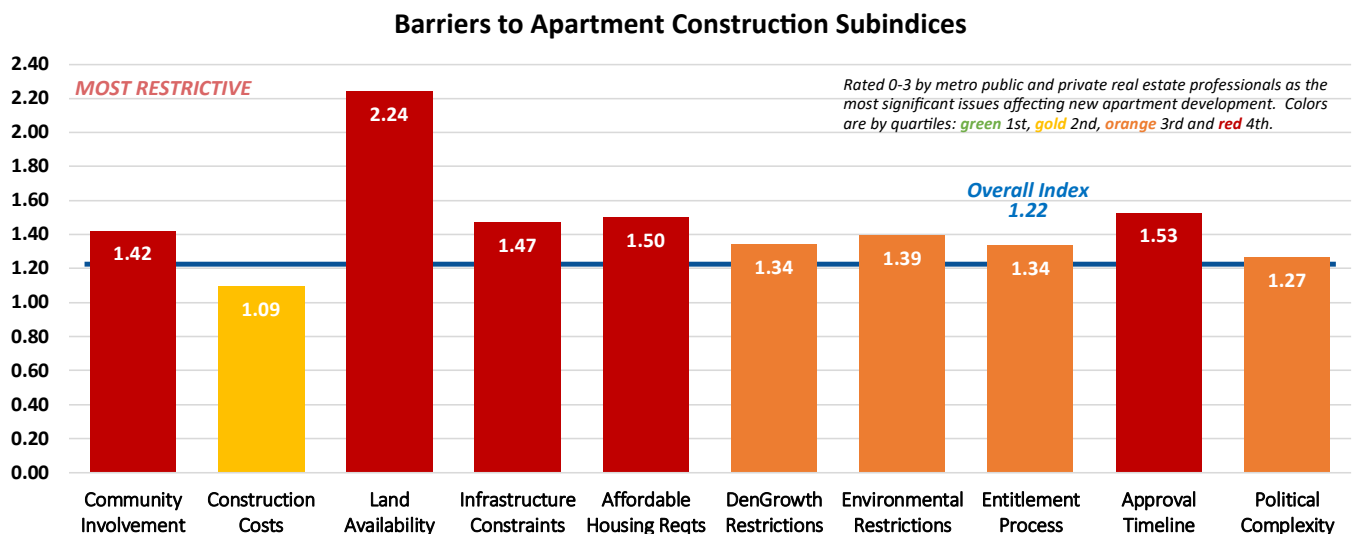
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MOST RESTRICTIVE APARTMENT CATEGORIES:

- LAND AVAILABILITY
- APPROVAL TIMELINE
- AFFORDABLE HOUSING REQUIREMENTS

Salt Lake City ranks in the bottom fourth of major markets with an overall index of 1.22, closer to Philadelphia and San Francisco. Survey respondents cite land availability and its development feasibility as the greatest restriction to new apartments. Community involvement is cited, driven by strong local opposition and lengthy public engagement. Infrastructure constraints are wide ranging, from traffic to school crowding. Affordable housing requirements are high, along with the timeline for entitlement approvals for rezoning. Most other subindices are near-index, while interestingly the barriers tied to construction costs are seen as least restrictive. Median rental income is relatively strong on current supply, slightly above the requirement for average market rents of \$1,080.

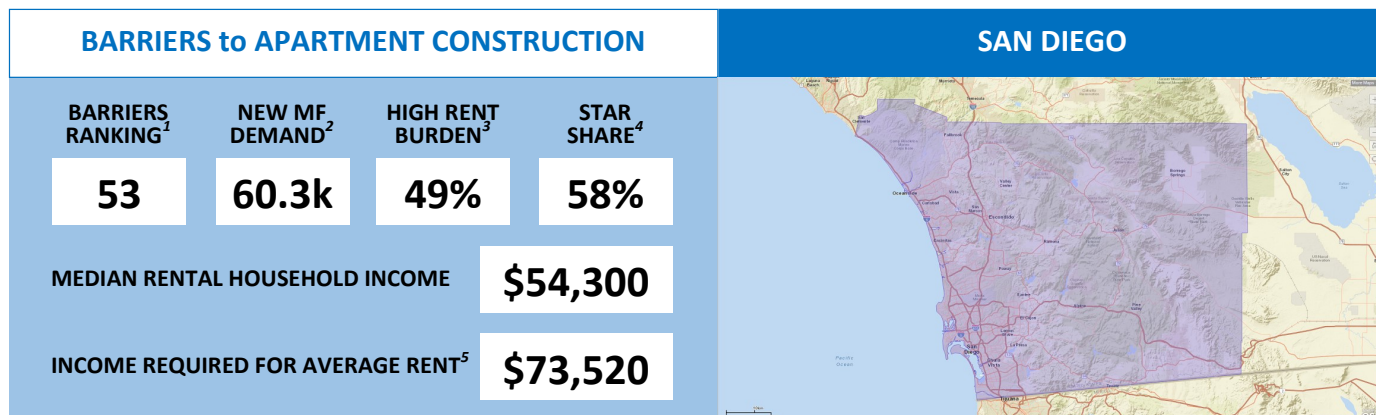


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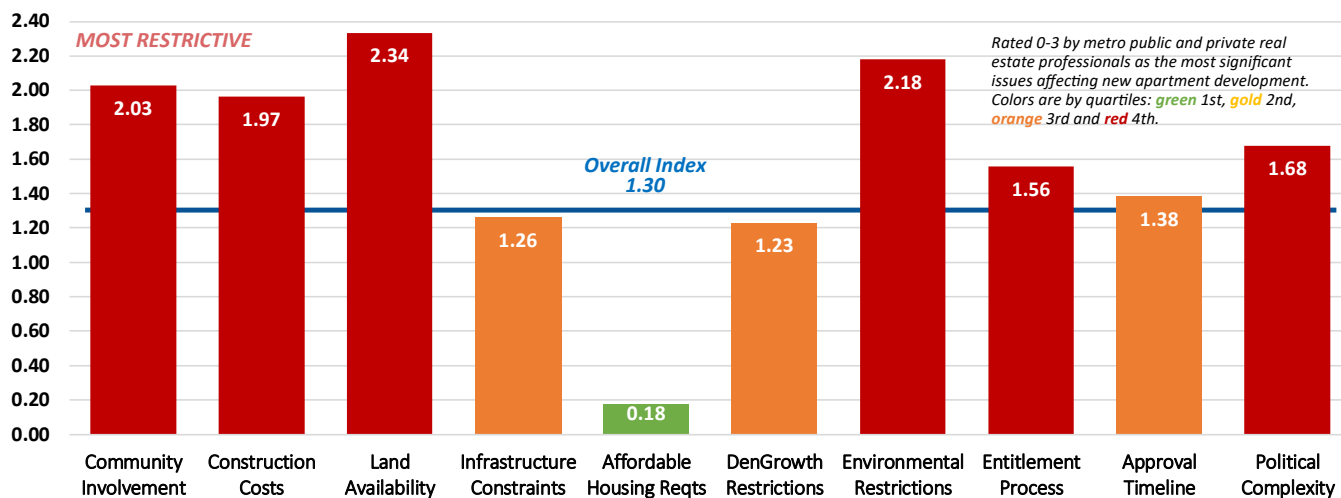


MOST RESTRICTIVE APARTMENT CATEGORIES:

- LAND AVAILABILITY
- ENVIRONMENTAL RESTRICTIONS
- COMMUNITY INVOLVEMENT

San Diego was one of four pilot metro markets explored with an earlier survey and is recast below with updated indexing. A highly desirable, land-constrained market, San Diego metro has multiple factors ranked high for their impact on apartment development. Respondents particularly noted that citizen opposition to growth influences the development process through an array of advocacy groups, public votes to circumvent council or planning commissions, repeated lawsuits, and numerous community meetings required before zoning or rezoning. Construction costs are driven up by the high number of impact fees, lack of waivers or processes to mediate fees, and high and increasing land costs. In addition to coastal restrictions, environmental restrictions and mitigation, the area ranks high in the number of conservation bonds passed at the local and state level in the past ten years including the California Environmental Quality Act (CEQA). Metro experts also noted process and political structure issues that create uncertainty and delays in the entitlement process. Complex approval structures requiring multiple submissions to approve developments are frequently cited.

Barriers to Apartment Construction Subindices



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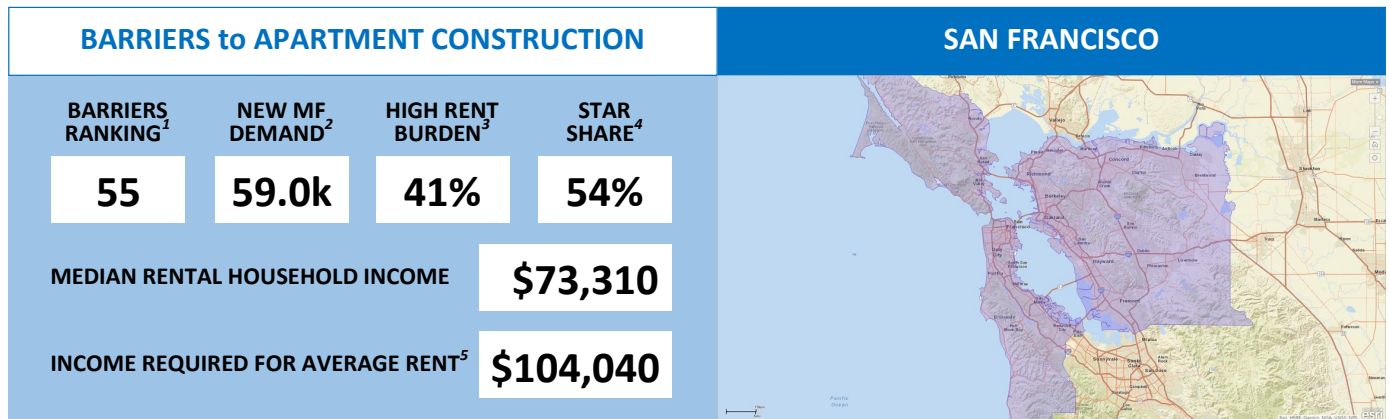
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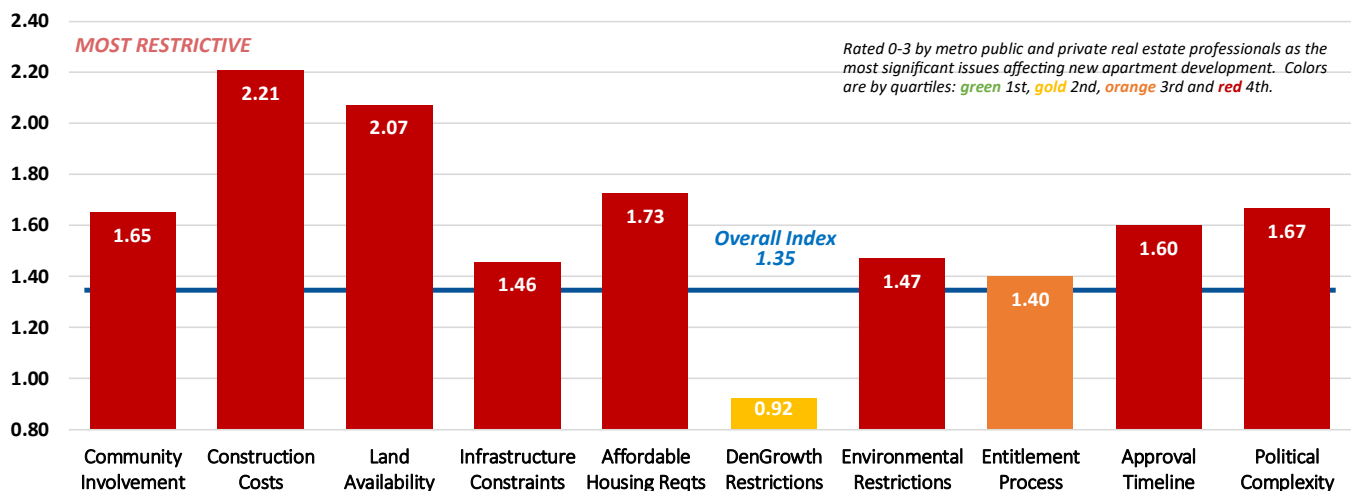
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MOST RESTRICTIVE APARTMENT CATEGORIES: ➡ **CONSTRUCTION COSTS**
➡ **LAND AVAILABILITY**

Metro San Francisco, true to reputation, ranked near the bottom as most restrictive new apartment market surveyed with an overall index of 1.35. Local respondents provide scores in the top quartile for all but two subindices. Most restrictive is construction costs, including land and recent increases, followed by land availability and its feasibility for development. Community involvement is driven by strong local opposition and lengthy public meetings. Affordable housing requirements are considered heavy. Long approval timelines for rezoning are fueled by strong local and State influences, often requiring a third-party development advocate. Though the metro enjoys the highest median rental incomes of the major markets, these incomes remain a significant 30% below the requirement for average market rents of \$2,850 while 41% of renters are paying over 35% of incomes on their lease.

Barriers to Apartment Construction Subindices

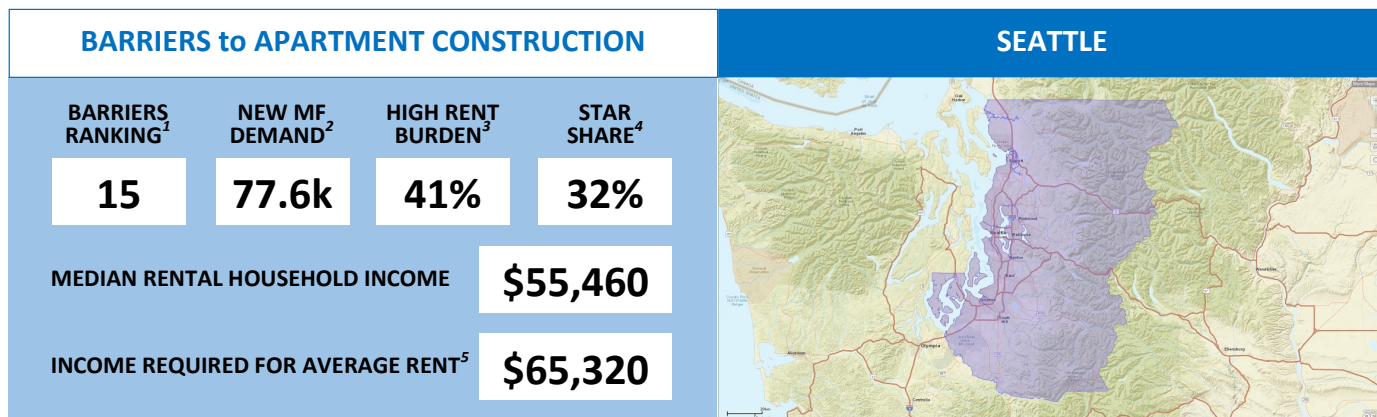


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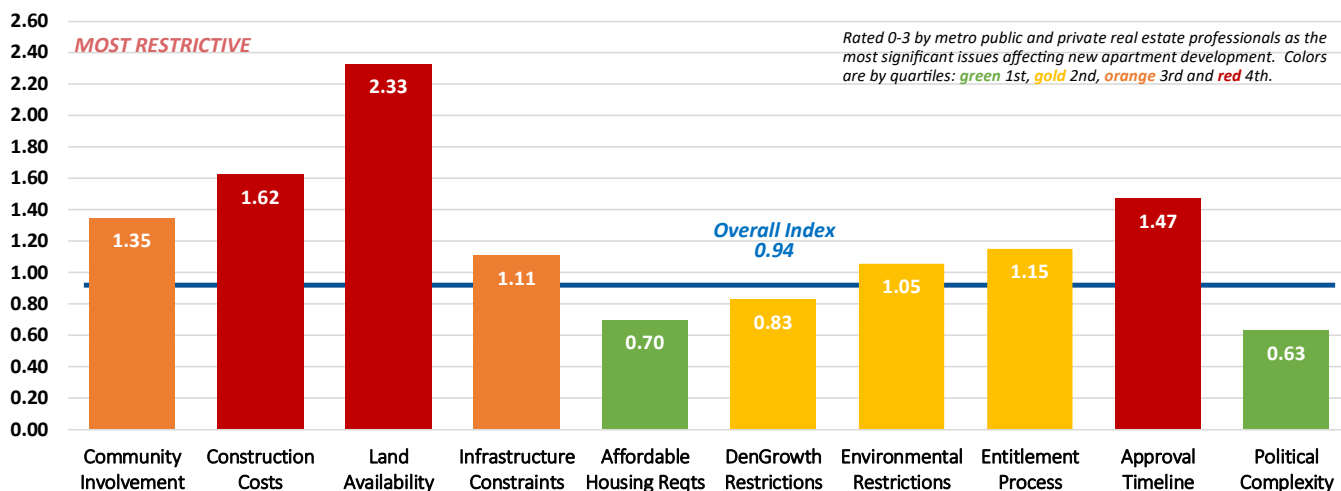


MOST RESTRICTIVE APARTMENT CATEGORIES:

- LAND AVAILABILITY
- CONSTRUCTION COSTS
- APPROVAL TIMELINE

Seattle metro was ranked in the top fourth of major multifamily markets with an overall index of 0.94, while sustained demand also remains in the top third of national metros. Local survey respondents cite land availability and its feasibility as the top barrier, followed by construction costs driven by land cost and its share of total costs. Approval timelines are lengthy from land and project rezoning. Community involvement slows new development with strong local opposition and the public engagement required. Unlike major western metros, affordable housing requirements, density and growth restrictions, and political complexity are deemed less restrictive. Median rental incomes are near the top of major markets, yet remain 15% below the requirements for Seattle's average market rents of \$1,635.

Barriers to Apartment Construction Subindices



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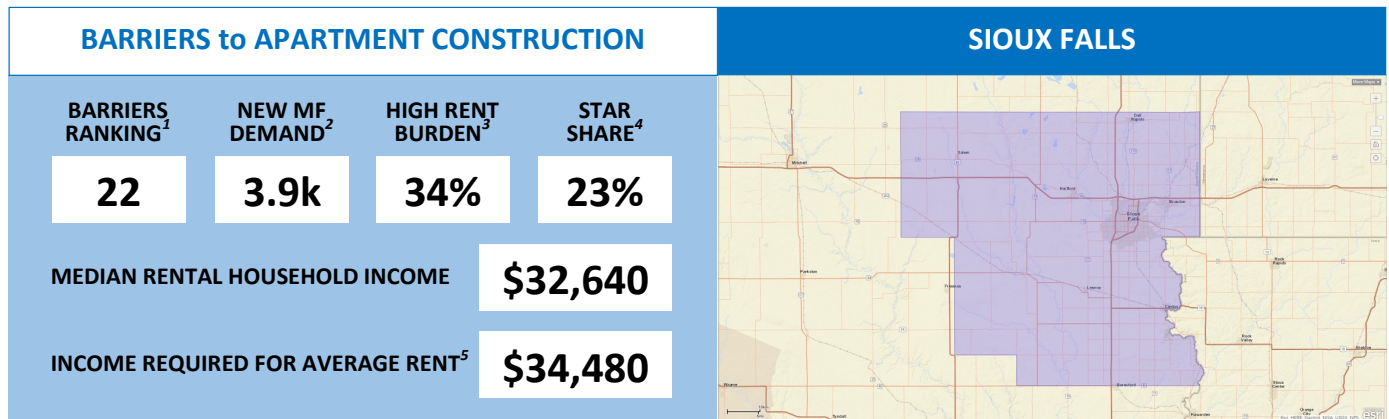
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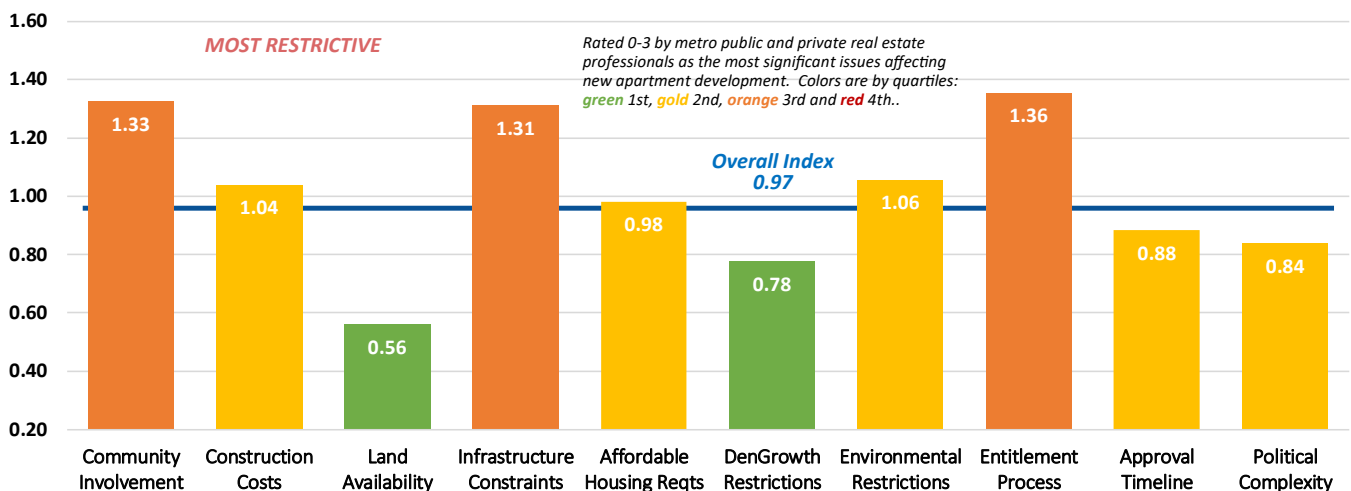


MOST RESTRICTIVE APARTMENT CATEGORIES:

- ENTITLEMENT PROCESS
- COMMUNITY INVOLVEMENT
- INFRASTRUCTURE CONSTRAINTS

The smaller Sioux Falls metro ranks above median of major markets as least restrictive to new apartment development with an overall index of 0.97, similar to much larger metros like St. Louis, Seattle and Austin. Respondents cite community involvement as the top local barrier, mostly from local opposition. Infrastructure constraints are tied to availability and impact fees. The entitlement process is also cited, driven by unsupportive land use regulations; City Council is considering doubling D2 zoning setbacks to 30 feet, impacting both land use and new housing counts. Interestingly, the barrier of land availability scored high in most every other market is seen as least restrictive in Sioux Falls. Median renter incomes rank near the bottom of major markets, yet just 5.0% below the requirements for average Sioux Falls market rents of \$865. Over a third of renters are paying more than 35% of income for their lease. Local advocates see a significant need for affordable and workforce housing often held in check by overall rising costs of development.

Barriers to Apartment Construction Subindices

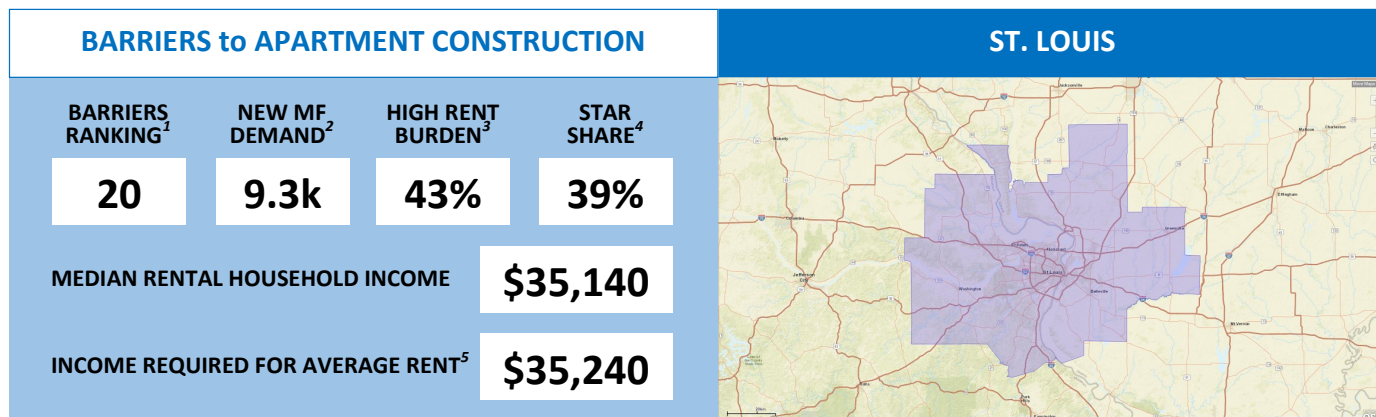


BARRIERS INDEX METHODOLOGY:

These NAA HAS Barriers to Apartment Construction indices were created from over 90 apartment development, process and timing questions in ten categories and sourced digitally from real estate professionals in both the public and private realms. An initial overall metro **Barriers to Apartment Construction Index** is also plotted above.

DEFINITIONS and NOTES:

- ¹**BARRIERS RANKING** is the relative ranking among 58 major metro apartment markets based upon the average index of each metro from the least restricted to the most; ranges from 1 (Albuquerque) to 58 (San Jose). Rankings consider expert responses from throughout the extended metro that includes but not isolates the urban core.
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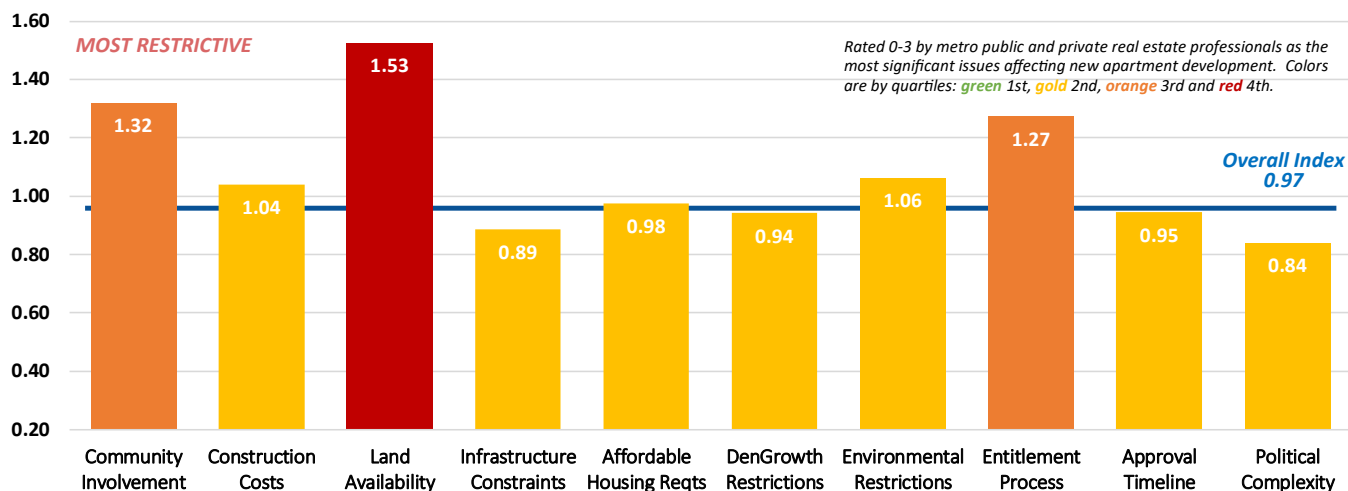


MOST RESTRICTIVE APARTMENT CATEGORIES:

- LAND AVAILABILITY
- COMMUNITY INVOLVEMENT
- ENTITLEMENT PROCESS

St. Louis metro ranks near the top third for least restrictive barriers to new apartment development with an overall index of 0.97, though sustained demand for new multifamily is near the bottom of national metros. Survey respondents cite land availability as the most restrictive of the subindices, followed by community involvement driven by local opposition, community groups and lengthy public engagement. Entitlement process was noted for a difficult approval appeal process. Most other indices are near-index with specific comments on rising construction costs, infrastructure availability, density restrictions, flood zone restrictions, land use regulations and local council influence as steady barriers. Median rental incomes rank some of the lowest, just below the requirement for their average market rents of \$885. Some 43% of metro renters must pay over 35% of income on their lease.

Barriers to Apartment Construction Subindices



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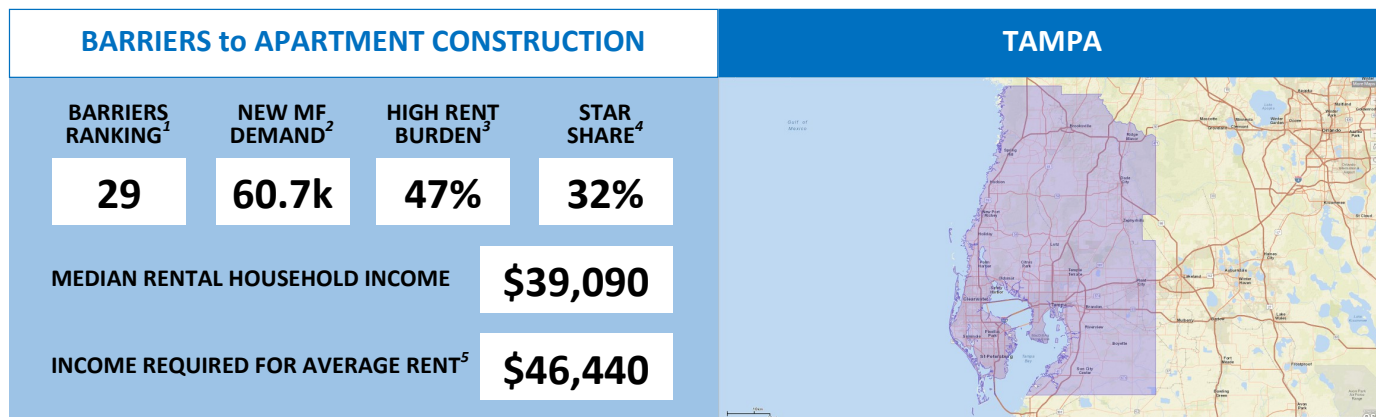
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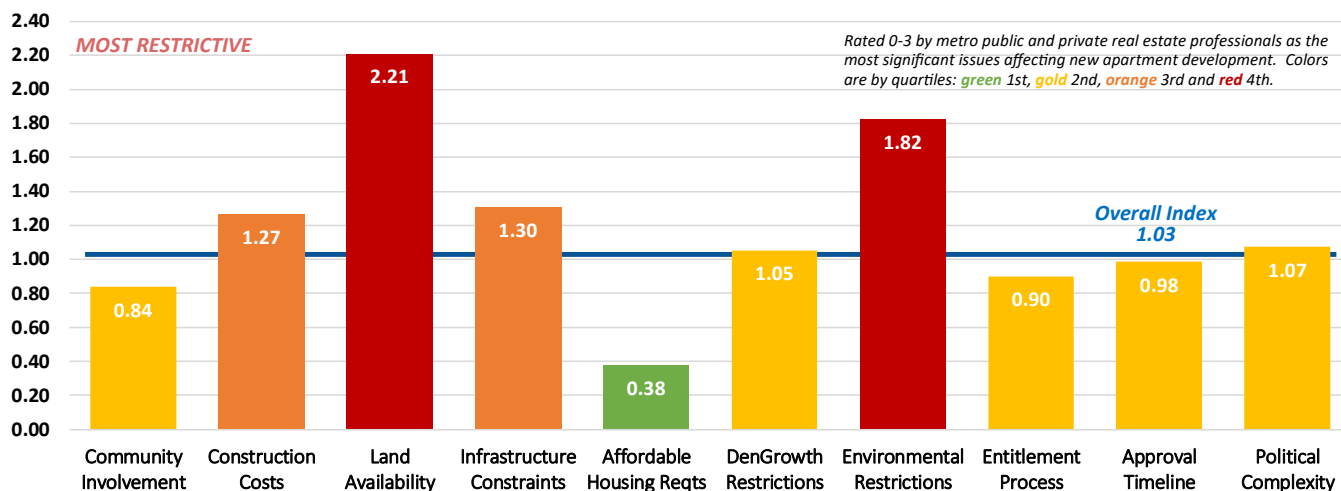
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MOST RESTRICTIVE APARTMENT CATEGORIES:  **LAND AVAILABILITY**
 **ENVIRONMENTAL RESTRICTIONS**

Tampa metro ranks the median of major markets for barriers to new multifamily development with an overall index of 1.03, while sustained demand is in the top third of national metros. Survey respondents cite land availability as the greatest barrier, both in supply and the feasibility for new apartment constraints. Environmental restrictions are high, driven by coastal and wetland restrictions, flood zone and open space requirements. Infrastructure constraints are tied to traffic, general availability and impact fees. Like many major markets, constructions costs are noted, yet not as a major barrier. Most other subindices are near-index, interestingly lower are community involvement, entitlement and affordable housing restrictions. Median rental income ranks in the lower third of major markets and is 16% below the requirement for average market rents of \$1,165.

Barriers to Apartment Construction Subindices



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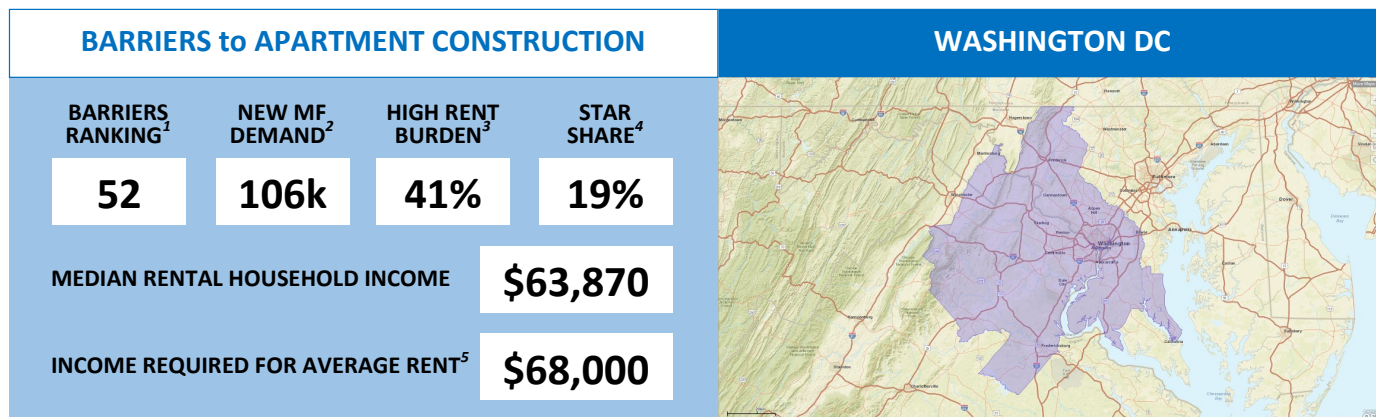
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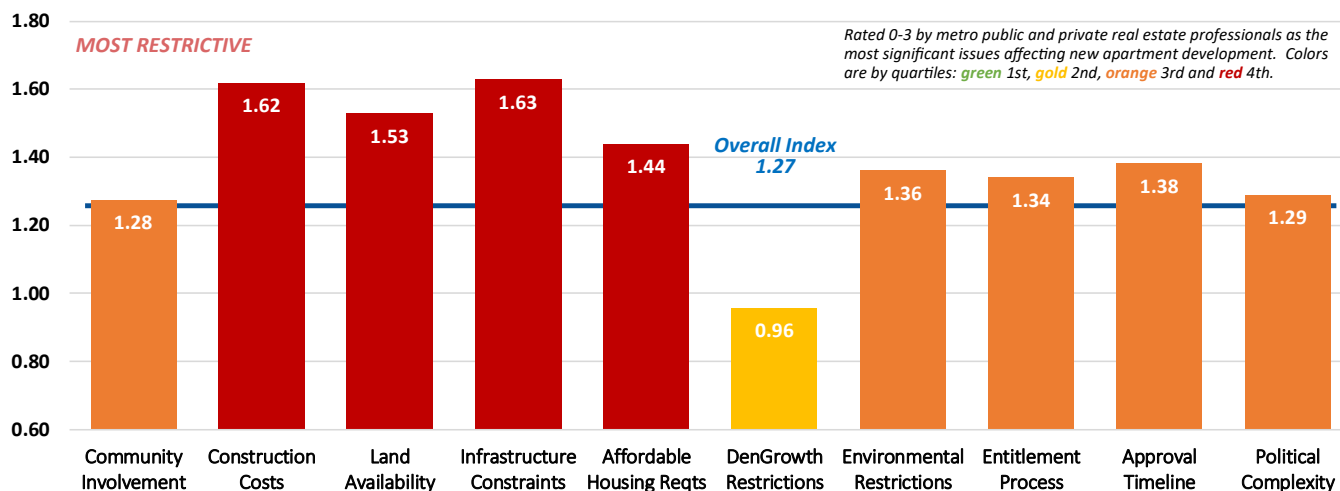


MOST RESTRICTIVE APARTMENT CATEGORIES:

- INFRASTRUCTURE CONSTRAINTS
- CONSTRUCTION COSTS
- LAND AVAILABILITY

Washington is experiencing a boom with sustained demand for new multifamily in the top third of national metro, yet ranks near the bottom of major markets for barriers to new apartment development with an overall index of 1.27, similar to Baltimore and New York. Local respondents cite four subindices as most restrictive. Construction costs are higher, land as a driver, while land supply itself is highly restrictive. Infrastructure constraints are driven by traffic and school crowding. Affordable housing requirements are heavy with few mitigation policies. Political complexity and regulation combine to raise the next four subindices seen in the third quartile. Density and growth restrictions is deemed relatively lower. Median metro rental income ranks second of the major markets behind San Francisco, though this spending power is much better aligned and only 6.0% below the income requirement for average market rents of \$1,700.

Barriers to Apartment Construction Subindices



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Appendix A

Metro Area Complexity: Cities per Metro Area

| MSA | # Cities in Metro Area | | | Population (000s) | Population/ # Cities in Metro Area | Rank |
|---------------------------------------------------------------|------------------------|----------------|-------|----------------------|------------------------------------------|------|
| | Incorporated | Unincorporated | Total | | | |
| Akron, OH Metro Area | 32 | 15 | 47 | 704 | 14,968 | 39 |
| Albuquerque, NM Metro Area | 19 | 64 | 83 | 913 | 11,001 | 51 |
| Anchorage, AK Metro Area | 4 | 32 | 36 | 401 | 11,136 | 50 |
| Atlanta-Sandy Springs-Marietta, GA Metro Area | 144 | 94 | 238 | 5,882 | 24,716 | 20 |
| Austin-Round Rock-San Marcos, TX Metro Area | 49 | 37 | 86 | 2,116 | 24,603 | 21 |
| Baltimore-Towson, MD Metro Area | 20 | 172 | 192 | 2,808 | 14,626 | 40 |
| Billings, MT Metro Area | 8 | 17 | 25 | 172 | 6,883 | 57 |
| Boston-Cambridge-Quincy, MA-NH Metro Area | 31 | 149 | 180 | 4,837 | 26,870 | 17 |
| Cape Coral-Fort Myers, FL Metro Area | 6 | 33 | 39 | 739 | 18,954 | 34 |
| Charlotte-Gastonia-Rock Hill, NC-SC Metro Area | 56 | 14 | 70 | 2,525 | 36,076 | 7 |
| Chicago-Joliet-Naperville, IL-IN-WI Metro Area | 350 | 98 | 448 | 9,534 | 21,281 | 32 |
| Cincinnati-Middletown, OH-KY-IN Metro Area | 143 | 158 | 301 | 2,181 | 7,245 | 56 |
| Cleveland-Elyria-Mentor, OH Metro Area | 103 | 15 | 118 | 2,059 | 17,448 | 37 |
| Columbus, OH Metro Area | 84 | 34 | 118 | 2,079 | 17,616 | 35 |
| Dallas-Fort Worth-Arlington, TX Metro Area | 198 | 44 | 242 | 7,400 | 30,580 | 10 |
| Dayton, OH Metro Area | 50 | 10 | 60 | 803 | 13,390 | 44 |
| Denver-Aurora-Broomfield, CO Metro Area | 46 | 74 | 120 | 2,888 | 24,069 | 23 |
| Des Moines-West Des Moines, IA Metro Area | 61 | 5 | 66 | 646 | 9,787 | 53 |
| Detroit-Warren-Livonia, MI Metro Area | 109 | 33 | 142 | 4,313 | 30,373 | 11 |
| Eugene-Springfield, OR Metro Area | 12 | 19 | 31 | 375 | 12,089 | 47 |
| Fort Collins-Loveland, CO Metro Area | 6 | 9 | 15 | 344 | 22,932 | 25 |
| Greenwood, SC Micro Area | 5 | 7 | 12 | 96 | 8,024 | 54 |
| Hartford-West Hartford-East Hartford, CT Metro Area | 5 | 40 | 45 | 1,210 | 26,895 | 16 |
| Honolulu, HI Metro Area | 1 | 39 | 40 | 989 | 24,716 | 19 |
| Houston-Sugar Land-Baytown, TX Metro Area | 125 | 87 | 212 | 6,892 | 32,511 | 8 |
| Indianapolis-Carmel, IN Metro Area | 74 | 17 | 91 | 2,027 | 22,275 | 30 |
| Jacksonville, FL Metro Area | 17 | 35 | 52 | 1,505 | 28,942 | 12 |
| Kansas City, MO-KS Metro Area | 172 | 38 | 210 | 2,127 | 10,128 | 52 |
| Las Vegas-Paradise, NV Metro Area | 5 | 23 | 28 | 2,204 | 78,717 | 1 |
| Los Angeles-Long Beach-Santa Ana, CA Metro Area | 122 | 83 | 205 | 13,354 | 65,141 | 2 |
| Madison, WI Metro Area | 50 | 5 | 55 | 654 | 11,895 | 48 |
| Miami-Fort Lauderdale-Pompano Beach, FL Metro Area | 104 | 61 | 165 | 6,159 | 37,326 | 6 |
| Milwaukee-Waukesha-West Allis, WI Metro Area | 59 | 19 | 78 | 1,576 | 20,208 | 33 |
| Nashville-Davidson--Murfreesboro--Franklin, TN Metro Area | 53 | 33 | 86 | 1,904 | 22,142 | 31 |
| New Orleans-Metairie-Kenner, LA Metro Area | 15 | 81 | 96 | 1,276 | 13,289 | 45 |
| New York-Northern New Jersey-Long Island, NY-NJ-PA Metro Area | 387 | 515 | 902 | 20,321 | 22,529 | 27 |
| North Port-Bradenton-Sarasota, FL Metro Area | 9 | 37 | 46 | 805 | 17,493 | 36 |
| Orlando-Kissimmee-Sanford, FL Metro Area | 36 | 68 | 104 | 2,510 | 24,133 | 22 |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD Metro Area | 165 | 310 | 475 | 6,096 | 12,834 | 46 |
| Phoenix-Mesa-Glendale, AZ Metro Area | 33 | 53 | 86 | 4,737 | 55,085 | 4 |
| Portland-Vancouver-Hillsboro, OR-WA Metro Area | 59 | 51 | 110 | 2,452 | 22,287 | 29 |
| Providence-New Bedford-Fall River, RI-MA Metro Area | 12 | 48 | 60 | 1,621 | 27,019 | 15 |
| Punta Gorda, FL Metro Area | 1 | 12 | 13 | 182 | 14,003 | 43 |
| Reno-Sparks, NV Metro Area | 2 | 18 | 20 | 465 | 23,260 | 24 |
| Riverside-San Bernardino-Ontario, CA Metro Area | 51 | 113 | 164 | 4,581 | 27,931 | 14 |
| Sacramento--Arden-Arcade--Roseville, CA Metro Area | 19 | 64 | 83 | 2,325 | 28,011 | 13 |
| Salem, OR Metro Area | 23 | 13 | 36 | 425 | 11,805 | 49 |
| Salinas, CA Metro Area | 12 | 18 | 30 | 438 | 14,597 | 41 |
| Salt Lake City, UT Metro Area | 30 | 23 | 53 | 1,203 | 22,700 | 26 |
| San Diego-Carlsbad-San Marcos, CA Metro Area | 18 | 56 | 74 | 3,338 | 45,104 | 5 |
| San Francisco-Oakland-Fremont, CA Metro Area | 65 | 82 | 147 | 4,727 | 32,159 | 9 |
| San Jose-Sunnyvale-Santa Clara, CA Metro Area | 17 | 14 | 31 | 1,998 | 64,467 | 3 |
| Santa Rosa-Petaluma, CA Metro Area | 9 | 26 | 35 | 504 | 14,406 | 42 |
| Seattle-Tacoma-Bellevue, WA Metro Area | 78 | 171 | 249 | 3,867 | 15,530 | 38 |
| Silverthorne, CO Micro Area | 6 | 3 | 9 | 29 | 3,228 | 59 |
| Sioux Falls, SD Metro Area | 32 | 7 | 39 | 260 | 6,658 | 58 |
| St. Louis, MO-IL Metro Area | 285 | 78 | 363 | 2,807 | 7,733 | 55 |
| Tampa-St. Petersburg-Clearwater, FL Metro Area | 35 | 85 | 120 | 3,091 | 25,762 | 18 |
| Washington-Arlington-Alexandria, DC-VA-MD-WV Metro Area | 82 | 194 | 276 | 6,217 | 22,524 | 28 |

Source: <https://simplemaps.com/data/us-cities>, April 2018 data; US Census, 2017 Population

Appendix B

NAA Barriers to Apartment Construction Index Survey Questions

| SUBINDEX QUESTION # | Subindex Name |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Community Involvement |
| 1 | <i>Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).</i> <i>citizen opposition to growth</i> |
| 2 | <i>Can public votes be used to circumvent a council or planning commission vote?</i> |
| 3 | <i>Is a community meeting or assembly required before which any zoning or rezoning request must be presented?</i> |
| 4 | <i>Is it required that any zoning change be put to a popular vote at an open town meeting?</i> |
| 5 | <i>How frequently do lawsuits occur, e.g. by neighborhood groups, environmental groups, and such, that delay development processes? (never, rarely, seldom, frequently, very frequently)</i> |
| | Cost |
| 1 | <i>By how much have total development costs increased during the past five years for:</i> <i>Construction costs for multi-family projects, including labor, hard & soft costs</i> <i><0%</i> <i>0-1%</i> <i>11-20%</i> <i>21-40%</i> <i>>40%</i> |
| 2 | <i>By how much have total development costs increased during the past five years for:</i> <i>Cost of undeveloped multi-family land</i> <i><0%</i> <i>0-1%</i> <i>11-20%</i> <i>21-40%</i> <i>>40%</i> |
| 3* | <i>By how much have total development costs increased during the past five years for:</i> <i>Cost of fees, studies and other soft costs</i> <i><0%</i> <i>0-1%</i> <i>11-20%</i> <i>21-40%</i> <i>>40%</i> |
| 4 | <i>What is the current cost to build an average Class A apartment in your market, including land and fees (enter in whole dollars, no commas)?</i> <i>One bedroom (average cost to build new, \$ per unit)</i> |
| 5 | <i>The below components typically account for what percent of total construction costs of a multifamily project excluding financing ? The components should add to 100. (Enter percentages as a whole number, e.g. enter 10% as 10.)</i> |

- construction costs, including soft costs*
land, demolition & site development
permits, zoning, environmental studies & development impact fees
other
- 6 *What types of impact fees are required? Check all that apply.*
- none*
sewer and water
transport
schools
environmental
parks
public facilities
*Other (please specify)*6
- 7 *Are waivers available in place of impact fees?*
- 8 *Are developers required to pay prevailing wages or hire union labor for multifamily development of:*
- Small properties (10 or fewer units)*
Large properties (> 10 units)
Low income housing
Projects that involve public subsidies / tax payer money
- 9* *Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).*
- special tax districts, e.g. Mello Roos or TIF*
- 10 *Other Data: Effective Tax Rate % (see Other Data.xlsx)*
- 11 *Other Data: Rent Index*

Tenants and Affordable Housing Requirements

- 1* *Are you required to include an affordable housing component in new multifamily developments?*
- 2* *If affordable units are required, can payment be made in lieu of affordable units?*
- 3 *Are density bonuses provided for more density if affordable housing is included?*
- 4 *Are rent control measures of some sort in place?*
- ** *If yes to the above question, do rent control measures impact new buildings or only existing buildings?*
- 5* *Does your community require landlords to have just cause in order to evict a multifamily tenant?*

Infrastructure

- 1 *Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).*
- impact fees / exactions*
- 2* *Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).*
- infrastructure improvement fees / mitigation*
- 3 *Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).*
- school crowding*
- 4 *Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).*
- school undercrowding*

- 5 Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

city budget constraints

- 6* Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

availability of infrastructure, e.g. sewer & water capacity / connections

- 7* Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

traffic

Density & Growth Restrictions

- 1 Is there a minimum lot size requirement for multifamily developments, and if so, what is the minimum size?

- 2 Is there a maximum floor area ratio (floor area / land area) for multifamily developments, and if so what is the limit?

- 3 Is there a height restriction for multifamily developments, and if so what is the limit?

- 4 Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

density restrictions

- 5 Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

moratoriums / growth limitations

- 6 Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

unit size mix requirements

- 7 Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

redevelopment of the existing site / building cannot be undertaken because the existing structure does not meet current code (e.g. height, density, setbacks)

- 8 Does your community place annual limits on the number of multifamily building permits, dwellings, units per building or units authorized for construction?

- 9 What are the parking requirements on average for a one bedroom unit in a new multifamily development (#/bedroom)?

- 10 Are there exceptions to parking requirements for transit oriented developments?

Land Supply

- 1 Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

land supply

- 2 Land Developability Index (see Other Data)

Environmental Restrictions

- 1 Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

coastal / wetland area restrictions or impervious cover

- 2 Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

environmental restrictions / mitigation

- 3 Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

water availability

- 4 Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

flood zone restrictions

- 5* Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

open space requirements

- 6 Other Data: LandVote conservation bonds - # passed 2008-17 at state and metro level (see other data)

Process Complexity

- 1 If a small change is made in an approved design, does that trigger an entirely new review? Answer No if staff can accept modifications with a quick review.

- 2 Are design criteria known and established ahead of time or do approval processes create significant unexpected 'ad hoc' changes in design?

- 3 Do developers need an advocate and/or community relations professional to aid in the approval process?

- 4 How often are projects not approved even though they meet all guidelines?

- 5 In regards to an appeal process:

How long does an appeal take on average (# MONTHS)?

- 6 What are the chances on average of reversing a denial (0 to 100%): %

- 7 How many submissions, including appeals are typical when getting a new development project approved?

- 8 How often are tax breaks or public subsidies of some sort used when developing multifamily properties?

- 9 Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

city council opposition to growth

- ** Does the length of the approval process for 'by-right' projects differ from when a zoning change is required?

- 10* Does your community have a "by-right" process that allows a fast track review process?

- 11* Does your community have any restrictions regarding demolishing or converting multifamily properties to other uses?

- 12* Rate the importance of each of the following factors in regulating the rate of residential development in your community (1 = not present, 2 = not important, 3 = somewhat important, 4 = very important).

historic districts or historic preservation status

- 13 Land Use Regulation (see Other Data)

Political Structure Complexity

Rate the involvement of the below organizations in influencing residential building activities and/or growth management in your community. (1= not at all involved; 5 = very involved)?

- 1 Local council, managers, commissioners

- 2 Local residents

- 3 County legislature

- 4 State legislature

- 5 Local courts

- 6 State courts

- 7* Which of the following organizations are required to approve a project that needs rezoning (check all that apply)?

local council, manager, commissioners or zoning board

environmental review board

county or borough board, president or commissioners

community board

- 8 Which of the following organizations are required to approve a new project that does not need rezoning (check all that apply)?

local council, manager or commissioners

local zoning board

environmental review board

design review board

public health office

county zoning board

county board of commissioners

fewer reviewers if by-right

Others - specify

9 *Has the state legislature attempted to limit local discretion over the housing entitlement process?*

10* *When was the General or Consolidated Plan last updated?*

11 *Does the General or Consolidated Plan require certification by an outside agency, e.g. a state housing agency?*

Time

What is the typical or average length of time (# MONTHS) required to complete the following for multi-family properties with < 50 units:

1 *Land Development; project conforms to all zoning requirements*

2 *Zoning; project conforms to all zoning requirements*

3 *Building Permits; project conforms to all zoning requirements*

4 *Land Development; minor deviations from zoning required*

5 *Zoning; minor deviations from zoning required*

6 *Building Permits; minor deviations from zoning required*

7 *Land Development; project requires a discretionary use permit*

8 *Zoning; project requires a discretionary use permit*

9 *Building Permits; project requires a discretionary use permit*

10 *Land Development; rezoning required*

11 *Zoning; rezoning required*

12 *Building Permits; rezoning required*

What is the typical or average length of time (# MONTHS) to complete the following for multi-family properties with 50 or more units?

13 *Land Development; project conforms to all zoning requirements*

14 *Zoning; project conforms to all zoning requirements*

15 *Building Permits; project conforms to all zoning requirements*

16 *Land Development; minor deviations from zoning required*

17 *Zoning; minor deviations from zoning required*

18 *Building Permits; minor deviations from zoning required*

19 *Land Development; project requires a discretionary use permit*

20 *Zoning; project requires a discretionary use permit*

21 *Building Permits; project requires a discretionary use permit*

22 *Land Development; rezoning required*

23 *Zoning; rezoning required*

24 *Building Permits; rezoning required*

Over the last 10 years, how did the length of time required to complete the review and approval of residential projects in your community change?

25 *multi-family < 50 units*

26 *multi-family >= 50 units*

****** *How long do updates to the General Plan or Consolidated Plan typically take to update (#MONTHS)?*

**Included in National Index, not in Pilot Study*

***Included in Pilot Study, not in National Index*

Appendix C: Survey Responses by Market

| Metropolitan Statistical Area* | Private Company | Public / Government Agency | Non- governmental agency / non- profit | Total Responses |
|----------------------------------------|--------------------|----------------------------------|-------------------------------------------------|--------------------|
| Akron, OH | | 2 | | 2 |
| Albany, GA | | 1 | | 1 |
| Albany-Schenectady-Troy, NY | 1 | 1 | | 2 |
| Albuquerque, NM | 7 | 1 | 1 | 9 |
| Allentown-Bethlehem-Easton, PA-NJ | | 2 | 1 | 3 |
| Ames, IA | | 3 | | 3 |
| Anchorage, AK | | 1 | 2 | 3 |
| Ann Arbor, MI | 1 | | | 1 |
| Asheville, NC | 2 | 2 | | 4 |
| Athens, OH* | | 1 | | 1 |
| Atlanta-Sandy Springs-Marietta, GA | 9 | 6 | 1 | 16 |
| Auburn, IN* | | 1 | | 1 |
| Auburn-Opelika, AL | | 1 | | 1 |
| Austin-Round Rock-San Marcos, TX** | 8 | 8 | | 16 |
| Bakersfield-Delano, CA | 1 | | | 1 |
| Baltimore-Towson, MD | 6 | 2 | 1 | 9 |
| Baraboo, WI* | | 1 | | 1 |
| Batavia, NY* | | 1 | | 1 |
| Bellingham, WA | | 1 | | 1 |
| Bemidji, MN* | 1 | | | 1 |
| Bend, OR | | 3 | | 3 |
| Big Spring, TX* | | 1 | | 1 |
| Billings, MT | | 2 | | 2 |
| Birmingham-Hoover, AL | 2 | | | 2 |
| Blacksburg-Christiansburg-Radford, VA | 1 | 1 | | 2 |
| Bloomington-Normal, IL | | 1 | | 1 |
| Boise City-Nampa, ID | 1 | 3 | | 4 |
| Boston-Cambridge-Quincy, MA-NH | 4 | 16 | 1 | 21 |
| Boulder, CO | | 1 | | 1 |
| Bridgeport-Stamford-Norwalk, CT | | 1 | | 1 |
| Brigham City, UT* | | 2 | | 2 |
| Brownsville-Harlingen, TX | 1 | | | 1 |
| Buffalo-Niagara Falls, NY | | 1 | | 1 |
| Burlington, NC | | 1 | | 1 |
| Burlington-South Burlington, VT | | 2 | | 2 |
| Canton-Massillon, OH | | 1 | | 1 |
| Cape Coral-Fort Myers, FL | 3 | 1 | 1 | 5 |
| Carson City, NV | | 2 | | 2 |
| Cedar Rapids, IA | | 1 | | 1 |
| Chambersburg, PA* | | 1 | | 1 |
| Champaign-Urbana, IL | | 1 | 1 | 2 |
| Charlotte-Gastonia-Rock Hill, NC-SC | 13 | 6 | 2 | 21 |
| Charlottesville, VA | | 1 | | 1 |
| Chattanooga, TN-GA | | 1 | | 1 |
| Chicago-Joliet-Naperville, IL-IN-WI | 7 | 21 | 1 | 29 |
| Chico, CA | | 1 | | 1 |
| Cincinnati-Middletown, OH-KY-IN | 15 | 2 | 2 | 19 |
| Clarksville, TN-KY | | 1 | | 1 |
| Cleveland-Elyria-Mentor, OH | 1 | 4 | 1 | 6 |
| Coeur d'Alene, ID | | 1 | | 1 |
| Coldwater, MI* | | 1 | | 1 |
| College Station-Bryan, TX | | 1 | | 1 |
| Colorado Springs, CO | | 2 | | 2 |
| Columbia, MO | 1 | | | 1 |
| Columbus, GA-AL | | 2 | | 2 |
| Columbus, OH | 4 | 3 | | 7 |
| Concord, NH* | | 1 | | 1 |
| Cookeville, TN* | | 1 | | 1 |
| Corpus Christi, TX | | 1 | | 1 |
| Corvallis, OR | | 1 | | 1 |
| Dallas-Fort Worth-Arlington, TX | 2 | 7 | 1 | 10 |
| Dayton, OH | 1 | 4 | | 5 |
| Deltona-Daytona Beach-Ormond Beach, FL | 1 | | | 1 |
| Denver-Aurora-Broomfield, CO | 4 | 7 | 1 | 12 |
| Des Moines-West Des Moines, IA | 1 | 3 | | 4 |
| Detroit-Warren-Livonia, MI | 1 | 2 | | 3 |
| Dothan, AL | | 1 | | 1 |
| Duluth, MN-WI | | 1 | | 1 |
| Durham-Chapel Hill, NC | | 1 | 1 | 2 |
| Eau Claire, WI | | 1 | | 1 |
| Edwards, CO* | | 3 | | 3 |
| El Paso, TX | | 1 | | 1 |
| Eugene-Springfield, OR | 2 | 2 | | 4 |
| Eureka-Arcata-Fortuna, CA* | | 1 | | 1 |
| Fallon, NV* | | 1 | | 1 |
| Fargo, ND | | 1 | | 1 |
| Faribault-Northfield, MN* | | 1 | | 1 |
| Fayetteville-Springdale-Rogers, AR-MO | 1 | 1 | | 2 |
| Florence, SC | | 1 | | 1 |

Appendix C: Survey Responses by Market, continued.

| Metropolitan Statistical Area* | Private Company | Public / Government Agency | Non- governmental agency / non- profit | Total Responses |
|------------------------------------------------------|--------------------|----------------------------------|-------------------------------------------------|--------------------|
| Fort Collins-Loveland, CO | 1 | 2 | | 3 |
| Frankfort, KY* | | 1 | | 1 |
| Fredericksburg? | | 1 | | 1 |
| Garden City, KS* | | 1 | | 1 |
| Gillette, WY* | | 1 | | 1 |
| Grand Forks, ND-MN | | 1 | | 1 |
| Grand Rapids-Wyoming, MI | | 1 | | 1 |
| Greeley, CO | | 2 | | 2 |
| Greensboro-High Point, NC | 2 | | | 2 |
| Greenville-Mauldin-Easley, SC | | 2 | | 2 |
| Greenwood, SC* | | 2 | | 2 |
| Hagerstown-Martinsburg, MD-WV | | 1 | | 1 |
| Harrisburg-Carlisle, PA | | 1 | | 1 |
| Harrisonburg, VA | | 1 | | 1 |
| Hartford-West Hartford-East Hartford, CT | 1 | 4 | | 5 |
| Hickory-Lenoir-Morganton, NC | | 1 | | 1 |
| Hilton Head Island-Beaufort, SC* | | 3 | | 3 |
| Holland-Grand Haven, MI | | 2 | | 2 |
| Honolulu, HI | 2 | | | 2 |
| Hot Springs, AR | 1 | | | 1 |
| Houston-Sugar Land-Baytown, TX | 11 | 2 | | 13 |
| Indianapolis-Carmel, IN | 7 | 6 | | 13 |
| Jacksonville, FL | 2 | 2 | | 4 |
| Janesville, WI | | 1 | | 1 |
| Juneau, AK* | 1 | | | 1 |
| Kalispell, MT* | | 1 | | 1 |
| Kansas City, MO-KS | 1 | 3 | | 4 |
| Kennewick-Pasco-Richland, WA | | 1 | | 1 |
| Kerrville, TX* | | 1 | | 1 |
| Kill Devil Hills, NC* | | 1 | | 1 |
| Killeen-Temple-Fort Hood, TX | 1 | | | 1 |
| Kingsport-Bristol-Bristol, TN-VA | | 1 | | 1 |
| Kingsville, TX* | | 1 | | 1 |
| Kodiak, AK* | | 1 | | 1 |
| Lafayette, IN | 1 | | | 1 |
| Laramie, WY* | | 1 | | 1 |
| Laredo, TX | 1 | | | 1 |
| Las Cruces, NM | | 2 | | 2 |
| Las Vegas-Paradise, NV | 2 | 2 | | 4 |
| Lewisburg, PA* | | 1 | | 1 |
| Lexington Park, MD* | | 1 | | 1 |
| Lincoln, NE | | 1 | | 1 |
| Lincolnton, NC* | | 1 | | 1 |
| Little Rock-North Little Rock-Conway, AR | 7 | 1 | | 8 |
| Longview, WA | | 1 | | 1 |
| Los Angeles-Long Beach-Santa Ana, CA | 9 | 10 | 2 | 21 |
| Louisville-Jefferson County, KY-IN | | 3 | | 3 |
| Lubbock, TX | 2 | | | 2 |
| Lynchburg, VA | 1 | | | 1 |
| Madison, WI | 1 | 2 | | 3 |
| Manassas, VA | | 1 | | 1 |
| Manchester-Nashua, NH | | 1 | | 1 |
| Maryville, MO* | | 1 | | 1 |
| McAllen-Edinburg-Mission, TX | | 2 | | 2 |
| Medford, OR | 1 | | | 1 |
| Memphis, TN-MS-AR | | 2 | | 2 |
| Menomonie, WI* | 1 | | | 1 |
| Merced, CA | | 1 | | 1 |
| Miami-Fort Lauderdale-Pompano Beach, FL** | 25 | 8 | | 33 |
| Milwaukee-Waukesha-West Allis, WI | 1 | 3 | | 4 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 1 | 5 | | 6 |
| Missoula, MT | | 1 | | 1 |
| Modesto, CA | | 1 | | 1 |
| Montgomery, AL | | 1 | | 1 |
| Montrose, CO* | | 1 | | 1 |
| Morristown, TN | | 1 | | 1 |
| Mount Pleasant, MI* | | 1 | | 1 |
| Mount Vernon-Anacortes, WA | | 1 | | 1 |
| Mountain Home, ID* | | 1 | | 1 |
| Myrtle Beach-North Myrtle Beach-Conway, SC | | 1 | | 1 |
| Nacogdoches, TX* | | 1 | | 1 |
| Naples-Marco Island, FL | 1 | | | 1 |
| Nashville-Davidson--Murfreesboro--Franklin, TN | 1 | 3 | | 4 |
| New Orleans-Metairie-Kenner, LA | 2 | 4 | | 6 |
| New York-Northern New Jersey-Long Island, NY-NJ-PA** | 26 | 19 | 1 | 46 |
| Norfolk, VA | 1 | 2 | | 3 |
| North Port-Bradenton-Sarasota, FL | 1 | 2 | | 3 |
| Oak Harbor, WA* | | 1 | | 1 |
| Ocala, FL | | 1 | | 1 |
| Ogden-Clearfield, UT | | 1 | | 1 |

Appendix C: Survey Responses by Market, continued.

| Metropolitan Statistical Area* | Private Company | Public / Government Agency | Non-governmental agency / non-profit | Total Responses |
|----------------------------------------------|-----------------|----------------------------|--------------------------------------|-----------------|
| Oklahoma City, OK | 1 | 1 | | 2 |
| Olympia, WA | | 1 | | 1 |
| Omaha-Council Bluffs, NE-IA | 1 | 1 | | 2 |
| Orlando-Kissimmee-Sanford, FL | 6 | 3 | | 9 |
| Oxnard-Thousand Oaks-Ventura, CA | | 1 | | 1 |
| Palm Bay-Melbourne-Titusville, FL | | 2 | | 2 |
| Palm Coast, FL | | 1 | | 1 |
| Pella, IA* | | 1 | | 1 |
| Pendleton-Hermiston, OR* | | 1 | | 1 |
| Pensacola-Ferry Pass-Brent, FL | | 1 | | 1 |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD | 21 | 6 | 1 | 28 |
| Phoenix-Mesa-Glendale, AZ | 13 | 1 | | 14 |
| Pittsburgh, PA | 5 | 3 | | 8 |
| Platteville, WI* | | 1 | | 1 |
| Portland-South Portland-Biddeford, ME | | 2 | | 2 |
| Portland-Vancouver-Hillsboro, OR-WA | 4 | 6 | 2 | 12 |
| Prescott, AZ | 1 | | | 1 |
| Providence-New Bedford-Fall River, RI-MA | | 3 | | 3 |
| Provo-Orem, UT | | 2 | | 2 |
| Punta Gorda, FL | | 2 | | 2 |
| Raleigh-Cary, NC | | 5 | 1 | 6 |
| Redding, CA | | 1 | | 1 |
| Reno-Sparks, NV | 1 | 2 | | 3 |
| Rexburg, ID* | | 1 | | 1 |
| Richmond, VA | 1 | 1 | | 2 |
| Richmond, VA | | 1 | | 1 |
| Riverside-San Bernardino-Ontario, CA | | 3 | | 3 |
| Roanoke, VA | | 1 | | 1 |
| Rochester, NY | 2 | 1 | | 3 |
| Sacramento-Arden-Arcade-Roseville, CA | 1 | 3 | | 4 |
| Saginaw-Saginaw Township North, MI | | 1 | | 1 |
| Salem, OR | 1 | 2 | | 3 |
| Salinas, CA | | 2 | | 2 |
| Salt Lake City, UT | 4 | 6 | | 10 |
| San Antonio-New Braunfels, TX | 5 | 3 | | 8 |
| San Diego-Carlsbad-San Marcos, CA** | 43 | 7 | 1 | 51 |
| San Francisco-Oakland-Fremont, CA | 7 | 10 | 1 | 18 |
| San Jose-Sunnyvale-Santa Clara, CA | 3 | 1 | | 4 |
| Santa Barbara-Santa Maria-Goleta, CA | | 1 | | 1 |
| Santa Cruz-Watsonville, CA | | 1 | | 1 |
| Santa Fe, NM | | 1 | | 1 |
| Santa Rosa-Petaluma, CA | | 3 | | 3 |
| Savannah, GA | 2 | 1 | | 3 |
| Seaford, DE* | | 1 | | 1 |
| Seattle-Tacoma-Bellevue, WA | 5 | 5 | | 10 |
| Sheridan, WY* | | 1 | | 1 |
| Sherman-Denison, TX | | 1 | | 1 |
| Shreveport-Bossier City, LA | 1 | | | 1 |
| Silverthorne, CO* | | 4 | | 4 |
| Sioux Falls, SD | 7 | | | 7 |
| South Bend-Mishawaka, IN-MI | | 1 | | 1 |
| Spokane, WA | 1 | | | 1 |
| Springfield, MA | | 2 | | 2 |
| Springfield, MO | | 1 | | 1 |
| St. Cloud, MN | | 2 | | 2 |
| St. George, UT | | 1 | | 1 |
| St. Louis, MO-IL | 1 | 5 | | 6 |
| State College, PA | | 1 | | 1 |
| Statesville-Mooresville, NC* | | 1 | | 1 |
| Stillwater, OK* | | 1 | | 1 |
| Stockton, CA | | 1 | | 1 |
| Syracuse, NY | | | 1 | 1 |
| Tampa-St. Petersburg-Clearwater, FL | 2 | 8 | | 10 |
| The Villages, FL* | | 1 | | 1 |
| Toledo, OH | 1 | | | 1 |
| Torrington, CT* | | 1 | | 1 |
| Traverse City, MI* | | 1 | | 1 |
| Tucson, AZ | | | 1 | 1 |
| Tyler, TX | | 1 | | 1 |
| Valdosta, GA | | 1 | | 1 |
| Vineland-Millville-Bridgeton, NJ | 1 | | | 1 |
| Visalia-Porterville, CA | 1 | 1 | | 2 |
| Washington-Arlington-Alexandria, DC-VA-MD-WV | 6 | 13 | 2 | 21 |
| Wichita, KS | | 1 | | 1 |
| Willimantic, CT* | | 2 | | 2 |
| Wilmington, NC | | 1 | | 1 |
| Wilson, NC* | | 1 | | 1 |
| Winfield, KS* | | 1 | | 1 |
| Wooster, OH* | | 1 | | 1 |
| Worcester, MA | | 2 | | 2 |
| Yakima, WA | | 1 | | 1 |
| York-Hanover, PA | | 1 | | 1 |
| No Metropolitan Area | 2 | 14 | | 16 |
| Grand Total | 367 | 485 | 31 | 883 |

*Indicates a Metropolitan Statistical Area

**Indicates a Pilot Market

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RESEARCH TEAM

This report was prepared for the National Apartment Association by Hoyt Advisory Services, Dinn Focused Marketing, Inc. and Eigen 10 Advisors, LLC.

Hoyt Advisory Services (HAS) is subsidiary of the Homer Hoyt Institute (HHI), an independent, non-profit research and educational foundation established in 1967 to improve the quality of public and private real estate decisions by expanding and disseminating the real estate body of knowledge, stimulating innovation in the discipline of real estate and land economics, building bridges among academia, industry, and government, and developing innovative approaches to the solution of real estate problems.

Research supported by HHI must meet the highest standards of scholarship, and it must further the improvement of decision making in the real estate industry. That is, it must combine rigor with relevance. HAS is able to engage PhDs from leading universities along with practitioners with proven, appropriate real estate expertise for the project, in this case partnering with Dinn Focused Marketing, Inc. and Eigen 10 Advisors.

Dinn Focused Marketing, Inc. provides clients a detailed and directional picture of the underlying market place trends now and going forward for any national housing or mix-use real estate development challenge. Clientele are a select cadre of land developers, homebuilders, lending institutions, portfolio managers, municipal leadership and national housing organizations.

Eigen 10 Advisors, LLC provides real estate consulting services in the areas of investment analysis, portfolio structuring, capital formation strategies, market analysis, econometric modeling and forecasting, reporting and asset management.

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Michael J. Dinn, CRE®



Michael Dinn leads Dinn Focused Marketing, Inc. (DFM) Throughout his career, Michael has taken a market-centric stance in land acquisition, land brokerage, residential development, residential design and marketing campaigns. For over 19 years leading DFM, he has combined these experiences into a skill set that provides clients a detailed and directional picture of the underlying market place trends now and going forward for any national housing or mix-use real estate development challenge. His Clientele are a select cadre of land developers, homebuilders, lending institutions, portfolio managers, municipal leadership and national housing organizations, each with a unique market position, access or capacity to affect their residential market. The mix is public and private, lender and sponsor, landowner and sales management. His work provides scaled assessments of metro housing markets amid sustained change, targeting a mix of housing assets from failing master planned communities to select multi-family apartment portfolios. His contact is michael@dinnfm.com.

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