

MAINE STATE LEGISLATURE

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State of Maine Housing Production Needs Study

Homes to support Mainers and Maine businesses,
now and in the future.

October 2023



GOVERNOR'S OFFICE OF
Policy Innovation
and the Future



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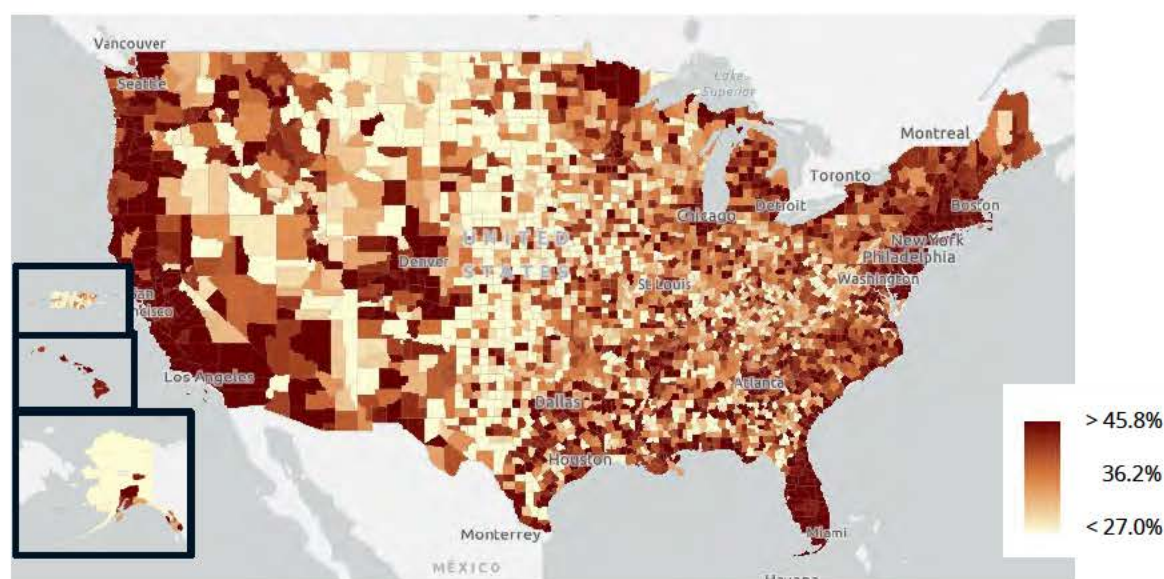


Executive Summary

Introduction

In response to a national housing crisis accelerated by the Covid-19 pandemic, policy makers are increasingly asking, *how many and what kind of homes are needed to meet the needs of our constituents and improve affordability?* The scale and nature of housing challenges varies significantly across regions and places but is driven by a primary underlying cause: housing production dropped precipitously after the Great Recession, leading to a nationwide undersupply of homes, especially at low and moderate income price points.¹ These trends were exacerbated by the pandemic through materials and labor shortages just as some places—Maine in particular—experienced a sudden influx of residents due to an increase in remote workers seeking a higher quality of life and an increase in international immigration. What was once primarily a problem for coastal cities has become a national one; almost every county in America now has significant rates of renter cost burden, among other housing challenges (Figure 1).

Figure 1: Percentage of Cost Burdened Renters by County



Source: American Community Survey 5-Year 2021

While Maine has historically had a relatively affordable homeownership market, this changed in the years leading up to the pandemic and has worsened since 2020.² Maine is also faced with an aging housing stock, leading more of the state's existing homes to sit vacant in need of reinvestment. These trends have led to a range of housing challenges for Mainers, including reduced housing quality, limited options to age in place, increased homelessness, and rising housing costs. All these issues are important to study further. However, at the most basic level, aligning housing production with population and economic growth is the foundation of a healthy housing market that offers quality homes at a price affordable to

¹ Betancourt, Gardner and Palim. (2022). Housing Insights: The U.S. Housing Shortage from a Local Perspective. Fannie Mae. <https://www.fanniemae.com/media/45106/display>

² MaineHousing Affordability Index. (2023). MaineHousing. <https://mainehousing.org/data-research/housing-data/housing-affordability-indexes>

residents. **The first step is to understand how many homes are needed to support broad affordability and availability, which lays the foundation to adopt policies to create those homes.**

Addressing housing supply challenges in Maine will require a comprehensive approach that considers both the **local regulatory changes** needed to increase housing supply through new construction and the **funding** needed to reinvest in Maine's aging homes and create new homes that are affordable to those with lower incomes, including seniors on fixed incomes, households waiting for federal work authorization, and others. Further, strategies to overcome other barriers, such as the capacity of the development and construction industry in Maine and environmental challenges, will all be necessary as part of a comprehensive approach to increase supply.³ While this will require both local and state-wide strategies, the historic hyper-local response to what is ultimately a regional problem has been one of the primary barriers in Maine and nationwide to building enough homes.

In recognition of this, the State of Maine has taken the lead on a strategy to **build new homes and reinvest in existing homes state-wide** through the passage of LD 2003 and over \$280,000,000 in affordable housing production funding since 2019. LD 2003 requires municipalities to permit a wider range of housing types and commits State financial and technical assistance for municipalities to support local and regional production targets, including through measuring regional housing production needs. LD 2003 recognizes that a data-informed approach to measuring regional and statewide housing production needs is key to a broader state-wide planning effort to increase housing production.

This Study is a key step in this process, and it aims to answer the question, **how many homes are needed in Maine now and in the future to support Mainers to have access to the homes they need, in a location that promotes economic opportunity, and at a price that ensures a high quality of life?** This Study is focused on measuring that need in alignment with the State's specific demographic and economic conditions as well as goals to ensure that Maine can sustain and grow its economy over time. This Study measures "homes" as housing units in any building type, including single family, attached housing and multifamily housing. Building and reinvesting in a diverse range of housing types to meet different household needs and price points will be crucial to meeting Maine's housing supply needs.

This Study, conducted by HR&A Advisors, was overseen by a Steering Committee representing MaineHousing, the Governor's Office of Policy Innovation and the Future (GOPIF), and the Department of Economic and Community Development (DECD), together the "Study Team", which met regularly to coordinate research planning, data collection, and priority areas of analysis.

The Study Team also solicited feedback from a Technical Working Group composed of representatives from the Department of Labor (DOL), the Maine State Economist, the Greater Portland Council of Governments, the Maine Association of Realtors, the Maine Municipal Association, and other experts.

Approach

Maine has a set of broad policy priorities that inform this Study's approach to measuring how many homes need to be built or reinvested in. The first is to have **enough homes overall to accommodate the existing demand for homes**. When there is an insufficient supply of homes, competition for the limited number of homes available drives up prices to levels that are unaffordable to many existing

³ Sturtevant and Curtis. (2023). Availability of Workforce Housing in Maine. University of Maine. https://usm.maine.edu/shaw-innovation-fellows/wp-content/uploads/sites/406/2023/05/Workforce-Housing-in-Maine_Sturtevant-Curtis_Shaw-Innovation-Fellowship-8-May-2023-1.pdf.

Mainers. A healthy housing market—one that has enough homes to accommodate existing demand across income groups—has a portion of homes that are vacant and available at any given time⁴. These available homes allow households to move about the state as they change jobs, move out of homes to start their own family, or otherwise need to relocate because of changes in their life. Right now, there are portions of the state where there are simply no homes available for a household to move into.

The second policy priority is to have enough homes **affordable, available and in the right locations to support the workforce necessary to sustain and grow Maine's economy**. The State's Economic Development Strategy focuses on the need for a workforce to support Maine's long-standing industries and to foster growth and innovation in new areas. To achieve these goals, Maine's economy requires workers to fill open positions as an increasing number of Mainers reach retirement and room for new workers to fill positions created as local businesses and the economy grow. Without enough homes for workers filling open job positions, businesses will continue to struggle and at times fail—harming the prosperity of all Mainers.

With these two goals in mind, this Study calculates both the number of additional homes needed currently to remedy **Historic Underproduction** and, by 2030, the **Future Need** to meet these policy priorities. In recognition of Maine's regional economies, Historic Underproduction and Future Need are calculated for three economic regions: the Coastal Region, comprising Cumberland, Hancock, Knox, Lincoln, Sagadahoc, Waldo, and York Counties, the Northeastern Region, comprising Aroostook, Penobscot, and Washington Counties; and the Central Western Region, comprising Androscoggin, Franklin, Kennebec, Oxford, Piscataquis, and Somerset Counties.

Other studies have quantified the need for homes in Maine, particularly for affordable rental homes. For example, the National Low Income Housing Coalition (NLIHC) has estimated a shortage of 22,300 affordable and available rental homes for households making at or below 50% of Area Median Income (AMI) and mostly for extremely low income households. While the State of Maine Housing Production Needs Study considers housing need at the lowest income levels, the primary focus is on measuring overall production needs for both renters and homeowners across the income spectrum in Maine, incorporating the demand for seasonal homes, the need for additional workers, and the recent influx of higher income households to Maine, all of which significantly impact the availability and price of homes in Maine. Different approaches can be used together to understand different elements of housing need in the state.

This Study does not, however, detail the specific physical typologies of homes needed to support different populations including the elderly, asylum-seekers and refugees, those experiencing homelessness, and different household types more broadly. It is important for the State and municipalities to take into account local population needs and make regulatory and funding decisions accordingly, including by reducing regulatory barriers to building the types of homes that households need and securing funding for homes that can support populations with the highest need. Local planning should consider how different housing types, including single family, attached and multifamily rental and for-sale homes, can support availability at the price points needed while also considering local context.

Ultimately, setting production targets is a process that will need to account for regional variation in demographic trends, economic development needs, and existing constraints on housing development.

⁴ Vacant and available homes do not include vacant homes that are not currently available for full-time residence, whether due to disrepair, seasonal use, foreclosure, or other factors.

This Study provides analysis to help guide that process (Figure 2). As local planning follows, local adjustments to these targets should be balanced with the likely impact on the availability and affordability of homes for existing Mainers and the economic health of the state. These production targets will also need to be monitored over time as economic and demographic conditions change and as municipalities take steps to meet these targets. For more information about the Study approach, see page 12.

Figure 2: Setting Housing Production & Reinvestment Targets



Key Findings

While trends vary across the state, homes are becoming less affordable and harder to find in Maine. There are demand-side drivers, including sudden in-migration and declining labor force participation amongst Maine’s aging population, and supply-side drivers, including low housing production and an aging housing stock, that are broadly driving these trends.

Demand-Side Drivers

Recent demand-side drivers, including **sudden in-migration** during the height of the Covid-19 pandemic and a **declining labor force from aging households**, are impacting the number of homes Maine needs. Maine experienced increased in-migration from out of state in recent years, concentrated in York and Cumberland Counties but distributed across the state. These in-migrants have higher incomes on average than existing Mainers and are able to pay more for homes. Maine has also experienced a surge in households seeking asylum, who generally have very low incomes in the short-term as they await federal work authorization.

At the same time, Maine’s population is aging, resulting in a declining labor force. This impacts both the kinds of homes needed to accommodate a retiring population and homes needed to enable employers to attract more workers to the state to fill open job positions. Over the past decade, Mainers 55 and over have grown as a share of the population, and labor force participation among this group has significantly declined since 2017 as the group gets closer to retirement age. As a result, overall labor force

participation has not recovered post-pandemic as older workers retire, even as labor force participation amongst younger groups has remained steady.

In order to fill the job vacancies created by increased retirement, Maine will need to bring in workers from out-of-state, who will in turn require additional homes to live in.⁵ Maine currently has a very high share of unfilled job positions, with many parts of the state having more vacancies than available workers. Many of these jobs skew somewhat lower income, reflecting a growing mismatch between what many new workers could afford and the price of Maine's available homes.

Supply-Side Drivers

These demand-side drivers are exacerbated by supply-side challenges, namely Maine's **aging housing stock** and **low housing production** over the past decade.

As the housing stock ages, the share of homes that are unavailable to be occupied due to poor condition has increased. As these homes deteriorate over time, the inventory of homes can gradually decline through demolition. There is limited data to quantify the annual loss of homes through demolition or disrepair, however, individual towns and localities may have the information or begin to gather the information through demolition permits to track the loss of homes over time. Ultimately, this data will need to inform local production and reinvestment targets.

Maine has also had **low housing production relative to job growth across all regions**, but particularly in the Coastal Region, which is a key measure of housing supply issues. Both the Central Western and Northeastern regions have seen total housing inventory decline slightly since 2016. The state has also seen a decline in rental homes across all regions, which runs counter to the trend in almost every other housing market in America and is likely exacerbating Maine's workforce challenges, as workers in entry-level and lower wage positions often require rental housing options.

Finally, **the consistently high demand for seasonal homes means that Maine has historically required a higher number of homes relative to the number of year-round residents and available jobs than states with lower seasonal demand.**

Availability and Affordability

As a result of low production, reduced rental housing and an aging housing stock, the **availability of homes is declining** and **prices are increasing**, making it very difficult to access and afford homes and fill job openings in some parts of the state. Not all vacant homes in a housing market are available, as some vacant homes might be reserved as a seasonal home, in foreclosure, in disrepair or otherwise unavailable to the market for occupancy. True "availability" of the housing stock is defined as the vacant units that are ready and available for a household to move into. In a healthy housing market, typically about 5% of homes are vacant and available for use at any given time—allowing for housing choice flexibility and

⁵ Maine's 2020 – 2029 Economic Development Strategy also aims to increase the labor force participation rate of groups with historically lower participation, such as women and people with disabilities. However, the plan acknowledges that in order to support Maine's economic growth, additional workers will also have to come from out of state.

movement. **Across Maine, the share of homes vacant and available has fallen to an average of 2.3% statewide.**

Homeownership in Maine is becoming increasingly unaffordable. Under a standard definition set by the U.S. Department of Housing and Urban Development (HUD), homes are considered affordable if the rent or cost of ownership⁶ is less than 30% of household income. Until recently, the cost of purchasing a home in Maine was such that a household earning the median income could afford the mortgage on the median home value. In recent years, however, the demand- and supply-side drivers described above, in addition to macroeconomic trends such as rising interest rates, have caused a significant divergence between the income needed to purchase a home in Maine and the actual median income of Mainers; **households now need to make over \$100,000 annually to afford the median home price** As a result, buying a home in Maine now is not affordable for the majority of Mainers.

Renters in Maine are also facing affordability and availability challenges. Maine has seen a decline in renter-occupied units across the state since 2016, and the majority of renter households below 60% of Area Median Income (AMI)⁷ in Maine were **cost burdened** (paying over 30% of household income in rent) in 2021, with the highest rates of cost burden in the Coastal Region. Although renter cost burden rates remained relatively consistent from 2016-2021 (the most recently available data), rents and homes prices increased significantly in 2022 and 2023 and exceeded wage increases, which has likely increased cost burden rates since 2021.

Measuring Housing Need

To address these needs and meet the State's policy priorities, Maine needs approximately 38,500 homes to remedy historic underproduction and will need an additional 37,900 to 45,800 homes to meet expected population growth and household change by 2030 (Table 1). Maine can meet this goal both through the **production of new homes** and **reinvestment in existing homes** that are vacant or unavailable due to disrepair or foreclosure.

Table 1: Historic Underproduction and Future Need by Region

<i>Region</i>	<i>Historic Underproduction</i>	<i>Future Need (2021 - 2030)</i>	<i>Total</i>
<i>Coastal</i>	21,200	24,200 - 28,000	45,400 - 49,200
<i>Central Western</i>	13,000	9,700 - 11,700	22,700 - 24,700
<i>Northeastern</i>	4,300	4,000 - 6,100	8,300 - 10,400
<i>Maine</i>	38,500	37,900 - 45,800	76,400 - 84,300

Historic Underproduction: The Study Team defines historic underproduction as the deficit of available homes for the existing population (the availability deficit) plus the deficit of homes for workers needed to

⁶ Includes mortgage, property taxes, and insurance.

⁷ See Appendix Page 5 for explanation of Area Median Income calculations.

increase the workforce to support Maine's existing economy (the jobs : homes deficit)⁸. For more information about how the Study Team measured historic underproduction in Maine, see page 40.

Future Need: The Study Team defines future need as the number of homes needed to support Maine's projected population and household change by 2030, while accounting for Maine's high demand for seasonal homes. For more information about how the Study Team measured future need in Maine, see page 52.

To put this need in context, Maine's total housing inventory in 2021 was about 737,800 homes. Increasing the number of homes to meet historic underproduction alone (38,500 additional homes) would constitute about a 5% increase in total homes across the state. To meet both current and future need by 2030, Maine would need to add 8,500 to 9,300 homes each year (Table 2). Currently, about 4,800 homes are permitted per year in Maine, and meeting this annual need would require a 77% to 94% increase in the number of permits (with geographic variation). It is important to note that annual building permits are not an exact measure of housing production, as not all permitted homes are built. The necessary increase in housing production may be larger than current permitting suggests and will vary based on the annual loss of homes in different regions.

Table 2: Annualized Production Needs Compared to Annual Building Permits by Region

	<i>Total Annual Production Need</i>	<i>5-year average (2016 - 2021)</i>	<i>% Change in Permits</i>	<i>Net Change in permits</i>
<i>Coastal</i>	5,100 – 5,500	3,400	50% - 62%	1,700 – 2,100
<i>Central Western</i>	2,500 – 2,700	1,000	150% - 170%	1,500 – 1,700
<i>Northeastern</i>	900 – 1,100	400	128% - 175%	510 - 700
<i>Maine</i>	8,500 – 9,300	4,800	77% - 94%	3,700 – 4,500

The number of additional homes needed varies across Maine's regions. Much of it is concentrated in the Coastal and Central Western Regions, which together need 34,200 homes to make up for historic underproduction, and another up to 39,700 homes to meet future need. The Northeastern Region, by contrast, needs about 4,300 additional homes to make up for historic underproduction and meet the economic needs of the region and another 4,000 to 6,100 homes to meet future need by 2030.

Even in places where overall population is aging and declining, there is still need for housing production and reinvestment; in fact, household formation can increase in these circumstances (children of an aging population move into their own homes and some existing households split up). For example, while Aroostook, Piscataquis and Somerset Counties are all projected to see a modest total population decline by 2030, all of those counties will still see a net gain in households in that time period as well as a housing stock that continues to age, requiring additional homes and reinvestment. Further, as these regions face a declining workforce, new homes at affordable price points will be essential to attracting workers to the region and ensuring that existing younger households can stay.

⁸ The "availability deficit" measures the additional homes needed to create a healthy level of availability in the housing market, with "true availability" representing homes that are vacant and available to live in (defined as For Sale and For Rent in the American Community Survey).

Income Distribution

In addition to the number of homes that Maine needs to sustain and grow its economy, it is important to measure the price of homes needed to ensure that households hoping to work or age in place in Maine can afford them. The Study Team created a sample income distribution by allocating the availability deficit based on the income distribution of existing households (Table 3) and the jobs : homes deficit on the expected household income distribution of wages from open job listings (Table 4).

Table 3: Allocation of Availability Deficit Based on Existing Household Income Distribution⁹

<i>Household Income</i>	<i>Coastal</i>	<i>Central Western</i>	<i>Northeastern</i>
Regional Totals	9,400	4,900	2,300
<i>Less than 20K</i>	1,100	780	420
<i>20K - 35K</i>	1,000	760	380
<i>35K - 50K</i>	1,000	730	320
<i>50K - 75K</i>	1,700	880	410
<i>75K - 100K</i>	1,400	650	290
<i>100K - 150K</i>	1,700	690	290
<i>150K+</i>	1,500	410	190

Table 4: Allocation of Jobs : Homes Deficit Based on Estimated Household Wages of Open Job Listings¹⁰

<i>Household Income</i>	<i>Coastal</i>	<i>Central Western</i>	<i>Northeastern</i>
Regional Totals	11,900	8,100	2,000
<i>Less than 20K</i>	70	50	10
<i>20K - 35K</i>	660	360	170
<i>35K - 50K</i>	1,230	640	210
<i>50K - 75K</i>	2,000	1,400	410
<i>75K - 100K</i>	2,300	1,600	380
<i>100K - 150K</i>	3,200	2,300	470
<i>150K+</i>	2,500	1,700	350

⁹ Income Distributions are allocated based on regional numbers and rounded to the tens for counts in the hundreds, and hundreds for counts over a thousand. Due to rounding, numbers may not sum exactly to regional or state numbers.

It is important to note that low- and moderate-income households are more constrained in their choices and more likely to pay more than they can afford for a home. **Because of that, policy makers should emphasize strategies to increase affordable housing production for low- and moderate-income households** in addition to strategies to increase the supply of homes more broadly. At the local level, this may include weighting the income distribution of needed homes more heavily towards low- and very low-income populations to account for this need.

Geographic Distribution

Across regions, individual jurisdictions are contributing more or less to housing demand based on job growth, demographic and migration trends, and other factors, including the existing inventory of available housing and the share of seasonal homes.

To measure local contributions to housing demand, the Study Team weighted the allocation of regional need to the county level by both population share and job share of each county. Weighting allocation by population and jobs helps ensure that housing to address the State's historic underproduction is being added in places where jobs are, both to support households in living close to where they work and also to ensure that towns and cities that are growing economically are also accommodating the population needed to support that growth. This avoids issues of decreasing affordability when housing is not provided where job growth exists, and unnecessary development in areas where there may not be as significant job or population growth.

There are many alternative ways to allocate housing to more granular geographies across Maine, many of which would incorporate unique criteria specific to certain areas of the State.

Setting Production Targets

Meeting this housing need will require Maine to **set housing production and reinvestment targets** that address both historic underproduction and disinvestment and account for future need. The next step in the process will be to set housing production and reinvestment targets at the local level and to consider the different housing typologies that can support housing production across the income spectrum. To move from the regional level to the local level will involve consideration of local obstacles such as available infrastructure, development capacity and other factors. It will also involve dialogue among communities about where and how to accommodate growth and target reinvestment within the region.

Ultimately, creating enough homes in Maine is foundational to the wellbeing of *all Mainers* and can only be achieved if the State and federal government, municipalities and the private sector work together on an ongoing basis. This will require **evaluating important metrics**, such as availability rate, housing production, cost burden, job availability, housing loss and others over time and **adjusting housing production and reinvestment targets** to adapt to changing conditions.

In order for stakeholders to monitor these changing conditions and track progress towards local housing production targets, the State will be providing an online data dashboard of baseline housing conditions at the state, county, and municipal level that will be updated on a periodic basis. Moving forward, improved collection of both building permitting and demolition data, as well as continuous tracking of vacancy trends, will also be critical for monitoring new development. For more information on evaluation and implementation, see page 58.

Study Approach

Introduction

There are many different policy makers, planners, organizations, and researchers who are already working to understand housing needs in Maine, deliver programs and services, and plan for current and future housing needs. This Study involved extensive engagement with state and regional experts and stakeholders to inform its approach and methodologies.

This Study, conducted by HR&A Advisors, was overseen by a Steering Committee representing MaineHousing, the Governor’s Office of Policy Innovation and the Future (GOPIF), and the Department of Economic and Community Development (DECD), together the “Study Team”, which met regularly to coordinate research planning, data collection, and priority areas of analysis.

The Study Team also solicited feedback from a Technical Working Group composed of representatives from the Department of Labor (DOL), the Maine State Economist, the Greater Portland Council of Governments, the Maine Association of Realtors, the Maine Municipal Association, and other technical experts. Members of the Working Group provided ongoing input on data sources, analytical approaches—including consistency with existing methodologies used by State agencies—preliminary findings, and methodology development for measuring housing production and reinvestment needs. In addition, the Study Team conducted a series of interviews regarding the housing needs of special populations and the role of housing in supporting economic development across the state with organizations including:

- Maine Immigrants’ Rights Coalition
- Jewish Community Alliance of Southern Maine
- Catholic Charities Maine
- Maine Immigrant and Refugee Services
- Island Institute
- Island Housing Trust
- Bath Housing
- WishRock Housing Group

Interviewees described a broad range of opportunities and challenges in Maine’s housing market. Emergent themes included the need for housing to support Maine’s aging population while welcoming new households to help support Maine’s economy; concerns about the impact of Maine’s seasonal housing and short-term rentals on the available year-round stock; the challenges of providing homes for the growing number of asylum seeker and refugee populations, and the difficulties faced by employers in filling open job positions without available workforce housing.

Crucially, these discussions highlighted **key State economic development goals** that informed the Study Team’s methodology to measure housing production and reinvestment needs—namely, to encourage and enable communities **to plan for housing to support a high quality of life for all Mainers while also supporting economic stability and growth in the state.**

Background Research and Existing Studies

The Study Team conducted a review of existing studies and plans to understand previous research on housing challenges and opportunities in Maine. The National Low Income Housing Coalition (NLIHC) has estimated a shortage of over 22,000 rental homes, however this shortage is specifically for low-income renters, suggesting the overall number for all income groups is much higher.

A recent study by researchers at the University of Southern Maine found that Maine is short 20,000 – 25,000 homes for existing extremely low-income Maine residents, as well as 10,000 – 20,000 homes that are necessary to attract enough workers to fill open job positions.¹¹ In total, the study estimates Maine has a shortage of 30,000 – 40,000 new homes currently.

When considering broader housing needs beyond housing supply, housing studies at the municipal level¹² echo common themes, including:

- Lack of homes necessary to accommodate an aging population while creating homeownership opportunities for younger households.
- Aging housing stock in need of repair and reinvestment.
- Lack of affordable housing for low and middle-income households, exacerbated by undersupply of homes, and (anecdotally) increased housing demand from out-of-state in-movers.
- Difficulty filling open job positions due to limited housing availability.
- Housing located far from jobs and transit, resulting in long commutes and high household travel costs.
- Concerns about a rise in seasonal housing and short-term rentals putting pressure on the housing stock within certain tourism-heavy communities.

This Study intersects with these issues in certain areas, including by measuring the number of homes needed to support healthy availability in the housing market overall and a healthy job market. This Study builds on previous work by considering the regional need for homes across the income spectrum as well as the need to meet demand for seasonal homes and homes for recent higher income in-migrants, both of which significantly impact the availability and price point of homes for low and moderate-income residents. This Study does not, however, detail the specific physical typologies of homes needed to support different populations including the elderly, asylum-seekers and refugees, those experiencing homelessness, and different household types more broadly. It is important for the State and municipalities to take into account local population needs and make regulatory and funding decisions accordingly, including by reducing regulatory barriers to building the types of homes that households

¹¹ Sturtevant and Curtis. (2023). Availability of Workforce Housing in Maine. University of Maine. https://usm.maine.edu/shaw-innovation-fellows/wp-content/uploads/sites/406/2023/05/Workforce-Housing-in-Maine_Sturtevant-Curtis_Shaw-Innovation-Fellowship-8-May-2023-1.pdf.

¹² Crane Associates and EPR. (2022). City of South Portland Housing Needs Assessment and Strategy. [https://go.boarddocs.com/me/sport/Board.nsf/files/CF9GZQ46438A/\\$file/Att.%201%20-%20Final%20Housing%20Report_05.20.2022.pdf](https://go.boarddocs.com/me/sport/Board.nsf/files/CF9GZQ46438A/$file/Att.%201%20-%20Final%20Housing%20Report_05.20.2022.pdf).

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Camoin Associates and The Musson Group. (2018). Housing Needs Analysis and Assessment: Mount Desert Island, ME. Island Housing Trust. <https://static1.squarespace.com/static/569fba9076d99cc6c04e5005/t/5cc204b16f3d150001a80f8a/1556219104894/IHT-Housing-Study-2018.pdf>.

need and securing funding for homes that can support populations with the highest need. Local planning and studies should consider how different housing types, including single family, attached and multifamily rental and for-sale homes can support availability at the price points needed while also considering local context.

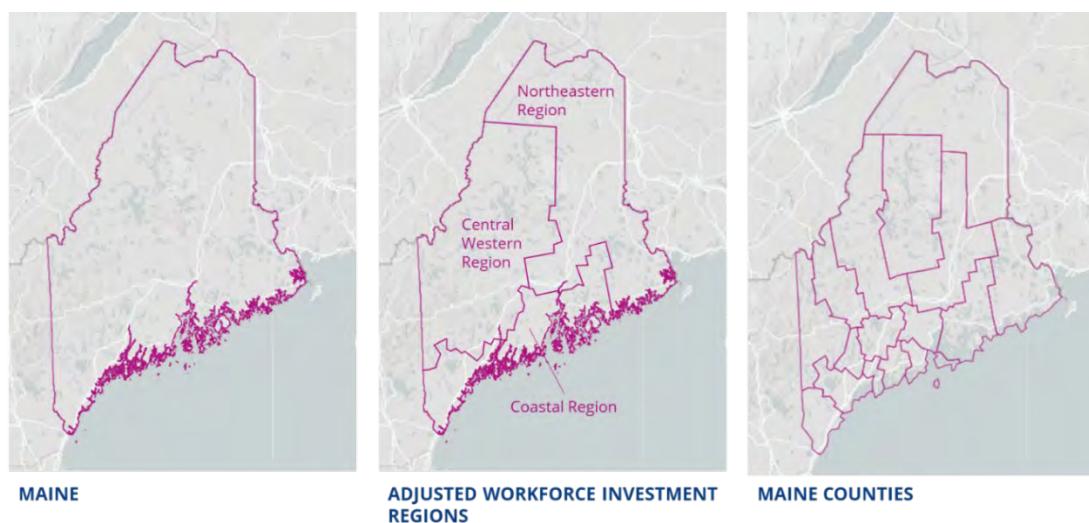
The Study Team reviewed housing production studies across the country to compare how different methodologies can be used to accommodate important local economic and housing market trends in Maine. In California, regional goals incorporate population, vacancy rates, overcrowding, cost burden, and replacement rates, and are allocated to the municipal level by regional councils of governments (COGs). Similarly, Oregon sets regional targets incorporating projected need, historic underproduction, and homes for people experiencing homelessness based on population and vacancy rates. Massachusetts, rather than using regional metrics, sets a goal of 10% affordable housing for each municipality. For more information on national production goal methodologies, see Appendix Page 3.

Determining Geographic Boundaries

Given the alignment between State economic development goals and housing needs, the Study Team strove to align the geographic boundaries of this study with Maine's economic geographies. Maine's housing and labor markets are unusually regional— Maine has the longest median 1-way commute in miles in the United States, with the median commuter traveling close to 10 miles each way.¹³ As a result, this Study uses regional geographies when measuring housing need in Maine relative to jobs but also points to the need for new homes that can support Mainers to live closer to their jobs.

In recognition of this, the Study Team selected the Department of Labor's three Workforce Investment Regions as the highest geographic level for the Study (Figure 3).¹⁴

Figure 3: Maine Workforce Investment Regions and Counties



¹³Commutes Across America: Where Are the Longest Trips to Work? (2018). Streetlight Data.

https://www.streetlightdata.com/wp-content/uploads/2018/03/Commutes-Across-America_180201.pdf

¹⁴ In order to align the Workforce Investment Region boundaries with Census data used to study current housing needs in Maine, the Study Team reallocated Hancock and Piscataquis Counties from the Northeastern Region to the Coastal and Central Western Regions, respectively.

The Coastal Region, consisting of Cumberland, Hancock, Knox, Lincoln, Sagadahoc, Waldo, and York Counties and encompassing the greater Portland area, is the most heavily populated of the three regions and is currently home to 55% of the state's jobs in 2023¹⁵. The Central Western region consists of Androscoggin, Franklin, Kennebec, Oxford, Piscataquis, and Somerset Counties, and is home to the cities of Augusta, Lewiston and Auburn. The Northeastern region is the smallest and most rural of the three regions, consisting of Aroostook, Penobscot, and Washington Counties. For a detailed list of towns, counties and cities in each region, see Appendix Page 1.

¹⁵ Defined as total employment (Bureau of Labor Statistics, 2023) added to total open job listings (Job Openings and Labor Turnover Survey, 2023).

What is happening in Maine's housing market now?

Overview

Before measuring housing production needs, the Study Team explored existing conditions and trends in Maine's housing market to understand key demographic, economic and housing inventory dynamics that influence housing need. These conditions and trends, summarized below, highlight Maine's unique economic, demographic and housing market conditions, all of which inform both the need for more homes in Maine and the opportunity for homes to better support economic development in the state.

Adequate housing supply to meet demand is the foundation of affordability in any housing market, including Maine's diverse regional housing markets (Figure 4). As such, it is important to understand both housing supply and housing demand trends to ensure that enough homes are created and preserved in Maine that are the type and price that households need. This study explores both demand-side drivers of housing need (demographic and economic change) and supply-side drivers (housing age, type, prices and production) to arrive at housing production and reinvestment needs. While trends vary across the state, recent demand-side trends, including sudden in-migration and declining labor force participation, are exacerbated by Maine's aging housing stock and low overall housing production over the past decade. As a result, the availability of homes is declining and prices are increasing, making it very difficult to access and afford homes in some parts of the state.

The following sections explore these trends in greater detail and illustrate how these trends impact Maine's housing supply needs.

Figure 4: Supply and Demand of Homes



*In a healthy housing market, **housing demand**, the number of households by income level, size, and type, is equivalent to **housing supply**, the number of suitable homes for households, with some additional availability (vacancy). When housing demand exceeds housing supply, more homes are needed to ensure availability and affordability.*

Demand-Side Drivers of Housing Need

Overall population and population growth determines how many people presently need homes and how many people will need homes in the future. The **type** and **size of households**, in combination with population growth, determines how many homes and what types of homes are needed to accommodate the population and their household needs. Finally, **household income** determines how much money households can put towards housing costs each month, impacting the needed price point of homes.

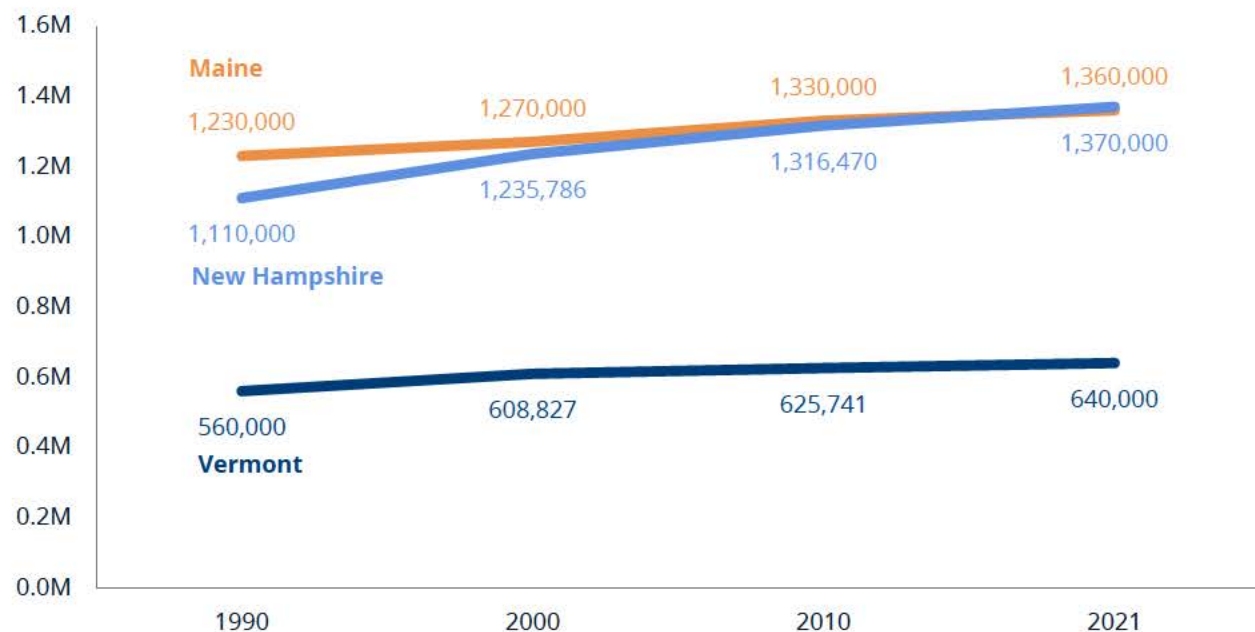
Each of these local factors is influenced by both regional and national trends, and changes in any of these elements will impact the amount, type and price point of homes needed in a housing market. **Maine has experienced recent demand-side shocks**, including the following:

- **Sudden in-migration** during and after the Covid-19 pandemic, generally from higher income households (in-migrants had an average household income of \$88,000 compared to \$78,000 of existing residents.¹⁶
- A **surge in asylum-seekers**, who generally have very low incomes in the short term.
- A **declining labor force** as the State's population ages, impacting both the kinds of homes needed to accommodate the population and employers' ability to fill open job positions.

Population Change

Historically, Maine has experienced modest overall population growth, with a 10.5% increase in population from 1990 to 2021. This growth has lagged other northeastern states; New Hampshire grew by 23.7% and Vermont by 14% in this time period (Figure 5).

Figure 5: Comparative State Population Growth, 1990 – 2021

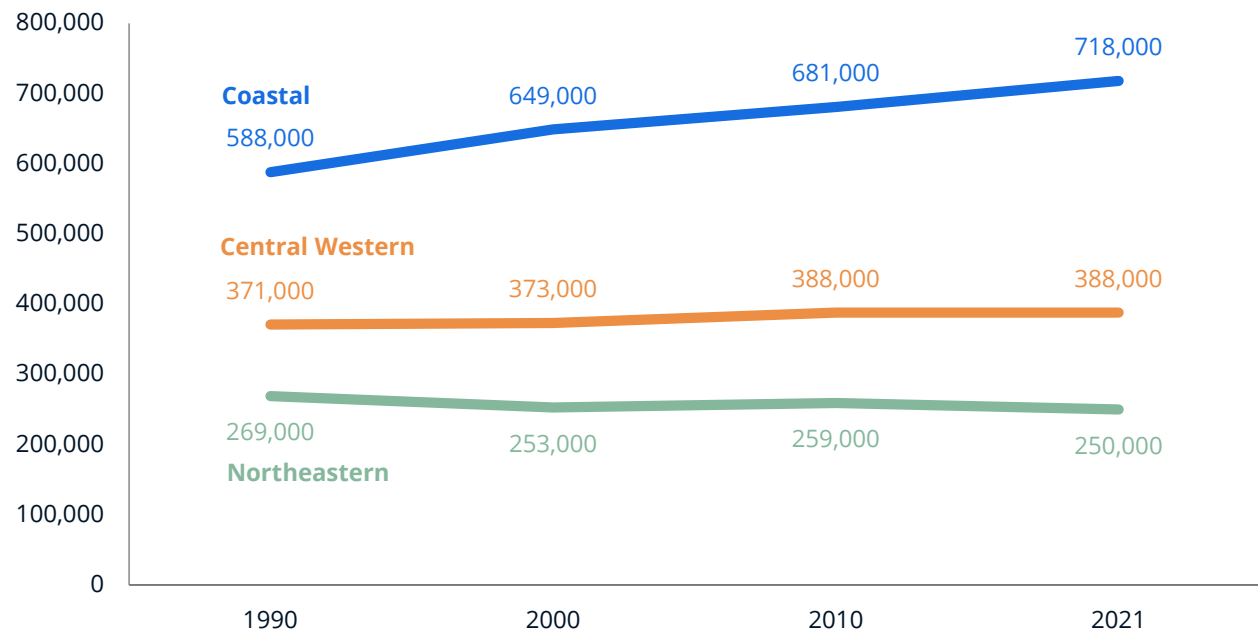


Source: Decennial Census 1990 – 2021

While the State has grown overall, population change has varied across the state. The Coastal Region, where most of the state's population is concentrated, has grown by 22.2% since 1990. Much of the Coastal Region's growth has been driven by Cumberland and York Counties, which each grew by nearly 7% from 2010 to 2021 alone. By contrast, the Central Western Region only grew by 4.6% and the Northeastern Region declined by -6.8% in that time period (Figure 6).

¹⁶ Maine's average household income of \$78,000 is higher than the median household income of \$63,200, which is used as a reference point throughout the rest of this report.

Figure 6: Population Growth by Region, 1990 – 2021



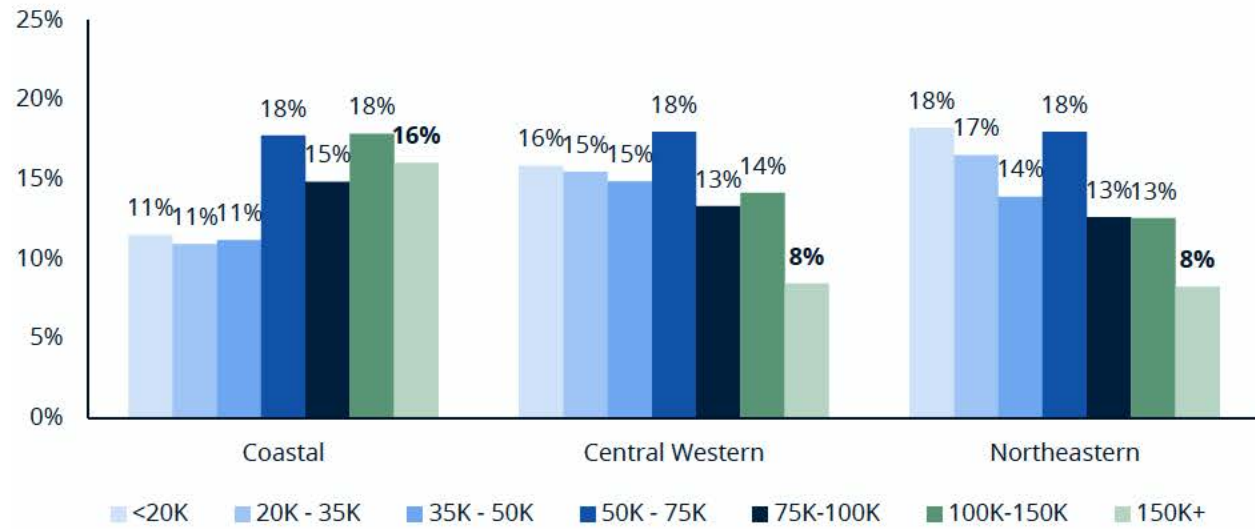
Source: Decennial Census 1990 – 2021

Income Distribution

Maine's households are somewhat lower income than its neighboring states, with a median household income of \$63,200 relative to New Hampshire's median income of \$83,400 and Vermont's median income of \$69,000. 58% of households earn less than \$75,000, slightly more than the 54% of households earning under \$75,000 in the United States as a whole.

Income distribution varies by region, however, with higher incomes in the Coastal Region in particular. 16% of households in the Coastal Region earn more than \$150,000, relative to 8% in the Central Western and Northeastern Region. The Northeastern Region has the lowest incomes, with almost 50% of households earning less than \$50,000 annually (Figure 7).

Figure 7: Income Distribution by Region, 2021



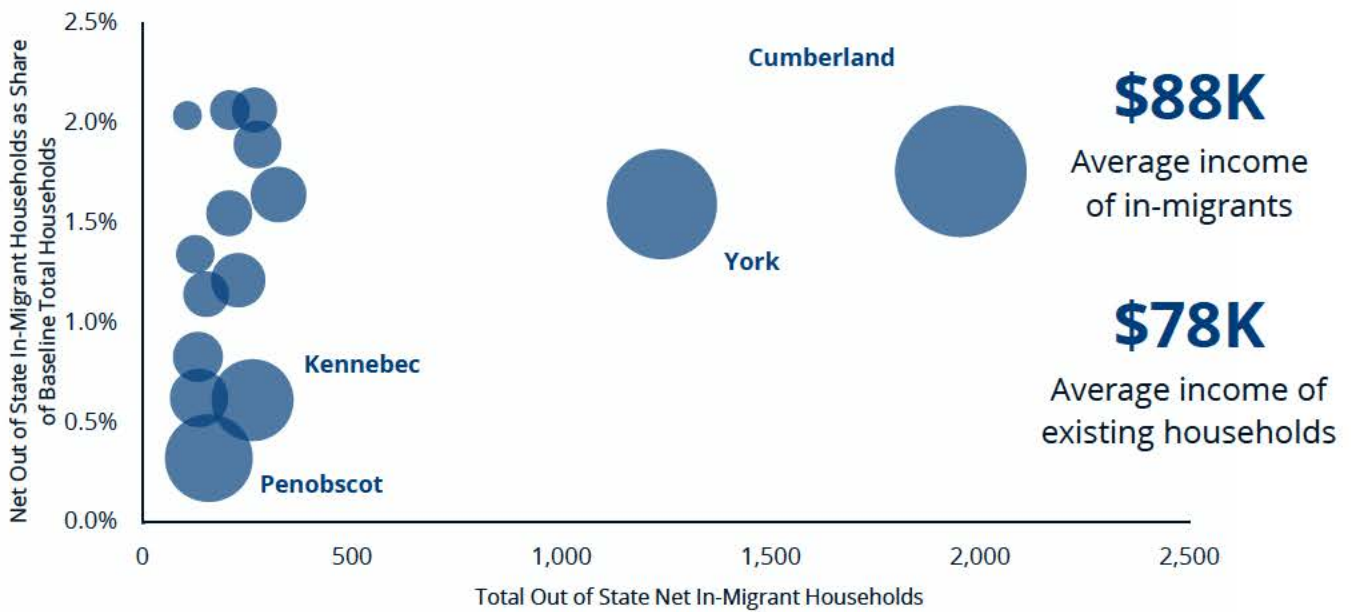
Source: American Community Survey 5-Year 2021

Recent In-Migration

Recently, significant in-migration has quickly increased the demand for homes in Maine. This is particularly concentrated in York and Cumberland Counties, which respectively received 1,200 and 2,000 in-migrant households in 2020 alone (a little under 2% of their baseline total households). On average, the recent in-migrant households have somewhat higher incomes than existing households, with an average income of \$88,000 compared to a median income of \$63,200 for existing households¹⁷. This has increased demand for housing across the income spectrum, but particularly at higher price points (Figure 8).

¹⁷ IRS data only provides average income of in-migrants, rather than median income, preventing direct comparison to Maine's median income. The average income of Maine's existing residents is \$78,000.

Figure 8: In-Migration Versus Baseline Population by County, 2020



Source: Internal Revenue Service 2021, American Community Survey 5-Year 2021

Bubble Size = Baseline Population

Demand at the lowest income levels is also being impacted by a recent uptick in households seeking asylum, who generally need short-term housing support. Since 2018, the number of individual notice-to-appear cases filed annually in Maine (a proxy for the total number of asylum seekers arriving in Maine) has risen from under 400 to nearly 3,400 as of August 2023 (Figure 9).

Figure 9: Total Individual Notice-To-Appear Cases Filed, 2001 - 2023



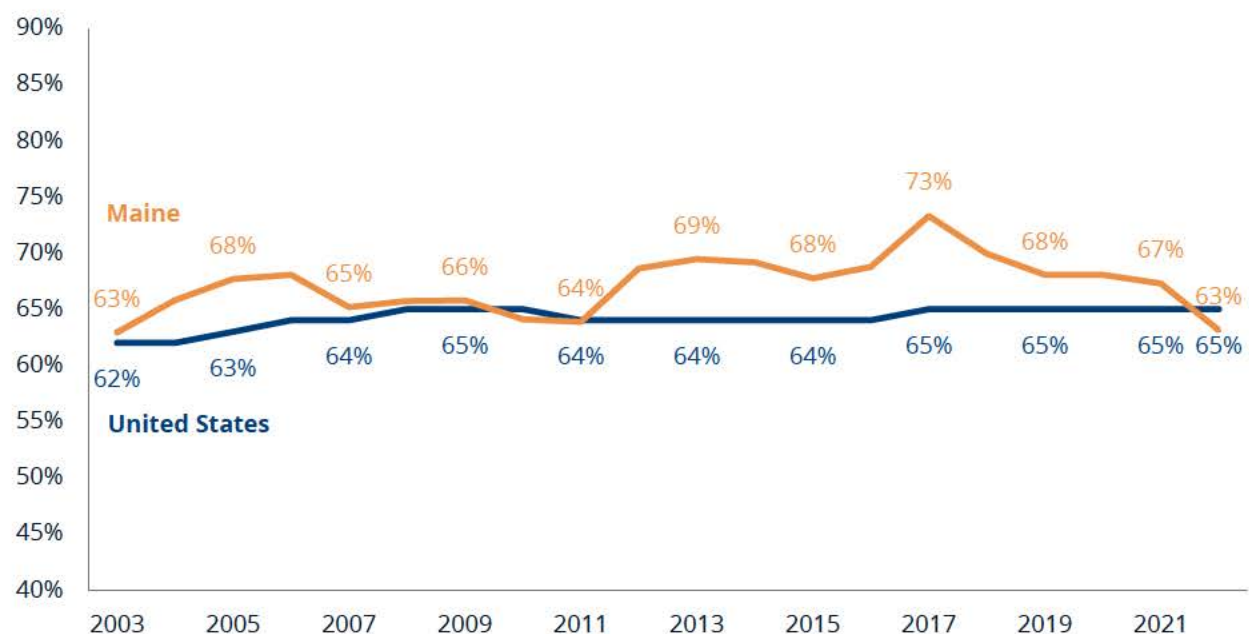
Source: TRAC New Proceedings Filed in Immigration Court; Notice to Appear Deportation Cases 2001 - 2023

Facing short-term restrictions on employment by the Federal Government, households seeking asylum often rely on Maine's General Assistance Program to find housing in the private market or utilize subsidized housing, which is difficult and costly to build quickly. Locations where housing is more affordable may be far from public transportation, a particular barrier for households without access to a car, and far from the support of existing refugee and asylum seeker communities. In addition, a high proportion of larger households arriving—data from the Office of Maine Refugee Services (OMRS) suggests that asylum seekers have an average household size of 4 people compared to 2.6 in the state on average—can make it difficult to find affordable homes that allow families to stay together.

Labor Force Participation

Maine has an aging population, which also means an aging labor force. Since 2011, Mainers 65 and over have grown from 16% to 21% of the population. This is significantly higher than in the United States overall (16%) and higher than all neighboring states, including Vermont (20%), New Hampshire (18%) and Massachusetts (17%). Until recently, Maine had significantly higher labor force participation amongst 55 – 64 year-olds relative to the United States as a whole, peaking at 73% in 2017. The decline of this labor force participation rate, which accelerated during the Covid-19 pandemic and does not track with national trends for this age group, is already impacting the health of Maine's economy as businesses find it increasingly challenging to fill open job positions (Figure 10).

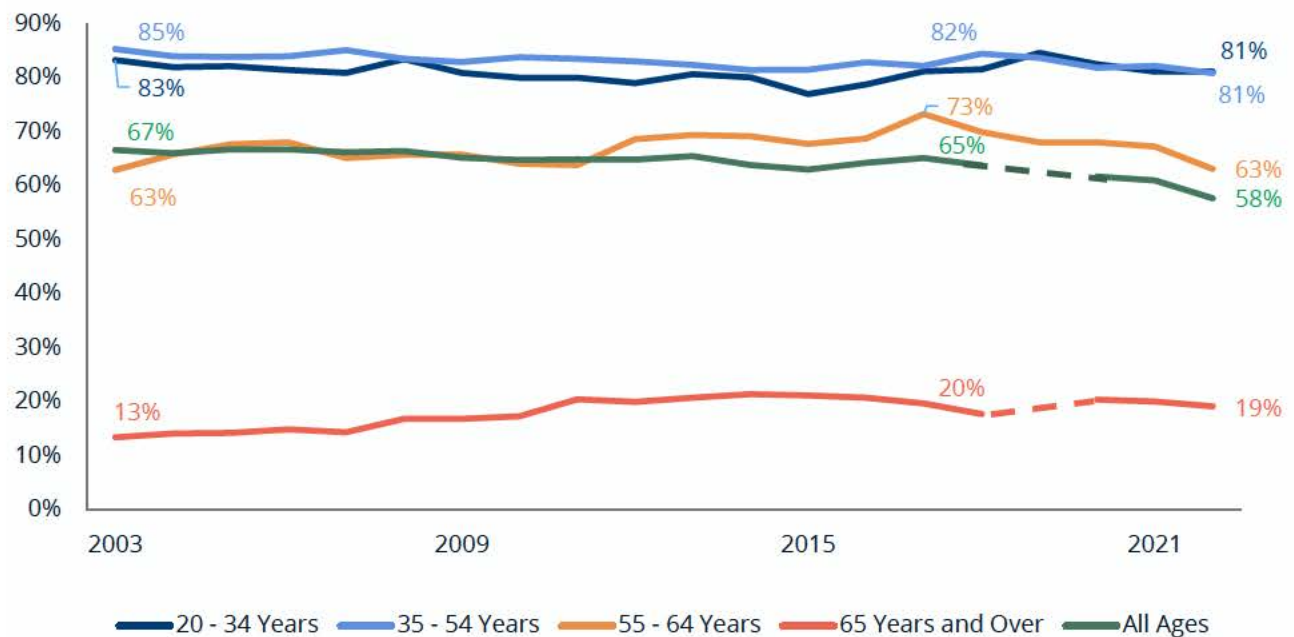
Figure 10: Ages 55 - 64 Labor Force Participation, Maine vs. United States, 2003 - 2022



Source: Bureau of Labor Statistics Local Area Unemployment Statistics 2003 – 2022

The decline in labor force participation amongst older Mainers suggests pandemic-driven early retirements, while labor force participation amongst younger groups has remained relatively consistent (Figure 11). As a result, Maine's overall labor force participation has not recovered to pre-pandemic levels, in contrast with the national labor force participation rate, which has largely recovered.

Figure 11: Maine Labor Force Participation by Age, 2003 – 2022



Source: Bureau of Labor Statistics Local Area Unemployment Statistics 2003 – 2022

Note: No data in 2019 for All Ages and 65 Years and Over.

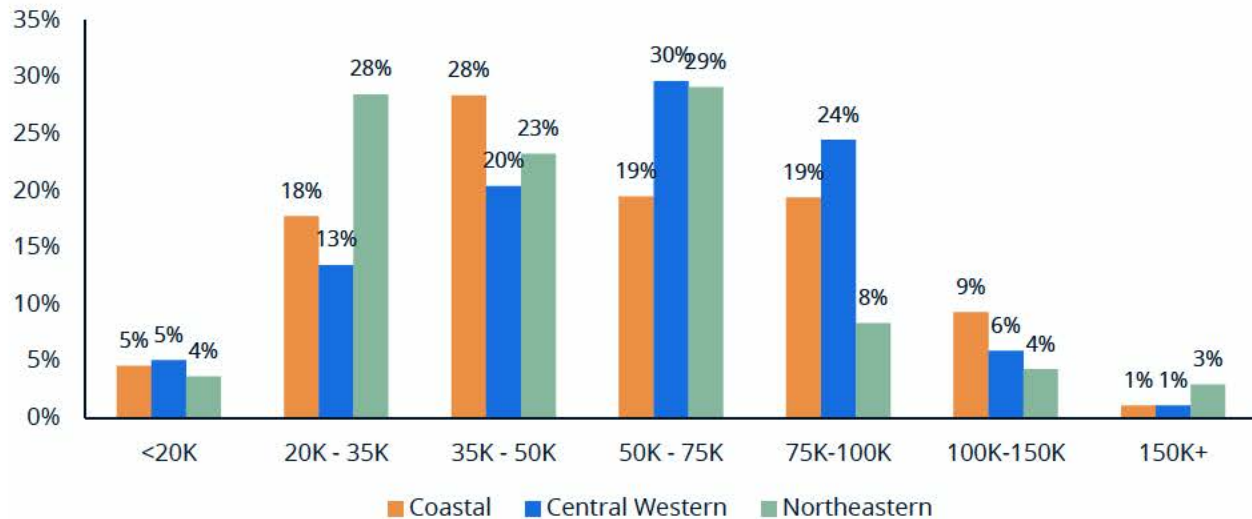
This decline in labor force participation for older adults, as well as Maine’s aging population more broadly, has contributed to a need for additional households to support Maine’s existing economy.

As of May 2023, Maine had 46,000 unfilled job positions, just over half of which are estimated to be located in the Coastal region¹⁸.

Unfilled job listings skew toward lower paying positions. In the Northeastern and Coastal regions, over 50% of job listings pay less than \$50,000 annually (Figure 12). This suggests that in-migrants, who are generally higher income, are not necessarily filling these positions at high rates as they move to the state. It also creates a large and growing mismatch between the home price that workers can afford and the price of available homes.

¹⁸ HR&A analysis of Bureau of Labor Statistics Job Openings and Labor Turnover Survey, 2023.

Figure 12: Job Listing Wages by Region, 2022 - 2023



Source: Lightcast 2023

There has been a dramatic uptick in the “Unclassified” category, which includes new employer accounts from out of state that have not yet been processed by the State Department of Labor in their Quarterly Census of Employment and Wages. This may be a reference to the increase in remote workers, but further study is needed to understand the increase in remote work in Maine and the impact on wages.

The result of these economic and demographic trends is that the ability to pay for higher-priced homes is increasing for some segments of the population while others struggle to afford costs in an increasingly constrained market. Existing residents who are not actively part of the workforce or who have low or moderate wages (particularly those earning less than 80% of AMI) are competing in the same housing market. The Coastal Region is particularly impacted by this increased demand by higher wage households, but this region has also seen an influx of households seeking asylum who are in need of much lower cost housing options. Without adequate increased housing supply to meet this rising demand at different price points, Mainers are seeing reduced availability and affordability across all regions, as described in further detail below.

Supply-Side Drivers of Housing Need

Housing supply is influenced by **the total number of homes in a market**, the **types of homes** (may include multifamily at varying densities, single-family homes, mobile homes, or other non-traditional home types (boats, etc.)), the **tenure of homes available** (homes can be either owned or rented), the **price point** (can be influenced by available subsidy programs, overall supply of homes and by what tenure or type, and be impacted by demand and the **availability** (whether the home is vacant and available for a user to occupy by renting or purchasing).

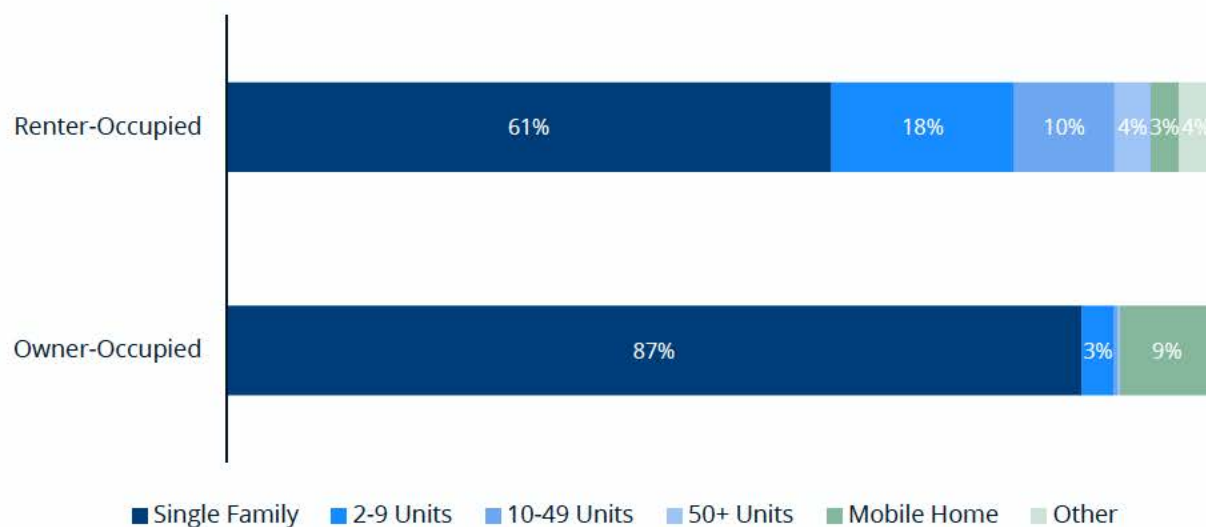
Maine’s existing housing supply is composed primarily of single-family homes that are owned, which is also the primary type of housing that has been added to the market. However, **over the last decade, Maine’s housing production has lagged job growth. Furthermore, the inventory of homes that need reinvestment is increasing, which is reducing the overall availability of homes.**

Tenure and Typology

Owner-occupied homes represented 73% of all Maine's homes in 2021, a high share relative to the housing stock of the United States as a whole, which was 65% owner-occupied in 2021. Of those owner-occupied homes, close to 87% were single-family homes (on par with the United States owner-occupied stock, which is 89% single-family) (Figure 13). Notably, mobile homes, an affordable homeownership option, made up 9% of the owner-occupied stock.

There is greater diversity in Maine's renter-occupied housing stock, with low-density 2-9 unit buildings providing about 20% of the rental options in the state, and 10 – 49 unit buildings providing about 10% of rental options. The rental stock has a high representation of single-family homes, however, with single-family homes making up 61% of rental homes, close to twice the single-family share of the United States rental stock (33%). This is likely due to the overall character of Maine's housing inventory, local zoning regulations and the rural nature of much of the state.

Figure 13: Occupied Units by Typology and Tenure in Maine, 2021



Source: American Community Survey 5-Year 2021

Subsidized Housing

Federal, State and local subsidy can be used to provide direct assistance to households or to reduce the cost to build or operate homes. Although income eligibility for subsidized housing varies by program, these subsidies are typically available to households making up to 80% of Area Median Income. The most prominent funding source for affordable housing is the federal Low-Income Housing Tax Credit, provided to developers of affordable rental housing¹⁹, which ultimately reduces the total rent that occupants pay to better align with what they can afford. Public housing, another common type of affordable housing, is typically owned and managed by the local housing authority. Housing vouchers, a form of direct subsidy to tenants, provides rental assistance that allows households to rent on the private market at a price point they can afford (or, in some cases, specific project-based units).

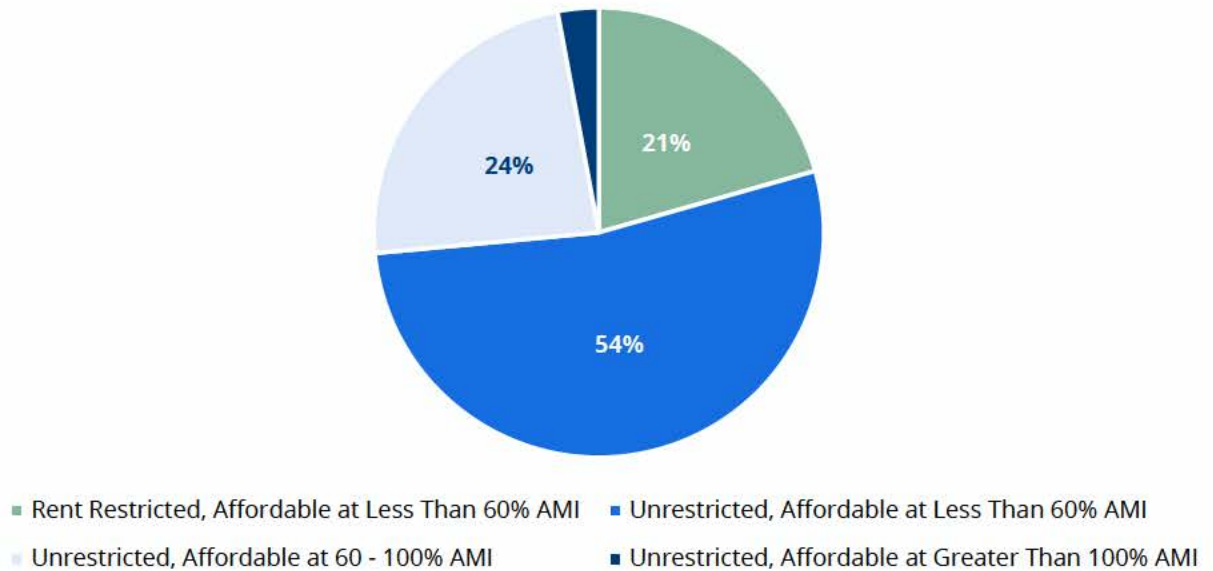
In 2021, Maine had approximately 28,000 subsidized rental homes with income restrictions ensuring affordability to households making less than 60% of AMI. These homes make up 21% of the rental

¹⁹ The Low-Income Housing Tax Credit program gives State and local agencies an annual budget to issue tax credits to support construction or preservation of affordable housing.

housing stock, a substantial share (Figure 14). Maine has continued to add affordable housing: just over 7,500 of these subsidized, income-restricted units have been added since 2010 (Figure 15).

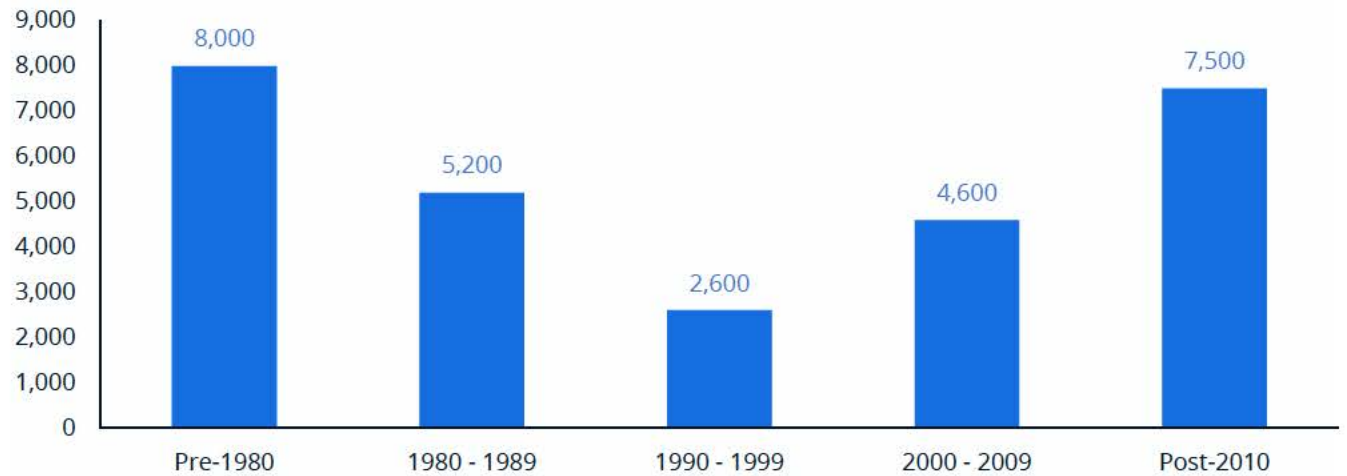
A further 71,850 units were affordable to households making less than 60% of AMI without rent restrictions, often referred to as “Naturally Occurring Affordable Housing (NOAH).” These units made up 54% of Maine’s rental stock in 2021.

Figure 14: Rental Housing by Affordability and Rent Restricted Status, 2021



Source: American Community Survey 5-Year, Public Use Microdata Sample (PUMS) 2021, National Housing Preservation Database 2021

Figure 15: Rent Restricted Units in Maine by Earliest Subsidy Date, 2021



Source: National Housing Preservation Database 2021

Housing Production

Overall housing production has lagged job growth over the past decade—particularly in the Coastal region. All regions have gained significantly more jobs than housing units, with total housing inventory remaining essentially constant since 2016, with a slight decline in the Northeastern Region (Figure 16, Table 5). Job growth has been primarily concentrated in the Coastal Region, and while housing inventory there has grown modestly, the region has seen only 21,300 homes built relative to an increase of 39,334 jobs over the past decade (Table 5). The Northeastern region in particular has had modest job growth. However both the Northeastern Region and Central Western regions have availability rates of close to 2%, suggesting that limited housing supply may be impeding the ability of new workers to move to these regions to fill open positions.

Figure 16: Total Housing Inventory by Region, 2010 - 2021



Source: American Community Survey 5-Year 2021

Table 5: Net New Units versus Change in Employment and Job Listings

	New / Lost Units 2010 -2021	New / Lost Jobs (2010 - 2022)	Change in Job Listings (2010 – 2022/23)	Availability Rate
Coastal	+21,304	+39,334	+13,144	2.1%
Central Western	+2,389	+5,791	+9,408	2.2%
Northeastern	(181)	+725	+2,583	3.0%

Source: American Community Survey 5-Year 2021, Bureau of Labor Statistics State Current Employment Statistics 2010, 2023 allocated using QCEW, Lightcast job listings 2010 , 2023

Notably, the state has experienced an overall decline in rental homes, with the greatest gross and percentage loss in the Coastal region of 3,000, or a 4% loss (Figure 17). This may be exacerbating labor force challenges for low and moderate wage jobs, which typically do not pay enough for workers to afford most homeownership options and thus rely heavily on rental housing.

Figure 17: Renter Occupied Units by Region, 2016 - 2021

Source: American Community Survey 5-Year 2021

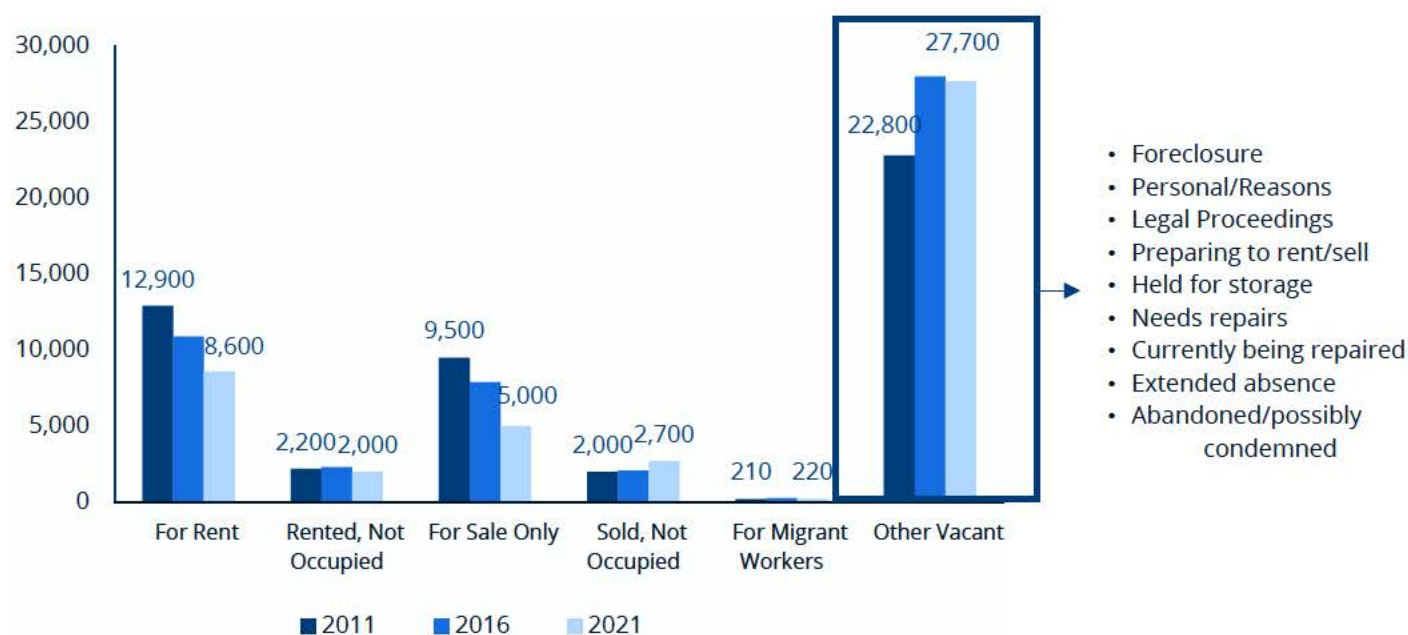
Moderate and low-density rental homes (single-family and 2-9 unit homes) in particular have declined in stock since 2016, with Maine seeing a loss of 4,800 single family homes (a 14% decline)

and 4,100 low-density (2-9 unit) homes (a 5% decline). These losses are concentrated among homes affordable to households earning 60 – 80% of AMI, which since 2016 have declined by over 3,500 single-family homes (a 33% decline) and almost 1,400 low-density homes (a 9% decline), although modest growth in higher density rental housing for low- and moderate-income renter households may have eased some cost pressures for renters.

Vacant Housing Stock

Facing limited housing production relative to demand, some of Maine's growing housing demand is being absorbed by vacant housing stock. All regions have seen a decrease in vacant for-rent and vacant for-sale housing stock, meaning that there are increasingly limited available housing options for both renters and homebuyers (Figure 18). This scarcity increases competition for available homes and helps drive up prices. Simultaneously, Maine's inventory of homes that are unavailable due to other conditions including foreclosure, repairs and family reasons, has increased by nearly 5,000 statewide since 2011, further reducing the available housing stock.²⁰

Figure 18: Vacant Housing in Maine, 2011 - 2021

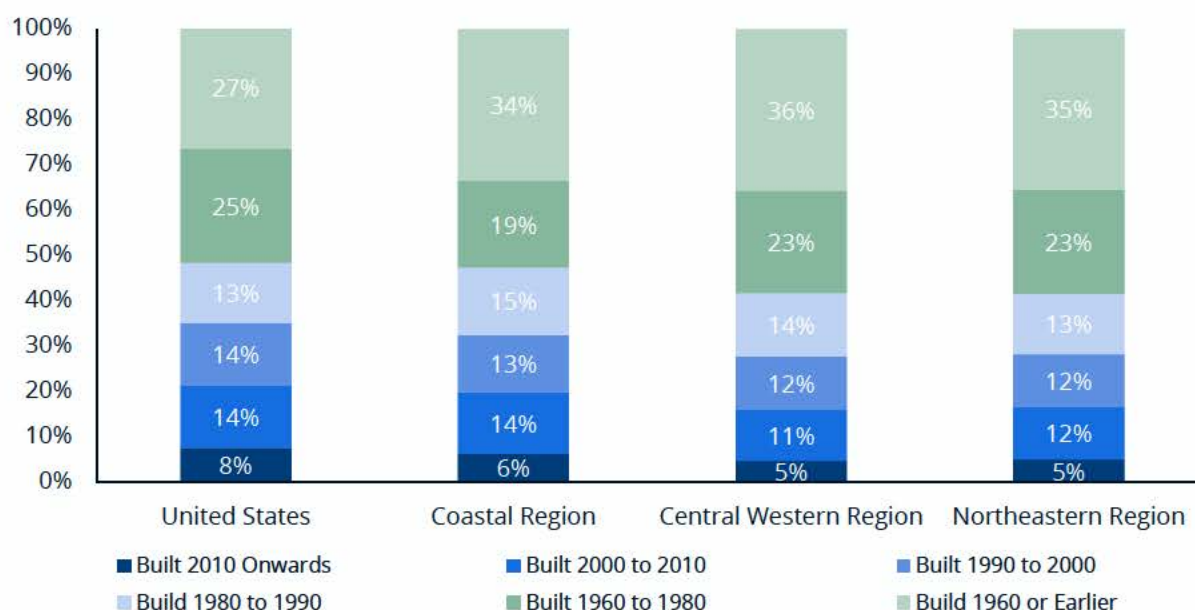


Source: American Community Survey 5-Year, Public Use Microdata Sample (PUMS) 2021

Much of this need for repair and reinvestment is likely driven by Maine's aging housing stock. Maine's homes are older on average than the rest of the country, with homes built before 1960 making up around 35% of the housing stock in all regions, relative to 27% in the United States as a whole (Figure 19). This aging is particularly acute in the Central Western and Northeastern regions, where close to 60% of homes in 2021 were built before 1980.

²⁰ American Community Survey detailed vacancy breakdowns, including the share of Other Vacant housing in need of repair, are unavailable historically, limiting this study's ability to directly assess changes in need for repair over time.

Figure 19: Age of Housing Stock by Region, 2021



Source: American Community Survey 5-Year 2021

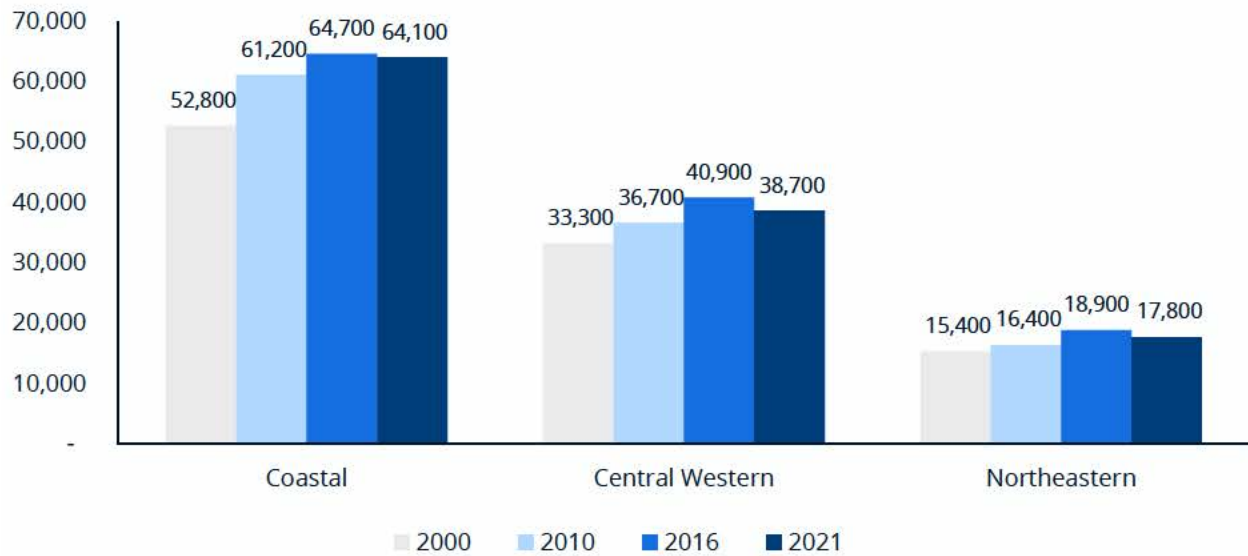
Both Maine's aging stock and increasing share of homes unavailable due to foreclosure, repairs and other reasons suggest that declining housing quality is a significant factor in Maine's housing availability challenges. However, data directly assessing housing quality in Maine is scarce, and further study will be needed to more accurately measure the extent of repair and reinvestment needed in Maine's housing stock.

Seasonal Homes and Short-Term Rentals

Maine's tourism and seasonal economy has also shaped its available housing supply. Maine has always had a high share of seasonal homes, representing 16% of Maine's total housing stock in 2021. The proportion of seasonal homes statewide has remained generally level, with a slight decrease from 124,500 homes in 2016 to 120,600 homes in 2021 (Figure 20). 85% of seasonal homes were concentrated in the Coastal and Central Western Regions, where seasonal housing makes up close to a fifth of the housing stock (Figure 21). In the Coastal Region, the share of seasonal housing remained consistent from 2000 – 2021 (Figure 22).

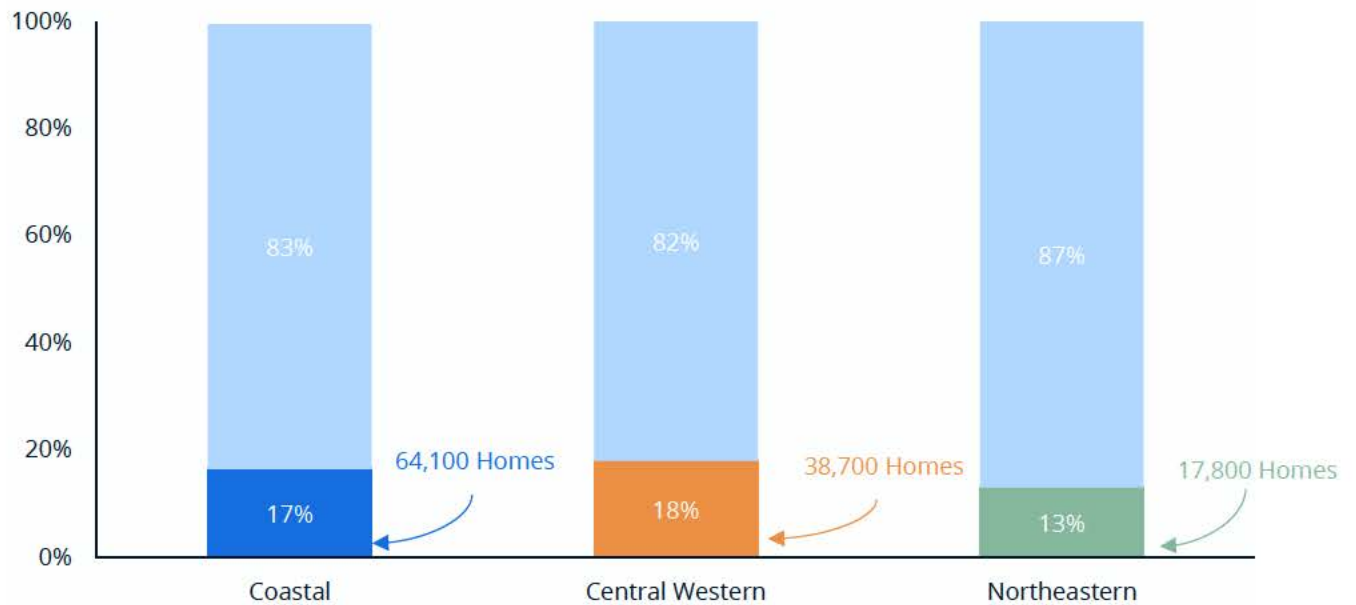
The consistently high demand for seasonal homes means that Maine has historically required a higher number of homes relative to the number of year-round residents and available jobs than states with lower seasonal demand.

Figure 20: Seasonal Homes Over Time by Region, 2000 - 2021



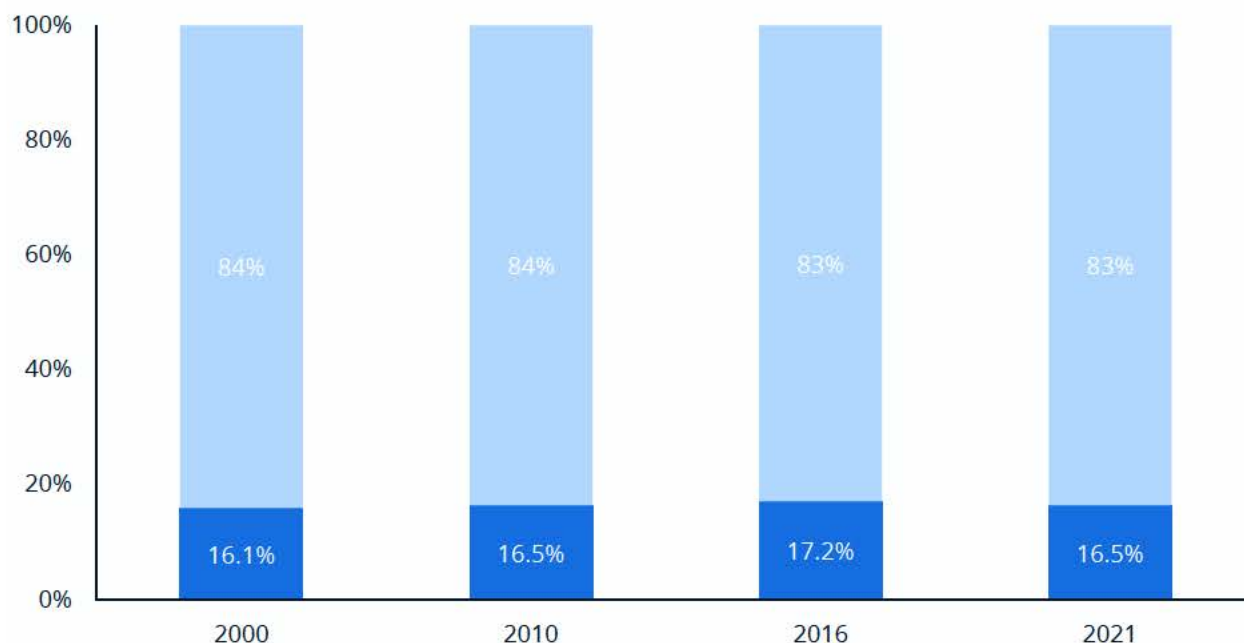
Source: Decennial Census 1990 – 2021

Figure 21: Seasonal Housing as Share of Total Homes by Region, 2021



Source: American Community Survey 5-Year 2021

Figure 22: Seasonal Housing As Share of Total Homes Over Time in the Coastal Region, 2021



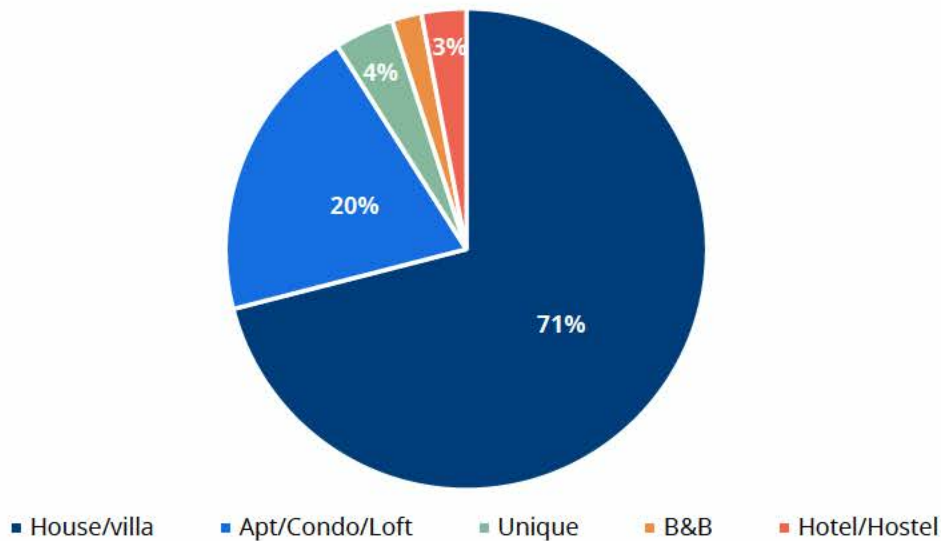
Source: American Community Survey 5-Year 2000, 2010, 2016, 2021.

The rise of online short-term rental platforms has raised some concerns in Maine about the extent to which available homes are being converted to short-term rentals. Using AirDNA, a platform tracking Airbnb and Vrbo rentals across the state, the Study Team found that Maine had 23,859 short-term rental properties with at least one reservation between April 2022 and 2023, largely concentrated in the Coastal region (16,904), followed by the Central Western region (5,014) and Northeastern region (1,941), about 20% of seasonal homes overall.²¹

While short-term rentals make up an increasing share of seasonal homes, they are not always directly comparable to homes that might otherwise be available to year-round residents looking for housing because of type, size, location and price point, or because the owners occupy them for part of the year. Many of these properties would not viably serve as year-round housing at all— 9% of the AirDNA inventory is hotels and hostels, B&Bs, and “unique” listings (e.g., tents, treehouses, caves, etc.) (Figure 23). Of the total AirDNA inventory, the Study Team identified 57% percent that are directly relevant to the supply of year-round homes—defined as an entire single family or multifamily unit, available more than 3 months out of the year.

²¹ Note that the count of overall seasonal homes will likely incorporate most full-time short-term rentals, and may exclude short-term rentals that are used as a primary residence most of the year.

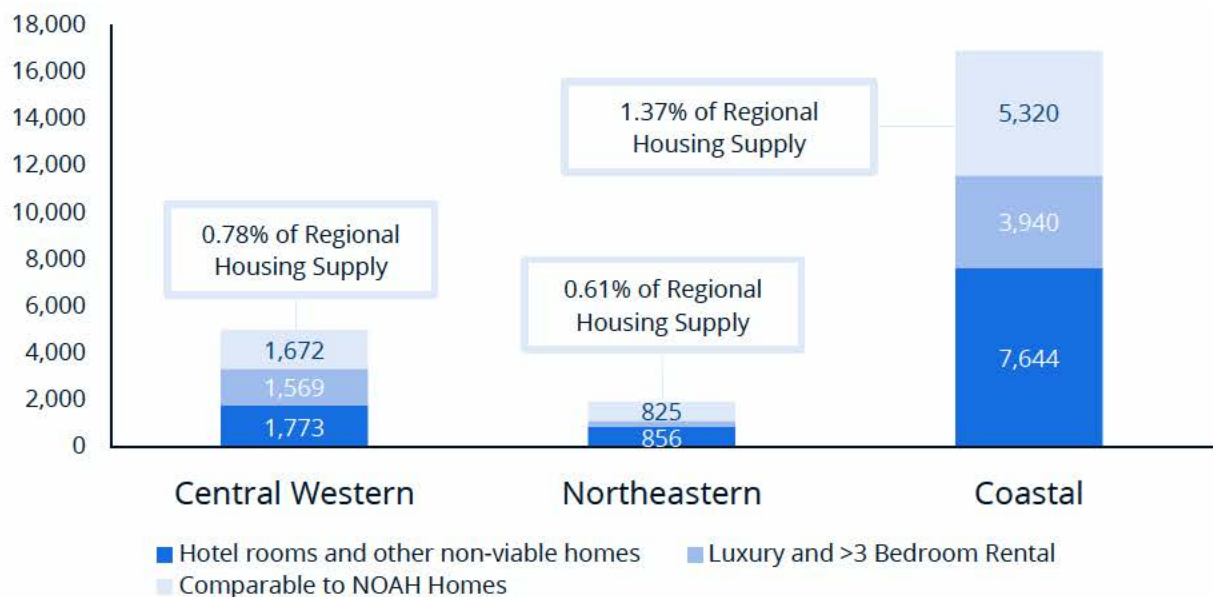
Figure 23: Short-Term Rentals by Typology, April 2022 - 2023



Source: AirDNA 2023. All properties with at least one reservation in the past year.

Further, not all short-term rentals would be available at a price point affordable to the median renter if offered on the private market, whether due to size, location, or high-end design. Excluding luxury rentals and rentals with more than 3 bedrooms from the data, the Study Team found that about 33% of the short-term rental stock is reasonably comparable to naturally occurring affordable housing (NOAH) on the market based on size and quality. In each region, the total number of current short-term rentals that meet this criteria range from just 0.6% to 1.4% of the total housing supply (Figure 24).

Figure 24: Short-Term Rental Inventory by Region, 2021



Source: AirDNA 2021

Concentration of short-term rentals is notably varied across the state, however, and conversion to short-term rental units may be putting more significant pressure on housing markets in areas with a high concentration of seasonal homes and heavy tourist demand, or in locations where this is a small number of homes overall. In Hancock County, for example, active short term rental inventory made up close to 10% of the total housing stock, and those that might otherwise be comparable to NOAH housing²² made up about 3% of the total stock. In Lincoln and Franklin Counties, short-term rentals made up just over 6% of the total housing stock, and those comparable to NOAH housing made up 2.5% and 1.76% of the total stock, respectively. For breakdown of short-term rental inventory by county, see Appendix Page 6.

Housing Availability and Affordability

The demand-side and supply-side trends described impact both **affordability** and **availability** in Maine's housing market, making it difficult for Mainers to find available housing that they can afford, especially in the Coastal region. Improving this will require aligning housing supply with the amount, type and location of homes needed by Maine's existing and future households.

Rental Affordability

Median rent for a 2-bedroom unit, utilities included, has historically been unaffordable in Maine, meaning that the median rent across the state exceeded the rent affordable to the median renter (under a standard definition set by HUD, rent is considered "affordable" when it does not exceed 30% of monthly income) (Figure 25). Between 2016 and 2021, Maine saw a significant uptick in median rents, along with rising median incomes, a trend that has occurred nationally.

Figure 25: Rental Affordability in Maine, 2000 - 2020

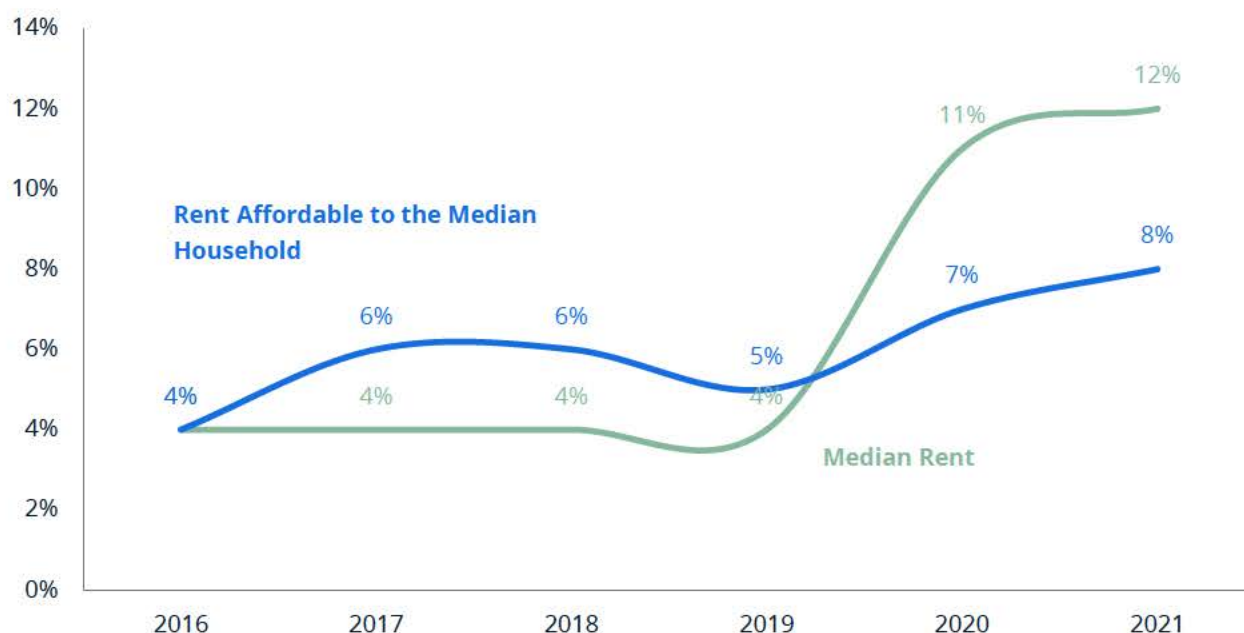


Source: MaineHousing Rental Affordability Index

²² Luxury units and large homes with over 3 bedrooms removed.

Rental affordability has been an increasing challenge in recent years. In many places, rents have increased more quickly than wages. Rent in the Portland MSA increased by 12% in 2021 while renter household incomes increased by about 8%; before the Covid-19 pandemic, renter wages were increasing faster than rents in the Portland MSA (Figure 26). Recent inflation in the rental housing market has likely exacerbated this trend.

Figure 26: Portland MSA Median Renter Income Versus Median Rent, Year Over Year Percent Change, 2016 - 2021

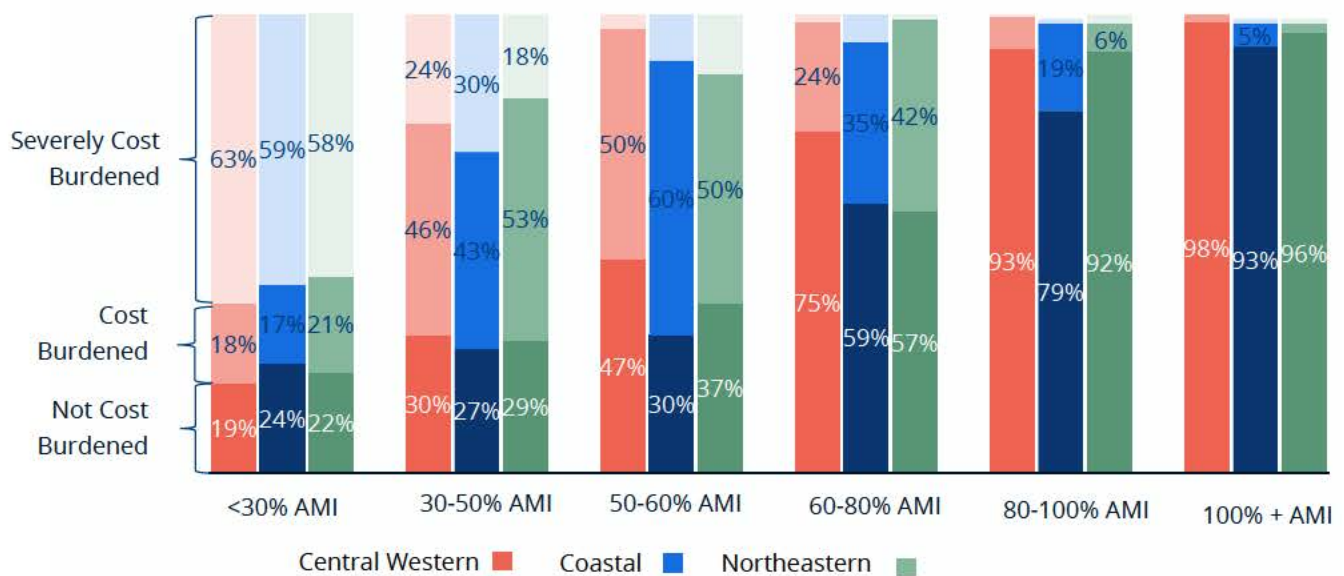


Source: American Community Survey 5-Year 2021, Zillow 2023

In the Augusta area, rents have been increasing faster than median renter household incomes since 2017; in 2020, however, the median renter income fell by close to 2% while rents continued to rise by 9%. In 2021, rents rose by 14%, close to twice as fast as median renter income, which rose by 8%. The Bangor area, which prior to 2021 had seen faster income growth than rent growth, saw rents rise by 12% in 2021 relative to median renter income growth of only 4%.

The majority of renter households below 60% of Area Median Income (AMI) are cost burdened in Maine (Figure 27). This held steady from 2016 to 2021, with a modest decline in cost burden for the lowest income renters, who may be supported by new subsidized affordable housing development (see Appendix Page 7). Renters in the Coastal Region experience the highest rates of cost burden, with the exception of the lowest income renters, around 80% of whom are cost burdened or severely cost burdened across all three regions.

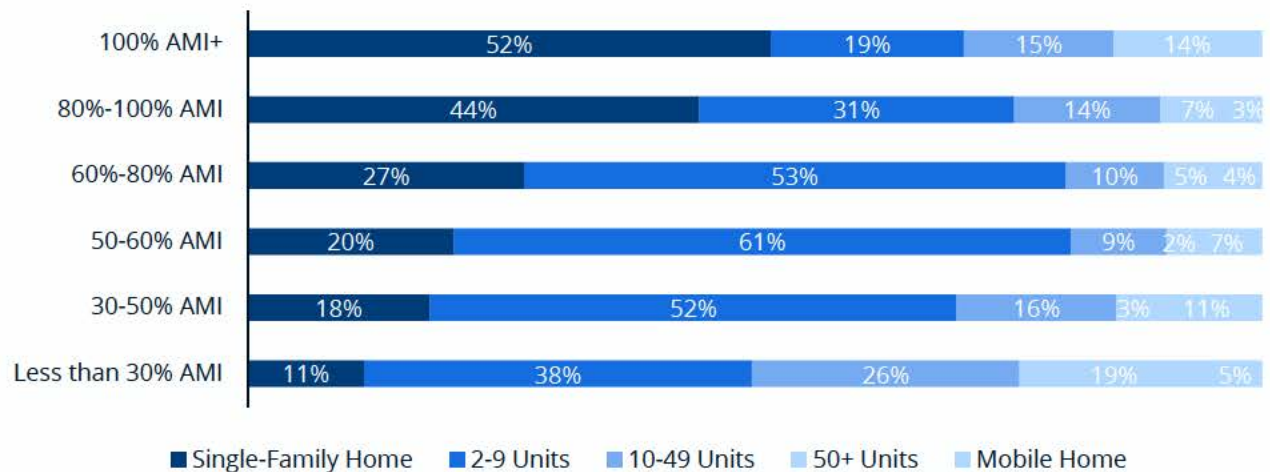
Figure 27: Share of Renters Cost Burdened by Region, 2021



Source: American Community Survey 5-Year, Public Use Microdata Sample (PUMS) 2021

Throughout the state, moderate and lower density building types support affordability for renter households making less than 80% of AMI (Figure 28). While single family rentals tend to be affordable to households making more than 80% of AMI across the state, over 60% of the homes affordable to renter households making less than 50% AMI are in moderate density rental buildings, or those with between 2 and 49 rental units.

Figure 28: Rental Housing Types Affordable by Income Bracket in Maine, 2021



Source: American Community Survey 5-Year, Public Use Microdata Sample (PUMS) 2021

Housing affordability by building typology and region are not all consistent with statewide data. The Coastal region has a distribution most similar to the state, while the Central Western and Northeastern regions have a higher share of 10 or more unit homes affordable to homes over 100% AMI. The Central Western region also has a notably higher proportion of mobile homes across all income levels. A full breakdown of regional housing distribution by Area Median Income can be found in Appendix Page 7.

Homeownership Affordability

Until recently, Maine had a relatively affordable homeownership market, meaning the cost of purchasing a home has been relatively aligned with the purchasing capacity of the median household. Purchasing a home is considered affordable to a household if the costs of ownership, including a mortgage, property taxes, and insurance, do not exceed 30% of total household income.

In recent years, however, the demand- and supply-side drivers described above, in addition to macroeconomic trends such as rising interest rates, have caused a significant divergence between the income needed to purchase a home in Maine and the actual median income of Mainers, who now need to make over \$100,000 annually to afford the median home price (Figure 29).

Figure 29: Purchasing Capacity Over Time, 2000 - 2022²³



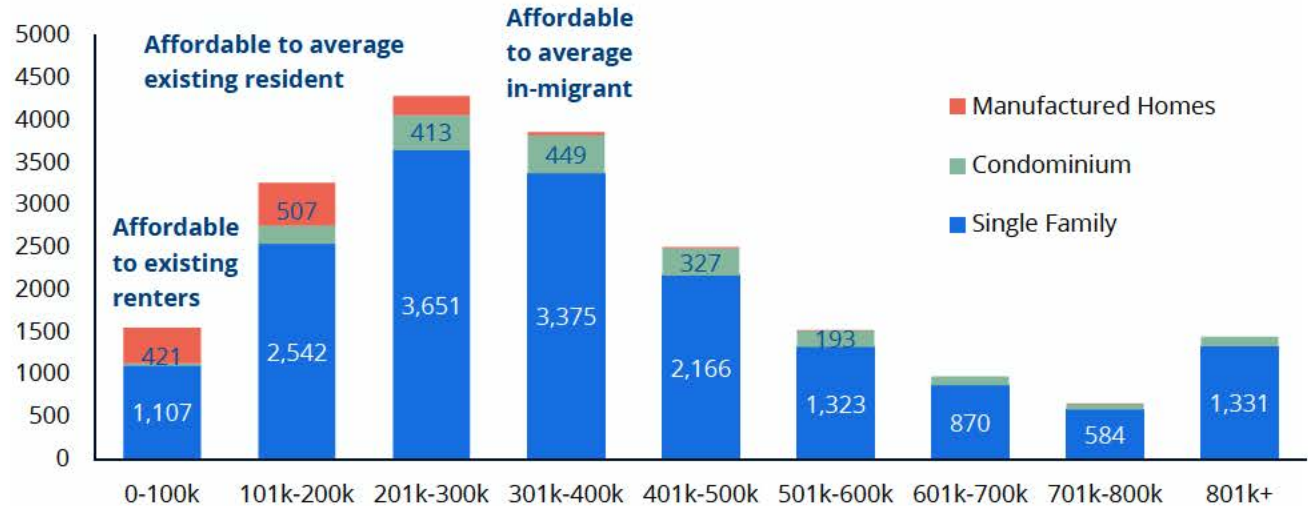
Source: MaineHousing 2022

Home sales prices since 2022 have been concentrated in the \$200,000 - \$400,000 range. As of July 2023, the median sales price in the state was \$387,400, a 9% increase from the prior year and a 63% increase from July 2019²⁴. These prices are generally relatively affordable to in-migrants, who are on average higher income than existing residents, but mostly unaffordable to the average existing resident in Maine, and even less so to the average existing Maine renter (Figure 30). Given Maine's historic affordability, it is likely that higher income existing and new homeowners are "underhoused" or buying down market, increasing competition for moderate income homebuyers.

²³ Purchasing capacity over time is provided based on Maine Housing Methodology, which uses average property tax rate by county and assumes 28% as the cost burden threshold.

²⁴ Redfin 2023.

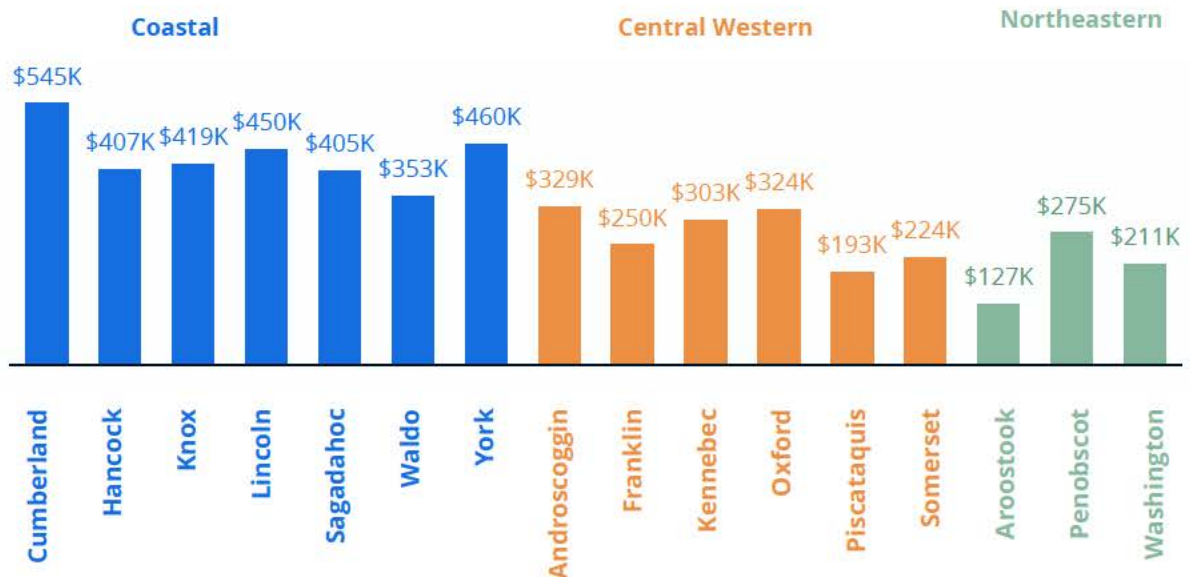
Figure 30: Maine Home Sales by Price Point, 2022 - 2023



Source: Maine MLS Data 2023, Internal Revenue Service 2021, American Community Survey 5-Year 2021

Home sale prices vary significantly by region and are highest in the Coastal Region, particularly in Cumberland and York Counties, with an average sale price of \$434,000 (Figure 31). The median home sale price in the Northeastern and Central Western Regions are \$204,000 and \$270,000 respectively in 2023.

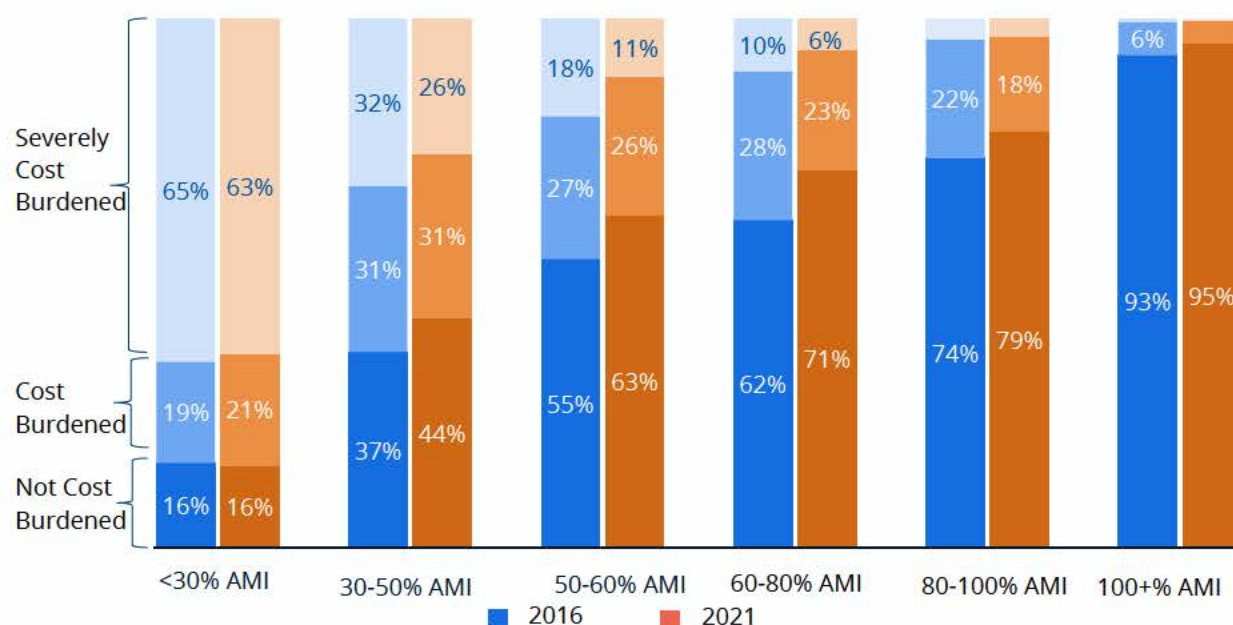
Figure 31: Median Home Sales Price by County, 2023



Source: Redfin 2023

Despite the historic affordability of the homeownership market, 20% of homeowners still experienced cost burden in 2021, a 4% decrease from 2016 (Figure 32). Cost burden for homeowners remained level from 2016 to 2021 for the lowest income households but decreased for all other income groups. Given data limitations on measuring cost burden in real-time, *this likely does not fully capture the impact on cost burden of the most recent home price increases.*

Figure 32: Share of Owners Cost Burden Over Time in Maine, 2016 – 2021

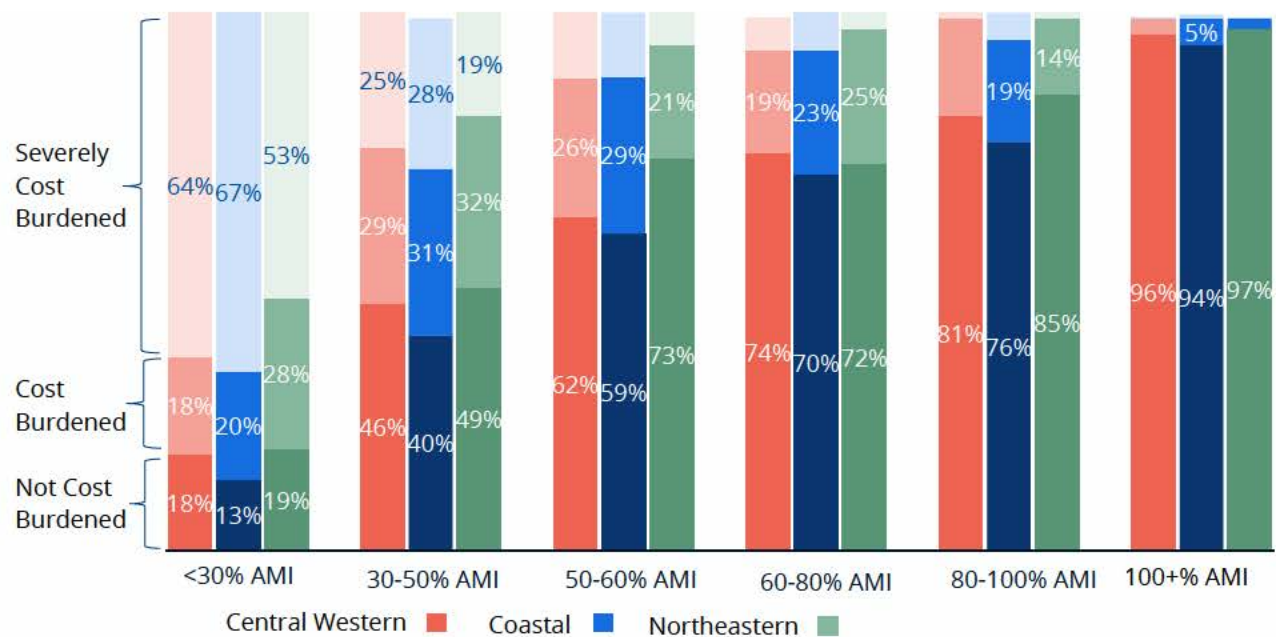


Source: American Community Survey 5-Year, Public Use Microdata Sample (PUMS) 2021

Notably, very low-income homeowners have experienced very high-cost burden rates, even more than renters of the same income. This may be partially driven by Maine’s large senior homeowner population; **senior homeowners in Maine tend to be lower income than other households and rely on fixed incomes, and in aggregate face higher rates of cost burden.**

Regionally, owner cost burden rates are highest in the Coastal Region, likely due in part to significantly higher home values (Figure 33).

Figure 33: Share of Owners Cost Burdened by Region, 2021



Source: American Community Survey 5-Year, Public Use Microdata Sample (PUMS) 2021

Overall, the availability of homes in Maine is declining while costs relative to incomes are rising. This crunch in the housing market is being driven by demand-side shocks including sudden in-migration and need for additional workers to support Maine's economy, and supply-side pressures including limited housing production and a rising number of homes in need of reinvestment due to poor condition. To improve housing availability and affordability for Mainers, Maine will need to increase housing production and reinvestment aligned with the amount, type and location of housing needed by both existing and future households.

How many homes does Maine need today?

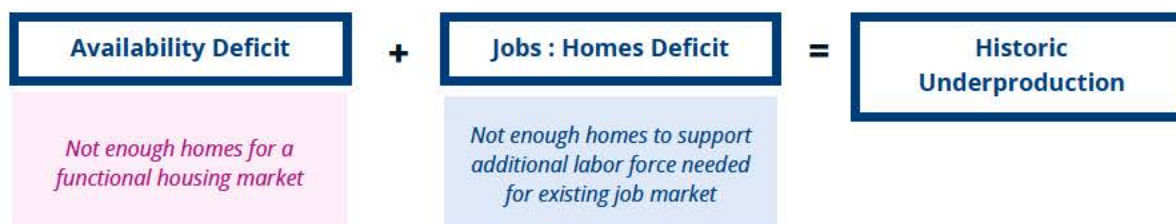
Quantifying how many homes Maine needs today to improve both **availability** and **affordability** for Mainers requires measuring how many homes *should have* been built or reinvested in in recent years (historic underproduction) to support population and job growth with stable availability. Addressing this historic underproduction is a State policy priority that aims to ensure affordability for all Mainers while supporting the economic health of the State. **In some areas of the state, addressing historic underproduction might reflect the need for new homes to address population and economic growth, while in other areas of the state that have not seen significant population growth, this may reflect the need to invest in or replace aging housing stock that is deteriorating past its useful life.**

If the existing housing deficit continues to grow, Maine will struggle to support economic growth or maintain its existing economic activity, and it will become increasingly difficult and costly to address affordability challenges for low- and moderate-income residents. Existing residents with changing housing needs won't have the flexibility to move within their existing housing markets. Lack of homes will also inhibit the growth of Maine's labor force and economy, which could pull from out of state if there were sufficient places for new residents to live. Aligning housing development with economic and demographic trends will help support Maine's economy and stabilize housing prices for existing residents.

Historic Underproduction

Historic Underproduction includes two components: the **availability deficit** and the **jobs : homes deficit**. The combination of these two measures is intended to capture both the homes needed now to support healthy availability for existing households, as well as homes that would support households to move to Maine and fill unfilled jobs. These deficit measures, defined in Figure 34, are based on the State's economic targets²⁵.

Figure 34: Components of Historic Underproduction



Availability Deficit

The "availability deficit" measures the additional homes needed to create a healthy level of availability in the housing market overall, with "true availability" representing homes that are vacant and available to live in. This designation is a key component of the analysis, as not all homes that are defined as "vacant" are available to be lived in. Availability rate is an important characteristic in a housing market as it allows flexibility in housing choice. A 1:1 household to unit ratio with zero availability would make it almost impossible for existing households to move and could not accommodate any growth in households.

²⁵ The State Department of Labor targets an unemployment rate of 3.5% and a job openings rate of 3.0%.

Measuring “true availability” requires an understanding of how vacancy is measured. There are many different types of vacant units, some of which are not available to be occupied by households looking for a home because they are seasonal homes, in foreclosure, or in need of repair, for example.²⁶

The Study Team measures “true availability” as the number of vacant for-sale and for-rent homes in the market; in other words, homebuyers and prospective renters could access these homes when they need to move (Figure 35).

Figure 35: Vacant Housing Stock Composition



Across the state of Maine, the availability rate has plummeted to 2.3% on average, well below what is often considered to be a healthy rate of 5%. This is true for all regions in Maine (Figure 36). These low availability rates indicate a general housing shortage that is putting pressure on regional housing markets due to lack of available homes.²⁷

²⁶ High level Vacancy categories in the American Community Survey includes Seasonal Homes, Other Vacant, rented or sold not occupied, for migrant workers, vacant for rent and vacant for sale.

²⁷ The true availability rate is taken as a percentage of total homes, where total homes are calculated as occupied renter homes, occupied owned homes, vacant for rent and vacant for sale. The true availability is then calculated as the percentage of vacant for rent and vacant for sale of the total homes.

Figure 36: Available and Occupied Housing Stock by Region, 2021



The Study Team calculated the homes needed in each region to achieve a target availability rate of 5%, which would support broader affordability and availability for all Mainers (Figure 37).

Figure 37: Housing Stock including Target Availability Rate



Based on this target availability rate, the Study Team estimates that an additional **16,500 homes** are needed in Maine now to create a healthy rate of availability for existing residents (Table 6).

The need varies significantly by region and is the greatest in the Coastal Region – with about 9,300 units needed to address the availability deficit. The Central Western and Northeastern regions have lower availability needs at 4,900 and 2,300 respectively, reflecting lower populations and higher availability in the Northeastern Region.

Table 6: Homes Needed to Meet Regional Availability Deficit

Region	Units
Coastal Region	9,300
Central Western Region	4,900
Northeastern region	2,300
Statewide	16,500

Jobs : Homes Deficit

The “jobs : homes” deficit component of Historic Underproduction in Maine was developed by the Study Team to measure the number of additional homes needed to house a labor force that can support Maine’s current economy. This homes deficit is calculated using two components:

1. Deficit resulting from a tight labor market (based on a target unemployment rate)
2. Deficit resulting from unfilled job openings (based on a target job openings rate)

In collaboration with the Department of Labor and based on the State’s labor market goals, the Study Team used a **target unemployment rate of 3.5%** and a **target job openings²⁸ rate of 3.0% in this analysis.**²⁹

The unemployment rate reflects the percentage of the workforce that is unemployed at any given time; these individuals are available to fill unfilled positions and are important for supporting a healthy labor market. The job openings rate is the share of unfilled jobs within the overall job market. Every region in Maine has an average annual unemployment rate, measured based on employment trends from May 2022 – April 2023, lower than the target 3.5%. Measured rates range from 2.4% in the coastal region to 3.1% in the Northeastern Region. The job openings rate for all regions exceeds DOL’s target rate of 3.0%, ranging from 4.4% in the Northwestern Region to 9.2% in the Central Western Region (Table 7).

Table 7: Existing Unemployment and Job Openings by Region

	<i>Unemployment Rate</i> (Avg May 2022 – April 2023)	<i>Job Openings Rate³⁰</i> (Avg May 2022 – April 2023)
<i>Coastal Region</i>	2.4%	6.1%
<i>Central Western Region</i>	2.9%	9.2%
<i>Northeastern Region</i>	3.1%	4.4%
Statewide	2.7%	6.5%

Unemployment and job openings targets are meant to bring labor supply and labor demand in the state into better balance to support a healthy economy and ensure economic opportunity for all Mainers.

- **Unemployment Rate** The target unemployment rate of 3.5% is reflective of a full employment economy in which the overwhelming majority of people who want a job have one. In a full employment economy, a small share of the labor force is experiencing unemployment, which is often transitional. This might include people searching for a job because they have recently entered or re-entered the labor force, people who may be seeking to change careers or those who recently completed an educational or training program and are seeking a job that aligns with their skills and preferences.

²⁸ Job Openings Rate is defined as the percent of job openings in the labor market over the sum of total jobs and job openings.

²⁹ Measurements of unemployment and job listings are based on annual averages to account for seasonal changes in the workforce.

³⁰ Calculated using Job Openings and Labor Turnover Survey gross numbers and allocating to regions based on proportion of Lightcast data job openings over a one year period.

- **Job Openings Rate** A target job opening rate of 3.0% reflects a labor market in which most of the labor demand in the state is met and there is a healthy balance between available job opportunities and the number of unemployed job seekers throughout the state. Job openings similarly capture labor market transitions where some employers are growing and seeking to expand their staff levels while many others are seeking to fill an available job opening due to replacement needs because the incumbent job holder has retired, accepted a promotion, switched careers, or otherwise left a job.

Better aligning job openings with unemployment requires additional workers to fill those jobs, and with a low unemployment rate, many of those workers will need to come from out of state. **Without homes that can accommodate those additional households at a price point they can afford, Maine will continue to struggle to sustain healthy labor market conditions, which will harm local businesses.**

The job openings rate is 6.5% statewide on average over the last year and is down from a pandemic level high of 8.1% in 2021³¹, but remains elevated compared with pre-pandemic averages. Since March 2022, the Federal Reserve has raised interest rates to reduce inflation, which had reached a 40 year high of 9.1% in June of 2022³². Due to these ongoing changes, the Study Team has selected an alternate base conditions job openings rate that reflects an elevated condition to the pre-pandemic average, but not as severe as the current measurements reflected by the May 2022 – April 2023 average (Table 8).

Table 8: Job Openings Rates for Historic Conditions, Existing Conditions and Modified Near-Term Conditions

	<i>Job Openings Rate³³(Avg May 2022 – April 2023)</i>	<i>Job Openings Rate 5-year Regional averages (2015- 2019)</i>	<i>Job Openings Rate Midpoint</i>
<i>Coastal Region</i>	6.1%	4.5%	5.3%
<i>Central Western Region</i>	9.2%	4.4%	6.8%
<i>Northeastern Region</i>	4.4%	4.0%	4.2%
<i>Statewide</i>	6.5%	4.4%	5.5%

To calculate the number of homes needed to support this target scenario, the Study Team measured the additional workers needed to achieve these target labor market conditions. This number represents the additional workers necessary to reduce the job openings rate and support an employment rate reflective of a full employment economy. See Figure 38 for the Coastal Region example.

³¹ JOLTS Seasonally Adjusted July 2021

³² TED: The Economics Daily. (2022). Consumer Prices up 9.1 percent over the year ended June 2022, largest increase in 40 years. BLS <https://www.bls.gov/opub/ted/2022/consumer-prices-up-9-1-percent-over-the-year-ended-june-2022-largest-increase-in-40-years.htm>

³³ Calculated using Job Openings and Labor Turnover Survey gross numbers and allocating to regions based on proportion of Lightcast data job openings over a one-year period.

Figure 38: Existing and Target Labor Force Conditions: Coastal Region Example



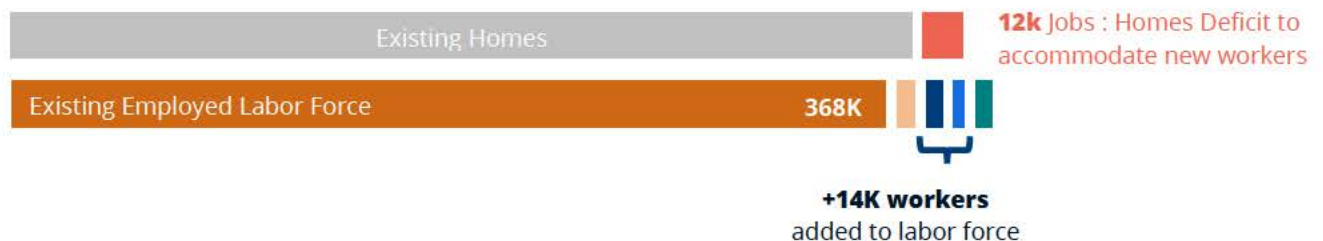
Based on the resulting workers needed, the Study Team measured the number of homes needed to accommodate this additional labor force. The Study Team applied a jobs : homes ratio to these numbers by region, which is based on the existing jobs : homes ratio but with a 5% availability rate. By incorporating all occupied homes, this ratio accounts for working, non-working and unemployed populations, and the number of jobs supported by one home, taking into account a 5% market availability rate. Figure 39 reflects an example ratio of 1.15, indicating that in the Coastal Region, one home for every 1.15 jobs would incorporate a healthy availability rate.

Figure 39: Jobs : Homes Ratio Calculation for the Coastal Region

$$\frac{\text{Employed Labor Force: } 368\text{K}}{\text{Existing Occupied Homes: } 304\text{K} + \text{Required Available Homes: } 16\text{K (5\%)}} = 1.15 \text{ Jobs : Homes Ratio}$$

The Study Team calculated this ratio for each region and used it to measure the homes required to house the additional workers needed by region. See Figure 40 for the Coastal Regional example.

Figure 40: Homes Needed to Support Target Workforce Conditions: Coastal Region Example



Based on this analysis, the additional labor force needed to support Maine's existing economy is approximately **24,100 workers**, who would require **22,000 additional homes** statewide to account for a healthy availability rate. Accounting for regional differences in labor force needs, there is a shortage of 11,900 homes in the Coastal Region, 8,100 homes in the Central Western Region and 2,000 homes in the Northeastern Region (Table 9).

Table 9: Workers and Homes Needed to Address Jobs : Homes Deficit

	<i>Required Workers</i>	<i>Target Jobs Housing Ratio</i>	<i>Additional Homes Needed</i>
<i>Coastal Region</i>	13,700	1.15	11,900
<i>Central Western Region</i>	8,400	1.03	8,100
<i>Northeastern Region</i>	2,000	1.01	2,000
<i>Statewide</i>	24,100		22,000

Economic and labor force conditions are constantly changing, and the State will have to monitor labor force conditions and make adjustments to the target rates as needed to support evolving goals.

Including both historic underproduction and the jobs : homes deficit, **Maine needs 21,200 homes in the Coastal Region, 13,000 homes in the Central Western Region, and 4,300 homes for the Northeastern region (Table 10).**

Table 10: Historic Underproduction by Region, 2021

<i>Region</i>	<i>Availability Deficit</i>	<i>Jobs : Homes Deficit</i>	<i>Total Historic Underproduction</i>
<i>Coastal</i>	9,300	11,900	21,200
<i>Central Western</i>	4,900	8,100	13,000
<i>Northeastern</i>	2,300	2,000	4,300
<i>Maine</i>	16,500	22,000	38,500

Income Distribution

In addition to the number of homes that Maine needs to sustain and grow its economy, it is important to measure the cost of the homes needed to support affordability in the market. The Study Team allocated both the availability deficit and the jobs : homes deficit by price point as an example of how production targets can be distributed, however, regional and local planning work will need to be done to further allocate the housing types and price points that will support affordability.

The Study Team calculated affordable monthly rent by income based on a monthly housing cost burden of 28%, including a utility allowance using the average of Statewide HUD utility allowance schedules³⁴. The Study Team calculated affordable home purchase price including monthly mortgage payments, property taxes, utilities and insurance (Table 11).

³⁴ MaineHousing's Affordability Index measures affordability at 28% of monthly household income.

Table 11: Affordable Rent and Home Prices by Income Group, 2023

<i>Income Range</i>	<i>Affordable Monthly Rent³⁵</i>	<i>Affordable Home Price</i>
<i>Less than 20K</i>	< 80	N/A
<i>20K - 35K</i>	81 – 430	< 36,500
<i>35K - 50K</i>	431 – 780	36,501 – 90,700
<i>50K - 75K</i>	781 – 1,360	90,701 – 180,900
<i>75K - 100K</i>	1,361 – 1,950	180,901 – 271,200
<i>100K - 150K</i>	1,951 – 3,110	271,201 – 451,700
<i>150K+</i>	3,111 +	451,701 +

Availability Deficit Income Distribution:

The availability deficit impacts all households as people seek to move. This may include those who are hoping to downsize to age in place, those who have growing households, households with a change in income and desire to relocate because of it, households with a change in job location, and other reasons for relocation. One way to view the allocation of this deficit is to distribute it across the income distribution of the region (Table 12).

Table 12: Existing Household Income Distribution

<i>Household Income</i>	<i>Coastal</i>	<i>Central Western</i>	<i>Northeastern</i>
<i>Less than 20K</i>	11%	16%	18%
<i>20K - 35K</i>	11%	15%	17%
<i>35K - 50K</i>	11%	15%	14%
<i>50K - 75K</i>	18%	18%	18%
<i>75K - 100K</i>	15%	13%	13%
<i>100K - 150K</i>	18%	14%	13%
<i>150K+</i>	16%	8%	8%

A limitation of this methodology is that it does not fully capture greater need at low- and moderate-income levels. Low- and moderate-income households are more constrained in their choices and more likely to pay more than they can afford in housing costs. It is important to increase the availability of homes at different price points, with an emphasis on homes that are affordable to lower income

³⁵ Apartment unit monthly rents were calculated assuming 28% of income towards housing expenses less utility allowance. Utility allowance was calculated using HUD schedules assuming a 2 bedroom garden apartment unit.

households. Methods of reallocation to address the need at lower income levels may vary by geographic region and respond to specific needs of certain areas of the state. Adjustment to lower incomes should account for what proportion of the population within which income groups is the highest cost burdened for both renters and homeowners. Methods that include this factor will have a better chance of addressing the need at income levels that are paying the highest share of their household income in home costs.

The allocation of the Availability Deficit based on existing income distribution varies by regional characteristics, with the Northeastern and Central Western having greater need at lower household incomes than the Coastal Region (Table 13). Northeastern and Central Western Regions have 49% and 46% of households respectively at household incomes less than 50K, while the Coastal region proportion of households less than 50k is 34%.

Table 13: Allocation of Availability Deficit Based on Existing Household Income Distribution³⁶

<i>Household Income</i>	<i>Coastal</i>	<i>Central Western</i>	<i>Northeastern</i>
Regional Totals	9,400	4,900	2,300
<i>Less than 20K</i>	1,100	780	420
<i>20K - 35K</i>	1,000	760	380
<i>35K - 50K</i>	1,000	730	320
<i>50K - 75K</i>	1,700	880	410
<i>75K - 100K</i>	1,400	650	290
<i>100K - 150K</i>	1,700	690	290
<i>150K+</i>	1,500	410	190

Jobs : Homes Deficit Income Distribution

To allocate the homes needed to fill the jobs : homes deficit by price point, the Study Team aligned the wages of existing job openings with home prices that would be affordable to those wages. The methodology used to arrive at this distribution included a multistep process that reviewed job listing data for wages and aligned those wages with typical household incomes associated with them (Table 14).³⁷ This distribution allows job listing wages to be allocated to household incomes by accounting for households with more than one earner.³⁸

This distribution is a tool to help regions and municipalities plan for housing that households can afford based on available jobs, ensuring that they can move to and stay in Maine.

³⁶ Income Distributions are allocated based on regional numbers and rounded to the tens for counts in the hundreds, and hundreds for counts over a thousand. Due to rounding, numbers may not sum exactly to regional or state numbers.

³⁷ The Study Team calculated a wage distribution using job listing wages based on a review of job listings over a 12 month period, June 2022 - May 2023.

³⁸ Using the Public Use Microdata Sample, the Study Team used regional household averages in Maine, Vermont and New Hampshire to estimate the likely total household income of individuals who hold similar jobs across the region. For additional detail about this analysis, see Appendix Page 12.

Table 14: Estimated Household Income Distribution for Job Listings by Region

<i>Household Income</i>	<i>Coastal</i>	<i>Central Western</i>	<i>Northeastern</i>
<i>Less than 20K</i>	0.6%	0.7%	0.6%
<i>20K - 35K</i>	5.5%	4.4%	8.4%
<i>35K - 50K</i>	10.4%	7.9%	10.6%
<i>50K - 75K</i>	16.7%	16.8%	20.4%
<i>75K - 100K</i>	19.3%	20.3%	18.9%
<i>100K - 150K</i>	26.9%	28.9%	23.6%
<i>150K+</i>	20.6%	21.0%	17.6%

Using the resulting household income distribution, the Study Team allocated the jobs : homes regional deficits by the estimated household incomes for workers needed to fill open jobs in each region (Table 15).

Table 15: Allocation of Jobs : Homes Deficit to Household Incomes Based on Wages of Open Job Listings³⁹

<i>Household Income</i>	<i>Coastal</i>	<i>Central Western</i>	<i>Northeastern</i>
<i>Regional Totals</i>	11,900	8,100	2,000
<i>Less than 20K</i>	70	50	10
<i>20K - 35K</i>	660	360	170
<i>35K - 50K</i>	1,230	640	210
<i>50K - 75K</i>	2,000	1,400	410
<i>75K - 100K</i>	2,300	1,600	380
<i>100K - 150K</i>	3,200	2,300	470
<i>150K+</i>	2,500	1,700	350

Historic Underproduction Geographic Distribution

Across regions, individual jurisdictions are contributing more or less to housing demand based on job growth, demographic and migration trends, and other factors, including the existing inventory of available

³⁹ Income Distributions are allocated based on regional numbers and rounded to the tens for counts in the hundreds, and hundreds for counts over a thousand. Due to rounding, numbers may not sum exactly to regional or state numbers.

housing and the share of seasonal homes. Housing need in each region is impacted by the existing conditions and trends of individual jurisdictions and counties, and as such requires both local and regional approaches to tackling housing production needs.

To measure local contributions to housing demand, the Study Team considered both population share and job share of each county. Weighting allocation by both population and jobs helps ensure that housing to address the State's historic underproduction is being added in places where jobs are, both to support households in living close to where they work and also to ensure that towns and cities that are growing economically are also accommodating the population needed to support that growth. This avoids issues of decreasing affordability when housing is not provided where job growth exists, and unnecessary development in areas where there may not be as significant job or population growth.

There are many ways to allocate housing to more granular geographies across Maine, many of which would incorporate unique criteria specific to certain areas of the State, particularly due to the varying growth trends across Maine. For purposes of this study, the Study Team weighted housing need based on population and jobs shares in each region. Using the Coastal Region as an example, the greatest allocation of homes based on this methodology is to Cumberland County, which represents 42% of the region's population and 54% of the region's jobs (Table 16). In the Central Western region Kennebec has the greatest weighted allocation and in the Northeastern region Penobscot has the greatest weighted allocation.

Table 16: County Level Distributions Historic Underproduction⁴⁰

<i>Counties</i>	<i>Population Share</i>	<i>Job Share</i>	<i>Weighted Allocation</i>	<i>Historic Underproduction</i>
<i>Maine Historic Underproduction</i>				38,500
<i>Hancock County</i>	8%	7%	7%	1,500
<i>Cumberland County</i>	42%	54%	48%	10,200
<i>Knox County</i>	6%	5%	5%	1,100
<i>Lincoln County</i>	5%	3%	4%	870
<i>Sagadahoc County</i>	5%	5%	5%	1,100
<i>Waldo County</i>	6%	3%	4%	900
<i>York County</i>	29%	22%	26%	5,500
<i>Piscataquis County</i>	4%	4%	4%	510
<i>Androscoggin County</i>	28%	30%	29%	3,800
<i>Franklin County</i>	8%	7%	7%	900
<i>Kennebec County</i>	32%	39%	35%	4,600
<i>Oxford County</i>	15%	11%	13%	1,700
<i>Somerset County</i>	13%	10%	12%	1,500
<i>Aroostook County</i>	27%	24%	25%	1,100
<i>Penobscot County</i>	61%	66%	64%	2,700
<i>Washington County</i>	12%	9%	11%	460

⁴⁰ County Distributions are allocated based on regional numbers and rounded to the tens for counts in the hundreds, and hundreds for counts over a thousand. Due to rounding, numbers may not sum exactly to regional or state numbers.

How many homes will Maine need to accommodate future population growth?

Overview

The State of Maine is projected to grow by about 3% over the next decade, with growth primarily concentrated in the Coastal region (Table 19). In addition to the housing that Maine needs now, the state will need additional housing this decade to accommodate population change and support both new household formation and in-migration.

The Maine State Economist develops population projections every two years to accommodate changing demographic and growth conditions. While the state overall is growing, it is important to note that not all areas in the state are projected to grow in the coming decade. However, even in places where overall population is aging and declining, there is still need for housing production and reinvestment; in fact, household formation generally increases these circumstances (children of an aging population move into their own homes and some existing households split up). For example, while Aroostook, Piscataquis and Somerset Counties are all projected to see a modest total population decline by 2030, all of those counties will still see a net gain in households in that time period, requiring additional homes. Further, as these regions face a declining workforce, new homes at affordable price points will be essential to attracting workers to the region and ensuring that existing younger households can stay.

Table 17: Estimated Population Change, 2020-2030

County	2020 Population	2030 Population	% Growth	Added /Lost People
Northeastern Region				
Aroostook	66,994	66,937	-0.1%	-57
Penobscot	152,007	153,327	0.9%	1,320
Washington	31,062	33,555	8.0%	2,493
Central Western Region				
Androscoggin	111,039	113,477	2.2%	2,438
Franklin	29,418	29,603	0.6%	185
Kennebec	123,754	130,259	5.3%	6,505
Oxford	57,849	58,321	0.8%	472
Piscataquis	16,768	15,935	-5.0%	-833
Somerset	50,404	49,781	-1.2%	-623
Coastal Region				
Cumberland	303,312	308,124	1.6%	4,812
Hancock	55,460	56,707	2.3%	1,247
Knox	40,609	41,130	1.3%	521
Lincoln	35,192	35,364	0.5%	172
Sagadahoc	36,688	36,921	0.6%	233
Waldo	39,635	42,405	7.0%	2,770
York	212,089	225,816	6.5%	13,727
Statewide				
Maine	1,362,280	1,397,663	2.6%	35,383

Source: Maine State Economist 2023

Recent shifts in population growth due to unexpected global and economic events, including the COVID-19 pandemic, demonstrate the unpredictable nature of population projections. As such, the State will need to continue to monitor population change to better understand long term expectations. It is not certain whether recent growth is a longer-term trend or was a short-term, Covid-induced change.

Despite the uncertainty, Maine should continue to plan for population and household growth, which is crucial for maintaining the health of Maine's economy. Planning for housing to support that growth will ensure that the increased demand over time will not exceed the supply of housing, causing prices to rise.

Accommodating Population Growth

The Maine State Economist's population projections anticipate 35,000 additional residents in Maine by 2030. This change in population varies by region, with the Northeastern region projected to grow by 1.5%, Central Western by 2.1%, and Coastal by 3.25%. Maine's statewide growth of 2.6% is modest compared to the State of New Hampshire, which is expected to grow by 6.95% between 2020 and 2030⁴¹, and is also less than Massachusetts which is expected to grow 4.21% between 2020 and 2030^{42,43}.

Based on average household characteristics and the age distribution of the projected population, these residents translate to approximately 37,000 new households statewide by 2030. Future housing will need to accommodate not only these new households but also a healthy availability rate and an allowance for seasonal/alternate home use. The additional allocation for seasonal homes/alternate use homes assumes that the relative demand for seasonal homes remains constant as the population grows. This assumption is based on historic data, which has indicated that while seasonal homes as a percentage of total homes has fluctuated slightly it has stayed relatively constant since 2000 (Table 20).

Table 18: Seasonal Homes and Alternate Use as a Percentage of Total Homes Over Time

<i>Year</i>	<i>2000</i>	<i>2010</i>	<i>2016</i>	<i>2021</i>
<i>Coastal</i>	16.6%	17.2%	17.8%	17.1%
<i>Northeastern</i>	12.7%	12.8%	14.6%	13.9%
<i>Central Western</i>	17.5%	17.7%	19.8%	18.8%

Without accommodating the demand for seasonal homes and alternate uses, seasonal buyers and other users will acquire more of the housing stock that could otherwise be occupied by full-time residents (Figure 41).

⁴¹ Scardamalia, Robert. (2022). State, County, and Municipal Population Projections: 2020 – 2050. New Hampshire Department of Business and Economic Affairs, Office of Planning and Development. <https://www.nheconomy.com/getmedia/0205c62d-9c30-4b00-9c9e-d81d8f17b8b3/NH-Population-Projections-2020-2050-Final-Report-092022.pdf>

⁴² UMass Donahue Institute. (2018). Regional Population Projections for 2020 RTPs. <https://www.mass.gov/doc/projections-final-for-rtps-0/download>

⁴³ The state of Vermont projected an increase of 2.5%, however projections were executed in 2013 and do not reflect recent national trends.

Figure 41: Future Housing Need Methodology: Coastal Region Example



Jurisdictions across the state already add housing every year. On average from 2016 - 2021, The Coastal, Central Western and Northeastern regions permitted 3,400, 1,000, and 400 units respectively. This analysis simply measures the number of new homes that would align with projected population growth, within a range of +/- 0.5% to accommodate uncertainty around future growth. Accounting for varying population projections in each region and a steady availability rate of 5%, **between 38,000 and 46,000 additional units will be needed by 2030 to accommodate households and associated vacant and seasonal units for a healthy housing market (Table 21).**⁴⁴

Table 19: Future Need Scenario Low / High Range 2021 - 2030 Growth

Region	Change in Households	Homes to Accommodate Availability	Homes to Accommodate Seasonal Use	Total Homes Needed
Coastal	19,000 – 21,900	1,000 – 1,200	4,200 – 4,900	24,200 – 28,000
Central Western	7,800 – 9,300	410 – 490	1,500 – 1,900	9,700 – 11,700
Northeastern	3,000 – 4,700	160 - 250	790– 1,100	4,000 – 6,100
	29,800 – 35,900	1,600 – 1,900	6,500 – 7,900	37,900 – 45,800

Annualizing the total homes needed over nine years results in 2,700 – 3,100 homes for the Coastal Region, 1,100 – 1,300 homes for the Central Western Region, and 430 – 660 homes for the Northeastern Region (Table 22). Any adjustments to population projections will result in adjustments to production

⁴⁴ Population projections provided by the State Economist are for population growth during the period between the year 2020 and 2030. Since data sources for this study are aligned with 2021 or a 2021 equivalent, a year of growth demand is removed from the total. Adjusted housing need by region for the time period 2021 – 2030 is summarized in Table 14. Adjusted Regional Housing Demand for time period 2021 - 2020. The total adjusted projected need to accommodate future growth from 2021 – 2030 across all regions in Maine is 42,200 units.

targets. Similar to the jobs : homes deficit, any anticipated changes in future conditions regarding slower or faster growth than expected would impact homes needed to address future growth.

Table 20: Annualized Production Goals Future Need, 2021 – 2030

<i>Region</i>	<i>Annualized Production Goal Range: Future Need</i>
<i>Coastal</i>	2,700 – 3,100
<i>Central Western</i>	1,100 – 1,300
<i>Northeastern</i>	430 - 660

Future Need Geographic Allocation

The future need projections are based on the Maine State Economist's population projections, which occur every two years and are output at the county level for the State of Maine.

While the state overall is growing, not all areas in the state are projected to grow in the coming decade. Certain counties show much greater additional housing need to accommodate population change. Need is sized based on population shifts including aging, dissolution of multi-person households resulting in additional household formations and anticipated economic changes. Aroostook, Piscataquis and Somerset Counties are projected to see a modest total population decline by 2030, with Piscataquis seeing a decrease in the low growth scenario. However, in all other scenarios there will likely be a net gain in households in that time period, requiring additional homes (Table 21).

Table 21: County Level Distributions, Future Need by 2030

<i>Counties</i>	<i>Future Need Low</i>	<i>Future Need High</i>
Maine Future Need	37,900	45,800
<i>Hancock County</i>	1,900	2,200
<i>Cumberland County</i>	7,200	8,600
<i>Knox County</i>	1,400	1,700
<i>Lincoln County</i>	880	1,100
<i>Sagadahoc County</i>	770	950
<i>Waldo County</i>	2,100	2,300
<i>York County</i>	10,100	11,100
<i>Piscataquis County</i>	-30	110
<i>Androscoggin County</i>	2,200	2,700
<i>Franklin County</i>	820	1,000
<i>Kennebec County</i>	4,500	5,100
<i>Oxford County</i>	1,900	2,300
<i>Somerset County</i>	330	600
<i>Aroostook County</i>	720	1,100
<i>Penobscot County</i>	1,400	3,000
<i>Washington County</i>	1,700	1,900

Total Need

To arrive at the overall annual production need for the State for the nine years from 2021 – 2030, the Study Team summed the annual production need for both historic underproduction and future need. This assumes that historic underproduction and future need can be addressed incrementally. The combined annual production needed to account for both historic underproduction and future need is **between 8,500 and 9,300 homes statewide per year (Table 22).**

Table 22: Annualized Production Need 2021 – 2030

	<i>Annualized Future Need</i>	<i>Annualized Historic Underproduction Need</i>	<i>Total Homes Needed Annually</i>
<i>Coastal</i>	2,700 – 3,100	2,400	5,100 – 5,500
<i>Central Western</i>	1,100 – 1,300	1,400	2,500 – 2,700
<i>Northeastern</i>	430 – 660	480	900 – 1,100
<i>Total for Maine</i>	4,200 – 5,100	4,300	8,500 – 9,300

The Study Team compared these annual production needs to building permit data released annually by HUD. All regions will require an increase in production, with a range of 50% to 175% increase required to achieve the high end of the production goals (Table 23). These numbers provide context for how much more housing regions will need to permit compared to historical trends to address this need. While the percent change in building permits needed in the Central and Northeastern Regions is higher than in the Coastal Region, the need is much smaller overall. More than half of annual production needs are in the Coastal Region, while the Northeastern Region would need to permit and build about 900 homes per year to meet these goals.

Table 23. Annual Production Needs Benchmarked to Historic Permitting

	<i>Total Annual Production Need</i>	<i>5-year average (2016 - 2021)</i>	<i>% Change in Permits</i>	<i>Net Change in permits</i>
<i>Coastal</i>	5,100 – 5,500	3,400	50% - 62%	1,700 – 2,100
<i>Central Western</i>	2,500 – 2,700	1,000	150% - 170%	1,500 – 1,700
<i>Northeastern</i>	900 – 1,100	400	128% - 175%	510 - 700
<i>Maine</i>	8,500 – 9,300	4,800	77% - 94%	3,700 – 4,500

Source: Annual units permitted by county as measured by HUD, average 2016 - 2021

Next Steps and Implementation

In response to the requirements established in LD 2003, this Study measures the number of homes needed to meet the housing and economic development goals established by the State of Maine. The next step in the process will be to set housing production and reinvestment targets at the local level and to consider the different housing typologies that can support housing production across the income spectrum. To move from the regional level to the local level will involve consideration of local obstacles such as available infrastructure, development capacity and other factors. It will also involve dialogue among communities about where and how to accommodate growth within the region.

The assessment of regional housing need and the local targets will need to be updated periodically to reflect changing conditions. In particular, there is considerable uncertainty around whether recent immigration is a longer-term trend or a short-term impact of the Covid-19 pandemic. The State and regional partners will need to establish a process to evaluate and modify production targets based on changing housing, labor force, demographic and population conditions and make those changes available to the public.

In order for stakeholders to monitor these changing conditions and track progress towards local housing production targets, the State will be providing an online data dashboard of baseline housing conditions at the state, county, and municipal level that will be updated on a periodic basis. Moving forward, improved collection of both building permitting and demolition data, as well as continuous tracking of vacancy trends, will also be critical for monitoring new development.

Finally, there are a number of important issues in this report that deserve further study to ensure that housing policy in Maine reflects changing conditions. In particular, more data and information is needed to understand the specific housing needs of Maine's aging population, asylum seekers and refugees, and those who are facing housing quality issues and energy insecurity.

Appendix

Appendix Table 1: State of Maine's Study Geographic Regions Defined

Counties	Cities	Towns
Northeastern Region		
Aroostook County	Caribou, Presque Isle	Allagash, Amity, Ashland, Bancroft, Blaine, Bridgewater, Castle Hill, Caswell, Chapman, Crystal, Dyer Brook, Eagle Lake, Easton, Fort Fairfield, Fort Kent, Frenchville, Grand Isle, Hamlin, Hammond, Haynesville, Hersey, Hodgdon, Houlton, Island Falls, Limestone, Linneus, Littleton, Ludlow, Madawaska, Mapleton, Mars Hill, Masardis, Merrill, Monticello, New Canada, New Limerick, New Sweden, Oakfield, Orient, Perham, Portage Lake, Saint Agatha, Saint Francis, Sherman, Smyrna, Stockholm, Van Buren, Wade, Washburn, Westfield, Westmanland, Weston, and Woodland
Penobscot County	Bangor, Brewer and Old Town	Alton, Bradford, Bradley, Burlington, Carmel, Charleston, Chester, Clifton, Corinna, Corinth, Dexter, Dixmont, East Millinocket, Eddington, Edinburg, Enfield, Etna, Exeter, Garland, Glenburn, Greenbush, Greenfield, Hampden, Hermon, Holden, Howland, Hudson, Indian Island, Kenduskeag, Lagrange, Lakeville, Lee, Levant, Lincoln, Lowell, Mattawamkeag, Maxfield, Medway, Milford, Millinocket, Mount Chase, Newburgh, Newport, Orono, Orrington, Passadumkeag, Patten, Plymouth, Springfield, Stacyville, Stetson, Veazie, Winn and Woodville
Washington County	Calais and Eastport	Addison, Alexander, Baileyville, Beals, Beddington, Centerville, Charlotte, Cherryfield, Columbia, Columbia Falls, Cooper, Crawford, Cutler, Danforth, Deblois, Dennysville, East Machias, Harrington, Indian Township, Jonesboro, Jonesport, Lubec, Machais, Machiasport, Marshfield, Meddybemps, Milbridge, Northfield, Pembroke, Perry, Princeton, Robbinston, Roque Bluffs, Steuben, Talmadge, Topsfield, Vanceboro, Waite, Wesley, Whiting and Whitneyville
Central Western Region		
Androscoggin County	Auburn, and Lewiston	Durham, Greene, Leeds, Lisbon, Livermore, Livermore Falls, Mechanic Falls, Minot, Poland, Sabattus, Turner and Wales
Franklin County		Avon, Carrabassett Valley, Carthage, Chesterville, Eustis, Farmington, Industry, Jay, Kingfield, Madrid, New Sharon, New Vineyard, Phillips, Rangeley, Strong, Temple, Weld and Wilton
Kennebec County	Augusta, Gardiner, Hallowell and Waterville	Albion, Belgrade, Benton, Chelsea, China, Clinton, Farmingdale, Fayette, Litchfield, Manchester, Monmouth, Mount Vernon, Oakland, Pittston, Randolph, Readfield, Rome, Sidney, Vassalboro, Vienna, Wayne, West Gardiner, Windsor, Winslow and Winthrop
Oxford County		Andover, Bethel, Brownfield, Buckfield, Byron, Canton, Denmark, Dixfield, Fryeburg, Gilead, Greenwood, Hanover, Hartford, Hebron, Hiram, Lovell, Mexico, Newry, Norway, Otisfield, Oxford, Paris, Peru, Porter, Roxbury, Rumford, Stoneham, Stowe, Sumner, Sweden, Upton, Waterford, West Paris and Woodstock

Piscataquis County		Abbott, Atkinson, Beaver Cove, Bowerbank, Brownville, Dover-Foxcroft, Greenville, Guilford, Medford, Milo, Monson, Parkman, Sangerville, Sebec, Shirley, Wellington and Willimantic
Somerset County		Anson, Athens, Bingham, Cambridge, Canaan, Cornville, Detroit, Embden, Fairfield, Harmony, Hartland, Jackman, Madison, Mercer, Moose River, Moscow, New Portland, Norridgewock, Palmyra, Pittsfield, Ripley, Saint Albans, Skowhegan, Smithfield, Solon and Starks
Coastal Region		
Cumberland County	Portland, South Portland, and Westbrook	Baldwin, Bridgton, Brunswick, Cape Elizabeth, Casco, Cumberland, Falmouth, Freeport, Gorham, Gray, Harpswell, Harrison, Naples, New Gloucester, North Yarmouth, Pownal, Raymond, Scarborough, Sebago, Standish, Windham, and Yarmouth
Hancock County	Ellsworth	Amherst, Aurora, Bar Harbor, Blue Hill, Brooklin, Brooksville, Bucksport, Castine, Cranberry Isles, Dedham, Deer Isle, Eastbrook, Franklin, Frenchboro, Gouldsboro, Great Pond, Hancock, Lamoine, Mariaville, Mount Desert, Orland, Osborn, Otis, Penobscot, Sedgwick, Sorrento, Southwest Harbor, Stonington, Sullivan, Surry, Swans Island, Tremont, Trenton, Verona, Waltham and Winter Harbor
Knox County	Rockland	Appleton, Camden, Cushing, Friendship, Hope, Isle au Haut, North Haven, Owls Head, Rockport, St George, South Thomaston, Thomaston, Union, Vinalhaven, Warren and Washington
Lincoln County	Wiscasset	Alna, Boothbay, Boothbay Harbor, Bremen, Bristol, Damariscotta, Dresden, Edgecomb, Jefferson, Newcastle, Nobleboro, Somerville, South Bristol, Southport, Waldoboro, Westport, Whitefield and Wiscasset
Sagadahoc County	Bath	Arrowsic, Bowdoin, Bowdoinham, Georgetown, Phippsburg, Richmond, Topsham, West Bath and Woolwich
Waldo County	Belfast	Belmont, Brooks, Burnham, Frankfort, Freedom, Islesboro, Jackson, Knox, Liberty, Lincolnville, Monroe, Montville, Morrill, Northport, Palermo, Prospect, Searsmont, Searsport, Stockton Springs, Swanville, Thorndike, Troy, Unity, Waldo and Winterport
York County	Biddeford and Saco	Acton, Alfred, Arundel, Berwick, Buxton, Cornish, Dayton, Eliot, Hollis, Kennebunk, Kennebunkport, Kittery, Lebanon, Limerick, Limington, Lyman, Newfield, North Berwick, Ogunquit, Old Orchard Beach, Parsonsfield, Sanford, Shapleigh, South Berwick, Waterboro, Wells and York

Review of Housing Production Goal National Precedents and their Methodologies

National Housing Production Goal Analysis precedents were reviewed in the development of the State of Maine's methodology. Three examples specifically reviewed were the California Regional Housing Need Allocation, the Oregon Housing Needs Analysis, and Massachusetts Chapter 40B.

California Regional Housing Need Allocation

The California Regional Housing Need Allocation sets state and regional housing production goals and requires local government's zoning and housing plans to work towards achieving those goals. The State of California Department of Housing and Community Development (HCD) sets the amount of new housing units each region is required to produce within the income categories of Very Low (0 – 50% AMI), Low (50 – 80% AMI), Moderate (80% - 120% AMI) and Above Moderate Income (120% AMI +).

HCD sets the amount of housing needed by region using population projections from the California Department of Finance and adjusted based on local characteristics of target vacancy, overcrowding and share of cost-burdened households. The housing need is set every eight years for the next 8 year cycle. After regional numbers are set, regional organizations then allocate a share of units to local jurisdictions within their region. Local jurisdictions report progress towards their allocations to HCD annually using a progress report template.¹

Oregon Housing Needs Analysis

In 2019, Oregon passed House Bill 2003 directing Oregon Housing and Community Services (OHCS) to support housing needs as outlined by Oregon's statewide land use planning program. Oregon's model for estimating regional housing need is called the Oregon Housing Needs Analysis (OHNA). This methodology is used by OHCS to measure current housing need, historic underproduction, projected housing need over the next 20 years, and housing need for those currently homeless. It also considers the impacts on housing markets from vacation homes. The methodology incorporates guidance on the distribution of unit affordability in a region, with the latest methodology suggesting that about 32% of Oregon's housing need should be affordable to households earning less than 60% of state median income. and allocates this regional need to the local level with guidance on unit typologies (single family or multifamily). This is intended to replace housing need calculations previously executed at the local level.

The OHNA also establishes local production targets for cities with populations over 10,000, which the state tracks and evaluates regularly through a Housing Production Dashboard presenting data on progress towards production targets. Furthermore, the state tracks ongoing housing equity indicators, including cost burden and homeownership rates by race, age, and disability status.²

¹ Association of Bay Area Governments. (2020). Regional Housing Needs Allocation Proposed Methodology: San Francisco Bay Area, 2023-2031. https://abag.ca.gov/sites/default/files/rhna_methodology_report_2023-2031_finalposting.pdf

Association of Bay Area Governments. (2021). Regional Housing Needs Allocations Frequently Asked Questions. https://abag.ca.gov/sites/default/files/documents/2021-12/ABAG_2023-2031_RHNA_FAQ_Dec2021.pdf

² Oregon Department of Land Conservation and Development Oregon Housing and Community Services. (2022). Oregon Housing Needs Analysis Legislative Recommendations Report: Leading with Production. https://www.oregon.gov/lcd/UP/Documents/20221231_OHNA_Legislative_Recommendations_Report.pdf

Massachusetts Chapter 40B

Massachusetts 40B is a state statute that overrides local authority to block affordable housing development in the State of Massachusetts. Chapter 40B enables Local Zoning Boards of Appeals to approve affordable housing developments, with at least 20 – 25% of the units have long-term affordability restrictions, under flexible rules. Chapter 40B is a controversial law as it allows developers of affordable housing to appeal a local decision to the state if the community in which the developer is looking to build has less than 10% of year-round housing as affordable housing, or less than 1.5% of its land area as affordable housing.

Municipalities can receive a 1 or 2-year exemption from the developer appeals process through the creation of a Housing Production Plan (HPP) and maintaining annual affordable housing growth of 0.5%. Characteristics of approved plans include the following:

- Units must be part of a subsidized development built or operated by a public agency, non-profit or limited dividend organization.
- A minimum of 25% of units must be income restricted at 80% AMI with restrictions for at least 30 years.
- The proposed development must be subject to a regulatory agreement and monitored by a public agency or nonprofit organization.
- Owners must meet affirmative marketing requirements.

Implemented in 1969, this policy has a long history reflecting its successful implementation in the state for the creation of housing in many communities. Many towns since the policy's implementation have exceeded the 10% threshold, a count that continuously increased throughout the 2000s. Chapter 40B has produced over 60,000 units in over 1,200 developments and is considered responsible for approximately 34% of all housing production in Greater Boston from 2002 – 2006.³

³ MassHousing. (2023). Chapter 40B and MassHousing. <https://www.masshousing.com/en/programs-outreach/planning-programs/40b>

Citizens' Housing and Planning Association. (2011). Fact Sheet on Chapter 40B The State's Affordable Housing Zoning Law. <https://www.chapa.org/sites/default/files/Fact%20Sheet%20on%20Chapter%2040B%202011%20update.pdf>

Regional Area Median Income Percentage to Gross Household Income

PUMS data was used as a basis for existing conditions analysis throughout the report. To understand household income levels at a more regional level using PUMS, HUD fair market rents were applied by PUMA to understand household incomes with respect to percentage of AMI levels. There are 10 PUMA geographies in the State of Maine and multiple HUD geographies within some PUMAs, so the two datasets did not align exactly. Since PUMA geographies cannot be broken down further, a HUD fair market rent needed to be selected for each individual PUMA. For those PUMAs which had multiple Fair Market Rent areas in them, the Study Team took HUD AMI limits with the largest population within a particular PUMA.

Appendix Table 2: PUMA to HUD Geography Crosswalk

PUMA Geography	PUMA Code	HUD Geography
Northeastern Region		
Northeast Maine – Aroostook & Washington Counties PUMA	23 00100	Aroostook County
Penobscot County PUMA	23 00300	Penobscot County – Bangor, ME HUD Metro FMR Area
Central Western Region		
Androscoggin County PUMA	23 00600	Androscoggin County – Lewiston – Auburn ME, MSA
Northwest Maine – Oxford, Somerset, Franklin & Piscataquis Counties PUMA	23 00200	Oxford County
Kennebec County PUMA	23 00400	Kennebec County
Coastal Region		
Cumberland County (Southeast) – Portland, South Portland & Westbrook Cities PUMA	23 01000	Cumberland County – Portland, ME HUD Metro FMR Area
Coastal Maine Region – Hancock, Knox, Waldo & Lincoln Counties PUMA	23 00500	Hancock County
Sagadahoc & Cumberland (North) Counties – Bath City & Brunswick PUMA	23 00700	Sagadahoc County – Sagadahoc County, ME HUD Metro FMR Area
South Maine – York (west) & Cumberland (West) Counties PUMA	23 00800	York County – Portland ME HUD Metro FMR Area
Cumberland (Outside Portland) & York (East) Counties – Biddeford & Saco Cities PUMA	23 00900	Cumberland County – Cumberland County, ME (Part) HUD Metro FMR Area

Short Term Rental County-Level Findings

Appendix Table 3: Short-Term Rental Inventory as Share of Total Housing Supply by County, 2023

Counties	Total AirDNA Inventory	NOAH-Comparable AirDNA Inventory
Northeastern Region		
Aroostook County	1.2%	0.5%
Penobscot County	1.1%	0.4%
Washington County	3.2%	1.5%
Central Western Region		
Androscoggin County	0.5%	0.2%
Franklin County	6.2%	1.8%
Kennebec County	1.1%	0.4%
Oxford County	4.8%	1.4%
Piscataquis County	4.1%	1.9%
Somerset County	1.5%	0.8%
Coastal Region		
Cumberland County	2.8%	0.9%
Hancock County	9.8%	3.1%
Knox County	5.2%	1.6%
Lincoln County	6.3%	2.5%
Sagadahoc County	2.4%	0.9%
Waldo County	3.7%	1.5%
York County	4.2%	1.1%

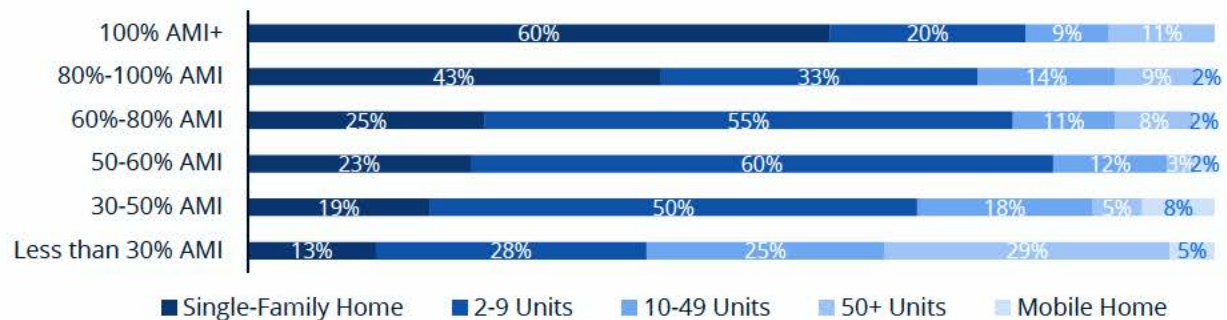
Source: AirDNA 2023; American Community Survey 5-Year, 2021.

Note: Total AirDNA Inventory defined as properties with at least one reservation in the past year. NOAH-Comparable AirDNA Inventory defined as properties with at least one reservation in the past year, available more than 3 months out of the year, that are an entire single family or multifamily unit, and excluding luxury rentals and rentals with more than 3 bedrooms.

Housing Typology Distribution by AMI - Regional Breakout

Housing typologies by income in the Coastal Region generally mirror that of the state (Appendix Figure 1). Notably, buildings with 50 or more units support affordability for very low-income households in the Coastal Region.

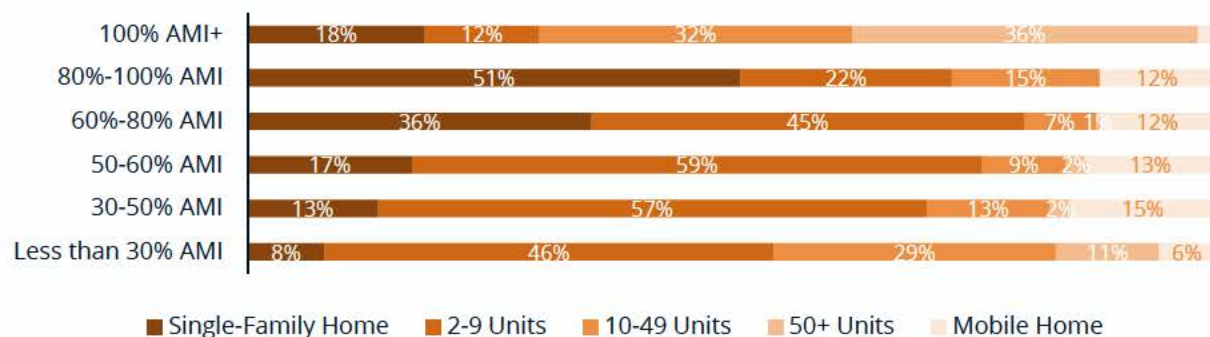
Appendix Figure 1: Rental Housing Types Affordable by Income Bracket in the Coastal Region, 2021



Source: American Community Survey 5-Year, Public Use Microdata Sample (PUMS) 2021

Compared to the state as a whole, the Central Western Region has a high share of 10 or more-unit homes affordable to households over 100% of AMI, and a high share of single-family homes supporting households between 60 – 100% of AMI (Appendix Figure 2). 2-9 unit buildings are an important source of homes affordable to renter households making very low incomes in this region.

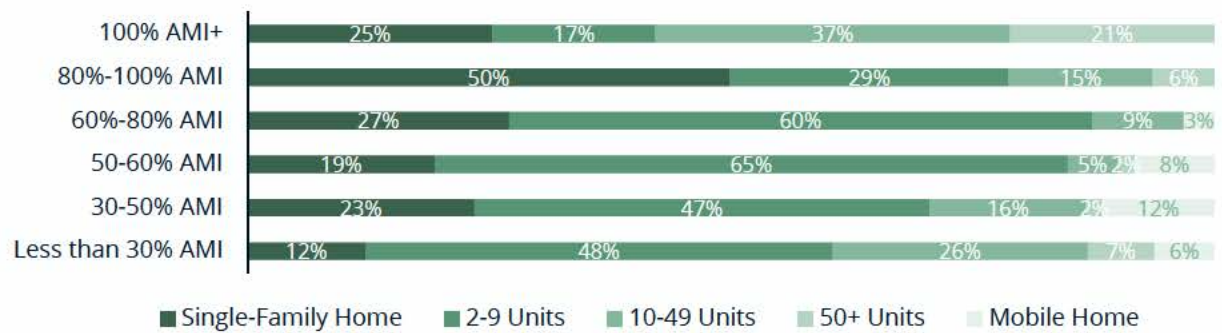
Appendix Figure 2: Rental Housing Types Affordable by Income Bracket in the Central Western Region, 2021



Source: American Community Survey 5-Year, Public Use Microdata Sample (PUMS) 2021

In the Northeastern region, 2-9 unit buildings are the most prevalent source of rental homes affordable to renter households making less than 80% AMI, with a higher share of higher-density rental buildings affordable to households over 100% of AMI (Appendix Figure 3).

Appendix Figure 3: Rental Housing Types Affordable by Income Bracket in the Northeastern Region, 2021



Source: American Community Survey 5-Year, Public Use Microdata Sample (PUMS) 2021

Job Openings Rate Calculation Methodology

The Study Team used an adjusted method to calculate job openings when compared to the Job Openings and Labor Turnover Survey (JOLTS) values. The JOLTS data is benchmarked primarily from the Quarterly Census of Employment and Wages program (QCEW). Our analysis is based on the FRED employment numbers resulting from the Current Population Survey (CPS) survey. To translate these values to the FRED data source, the JOLTS job opening numbers were allocated to regions based on Lightcast job listings data, and then applied to FRED Employment numbers – reflecting a ratio of listings to employment rather than the traditional JOLTS measure of jobs. This adjustment shifts the opening rate slightly from the corresponding JOLTS reported rate.

Home Affordability Calculation by Household Income

Home affordability calculations for both rental and homeownership incorporated necessary additional expenses typical of homeowners and renters.

Renter Affordability Calculation

For renter affordability ranges correlating to the predetermined income ranges, a cost burden ratio of 28% was used based on Maine Housing's standard assumptions. Rental Utility allowance was selected from HUD regional tables and included in the affordability calculation by netting it out of the households monthly payment. The utility allowance for rental units was assumed to be an average value of Maine's region tables (Tables for Regions 4, 5, 6 and 7, Region 1, and Region 2 and 3) and assumed to be a 2-bedroom garden unit. This utility allowance was assumed at \$381 per month, and includes electric heating, cooking, lighting, and water heating, water, sewer, and trash collection.

The resulting affordable rent shown in Appendix Table 4 is what the corresponding household income could afford.

Appendix Table 4: Regional Household Income Range with Corresponding Rental Affordability

<i>Income Range</i>	<i>Affordable Monthly Rent⁴</i>
<i>Less than 20K</i>	< 80
<i>20K - 35K</i>	81 – 430
<i>35K - 50K</i>	431 – 780
<i>50K - 75K</i>	781 – 1,360
<i>75K- 100K</i>	1,361 – 1,950
<i>100K - 150K</i>	1,951 – 3,110
<i>150K+</i>	3,111 +

Homeowner Affordability Calculation

For homeowner affordability ranges correlating to the predetermined income ranges, a cost burden ratio of 28% was used based on Maine Housing's standard assumptions. Additional cost assumptions incorporated are as follows:

- Utilities – \$500 per month, Assumed for a 3 bedroom single family home averaging across all region tables and including electric heating, cooking, lighting, and water heating, water, sewer, and trash collection.
- Insurance - \$80 per month
- Property Taxes – Assumed to be an average rate of 1.39%, based on an assessed value of 75%

⁴ Apartment unit monthly rents were calculated assuming 28% of income towards housing expenses less utility allowance. Utility allowance was calculated using HUD schedules assuming a 2 bedroom garden apartment unit.

Home mortgage costs were estimated using the corresponding household income and current market conditions, including an 80% loan to value, 7.5% interest rate, 4% closing costs with a 30-year amortization.

Appendix Table 5: Regional Household Income Range with Corresponding Affordable Home Purchase Price

<i>Income Range</i>	<i>Affordable Home Price</i>
<i>Less than 20K</i>	N/A
<i>20K - 35K</i>	< 36,500
<i>35K - 50K</i>	36,501 – 90,700
<i>50K - 75K</i>	90,701 – 180,900
<i>75K- 100K</i>	180,901 – 271,200
<i>100K - 150K</i>	271,201 – 451,700
<i>150K+</i>	451,701 +

Methodology for Job : Homes Deficit Household Income Allocation

The Jobs : Homes deficit income allocation was calculated using a methodology that includes both PUMS data and Lightcast job opening distribution data.

Data was collected on the distribution of personal and corresponding household incomes for those living in the Northeastern Region. To ensure the analysis incorporated a sufficient sample size of households and their incomes, a larger geography was used rather than specific regional geographies. Because of this data limitation, this regional distribution was then applied to all regions job listings instead of having regional specific distributions. States included in this Northeastern Region geography for the purposes of this calculation include New Hampshire, Vermont, and Maine. The resulting matrix shows the estimated distribution of household income for individual earners within a specific personal income range (Appendix Table 6).

Appendix Table 6: Regional Household Income Distribution by Personal Income

<i>Household Income</i>	<i>Less Than 20K</i>	<i>20K-35K</i>	<i>35K-50K</i>	<i>50K-75K</i>	<i>75K-100K</i>	<i>100K-150K</i>	<i>150K+</i>
<i>Less Than 20K</i>	12%	0%	0%	0%	0%	0%	0%
<i>20K-35K</i>	12%	28%	0%	0%	0%	0%	0%
<i>35K-50K</i>	12%	14%	25%	1%	0%	0%	0%
<i>50K-75K</i>	18%	23%	22%	27%	1%	0%	0%
<i>75K-100K</i>	14%	14%	24%	23%	25%	1%	0%
<i>100K-150K</i>	18%	12%	20%	33%	41%	41%	1%
<i>150K+</i>	15%	8%	9%	16%	33%	57%	99%

The Study Team derived a distribution of individual wages from Lightcast job listing data. The Study Team used Unique Postings from June 2022 to May 2023 individually for each region, summing based on average incomes of occupation codes (SOC). The resulting summary provided individual wage distributions of job listings over the selected one-year period by region (Appendix Table 7).

Appendix Table 7: Individual Job Listing Income Distributions by Region

<i>Personal Listing Income</i>	<i>Less Than 20K</i>	<i>20K-35K</i>	<i>35K-50K</i>	<i>50K-75K</i>	<i>75K-100K</i>	<i>100K-150K</i>	<i>150K+</i>
<i>Coastal</i>	4.6%	17.8%	28.4%	19.5%	19.4%	9.3%	1.1%
<i>Central Western</i>	5.1%	13.5%	20.4%	29.6%	24.4%	5.9%	1.1%
<i>Northeastern</i>	3.7%	28.4%	23.2%	29.1%	8.3%	4.3%	2.9%

The resulting individual wage distributions were then applied to the overall household income distribution, resulting in an estimate of a regional household income distribution which one could expect out of state relocations for open job opportunities to fall within (Appendix Table 8).

Appendix Table 8: Estimated Household Income Distribution for Job Listings by Region

<i>Household Income</i>	<i>Coastal</i>	<i>Central Western</i>	<i>Northeastern</i>
<i>Less than 20K</i>	0.6%	0.7%	0.6%
<i>20K - 35K</i>	5.5%	4.4%	8.4%
<i>35K - 50K</i>	10.4%	7.9%	10.6%
<i>50K - 75K</i>	16.7%	16.8%	20.4%
<i>75K - 100K</i>	19.3%	20.3%	18.9%
<i>100K - 150K</i>	26.9%	28.9%	23.6%
<i>150K+</i>	20.6%	21.0%	17.6%

The Study Team then applied the estimated Jobs : Homes deficit to the resulting household distribution expected for out of state relocations to Maine for new job opportunities in Appendix Table 8, totaling 11,400 units for the Coastal Region, 7,500 for the Central Western Region, and 1,900 for the Northeastern Region. The resulting distribution of the Jobs : Homes deficit provides an estimate on which to base home prices such that out of state relocating households could afford to purchase them (Appendix Table 9).

Appendix Table 9: Allocation of Jobs : Homes Deficit to Estimated Household Incomes Based on Wages of Open Job Listings

<i>Household Income</i>	<i>Coastal</i>	<i>Central Western</i>	<i>Northeastern</i>
<i>Less than 20K</i>	70	50	10
<i>20K - 35K</i>	630	330	160
<i>35K - 50K</i>	1,180	600	200
<i>50K - 75K</i>	1,900	1,300	390
<i>75K - 100K</i>	2,200	1,500	360
<i>100K - 150K</i>	3,100	2,200	450
<i>150K+</i>	2,350	1,600	340
<i>Total</i>	11,400	7,500	1,900