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Article 22

Market Demand-Based Planning and Permitting: Special Case of Affordable Housing

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MARKET DEMAND-BASED PLANNING AND PERMITTING SPECIAL CASE OF AFFORDABLE HOUSING

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ABSTRACT

Arthur C. Nelson has advanced the concept of market demand-based planning and permitting (MDBPP) as a way in which to balance the need for development within the limits of market capacity. Lacking MDBPP discipline, real estate markets are prone to over-development that can lead to economic downturns including notably the Great Recession of 2007-2009. This article will unpack the history and challenge of MDBPP and demonstrate its efficacy. Then, it will apply these principles to the specific wicked problem of housing affordability, which is both ongoing and emerging in nature. It will tie this problem to a call for MDBPP by noting that the problem of over-permitting continues with the single-family detached housing type, which overwhelmingly dominates the U.S. housing market. This problem continues as the market demand and critical need for more affordable housing types go unanswered by cities and developers.

INTRODUCTION

Over a 50-year career in planning, Professor Arthur C. Nelson has made substantial contributions to the nuts and bolts that make the profession a useful institution. More precisely, he has been a driving force in urban planning theory and practice, playing a key role in the formulation and refinement of the growth management and related movements. This paper will focus on the general topic of "market demand-based planning and permitting," (MDBPP), an implied but under-theorized tenet in growth management prior to Dr. Nelson's 2017 book, and its history in the planning profession over the last 50 years, plus a look at possible future directions in the next 50 years. It will place MDBPP within the framework of comprehensive planning and growth management or Smart Growth. One may refer to this approach as "pro forma planning," a sustainability approach in which the future outcomes of decisions are "discounted," so to speak, to the present time, which highlights the implications of a plan. But his genius lies in a more fundamental principle: planning analysis must cut through many sources of rhetoric with evidence-based assessment and policy solutions that are useful to policy makers and practitioners on the ground, in the present. Visionary planners do not always appreciate that implementation occurs in the details. Dr. Nelson, himself a

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sagacious diagnostic theoretician, has demonstrated that the process of executing a grand design requires clarity. In effect, therefore, the nuts and bolts are constitutive of the planner's vision.

Dr. Nelson has applied this principle to many wicked planning issues, including the fiscal and social impacts of sprawl and related policy regimes (Nelson, Dawkins, and Sanchez 2004), the appropriate context for and implementation of impact fees for housing affordability (Nelson et al. 2008), and the public mandate to base planning decisions upon the fact basis (Nelson 2004). He has diagnosed the biggest recessions of recent U.S. history as the result of major disconnects between the housing market and policy-driven lending and development (Nelson et al. 2017). He has greatly increased the evidence for positive market spillovers of development in mixed land uses and public transit systems (Nelson et al. 2015; Nelson and Ganning 2015; Hinners et al. 2017; Nelson 2016; Nelson et al. 2020).

However, as his research has demonstrated, the complexities of the implementation process have to be considered. Each instantiation of good planning principles varies by context. This topic will be of deep importance in the coming decades as urban growth, in many varieties, is projected to skyrocket across the globe. Moreover, Dr. Nelson has made a critical contribution to it, both in terms of the theory and the relentless slogs he has taken through mountains of data. His vision for an evidence basis for planning policy will need a further 50 years and some courage to fully implement. A range of issues come into play, many of which he reviewed in his 2017 book on the subject. Dr. Nelson's ability to synthesize diverse elements gave him the ability to bring to light many solutions to both long-standing and nascent challenges.

Rhetoric abounds in the public debates of our era. Rhetoric is the tendency to apply distorted or reductionist frameworks to our thorniest problems in order to sway decision making and public opinion toward one ideology or another. These frameworks often invoke cultural taboos to reach conclusions that cannot be supported by a more nuanced approach. Dr. Nelson has decomposed many arguments made upon anecdotal evidence or cultural notions, separating the signal from the noise. A brief splash through his voluminous research reveals many examples. One example is the surprising result of an analysis regarding which demographic groups have been attracted to live near public transit stations across the United States in recent years. One group that has unexpectedly made the move toward transit is households with children (Nelson and Hibberd 2021). Another surprise to the literature was his finding that environmental regulations did not add significant additional costs to residential developments (Nelson, Randolph, and McElfish 2014). Another was his finding that express bus systems across the United States have added value to the proximate real estate, proving that people were

willing to pay more to live and work closer to express bus stations (Nelson and Hibberd 2019a; 2019b). Yet another was his contribution to the evidence that specific urban containment policy regimes had proven successful at simultaneously reducing sprawl and racial segregation while maintaining healthy housing costs through the accommodation of projected growth (Nelson et al. 2004; Nelson., Dawkins., and Sanchez. 2007). One of his recent works revealed the potential for a nationwide "Senior Short Sale," or the over-supply eruption that may well occur in the residential housing market as the Baby Boomer generation retires and seeks to sell a massive amount of large-lot single-family homes in the coming years, and then subsequently migrates to different regions. By the numbers, thousands of senior households may face high risk of being unable to sell their homes or make a reasonable profit on them (Nelson 2020).

Across the country, in each of the above cases popular anecdotes and incomplete information have impeded good policy. As a result, for example, express bus systems are undervalued for their contribution (see Nelson and Hibberd 2019), while certain environmental regulations and UGB's are viewed as contributing to overheated urban housing markets (they have done so in certain instances where growth and development needs were not accommodated by the policy); and permitting for many new large-lot single-family detached homes continues in defiance of—or perhaps in the absence of—market projections. Dr. Nelson has had a way of pointing out unrealized opportunities many communities have across the country, such as that of the large amount of dead, vacant, or parking lot-covered parcels that could be reinvigorated if the NIMBY crowd would allow municipal zoning codes to be updated to meet the demand for efficient development (Nelson 2013). Moreover, this would certainly redound to their own benefit in higher neighborhood values. Dr. Nelson's empirical research shows the need to investigate further than the sometimes-clunky policies and popular narratives about these issues.

This article will unpack the history and challenge of MDBPP and demonstrate its efficacy. Then, it will apply these principles to the specific wicked problem of housing affordability, which is both ongoing and emerging in nature. It will tie this problem to a call for MDBPP by noting that the problem of over-permitting continues with the single-family detached housing type, which overwhelmingly dominates the U.S. housing market. This problem continues as the market demand and critical need for more affordable housing types go unanswered by cities and developers.

HISTORY OF LAND USE AND FACILITY PROJECTIONS IN PLANNING LITERATURE

Urban planning in the United States began as the local exercise of delegated state police power to control land uses and their distributions through the zoning code. In the 1926 *Euclid, Ohio v. Ambler Realty Co*. decision, the Supreme Court established the legal authority of local jurisdictions to regulate land use, subject to state enabling legislation. The original 1926 Standard State Zoning Enabling Act (SZEA), which justified *Euclid's* prescription for regulating the placement of land uses with detailed zoning codes, was supplemented by the 1928 Standard City Planning Enabling Act (SCPEA), which functioned upon the broader paradigm of comprehensive planning at the level of the local jurisdiction, supported by state enabling laws. The comprehensive plan enumerated as many of the needs of a community as possible, including land use, capital facilities, housing, transportation, economic development, water or utilities, rural, and environmental concerns, among others (Porter 2008). Neither of these laws mandated a quantitative fact basis that enumerates existing conditions and projections of growth. As the automobile and large-scale infrastructure for water and energy continued to interweave local jurisdictions into regional systems, planners attempted to overcome the problems inherent in disjointed local planning regimes for jurisdictions that often competed with each other for jobs and infrastructure. Still, to the present day, home rule and other trends produce disjointed and incremental planning and permitting regimes. Empirical research is needed to further identify which planning challenges suitably devolve to local governance or would be further optimized through regional-scale policy.

Assumptions of an efficient market

Downs (2005) asked rhetorically, based upon various market failures, if there were clear evidence whether "centralized or regional planners can anticipate future trends in population growth, technological change, and the market's locational preferences as well as, or better than, individual entrepreneurs creating particular new subdivisions without any overall plan." Nelson et al. (2017) pointed clearly to anti-market trends, i.e., market failures, in the housing market over the last several decades that stemmed from a lack of coordination, which led the breaking of critical market assumptions. Key amongst them is the requirement that a "free" market, or in other words, an efficiently functioning market, be based upon market actors having full access to sufficient information to make rational decisions. Lacking such a decision-making basis, the market is bound to be rife with distortions and losses in efficiency. An efficient market requires support from government policies that enable the free flow of information for decision making, such that the actors have the ability to quickly enter and exit the market or pivot to new or modified products, as current and projected market demands change over

time. Such an open market must be a competitive market unhindered by monopolies or cartels. A "free" market is an efficient market.

Nelson et al. (2017) explains it thusly: "an important role of government is to provide high-quality information about real estate markets—information that is equally accessible to all real-estate decision-makers." A lack of such information can result in "inefficient allocation of resources because of exclusive access to information. Efficient markets depend on accurate information that is equally available to everyone." The need is particularly high regarding the decision-making process local jurisdictions use to allocate building permits. Consumers also require requisite information to avoid high-risk loans. Builders require full information to avoid increasing supply in over-saturated segments of the housing markets. Further, city officials have been assigned a gate-keeping responsibility in the form of the permitting process. Nelson et al. (2017) argued that one need look no further than cities' failures to base permitting on fiduciary responsibilities, such as avoidance of the Tragedy of the Commons, for the root of the housing crash in 2008. The Tragedy of the Commons is briefly described as private use of a common good that benefits the private party but damages the interests of the common society, of which the private party is a constituent. Eventually all are harmed by negative private spillovers in the commons, including the private individual who relies upon its health. These principles are summarized in Table 1.

Moral Hazard, Comprehensive Planning, and Growth Management

To support the comprehensive plan and/or the zoning code, the latter of which was often the sole planning policy document for a local jurisdiction, some planning offices have implemented the practice of making market projections upon which to base zoning and permitting. However, in many cases, the practice of integrating quantitative projections with the plan has been neglected. Most historical comprehensive plans did not require a current set of quantitative development figures along with projections (termed the "fact basis") of population growth and the concomitant need for increases in developed land for residential, commercial, and public buildings, along with the infrastructure needed to support them.

The growth management movement began in the early 1970s, just over 40 years after the standard enabling laws of the 1920s. In that sense, there had only been a couple of generations that had had time to begin formulating the real-world picture of urban planning in the United States. Growth management called for just such an approach. Growth management planning has as its main goal to anticipate future growth over a planning horizon, usually 20 years, and support and facilitate that growth within the bounds of the desired vision and goals of the community. Many communities have used growth management as a toolbox to restrict growth, rather than accommodate it. The tools used for this purpose have included growth

moratoria, downzoning, limiting permits, restrictive growth boundaries, and requirements for adequate public facilities. Still, many communities have used a growing "panoply of practices" for the accommodation of growth in a measured and meaningful way, as an extension of comprehensive planning, zoning, subdivision regulations, and capital improvement programs (Porter 2008).

Table 1
Assumptions of an Ideal (Efficient) Land Market, Market Failures (adapted from Nelson et al. (2017))

Assumptions of Ideal Market	Market Failures
Many *buyers and sellers*	This source of competition among sellers is impeded by a lack of sufficient numbers of buyers and sellers for some properties
No *transaction costs*	Title insurance, legal services and other transaction cost abound in real estate
Developers can *enter or leave markets* instantly	Difficult to enter markets and when exiting, many costs arise such as excess real estate stock.
Producers and consumers fully *internalize the externalities* stemming from production and use of a good	Insufficient information often leads businesses to not pay full cost of externalities, leaving them for others to pay.
All decision-makers have *perfect information* about a product, its price and quality	Properties' characteristics, market demand and impact of development accrue from imperfect information.

Source: Adapted from Nelson et al. 2017.

Growth management's panoply of practices have been conceptually organized as follows (adapted from Porter 2008):

- Managing community expansion ("where to grow")
    - Urban containment in several forms: urban growth boundaries, service limits or designated growth areas
- Techniques to preserve environmental qualities and natural resources ("where not to grow")
    - Conservation planning, green infrastructure, agricultural land protection, transfer of development rights, rural clustering provisions, etc.
- Techniques for efficient provision of infrastructure
    - Functional plans for locating and phasing developments
    - Adequate public facilities requirements
    - Exactions and impact fees
    - Roadway designs to encourage walking and bicycling
- Techniques to create and preserve community character and quality
    - Mixed-use and form-based zoning codes
    - Incentives for development according to public goals: density bonuses, fast-track permitting
    - Historic preservation standards
- Techniques to improve economic opportunities and social equity
    - Jobs-housing balance
    - Employment retention and expansion incentives
    - Inclusionary zoning
    - Community land trusts and housing trust funds
- Regional and state techniques to support local growth management
    - Collaborative regional planning and administration of regional services
    - State and regional reductions of local revenue disparities
    - State requirements for local planning and regulation

- State incentives for local actions in support of sustainable development and smart growth principles and interlocal cooperation

At the heart of many of these growth management tenets is the prerequisite of MDBPP. Unfortunately, the growth management movement was not sufficiently formed and influential to stem crises based on excessive permitting that would begin a decade later and have continued into recent years. Both the Savings & Loan crisis of the 1980s, and the Great Recession of 2008 were caused by over-permitting in real estate. The former was caused by over-permitting in office buildings, and the latter by over-permitting of the dominant housing type in the US, single-family housing. This means that one of the primary culprits in these catastrophes were jurisdictions that did not sufficiently manage their permitting process.

Nelson et al. (2017) argued that these recessions may not have been nearly as catastrophic if jurisdictions had been avoiding over-permitting. However, they argued, the fault rested upon the problem of *moral hazard* and its negation of "the Invisible Hand" of the market. An *efficient market* requires producers and consumers to internalize all their externalities, i.e., to correct any adverse spillovers stemming from their market activities. Failure to do so passes the damage on to others. This is the Tragedy of the Commons, and it always results in harms that circle back to cause problems for the initiators, along with the broader society.

Moral hazard is the lack of fear felt by market actors that any unfavorable results of their activities will rest directly upon themselves. In the real estate market, that risk has rested not upon local governments, lenders, and developers involved in over-permitting and subsequent over-building in a given market, but upon the federal government and therefore the taxpayer, along with those caught in the cascading effects of the fall of an over-heated market. This lack of fear in the real estate market was the result of the availability of a government assurance that certain financial interests were "too big to fail." In other words, the problem was due to the wrong kind of government involvement in the market, which led to substantial inefficiencies. Moreover, they occurred across the country, but the negative effects hit particularly hard in states without adequate growth management policies in place (Nelson et al. 2017). State legislative frameworks varied widely across the country but can be broken into two general categories: those who view zoning as the sole needed planning approach, and those who mandate that zoning codes be in accordance with a plan that mandates growth management.

Comprehensive Planning has increasingly turned toward growth management (more recently labeled Smart Growth) and its emphasis on regulations that require market projections for development. Therefore, planning approaches may also be categorized generally by their stances on growth and growth management regulations. Regulatory regimes may be weak or strong in their

management of growth, and they may be restrictive or accommodating of growth in their jurisdictions. Accommodating regimes are required to have a sufficient fact basis on which to prescribe the amount of growth to accommodate over a planning horizon, usually twenty years. Nelson et al. (2004) found that "strong-accommodating" regimes were far more successful at achieving growth management goals while avoiding the over-heating of the market than regimes with other regulatory characteristics.

One important method for avoiding the moral hazard scenario is to build a sufficient number of units of affordable housing types, which are increasingly sought by smaller households looking for housing in high-accessibility neighborhoods that are more attainable in price.

Smart Growth

Closely related to the growth management movement, Smart Growth began its formative years in the 1990s. Its principles have grown to encompass a large laundry list over time but are based upon a theory of efficient and sustainable use of a set of resources: human, tax base, land, transportation infrastructure, and public institutions. These principles also require MDBPP as an absolute prerequisite. A prominent list, with many of the tenets listed above under the banner of growth management, includes the following[1]:

- Mix land uses
- Take advantage of compact building design
- Create a range of housing opportunities and choices
- Create walkable neighborhoods
- Foster distinctive, attractive communities with a strong sense of place
- Preserve open space, farmland, natural beauty, and critical environmental areas
- Strengthen and direct development towards existing communities
- Provide a variety of transportation choices
- Make development decisions predictable, fair, and cost effective

[1] See Smart Growth Network and Environmental Protection Agency document, "This is Smart Growth." https://www.epa.gov/sites/production/files/2014-04/documents/this-is-smart-growth.pdf. Accessed 2-24-2021.

- Encourage community and stakeholder collaboration in development decisions

To this list one should add a range of goals based in regionalism, a planning and policy theory that calls for regional-scale institutions that plan for and implement policies to manage regional-scale phenomena including land use and transportation, water infrastructure and so on (Downs 2001). Policy goals include:

- Tax-base sharing
- Urban growth boundaries
- Jobs-housing balance
- Affordable housing
- Regional public transportation network
- Transfer or purchase of development rights

DATA AND METHODOLOGY

To evaluate patterns in current permitting and development of housing by type, this paper will utilize the United States Census Bureau's American Community Survey (ACS) PUMS Microdata 5-year sample estimates for regional and state-level housing type and rent figures. The survey for 2019 is used because it is the most, complete data available for the period before the COVID-19 pandemic. Using these data, the study will perform a descriptive analysis of the distribution of housing by type and associated rent across the U.S. Rent figures will be taken from two samples of housing by its relative affordability to Extremely Low-Income (ELI) households, defined as households with income of 30 percent the area median income (AMI), which is measured at the regional scale. The sample of states with high affordability housing will include Arkansas, Massachusetts, New Mexico, West Virginia, and Wyoming, while the sample of states with low affordability housing will include Alaska, Arizona, California, Florida, Nevada, New Jersey, Oregon, and Texas. These samples are based on affordability research done in a recent study by the National Low Income Housing Coalition (NLIHC).[2] The study will then follow up with implications for planning and residential real estate development.

[2] National Low Income Housing Coalition, The Gap: A Shortage of Affordable Homes, March 2020, available at: https://reports.nlihc.org/sites/default/files/gap/Gap-Report_2020.pdf. Accessed 2-21-2021.

RESULTS AND DISCUSSION

The thorniest challenge for the next 50 years of growth management may not actually be in making the built environment more accessible, but in making it more *affordable* for all kinds of households. Principles of MDBPP should be applied to the current housing affordability challenges. A key MDBPP issue is that cities are permitting, and developers are building housing types with the least unmet market demand at the expense of more affordable housing types with the highest demand. This market distortion is bound to wreak havoc at some point, just as the last two recessions manifested. Demographic projections indicate that households are getting smaller over time and are increasingly seeking smaller, more affordable homes in location efficient neighborhoods, i.e., those that have higher levels of access than legacy suburbs, with a wide range of places to walk to, including jobs relevant to local populations, and access to transit (Nelson 2013). High-accessibility housing locations exact a value premium, given the market's willingness to pay for accessibility as an amenity. This value premium is offset in some cases by lower transportation costs and various public planning tools, such as low-interest mezzanine loans, tax-increment financing districts, fast-track permitting, and density bonuses (Nelson 2014). More affordable types of housing should be built in accessible neighborhoods to increase the offset to the accessibility premium and make housing more affordable to a larger segment of the population.

Further, as will be seen in this study, demand for affordable homes far outpaces supply, and those facing the greatest need are forced to compete with all other households for that supply. By the numbers for 2018, Extremely Low-Income (ELI) households (at 30 percent of area median income or AMI) had an affordable housing rental supply of 36 homes per 100 households at the national scale. By comparison, at 80 percent of AMI, households had a supply of 93 affordable homes per 100 households. The lowest income households have a much higher instance of facing cost burdens from housing, which means they pay more than 30 percent of their income solely to housing and utilities.[3]

Recent scholarship has demonstrated that households are saving transportation costs by locating near transit stations.[4] Making it more affordable to do so will pay in extra dividends when coupled with housing innovations, such as expansion of the under-supplied Missing Middle—including townhouses, condominiums, and other types, which may profitably add manufactured housing to its list of neglected housing types (Parolek with Nelson 2020). Many households

[3] Ibid.

[4] See Nelson et al. 2021 NITC study results: "LRT/BRT/SCT/CRT Development Outcomes FINAL PHASE." https://nitc.trec.pdx.edu/research/project/1253. Accessed 2-24-2021.

need a way to get their foot in the door of the housing market, so to speak, and providing housing options that meet existing and projected demands will inject greater resiliency into the housing market. A wide range of innovations in lending, construction materials, and housing types are needed. Planners and developers need more effort focused on the goal of greater affordability in quality housing. The greatest need is at the lowest range of the income demographic.[5]

Housing Types in the United States by Region and State, and Cost of Rent in 2019

Figure 1 shows that single-family detached housing is the overwhelming leader in the U.S. housing market. That is, its market share is so overwhelming as to make it almost the only major housing type in the country. The second-largest share is that of large apartment buildings (5 or more units per building), although it is a distant second. Figure 2 shows that in some markets, such as the South region of the U.S., small apartments are almost a nonentity. In the Northeast region, manufactured housing is likewise miniscule in numbers of units. The smallest regional share of single-family detached housing is in the Northeast region, where large apartment buildings take up the majority of the remaining share of the regional housing stock. The next-biggest share in the Northeast goes to single-family attached housing units. In the Midwest, single-family detached has the largest share of all the U.S. regions, and large apartment buildings also take second place. This scenario is true in the South and West regions, as well.

Figures 2 and 3 also demonstrates the distortions in the U.S. housing market by housing type in current use. The rise of interest in Missing Middle Housing (Parolek with Nelson 2020)—characterized as 2-4 unit low-rise attached and townhouse units (although including cluster/higher density detached units) in walkable communities belies its very small share of total housing. Manufactured Housing also comprises a very small share of the total. Inasmuch as these are considered more affordable types of housing, this suggests the need for additional efforts to expand these types to provide affordable housing to low-income households. Maps of the distribution of housing shown in figures 4 through 6 provide a spatial illustration of different housing types with special reference in Figure 6 to the dominance of single family detached housing.

[5] See The Gap: A Shortage of Affordable Homes at https://reports.nlihc.org/sites/default/files/gap/Gap-Report_2020.pdf. Accessed 2-21-2021.

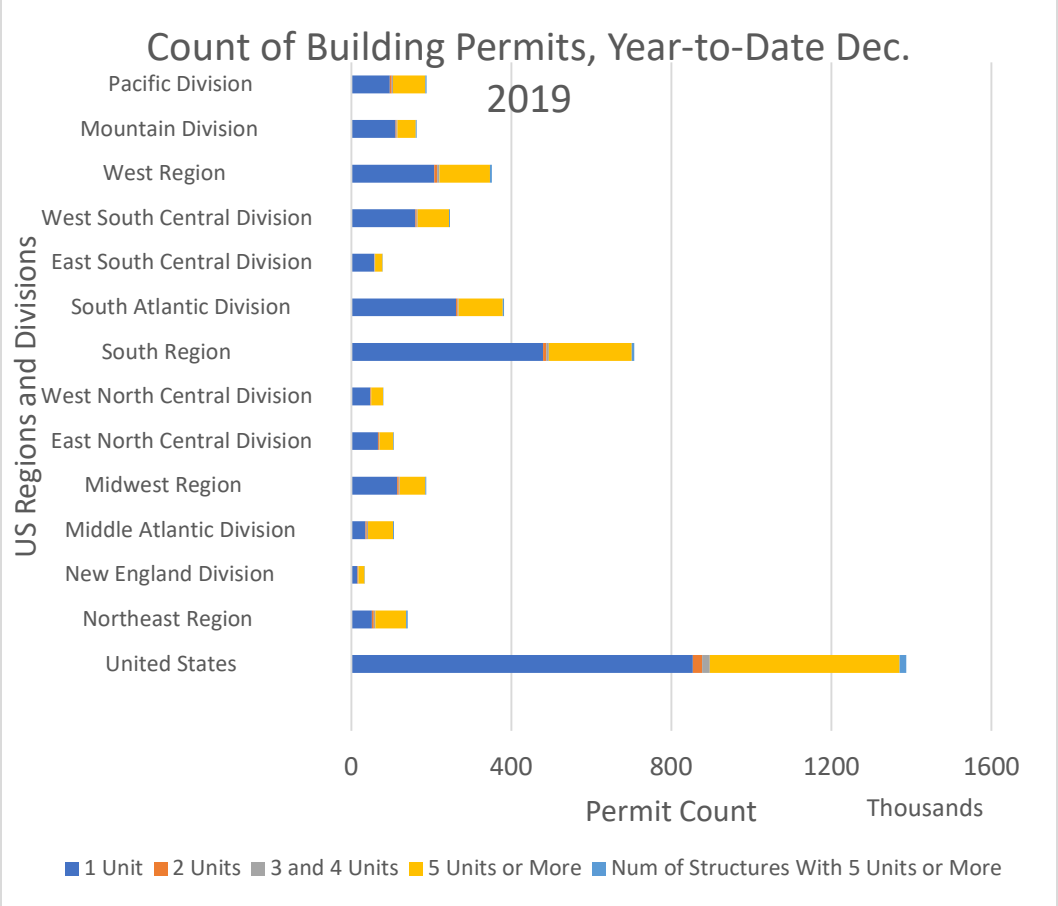

Figure 1
Permits issued at year's end in 2019 in the US. Data from U.S. Census Bureau Building Permits Survey
Source: Author.[6]

[6] Data come from ACS PUMS Microdata 5-Year Estimates for 2019. See www.data.census.gov. Accessed 2/21/2021.

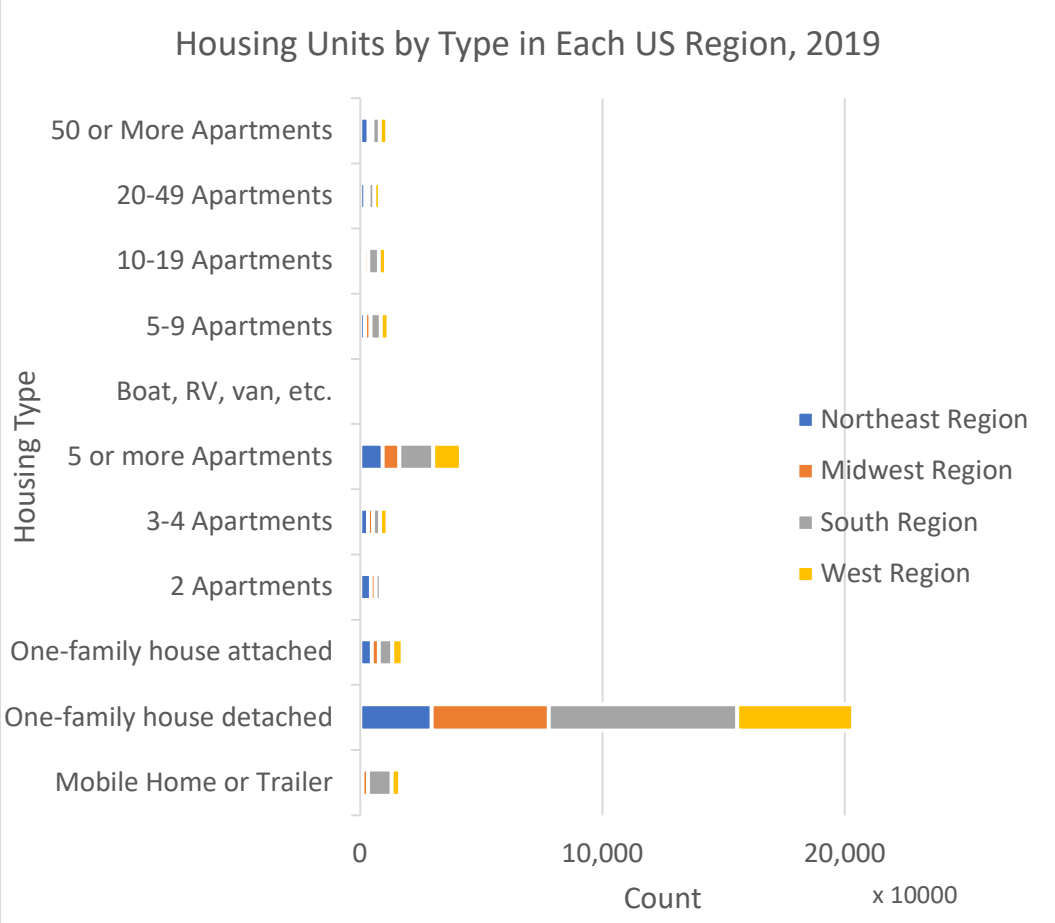

Figure 2
ACS 2019 5-Year PUMS Housing Counts by Type for Each U.S. Region
Source: Author.[7]

[7] Data come from ACS PUMS Microdata 5-Year Estimates for 2019. See www.data.census.gov. Accessed 2/21/2021.

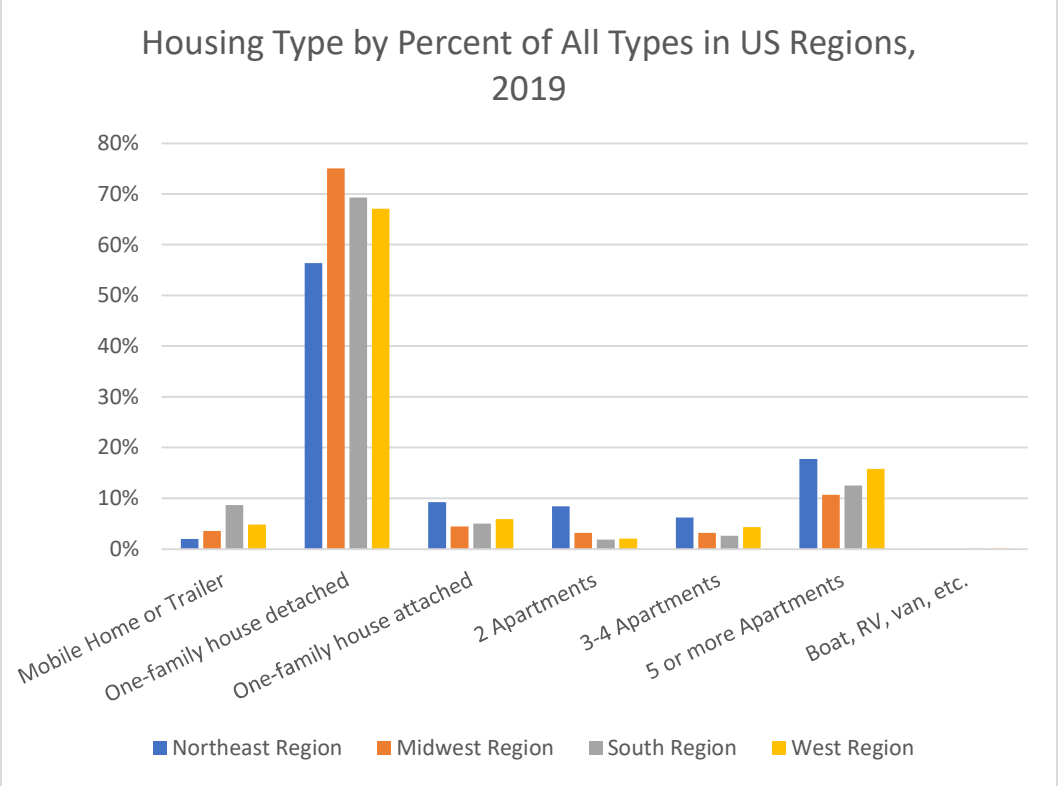

Figure 3
ACS 2019 5-Year PUMS Housing Percent by Type for Each U.S. Region
Source: Author.[8]

[8] Ibid.

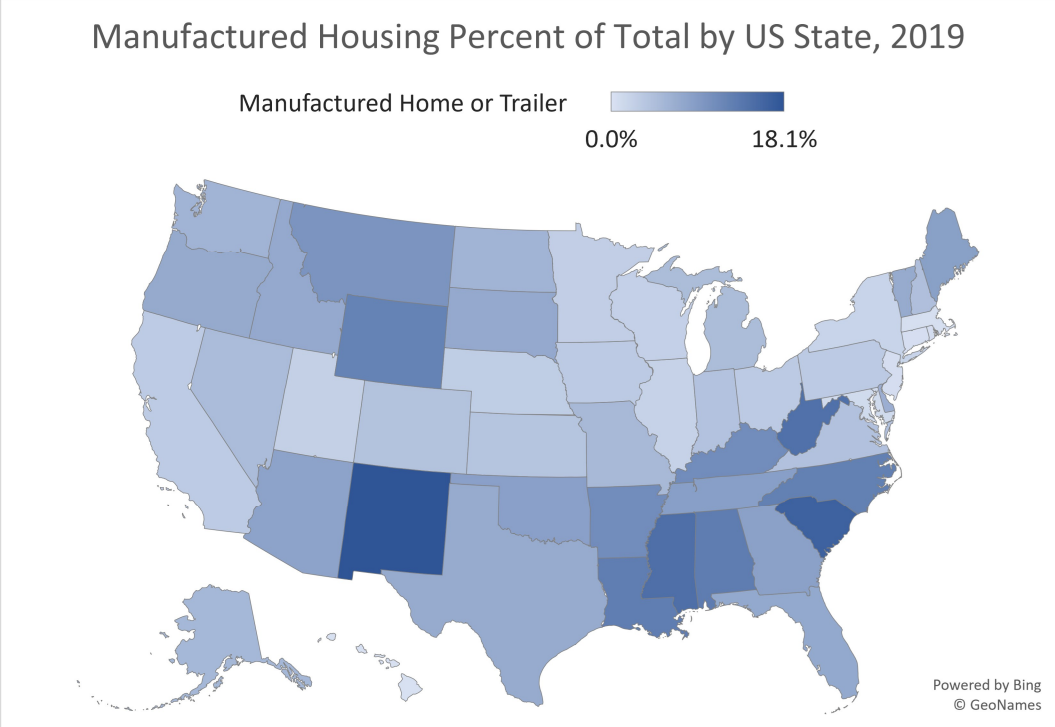

Figure 4
Manufactured Housing by percent of total statewide housing stock across the US, 2019
Source: Author.[9]

[9] Data come from ACS PUMS Microdata 5-Year Estimates for 2019. See www.data.census.gov. Accessed 2/21/2021.

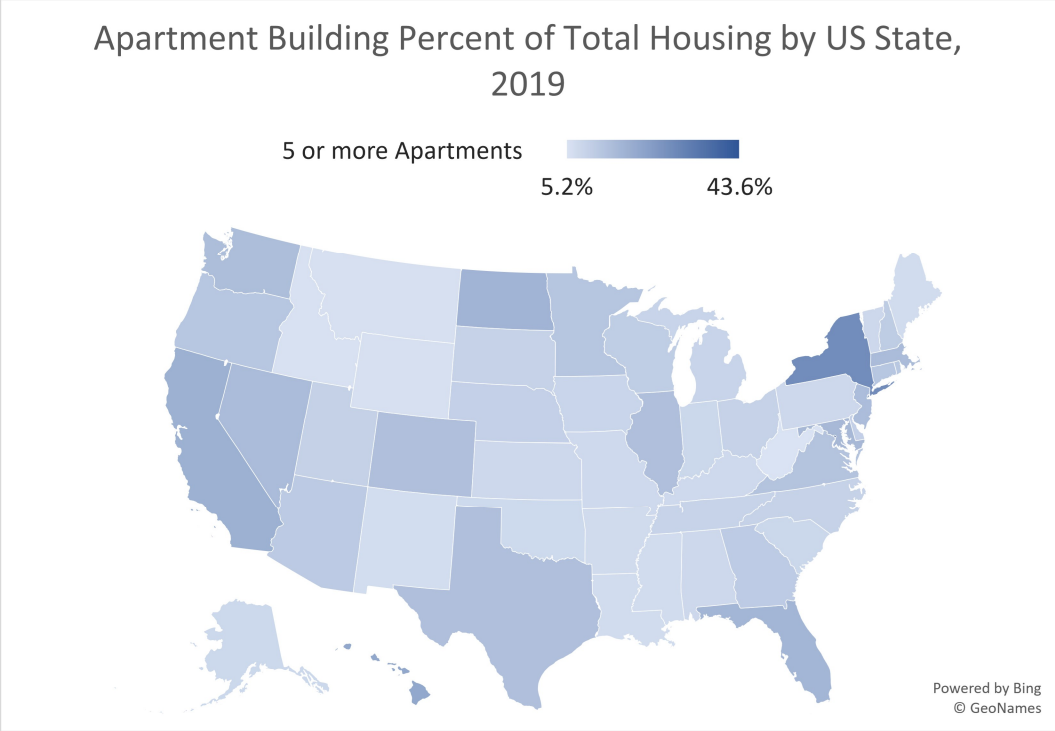

Figure 5
Large apartment buildings (5 or more units) by percent across the US, 2019.
Source: Author.[10]

[10] Ibid.

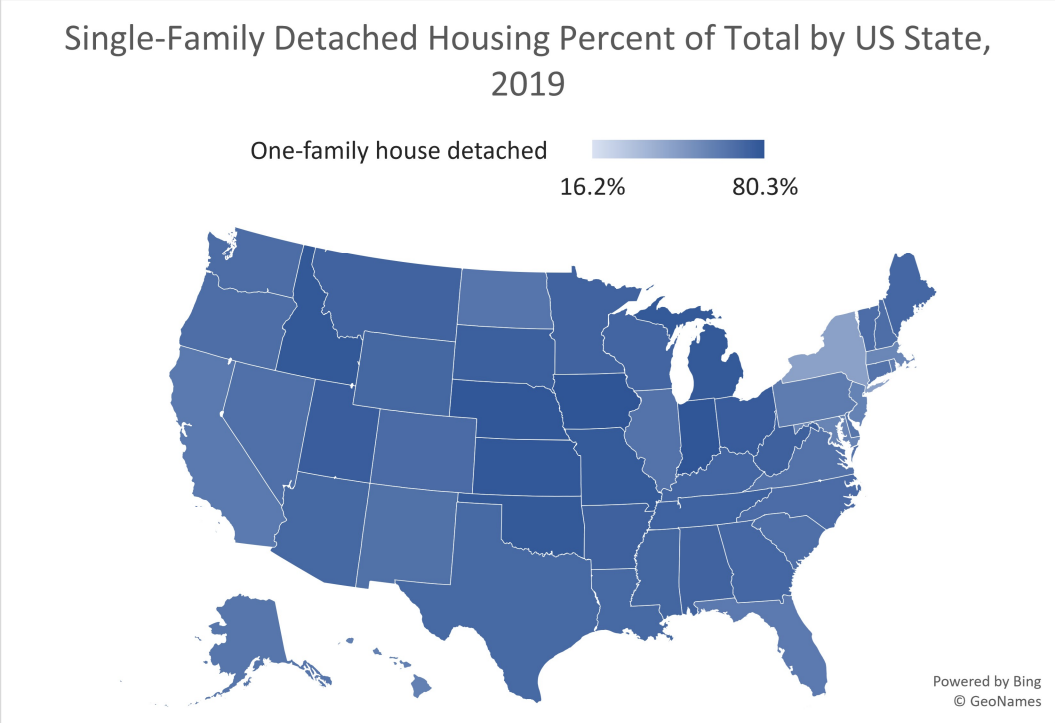

Figure 6
The Single-family detached housing by percent across the US, 2019
Source: Author.[11]

[11] Ibid.

As untenable a solution as is the widespread construction of large apartment complexes, they are the most frequently built form of higher-density housing. They are mostly used in states with large urban areas, including Illinois, Texas, New York, and California. NIMBYs constantly complain about and block the construction of such buildings across the country. The question of the relative efficacy of apartment complexes is at least partly answered in these data about their lack of affordability to a large segment of the market (Figure 6). For example, in Figure 7, large apartment complexes (50 or more units) average $980 per month in the low-affordability state sample. It is clear from our data that the Missing Middle is not being utilized to its full potential. Most smaller apartment buildings are more affordable than single-family units in both state samples. Duplexes can provide a great source of more affordable homes for first-time home buyers and still provide the privacy and low density many people in the U.S. desire. Further, as homes affordable to households near the area median income are built, they free up housing units that are affordable to households in the extremely low-income and very low-income brackets. High-quality workforce housing with first-time mortgages can also provide lower-income households with opportunities to work towards home ownership, which is the primary source of wealth for U.S. households (Rothstein 2017).

The Missing Middle Housing types, which are of "house scale," or of similar scale to single-family detached units and usually have up to 4 units, are very much a minority of the housing stock, along with manufactured housing, which is well under 10 percent of the housing stock in each U.S. region. These housing units are of a fairly similar size across geographic locations and offer a building type that is more cost efficient. This will help to increase affordable and attainable housing options.

The Missing Middle Housing types allow for redevelopment with "gentle density" that can be designed to fit almost seamlessly with existing low-density urban and suburban neighborhoods, with sufficient variety of types and interchangeability to allow for this broad range of locations (Parolek 2020). Thousands of vacant urban lots dot our cities across the country, particularly along existing corridors dotted with vacant parking lots and strip malls. These are also promising locations for public transit system expansion, given the large width of the average corridor. Further, existing public facilities will need to be updated along these corridors even in the absence of redevelopment (Nelson 2013).

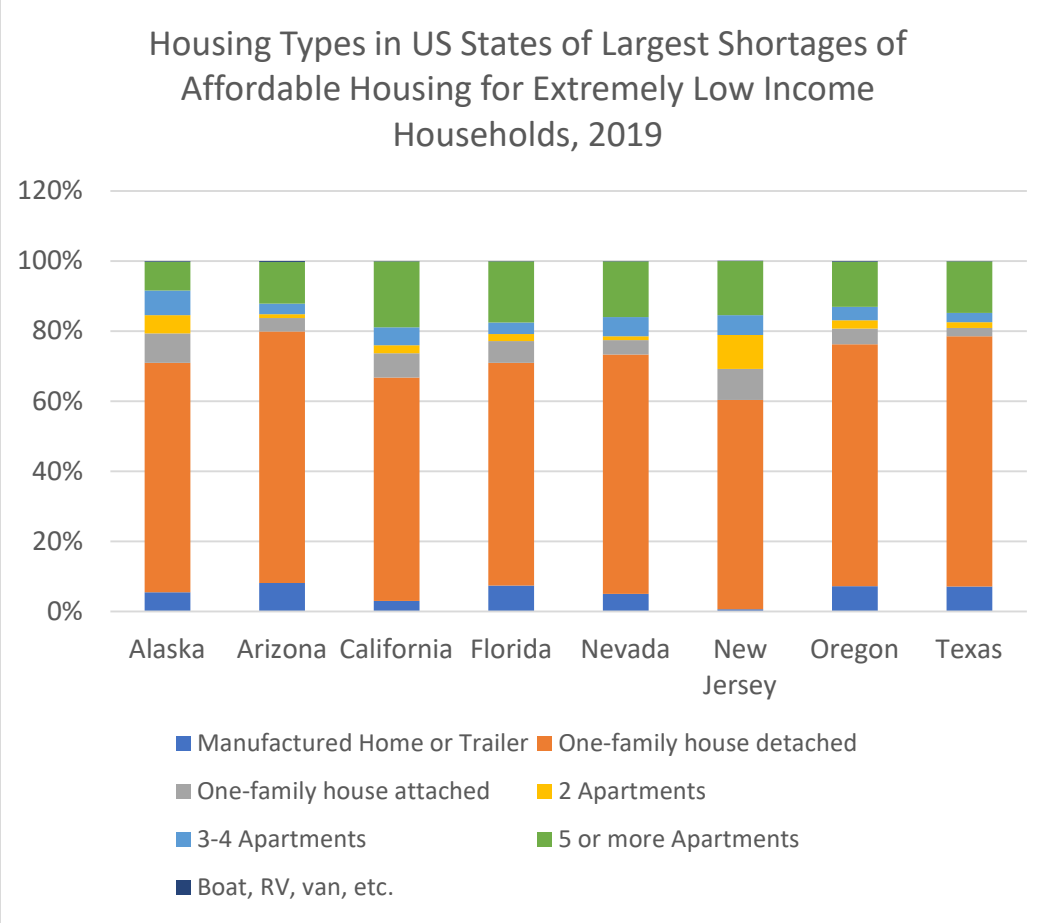

Figure 7
Housing Type by Percent of Total Units in U.S. States with Largest Affordable Housing Shortages for ELI Households in 2019
Source: Author.[12]

[12] Data come from ACS PUMS Microdata 5-Year Estimates for 2019. See www.data.census.gov. Accessed 2/21/2021. Information on ELI States comes from NLIHC GAP Report 2020. https://reports.nlihc.org/sites/default/files/gap/Gap-Report_2020.pdf. Accessed 2-21-2021.

Some form of fast-tracked and streamlined re-zoning and permitting approval needs to be implemented on a broad scale, perhaps at the state level, thus allowing each state to tailor their policies to their unique needs but at a sufficient scale to make the streamlining process more robust. A state scale can provide a uniformity of policy and design requirements that enables more economies of scale in the urban market, which is considerably challenged by the dispersed distribution of infill parcels.

Manufactured Housing (MH) is most prevalent across the South region, New Mexico, and Wyoming. Aside from the issue of construction quality, a primary reason MH is not more widespread in use is the profound social stigma attached to such structures, whether it resides in a trailer park or on a separate piece of land (Kusenbach 2009, Sullivan 2018). This stigma can be traced back in part at least to a major historical trend in MH development. In its original format, MH was a cheap, small, and temporary source of housing, mobile medical clinics, or libraries. They were financed and taxed as personal property rather than real property. It was essentially a recreational vehicle, but during the WWII years of wartime production press of workers who in many cases had to quickly move, MH was utilized as a stop-gap source of temporary housing. After the war, these units were used by construction workers and active members of the military. To the chagrin of many communities, these temporary homes were immensely sought after and eventually became permanent housing for many young families regardless of the slap-dash and unregulated nature of their construction, which made neighbors worry about the health and well-being of their inhabitants (Hart, Rhodes, and Morgan 2002).

In recent years, MH has become a much better option for affordable permanent housing. Currently units, redesigned for permanent use and comfort, are extensively used as upscale affordable units in higher-amenity mobile home parks and resorts for retired households. The quality has increased after the 1974 Manufactured Home Construction and Safety Standards Act mandated higher quality and safety standards. Still, they are generally considered a “locally unwanted land use” or LULU (Hart, Rhodes, and Morgan 2002). A series of reforms to lending and zoning, coupled with smart neighborhood design standards, would make this high-quality affordable housing type more practical as a widespread option. Ownership of higher-quality units may expand investment opportunities for lower-income first-time home buyers. Finding ways to integrate these homes into neighborhoods with a range of housing options, a stated goal of Smart Growth theory, would further improve their marketability and appreciation in value over time, and make it easier for cities to provide public facilities in efficient locations that already have adequate public facility capacity available, avoiding further greenfield development.

As seen in Figure 6, acute shortages of affordable housing exist in states across the country, in varying levels, with some examples being extreme, at approximately 30 housing units per 100 households seeking those units. In the states in Figure 6, the vast majority of housing is in two types: the single-family detached, and apartments in high-density complexes, both of which have a more expensive monthly rent than mid-density apartment complexes and manufactured housing (see figures 2, 8, and 9).

In our sample of states with low levels of affordable housing for extremely low income (ELI) households in 2019,[13] the highest rent occurs in the single-family attached housing type. This category, along with single-family detached and apartment buildings of size 2 to 4 units per building, account for more than half of the housing stock in those states.

The study segments monthly rents across the country into two samples (see figures 7 and 8) based on the National Low Income Housing Coalition (NLIHC) Gap Report 2020.[14] The NLIHC report bases the figures for rent affordability upon Fair Market Value (40^{th} percentile of rent in a region).

The first sample consists of 5 states with 45 or more units of affordable housing per 100 ELI households. Figure 7 is a Pareto a histogram of frequency in descending order, with a cumulative line of percentage (red line). Pareto histograms show the ordered frequencies of values for the different levels of a categorical or nominal variable, in this case rent by type of housing unit. Clearly, lower density housing regardless of type is the least affordable to ELI households.

[13] ELI is a subset of the very low-income households and is defined as 30 percent of area median income and below. ELI metrics help assess the kind of housing available and suitable for ELI households (including supportive housing and single-room occupancy units) and whether existing zoning permits those housing types.

[14] *The Gap* presents data on the affordable housing supply and housing cost burdens at the national, state, and metropolitan levels. The report also examines the demographics, disability and work status, and other characteristics of extremely low-income households most impacted by the national shortage of affordable and available rental homes. See https://reports.nlihc.org/gap.

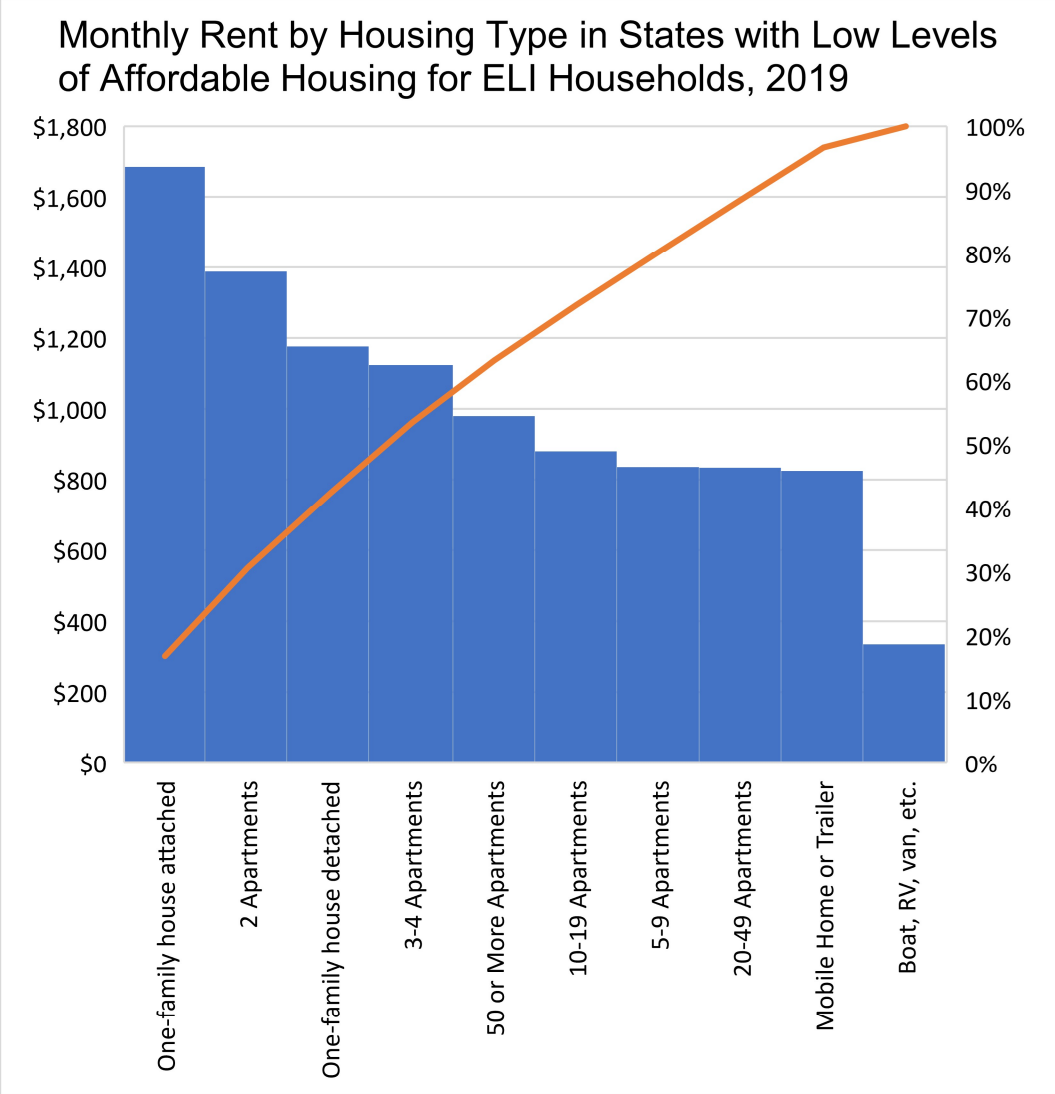

Figure 8
Monthly rent for separate housing types in states with low levels of affordable housing, 30 or fewer units per 100 ELI households in Alaska, Arizona, California, Florida, Nevada, New Jersey, Oregon, and Texas
Source: Author.[15]

[15] Data come from ACS PUMS Microdata 5-Year Estimates for 2019. Information on ELI States comes from NLIHC GAP Report 2020. https://reports.nlihc.org/sites/default/files/gap/Gap-Report_2020.pdf. Accessed 2-21-2021.

The second sample (Figure 9) consists of the eight states with 30 or less affordable units per 100 ELI households. They are Arkansas, Massachusetts, New Mexico, West Virginia, Wyoming. Housing in the low-affordability states cost twice as much in rent at the highest level of the scale, at approximately $1685 per month for single-family attached housing units. This is a higher rent than for single-family detached housing, which may be caused either by the differences in tenure arrangement of the two categories, or by the age and amenities of each housing type. The highest category for the high-affordability states was about $820 per month for an apartment in a large complex. The single-family detached unit averaged $658 per month. The Pareto histogram shows patterns similar to those seen in Figure 8.

One major distinction between the two state samples, which is not a representative sample and thus likely has some level of bias, is that the more affordable states are largely rural (with the exception of Massachusetts, which has the Boston area), while many of the states in the less affordable sample have a high percentage of population in large metropolitan areas (except mostly rural Alaska). In the rural states, the cost of rent for most apartments is less than a single-family home.

From this initial analysis it is evident that there are multiple causal elements to the question of the cost of housing. The prevalent housing types and the effects of the regional economy, along with the relative population level and density are evident in the figures. Further analysis should model the relative elasticities between housing cost and specific amenities and characteristics across the country's housing by type and regional context. Also, this analysis does not provide a projection of what these figures might be in 50 years. If the present situation is indicative of what awaits the housing market in the coming half-century, efforts will be needed to address the challenges listed in this study.

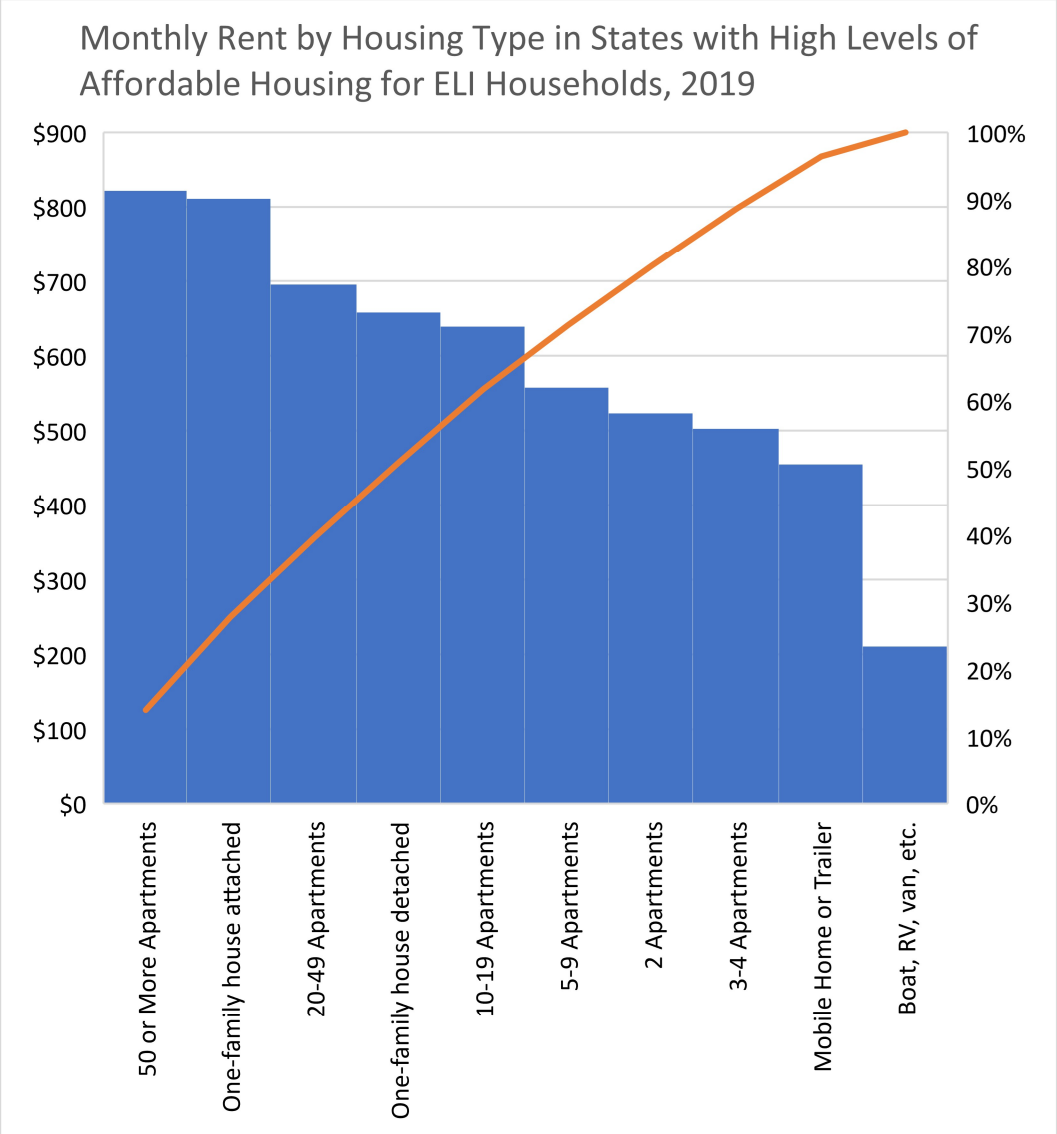

Figure 9
Monthly rent for separate housing types in states with high levels of housing affordable to ELI households, 45 or more units per 100 ELI households in Arkansas, Massachusetts, New Mexico, West Virginia, Wyoming
Source: Author.[16]

[16] Data come from ACS PUMS Microdata 5-Year Estimates for 2019. Information on ELI States comes from NLIHC GAP Report 2020. https://reports.nlihc.org/sites/default/files/gap/Gap-Report_2020.pdf. Accessed 2-21-2021.

IMPLICATIONS FOR PLANNING AND RESIDENTIAL REAL ESTATE

Professor Nelson has made many important contributions to the planning profession, many of which may take an additional 50 years to implement. Housing stock efficiency is one of those long-term thorny issues that may take an additional 50 years of further development and implementation of the MDBPP paradigm to achieve. Had MDBPP been used more consistently across the country, the U.S. may have avoided or ameliorated the worst impacts of the real estate crises of the 1980s and 2000s, both of which were due to over-permitting. Growth management and Smart Growth have grown to prominent theoretical stature in the planning profession in the last 50 years, but not enough to avoid the real estate crises of the last thirty years, including two recessions as well as a growing crisis of housing affordability. The reasons for this failure consist not only of the failure to implement a series of related growth management policies, but also particularly the failure to implement a coordinated MDBPP basis for managing the housing supply. In turn, this failure may be tied to the vague and under-theorized nature of this goal prior to Dr. Nelson's elucidation of MDBPP in 2017. There yet remains a great deal of work to do to implement it across the disjointed jurisdictions of U.S. communities.

Another obstacle to face in the next 50 years of growth management and MDBPP relates to the widespread practice of exclusionary zoning, whereby communities are able to keep certain housing types out of their jurisdiction while they continue to add to the overstock of single-family housing units. MDBPP implementation in these jurisdictions will make it plain that exclusionary practices are not supported by the fact basis, and therefore do not meet the needs of certain segments of their own communities. Further research and public relations efforts to demonstrate the value-added effects of efficient development will aid in overcoming this obstacle, as it is often based upon the popular notion that certain housing and development types will detract from the value of existing single-family housing stock. This last point is especially salient to the increase of MH types in the metropolitan fabric, as their presence is often a sign that their developers were able to somehow find a way to overcome the widespread policies that allow communities to exclude them.

The 2019 permitting figures by housing type across the U.S. are an indication of the degree to which U.S. communities have implemented the call for a "range of housing options," which is a central tenet of the Smart Growth theory. Higher-rent states are those with lower supplies of affordable housing stock. This mechanism is widely known in the real estate literature, and in economics in general: restrict the supply, and the result will be higher prices. Conversely, the states most affordable to the lowest-income households are those with sufficient numbers of affordable housing units. This inflated price is a market distortion due

at least in part to the disequilibrium between demand and supply of affordable housing. It especially affects urbanized areas, as seen in the higher prices for more urbanized states. Further work is needed to tease out the current hedonic characteristics of these states' housing supplies and verify whether and to what extent housing type is a price effect independent from other sources of value premiums, such as land use intensity, job availability, regional natural amenities, and competition for a location near the central business district. Moreover, the cause of affordable urban housing needs more attention. One possible solution involves the thousands of vacant lots causing concern across many urban areas.

The housing types of the Missing Middle—condominiums, townhouses, quadplexes, and others, along with new high-quality manufactured housing, can be built to meet the pent-up demand for more affordable homes in location efficient, transit-served accessible neighborhoods. If the U.S. instead follows its present course of neglecting the needed housing types, there is some likelihood that the past results of over-permitting will repeat themselves, bringing on further recessions or other housing market challenges, like the Great Senior Short Sale.

A whole suite of disruptive innovations loom on the near horizon, and merit investigation in connection with this study's questions. Two of such that may directly influence the expansion of affordable housing options include Connected and Autonomous Vehicles and 3-Dimensional printing of affordable housing. Of further need, to increase affordability, are innovations in public facilities technology and provision, and design approaches for MH that help integrate this housing type into the residential fabric. MDBPP is also one such potentially disruptive innovation that may break down longstanding obstacles to more affordable and location efficient housing stocks across the U.S.

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