

The Potential and Challenges of Using Manufactured Housing to Expand Entry-Level Homeownership

Chris Herbert, Chad Reed, Dan McCue, Alex Hermann and James Shen
February 16, 2024

Recent Joint Center Studies on Manufactured Housing

Comparison of the Costs of Manufactured and Site-Built Housing

JULY 2023 | CHRISTOPHER HERBERT, CHADWICK REED, JAMES SHEN



A Review of Barriers to Greater Use of Manufactured Housing for Entry-Level Homeownership

JANUARY 2024 | CHRISTOPHER HERBERT, ALEXANDER HERMANN, DANIEL MCCUE, CHADWICK REED



Overcoming Barriers to Manufactured Housing: Promising Approaches from Five Case Studies

2024 | CHRISTOPHER HERBERT and CHADWICK REED

Coming March 2024



Overview of Today's Talk

- Start with an overview of what manufactured housing is and briefly review trends and characteristics of the manufactured home sector
- Present findings from our cost comparison study
- Provide estimates of where manufactured housing holds the most potential for expansion and how many potential buyers this might
- Review findings from our study on barriers to greater adoption
- Preview results of upcoming case study report

Overview of Manufactured Housing

What is Manufactured Housing?

- Pre-1976 ‘mobile’ or ‘trailer’ homes proliferated to meet the growing need for housing in the post-war era
- To address concerns about the health and safety of these homes in 1976 HUD established the Manufactured Home Construction and Safety Standards—or the “HUD Code”—and ushered in a new generation of these homes
- The HUD code has undergone multiple revisions over time to improve the quality of the homes and their installation

Manufactured Versus Modular Housing

- The HUD code super cedes state and local building codes which allows for mass production of these homes that can be shipped to markets across the country
- **Modular housing** is factory built but must still comply with state and local building codes and be inspected by agents for these areas during the construction process

Principal Typologies of Today's Manufactured Homes

Single Section

- 3/12 roof pitch
- Vinyl skirting
- Vinyl siding
- 36" typical height from exterior grade to entry elevation



Double-Section

- 3/12 roof pitch
- Vinyl skirting
- Vinyl siding
- 36" typical height from exterior grade to entry elevation

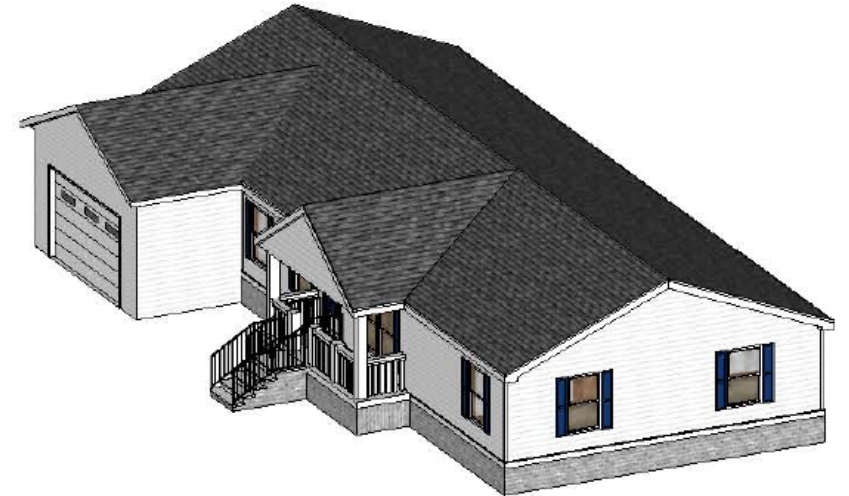


CrossMod™ Typology Developed by the Industry to Counter Negative Stereotypes

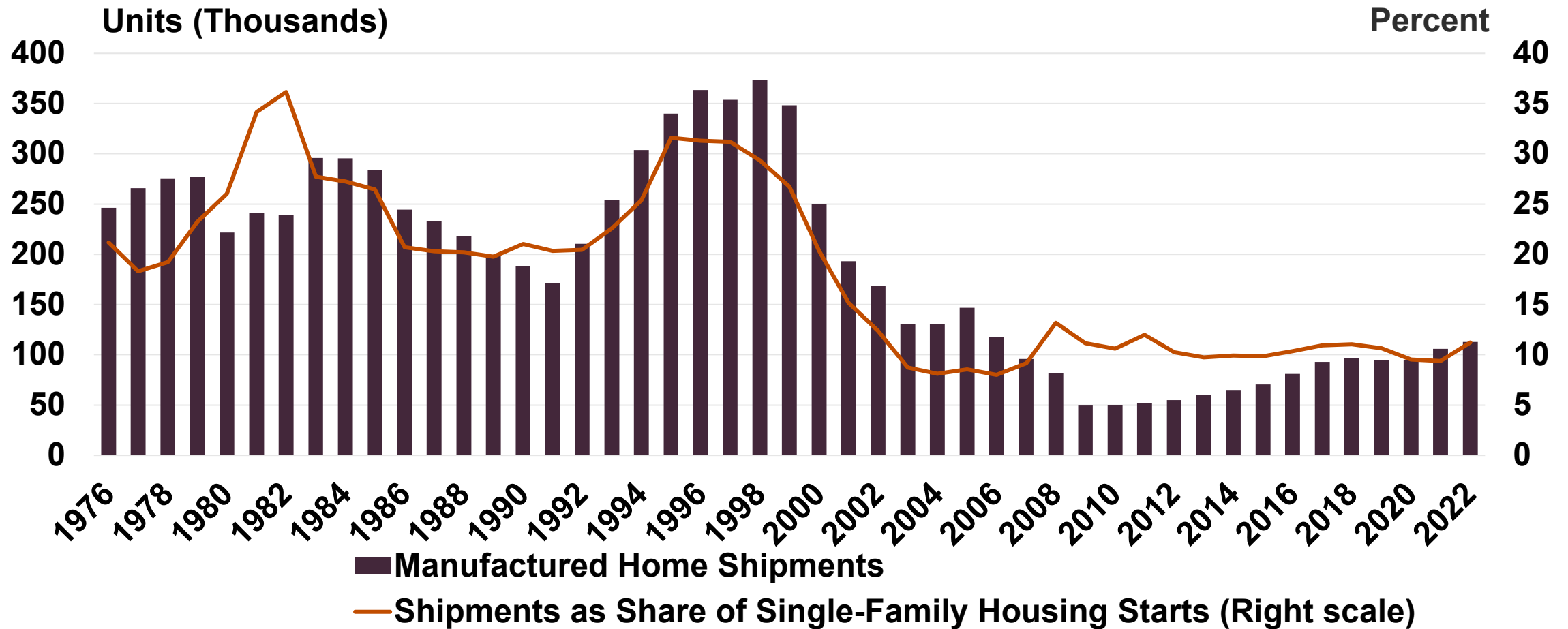
- Special lending programs for these homes created by Freddie Mac and Fannie Mae that allow for site-built homes to be used as comparables
- Other required features include:
 - A permanent foundation
 - Higher energy efficiency standards
 - Durable cabinets
 - Higher quality bathroom materials

CrossMod™

- 5/12 roof pitch
- Masonry perimeter wall
- Engineered Wood Siding
- 30" maximum height from exterior grade to entry elevation
- 6 inch eaves

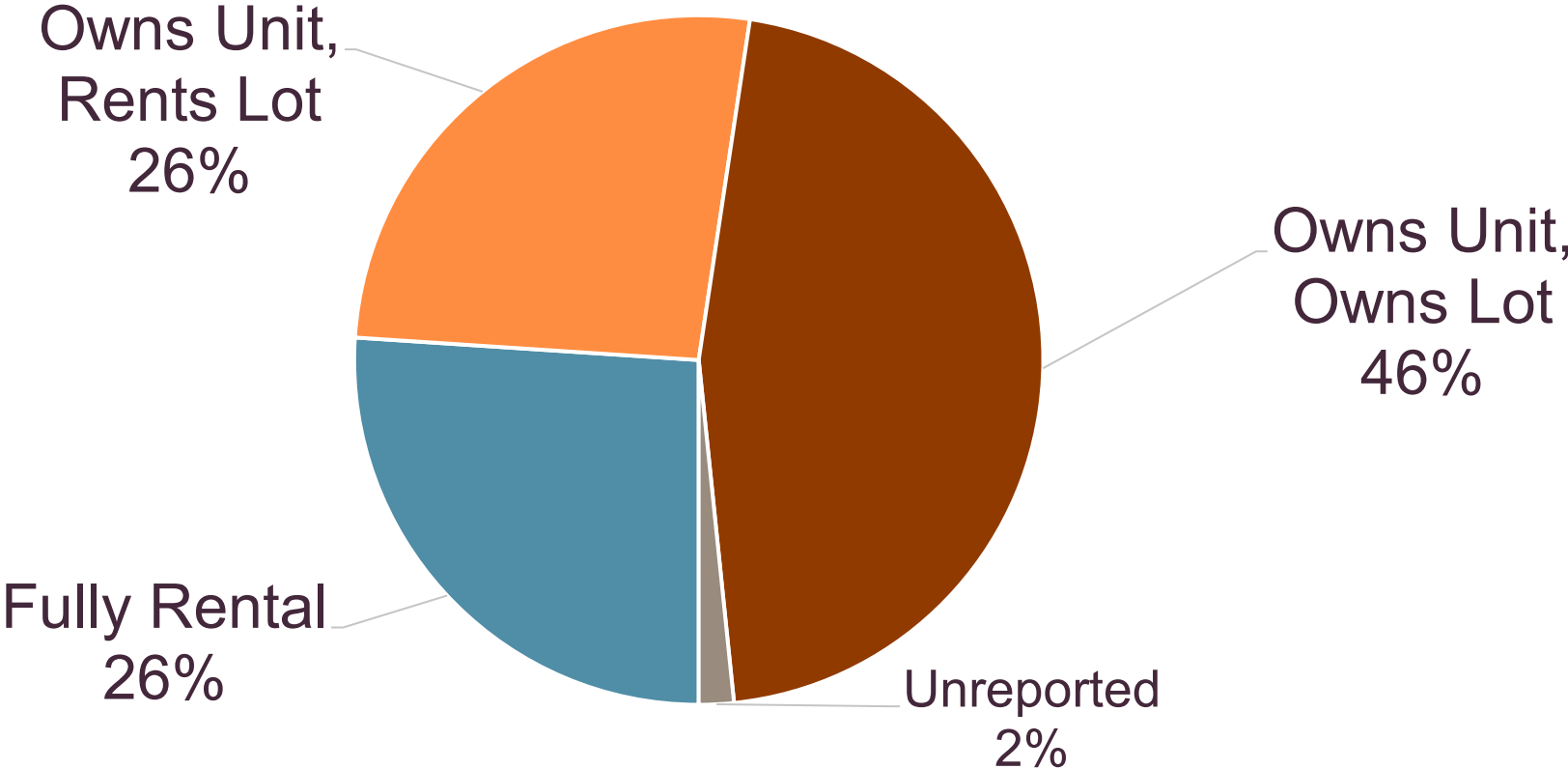


Manufactured Home Production Was a Significant Share of New Single-Family Homes Through the 1990s But Have Yet to Recover From Downturn in Early 2000s



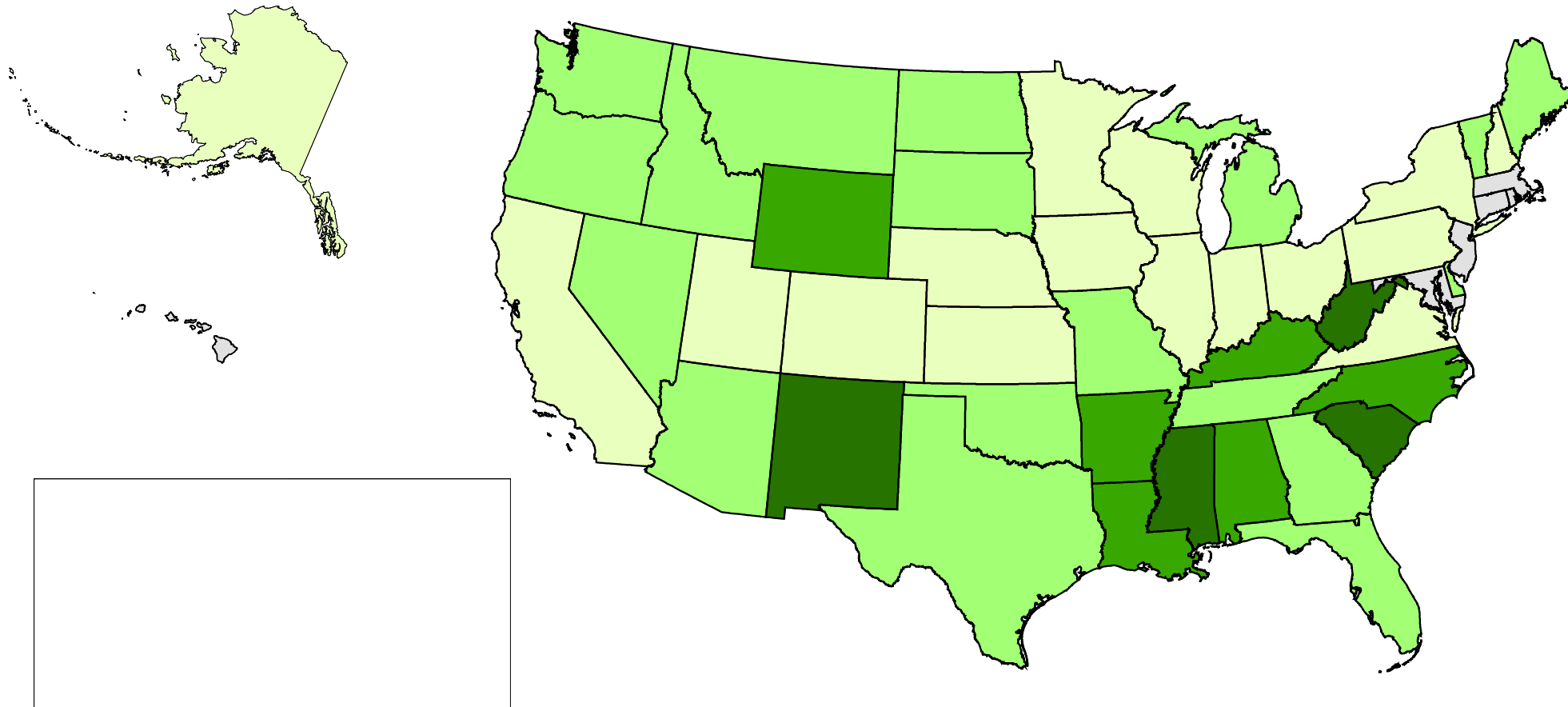
Source: JCHS tabulations of US Census Bureau, Manufactured Home Survey and Survey of Construction.

A Significant Share of Existing Manufactured Homes Are on Rented Land, But Half Are Owned with the Site



Source: JCHS tabulations of US HUD 2021 American Housing Survey.

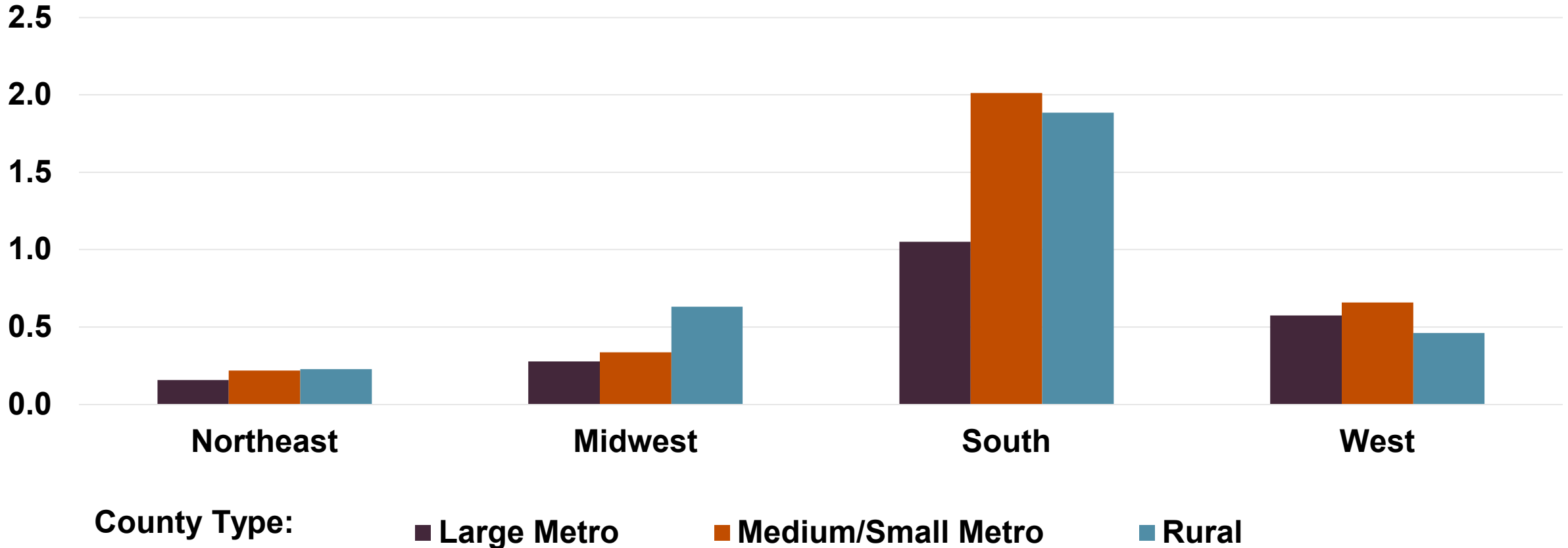
Manufactured Housing is Most Prevalent in the South and a Few Western States



Source: JCHS tabulations of US Census Bureau, 2019 American Community Survey.

While a Much Larger Share of the Housing Stock is in Rural Areas, Manufactured Homes Are Nonetheless Prevalent in Metro Areas

Manufactured Housing Units (Millions)



Source: JCHS tabulations of US Census Bureau, 2019 American Community Survey 5-Year Estimates.

Counties Where Manufactured Homes Are Most Prevalent are Rural and Low-Cost/Low-Income

County Characteristics	Lowest Shares of manufactured housing (Bottom Quintile)	Middle Quintile	Highest Shares of manufactured housing (Top Quintile)
Mean share of Housing Stock that is Manufactured Housing (Percent)	2.4	10.7	28.1
Median Home Value	\$220,000	\$148,000	\$105,600
County Population	305,400	56,560	27,500
Mean Population Density (pop/sqmi)	2,189	326	84
Homeownership Rate (Percent)	68.6	72.0	73.2
BIPOC Homeownership Rate (Percent)	48.6	53.9	60.2
Median Household Income	\$66,700	\$52,500	\$42,700

Source: JCHS tabulations of US Census Bureau, 2019 American Community Survey 5-Year Estimates

Comparing the Cost of Manufactured Housing to Site Built Homes

Methodology

- Rely on estimates of the cost of constructing, transporting and siting three forms of manufactured housing conducted by Next Step Network and with the help of ManufacturedHomes.com
- Survey of 22 manufacturers, dealers, and lenders in 2020—so pre-COVID prices
- Construction cost for comparably sized and modest quality site-built homes estimated using RS Means the for national market for same time period
- Estimates were also provided for West Coast markets where construction costs are higher, although the results were quite similar
- *While the estimates control for as many elements of quality as possible, there will no doubt still be differences in both design and the materials used*

Table 2: National Construction Cost Estimates

Cost Category	Site-Built (1,568 sf)	CrossMod™		Site-Built (1,568 sf)	Double-Section		Site-Built (1,216 sf)	Single-Section	
		Cost	% of Site-Built		Cost	% of Site-Built		Cost	% of Site-Built
Building Cost	\$150,119	\$78,000	52%	\$135,576	\$68,000	50%	\$119,243	\$35,000	29%
Foundation	\$24,300	\$6,700		\$24,300	\$8,000		\$21,449	\$4,000	
Transportation and Installation		\$42,043			\$18,700			\$10,100	
Admin and Profit	\$26,163	\$20,279		\$23,981	\$15,152		\$21,104	\$7,856	
Total Cost	\$200,582	\$147,022	73%	\$183,857	\$109,852	60%	\$161,796	\$56,956	35%

Notes: Foundation costs for manufactured homes include site prep and footings. Transportation and installation costs include transportation, siting of home, skirting, trimming out home, on-site add-ons, and cleaning.

CrossMod™ also includes costs of raising roof and adding a garage. The site-built house for comparison with CrossMod™ includes a single-car garage, which is not included with double-section or single-section comparisons.

Source: Authors' tabulations of RS Means data for site-built homes and Next Step industry survey for manufactured homes. Cost of garage addition is from RS Means for both housing types.

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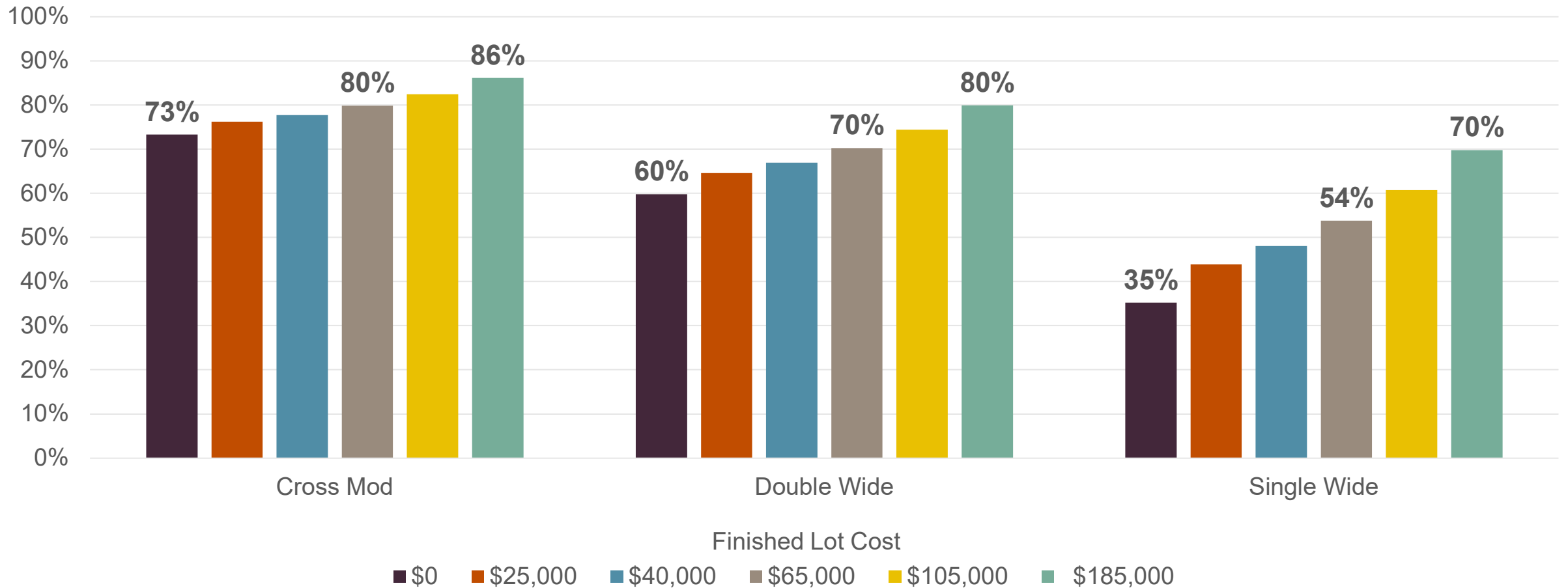
Source: Authors' tabulations of RS Means data for site-built homes and Next Step industry survey for manufactured homes. Cost of garage addition is from RS Means for both housing types.

Hypothesis About the Source of the Cost Savings

- Efficiencies in production process from controlled factory setting
- Vertical integration of production process that eliminates use of subcontractors
- Savings on material costs from scale of purchases
- Ability to incorporate advanced fabrication machinery
- Factories located in low-cost labor markets
- Differences in HUD code from standard building codes that allow for lower-cost or more efficient building designs

Construction Costs Are Not the Whole Story: Manufactured Housing Cost Advantage Declines as Land Prices Rise

Manufactured Home Cost as Percent of Comparable Site Built Home



Note: Land prices from <https://www.aei.org/housing/land-price-indicators>
 Source: Herbert, Reed, and Shen, 2023.

Assessing the Potential for Manufactured Housing to Expand Homeownership Opportunities

Counties Where Manufactured Homes Are Most Prevalent are Low-Cost/Low-Income

County Characteristics	Lowest Shares of manufactured housing (Bottom Quintile)	Middle Quintile	Highest Shares of manufactured housing (Top Quintile)
Mean share of Housing Stock that is Manufactured Housing (Percent)	2.4	10.7	28.1
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Source: JCHS tabulations of US Census Bureau, 2019 American Community Survey 5-Year Estimates

Arguably the Areas With Greatest Potential Expansion of Manufactured Housing are Those With Low-Housing Costs and Limited Existing Availability of These Homes

Quadrant of Manufactured Housing Prevalence and Median Home Value	Large Metro, Central County	Large Metro, non-Central County	Small or Medium Metro	Non-Metro	Total
Low Share, High Price	42	170	106	81	399
Low Share, Low Price	23	74	231	517	845
High Share, High Price	3	27	79	119	228
High Share, Low Price		97	313	1,258	1,668
Total	68	368	729	1,975	3,140

Note: High price counties are in the top quintile (top 20 percent) of counties ranked by median housing value, all others are low price. Low manufactured housing share counties are in the bottom two quintiles (bottom 40 percent) of counties ranked by county ratio of manufactured homes to SF homes, all others are high manufactured housing share.

Source: JCHS tabulations of American Community Survey 2019 5-Year Estimates via Social Explorer.

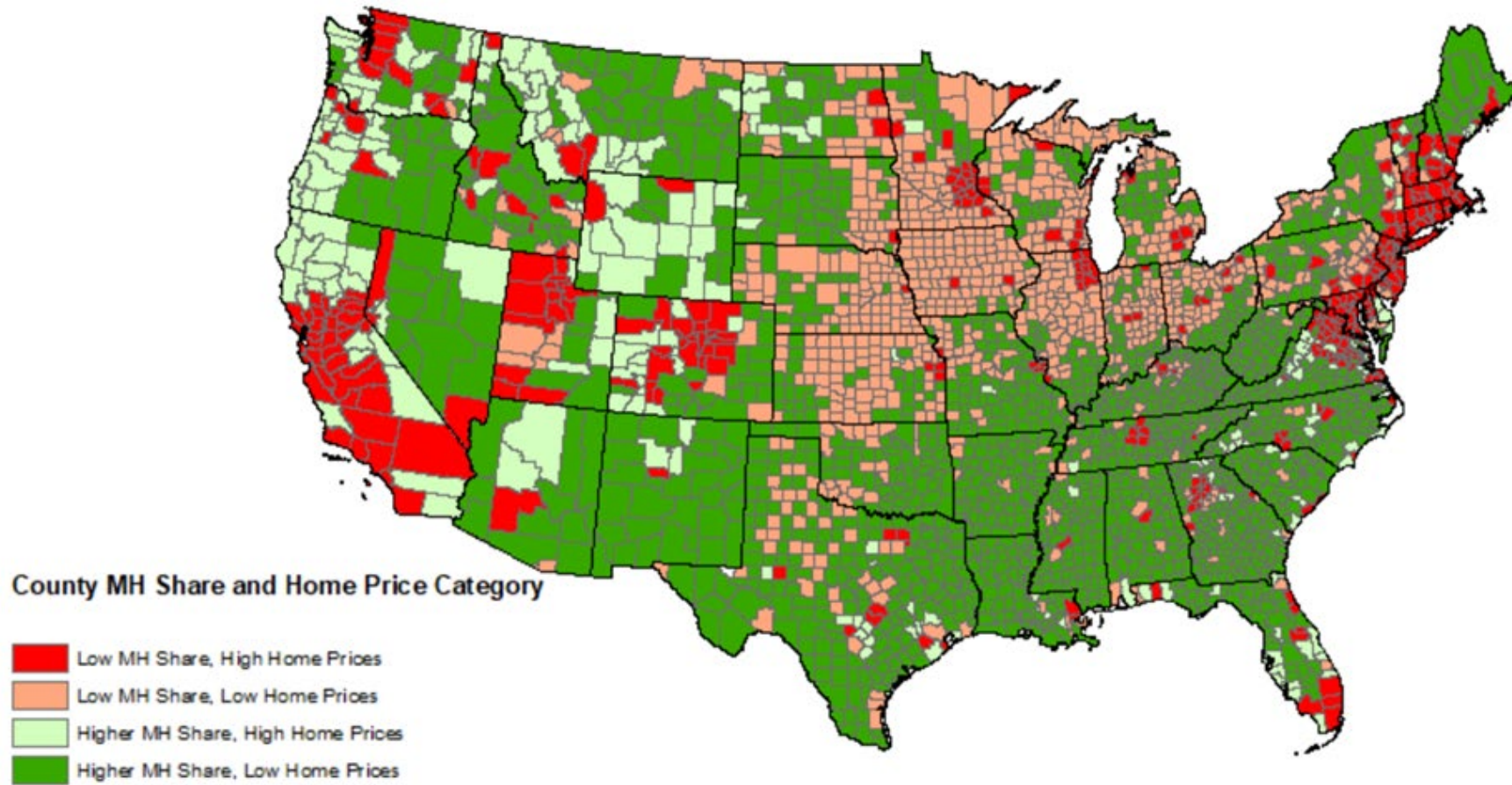
More Than Million Moderate Income Renters Reside in the Counties With Greatest Potential for Manufactured Home Expansion

Quadrant of Manufactured Housing Prevalence and Median Home Value	Large Metro, Central County	Large Metro, non-Central County	Small or Medium Metro	Non-Metro	Total
Low Share, High Price	3,477	2,151	1,147	98	6,873
Low Share, Low Price	1,387	349	1,229	282	3,248
High Share, High Price	182	96	407	125	810
High Share, Low Price	-	170	707	668	1,545
Total	5,046	2,766	3,491	1,173	12,476

Note: Moderate-income renter households are defined as having annual household incomes of \$50,000-\$99,999. High price counties are in the top quintile (top 20 percent) of counties ranked by median housing value, all others are low price. Low manufactured housing share counties are in the bottom two quintiles (bottom 40 percent) of counties ranked by county ratio of manufactured homes to SF homes, all others are high manufactured housing share.

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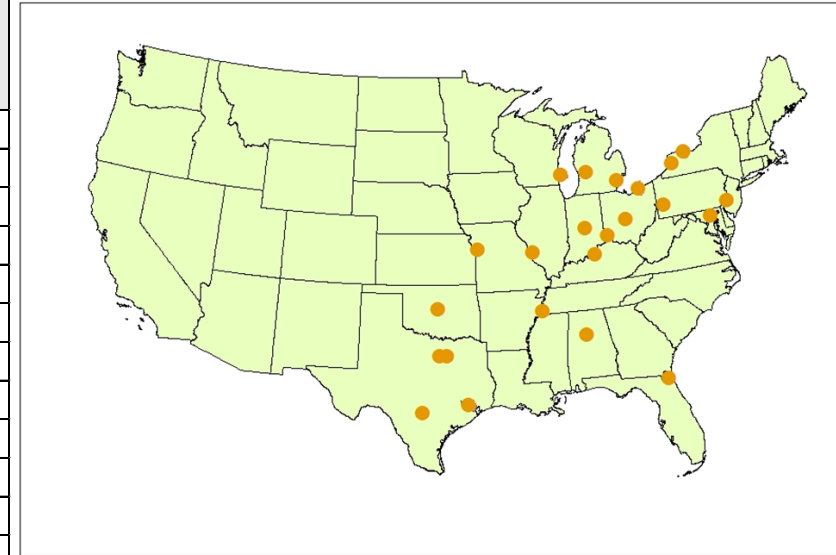
Low-Cost/Low-Share Counties are Concentrated in Midwest But Sprinkled through Other Regions in the Country



Source: JCHS tabulations of US Census Bureau, 2019 American Community Survey.

Large Urban Counties with High Potential for Manufactured Housing

County	Metro Area Name	Single-Family Share of Stock	Manufactured Housing Share of Stock	Median Home Value	Median Household Income
Jefferson County, AL	Birmingham-Hoover, AL	71.9%	2.8%	\$159,100	\$53,901
Duval County, FL	Jacksonville, FL	65.4%	4.2%	\$180,700	\$55,807
Marion County, IN	Indianapolis-Carmel-Anderson, IN	68.6%	1.6%	\$136,700	\$48,316
Jefferson County, KY	Louisville/Jefferson County, KY-IN	68.6%	1.3%	\$170,100	\$56,586
Baltimore city, MD	Baltimore-Columbia-Towson, MD	65.5%	0.1%	\$160,100	\$50,379
Kent County, MI	Grand Rapids-Wyoming, MI	72.1%	3.8%	\$173,700	\$63,053
Wayne County, MI	Detroit-Warren-Dearborn, MI	75.7%	1.8%	\$113,000	\$47,301
Jackson County, MO	Kansas City, MO-KS	72.5%	1.0%	\$147,400	\$55,134
St. Louis City, MO	St. Louis, MO-IL	47.2%	0.3%	\$138,700	\$43,896
Erie County, NY	Buffalo-Cheektowaga-Niagara Falls, NY	62.2%	1.5%	\$153,400	\$58,121
Monroe County, NY	Rochester, NY	68.9%	0.9%	\$148,400	\$60,075
Cuyahoga County, OH	Cleveland-Elyria, OH	64.6%	0.6%	\$132,800	\$50,366
Franklin County, OH	Columbus, OH	62.7%	0.9%	\$175,100	\$61,305
Hamilton County, OH	Cincinnati, OH-KY-IN	63.2%	0.8%	\$155,400	\$57,212
Oklahoma County, OK	Oklahoma City, OK	73.3%	2.9%	\$153,300	\$54,520
Allegheny County, PA	Pittsburgh, PA	72.4%	0.7%	\$154,700	\$61,043
Philadelphia County, PA	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	66.1%	0.3%	\$163,000	\$45,927
Shelby County, TN	Memphis, TN-MS-AR	71.2%	1.0%	\$150,400	\$51,657
Bexar County, TX	San Antonio-New Braunfels, TX	67.4%	2.8%	\$161,800	\$57,157
Dallas County, TX	Dallas-Fort Worth-Arlington, TX	56.7%	1.5%	\$174,900	\$59,607
Harris County, TX	Houston-The Woodlands-Sugar Land, TX	61.1%	2.6%	\$175,700	\$61,705
Tarrant County, TX	Dallas-Fort Worth-Arlington, TX	70.0%	1.9%	\$188,500	\$67,700
Milwaukee County, WI	Milwaukee-Waukesha-West Allis, WI	49.8%	0.6%	\$158,300	\$50,606



Source: JCHS tabulations of American Community Survey 2021 and 2019 5-Year Estimates via Social Explorer.

Barriers to Greater Use of Manufactured Housing

Key Barriers to Greater Adoption of Manufactured Homes

- Lingering negative perceptions of mobile homes that are not in keeping with improvements in quality over time
- Zoning and land use restrictions that ban or make it extremely difficult to site these homes in many neighborhoods
- Market conditions that influence the demand for these homes, with land costs being a key factor
- Unique supply chain that relies on dealers not developers to provide homes
- Challenges in obtaining lower-cost mortgage financing related both to specialized nature of lenders and difficulty of titling homes as real estate

What Will it Take to Overcome These Barriers?

- Multipronged efforts are needed to address these multiple barriers
- A key starting point is education about the quality of today's manufactured homes to attract consumers and—perhaps most importantly—gain regulatory approvals
- Given the importance of local land use regulations, state action to overcome local restrictions would help—but regulations need to address design standards and not just prohibitions on manufactured housing itself
- There is a clear need for new supply chains to deliver sited and titled homes for sale in urban areas
- Financing reforms are needed to expand access to mortgage financing, reduce denial rates, and improve cost of personal loans

Preview of Upcoming Case Studies of Promising Approaches to Expanding Manufactured Homes for Entry-Level Homeownership

Case Studies

Case Study Organization	Organization Type	Market Area(s)	Primary Development Type	Zillow County Median Home Value	JCHS County Categorization
MH Advisors	For Profit	<ul style="list-style-type: none"> Hagerstown, MD Harrisonburg, VA Petersburg, VA 	Subdivision	<ul style="list-style-type: none"> \$324,000 \$347,000 \$271,000 	<ul style="list-style-type: none"> Low MH/High Price Low MH/High Price High MH/Low Price
Spark Homes LLC	For Profit	Sequin and Marion TX (San Antonio MSA)	Subdivision	\$323,000	High MH/High Price
City of Jackson MS	Local Government	Jackson, MS	Urban Infill	\$154,000	Low MH/Low Price
Habitat for Humanity LaCrosse WI	Nonprofit	LaCrosse, WI	Urban infill	\$276,000	Low MH/Low Price
Neighborhood Partnership Housing Services	Nonprofit	San Bernadino, CA	Urban Infill	\$495,000	Low MH/High Price



Homes in the Heights, Petersburg, VA



Spark Homes, Marion, TX

Preliminary Conclusions from Case Studies

- Achieving an affordable price-point for entry level homebuyers was a fundamental driver of all of these efforts
- Educating local officials and other key players is job one
- Zoning barriers and local approval processes are significant hurdles to overcome
- Site selection is a key element, impacting the cost and appeal of the developments
- Obtaining dealer licenses is a necessary step but not an onerous one—at least in the states we profiled
- Appraisal and homebuyer financing were important considerations in planning these developments to realize affordability
- All of the case studies used the CrossMod™ form to address quality and aesthetic concerns and improve access to mortgage financing to preserve affordability