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State of Colorado

Housing Research

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EXECUTIVE SUMMARY.

COLORADO HOUSING RESEARCH: TOP FINDINGS

Executive Summary.

Colorado Housing Research

To assist Gary Community Ventures (GCV), the Colorado Housing Affordability Project (CHAP), and state and local policymakers make targeted- and outcome-driven decisions to address Colorado's housing needs, Root Policy Research conducted primary research in several areas critical to housing policy reform:

Existing conditions

- What market dynamics created the state's affordability challenges?
- Which Coloradans have the greatest housing needs?

Housing supply

- How are housing needs related to supply shortages?
- What housing product types provide the most affordability?
- How many additional units are needed to return the state to a functioning housing market?
- How many additional units are needed to accommodate future population and employment growth?

Land use

- Are Colorado cities making the best use of developable land?
- Do zoning and land use policies allow for more affordable housing types?

Policy interventions

- How can the state increase low to moderate income homeownership? Reduce the large homeownership gaps for Black, Indigenous, People of Color (BIPOC) households?
- How can the state address housing cost burden for low and moderate income households?
- What are the best ways to mitigate displacement and add to housing instability?

Our research was conducted at the state level. We also performed focused analyses of housing needs for a sample of Colorado counties representing the state's geographic diversity. Detailed analyses of potential land use interventions were conducted for Jefferson and Larimer Counties.

This Executive Summary provides a high-level overview of that research. Detailed research findings appear in subsequent sections.

Existing Conditions

Between 2010 and 2019:

- Residential construction failed to keep up with population or employment growth, much less accommodate acquisition of units for second home and vacation use. The state added 249,032 housing units but gained 273,395 households—fewer than one unit per household. Existing vacant units were inadequate to fill that gap.
- More new jobs were created than workers to fill them. The number of residents in prime working years (ages 18 to 64) grew by 1.5% annually. The number of jobs in the state grew by 2.5% annually. The strongest growth by age cohort occurred for older adults (65+ grew by 4.8% annually).
- Income growth of renters and BIPOC households outpaced that of owners and Non-Hispanic White households—a sharp reversal from the prior decade. Even so, the median income of renters is half that of owners, and the median income of BIPOC households is 60% of that of Non-Hispanic White households.
- **Rents rose much faster than incomes in every Colorado county and city with 50,000+ residents.** The gaps in income and rent increases were the worst in Eagle County and the Cities of Aurora, Boulder, Lakewood, and Westminster, where rent increases were double income increases.
- Sixty-five percent of Coloradans are owners—down slightly from 67% in 2000. The gap in homeownership rates of non-Hispanic Whites and BIPOC households is very large: **71% of Non-Hispanic White households own their homes, compared to 43% of Black/African American households and 51% of Hispanic households.** Much of this is driven by differences in income: Only households with incomes of \$75,000 and more exceed the state's overall homeownership rate.
- **About 300,000 renter households pay more than 30% of their incomes in housing costs and are “cost burdened.”** These renters make up 41% of all Colorado renters. More than half have incomes of \$25,000 and less. Cost burden decreases dramatically once renter income reaches \$50,000.
- **200,000 owners are cost burdened,** making up 25% of all Colorado owners. Of the burdened owners, 40% have incomes of \$25,000 and less. The number of burdened owners stays consistent for owners with incomes between \$25,000 and \$100,000.

Housing Supply

- A healthy for sale housing market has around six months of supply, defined as the number of houses currently for sale divided by the average number of homes sold per month. **Colorado's inventory as of June 2021 was 13% of what is needed for a functioning sales market.** When buyer-ready renters cannot find homes to purchase they occupy rental units longer, reducing the overall supply of rentals, and inducing

the market to raise rents. According to the Federal Reserve, the rental vacancy rate has been declining since 2009, reaching a historical low of 3.4% in 2018.

- In the decade before the housing crisis, **between 1996 and 2006, the state was adding on average 48,000 housing units each year, with new development tracking employment growth. Since 2007, the state has averaged 26,500 units per year, far fewer than needed to meet employment demands.**
- Demand for second and vacation homes in Colorado has directly affected the inventory of units for rent and for sale. Half of Colorado's vacant homes are reserved for seasonal, recreational, or occasional use—up from 40% in 2010.
- According to the State Demographer, Colorado is projected to add an average of 35,000 households per year between 2020 and 2030, and 29,600 between 2030 and 2040. **To keep up with household growth, and accommodate second and vacation home demand, an average of 40,950 new housing units should be built each year until 2030.** This will require development volume that is 1.5x current levels.
- **To return the housing market to a functioning level** and decrease housing prices, the state needs an extra 36,305 units, for **a total of 486,735 units between now and 2030**—an average of 44,250 units per year—1.67x current production levels.

Land Use

- Building permits historically and continue to be dominated by single-family detached homes. This type of development is inconsistent with demographic changes, and raises housing costs. Between now and 2050, the strongest growth in household types in Colorado will be for adults *without* children, making up nearly half of all households. The share of households with more than one adult and children will decline to 23%.
- **Renter and owner households with incomes between \$50,000 and \$100,000 are less likely to be cost burdened if they occupy moderate-density housing units such as duplexes and triplexes.** In 2019, the median rent for a single family detached home was 35% more expensive than the median rent for a duplex, and 40% more expensive than the median rent for a triplex or fourplex. The relative affordability of market rate apartments has declined over time as they have become highly amenitized and more costly to build.
- **Zoning reform has the potential to greatly increase the residential land capacity and housing supply in Colorado.** Most development is built to allowable capacity to avoid costly rezoning processes. Allowing more density and flexibility in housing types by right—and incentivizing or requiring this of planned unit developments (PUDs)—could increase development capacity in Jefferson County and Larimer County alone by nearly 330,000 units—about 65% of what is needed to satisfy the state's overall supply needs between now and 2030.

Policy Interventions

The analysis of Colorado's supply and demand dynamics affecting housing costs leads to several policy interventions likely to help increase housing affordability. Those are discussed in this section.

It is important to acknowledge that many factors affect housing costs, many of which are outside of policymakers' control:

- Can we change interest rates? No.
- Can we change demographic trends? No.
- Can we fix supply chains and lower construction costs? Not significantly.
- Can we stop demand for second homes? Not likely, but we can plan around that demand.
- Can we encourage the building of more housing and more affordable housing types? Yes. Increasing housing supply is paramount to addressing housing affordability challenges—especially when additional density carries affordability requirements. Supply-oriented reforms must be paired with programs that help renter households move into ownership and lower rental costs.

Solving for supply constraints. Colorado has been operating with a housing supply deficit for many years, and this is likely to continue in the future without land use reform. Many areas in the state have the land to absorb needed units if infrastructure costs are addressed.

Based on population projections from the Colorado State Demographer, Colorado should strive to **add 486,000 residential units by 2030**. This would accommodate population growth, allow for a normal vacancy rate, meet demand for second and vacation homes, and shift the housing supply curve to lower overall prices by 9%.¹ As long as growth pays its own way, this strategy would not cost the public sector.

Making better use of land is the surest way to add needed supply. Three separate land use reforms were tested on Jefferson and Larimer Counties for their potential to build housing supply by unlocking underutilized land. The impact of those policy proposals was measured through the number of residential units that *could have been created* if they were in place beginning in 2010-2021, and if they were in place going forward. That analysis found that:

¹ It is important to note that a price correction could lower revenue generated through property taxes; we assume some of this would be offset by increases in local spending related to reduced cost burden.

- Adding Accessory Dwelling Units (ADUs) on single family lots could have increased housing units by 1,200 in Jefferson County (adding 7% capacity) and 2,300 in Larimer County (27% capacity). However, due to cost and financing barriers, which are typically borne by owners, actual production would be much lower.
- Land use reforms that allow duplexes, triplexes, fourplexes, and sixplexes could have increased housing unit production by 1,770 to 4,400 units in Jefferson County (11%-21% capacity), and 6,300 to 17,100 in Larimer County (32% to 87% capacity), depending on the type of units developed.
- A broader regulatory change that **requires at least 10% of vacant land zoned for 10 dwelling units/acre** (sixplex and denser) **would make the most difference.** If 10% of currently vacant land were developed to this density, as many as 100,000 new residential units could be built in Jefferson County and 272,000 units in Larimer County. This impact is large because so little of these counties, and municipalities in these counties, have zoned land for this level of density.
- Counties and cities that rely heavily on growth through planned unit development (PUD) are limited in their ability to influence housing type diversity. They can, however, require or incentivize affordable housing as part of the PUD approval.

Solving for homeownership gaps. If homes to purchase for middle income renters were available, a modest downpayment assistance program that moved renters into ownership would not only address wealth-building gaps but would free up much-needed rental stock.

A program providing a 5% downpayment to 10%² of renter households with incomes between \$50,000 and \$100,000 could help around **23,500 renter households become owners** and boost available rental stock for low and moderate income renters by 3%.

The majority of renters helped—close to 15,000— would have incomes between \$50,000 and \$75,000. The homeownership rate for this income bracket would increase by 4 percentage points, from 60% to 64%.

To the extent that BIPOC households are assisted with such a program, would boost their ownership rates the most. For example, if all renters with incomes between \$50,000 and \$75,000 assisted are Black/African American, this would bring the homeownership rate of Black/African American households to 60%, from 43% currently. The boost would be lower for Hispanic households (bring the rate to 53% from 51%) because the state’s Hispanic population is much larger. Overall in the state, however, the incremental change would be small; the state’s homeownership rate would only increase by one percentage point.

² The 5% is applied to the mid-point affordable price for each income bracket which is \$268,091 for renters earning between \$50,000 and \$75,000, and \$375,328 for renters earning between \$75,000 and \$100,000.

Solving for cost burden. A little more than 500,000 households—nearly one-third of households in Colorado—are cost burdened. Most of these (300,000) are renters. Of all cost burdened households, 30% are renters with incomes of \$25,000 and less.

Addressing cost burden can be done through direct subsidies or unit production; the lowest income renters require both. These take the form of:

1. Paying part of a tenant’s rent (Section 8 vouchers and similar programs or through broader income supports);
2. Assisting an owner with property taxes, utilities, home repairs; and
3. Building affordable housing.

We modeled the cost for reducing renter and owner cost burden to 35% of gross household income. This is higher than the industry standard (30%), yet a reasonable goal in high-cost markets.

The annual cost to reduce renter cost burden is more than \$2 billion, with more than half dedicated to reducing burden on the lowest income households (\$25,000 and less). This equates to an average annual cost of \$7,100 per renter. Comparatively, investing the same amount of the rental cost into multifamily development (assuming a cost of \$350,000 per unit and rents that sustain operations) would produce 6,074 affordable units—just 2% of the needed supply to fully address cost burden, or 4% of the units for \$25,000-\$75,000 renters. Although unit development has long-term benefits, the upfront cost requires large development subsidies.

Displacement mitigation. Households most at risk of being displaced from new development include renter households who have few resources to manage rents and/or who have backgrounds that make them less desirable tenants for landlords (e.g., eviction histories, criminal backgrounds). Owners who are displaced are often those living on fixed incomes without the ability to manage the rising costs of ownership or owners who have stretched to attain ownership and for whom income disruptions—from lost jobs, divorce, medical conditions—compromise their ability to maintain their mortgage debt. Because renters in many markets are more likely to be BIPOC, displacement disproportionately affects people of color.

There is limited research on the effect of new housing development on displacement and gentrification. National data suggest that gentrification (defined here as an increase in high income, college educated individuals living in a neighborhood) only modestly increases out-migration.³ Findings from a Philadelphia based study indicate that low-credit score

³ Brummet, Quentin, and Davin Reed. "The effects of gentrification on the well-being and opportunity of original resident adults and children." Working paper with the Federal Reserve Bank of Philadelphia (2019).

residents of gentrifying neighborhoods were no more likely to move out than similar residents of non-gentrifying neighborhoods. Of those who did move, however, they were more likely to move to lower-income neighborhoods.⁴

Because new development, even if affordable and/or missing middle housing, might spur gentrification and lead to displacement, it is critical to have complementary programs in place to ensure that land use and zoning changes stabilize markets and increase affordable housing options. Strategies that have been studied and found to be effective include inclusionary zoning, asset building for low income current residents, and land trusts (e.g., a recent study in the *Journal of Urban Affairs* found that community land trusts can slow gentrification).

Programmatic solutions include resident preference policies or first rights for new affordable units; affirmative marketing requirements of developers (e.g., using multicultural models in advertisements, placing ads in culturally-targeted newspapers and radio stations, using a variety of languages, using accessible formats); eviction mediation and prevention; and property tax exemptions (typically for homeowners but can be applied to taxes passed on to renters) for older adults, residents with disabilities, and low income households.

⁴ Ding, Lei, Jackelyn Hwang, and Eileen Divringi. "Gentrification and residential mobility in Philadelphia." *Regional science and urban economics* 61 (2016): 38-51.

SECTION I.

EXISTING CONDITIONS

SECTION I.

Existing Conditions

Since 1990, the State of Colorado has experienced recessions and recoveries, major employment growth, rapid in-migration, increased second and vacation home ownership, aging demographics, and growing racial and ethnic diversity. Through all of these fluctuations, one thing has remained constant: housing development has failed to keep up with employment and population growth.

The state is now at a critical juncture. Without a shift in how Colorado develops housing, the state's economic development, employment growth, quality of life, and the well-being of families will be compromised. A better balance in affordable and market rate housing is necessary for the state to continue to thrive.

This first section of the Colorado Housing Research report answers two questions that are critical for housing planning:

- What market dynamics created the state's affordability challenges?
- Which Coloradans have the greatest housing needs?

Summary of Findings

Between 2010 and 2019:

- Residential construction failed to keep up with population or employment growth, much less accommodate acquisition of units for second home and vacation use. The state added 249,032 housing units but gained 273,395 households—fewer than one unit per household. Existing vacant units were inadequate to fill that gap.

This is happening because: of zoning won't allow needed housing types to be built (examined in depth in Section III); neighbors resist development; and the market gravitates to the highest return.

- Income growth of renters and BIPOC households outpaced that of owners and Non-Hispanic White households—a sharp reversal from the prior decade. Yet income growth was not strong enough keep up with rising rents and home prices, resulting in higher levels of cost burden across income brackets and declining rates of homeownership for all but Asian and Non-Hispanic White households.
- Rents rose much faster than incomes in every Colorado county and city with 50,000+ residents.

- About 300,000 renter households pay more than 30% of their incomes in housing costs and are “cost burdened.” These renters make up 41% of all Colorado renters and more than half have incomes of \$25,000 and less. 200,000 owners are cost burdened, making up 25% of all Colorado owners. Of the burdened owners, 40% have incomes of \$25,000 and less. It has become increasingly common for middle income households—incomes between \$35,000 and \$75,000 (and for renters with incomes between \$20,000 and \$35,000) to experience cost burden.
- In sum, Colorado’s housing market is doing what it is designed to do: cater to people who provide the highest return. The relative decrease in supply and record-high housing prices disproportionately affects Colorado’s workforce and low income families who are more likely to be BIPOC residents. If these patterns continue, Colorado will be unable to sustain its employment growth due to lack of workers.

Drivers of Housing Demand

Figure I-1 shows the growth in population, households, and housing units from 1990 to 2019 in Colorado. As the annual growth rate demonstrates, the only decade when the development of housing units outpaced the rate of growth was from 2000 to 2010, leading up to the Great Recession.

Since 2010, the state has gained 273,395 households compared to 249,032 housing units—adding about 24,000 more households than units. Although vacant units created during the higher-producing 2000s helped accommodate household growth, overall supply was insufficient to respond to demand.

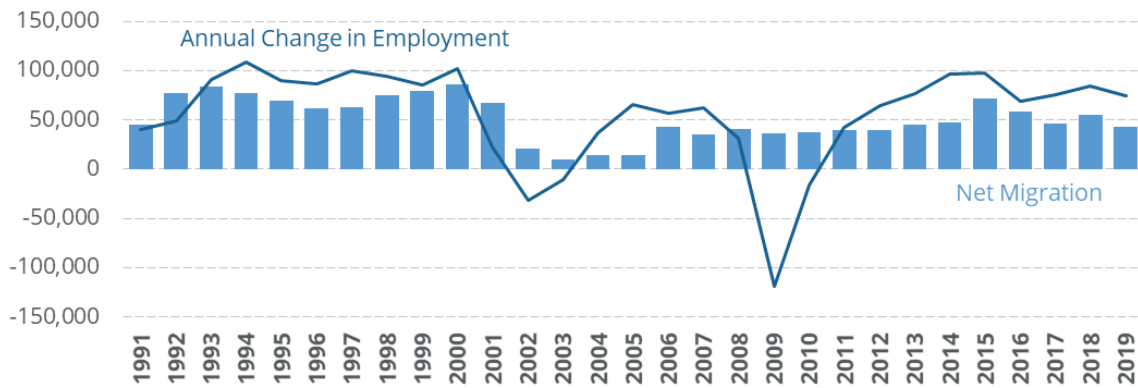
Figure I-1.
Population, Households, and Housing Units, Colorado, 1990-2019

	1990	2000	2010	2019	1990-2000		2000-2010		2010-2019	
					# Change	Ann. %	# Change	Ann. %	# Change	Ann. %
Population	3,304,042	4,338,801	5,050,332	5,763,976	1,034,759	2.8%	711,531	1.5%	713,644	1.5%
Households	1,282,488	1,674,523	1,981,010	2,254,405	392,035	2.7%	306,487	1.7%	273,395	1.4%
Housing units	1,477,349	1,835,015	2,218,698	2,467,730	357,666	2.2%	383,683	1.9%	249,032	1.2%

Source: DOLA.

Figure I-2 shows annual job growth and net migration from 1991 to 2019. The greatest net migration and employment growth occurred during the 1990s, and during this decade employment and population growth were closely correlated. During the 2000s, net migration continued, despite job losses due to the dot com bust in 2001 and the Great Recession in 2008.

Figure I-2.
Job Growth and Net Migration, Colorado, 1991-2019

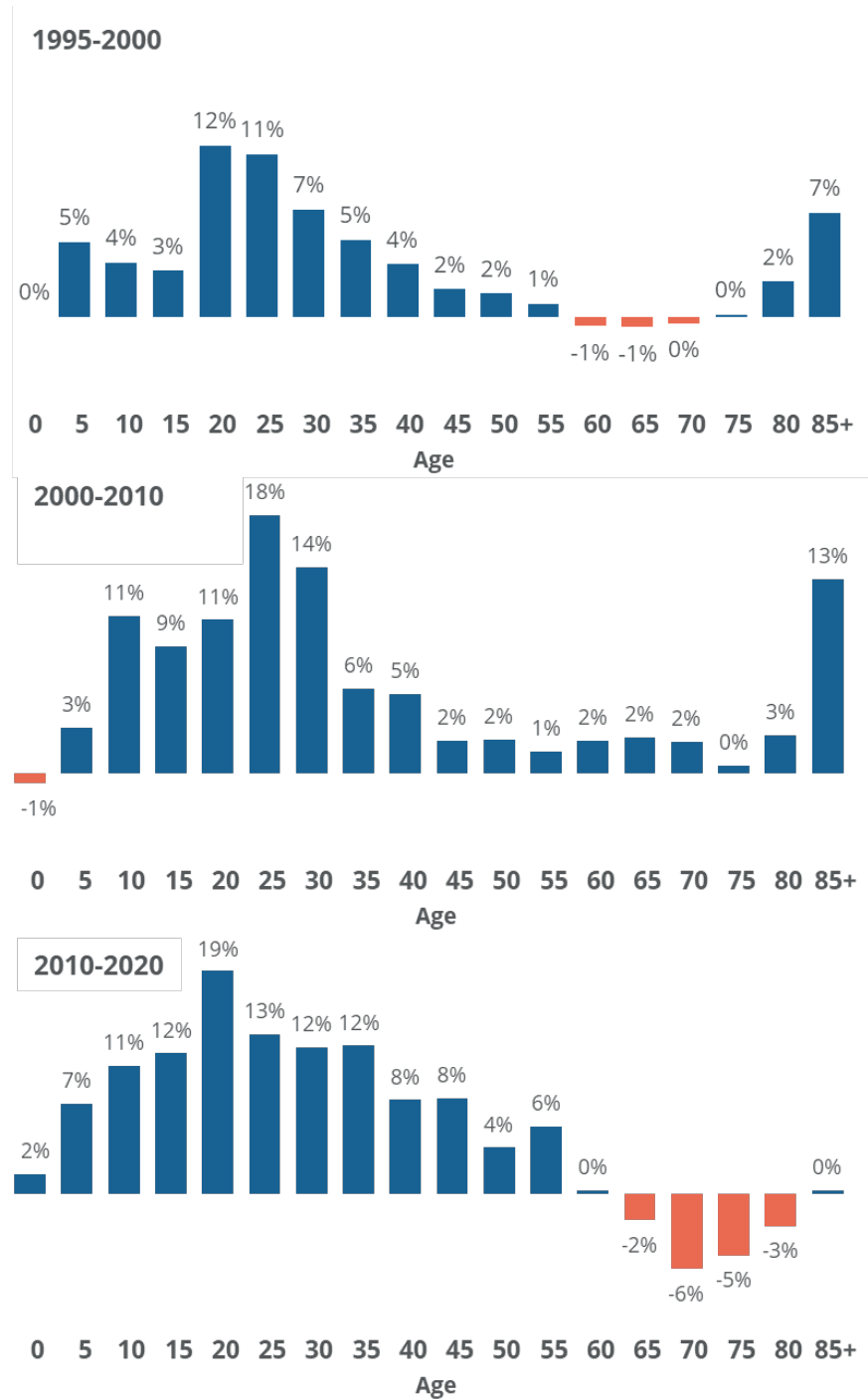


Source: US Census and ACS.

Colorado has historically drawn young adults and younger families with children. Since 2010, more older adults have left the state than moved in.

**Figure I-3.
Net Migration by
Age, Colorado,
1995-2000, 2000-
2010, and 2010-
2020**

Source:
DOLA.



Despite net out-migration, older adults/retirees are growing faster than any other age cohort: retirees grew by 291,323 in the past decade. This contrasts with very minimal growth in children. The state gained 32,337 children between 2010 and 2019, compared to 118,823 from 2000 to 2010.

Growth in residents in their primary working years was about half of the growth in jobs. If these patterns continue, Colorado will be unable to sustain its employment growth due to lack of workers.

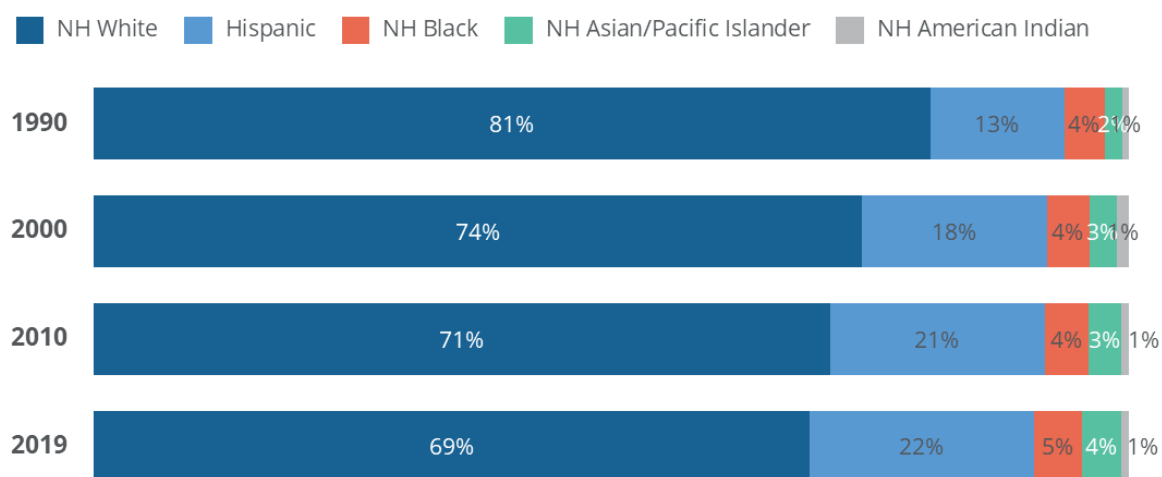
Figure I-4.
Age Distribution, Colorado, 2000-2019

	2000	2010	2019	2000-2010		2010-2019	
				# Change	Ann. %	# Change	Ann. %
Children (<18)	1,109,219	1,228,042	1,260,379	118,823	1.0%	32,337	0.3%
Young Adult (18-25)	432,837	489,551	561,374	56,714	1.2%	71,823	1.5%
Working Adult (25-65)	2,378,742	2,777,938	3,095,464	399,196	1.6%	317,526	1.2%
Retired (>65)	417,987	554,203	845,526	136,216	2.9%	291,323	4.8%
Total Employment	2,684,437	2,785,672	3,465,676	101,235	0.4%	680,004	2.5%

Source: DOLA.

In many states, increased racial and ethnic diversity has stabilized employment demand, as Non-White and Hispanic families are typically larger. Although Colorado is becoming more racially and ethnically diverse, primarily driven by the growing Hispanic population, this has had a minimal impact on the state's age distribution.

Figure I-5.
Race and Ethnicity, Colorado, 1990-2019



Source: DOLA and US Census.

Colorado owners' household incomes are 82% higher than renters' incomes—yet renters have experienced stronger income growth since 2010. By race and ethnicity, Hispanic households and multi-race households had the strongest income growth between 2010 and 2019, a reversal from the prior decade.

Even so, the median incomes of BIPOC households are much lower than the incomes of Non-Hispanic White households, and the income gap has grown for most BIPOC groups since 2000. Only Two or more race households have made significant strides in narrowing the income gap.

As discussed in Section IV—which has a special focus on homeownership and wealth-building—these income gains have not led to increased homeownership rates among these household types. Since 2010, the homeownership rate has dropped for all but Asian households (and been stable for Non-Hispanic White households). This could be due to a number of factors, including diverse households being younger with less savings for a downpayment, as well as lack of affordable buying options.

Figure I-6.
Median Household Income by Tenure and Race and Ethnicity, Colorado,
2000-2019

	2000	2010	2019	2000-2010		2010-2019	
				# Change	Ann. %	# Change	Ann. %
All households	\$47,009	\$54,046	\$77,127	\$7,037	1.4%	\$23,081	4.0%
Owner occupied	\$57,099	\$70,312	\$95,445	\$13,213	2.1%	\$25,133	3.5%
Renter occupied	\$30,335	\$31,924	\$52,362	\$1,589	0.5%	\$20,438	5.7%
Race and Ethnicity							
NH White	\$50,546	\$59,917	\$84,196	\$9,371	1.7%	\$24,279	3.9%
Hispanic	\$34,740	\$37,426	\$59,002	\$2,686	0.7%	\$21,576	5.2%
Black or African American	\$36,544	\$39,033	\$53,392	\$2,489	0.7%	\$14,359	3.5%
Asian	\$48,619	\$56,824	\$83,388	\$8,205	1.6%	\$26,564	4.4%
American Indian	\$36,384	\$34,314	\$49,286	-\$2,070	-0.6%	\$14,972	4.1%
Two or more races	\$37,195	\$40,838	\$69,433	\$3,643	0.9%	\$28,595	6.1%

Source: US Census, ACS, and Root Policy Research.

Income and Housing Costs

Figure I-7.
Median Renter Household Income and
Median Gross Rent, Focus Areas,
2000-2019

Source:
 ACS and Root Policy Research.

From 2000 to 2019, median renter household income did not keep up with changes in median rent over the same time.

An examination of those changes in five counties across the state found that median household income for renters increased anywhere from 43% to 60% compared to an increase of 73% to 91% in median rents over the same time, as shown in the figure to the right.

This trend is consistent for all cities and counties with a population over 50,000 people in Colorado, as shown in the table on the following page **In no geographic area with more than 50,000 residents did incomes keep up with rising rents.**

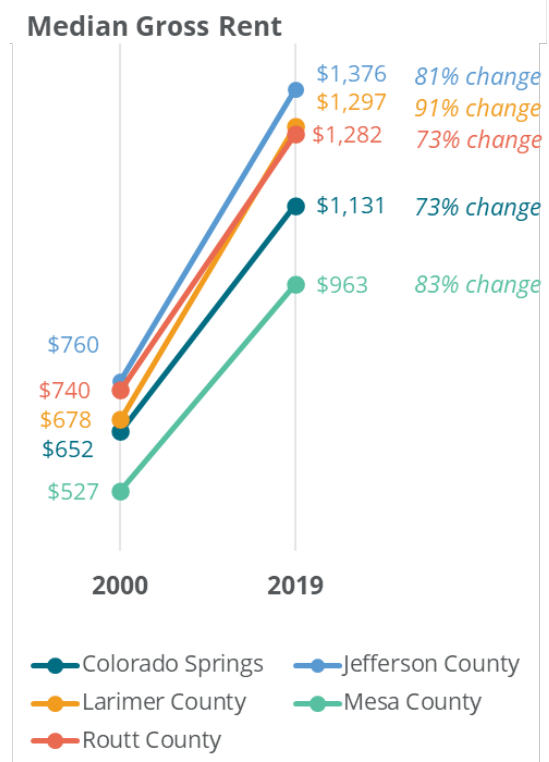
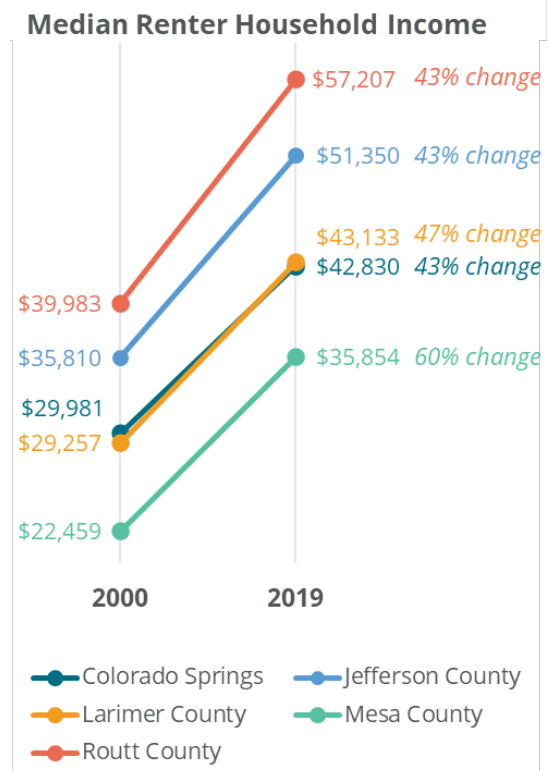


Figure I-8.
Median Renter Income and Median Gross Rent, 2000-2019

	Median Renter Household Income			Median Gross Rent		
	2000	2019	% change	2000	2019	% change
Focus areas						
Colorado Springs	\$29,981	\$42,830	43%	\$652	\$1,131	73%
Jefferson County	\$35,810	\$51,350	43%	\$760	\$1,376	81%
Larimer County	\$29,257	\$43,133	47%	\$678	\$1,297	91%
Mesa County	\$22,459	\$35,854	60%	\$527	\$963	83%
Routt County	\$39,983	\$57,207	43%	\$740	\$1,282	73%
Counties (50,000+ population)						
Adams County	\$32,067	\$49,344	54%	\$705	\$1,346	91%
Arapahoe County	\$34,075	\$51,557	51%	\$735	\$1,390	89%
Boulder County	\$33,189	\$48,426	46%	\$825	\$1,495	81%
Douglas County	\$48,767	\$75,715	55%	\$1,053	\$1,725	64%
Eagle County	\$47,743	\$58,099	22%	\$1,007	\$1,594	58%
El Paso County	\$30,759	\$45,017	46%	\$657	\$1,174	79%
Garfield County	\$32,819	\$55,820	70%	\$657	\$1,201	83%
La Plata County	\$25,323	\$40,533	60%	\$655	\$1,147	75%
Pueblo county	\$19,468	\$27,659	42%	\$489	\$829	70%
Weld County	\$24,646	\$43,857	78%	\$564	\$1,085	92%
Cities (50,000+ population)						
Arvada	\$32,988	\$51,705	57%	\$714	\$1,358	90%
Aurora	\$31,833	\$46,502	46%	\$700	\$1,328	90%
Boulder	\$29,859	\$41,876	40%	\$818	\$1,554	90%
Broomfield	\$38,992	\$68,042	75%	\$856	\$1,679	96%
Castle Rock	\$33,349	\$62,331	87%	\$791	\$1,536	94%
Commerce City	\$24,577	\$45,756	86%	\$626	\$1,286	105%
Denver	\$28,022	\$50,543	80%	\$631	\$1,311	108%
Fort Collins	\$26,977	\$41,632	54%	\$689	\$1,346	95%
Grand Junction	\$20,635	\$33,485	62%	\$496	\$935	89%
Greeley	\$21,899	\$38,087	74%	\$548	\$1,007	84%
Lakewood	\$35,302	\$49,676	41%	\$763	\$1,361	78%
Longmont	\$32,291	\$48,333	50%	\$769	\$1,340	74%
Loveland	\$29,548	\$48,926	66%	\$636	\$1,267	99%
Parker	\$45,591	\$67,887	49%	\$1,056	\$1,610	52%
Pueblo	\$18,155	\$25,879	43%	\$475	\$799	68%
Thornton	\$36,951	\$57,070	54%	\$802	\$1,495	86%
Westminster	\$41,040	\$54,268	32%	\$848	\$1,430	69%

Source: ACS and Root Policy Research.

Figure I-9.
Median Owner Household Income and
Median Home Value, Focus Areas,
2000-2019

Source:
 ACS and Root Policy Research.

Similar to renters, owner household median income did not keep up with rising home values from 2000 to 2019. In the five counties, median incomes increased between 44% and 59% while median home values increased by between 88% and 117%, about twice as much as incomes.

While increases in home value that outpace income growth does benefit owner households, it is problematic for making property tax payments and pushes homeownership further out of reach for renters looking to buy. Again, this trend is consistent throughout Colorado, as demonstrated in the table that follows.

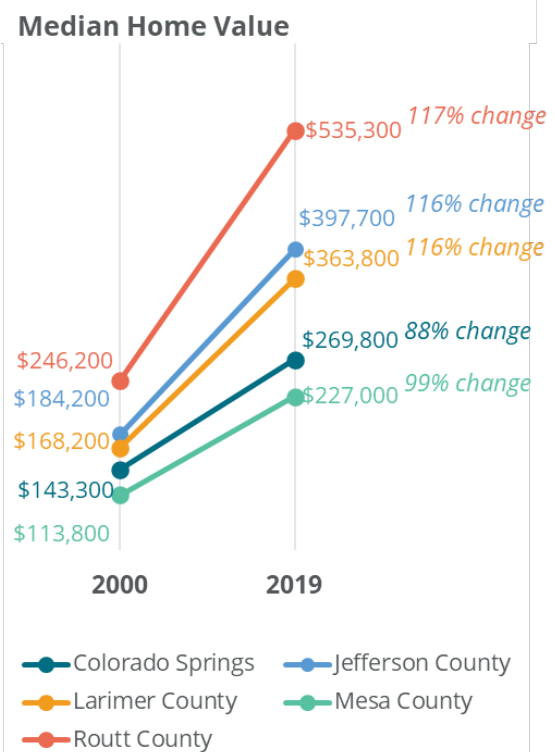
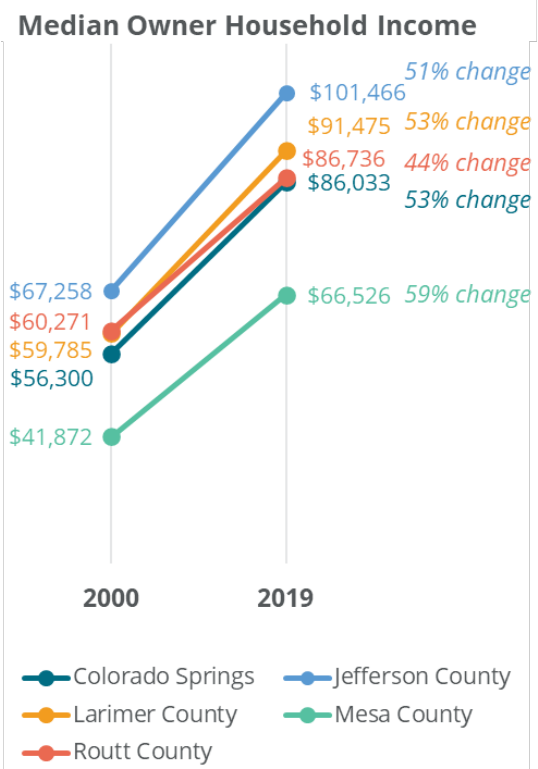


Figure I-10.
Median Owner Income and Median Home Value, 2000-2019

	Median Owner Household Income			Median Home Value		
	2000	2019	% change	2000	2019	% change
Focus areas						
Colorado Springs	\$56,300	\$86,033	53%	\$143,300	\$269,800	88%
Jefferson County	\$67,258	\$101,466	51%	\$184,200	\$397,700	116%
Larimer County	\$59,785	\$91,475	53%	\$168,200	\$363,800	116%
Mesa County	\$41,872	\$66,526	59%	\$113,800	\$227,000	99%
Routt County	\$60,271	\$86,736	44%	\$246,200	\$535,300	117%
Counties (50,000+ population)						
Adams County	\$54,691	\$85,826	57%	\$141,700	\$307,600	117%
Arapahoe County	\$65,274	\$97,708	50%	\$166,000	\$358,200	116%
Boulder County	\$71,595	\$110,377	54%	\$231,000	\$497,300	115%
Douglas County	\$86,955	\$133,472	53%	\$237,600	\$468,700	97%
Eagle County	\$73,138	\$99,156	36%	\$300,900	\$562,300	87%
El Paso County	\$56,759	\$87,054	53%	\$143,600	\$275,000	92%
Garfield County	\$55,410	\$85,509	54%	\$185,300	\$360,600	95%
La Plata County	\$49,875	\$82,821	66%	\$174,500	\$395,600	127%
Pueblo county	\$39,806	\$61,714	55%	\$93,100	\$164,600	77%
Weld County	\$51,443	\$87,247	70%	\$136,600	\$299,000	119%
Cities (50,000+ population)						
Arvada	\$62,907	\$101,153	61%	\$173,200	\$384,500	122%
Aurora	\$55,312	\$82,713	50%	\$139,700	\$290,000	108%
Boulder	\$71,063	\$117,808	66%	\$272,200	\$700,000	157%
Broomfield	\$70,605	\$115,689	64%	\$182,200	\$413,500	127%
Castle Rock	\$73,453	\$123,173	68%	\$184,300	\$422,100	129%
Commerce City	\$41,104	\$92,799	126%	\$109,600	\$320,100	192%
Denver	\$52,589	\$95,179	81%	\$160,100	\$390,600	144%
Fort Collins	\$61,532	\$95,423	55%	\$164,000	\$367,900	124%
Grand Junction	\$43,254	\$69,113	60%	\$114,000	\$237,100	108%
Greeley	\$50,009	\$76,419	53%	\$129,600	\$247,700	91%
Lakewood	\$59,057	\$87,972	49%	\$169,000	\$364,800	116%
Longmont	\$61,254	\$95,716	56%	\$173,800	\$362,500	109%
Loveland	\$55,235	\$83,155	51%	\$154,500	\$313,900	103%
Parker	\$76,389	\$130,338	71%	\$194,000	\$420,000	116%
Pueblo	\$36,474	\$56,087	54%	\$85,800	\$141,000	64%
Thornton	\$59,994	\$91,781	53%	\$152,100	\$322,200	112%
Westminster	\$63,870	\$92,680	45%	\$165,600	\$340,900	106%

Source: ACS and Root Policy Research.

These changes are more pronounced when segmented by income.

Household income. Figure I-11 shows the income distribution of owner and renter households in 2000 and 2019 for the focus counties. In all five focus areas, the share of renters with incomes of more than \$50,000 increased while the share with less decreased. This upward shift in the distribution is consistent with rising median renter incomes. These income trends explain the growing luxury rental market in Colorado.

The share of owner households with incomes of less than \$100,000 decreased in most focus areas while the share of owners earning more increased significantly from 2000 to 2019. The market response is to push prices higher, simultaneously lowering the likelihood that low and moderate income households can attain homeownership.

Housing costs. Figure I-12 shows the distribution of rents and home value in 2000 and 2019 for the five focus areas.

In 2000, the majority of units in most counties—including Routt County—rented for less than \$750 per month. That inventory is now minimal. Rents are increasingly misaligned with the income distributions of renters, who still skew very low income, despite income increases.

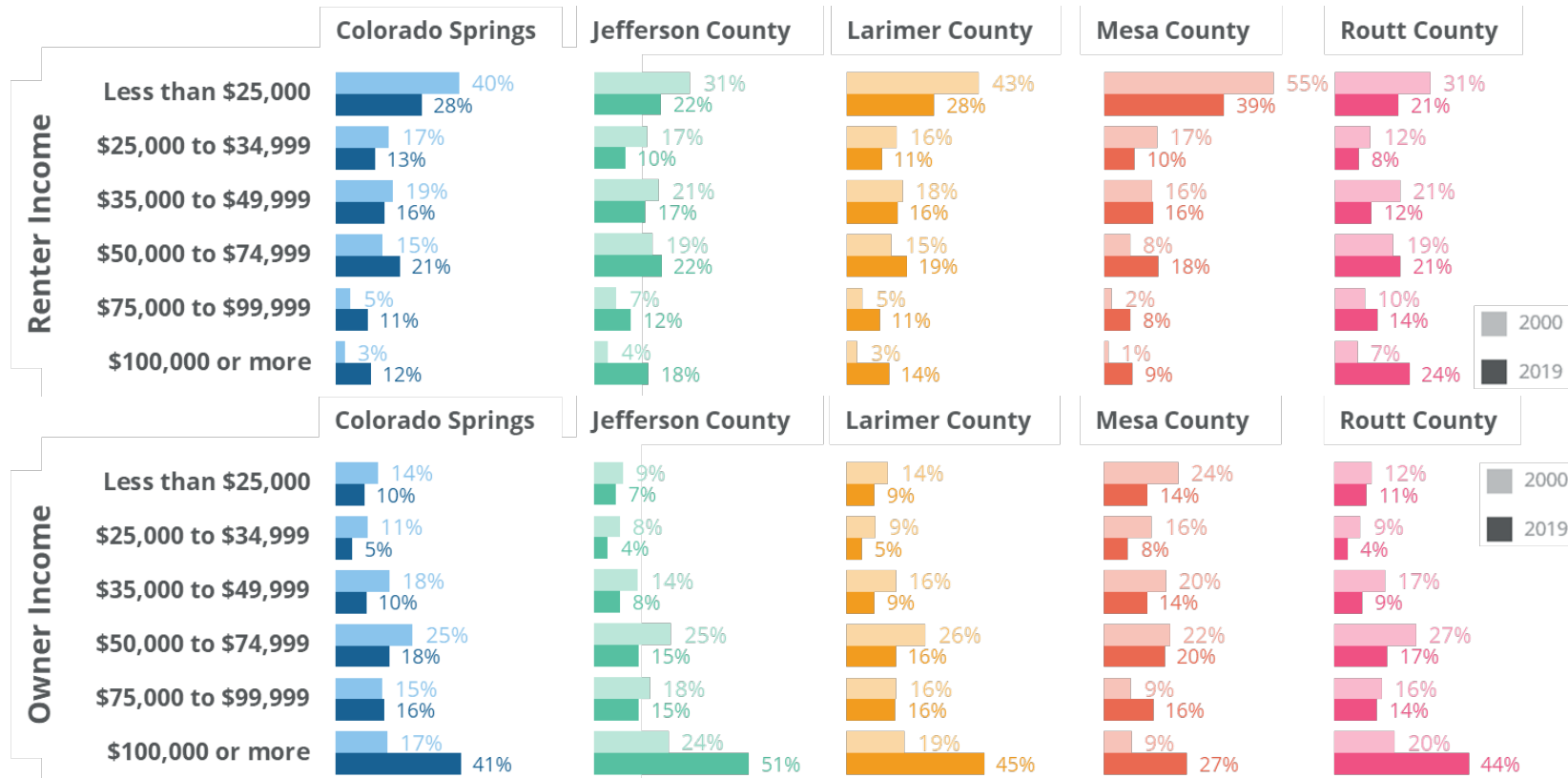
The largest shift in the home value distribution from 2000 to 2019 is a decrease in homes priced between \$100,000 and \$300,000 and an increase in homes valued between \$300,000 and \$500,000. This trend is most evident in the Front Range, including Jefferson and Larimer Counties and the City of Colorado Springs.

Cost burden. The result of greater increases in housing costs compared to household income is higher levels of housing cost burden. Households are considered cost burden if they spend more 30% of their income on households costs (including utilities). Households experiencing cost burden have less money to spend on other essentials like healthcare, education, groceries, and transportation—adversely affecting their household well-being and limiting their economic growth trajectory.

Figure I-13 shows the share of households experiencing cost burden by tenure and income in 2000 and 2019. Cost burden has increased only slightly for the lowest income renters, who have always faced a shortage of affordable products and must rely on publicly-assisted housing. Owners with incomes between \$10,000 and \$20,000 exhibit the largest jumps in burden, likely related to increases in property taxes and maintenance costs.

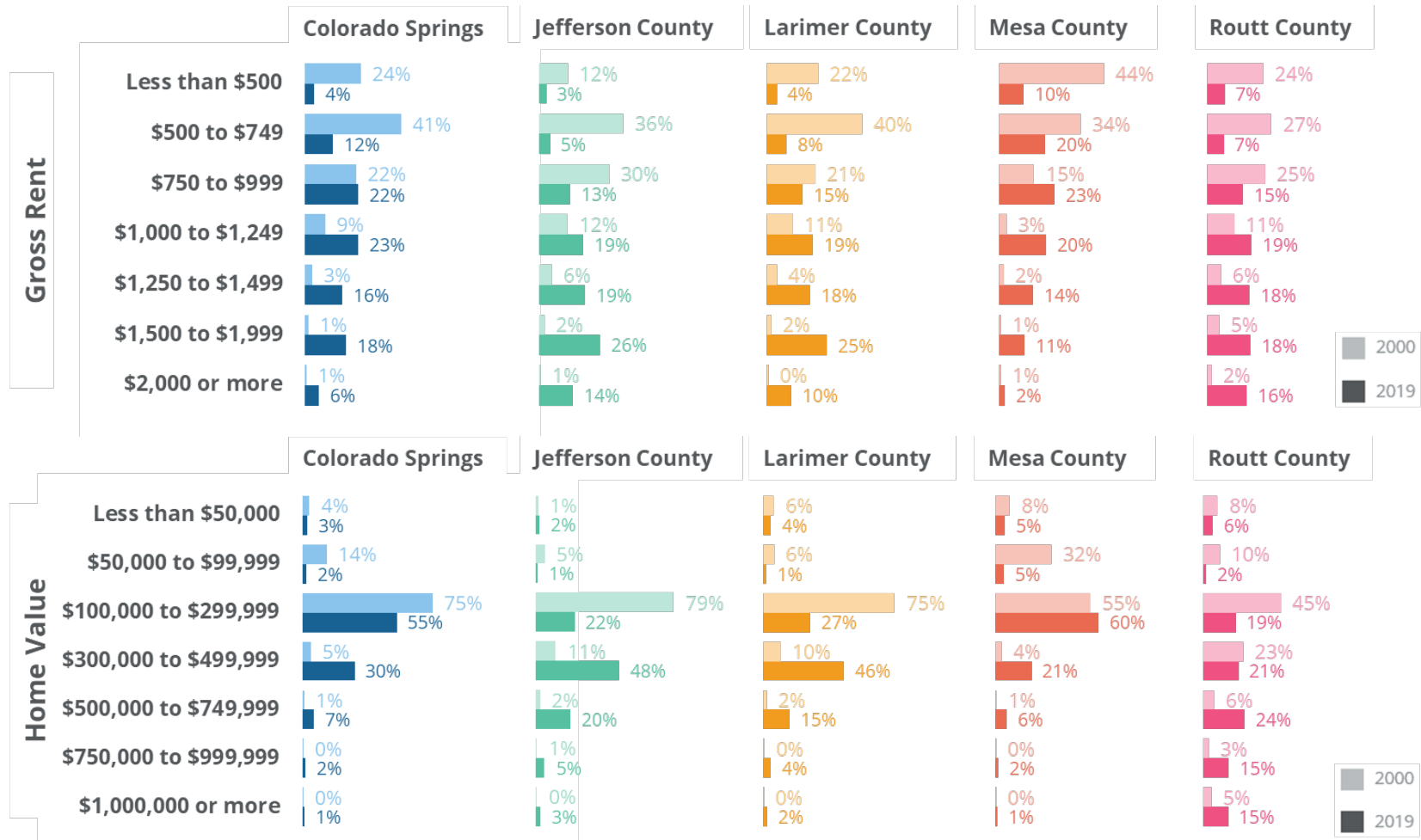
It has become increasingly common for middle income households—incomes between \$35,000 and \$75,000 (and for renters with incomes between \$20,000 and \$35,000) to experience cost burden.

Figure II-11.
Household Income Distribution by Tenure, Focus Areas, 2000-2019



Source: ACS and Root Policy Research.

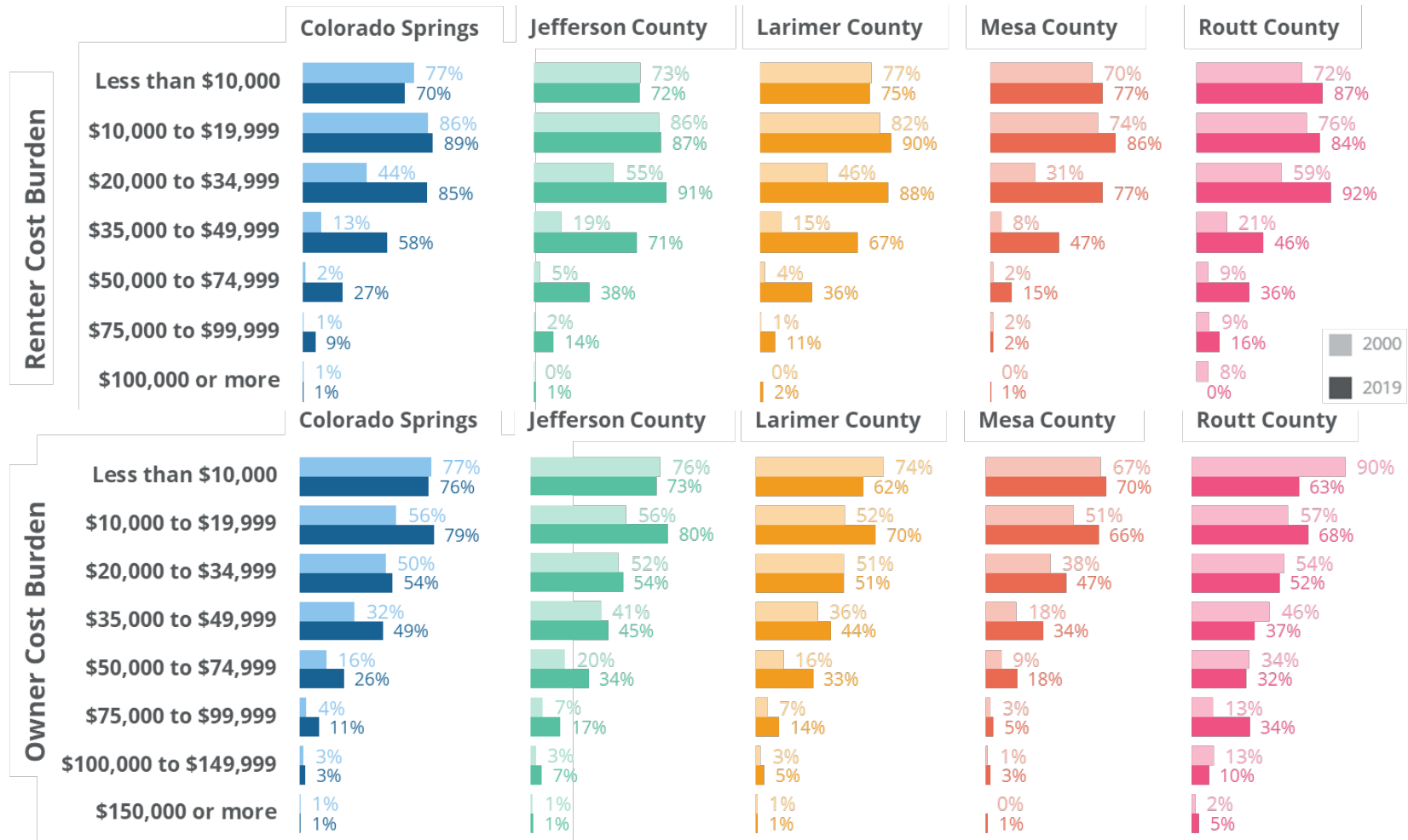
Figure II-12.
Housing Cost Distribution by Tenure, Focus Areas, 2000-2019



Source: ACS and Root Policy Research.

Figure II-13.

Share of Households Experiencing Housing Cost Burden by income and tenure, Focus Areas, 2000-2019

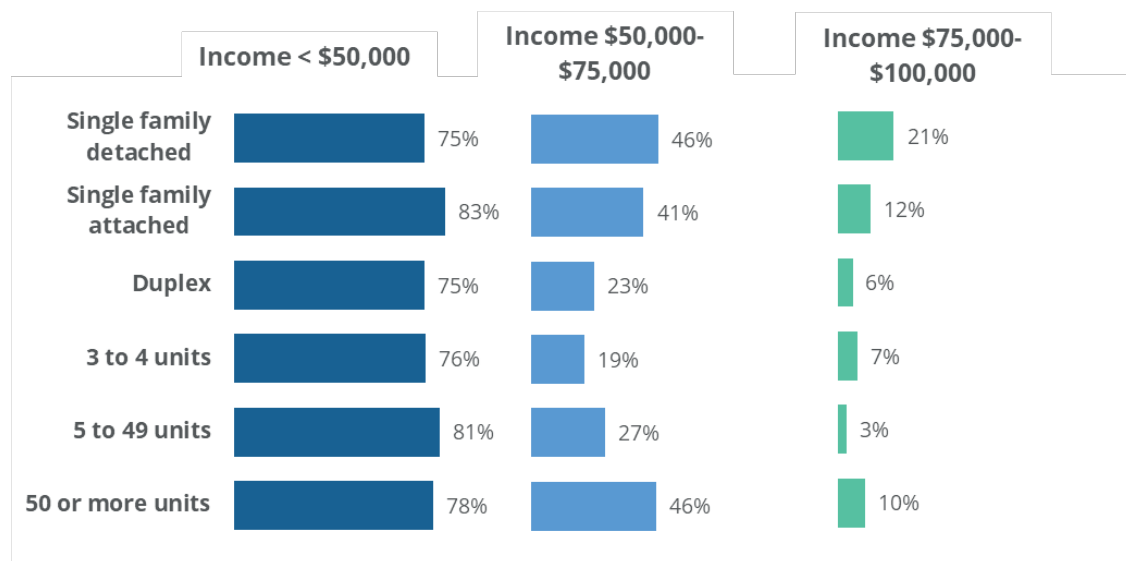


Source: ACS and Root Policy Research.

While lower income households have high rates of cost burden regardless of the housing type they occupy, they are slightly less likely to be cost burdened if they occupy single family detached homes and duplexes.¹ Renter and owner households with incomes between \$50,000 and \$100,000 are less likely to be cost burdened if they occupy moderate-density housing units such as duplexes and triplexes.

For example, as shown in the two figures below, renter households with incomes between \$50,000 and \$100,000 who live in a duplex are half as likely to be cost burdened as those who occupy single family detached homes (23% compared to 46%).

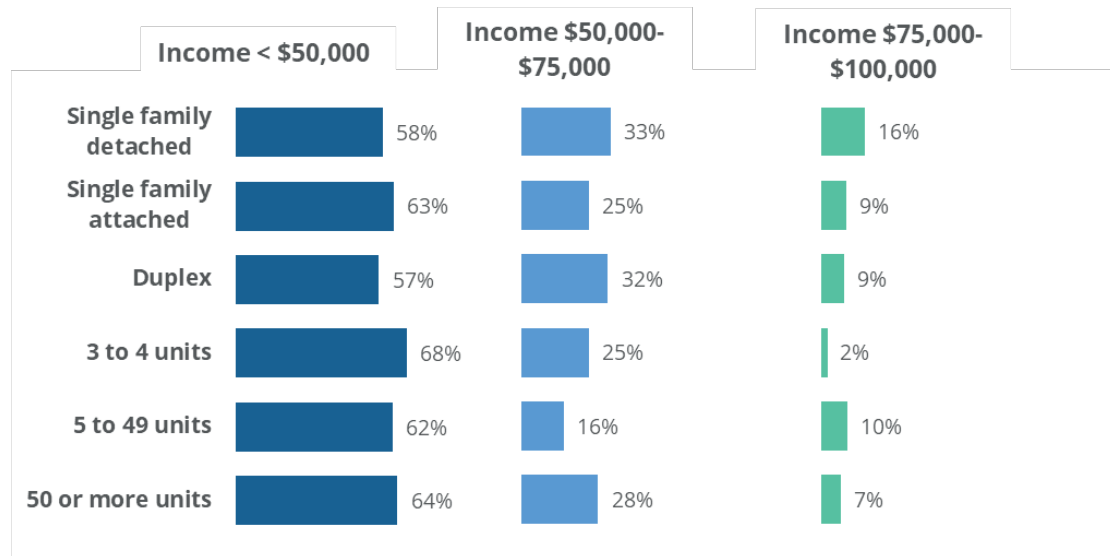
Figure II-14.
Renter Cost Burden, by Income and Housing Type



Source: IPUMS USA, University of Minnesota, www.ipums.org and Root Policy Research.

¹ This is likely driven by household and housing characteristics. For example, low income residents who occupy LIHTC units are more likely to be cost burdened and are more likely to live in multifamily housing. In addition, low income households who live in single family detached homes might live in units that are in poor condition or might be more likely to be part of larger households with more income earners, compared to households living in multifamily structures.

Figure II-15.
Owner Cost Burden, by Income and Housing Type



Source: IPUMS USA, University of Minnesota, www.ipums.org and Root Policy Research.

National academic research supports these conclusions. A 2019 study found that small multifamily units not only house the largest share of the nation's lowest income households, properties with 2 to 4 units are 13% less expensive than single family detached units with similar characteristics. Another, 2021 study, found that 1-4 unit properties rent, on average, 16% below market rate.² Because small unit properties are most likely to be owned by small-scale landlords, vacant units are a larger loss, and these landlords typically will not tolerate vacancies as long as larger, investment-driven owners.

² Decker, Nathaniel. "The Uneven Impact of the Pandemic on the Tenants and Owners of Small Rental Properties." *Terner Center for Housing and Innovation* (2021) <https://ternercenter.berkeley.edu/wp-content/uploads/2021/07/Small-Rental-Properties-Decker-July-2021.pdf>

SECTION II.

HOUSING SUPPLY

SECTION II.

Housing Supply

Inadequate housing development—and a mismatch between the types of housing that have been developed and the types that are needed—have worked together to create the state’s current housing challenges. This section explores these dynamics, by considering the following:

- How are housing needs related to supply shortages?
- What housing product types provide the most affordability?
- How many additional units are needed to return the state to a functioning housing market?
- How many additional units are needed to accommodate future population and employment growth?

The section begins with an overview of the market dynamics that have created the current housing shortage and affordability challenges.

Summary of Findings

- A healthy for sale housing market has around six months of supply, defined as the number of houses currently for sale divided by the average number of homes sold per month. Colorado’s inventory as of June 2021 was 13% of what is needed for a functioning sales market. When buyer-ready renters cannot find homes to purchase they occupy rental units longer, reducing the overall supply of rentals, and inducing the market to raise rents. According to the Federal Reserve, the rental vacancy rate has been declining since 2009, reaching a historical low of 3.4% in 2018.
- In the decade before the housing crisis, between 1996 and 2006, the state was adding on average 48,000 housing units each year, with new development tracking employment growth. Since 2007, the state has averaged 26,500 units per year, far fewer than needed to meet employment demands.
- Demand for second and vacation homes in Colorado has directly affected the inventory of units for rent and for sale. Half of Colorado’s vacant homes are reserved for seasonal, recreational, or occasional use—up from 40% in 2010.
- According to the State Demographer, Colorado is projected to add an average of 35,000 households per year between 2020 and 2030, and 29,600 between 2030 and 2040. To keep up with household growth, and accommodate second and vacation

home demand, an average of 40,950 new housing units should be built each year until 2030. This will require development volume that is 1.5x current levels.

- To return the housing market to a functioning level and decrease housing prices, the state needs an extra 36,305 units, for a total of 486,735 units between now and 2030—an average of 44,250 units per year—1.67x current production levels.

What are the Market Dynamics causing this shortage? Different supply and demand factors have come together to create an extremely tight housing market in Colorado.

Low interest rates. Lower rates give buyers more purchasing power by effectively decreasing the cost of financing a home purchase. This can be good for higher income households, but the higher prices that accompany lower interest rates require a higher down payment, which becomes a barrier for many lower- and middle-income households.

Millennials entering their prime home-buying years. Millennial demand is intensifying. These new buyers are entering a market with very low inventory and the pandemic incentivized many of them to enter homeownership earlier than previously planned.

Older generations growing old in their homes. Older adults are healthier than previous generations and are living longer. Colorado's zoning and land use structure, which heavily favors single family detached homes, has limited the ability of older generations to downsize. Even if they moved, the effect would be reallocating people from one type of housing to another, which may improve affordability but would not solve the housing shortage in the long run.

Construction costs. Construction costs have consistently increased, particularly since the recovery from the 2007 financial crisis. Labor shortages in Colorado are a driving factor, though commodity prices have also increased. Shortages in raw materials, such as lumber, and supply chain disruptions have caused sharp increases in building costs over the past year.

Colorado communities underbuilt housing for years. In the decade before the housing crisis, between 1996 and 2006, the state was adding on average 48,000 housing units each year. Since 2007, in the years after the housing crisis, the state has averaged 26,500 units per year. That is at least 21,000 homes each year that didn't get built and were needed. This has also created distortions in the construction labor market that contribute to the labor shortage.

Rising demand for second and vacation homes. A 2021 Vacation Home Counties report by the National Association of Realtors (NAR) documents the recent surge in vacation home purchases, and the effect on housing prices. Nationwide, vacation home

sales grew by more than 16% in 2020—well beyond existing home sales which grew by 5.6%. In the mountain region, the median price of homes in counties with high proportions of vacation homes rose by 20%, versus 10% in non-vacation home counties. Homes also sold faster when in vacation-home counties. The report also confirms that vacation home buyers are wealthy, with 53% buying with cash sales (compared to 22% for existing homes). High demand and purchasing power means that many of the units getting built in the state’s resort areas will cater to this segment of the market.

Housing misaligned with household types. Building permits historically have been and continue to be dominated by single-family units and large multifamily structures. These types of units are the most expensive for owners and renters, and households living in these unit types have the highest levels of housing cost burden. On average, around 70% of units permitted since 1980 were single-family units and around 26% were multifamily structures of 5 units or more.

The types of housing permitted and developed are increasingly inconsistent with trends in household composition: the strongest growth in household types in Colorado will be for adults *without* children. The share of households with more than one adult and children is just 25% and will decline to 23% by 2050.

Housing Needs and Supply Deficits

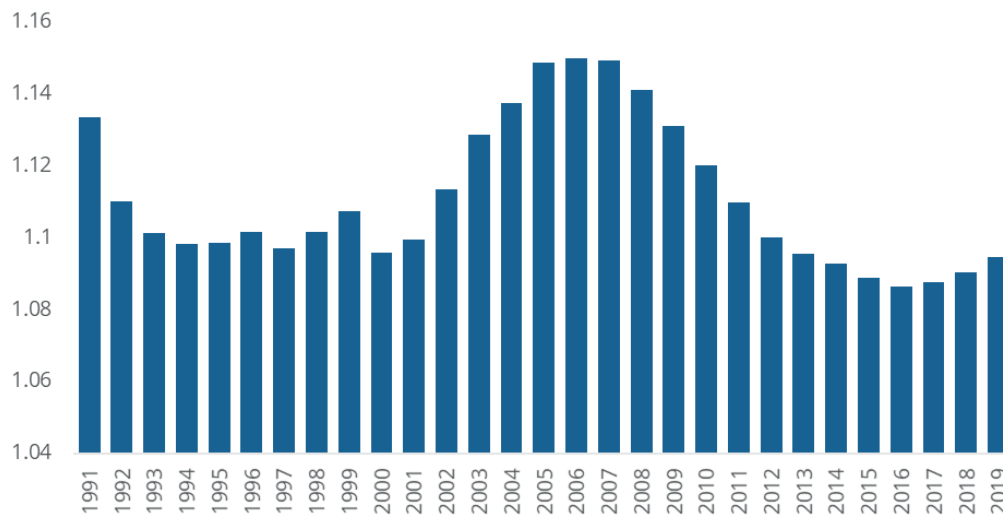
A healthy housing market has around six months of supply—the number of houses currently for sale divided by the average number of homes sold per month. According to the Colorado Association of Realtors, Colorado’s months of supply was 0.8 as of June 2021.¹ That is, there were fewer homes for sale than what an average month would demand. Colorado’s inventory as of June 2021 was 13% of what is needed for a functioning sales market.

This lack of inventory creates price pressure in both the rental and for sale markets: when buyer-ready renters cannot find homes to purchase they occupy rental units longer, reducing the overall supply of rental units, and inducing the market to raise rents.

The figure below shows the number of housing units available per household in the state. In 2016, Colorado reached the lowest number of housing units per household, at 1.086. Although the ratio is trending up, the state is still below pre-recession levels.

¹ <https://car-co.stats.showingtime.com/docs/mmi/x/Statewide?src=map>

**Figure II-2.
Ratio of Housing Units to Households**



Source: DOLA Colorado State Demography Office and Root Policy Research.

The above data underestimate the severity of the problem because they do not adjust for changes demand for second and vacation homes in Colorado. According to Census ACS estimates, the share of vacant units for seasonal, recreational, or occasional use in Colorado increased from 40% in 2010 to 50% in 2019.

When vacancies are segmented by use, a different trend emerges: The number of vacant homes for seasonal, recreational, or occasional use *increased* more than 10% from 2010, while the number of all other vacant units—those available for permanent residents—*decreased* more than 20%.

As shown in the following figure, while vacancies have dropped significantly for all types of housing units but seasonal units (blue bars), seasonal, recreational, and occasional use vacancies (green bars) have actually increased.

**Figure II-3.
Estimated Vacant Housing Units**



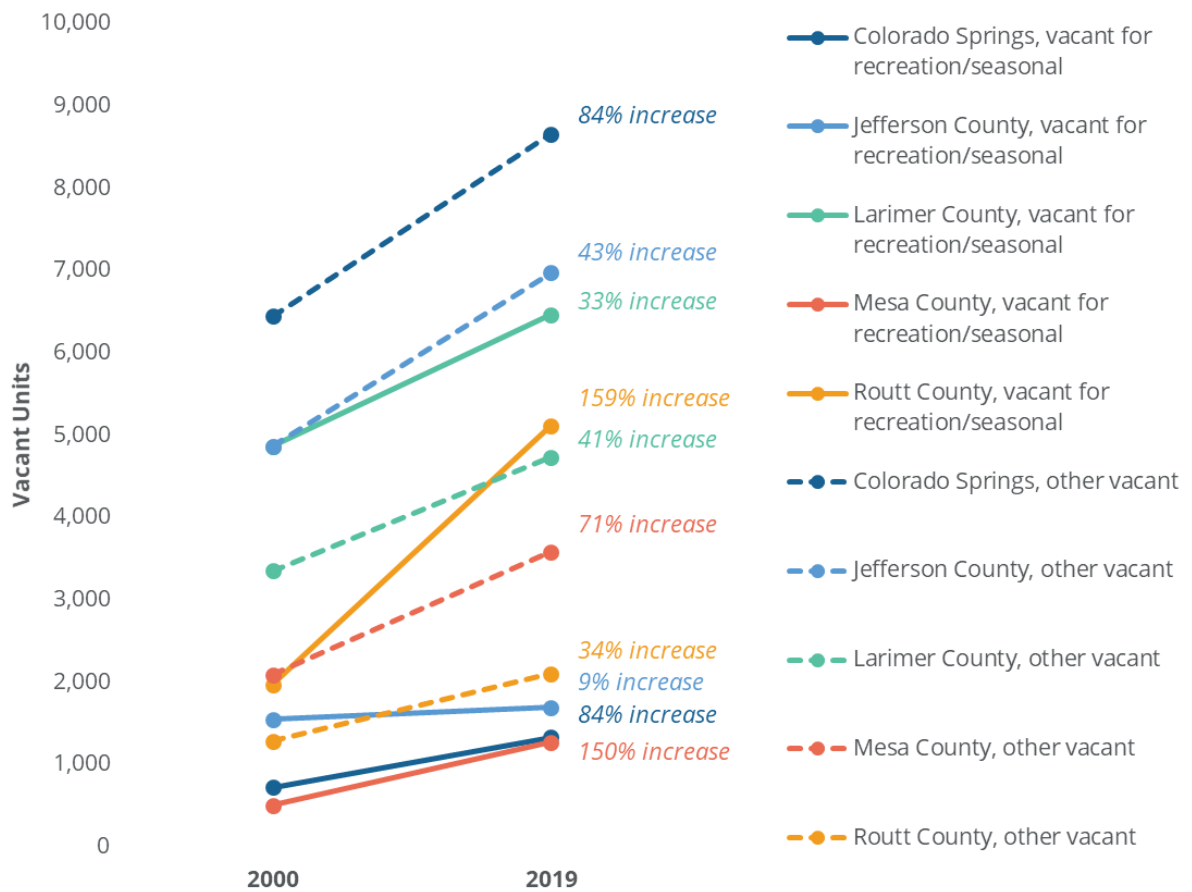
Note: Share of vacancies for recreational use are extrapolated from ACS 5-year estimates.

Source: DOLA Colorado State Demography Office, ACS 5-year estimates, and Root Policy Research.

Statewide, the increase in vacant units for seasonal, recreational, or occasional use outpaced increases in non-seasonal vacant units. These trends are examined first for five focus areas (Figure II-4) and then for all areas with 50,000 and more residents.

The comparison among focus area counties demonstrates that the surge in vacant seasonal units is much more pronounced in resort markets: In Routt County, the number of seasonal vacant units rose by 159%, compared to 34% for non-seasonal vacant units.

Figure II-4.
Share of Units Vacant for Seasonal and Recreational Use, Focus Areas,
2000-2019



Source: ACS and Root Policy Research.

Figure II-5 through II-7 provide detailed vacancy estimates, by reason, for the focus areas and cities and counties with a population greater than 50,000 people in Colorado for 2000 and 2019. The largest increase in vacant units is seen in un-occupied units, seasonal units, and “other” units. It is important to note that these numbers are derived from Census surveys which, when unable to identify the reason for vacancies, will default to “other” or unoccupied. These classification nuances should not detract from the fact an increasing share of Colorado’s housing stock is not occupied by permanent residents and workers.

**Figure II-5.
Vacant Units by Reason, 2000**

	For Rent	For Sale Only	Renter or Sold, not Occupied	For Seasonal/ rec. Use	For Migrant Workers	Other
Focus areas						
Colorado Springs	3,654	1,088	573	725	15	1,119
Jefferson County	2,097	968	716	1,555	12	1,073
Larimer County	1,334	795	448	4,870	11	770
Mesa County	775	563	246	508	17	495
Routt County	957	98	109	1,977	19	104
Counties (50,000+ population)						
Adams County	1,720	906	369	248	15	1,180
Arapahoe County	2,768	1,189	533	513	5	918
Boulder County	1,431	573	433	2,026	2	755
Douglas County	760	628	321	422	2	276
Eagle County	458	240	115	5,932	16	202
El Paso County	4,374	1,628	787	1,435	18	1,777
Garfield County	215	167	87	484	3	151
La Plata County	317	197	98	2,444	3	364
Pueblo county	1,506	714	297	607	25	1,198
Weld County	837	744	232	191	50	893
Cities (50,000+ population)						
Arvada	245	172	124	55	0	118
Aurora	1,396	759	289	205	0	986
Boulder	444	125	111	253	0	197
Broomfield	217	112	34	55	0	62
Castle Rock	102	51	25	23	0	20
Commerce City	71	27	10	14	0	83
Denver	5,321	2,185	1,020	1,443	10	2,221
Fort Collins	849	361	236	201	0	226
Grand Junction	422	188	78	71	0	160
Greeley	579	319	83	63	0	281
Lakewood	873	273	140	217	11	377
Longmont	244	189	100	75	0	119
Loveland	177	137	68	57	0	119
Parker	169	157	38	9	1	49
Pueblo	1,293	444	192	80	0	805
Thornton	317	208	46	19	0	101
Westminster	527	121	85	115	1	126

Source: ACS and Root Policy Research.

**Figure II-6.
Vacant Units by Reason, 2019**

	For Rent	For Sale Only	Renter or Sold, not Occupied	For Seasonal/ rec. Use	For Migrant Workers	Other
Focus areas						
Colorado Springs	2,709	1,438	1,361	1,333	44	3,113
Jefferson County	2,342	1,013	1,599	1,698	0	2,020
Larimer County	1,229	669	921	6,470	70	1,849
Mesa County	476	526	318	1,271	17	2,249
Routt County	1,105	158	268	5,119	56	519
Counties (50,000+ population)						
Adams County	3,135	1,069	857	210	14	1,465
Arapahoe County	4,131	896	1,884	1,321	0	2,676
Boulder County	2,114	513	1,335	2,710	0	2,009
Douglas County	1,176	869	669	774	9	565
Eagle County	1,307	215	447	11,700	0	621
El Paso County	3,499	1,922	1,700	2,494	44	5,213
Garfield County	290	372	172	806	0	863
La Plata County	779	496	273	3,299	7	1,177
Pueblo county	736	695	648	936	52	3,842
Weld County	1,337	396	646	337	83	1,700
Cities (50,000+ population)						
Arvada	309	279	587	187	0	169
Aurora	2,316	632	887	320	14	1,336
Boulder	926	191	599	675	0	633
Broomfield	347	106	154	125	0	172
Castle Rock	253	111	155	38	0	98
Commerce City	155	33	44	40	0	214
Denver	7,026	1,192	3,531	2,891	0	5,576
Fort Collins	794	241	485	457	0	992
Grand Junction	199	153	178	367	0	694
Greeley	919	70	234	111	16	683
Lakewood	1,023	236	316	189	0	675
Longmont	702	119	464	109	0	412
Loveland	287	225	209	286	44	219
Parker	289	128	35	8	0	95
Pueblo	624	486	547	294	0	2,621
Thornton	680	367	295	0	0	364
Westminster	895	135	262	30	0	511

Source: ACS and Root Policy Research.

Figure II-7.
Percent Change in Vacant Units by Reason, 2000-2019

	For Rent	For Sale Only	Renter or Sold, not Occupied	For Seasonal/ rec. Use	For Migrant Workers	Other
Focus areas						
Colorado Springs	-26%	32%	138%	84%	193%	178%
Jefferson County	12%	5%	123%	9%	-100%	88%
Larimer County	-8%	-16%	106%	33%	536%	140%
Mesa County	-39%	-7%	29%	150%	0%	354%
Routt County	15%	61%	146%	159%	195%	399%
Counties (50,000+ population)						
Adams County	82%	18%	132%	-15%	-7%	24%
Arapahoe County	49%	-25%	253%	158%	-100%	192%
Boulder County	48%	-10%	208%	34%	-100%	166%
Douglas County	55%	38%	108%	83%	350%	105%
Eagle County	185%	-10%	289%	97%	-100%	207%
El Paso County	-20%	18%	116%	74%	144%	193%
Garfield County	35%	123%	98%	67%	-100%	472%
La Plata County	146%	152%	179%	35%	133%	223%
Pueblo county	-51%	-3%	118%	54%	108%	221%
Weld County	60%	-47%	178%	76%	66%	90%
Cities (50,000+ population)						
Arvada	26%	62%	373%	240%	0%	43%
Aurora	66%	-17%	207%	56%	0%	35%
Boulder	109%	53%	440%	167%	0%	221%
Broomfield	60%	-5%	353%	127%	0%	177%
Castle Rock	148%	118%	520%	65%	0%	390%
Commerce City	118%	22%	340%	186%	0%	158%
Denver	32%	-45%	246%	100%	-100%	151%
Fort Collins	-6%	-33%	106%	127%	0%	339%
Grand Junction	-53%	-19%	128%	417%	0%	334%
Greeley	59%	-78%	182%	76%	0%	143%
Lakewood	17%	-14%	126%	-13%	-100%	79%
Longmont	188%	-37%	364%	45%	0%	246%
Loveland	62%	64%	207%	402%	0%	84%
Parker	71%	-18%	-8%	-11%	-100%	94%
Pueblo	-52%	9%	185%	268%	0%	226%
Thornton	115%	76%	541%	-100%	0%	260%
Westminster	70%	12%	208%	-74%	-100%	306%

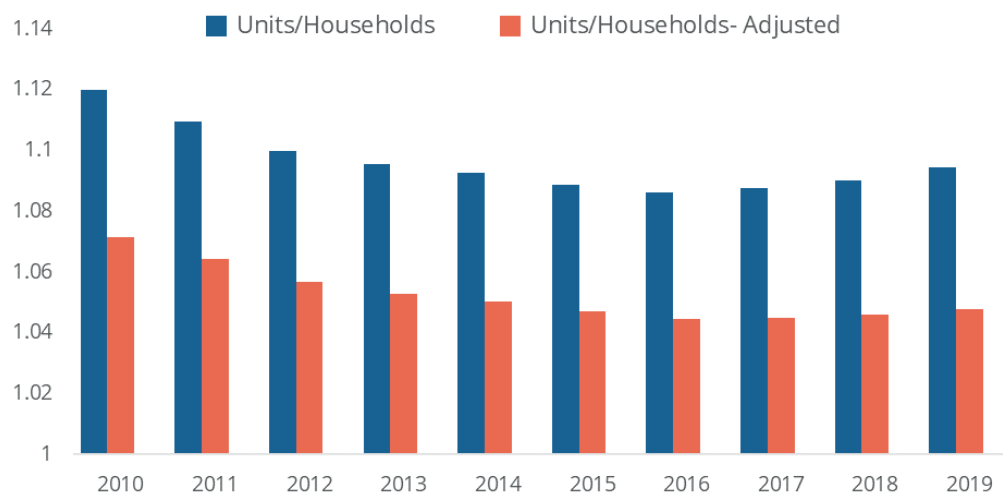
Source: ACS and Root Policy Research.

This decrease in inventory has impacted the supply of housing for permanent residents even more than the overall decrease in vacancies would suggest.

Figure II-8 shows the number of housing units per household in Colorado (same metric as in Figure 2) and compares it to the number of units per household *after removing the inventory of vacant units* for seasonal, recreational, or occasional use not available for permanent residents.

Figure II-8 shows how much lower the supply of homes for permanent residents is than overall vacancies would suggest. While the overall number of units per household was 1.09 in 2019, the actual number of units available per permanent resident household was 1.04.

Figure II-8.
Ratio of Housing Units to Households in Colorado, Adjusted for Seasonal Vacancies



Note: Share of vacancies for recreational use are extrapolated from ACS 5-year estimates.

Source: DOLA Colorado State Demography Office, ACS 5-year estimates, and Root Policy Research.

Figure II-9 shows the same metric for the five focus areas and cities and counties with a population greater than 50,000.

Figure II-9.
Ratio of Housing Units to Households in Colorado, Adjusted for Seasonal Vacancies, Focus Areas and 50,000+ Areas, 2000 and 2020

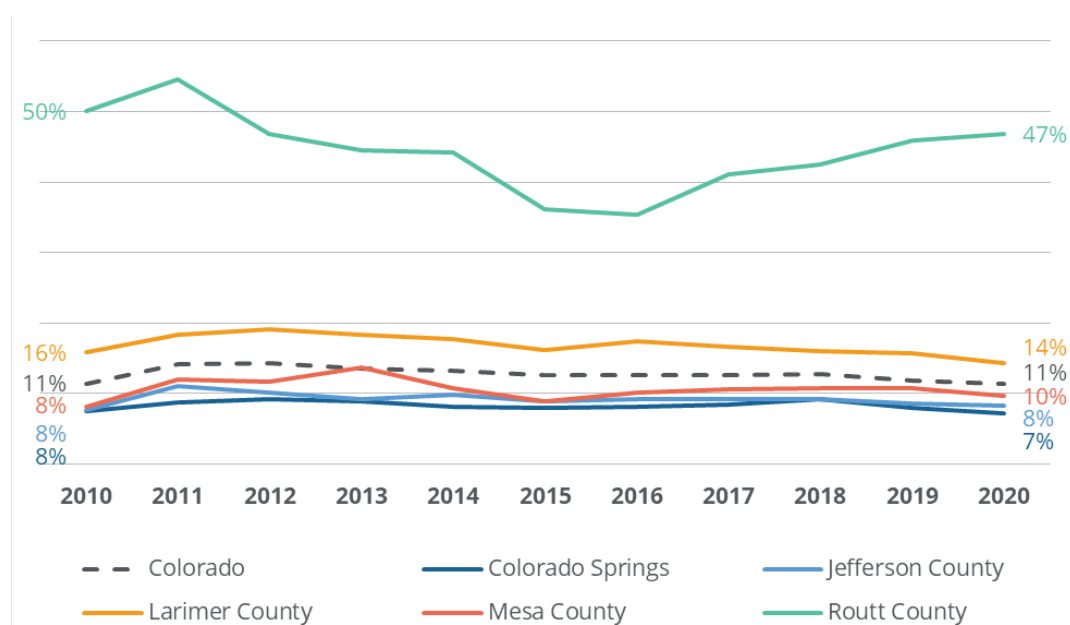
	2000			2019		
	Households per Unit	Adjusted	Difference	Households per Unit	Adjusted	Difference
Focus areas						
Colorado Springs	1.05	1.05	-0.01	1.06	1.05	-0.01
Jefferson County	1.03	1.02	-0.01	1.04	1.03	-0.01
Larimer County	1.08	1.03	-0.05	1.08	1.03	-0.05
Mesa County	1.06	1.05	-0.01	1.08	1.06	-0.02
Routt County	1.41	1.16	-0.25	1.75	1.22	-0.53
Counties (50,000+ population)						
Adams County	1.03	1.03	0.00	1.04	1.04	0.00
Arapahoe County	1.03	1.03	0.00	1.05	1.04	-0.01
Boulder County	1.05	1.03	-0.02	1.07	1.05	-0.02
Douglas County	1.04	1.03	-0.01	1.03	1.03	-0.01
Eagle County	1.46	1.07	-0.39	1.79	1.14	-0.64
El Paso County	1.05	1.04	-0.01	1.06	1.05	-0.01
Garfield County	1.07	1.04	-0.03	1.12	1.08	-0.04
La Plata County	1.20	1.06	-0.14	1.28	1.13	-0.15
Pueblo county	1.08	1.07	-0.01	1.11	1.09	-0.01
Weld County	1.05	1.04	0.00	1.04	1.04	0.00
Cities (50,000+ population)						
Arvada	1.02	1.02	0.00	1.03	1.03	0.00
Aurora	1.03	1.03	0.00	1.04	1.04	0.00
Boulder	1.03	1.02	-0.01	1.07	1.06	-0.02
Broomfield	1.04	1.03	0.00	1.03	1.03	0.00
Castle Rock	1.03	1.03	0.00	1.03	1.03	0.00
Commerce City	1.03	1.03	0.00	1.03	1.03	0.00
Denver	1.05	1.04	-0.01	1.07	1.06	-0.01
Fort Collins	1.04	1.04	0.00	1.05	1.04	-0.01
Grand Junction	1.05	1.05	0.00	1.06	1.05	-0.01
Greeley	1.04	1.04	0.00	1.06	1.05	0.00
Lakewood	1.03	1.03	0.00	1.04	1.03	0.00
Longmont	1.03	1.02	0.00	1.05	1.05	0.00
Loveland	1.03	1.03	0.00	1.04	1.03	-0.01
Parker	1.06	1.05	0.00	1.03	1.03	0.00
Pueblo	1.07	1.07	0.00	1.10	1.10	-0.01
Thornton	1.02	1.02	0.00	1.04	1.04	0.00
Westminster	1.03	1.02	0.00	1.04	1.04	0.00

Source: DOLA Colorado State Demography Office, ACS 5-year estimates, and Root Policy Research.

Impacts on the for sale market. Home Mortgage Disclosure Act (HMDA) data indicate which home mortgages were for second homes or investment properties and can be analyzed to better understand the shift in purchases to second or investment homes. However, HMDA data only include home purchases which made use of a mortgage—home purchases made in cash, without a mortgage, are not included in the data. Therefore, the following estimates are an undercount of how many homes were purchased as second homes and investment properties.

Figure II-10 shows the share of loans from second homes or investment properties in the five focus areas and the state from 2010 to 2020. Generally, the share of loans for this purpose have remained steady in all of the focus areas, except for fluctuations in Routt County, likely due to the resort and tourism in the area.

Figure II-10.
Share of Loans for Second Homes or Investment Properties, Focus Areas, 2010-2020



Source: HMDA and Root Policy Research.

Figure II-11 shows additional mortgage characteristics by occupancy type including principal residence, second homes, and investment properties. Second home mortgages have higher median property values compared to principal and investment properties. Investment properties have the lowest median property value.

Typically, the median applicant income for second home and investment mortgages are much higher than those for principal residences.

Another pertinent element of investment activity and second homeownership is the risk of displacement. While second home mortgages are more likely to occur in Census tracts with newer homes and a lower average share of racial and ethnic minorities, **investment mortgages are more likely to occur in older neighborhoods with higher average shares of racial and ethnic minorities.** Investment activities in these neighborhoods present a risk for displacement.

Figure II-11.
Mortgage Characteristics by Occupancy Type, Focus Areas, 2020

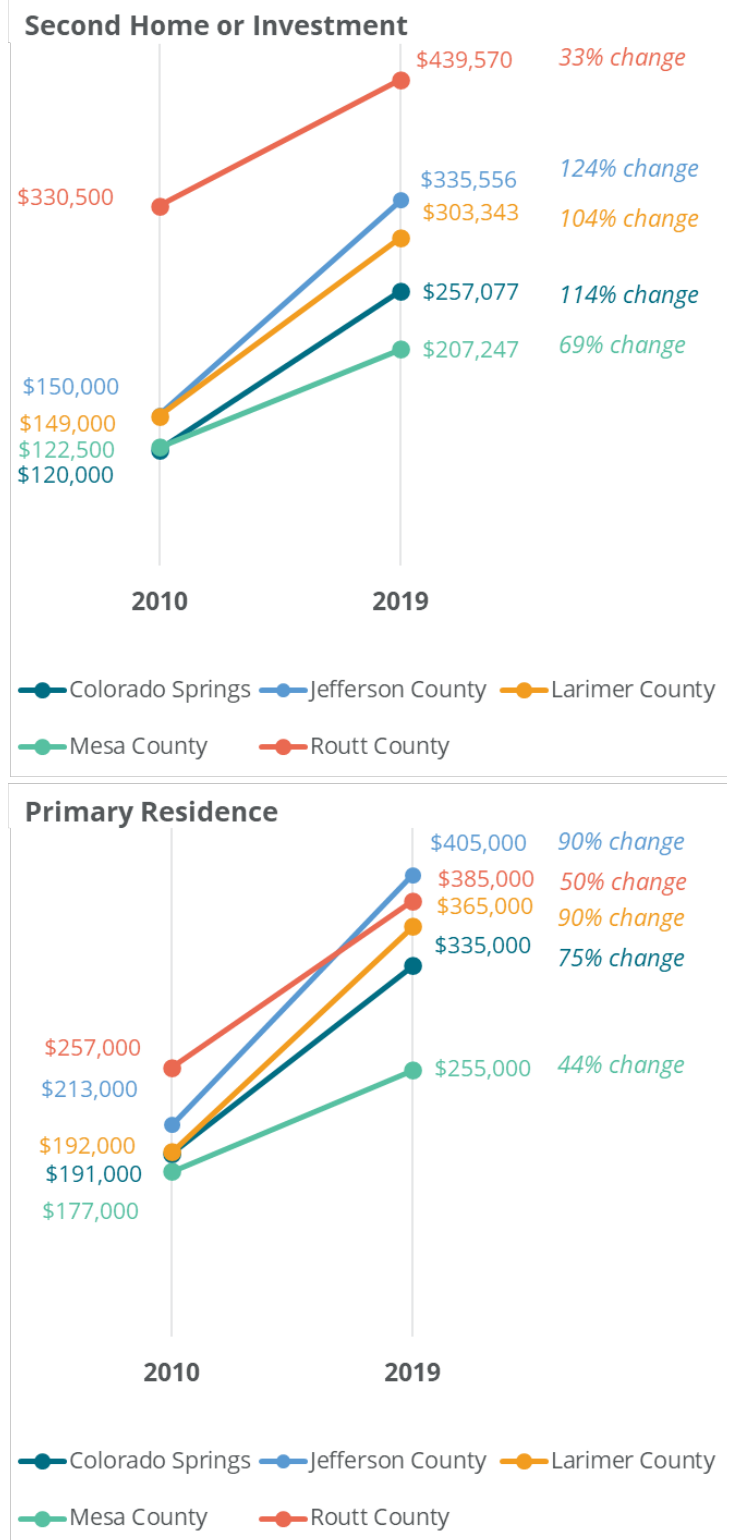
	Number of Home Loans	Pct. of Total Home Loans	Median Property Value	Median Loan Amount	Median Applicant Income	Avg. Pct. Minority by Tract	Avg. Year Built by Tract
Statewide							
Principal	107,298	89%	\$415,000	\$365,000	\$93,000	28%	1992
Second home	6,849	6%	\$525,000	\$395,000	\$215,500	18%	1992
Investment	6,974	6%	\$385,000	\$265,000	\$154,000	30%	1985
Colorado Springs (MSA)							
Principal	17,318	93%	\$365,000	\$335,000	\$83,000	28%	1996
Second home	372	2%	\$405,000	\$315,000	\$157,000	24%	1991
Investment	976	5%	\$315,000	\$235,000	\$150,000	28%	1988
Jefferson County							
Principal	9,875	92%	\$475,000	\$405,000	\$108,000	20%	1986
Second home	259	2%	\$485,000	\$385,000	\$177,000	17%	1986
Investment	623	6%	\$445,000	\$315,000	\$157,000	24%	1981
Larimer County							
Principal	6,085	86%	\$415,000	\$365,000	\$96,000	15%	1996
Second home	413	6%	\$445,000	\$345,000	\$193,500	12%	1991
Investment	607	9%	\$375,000	\$275,000	\$160,500	17%	1992
Mesa County							
Principal	3,424	90%	\$285,000	\$255,000	\$67,000	17%	1992
Second home	153	4%	\$305,000	\$245,000	\$120,000	17%	1989
Investment	212	6%	\$255,000	\$180,000	\$128,000	21%	1987
Routt County							
Principal	423	53%	\$485,000	\$385,000	\$103,000	10%	1993
Second home	332	42%	\$625,000	\$460,000	\$280,000	9%	1996
Investment	40	5%	\$405,000	\$270,000	\$127,000	10%	1996

Source: HMDA and Root Policy Research.

Figure II-12 shows the median loan amount by occupancy type in 2010 and 2019. Generally, the median loan amount for primary residences increased from 44% to 90% during this time compared to second or investment loans which increased between 33% and 124%. Demand for second homes in desirable locations may be driving this upward price bidding.

**Figure II-12.
Median Loan Amount by
Occupancy Type, 2010-2020**

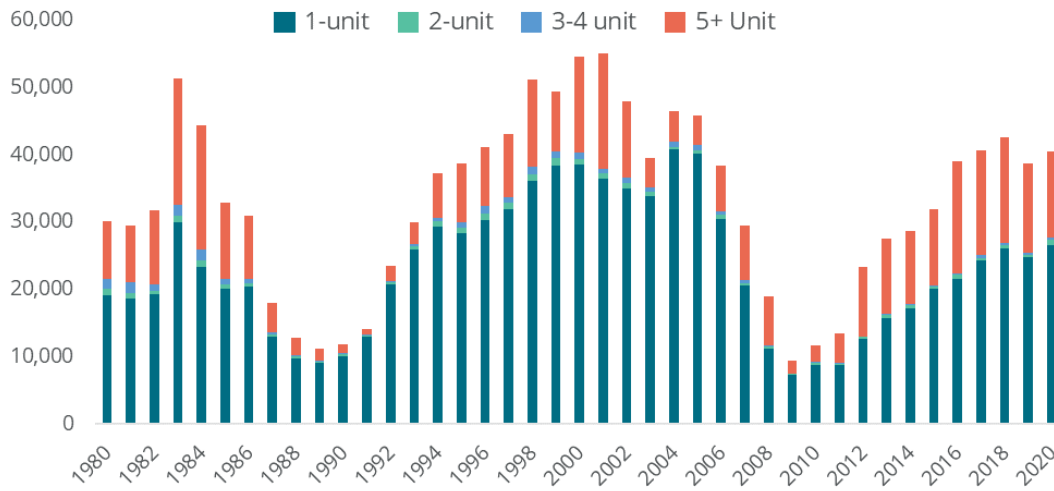
Source:
HMDA and Root Policy Research.



Product Affordability Analysis

Building permits in Colorado have been dominated by single-family units and, to a lesser extent, multifamily structures of 5 units or more. On average, around 70% of units permitted since 1980 were single-family units and around 26% were multifamily structures of 5 units or more.

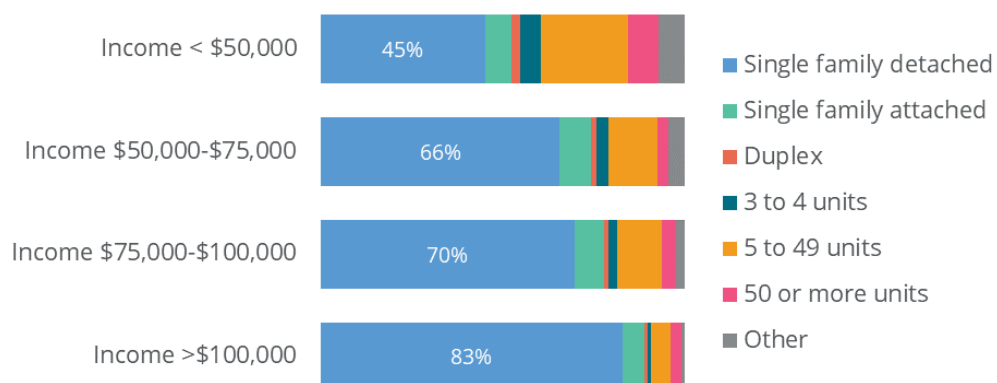
Figure II-13.
Building Permits by Units in Structure



Source: U.S. Census Building Permits Survey, and Root Policy Research.

Single family units are more likely to be occupied by higher income residents. Figure II-14 shows the distribution of housing types across different income categories in the state. While over 80% of households with income above \$100,000 occupy single family detached homes, only 45% of households with income below \$50,000 occupy single family detached homes. Households with incomes of \$50,000 are as likely to occupy multifamily units as they are single family detached homes.

Figure II-14.
Housing Type Occupied, by Income



Source: IPUMS USA, University of Minnesota, www.ipums.org and Root Policy Research.

Single family detached units remain more expensive compared to higher density housing units. As examined in Section I, housing type affects cost burden: While lower income households have high rates of cost burden regardless of the housing type they occupy, they are slightly less likely to be cost burdened if they occupy single family detached homes.² Renter and owner households with incomes between \$50,000 and \$100,000 are less likely to be cost burdened if they occupy moderate-density housing units such as duplexes and triplexes.

This is further confirmed by the analysis, presented below, on housing pricing by type. Figures II-15 and II-16 show median gross rent and median home value for different housing types; the right portion of the table shows how much more expensive single family detached housing is compared to each of the other categories. This is called the “single family premium.”

By way of example: In 2019, the median rent for a single family detached home was 35% more expensive than the median rent for a duplex, and 40% more expensive than the median rent for a triplex or fourplex. Note that the use of “attached homes” in this context are rowhomes and townhomes—not duplexes/triplexes/fourplexes.

Large multifamily structures were once the least expensive rental option and are now one of the most expensive options—largely due to higher construction costs, as well as the amenities now built into these developments.

² This is likely driven by household and housing characteristics. For example, low income residents who occupy LIHTC units are more likely to be cost burdened and are more likely to live in multifamily housing. In addition, low income households who live in single family detached homes might live in units that are in poor condition or might be more likely to be part of larger households with more income earners, compared to households living in multifamily structures.

**Figure II-15.
Median Gross Rent by Housing Type and Single Family Rent Premium**

	Median Gross Rent				Single Family Detached Rent Premium			
	1990	2000	2010	2019	1990	2000	2010	2019
Housing Type								
Single family detached	\$525	\$775	\$1,104	\$1,470	0%	0%	0%	0%
Single family attached	\$521	\$796	\$1,000	\$1,466	1%	-3%	10%	0%
Duplex	\$405	\$644	\$810	\$1,089	30%	20%	36%	35%
3 to 4 units	\$375	\$600	\$748	\$1,048	40%	29%	48%	40%
5 to 9 units	\$368	\$649	\$785	\$1,200	43%	19%	41%	23%
10 to 19 units	\$376	\$655	\$793	\$1,222	40%	18%	39%	20%
29 to 49 units	\$358	\$591	\$737	\$1,201	47%	31%	50%	22%
50+ units	\$361	\$630	\$757	\$1,338	45%	23%	46%	10%

Note: Nominal dollars. Single family attached homes in this context refer to townhomes and rowhomes.

Source: IPUMS USA, University of Minnesota, www.ipums.org and Root Policy Research.

Similarly, in 2019 the median home value for a single family detached home was 17% higher than the median value for a duplex and 46% higher than the median value for triplex or fourplex.³

³ These comparisons are for illustrative purposes only since they do not control for other housing attributes such as age and location.

Figure II-16.
Median Home Value by Housing Type and Single Family Value Premium

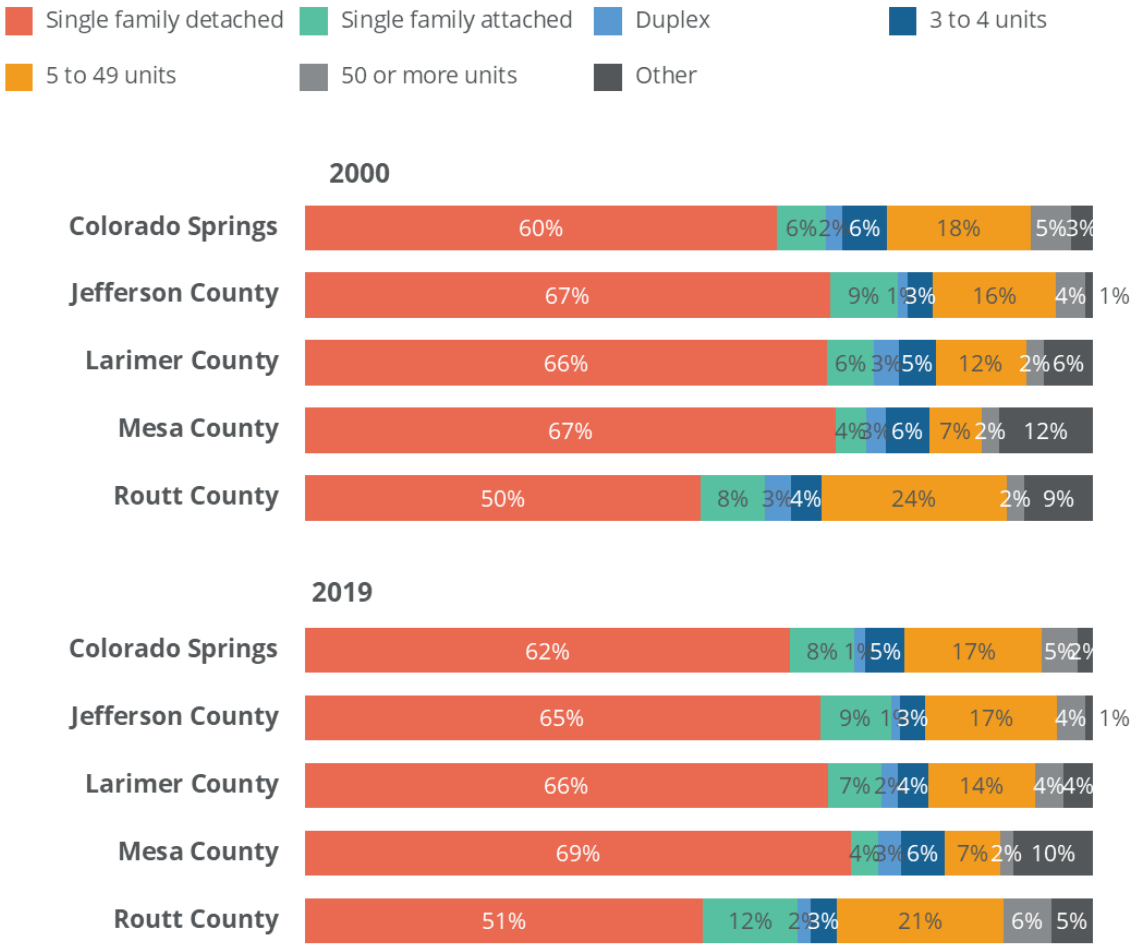
Category	Median Home Value				Single Family Detached Value Premium			
	1990	2000	2010	2019	1990	2000	2010	2019
Housing Type								
Single family detached	\$85,000	\$162,500	\$275,000	\$350,000	0%	0%	0%	0%
Single family attached	\$72,500	\$137,500	\$187,500	\$281,000	17%	18%	47%	25%
Duplex	\$85,000	\$162,500	\$225,000	\$300,000	0%	0%	22%	17%
3 to 4 units	\$62,500	\$112,500	\$162,500	\$240,000	36%	44%	69%	46%
5 to 9 units	\$57,500	\$112,500	\$162,500	\$210,000	48%	44%	69%	67%
10 to 19 units	\$42,499	\$95,000	\$137,500	\$200,000	100%	71%	100%	75%
29 to 49 units	\$47,500	\$95,000	\$137,500	\$225,000	79%	71%	100%	56%
50+ units	\$77,500	\$112,500	\$187,500	\$300,000	10%	44%	47%	17%

Note: Nominal dollars.

Source: IPUMS USA, University of Minnesota, www.ipums.org and Root Policy Research.

Recent development by housing type. Figure II-17 shows the share of housing units by units in structure in 2000 and 2019 for the focus areas. The overall distribution of housing types has not shifted dramatically since 2000, despite changing needs and preferences.

Figure II-17.
Units in Structure, Focus Areas, 2000-2019



Source: ACS and Root Policy Research.

Figures II-18 through II-20 show the number of units by type in 2000 and 2019 and the unit change over that time period for the focus area counties and areas with 50,000 people and more. Unit growth is primarily driven by single family detached housing units and units in building with 50 or more units—larger multifamily buildings. In many cases, the number of duplexes and other types of housing—primarily mobile homes—decreased during this time. The housing market has largely catered to the luxury housing market in recent years with larger single family detached housing and luxury apartments.

Figure II-18.
Units in Structure, 2000

	Single Family Attached	Single Family Detached	Duplex	3 to 4 Units	5 to 49 Units	50 or More Units	Other
Focus areas							
Colorado Springs	89,149	9,286	3,117	8,388	27,056	7,752	4,102
Jefferson County	141,553	18,142	2,819	6,612	33,400	7,808	2,154
Larimer County	69,824	6,315	3,242	4,929	12,180	2,341	6,561
Mesa County	32,639	1,823	1,215	2,722	3,198	1,039	5,791
Routt County	5,628	920	371	433	2,642	235	988
Counties (50,000+ population)							
Adams County	80,553	8,158	1,557	3,647	21,139	4,432	13,108
Arapahoe County	111,736	20,687	1,692	5,985	40,977	12,755	3,003
Boulder County	74,277	7,359	2,686	5,366	20,394	5,818	4,000
Douglas County	54,428	2,533	103	738	4,453	773	305
Eagle County	7,209	3,507	694	1,763	6,052	826	2,060
El Paso County	129,317	11,998	4,038	10,715	29,043	7,894	9,423
Garfield County	9,732	1,016	585	1,049	1,845	177	2,932
La Plata County	13,021	1,231	585	663	1,474	175	3,616
Pueblo county	43,039	1,637	1,940	2,229	3,687	1,966	4,428
Weld County	44,367	2,130	1,719	2,972	6,465	1,026	7,515
Cities (50,000+ population)							
Arvada	28,524	2,838	431	1,290	4,729	1,776	35
Aurora	54,271	13,502	899	4,379	25,663	7,666	2,694
Boulder	17,906	2,580	1,122	2,853	10,690	4,182	1,464
Broomfield	10,417	300	75	148	2,216	266	929
Castle Rock	5,288	427	62	118	1,343	151	97
Commerce City	4,587	412	384	268	590	134	532
Denver	119,432	18,766	7,994	10,034	63,088	31,447	674
Fort Collins	26,706	3,613	1,696	3,080	9,407	1,980	1,284
Grand Junction	11,907	748	636	1,203	2,366	878	1,134
Greeley	16,191	1,249	1,286	1,997	5,110	947	2,074
Lakewood	31,670	6,827	913	2,547	16,671	3,313	492
Longmont	17,843	1,816	1,003	1,269	3,543	1,047	906
Loveland	14,250	1,383	861	1,196	1,759	348	524
Parker	7,174	498	20	44	570	29	24
Pueblo	31,130	1,233	1,467	1,951	3,529	1,966	1,843
Thornton	18,166	2,248	127	819	4,343	704	3,074
Westminster	23,781	3,644	289	1,153	7,994	1,834	764

Source: ACS and Root Policy Research.

Figure II-19.
Units in Structure, 2019

	Single Family Attached	Single Family Detached	Duplex	3 to 4 Units	5 to 49 Units	50 or More Units	Other
Focus areas							
Colorado Springs	117,949	15,482	2,721	9,584	33,345	8,628	3,767
Jefferson County	157,471	21,644	2,798	7,755	40,149	8,595	2,544
Larimer County	98,331	10,153	3,066	5,633	20,226	5,228	5,592
Mesa County	46,144	2,334	1,859	3,681	4,758	1,108	6,715
Routt County	8,504	2,023	272	560	3,554	1,036	879
Counties (50,000+ population)							
Adams County	108,250	13,249	1,507	4,447	29,858	4,969	10,920
Arapahoe County	140,460	25,890	2,176	6,309	57,086	16,513	2,778
Boulder County	80,215	10,864	2,469	5,749	25,032	7,800	3,967
Douglas County	95,599	7,738	282	2,057	14,242	4,416	437
Eagle County	12,062	4,456	931	1,769	8,835	2,612	1,796
El Paso County	183,120	21,257	3,278	11,643	35,620	8,884	8,577
Garfield County	14,977	2,199	474	826	2,978	217	2,330
La Plata County	17,751	1,113	589	1,036	2,808	854	3,674
Pueblo county	53,578	2,286	1,319	2,468	4,465	2,787	4,320
Weld County	80,393	3,765	2,210	3,467	9,850	1,865	7,620
Cities (50,000+ population)							
Arvada	35,040	3,475	443	1,681	6,374	1,932	93
Aurora	70,211	16,432	1,348	4,352	33,823	6,832	2,561
Boulder	17,884	3,506	1,206	2,919	12,959	5,383	1,288
Broomfield	17,617	1,505	100	683	4,758	3,112	599
Castle Rock	16,355	1,835	85	250	2,760	584	122
Commerce City	13,232	1,275	285	305	1,152	209	360
Denver	143,429	25,504	7,904	10,039	75,746	57,945	1,150
Fort Collins	38,081	5,246	1,623	3,647	13,920	3,593	1,458
Grand Junction	17,240	1,363	894	2,112	3,662	1,027	1,575
Greeley	22,512	1,809	1,454	2,188	7,012	1,329	2,318
Lakewood	33,744	7,740	1,192	3,211	18,293	3,921	612
Longmont	23,770	3,228	859	1,776	6,521	1,566	870
Loveland	21,390	3,084	821	1,256	4,618	1,422	513
Parker	14,684	988	33	174	3,164	371	20
Pueblo	34,901	1,827	1,086	2,175	4,252	2,662	1,848
Thornton	30,288	4,270	112	1,145	7,693	920	2,954
Westminster	26,673	4,363	392	1,294	10,548	1,973	682

Source: ACS and Root Policy Research.

Figure II-20.
Percent Change by Units in Structure, 2000-2019

	Single Family Attached	Single Family Detached	Duplex	3 to 4 Units	5 to 49 Units	50 or More Units	Other
Focus areas							
Colorado Springs	32%	67%	-13%	14%	23%	11%	-8%
Jefferson County	11%	19%	-1%	17%	20%	10%	18%
Larimer County	41%	61%	-5%	14%	66%	123%	-15%
Mesa County	41%	28%	53%	35%	49%	7%	16%
Routt County	51%	120%	-27%	29%	35%	341%	-11%
Counties (50,000+ population)							
Adams County	34%	62%	-3%	22%	41%	12%	-17%
Arapahoe County	26%	25%	29%	5%	39%	29%	-7%
Boulder County	8%	48%	-8%	7%	23%	34%	-1%
Douglas County	76%	205%	174%	179%	220%	471%	43%
Eagle County	67%	27%	34%	0%	46%	216%	-13%
El Paso County	42%	77%	-19%	9%	23%	13%	-9%
Garfield County	54%	116%	-19%	-21%	61%	23%	-21%
La Plata County	36%	-10%	1%	56%	91%	388%	2%
Pueblo county	24%	40%	-32%	11%	21%	42%	-2%
Weld County	81%	77%	29%	17%	52%	82%	1%
Cities (50,000+ population)							
Arvada	23%	22%	3%	30%	35%	9%	166%
Aurora	29%	22%	50%	-1%	32%	-11%	-5%
Boulder	0%	36%	7%	2%	21%	29%	-12%
Broomfield	69%	402%	33%	361%	115%	1070%	-36%
Castle Rock	209%	330%	37%	112%	106%	287%	26%
Commerce City	188%	209%	-26%	14%	95%	56%	-32%
Denver	20%	36%	-1%	0%	20%	84%	71%
Fort Collins	43%	45%	-4%	18%	48%	81%	14%
Grand Junction	45%	82%	41%	76%	55%	17%	39%
Greeley	39%	45%	13%	10%	37%	40%	12%
Lakewood	7%	13%	31%	26%	10%	18%	24%
Longmont	33%	78%	-14%	40%	84%	50%	-4%
Loveland	50%	123%	-5%	5%	163%	309%	-2%
Parker	105%	98%	65%	295%	455%	1179%	-17%
Pueblo	12%	48%	-26%	11%	20%	35%	0%
Thornton	67%	90%	-12%	40%	77%	31%	-4%
Westminster	12%	20%	36%	12%	32%	8%	-11%

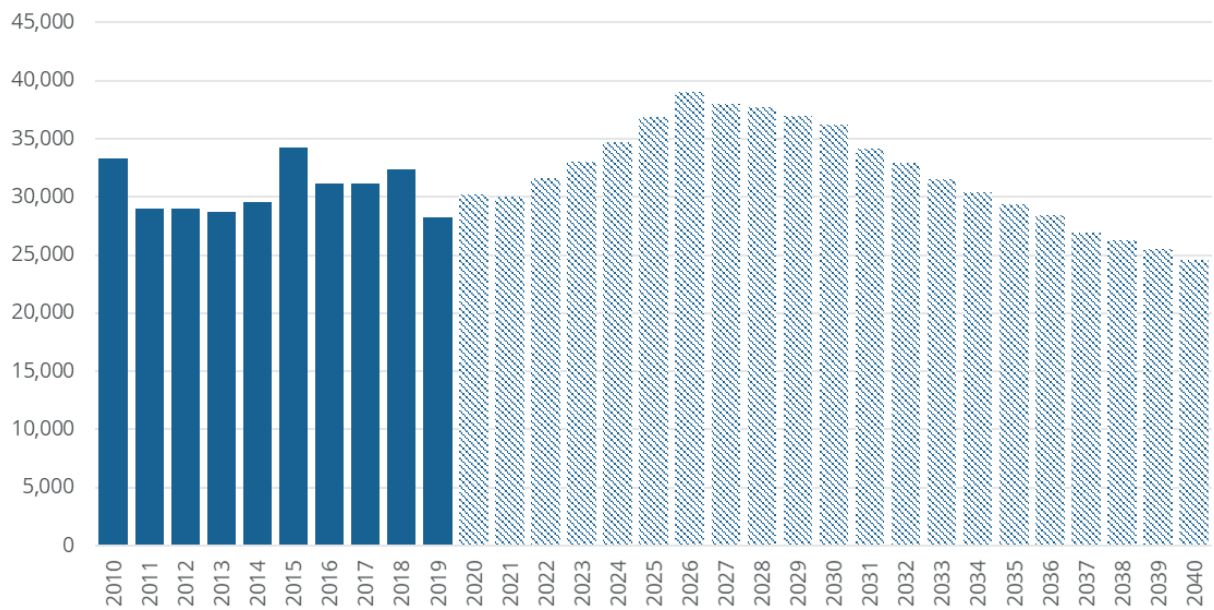
Source: ACS and Root Policy Research.

Development Capacity and Price Impacts

This section explores how much residential development capacity needs to increase or order to reach more affordable housing costs given current income.

Units needed. According to the Colorado State Demography Office, Colorado is projected to add an average of 35,000 households per year between 2020 and 2030. This average will decrease to around 29,600 households per year between 2030 and 2040.

Figure II-21.
Projected Growth in Households



Source: DOLA Colorado State Demography Office, and Root Policy Research.

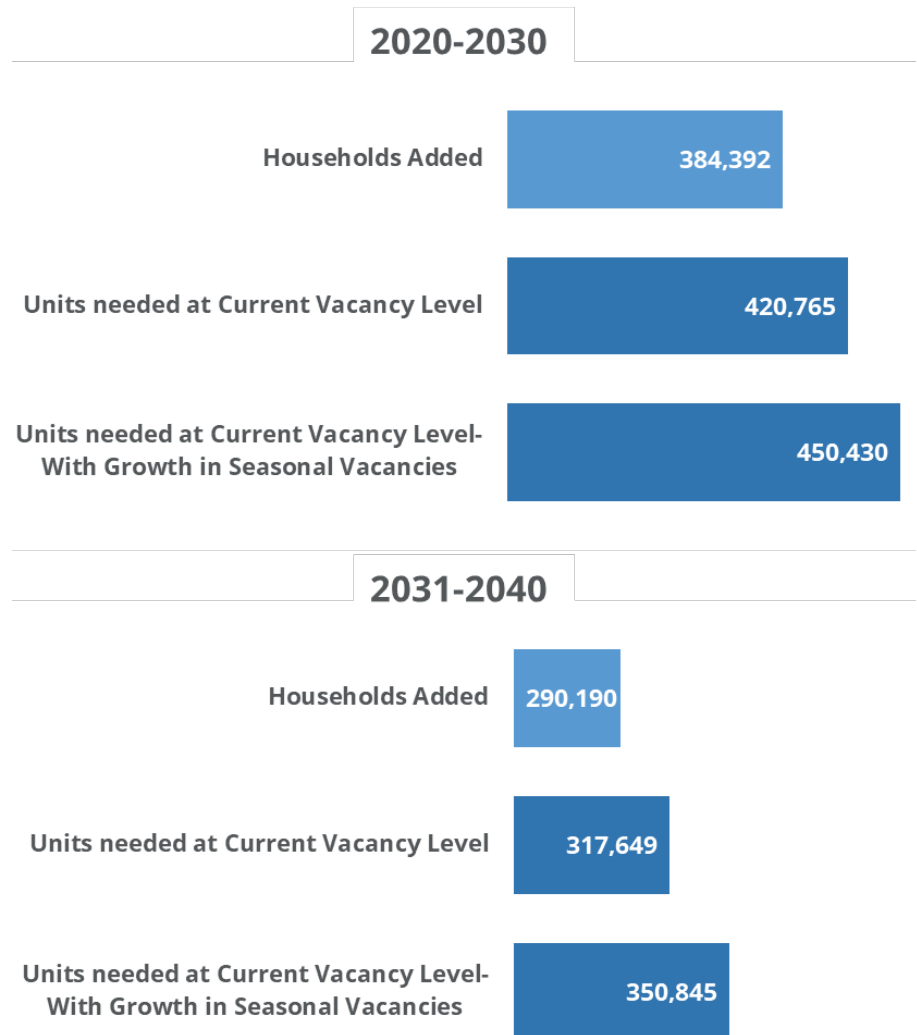
Figure II-22 below shows projected household growth, according to the State Demographer, and units needed to accommodate growth over the following two decades.

To keep up with household growth at the current vacancy rate, the state needs to add more than 420,700 new housing units over the next decade. If we assume that the share of homes that are used for seasonal and recreational purposes will continue to grow, then the state needs to add an extra 15,800 (a total of 450,000) units to meet this demand and keep the same vacancy rate for Colorado residents.

**Figure II-22.
Projected
Growth in
Households and
Housing Units
Needed**

Note:
Share of vacancies for recreational used extrapolated from ACS 5-year estimates. Forecasted growth in seasonal vacancies as a share of total vacancies was calculated using a linear forecast using trends from 2010-2019.

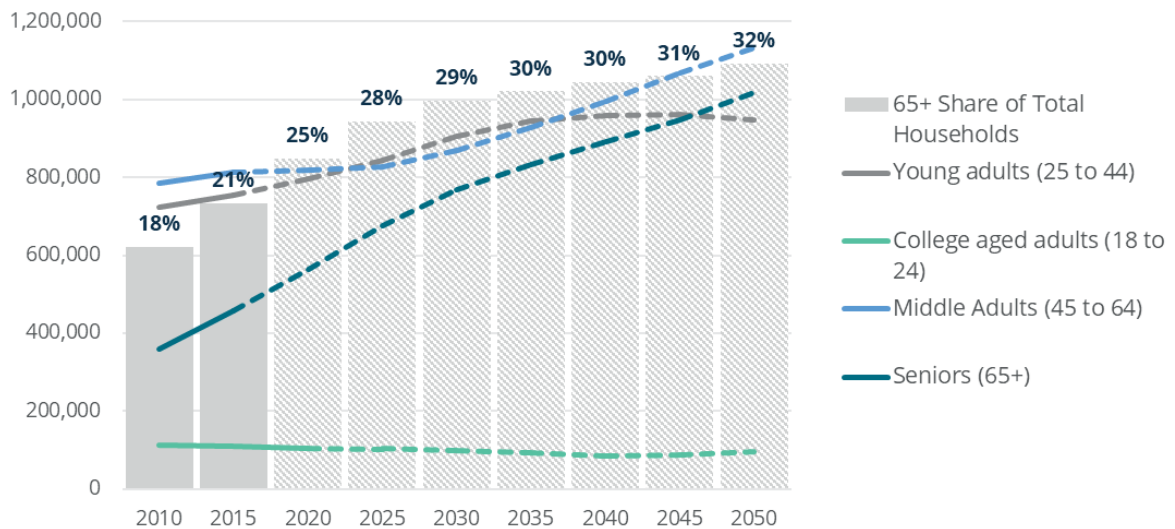
Source:
DOLA Colorado State Demography Office, ACS 5-year estimates, and Root Policy Research.



It should be noted that at the current vacancy rate, the current price pressures would continue—for price trends to soften the state needs to add even more units than projected above.

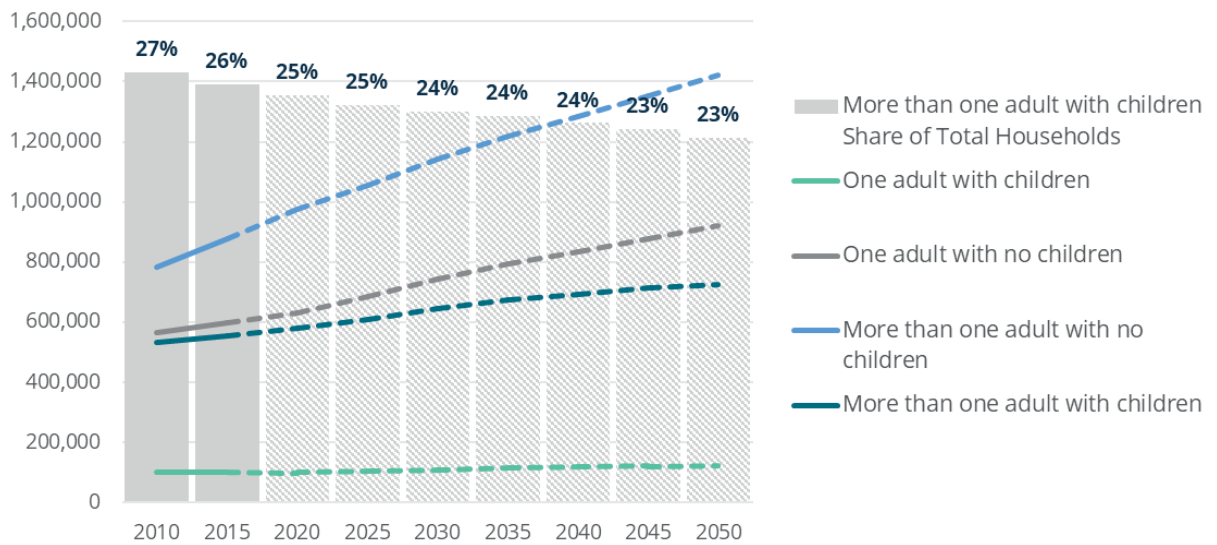
Moreover, the type of housing needed is also likely to change. Figures II-23 and II-24 show the projected population growth by age group and household type. The share of households over the age of 65 is projected to increase from 18% in 2010 to 32% of total households by 2050, while the share of households composed of more than one adult with children is projected to decrease from 27% in 2010 to 23% in 2050. Large single family detached housing may not be the most appropriate housing type to accommodate increasing diversity of the state’s households.

Figure II-23.
Household Trends and Forecast by Age



Source: DOLA Colorado State Demography Office, and Root Policy Research.

Figure II-24.
Household Trends and Forecast by Household Type



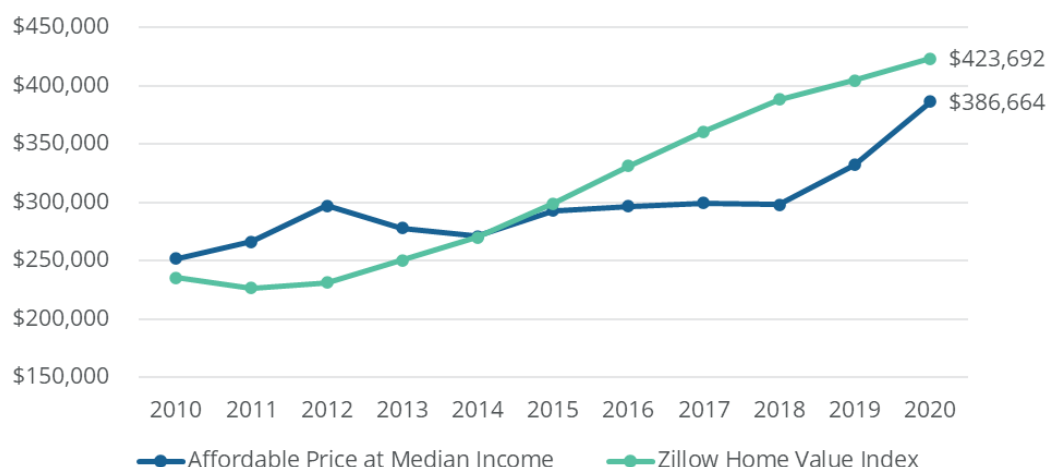
Source: DOLA Colorado State Demography Office, and Root Policy Research.

To get true a sense of how many units are needed—to both meet demand and address affordability needs—we first compared affordability levels at the median income with home prices. Figure II-25 shows the affordable home price for a household earning HUD’s median family income, with the Zillow Home Value Index price for Colorado.

In the last decade homes in Colorado reached peak affordability in 2012. HUD’s estimated median family income in 2012 was \$74,100 and given an average interest rate of 3.66%, a household could afford a home price of \$297,275 (this compares to the typical home price of \$231,647).

In 2018, by contrast, the estimated median family income was \$82,600 and with the average interest rate of 4.54%, a household could afford a home price of \$298,150. The typical home price was \$388,664. In 2020, with a median family income of \$92,200 and an interest rate of 3.13% a household could afford a maximum price of \$386,664. The typical home value is \$423,692.

Figure II-25.
Affordable Home Price and Typical Home Value Comparison, 2010-2019



Note: Affordability estimates assume a household spends 30% of their income on housing and assume a 30-year mortgage with a 5% down payment, 30% of monthly payment is used for property taxes, utilities, insurance. Interest rates used are the historical 30-year fixed rate average from Freddie Mac from 2010 to 2019 and the average rate for 30-year mortgages for Colorado according to the latest HMDA data for 2020.

Source: HUD, Zillow, Freddie Mac, HMDA, and Root Policy Research.

This indicates that in order to be considered affordable, home prices should be around 9% lower.

Using an economic model that estimates changes in prices as a function of supply and demand elasticities—described in the following section—the required increase in capacity (shift in the housing supply curve) to reach a 9% decrease in prices is 8.06%. Applying this to the estimated 450,430 units needed to meet population and vacancy growth, the state needs an extra 36,305 units, for a total of 486,735, an average of 48,673 units per year.

Model Framework

We estimate price changes based on supply and demand elasticities assuming a linear partial equilibrium market model. Approximating linear demand and supply curves and solving for a new equilibrium resulting from a shift downwards in the supply curve, we can solve for the change in price resulting from a shift in housing supply through the following formula:

$$\% \Delta P = \frac{\% \Delta Q}{E_S - E_D}$$

In which the percent change in housing prices (% ΔP) is a function of the percent change in quantity supplied (% ΔQ) and the price elasticity of supply (E_S) and demand (E_D). The elasticities of supply and demand measure how sensitive supply and demand are to changes in housing prices and can be estimated empirically using different data sources.

Supply elasticity. We model the supply of housing as a function of the price of housing and construction costs. We estimate the following natural logarithmic equation:

$$\ln(Q \text{ Supply}_t) = \alpha + \beta \ln(\text{ZHVI}_t) + \gamma \ln(\text{Construction Cost}_t) + \epsilon_t$$

Where β represents the price elasticity of supply—the percentage increase in housing that would result from a 1% increase in housing prices, holding construction costs constant.

We use annual data covering the 1996-2019 period to estimate the ordinary least squares regression. For the number of housing units (Q_s) in the state we gathered data from the State Demographer. For the price of housing, we use the Zillow Home Value Index (ZHVI), a smoothed, seasonally adjusted measure of the typical home value and market changes across a given region and housing type. For construction costs we use the producer price index for construction materials from the Bureau of Labor Statistics. The results indicate a supply elasticity of 0.18 that is statistically significant at the 99 percent level.

Demand elasticity. We use a standard demand function to model the consumption of housing as:

$$P * Q \text{ Demand} = \alpha p^{(\beta+1)} y^\gamma$$

Where the housing expenditure ($P * Q$ Demand) is a function of the price of housing (p) and income (y). Applying a natural log transformation, we get:

$$\ln(Q \text{ Demand}) = \ln(\alpha) + (\beta) \ln(p) + \gamma \ln(y)$$

In this case ($\beta-1$) represents the price elasticity of demand. Next, we estimate two logarithmic regressions, one for owner occupied housing and another for renter occupied housing to find a weighted average for the price elasticity of demand.

Homeowners. For the homeowner model, we regress housing expenditures on the ZHVI, household income, and interest rates.

$$\ln(Q \text{ Demand}_t) = \alpha + \beta \ln(\text{ZHVI}_t) + \gamma \ln(\text{Income}_t) + \ln(r_t) + \epsilon_t$$

We use IPUMS microdata on real housing expenditures from 2010 to 2019 but restrict the sample to households who have moved within the last year and are paying current market prices. IPUMS microdata are also used to measure real household income. The real ZHVI is used to measure housing prices, and the annual average Freddie Mac 30-year fixed mortgage rate is used to measure the interest rate. The results indicate a price elasticity of demand of 0.81 that is significant at the 99 percent level.

Renters. For the renter model, we regress the housing expenditures on the median rent and household income.

$$\ln(Q \text{ Demand}_t) = \alpha + \beta \ln(\text{Rent}_t) + \gamma \ln(\text{Income}_t) + \epsilon_t$$

We use IPUMS microdata on gross real rents from 2010 to 2019 but again restrict the sample to households who have moved within the last year and are paying current market prices. IPUMS microdata are also used to measure real household income. The median rent from the Colorado Statewide Multifamily Survey is used to measure real rent prices. The results indicate a price elasticity of demand of 0.51 that is significant at the 99 percent level.

The weighted average price elasticity of demand is 0.71. Using the estimated numbers to solve for the change in quantity required for a 9% decrease in price we get that change in quantity is equal to 9% multiplied by $(0.18 - (-0.71))$ or 8.06%.

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SECTION III.

LAND USE ANALYSIS

SECTION III.

Land Use Analysis

Locally-enacted zoning codes and land use regulations determine how a city and county develops—for example, the balance between residential and commercial properties, the heights of buildings, and the types and densities of residential units. The current housing market challenge has prompted a growing body of research to examine relationships between land use regulations and housing affordability; this research largely supports the need for zoning reform to expand housing supply and affordability.

This section provides a tailored look at the relationship between land use regulations and housing development in Colorado by examining the impacts of adopted zoning regulations on residential development in Jefferson and Larimer Counties—with a special focus on “missing middle” housing products like accessory dwelling units, duplexes, and small multifamily developments.

This section aims to answer:

- Are Colorado cities making the best use of developable land?
- Do zoning and land use policies allow for more affordable housing types?

Summary of Findings

The zoning and land use analysis of Jefferson and Larimer Counties in Colorado suggests the following.

- **Zoning in Colorado heavily favors single family development.** The distribution of residential land acres where single family, duplex, triplex, buildings with four or more units, and accessory dwelling units (ADUs) are permitted by right is consistent in Jefferson and Larimer Counties. Land available for single family development by right consumes the vast majority of land in both counties. The land available to develop missing middle housing types—duplexes, triplexes, and buildings with four or more units—is very limited. ADUs are generally permitted only conditionally, except in select municipalities.
- **Planned unit developments (PUDs) limit the opportunity for zoning reform.** PUDs are most prevalent in Jefferson County—specifically the unincorporated county and Westminster—where existing PUDs occupy about 20% of vacant land. PUDs are governed by negotiated plans for their overall development pattern that is approved by a governing body. Once PUDs are

established, they are hard to change without the initiation by the developer. Therefore, PUDs limit the effectiveness of zoning reform because they can be less responsive to current market conditions and needs. However, there is an opportunity for affordability and providing a mix of housing types to be a part of PUD negotiations for new PUDs developments in the future.

- **Residential developments generally build to the maximum density permitted by the zoning code to avoid rezoning processes which can be costly and unpredictable.** In both counties, properties that have developed since 2010 on land that allows single family and duplex developments typically built to the density permitted by right by the zoning code without subdividing land. A streamlined subdivision rezoning process may help unlock additional capacity already permitted under the zoning code.
- **Zoning reforms alone are not enough to solve the state’s affordability problem—particularly for the low and moderate income households.** A significant increase in supply *can* accelerate the filtering process that occurs when households have more choice and migrate into units that fit their affordability needs. However, academic research has shown that that process can take several decades. For supply interventions to truly benefit low and moderate income families, they must be coupled with effective programs and policies to reduce the costs of newly built housing.
- **Zoning reform has the potential to greatly increase the residential land capacity and housing supply in Colorado—based on an analysis of Jefferson and Larimer Counties zoning codes.** In this section, three separate land use reforms were tested on Jefferson and Larimer Counties for their potential to build housing supply by unlocking underutilized land. The impact of those policy proposals was measured through the number of residential units that could have been created if they were in place beginning in 2010-2021, and if they were in place going forward. That analysis found that:
 - ***Accessory Dwelling Unit (ADU)*** land use reforms that allow ADUs on single family lots could have increased housing supply in Jefferson County by 1,224 units between 2010 and 2021—equivalent to 7% of the county’s total unit production—and in Larimer County by 2,317—equivalent to 27% of the county’s total unit production. In reality, because of the challenges of developing and financing ADUs, actual production would have been much lower.
 - Land use reforms that ***allow duplexes, triplexes, fourplexes, and sixplexes*** could have increased unit production by between 1,774 and 4,392 units between 2010 and 2021 in Jefferson County—an overall unit

production increase of between 11% and 21% (with sixplexes boosting production the most). The potential for unit production is much greater in Larimer County with an increase between 6,304 and 17,118—an overall increase of between 32% and 87%. In the product affordability analysis completed for this research, these types of units were also determined to be more affordable to rent and buy, and carry the lowest cost burden of other types of housing units.

- A broader regulatory change that requires at least **10% of land zoned for 10 dwelling units/acre** (sixplex and denser) would unlock the potential for the development of nearly 100,000 new residential units in Jefferson County and 272,000 units in Larimer County. This is because so little of the land in these counties, and the land of municipalities in these counties, is zoned land for this level of density.
- **Planned unit developments (PUDs) are a barrier to zoning reform.** Zoning reforms were shown to have a more substantial impact in Larimer County compared to Jefferson County due in large part to the prevalence of PUDs in Jefferson County. About 20% of vacant land in Jefferson County will develop through the PUD process.

Going forward, there is more potential for ADU capacity to be added to Jefferson and Larimer County land parcels *without PUD zoning* than for du- through sixplexes due to the limited number of vacant parcels. Maximizing density by adding du-through sixplexes would involve demolishing existing units, which can be costly and invite neighborhood resistance. Still, there are many opportunities to maximize the density of vacant remaining single family detached lots to increase capacity, and, more importantly, incorporate these unit types through PUDs.

Zoning Case Studies

Figure III-1 and III-2 show the land area in Jefferson and Larimer Counties that are protected (through public or private conservation), vacant, and located within a planned unit development (PUD).

A PUD is a large, integrated development that allows for land use flexibility outside of the community’s adopted zoning ordinance. PUDs are typically approved by the local legislative body—city council, board of supervisors, county commissioners. The process for establishing a PUD typically requires a public hearing. PUDs can be beneficial for developing missing middle housing and mixed-density housing that is not typically permitted under zoning regulations. However, PUDs are highly individual and are not typically subject to modifications to the zoning ordinance once PUDs are approved.

Jefferson County includes land area within Arvada, Edgewater, Golden, Lakewood, Littleton, Morrison, Westminster, and Wheat Ridge. County land that is not located within a municipality is classified as unincorporated.

Figure III-1.
Residential Land by Municipality, Jefferson County

	Total		Protected		Vacant		PUD	
	Acres	%	Acres	%	Acres	%	Acres	%
Jefferson County	1,313,677	100%	94,688	100%	121,725	100%	48,436	100%
Arvada	13,733	1%	262	0%	5,068	4%	3,103	6%
Edgewater	248	0%	3	0%	13	0%	6	0%
Golden	6,138	0%	3	0%	1,160	1%	5,112	11%
Lakewood	33,063	3%	2,606	3%	2,974	2%	2,500	5%
Littleton	180	0%	0	0%	33	0%	180	0%
Morrison	944	0%	0	0%	368	0%	60	0%
Unincorporated	1,248,075	95%	91,624	97%	107,154	88%	33,506	69%
Westminster	3,716	0%	172	0%	1,154	1%	3,334	7%
Wheat Ridge	7,580	1%	18	0%	3,801	3%	635	1%

Source: DU Student Research Team, COMaP, and Root Policy Research.

Larimer County includes land area within including Berthoud, Estes Park, Fort Collins, Loveland, Timnath, Wellington, Windsor, and Johnstown. County land that is not located within a municipality is classified as unincorporated.

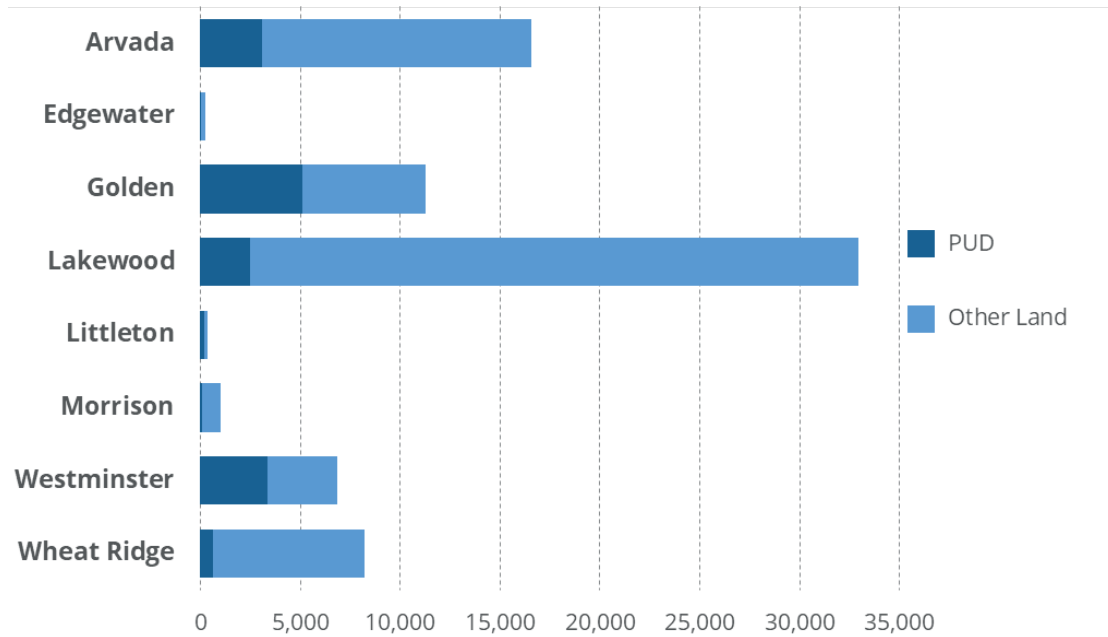
Figure III-2.
Residential Land by Municipality, Larimer County

	Total		Protected		Vacant		PUD	
	Acres	%	Acres	%	Acres	%	Acres	%
Larimer County	1,839,186	100%	1,081,946	100%	279,306	100%	12,132	100%
Berthoud	5,260	0%	330	0%	1,266	0%	1,187	10%
Estes Park	3,111	0%	81	0%	641	0%	0	0%
Fort Collins	81,612	4%	9,197	1%	6,862	2%	0	0%
Johnstown	3,173	0%	298	0%	35	0%	3,138	26%
Unincorporated	1,711,083	93%	1,069,187	99%	263,674	94%	398	3%
Loveland	26,539	1%	2,652	0%	3,128	1%	7,359	61%
Timnath	3,008	0%	11	0%	1,575	1%	0	0%
Wellington	1,982	0%	50	0%	661	0%	0	0%
Windsor	3,419	0%	141	0%	1,464	1%	49	0%

Source: DU Student Research Team, COMaP, and Root Policy Research.

Figure III-3 shows the estimated acreage of land that is located in a PUD by municipality. Littleton, Golden, and Westminster—specifically the areas located in Jefferson County—are predominantly governed by an approved PUD. The prevalence of PUD development in Colorado, particularly in high opportunity suburban areas, presents a unique opportunity for—and a potential barrier to—expanding housing choice. The inclusion of housing to meet the needs of typically underrepresented residents is critical to raise during negotiations for the planned development.

Figure III-3.
Total Land Acres in a PUD by Jurisdiction, Jefferson County



Source: Root Policy Research and DU Student Research Team.

PUDs are much less prevalent in Larimer County, as shown Figure III-2. Fort Collins—the largest municipality in Larimer County—does not designate separate PUD zoning districts; rather, the city designates PUD overlays which respect the underlying zoning districts.

Overlay zoning districts are used to apply additional standards to underlying base zoning districts within a specified area. Airport noise overlay zones are a common examples of an overlay zoning district, and they limit the uses that can be constructed within a specified distance from an airport. These overlays are primarily used to limit residential uses in areas surrounding airports that are impacted by noise.

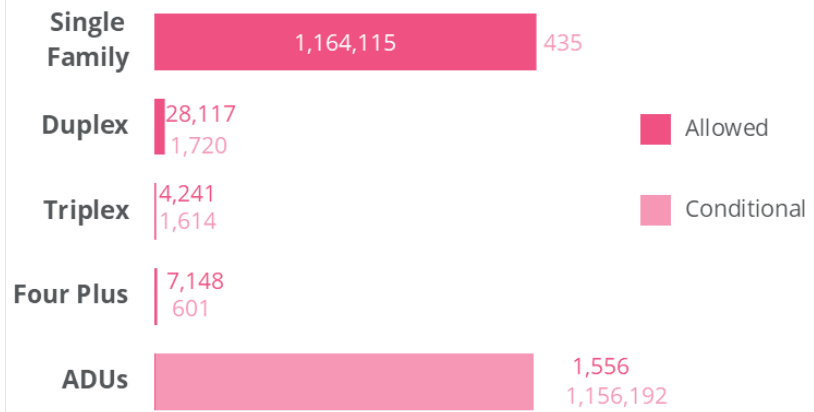
Figure III-4 and III-5 show the acreage of land that is zoned to allow by right or conditionally permit residential housing types including single family, duplexes, triplexes, developments with four or more units (multifamily), and ADUs.

In traditional zoning, land is divided into districts by the types of uses permitted. Permitted uses can be allowed by right or conditional. Allowed uses do not require additional layers of review or a public process in order to be approved. Conditional uses either have unique requirements that limit the development of that use or require a public process and approval by the local legislative body.

The vast majority of land in Jefferson County permits single family detached homes (“single family”) development by right. Other residential uses are more limited. Accessory dwelling units (ADUs) typically require conditional approval.

Figure III-4.
Total Land Acres
Where Residential
Uses are Allowed
(by right) or
Conditional,
Jefferson County

Source:
 Root Policy Research and DU
 Student Research Team.



The overall distribution of land by permitted uses in Larimer County is very similar to Jefferson County. However, Larimer County offers significantly more opportunities to construct duplexes and triplexes by right.

Figure III-5.
Total Land Acres
Where Residential
Uses are Allowed
(by right) or
Conditional, Larimer
County

Source:
 Root Policy Research and DU
 Student Research Team.

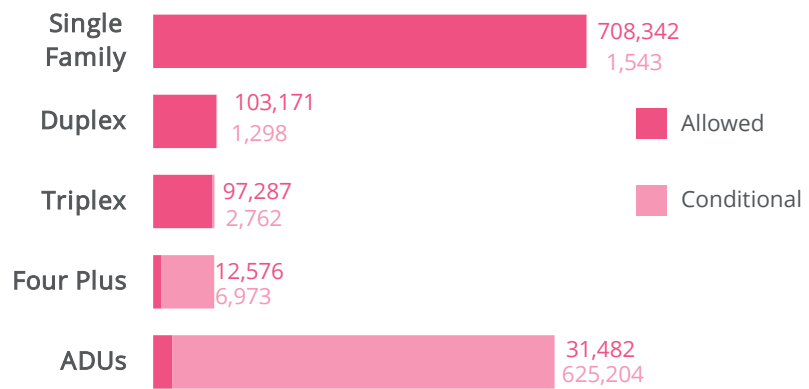


Figure III-6 and III-7 show the residential uses permitted by right in each municipality. Outside of the unincorporated areas in Jefferson County, Wheat Ridge and Lakewood provide the most variety in residential housing types allowed by right.

Figure III-6.

Residential Land by Residential Use Allowed by Right, Jefferson County

	Single Family		Duplex		Triplex		Four Plus	
	Acres	%	Acres	%	Acres	%	Acres	%
Jefferson County	1,164,115	100%	28,117	100%	4,241	100%	7,148	100%
Arvada	7,279	1%	6	0%	13	0%	1,319	18%
Edgewater	230	0%	70	0%	40	1%	41	1%
Golden	844	0%	213	1%	213	5%	223	3%
Lakewood	26,082	2%	1,557	6%	859	20%	2,450	34%
Morrison	856	0%	17	0%	17	0%	17	0%
Unincorporated	1,121,823	96%	20,729	74%	122	3%	127	2%
Westminster	228	0%	31	0%	31	1%	31	0%
Wheat Ridge	6,772	1%	5,494	20%	2,947	69%	2,940	41%

Source: Root Policy Research and DU Student Research Team.

In Larimer County, Loveland, Windsor, and Estes Park provide the most variety in land zoned to allow mixed residential uses by right.

Figure III-7.

Total Residential Land by Residential Use Allowed by Right, Larimer County

	Single Family		Duplex		Triplex		Four Plus	
	Acres	%	Acres	%	Acres	%	Acres	%
Larimer County	708,342	100%	103,171	100%	97,287	100%	12,576	100%
Berthoud	3,452	0%	621	1%	621	1%	398	3%
Estes Park	2,814	0%	1,078	1%	1,006	1%	1,006	8%
Fort Collins	50,222	7%	486	0%	146	0%	146	1%
Johnstown	0	0%	0	0%	0	0%	0	0%
Unincorporated	633,314	89%	87,669	85%	86,535	89%	0	0%
Loveland	12,221	2%	12,090	12%	8,916	9%	10,105	80%
Timnath	2,608	0%	307	0%	0	0%	0	0%
Wellington	1,153	0%	39	0%	39	0%	39	0%
Windsor	2,558	0%	882	1%	25	0%	882	7%

Source: Root Policy Research and DU Student Research Team.

Figures III-8 through III-13 include maps of current zoning regulations in Jefferson County. Figure III-8 shows where approved PUDs are located in Jefferson County. Figures III-9 to III-13 show where different housing types are allowed by right or conditionally in Jefferson County. Please note special permits are a form of conditional approval.

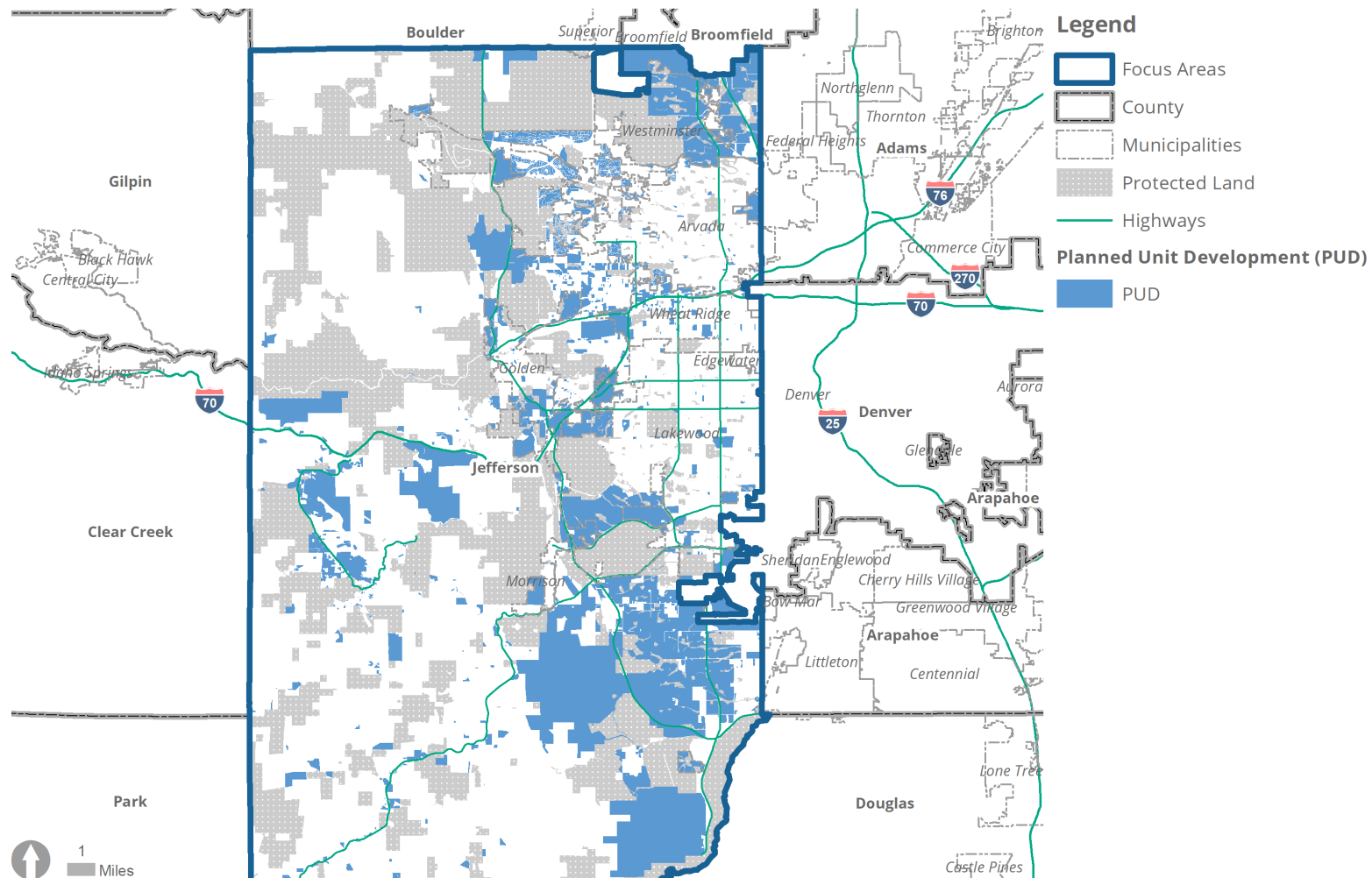
These maps highlight the following trends in Jefferson County:

- PUDs cover a vast area of land Jefferson County and they are particularly prevalent in the unincorporated areas and Westminster.
- Single family residential development is permitted by right nearly everywhere in the county, while areas zoned to allow duplex, triplex, and four or more units are much more limited.
- Opportunities for fourplex units are primarily along major corridors and concentrated in areas susceptible to displacement.
- Finally, ADUs almost always require a conditional permit to construct, except in Golden where growth is limited locally by a growth rate cap.

Figures III-14 through III-19 show maps of current zoning regulations in Larimer County. Like the Jefferson County maps, Figure III-14 shows where approved PUDs are located and Figures III-15 to III-19 show where different housing types are allowed by right or conditionally. These maps highlight the following trends in Larimer County:

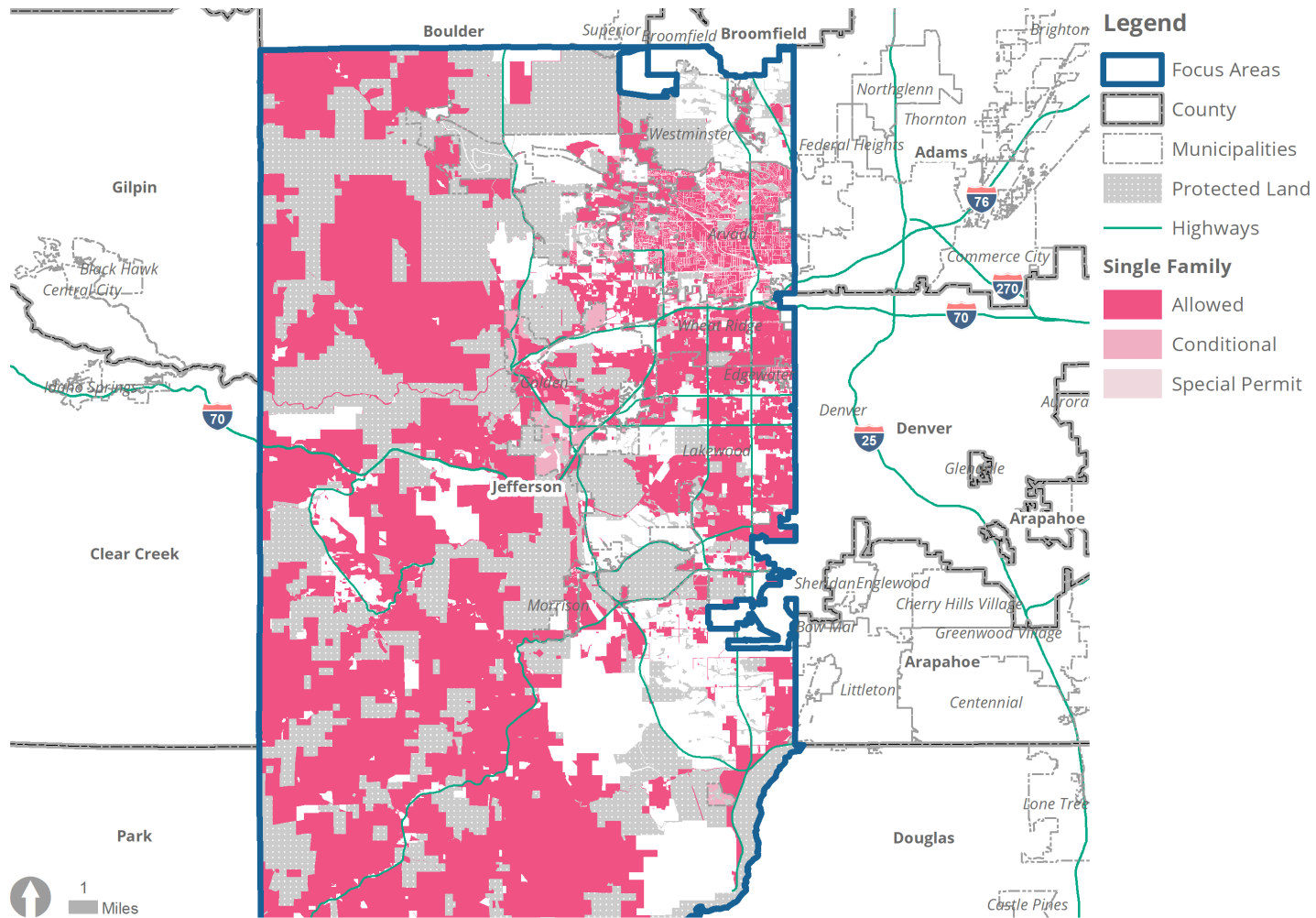
- Larimer County has far fewer PUDs compared to Jefferson and the existing PUDs in the county are primarily concentrated in Loveland.
- Similar to Jefferson County, single family residential development is permitted by right nearly everywhere in the county, while areas zoned to allow duplex, triplex, and four or more units are much more limited.
- Loveland and Estes Park offer the most land to develop middle density housing products by right, while Fort Collins requires conditional approvals.
- Municipalities, apart from Fort Collins, generally allow ADUs by right in single family areas while the unincorporated county allows them conditionally.

Figure III-8. Areas in a Planned Unit Development (PUD), Jefferson County



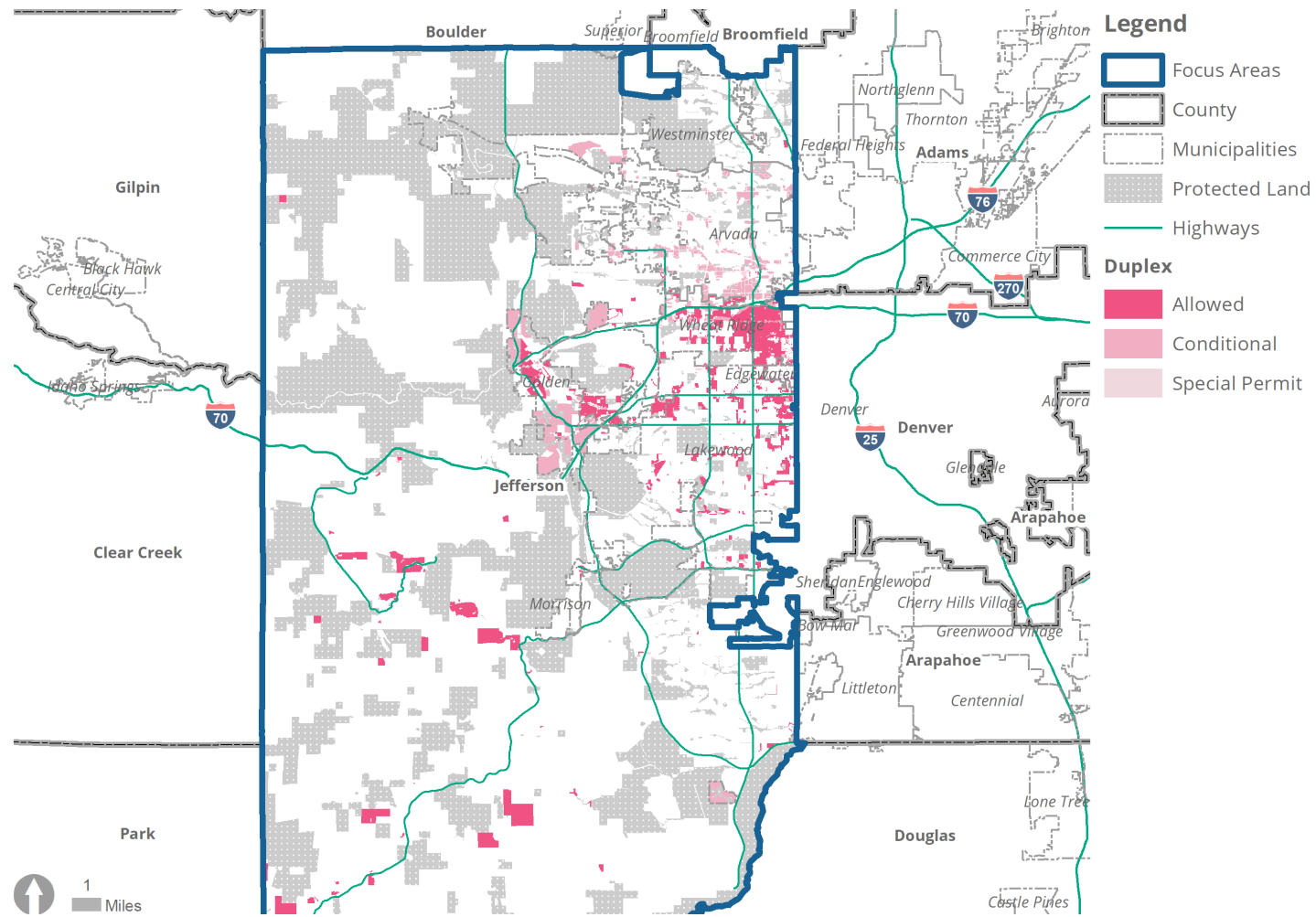
Source: Root Policy Research and DU Student Research Team.

Figure III-9. Areas Zoned to Allow Single Family Residential, Jefferson County



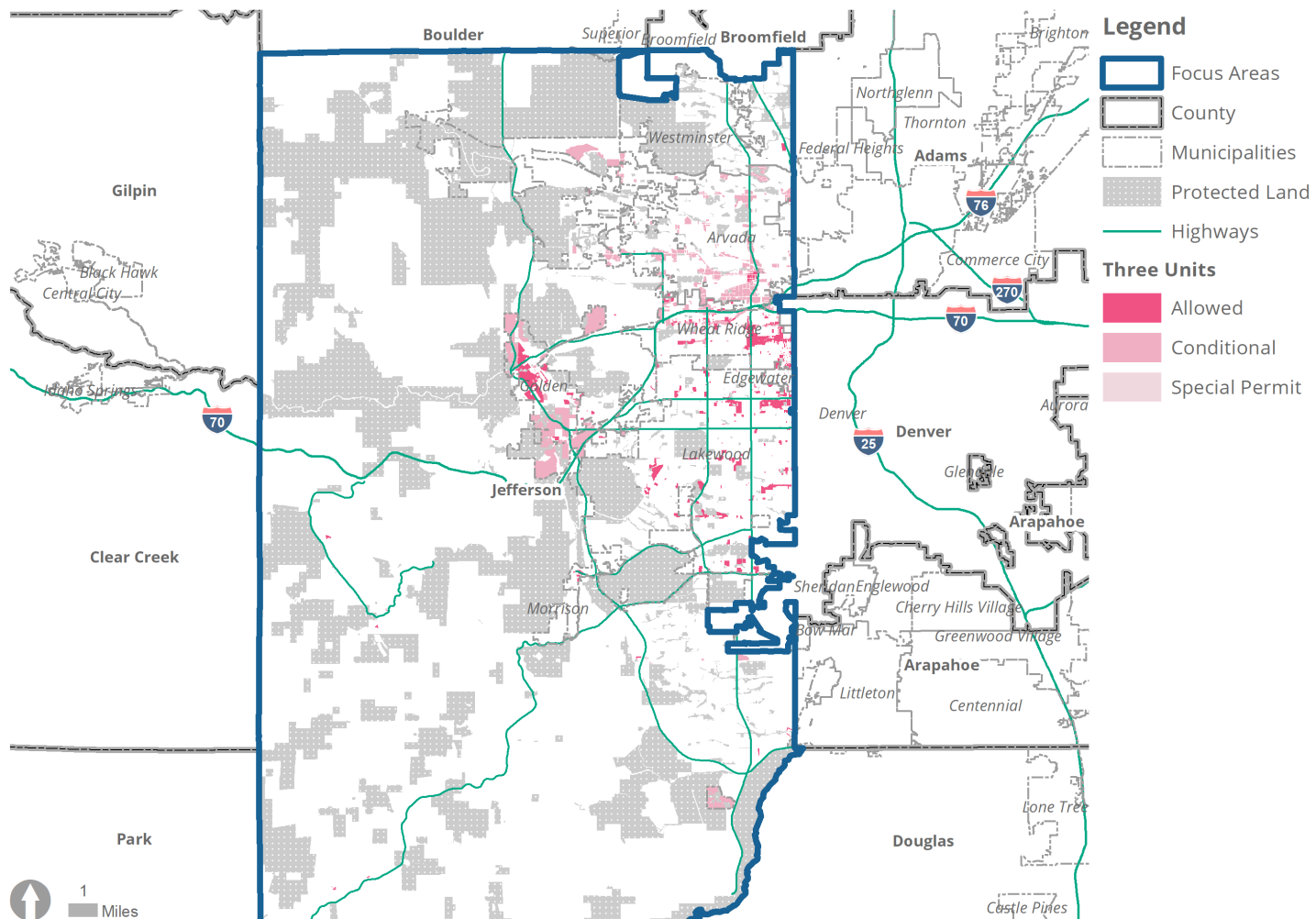
Source: Root Policy Research and DU Student Research Team.

Figure III-10. Areas Zoned to Allow Duplex Residential, Jefferson County



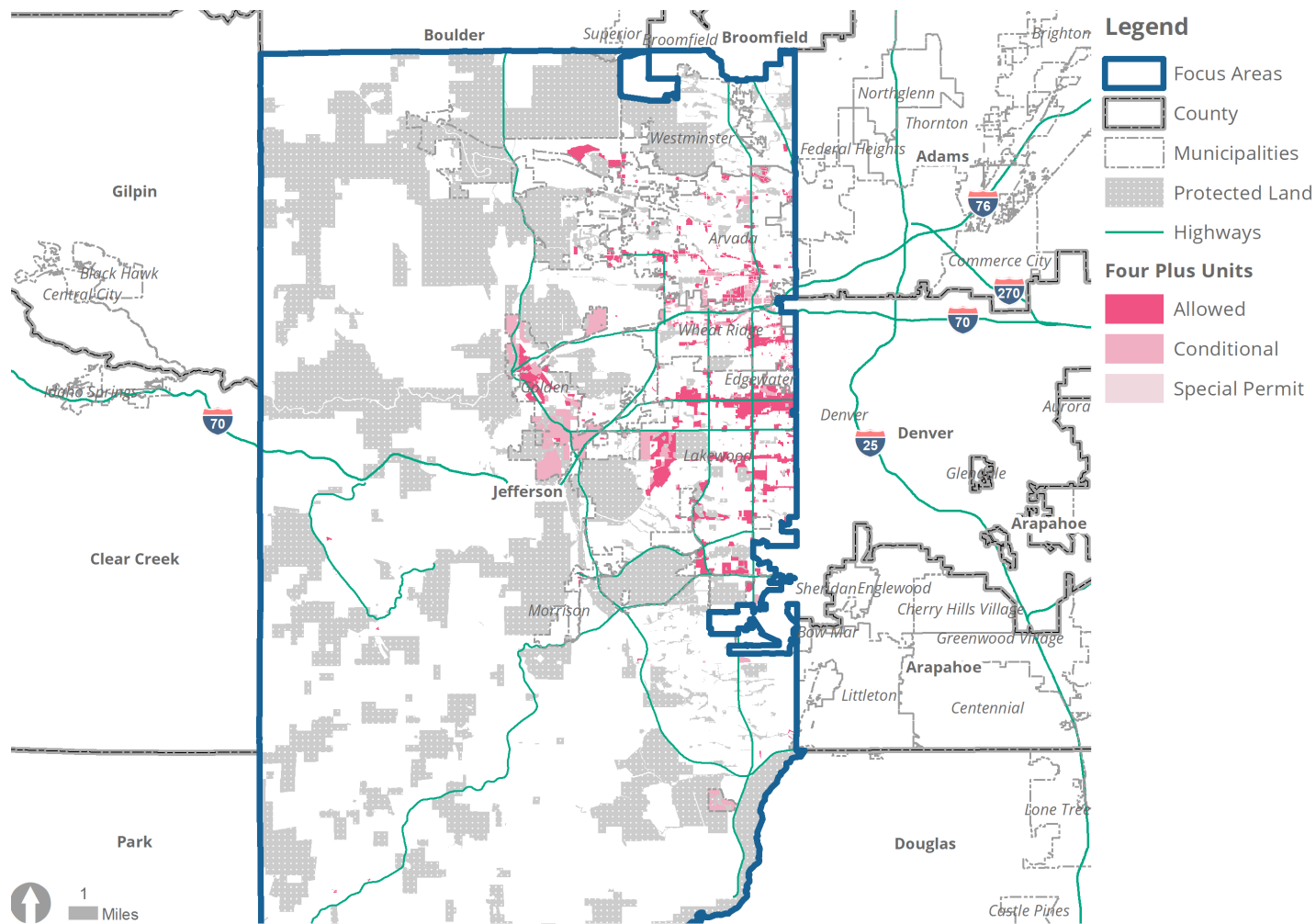
Source: Root Policy Research and DU Student Research Team.

Figure III-11. Areas Zoned to Allow Triplex Residential, Jefferson County



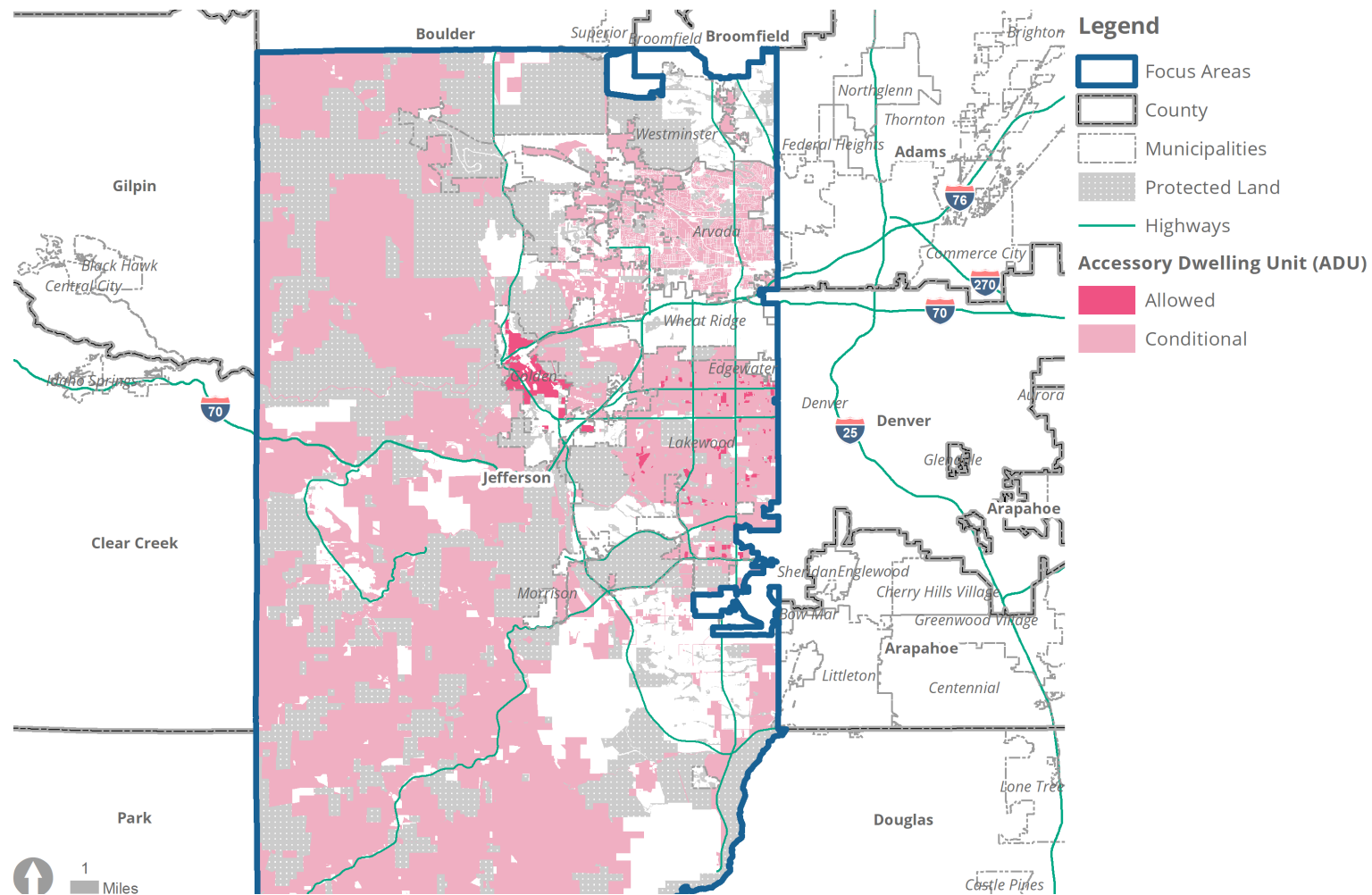
Source: Root Policy Research and DU Student Research Team.

Figure III-12. Areas Zoned to Allow Four or More Residential Units, Jefferson County



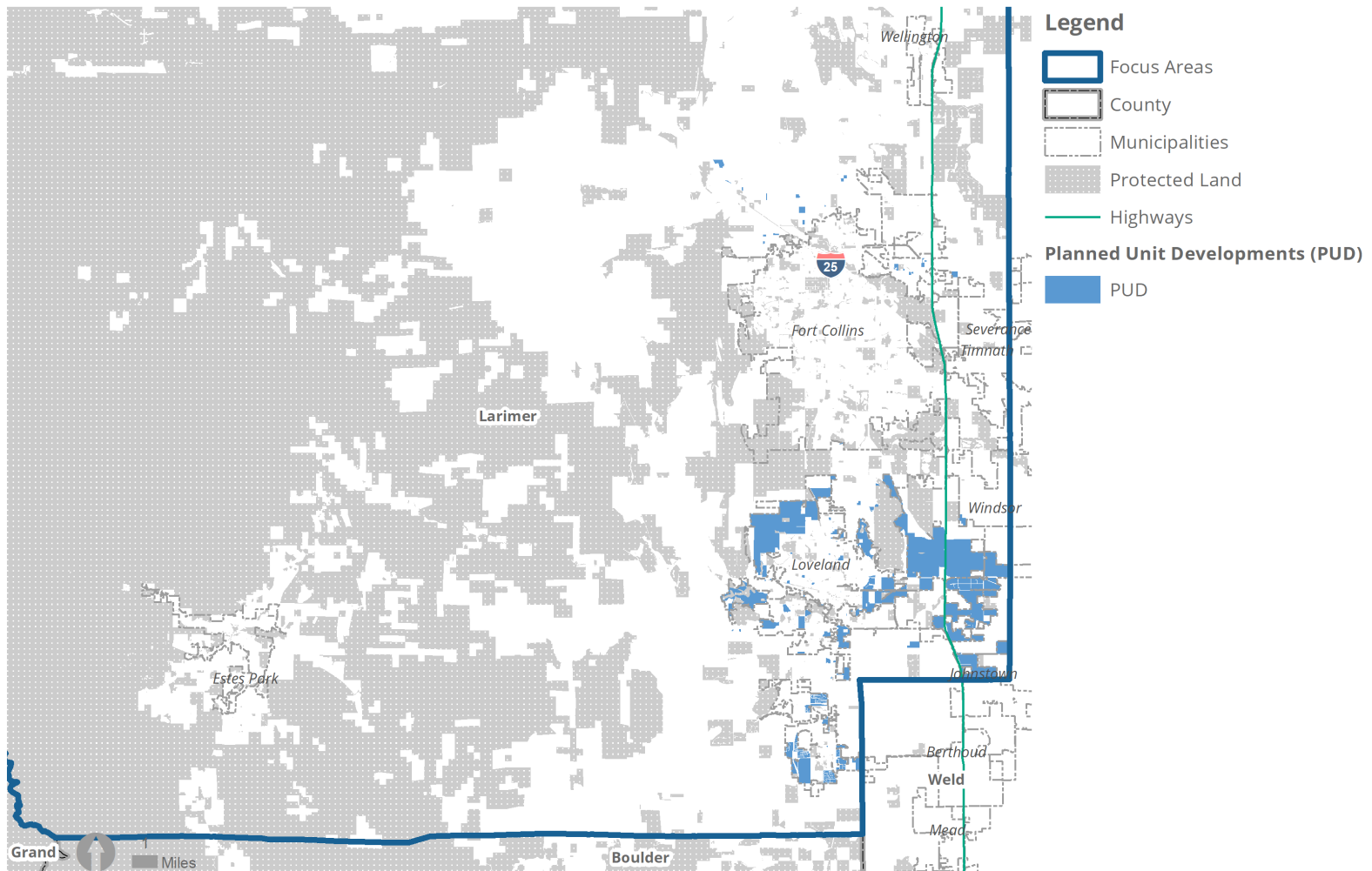
Source: Root Policy Research and DU Student Research Team.

Figure III-13. Areas Zoned to Allow Accessory Dwelling Units (ADUs), Jefferson County



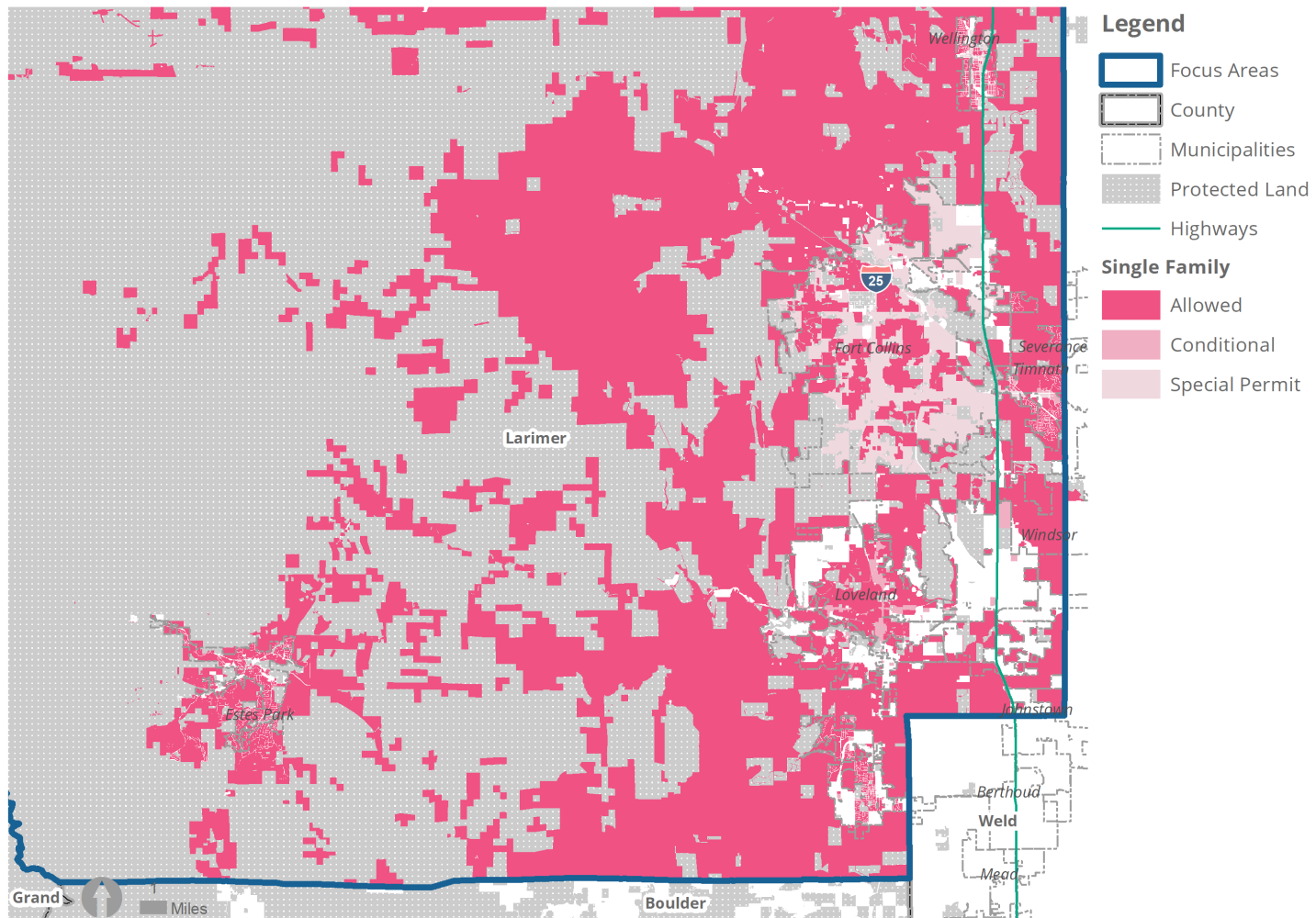
Source: Root Policy Research and DU Student Research Team.

Figure III-14. Areas in a Planned Unit Development (PUD), Larimer County



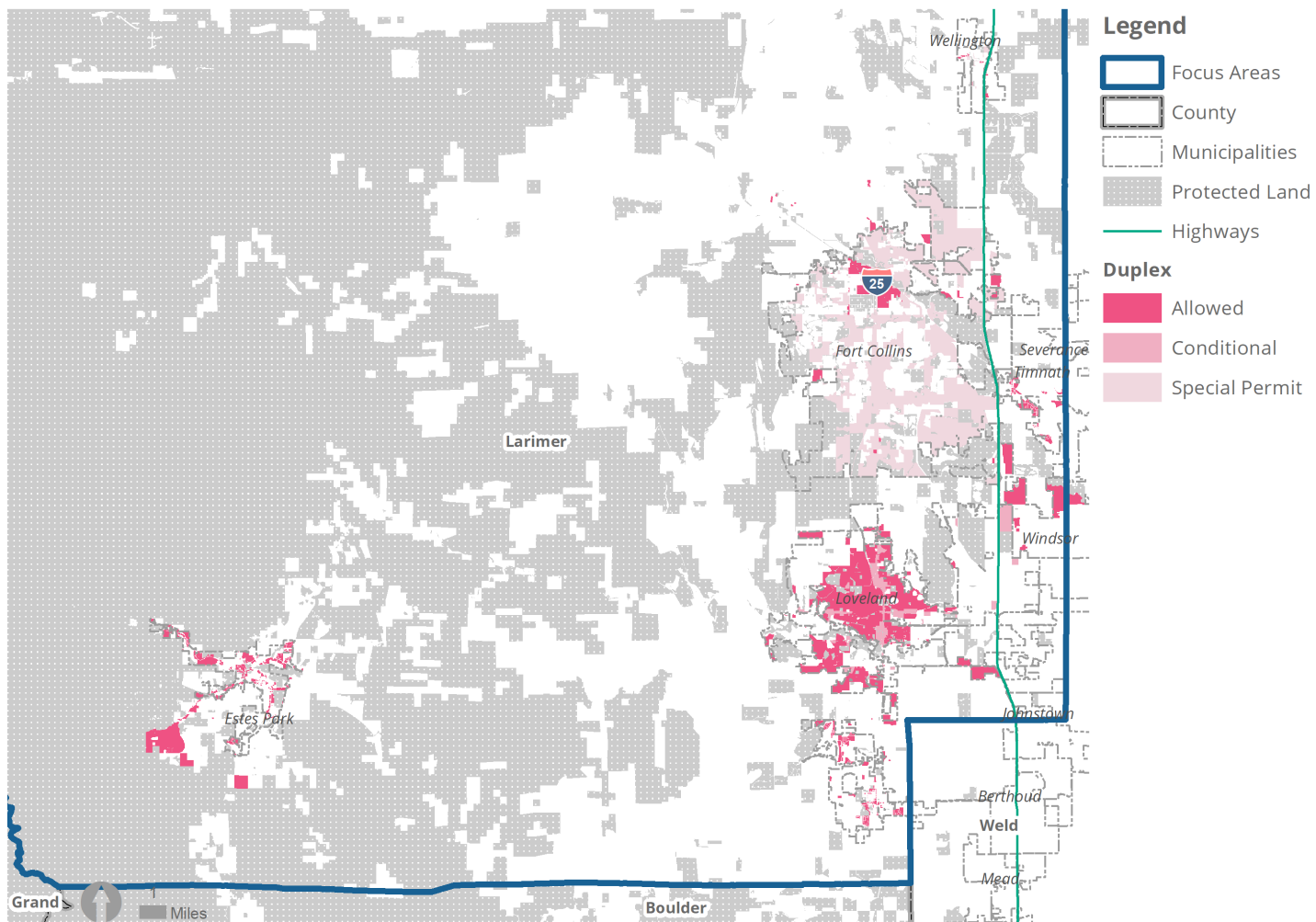
Source: Root Policy Research and DU Student Research Team.

Figure III-15. Areas Zoned to Allow Single Family Residential, Larimer County



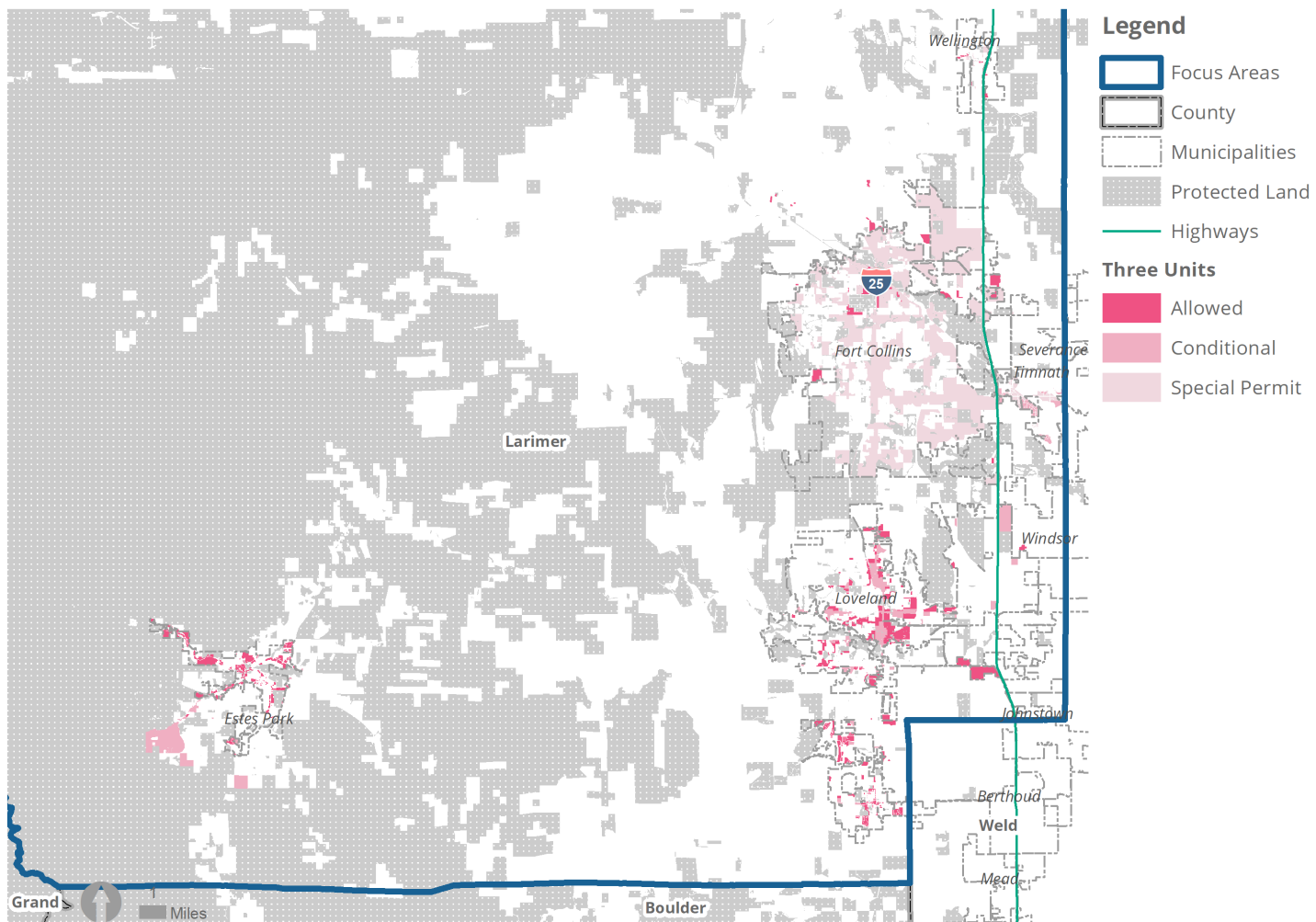
Source: Root Policy Research and DU Student Research Team.

Figure III-16. Areas Zoned to Allow Duplex Residential, Larimer County



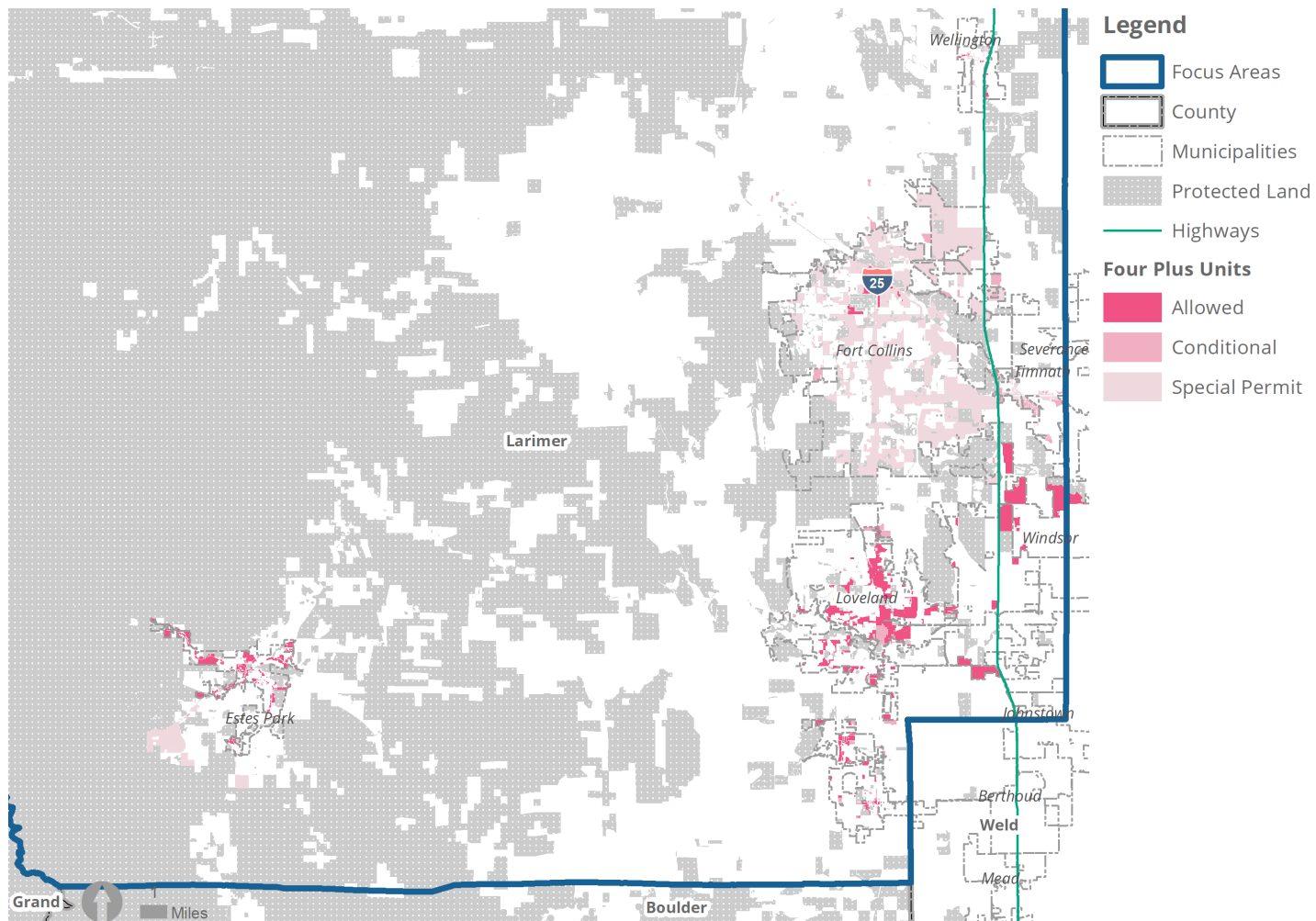
Source: Root Policy Research and DU Student Research Team.

Figure III-17. Areas Zoned to Allow Triplex Residential, Larimer County



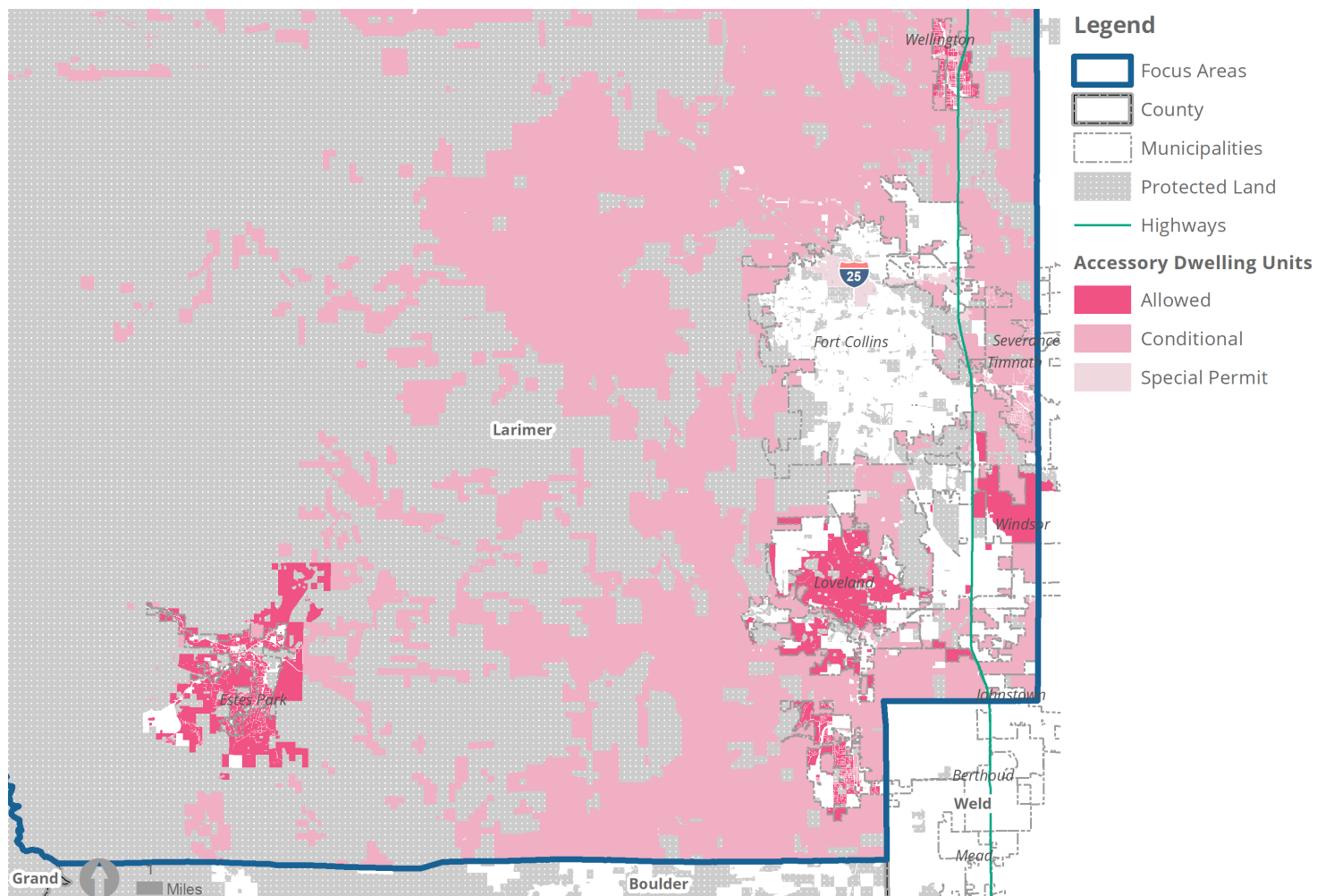
Source: Root Policy Research and DU Student Research Team.

Figure III-18. Areas Zoned to Allow Four or More Residential Units, Larimer County



Source: Root Policy Research and DU Student Research Team.

Figure III-19. Areas Zoned to Allow Accessory Dwelling Units (ADUs), Larimer County



Source: Root Policy Research and DU Student Research Team.

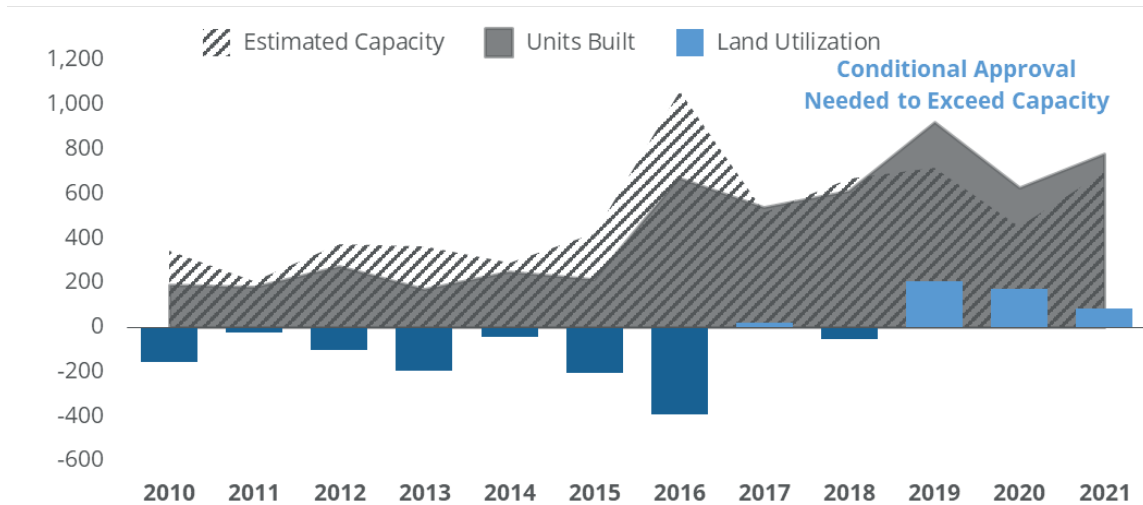
Land utilization. The following figures display the results of an examination of land utilization in Jefferson and Larimer Counties over the past 10 years.

To estimate the maximum capacity of land, current zoning regulations were applied to parcels that developed over the past 10 years to determine the highest number of units that could be developed by right. This estimated capacity is then compared to the number of units that were constructed on that parcel to determine if the parcel was over or underbuilt under the zoning regulations.

Figures III-20 and III-21 show the residential units built compared to the estimated residential land capacity on those parcels for all housing types in Jefferson and Larimer Counties, respectively.

In Jefferson County, prior to 2019, residential units were being underbuilt—primarily single family and duplexes. Since 2019, the units built exceed the number of units allowed by right which means these developments required conditional approval. The majority of conditionally approved housing developed during this time was four or more unit developments (multifamily).

Figure III-20.
Residential Units Built Versus Residential Land Capacity, Jefferson County, 2010-2021

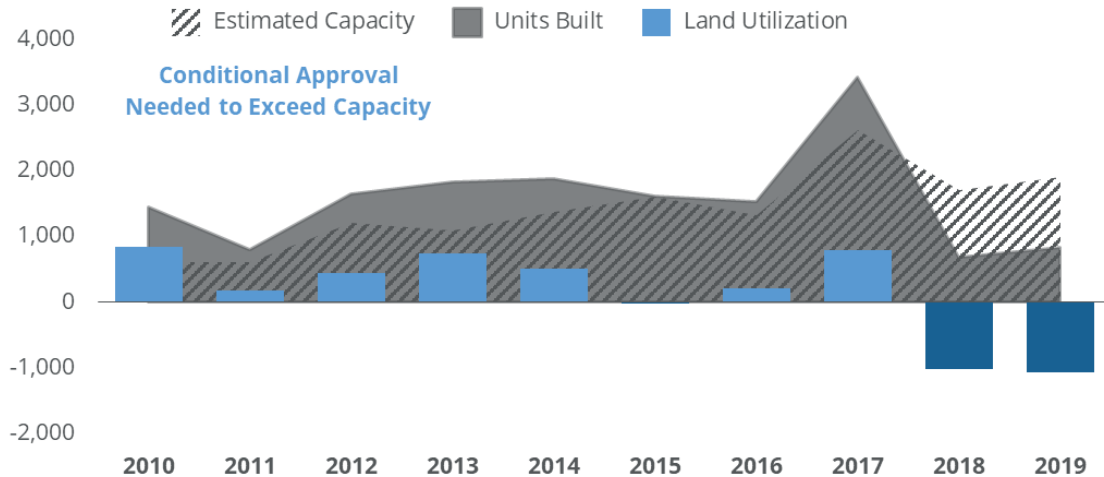


Notes: Residential land capacity is calculated using existing zoning regulations. PUDs are not included.

Source: DU Student Research Team and Root Policy Research.

Conversely, in Larimer County prior to 2018, residential areas were developing over the estimated capacity. A large portion of these units were developed in mixed use districts in the City of Fort Collins that require conditional approval. Therefore, these parcels were not modeled under the capacity analysis because they were not permitted by right. Figure III-22 shows the units that required conditional approval.

Figure III-21.
Residential Units Built Versus Residential Land Capacity, Larimer County, 2010-2019

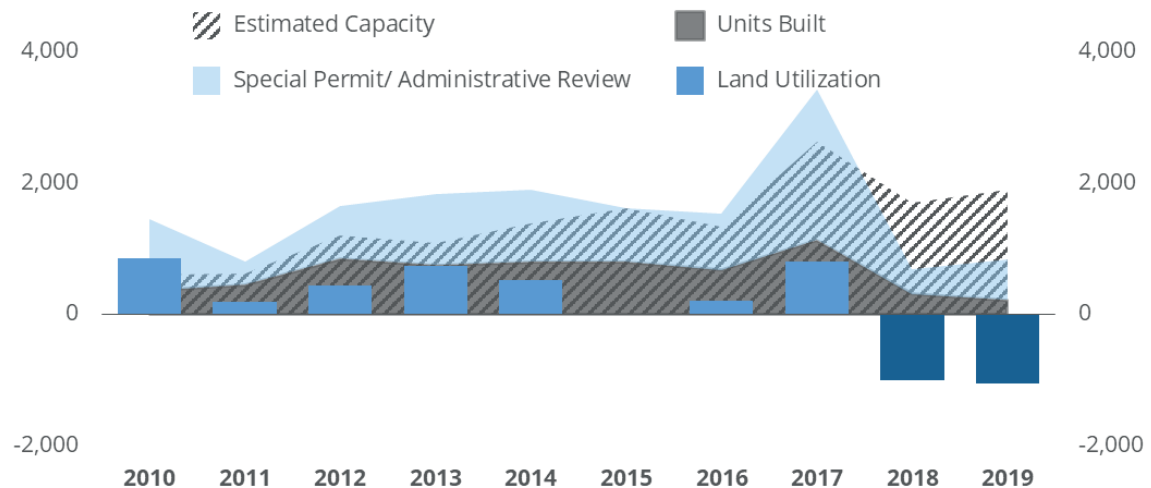


Notes: Residential land capacity is calculated using existing zoning regulations. PUDs are not included.

Source: DU Student Research Team and Root Policy Research.

When units that required conditional approval through a special permit or administrative review are removed (shown in light blue), Larimer County has been slightly underbuilding the residential capacity permitted by zoning regulations.

Figure III-22.
Residential Units Built Versus Residential Land Capacity *by Approval Process*, Larimer County, 2010-2019



Notes: Residential land capacity is calculated using existing zoning regulations. PUDs are not included.

Source: DU Student Research Team and Root Policy Research.

Figures III-23 and III-24 show the number of units built and the estimated residential land capacity under current zoning regulations presented in the charts above. Negative numbers indicate under-utilization of land.

Figure III-23.
Residential Units Built Versus Residential Land Capacity, Jefferson County, 2010-2021

Note:
 PUDs not included.
 Source:
 DU Student Research Team and Root Policy Research.

	Residential Units		
	Estimated Capacity	Units Built	Land Utilization
2010	346	191	-155
2011	205	179	-26
2012	373	273	-100
2013	362	168	-194
2014	292	250	-42
2015	421	215	-206
2016	1,058	668	-390
2017	514	537	23
2018	666	612	-54
2019	715	921	206
2020	451	624	173
2021	696	779	83

Figure III-24.
Residential Units Built Versus Residential Land Capacity, Larimer County, 2010-2019

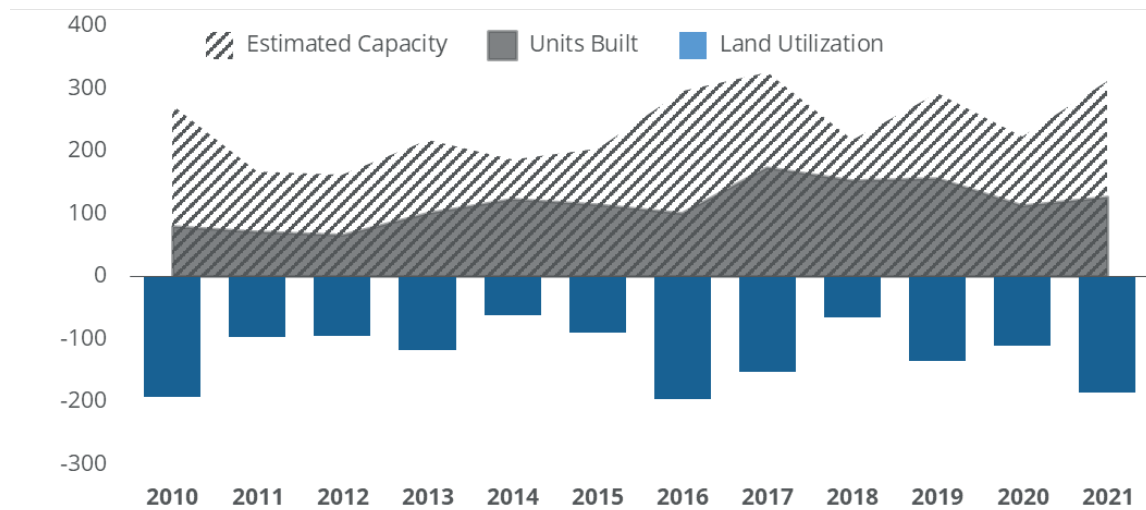
Note:
 PUDs not included.
 Source:
 DU Student Research Team and Root Policy Research.

	Residential Units		
	Estimated Capacity	Units Built	Land Utilization
2010	603	1,449	846
2011	612	794	182
2012	1,203	1,644	441
2013	1,089	1,827	738
2014	1,375	1,887	512
2015	1,611	1,608	-3
2016	1,324	1,529	205
2017	2,629	3,422	793
2018	1,700	685	-1,015
2019	1,898	835	-1,063

Figures III-25 and III-26 show the land utilization analysis for parcels that are zoned to allow for single family residential development in Jefferson and Larimer Counties. ***Over the past 10 years, single family land has not developed to the estimated capacity permitted by zoning ordinances in either county.*** The excess capacity or poor land utilization can be attributed to the need to subdivide land in order to maximize the number of units permitted under the zoning regulations. For example, if a one acre parcel is zoned to allow for single family and the minimum lot size in the district is half an acre the land

would need to be subdivided into two single family lots in order to build two units. Alternatively, one single family unit can be constructed on the parcel by right without subdividing the land.

Figure III-25.
Parcels Zoned for Single Family Units Built Versus Land Capacity, Jefferson County, 2010-2021

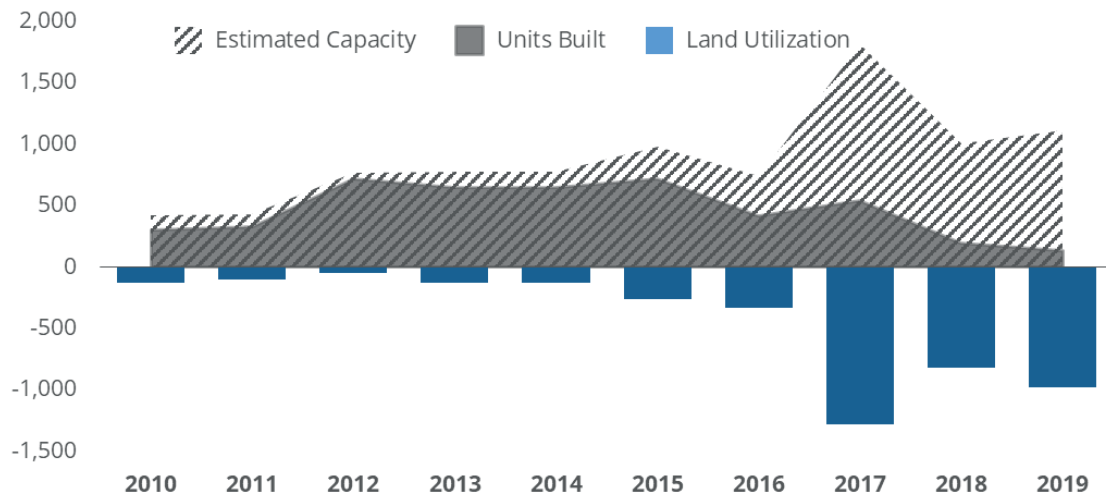


Notes: Residential land capacity is calculated using existing zoning regulations. PUDs are not included.

Source: DU Student Research Team and Root Policy Research.

Larimer County historically developed to capacity, but in recent years has been underbuilding in single family areas. This is largely due to the development of several larger single family properties in recent years that did not maximize density under the zoning regulations.

Figure III-26.
Parcels Zoned for Single Family Units Built Versus Land Capacity, Larimer County, 2010-2019

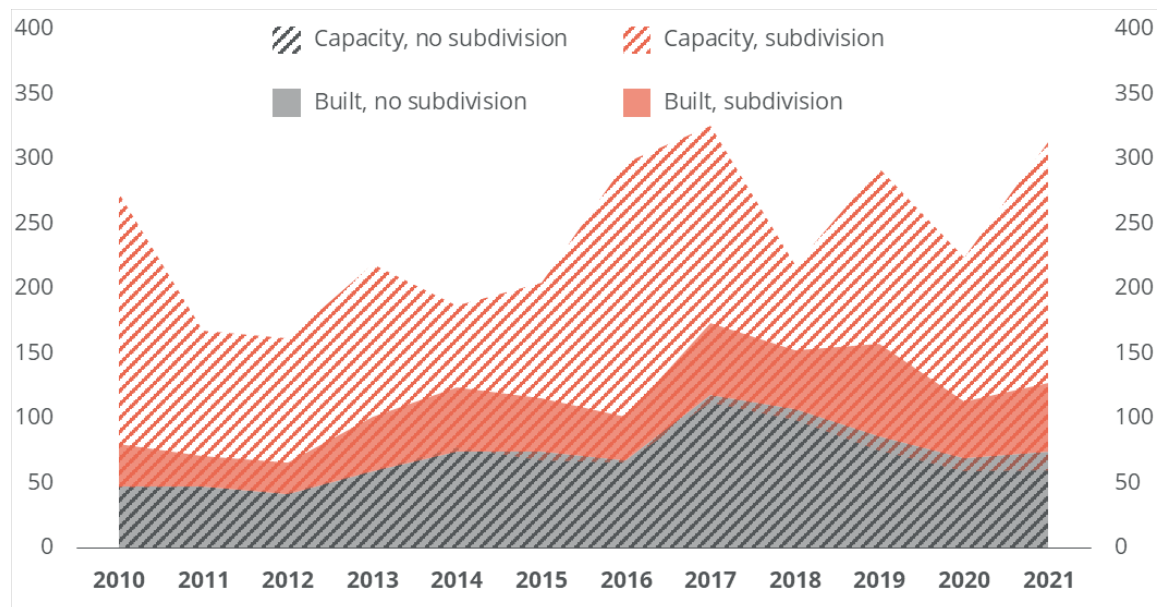


Notes: Residential land capacity is calculated using existing zoning regulations. PUDs are not included.

Source: DU Student Research Team and Root Policy Research.

Figure III-27 and III-28 show the number of units constructed and estimated capacity that requires no subdivision of land versus units constructed and estimated capacity where land needed to be subdivided to build more units in Jefferson and Larimer Counties. In Jefferson County over the past 10 years, developments not required to go through a subdivision process built to capacity.

Figure III-27.
Parcels Zoned for Single Family Units Built Versus Land Capacity, Jefferson County, 2010-2021

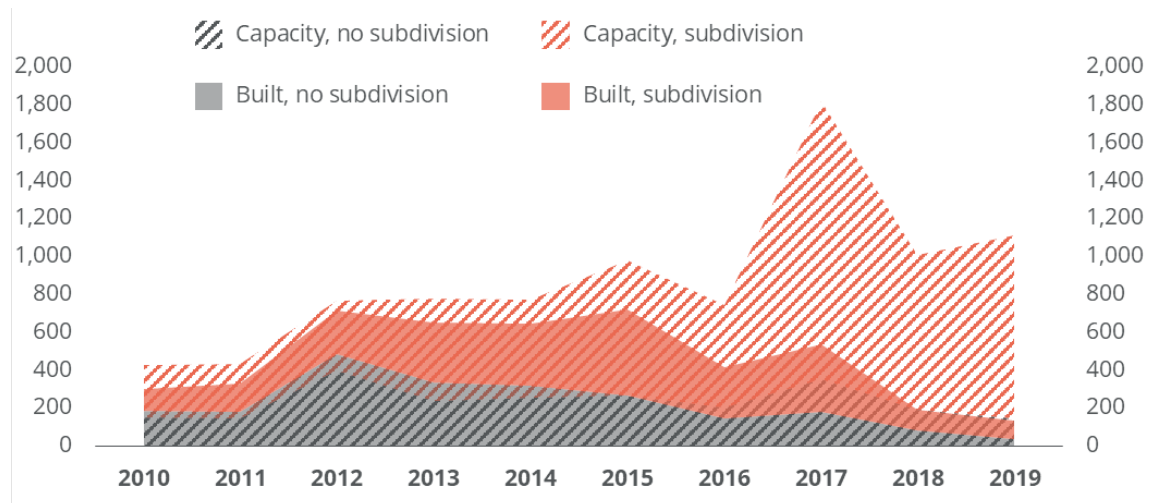


Notes: Subdivision of land is needed to maximize the land capacity under existing zoning regulations: subdivisions are needed when the minimum lot size is smaller than the available parcel. Residential land capacity is calculated using existing zoning regulations. PUDs are not included.

Source: DU Student Research Team and Root Policy Research.

Similar to Jefferson County, residential developments generally built to the capacity available without subdividing land in Larimer. A significant amount of capacity was available through the subdivision process in both counties, suggesting that housing supply could be unlocked through a streamlined subdivision process.

Figure III-28.
Parcels Zoned for Single Family Units Built Versus Land Capacity, Larimer County, 2010-2019

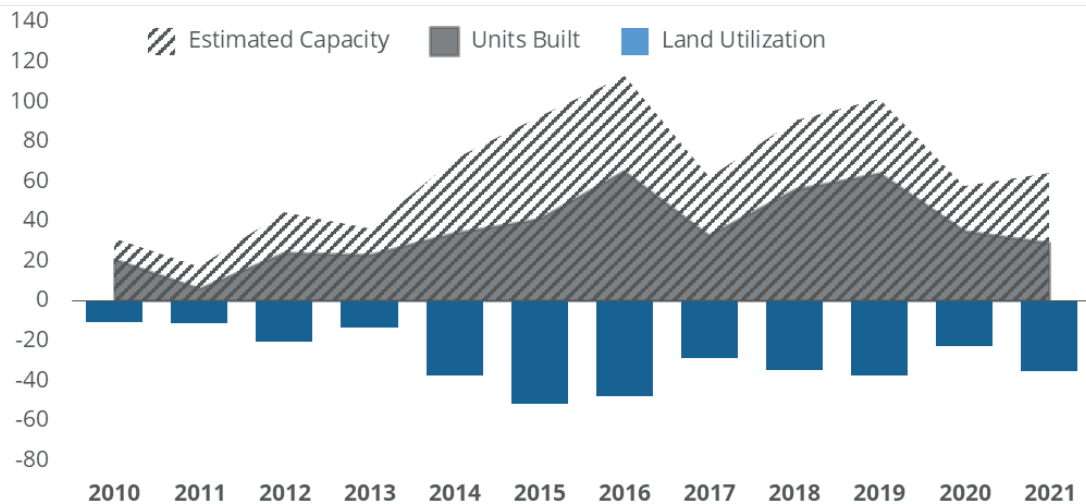


Notes: Subdivision of land is needed to maximize the land capacity under existing zoning regulations: subdivisions are needed when the minimum lot size is smaller than the available parcel. Residential land capacity is calculated using existing zoning regulations. PUDs are not included.

Source: DU Student Research Team and Root Policy Research.

Figures III-29 and III-30 show the land utilization analysis for parcels that are zoned to allow for duplex residential development in Jefferson and Larimer Counties. Similar to single family land over the past 10 years, duplexes have not developed to the estimated capacity permitted by zoning ordinances. Again, the excess capacity or poor land utilization can be attributed to the need to subdivide land in order to maximize the number of units permitted under the zoning regulations.

Figure III-29.
Parcels Zoned for Duplexes Units Built Versus Land Capacity, Jefferson
County, 2010-2021

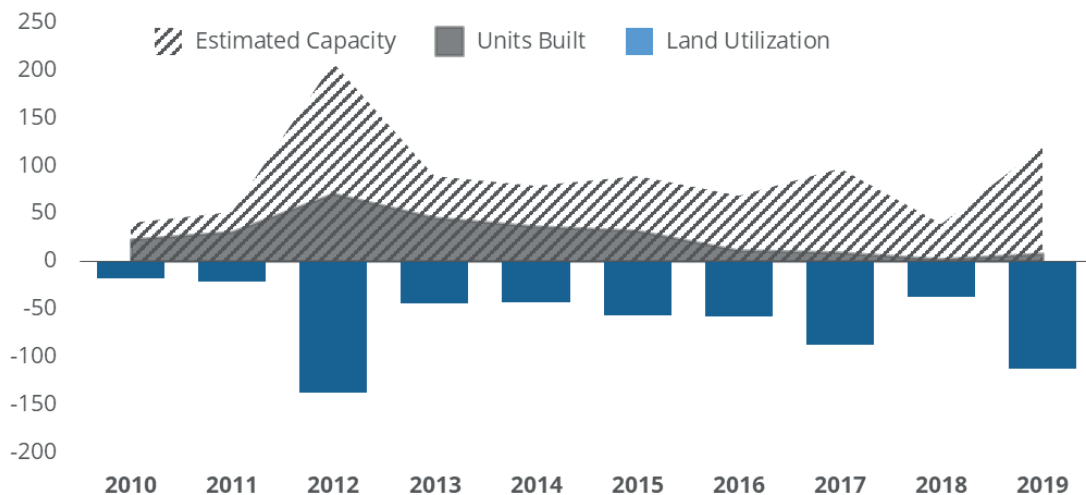


Notes: Residential land capacity is calculated using existing zoning regulations. PUDs are not included.

Source: DU Student Research Team, COMaP, and Root Policy Research.

Properties zoned to allow duplexes by right in Larimer County generally only constructed one unit over the past 10 years or did not subdivide to maximize the capacity granted under the zoning code.

Figure III-30.
Parcels Zoned for Duplexes Units Built Versus Land Capacity, Larimer
County, 2010-2019

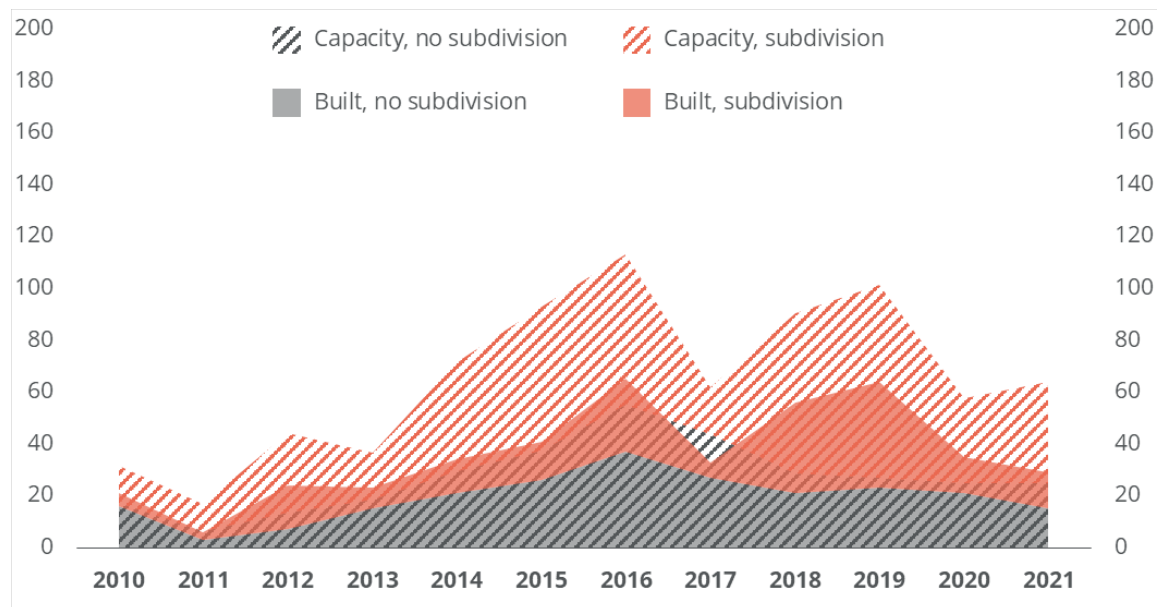


Notes: Residential land capacity is calculated using existing zoning regulations. PUDs are not included.

Source: DU Student Research Team, COMaP, and Root Policy Research.

Figures III-31 and III-32 show the additional land use capacity available if land were subdivided. In general, parcels developed to the maximum capacity permitted without subdividing land over the last 10 years in Jefferson County.

Figure III-31.
Parcels Zoned for Duplexes Units Built Versus Land Capacity, Jefferson County, 2010-2021

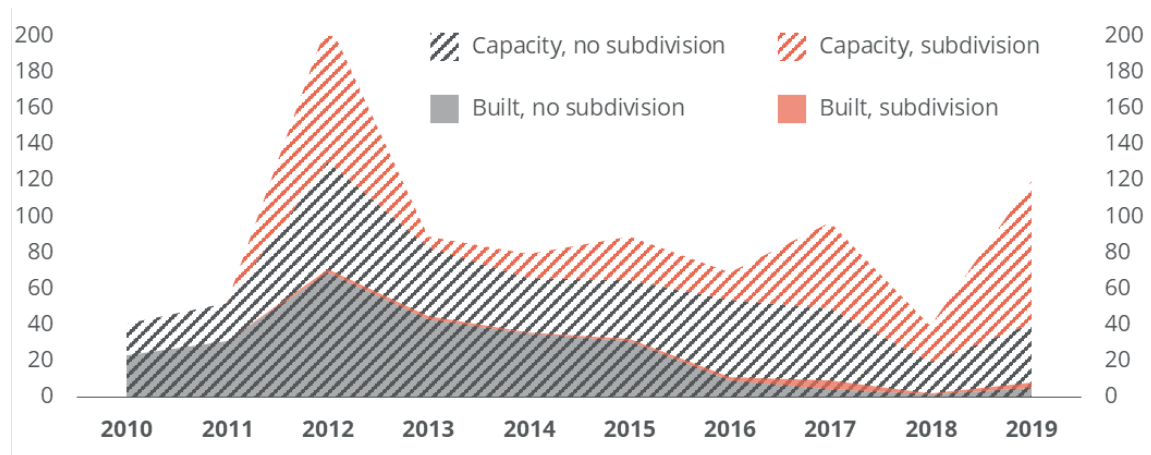


Notes: Subdivision of land is needed to maximize the land capacity under existing zoning regulations: subdivisions are needed when the minimum lot size is smaller than the available parcel. Residential land capacity is calculated using existing zoning regulations. PUDs are not included.

Source: DU Student Research Team and Root Policy Research.

Conversely, in Larimer County residential developments did not build to the capacity permitted by the zoning ordinance without subdividing land. This is generally due to residential developments of single family detached housing being constructed in areas that permit duplexes.

Figure III-32.
Parcels Zoned for Duplexes Units Built Versus Land Capacity, Larimer County, 2010-2019

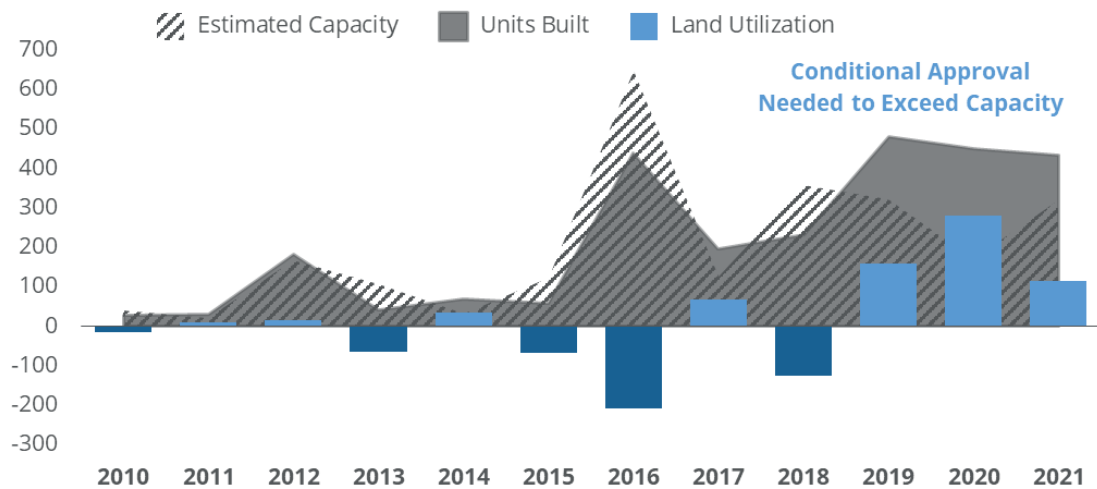


Notes: Subdivision of land is needed to maximize the land capacity under existing zoning regulations: subdivisions are needed when the minimum lot size is smaller than the available parcel. Residential land capacity is calculated using existing zoning regulations. PUDs are not included.

Source: DU Student Research Team and Root Policy Research.

Figures III-33 and III-34 show the number of units constructed over the past 10 years on land where four or more units are permitted by right in Jefferson and Larimer Counties. Typically, multifamily developers build to the capacity permitted under the zoning ordinance. In Jefferson County in recent years, the number of units built exceeds the estimated units permitted by right meaning conditional approvals were required. This suggests that the time and risk associated with conditional approvals will be undertaken if the return on investment is sufficient.

Figure III-33.
Parcels Zoned for Four or More Units Built Versus Land Capacity, Jefferson County, 2010-2021

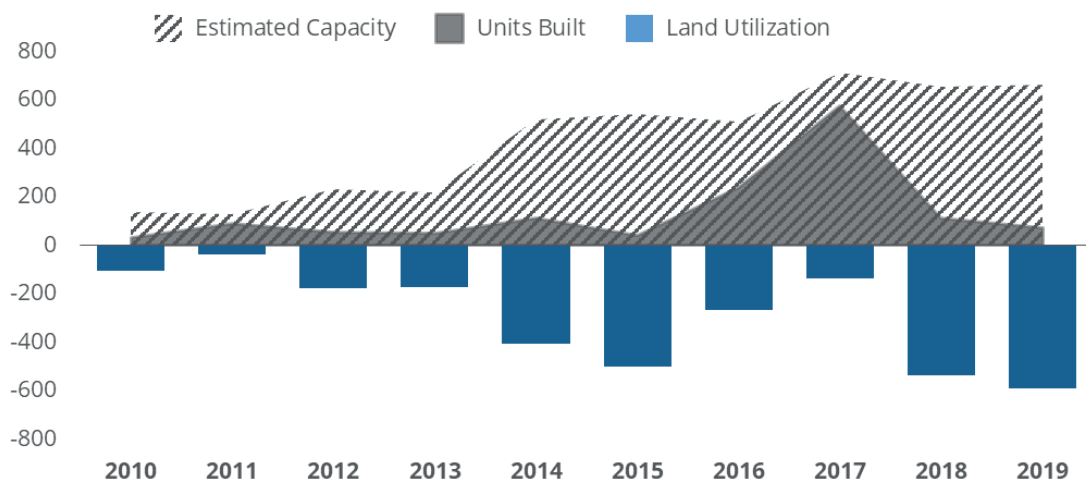


Notes: Residential land capacity is calculated using existing zoning regulations. PUDs are not included.

Source: DU Student Research Team and Root Policy Research.

On the other hand, parcels zoned for four or more units in Larimer County generally did not build to capacity. However, mixed use districts that require conditional approval—and contain multifamily developments—are not included in this analysis.

Figure III-34.
Parcels Zoned for Four or More Units Built Versus Land Capacity, Larimer County, 2010-2019



Notes: Residential land capacity is calculated using existing zoning regulations. PUDs are not included.

Source: DU Student Research Team and Root Policy Research.

Solutions—Zoning Reform

This final section focuses on three land use policy interventions that appear to be most likely to add housing market stability through addressing supply constraints. Effectiveness in this context is measured by the number of units that could be produced with regulatory reform.

It is important to note that adding supply alone is unlikely to be adequate to address the state's most acute housing needs. It is true that a significant increase in supply *can* accelerate the filtering process that occurs when households have more choice and migrate into units that fit their affordability needs. Academic research has shown that that process can take several decades. Therefore, for supply interventions to truly benefit low and moderate income families, they must be coupled with effective programs and policies. Those can include, but are not limited to:

- Adequate levels of downpayment assistance to move renter households into ownership,
- Land banking to reserve valuable and developable land for future affordable development, and
- Funding to support the production of affordable units.
- If the land use reforms discussed in this section require a conditional permit, administrative (staff) approval of affordable developments would be beneficial to counter potential effects of neighborhood resistance to affordable housing.

Impact on development over the past 10 years. The analysis presented in Figures III-35 and III-36 examines the potential for additional residential units produced from 2010 to 2021 **if land use regulatory changes were in effect beginning in 2010.**

The analysis tests two different types of zoning interventions ADUs and allowing missing middle housing types on single family lots by right. Specifically, the figure presents the number of units that could be constructed if:

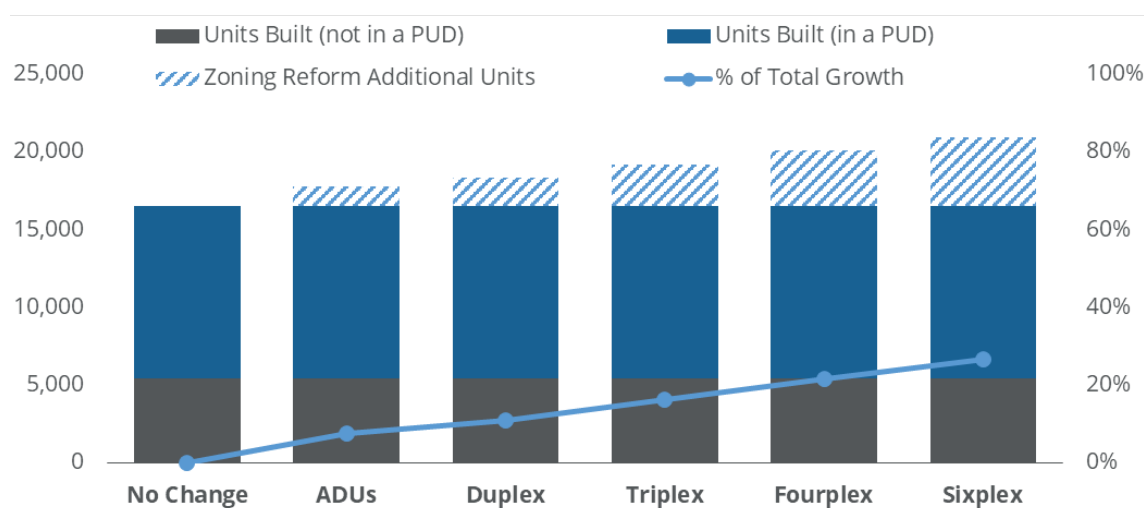
- 1) ADUs were permitted by right on quarter acre single family lots; and
- 2) If missing middle housing types were permitted by right on single family lots that are either half or one acre.

It is important to note that the implementation of these two development types would be vastly different. ADUs are typically developed by single owners who may not have experience or access to financing for new construction, limiting the construction of these units. Whereas, missing middle housing types are more likely to be constructed by professional developers.

Figure III-35 shows this analysis for Jefferson County from 2010 to 2021. The prevalence of PUDs in Jefferson County limits the effectiveness of zoning reform on unit production—67% of unit growth during this time was in a PUD. Even with the PUD constraint, this analysis found that:

- If ADUs were permitted on the remaining one-third of lots that were not a PUD and that were greater than one-quarter of an acre an additional 1,224 units could have been produced—7% of total unit growth.
- If duplexes, triplexes, and fourplexes were permitted on parcels not located in a PUD that were at least half an acre, an additional 1,774, 2,661, or 3,548 units could have been produced—11% to 21% of total unit growth.
- Finally, if sixplexes were permitted on lots not located in PUD that were at least one acre, an additional 4,392 units could have been produced—27% of total unit growth.

Figure III-35.
Estimated Unit Production with Zoning Reform on Residential Development, Jefferson County, 2010-2021



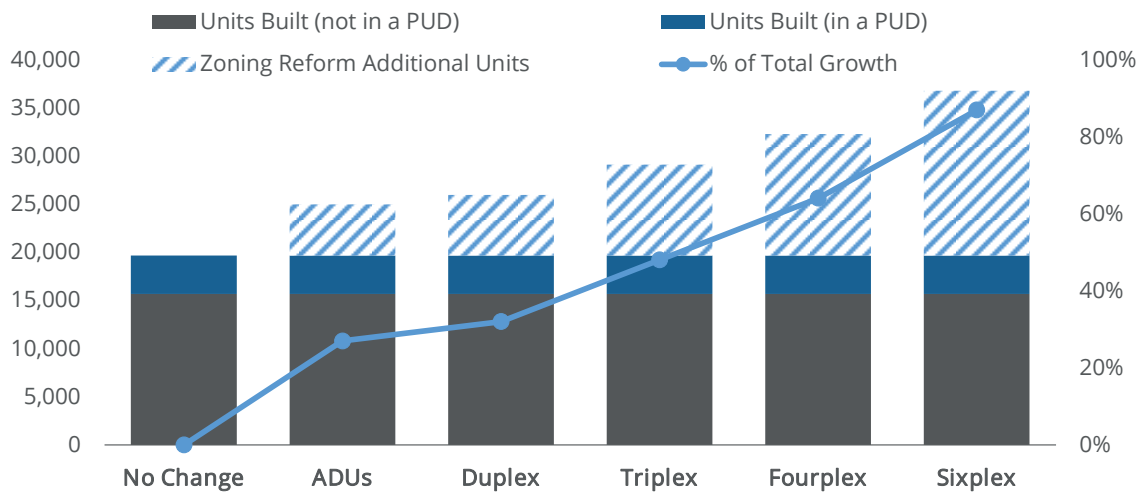
Source: DU Student Research Team and Root Policy Research.

Figure III-36 shows the same analysis for Larimer County from 2010 to 2021. Zoning reforms could have had a much greater impact on unit growth in Larimer County compared to Jefferson County because there are fewer PUDs in Larimer. This analysis found:

- If ADUs on lots not located in a PUD and that were greater than one-quarter of an acre an additional 5,319 units could have been produced—27% of total unit growth.

- If duplexes, triplexes, and fourplexes were permitted on parcels not located in a PUD that were at least half an acre, an additional 6,304, 9,456, or 12,608 units could have been produced—32% to 64% of total unit growth.
- Finally, if sixplexes were permitted on lots not located in PUD that were at least one acre, an additional 17,118 units could have been produced—87% of total unit growth.

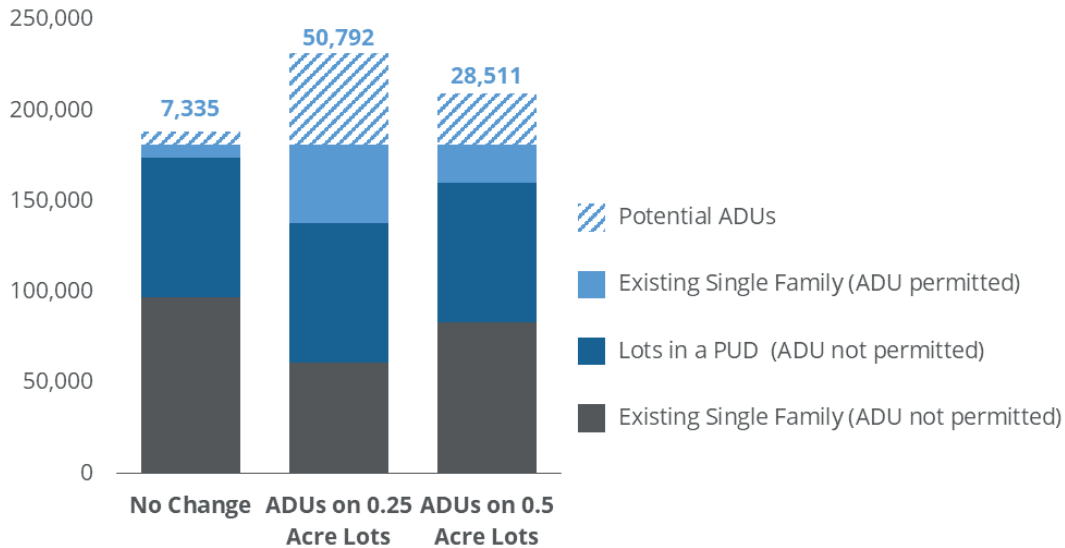
Figure III-36.
Estimated Unit Production with Zoning Reform on Residential Development, Larimer County, 2010-2021



Source: DU Student Research Team and Root Policy Research.

Impact on future development. The analysis presented in Figures III-37 and III-38 examines the potential for the development of ADUs if land use regulations were changed. This analysis includes the future development of vacant land and assumes new ADUs cannot be constructed in PUDs. Specifically, the analysis presents the number of ADUs that could be constructed if they were permitted by right on single family parcels larger than 0.5 and 0.25 acres respectively. The ADU potential for 0.25 acre lots in Jefferson County is equivalent to one year of needed production for the entirety of the State of Colorado.

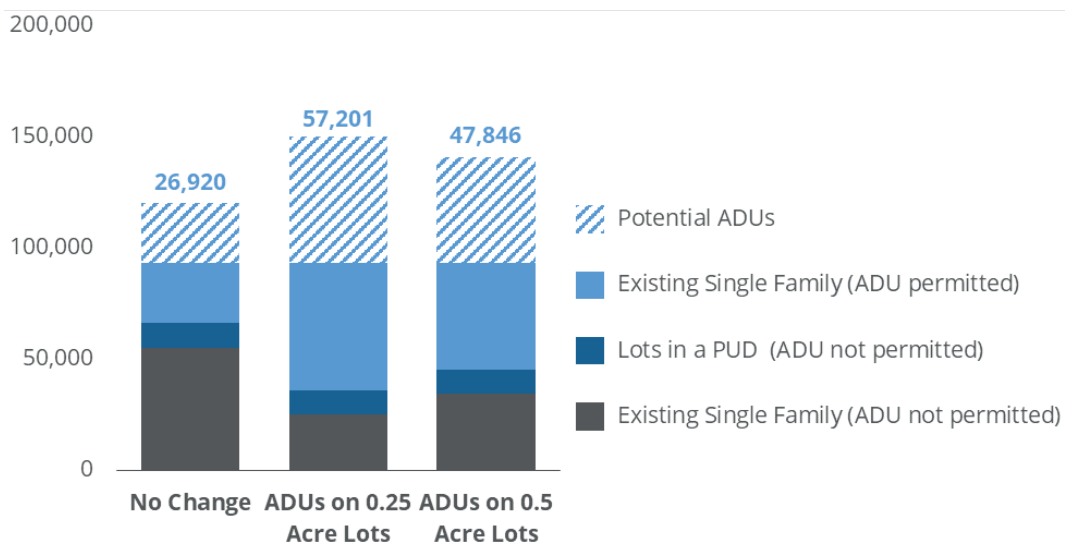
Figure III-37.
Potential ADUs Under Current and Proposed Regulations, Jefferson County



Source: DU Student Research Team and Root Policy Research.

The potential for ADU development in Larimer County is greater, despite less single family land available, because the county has fewer PUDs. The potential for adding ADUs to existing residential lots is attractive because it does not require demolition of existing units and can introduce density in a “gentle” way. However, as discussed above, there are challenges for average homeowners with financing and constructing ADUs.

Figure III-38.
Potential ADUs Under Current and Proposed Regulations, Larimer County

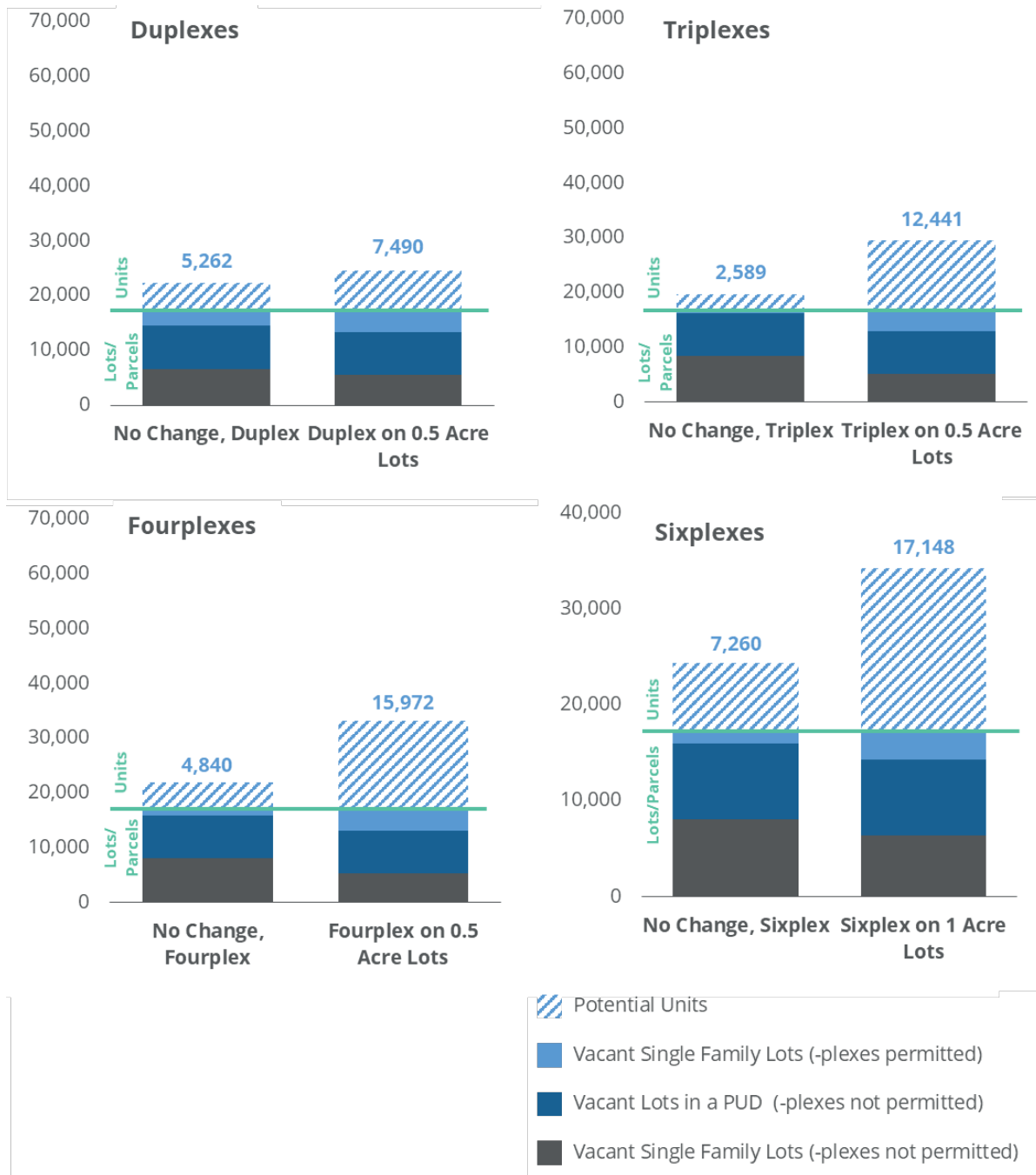


Source: DU Student Research Team and Root Policy Research.

Figures III-39 and III-40 focus on modifications to the types of residential uses permitted in single family areas. Specifically, the figure presents the number of units that could be constructed if missing middle housing types were permitted by right on single family lots that are either 0.5 or one acre.

The impact on future development is limited by the lack of vacant parcels that are not located in a PUD. To maximize a policy change that would allow du- to sixplexes by right, funds would need to be available for demolitions of under-utilized existing units and units in poor condition.

Figure III-39.
Potential Missing Middle Units Developed Under Current and Proposed
Zoning Regulations, Jefferson County



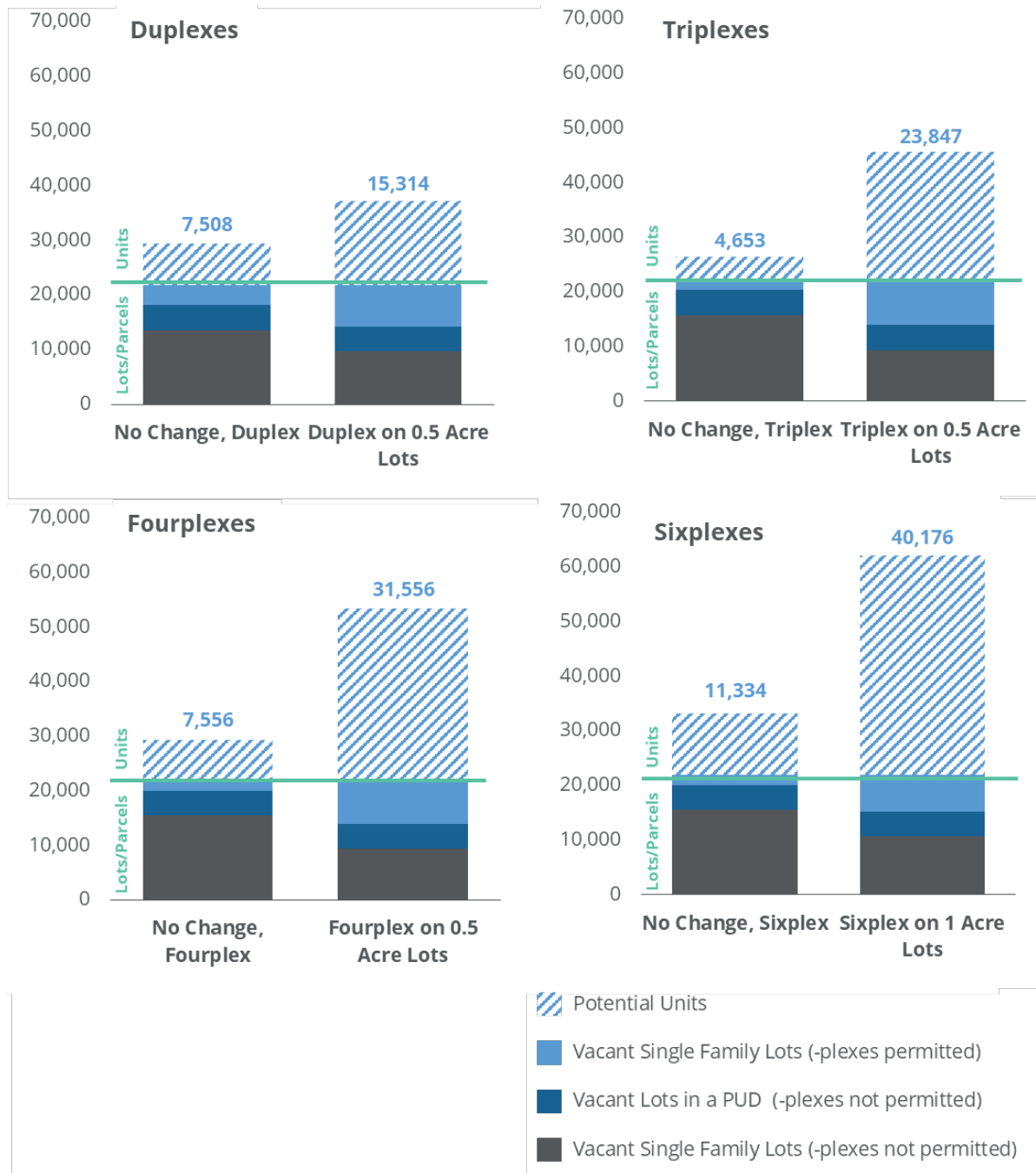
Notes: PUDs are not included.

Source: DU Student Research Team and Root Policy Research.

In Larimer County, there is greater potential to develop missing middle housing types on vacant single family land because there are fewer PUDs, compared to Jefferson County. Additionally, Larimer County already permits missing middle housing types by right on a

larger proportion of land compared to Jefferson County. Therefore, the political feasibility for developing these types of residential units is likely more viable.

Figure III-40.
Potential Missing Middle Units Developed Under Current and Proposed Zoning Regulations, Larimer County



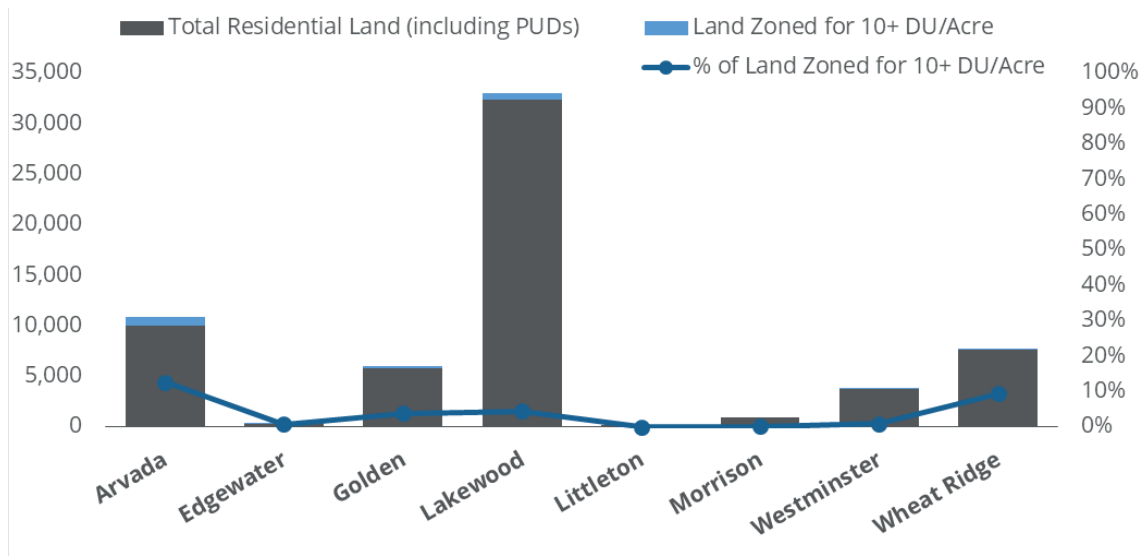
Notes: PUDs are not included.

Source: DU Student Research Team and Root Policy Research.

Figures III-41 through III-44 focus on a broader regulatory change that increases land use capacity by increasing the maximum dwelling units per acre of land.

Figure III-41 shows the estimated share of land in Jefferson County that is currently zoned to allow up to 10 dwelling units per acre. There is very little land in the county zoned to permit this density by right, except in Arvada and Wheat Ridge.

Figure III-41.
Estimated Share of Land Zoned to Allow 10+ Dwelling Units per Acre, Jefferson County



Notes: PUDs are not included.

Source: DU Student Research Team and Root Policy Research.

Figure III-42 shows the potential unit development in Jefferson County if 10% of vacant land were zoned to allow 10 dwelling units per acre or more. This zoning change produces the most unit capacity with nearly 100,000 units unlocked.

Figure III-42.
Estimated Share of Land Zoned to Allow 10+ Dwelling Units per Acre, Jefferson County

Note:
 PUDs not included.
 Source:
 DU Student Research Team and Root Policy Research.

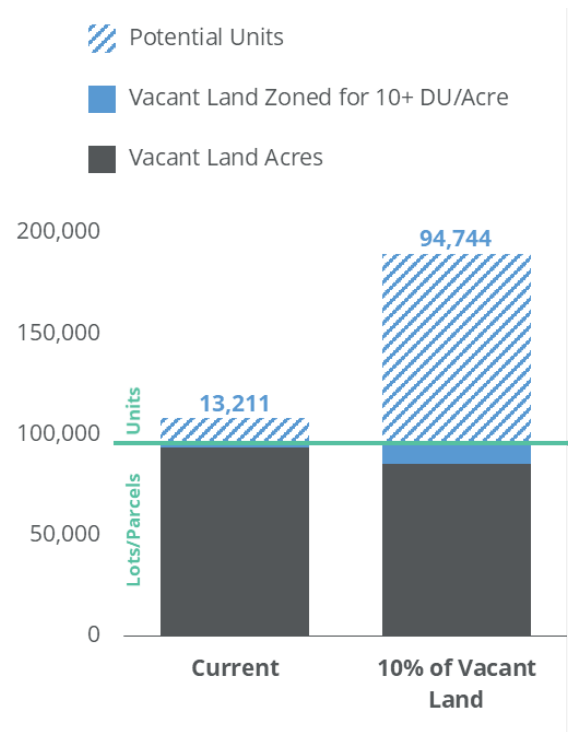
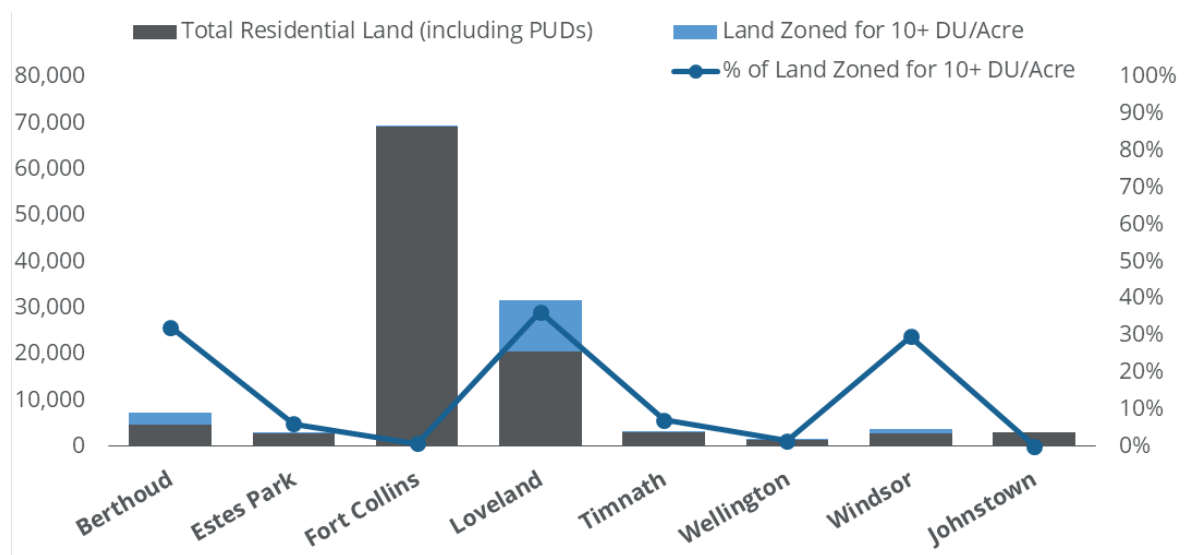


Figure III-43 shows the estimated share of land in Larimer County that is currently zoned to allow up to 10 dwelling units per acre. Larimer County has a higher share of land zoned for this density compared to Jefferson County. Berthoud, Loveland, and Windsor have the highest shares of land zoned to this density in Larimer County.

Figure III-43.
Estimated Share of Land Zoned to Allow 10+ Dwelling Units per Acre, Larimer County

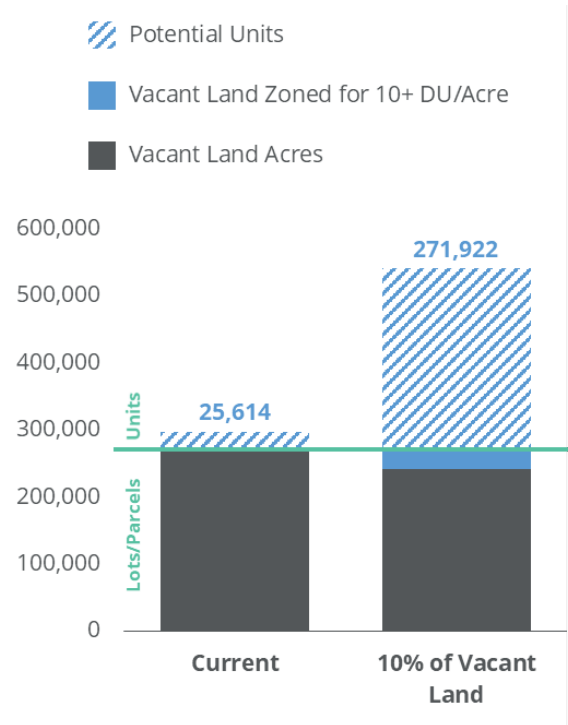


Notes: PUDs are not included.
 Source: DU Student Research Team and Root Policy Research.

Figure III-44 shows the potential units produced with this regulatory change. The potential for units in Larimer County is almost three times the capacity increase in Jefferson County. This is largely due to more vacant land available in Larimer County that is not constrained by an existing PUD.

Figure III-44.
Estimated Share of Land Zoned to Allow 10+ Dwelling Units per Acre, Larimer County

Note:
 PUDs not included.
 Source:
 DU Student Research Team and Root Policy Research.



SECTION IV.

POLICY INTERVENTIONS: BUILDING HOMEOWNERSHIP,
REDUCING COST BURDEN, MITIGATING DISPLACEMENT

SECTION IV.

Policy Interventions

This section is dedicated to the effects and costs of implementing solutions to:

- Create wealth-building opportunities for low and moderate income households through homeownership, including BIPOC households where homeownership gaps are large;
- Reduce housing cost burden to improve housing stability for low and moderate income renters and owners; and
- Mitigate displacement of low and moderate income households.

Wealth-building through Homeownership

Homeownership is considered one of the most common methods of wealth building, particularly for low and moderate income households. The paydown of a mortgage principal can act as savings that allow a family to build wealth that can be accessed in retirement or passed down to the next generation. Homeownership can also provide economic stability, as it provides protection against inflation and involuntary displacement.

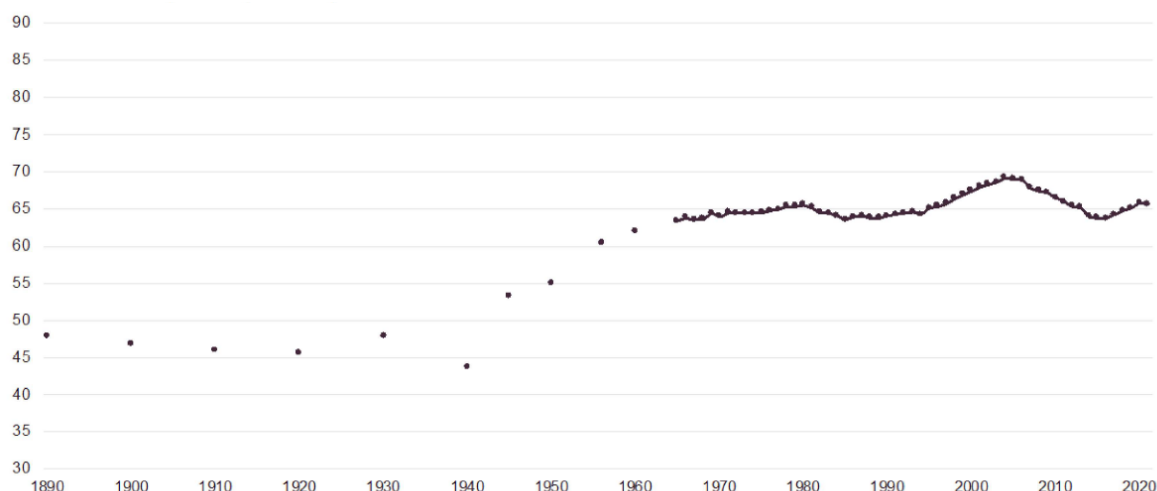
In the U.S. the homeownership rate is 64%, and this share has remained remarkably stable over the past 50 years. Yet homeownership inequities among BIPOC populations, residents with disabilities, and single parent families are stubbornly persistent and have been widening.¹

Looking at the homeownership rate from a historical perspective can shed some light on what it takes to meaningfully increase homeownership. Recent research² shows that the homeownership rate hovered between 40% and 50% from 1890 to 1930, and started a period of transition in the 1930s—when homeownership was destabilized by the Great Depression—to 1970, when it reached 65%. **Since 1970, there has not been a sustainable increase in the nation’s homeownership rate.**

¹ <https://www.urban.org/policy-centers/housing-finance-policy-center/projects/reducing-racial-homeownership-gap>

² Layton, Don. “The Homeownership Rate and Housing Finance Policy, Part1: Learning from the Rate’s History.” Joint Center for Housing Studies of Harvard University (2021.)

Figure IV-1.
U.S. Homeownership Rate



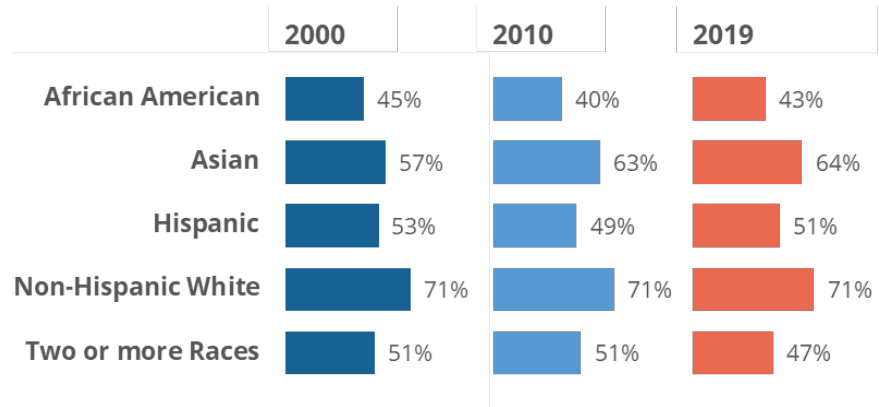
Source: Layton, Don. "The Homeownership Rate and Housing Finance Policy, Part1: Learning from the Rate's History." Joint Center for Housing Studies of Harvard University (2021.) From: <https://dqydj.com/historical-homeownership-rate-united-states/>

In addition to economic growth, the increase in homeownership rates between 1940 and 1970 was driven by major government interventions such as the GI Bill, which expanded homeownership among the middle class (which hit a century low point of 43.6% in 1940) and fueled suburban housing construction, as well as major changes in the housing finance system that made mortgage terms much more affordable. The lack of similarly aggressive public programs—as well as the discriminatory nature of past homeownership programs—have collectively limited homeownership today. As experienced in the mid-2000s, loosening lending criteria to incentivize a private sector response to broadening homeownership was not a productive solution, especially for BIPOC households.

Homeownership in Colorado. According to 2019 ACS estimates, the homeownership rate in Colorado is 65%. This rate has remained relatively stable since 2000, when it was 67%. However, homeownership varies significantly by race and income.

Figure IV-2 shows homeownership rates by race and ethnicity in 2000, 2010, and 2019. Non-Hispanic White households have the highest rates of homeownership at 71% followed by Asian households at 64%. African American, Hispanic, and Two or more races households experienced a decrease in homeownership rates since 2000. The gap in homeownership rates of Non-Hispanic Whites and BIPOC households ranges between 28 percentage points (White/Black) and 7 percentage points (White/Asian).

**Figure IV-2.
Homeownership
Rates by Race
and Ethnicity,
Colorado, 2000-
2019**

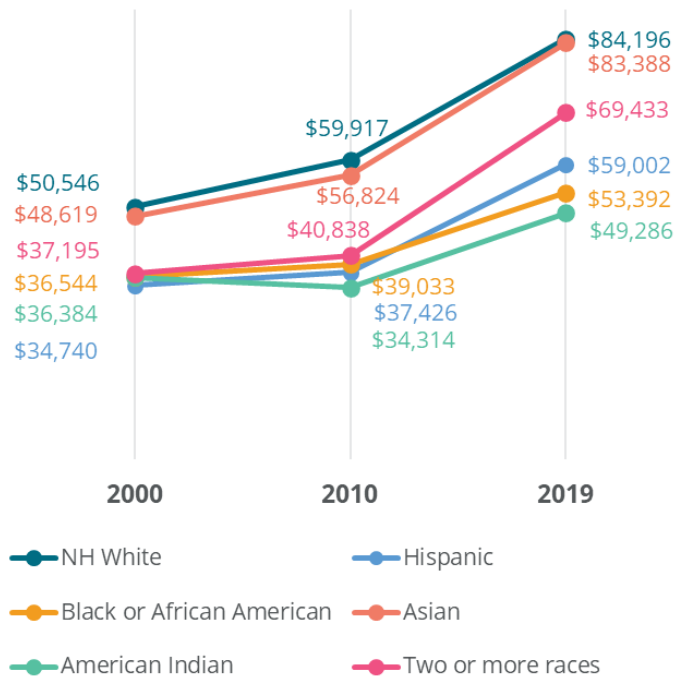


Source:
US Census, ACS, and Root Policy
Research.

Differences in income play a role in the homeownership gap. Figure IV-3 shows the median household income of different racial and ethnic groups. The gap between the racial and ethnic groups with the lowest household income compared to Non-Hispanic White households has grown in the past 19 years. In 2000, there was an estimated \$15,000 difference between the median Hispanic household income (lowest income group) and Non-Hispanic White median household income (highest income group). In 2019, the gap has grown to nearly \$35,000 between American Indian households (now the racial and ethnic group with the lowest median income) and Non-Hispanic White households. Only Two or more race households have made significant strides in narrowing the income gap. Yet, as discussed above, this has not led to an increase in homeownership. This could be due to a number of factors, including diverse households being younger with less savings for a downpayment, as well as lack of affordable buying options.

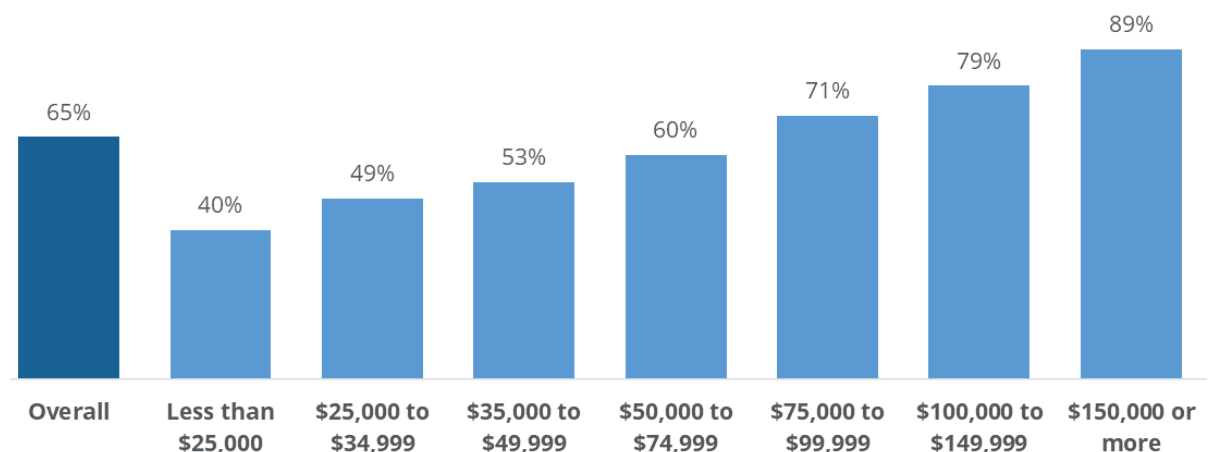
Figure IV-3.
Median Household Income by
Race and Ethnicity, Colorado,
2000-2019

Source:
 US Census and ACS.



As expected, homeownership rates increase with income. Figure IV-4 shows the homeownership rate by income. The homeownership rate for households with income below \$25,000 is less than half the rate of homeownership for households with income above \$150,000. Only households with incomes of \$75,000 and more exceed the state's overall rate.

Figure IV-4.
Homeownership Rate by Income



Source: 2019 ACS 5-year estimates, and Root Policy Research.

Downpayment assistance. As interest rates drop, the purchasing power of high income homebuyers increases, and this pushes up home prices. The increase in prices creates the need for a larger downpayment that can become a barrier to homeownership for many lower and moderate income buyers.

Downpayment assistance is a popular program used to help renters become homeowners. This section presents an analysis of the cost and number of potential renters that could be helped by a downpayment assistance program in Colorado.³

Figure IV-5 presents the number of renters in the State of Colorado by income. The majority of renters earn between \$25,000 and \$50,000 (200,297 altogether), less than \$25,000 (192,283), followed by renters earning between \$50,000 and \$75,000 (148,450).

Nearly 400,000 renters in Colorado have incomes of \$50,000 and less.

Figure IV-5.
Number of Renters by Income

Source:
2019 ACS 5-year estimates, and Root Policy Research.



Figure IV-6 shows the range in home prices that are affordable to each income bracket. The affordable home price is calculated assuming a household spends 30% of their income on housing costs, a 30-year mortgage at a rate of 3.13%—which was the median rate for

³ We acknowledge that downpayment assistance programs only work when there is adequate supply of homes to buy. Supply constraints are addressed more directly in other sections.

Colorado in 2020 according to Home Mortgage Disclosure Act data (HMDA)⁴—with a 5% down payment, and with 30% of the monthly payment going to property taxes, utilities, and insurance.

Figure IV-6.
Affordability Range by
Income Bracket

Note:

Assumes a 30-year mortgage at a rate of 3.13% with a 5% down payment, 30% of monthly payment is used for property taxes, utilities, insurance.

Source:

Root Policy Research.

Income Bracket	Min Affordable Price	Max Affordable Price
Less than \$25,000	-	\$107,237
\$25,000 to \$34,999	\$107,238	\$150,131
\$35,000 to \$49,999	\$150,132	\$214,473
\$50,000 to \$74,999	\$214,474	\$321,710
\$75,000 to \$99,999	\$321,711	\$428,946
\$100,000 to \$149,999	\$428,947	\$643,419

Under these assumptions, a household earning \$25,000 can afford a maximum home price of around \$107,000, a household earning \$50,000 can afford a maximum home price of around \$214,000, and a household earning \$100,000 can afford a home price of around \$429,000.

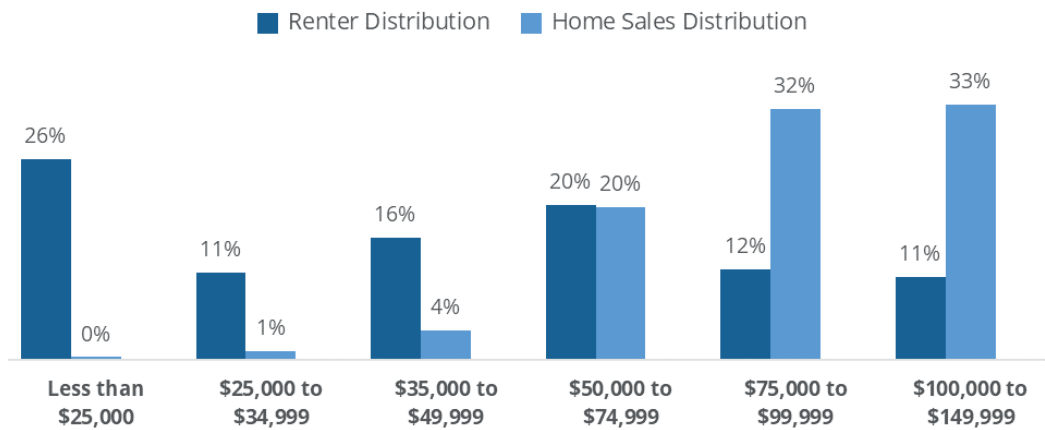
Lack of affordably priced homes to buy relative to renter income is a major challenge in Colorado. Figure IV-7 compares the distribution of renter income with the distribution of homes sold in 2020 that were affordable to each income bracket according to HMDA data⁵.

While renters are clustered at lower income brackets, the supply of homes is concentrated at affordability ranges for incomes above \$75,000, and supply of homes priced below \$215,000—affordable to households earning less than \$50,000—is minimal. Given these significant supply constraints, a downpayment assistance program is likely to be most viable for renters with incomes between \$50,000 and \$100,000. Households with incomes above \$100,000 are more likely to be able to afford a home without subsidies and already have a high homeownership rate. As such, the following analysis of the cost and effects of downpayment assistance focuses on Colorado households with incomes between \$50,000 and \$100,000.

⁴ HMDA data are collected by the Federal Financial Institutions Examination Council (FFIEC) and contain loan application records with information on income, loan terms, loan purpose, and outcomes of loan applications. HMDA data are reported by lending institutions and are one of the best readily-available sources of mortgage applications and purchase transactions.

⁵ Includes homes sold with a 30-year mortgage for first lien owner occupied purposes.

Figure IV-7.
Renter and Affordable Home Sales Distribution, by Income



Note: Totals do not add to 100% due to restricting the sample to incomes below \$150,000. Assumes a 30-year mortgage at a rate of 3.13% with a 5% down payment, 30% of monthly payment is used for property taxes, utilities, insurance.

Source: 2019 ACS 5-year estimates, HMDA, and Root Policy Research.

The supply of homes affordable to each income bracket varies considerably in Colorado, depending on location. By way of example, Figure IV-8 compares the share of renter households with income between \$50,000 and \$100,000 and the share of homes sold that are affordable to each income bracket in select counties. Larimer County and Jefferson County have a much higher share of renters with income between \$50,000 and \$75,000 than homes priced between \$215,000 and \$320,000 indicating that, even with downpayment assistance, these homebuyers will likely face a very challenging market.

Conversely, El Paso and Yuma Counties' markets have higher shares of homes sales by price point than the share of renters demanding those price points. In these markets, buyers have the ability to become homeowners without significantly compromising household budgets.

In all counties, the shares of homes priced for \$75,000 to \$100,000 households exceeds the proportions of renters in this income range—mostly because renters are low income.

Other counties with low shares of homes sold affordable to renter households with income between \$50,000 and \$75,000 include: Adams County, Boulder County, Broomfield County, Denver County, Douglas County, Eagle County, Elbert County, Gilpin County, Hinsdale County, Ouray County, and Summit County.

In sum, along the Front Range and in rural resort communities renters make too little to afford the homes available to buy. The exception is found in markets like Yuma County.

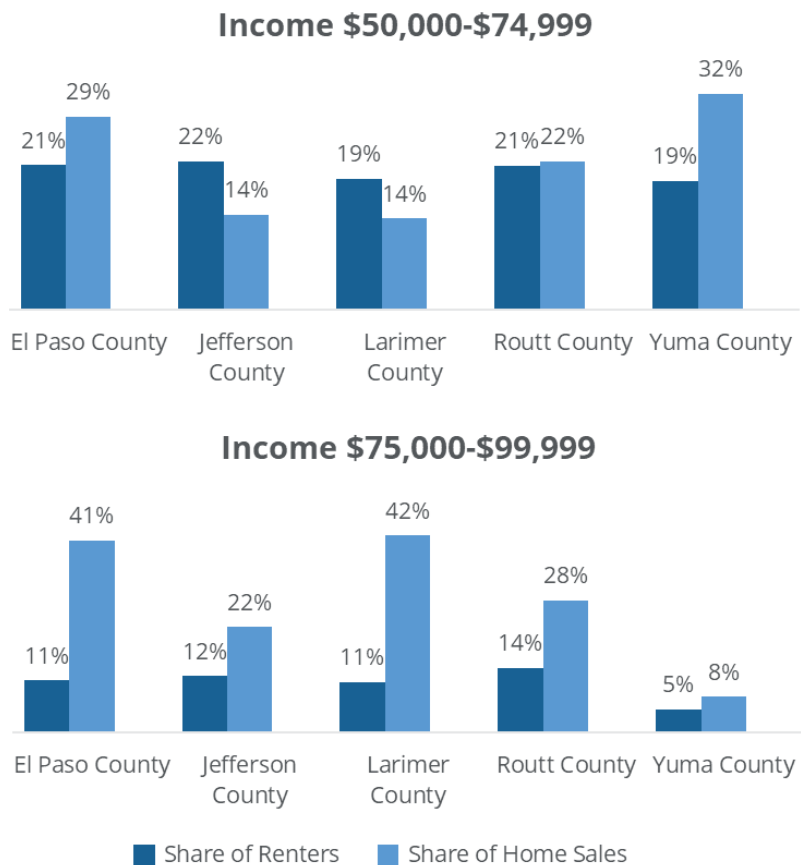
**Figure IV-8.
Renter and
Affordable Home
Sales Share for
Select Counties**

Note:

Assumes a 30-year mortgage at a rate of 3.13% with a 5% down payment, 30% of monthly payment is used for property taxes, utilities, insurance.

Source:

2019 ACS 5-year estimates, HMDA, and Root Policy Research.



Program cost. If homes to purchase for middle income renters were available, a modest downpayment assistance program that moved renters into ownership would not only address wealth-building gaps but would free up much-needed rental stock.

Figure IV-9 presents estimates for the number of renter households that could benefit and the cost of providing a 5% downpayment to 10%⁶ of renter households in each income bracket. Such a program would help around 23,500 renter households and cost around \$360 million. This cost would be offset by boosting available rental stock for low to moderate income renters by 3%.

It is important to note that this exercise assumes adequate supply of homes to buy for the 5% of renters provided hypothetical downpayment assistance. This would work well in some parts of Colorado; in others, supply constraints would need to be addressed before such a program would be effective.

⁶ The 5% is applied to the mid-point affordable price for each income bracket which is \$268,091 for renters earning between \$50,000 and \$75,000, and \$375,328 for renters earning between \$75,000 and \$100,000.

Figure IV-9. Program Cost

Note:
Assumes assistance for 10% of renters in each income bracket.

Source:
2019 ACS 5-year estimates, HMDA, and Root Policy Research.

Income Range	Number of Renters	Cost
\$50,000 to \$74,999	14,845	\$198,990,799
\$75,000 to \$99,999	8,650	\$162,327,431
Total	23,495	\$361,318,230

We also modeled a lower amount of downpayment assistance—3.5% of sales price—and expanded the pool of households assisted to 15% of Coloradans with incomes between \$50,000 and \$100,000. That program would assist 35,242 renters, at an estimated cost of \$374 million.

The majority of renters helped—close to 15,000— would have incomes between \$50,000 and \$75,000. As shown in Figure III-9, workers with median earnings in this income bracket—social workers, police officers, construction workers, bus drivers—provide crucial services for their communities but oftentimes find it difficult to afford housing.

Figure IV-10. Median Earnings for Select Occupations

	Median Earnings	Example Occupations
Community and social service occupations	\$50,904	Counselors, Social Workers
Protective Service Occupations	\$60,397	Firefighters, Police Officers
Construction and extraction occupations	\$50,881	Construction Laborers, Electricians, Plumbers
Installation, maintenance, and repair occupations	\$50,287	Auto Service Technicians, Heating/Cooling Installers
Transportation occupations	\$50,979	Bus Drivers, Truck Drivers, Flight Attendants

Source: 2019 ACS 1-year estimates, and Root Policy Research.

Impact on homeownership. Figure IV-11 shows how much the homeownership rate overall and within each income bracket would increase with the assistance program outlined above. As expected, the biggest increase is for households with income between \$50,000 and \$75,000. The homeownership rate for this income bracket would increase by 4 percentage points, from 60% to 64%. Overall, however, the incremental change would be small; the state’s homeownership rate would only increase by one percentage point.

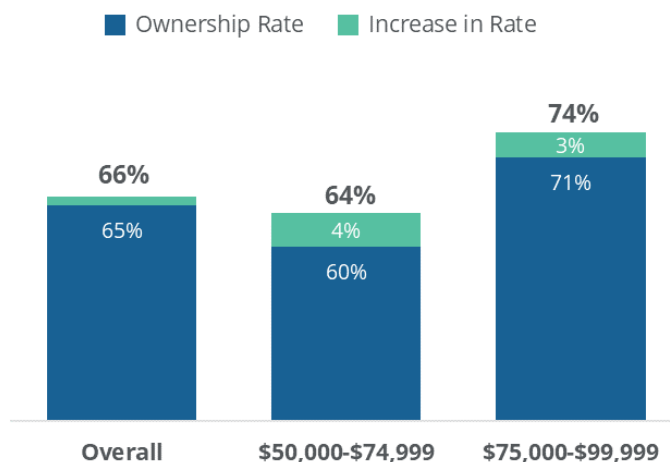
Figure IV-11.
Change in
Homeownership
Rates

Note:

The alternative program modeled—a 3.5% downpayment helping 15% of Colorado renters—would raise the overall ownership rate to 67%.

Source:

2019 ACS 5-year estimates, and Root Policy Research.



Credit barriers. Income explains only part of the homeownership gap. Except for households with incomes of less than \$25,000, the majority of loans applied for by Colorado residents between 2018 were approved, and approval rates hold steady at the \$50,000 income mark.

As discussed below, households taking on too much debt is the primary issue across incomes, suggesting that income stabilization policies could help boost ownership. For the lowest income households with high debt-to-income ratio denial rates, debt-reduction strategies, debt-avoidance emergency assistance programs, and consistent income supports would also help move these households into subsidized ownership models (deed-restricted, sweat equity, or land trust ownership products).

Figure IV-12.
Mortgage Applications by Income and Application Outcome, 2018-2020

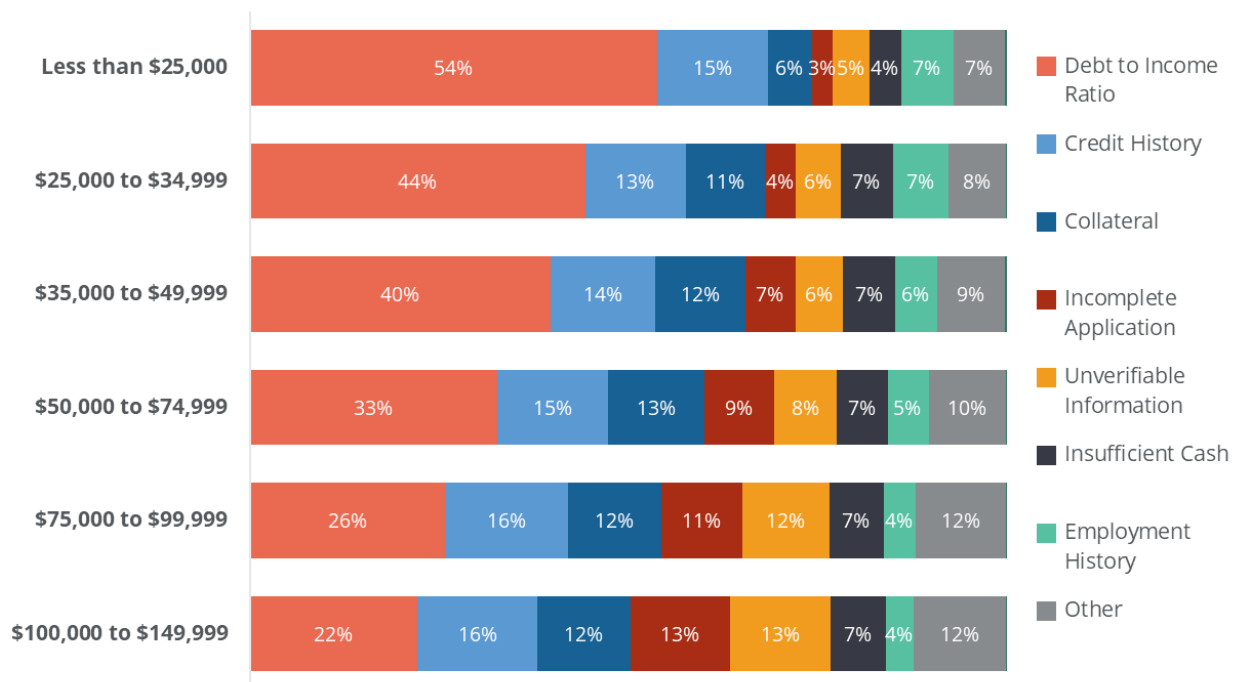
Income	Total Apps.	Percent Distribution of Application Outcome				
		Loan Originated	App. Denied	App. but Not Accepted	Withdrawn by Applicant	File Closed for Incompleteness
Less than \$25,000	3,013	39%	27%	2%	8%	24%
\$25,000 to \$34,999	7,617	64%	14%	3%	16%	2%
\$35,000 to \$49,999	31,677	72%	8%	3%	15%	2%
\$50,000 to \$74,999	92,510	76%	6%	2%	15%	2%
\$75,000 to \$99,999	79,224	76%	5%	2%	15%	2%
\$100,000 to \$149,999	89,630	76%	4%	3%	16%	2%
Total	303,671	75%	6%	2%	15%	2%

Note: Includes application for home purchase 30-year loans for owner occupied first liens.

Source: HMDA and Root Policy Research.

Figure IV-13 shows the distribution of aggregate denial reasons⁷ by income. Regardless of income, the top denial reason is debt to income ratio, but its importance decreases as income increases. Debt to income ratio accounted for one third of denial reasons for applications with income between \$50,000 and \$75,000 and 26% of denial reasons for applications with income between \$75,000 and \$100,000.

Figure IV-13.
Application Denial Reasons by Income, 2018-2020



Note: Includes application for home purchase 30-year loans for owner occupied first liens.

Source: HMDA and Root Policy Research.

Credit history and insufficient value or type of collateral play important roles in loan denials for households with income above \$50,000. For these income brackets, these two reasons accounted for 28% of denial reasons, while insufficient cash (for down payment or closing costs) accounted for 7% of denial reasons.

⁷ Up to 4 denial reasons per application are included in the data set.

Reducing Cost Burden

A little more than 500,000 households—nearly one-third of households in Colorado—are cost burdened. Most of these (300,000) are renters. Of all cost burdened households, 30% are renters with incomes of \$25,000 and less.

Addressing cost burden can be done through direct subsidies or unit production; the lowest income renters require both. These take the form of:

1. Paying part of a tenant's rent (Section 8 vouchers and similar programs or through broader income supports);
2. Assisting an owner with property taxes, utilities, home repairs; and
3. Building affordable housing.

We modeled the cost for reducing renter and owner cost burden to 35% of gross household income. This is higher than the industry standard (30%), yet a reasonable goal in high-cost markets. The results of that modeling are shown in the following figure.

The annual cost to reduce renter cost burden is more than \$2 billion, with more than half dedicated to reducing burden on the lowest income households (\$25,000 and less). This equates to an average annual cost of \$7,100 per renter.

Comparatively, investing the same amount of the rental cost into multifamily development (assuming a cost of \$350,000 per unit and rents that sustain operations) would produce 6,074 affordable units—just 2% of the needed supply to fully address cost burden, or 4% of the units for \$25,000-\$75,000 renters. Although unit development has long-term benefits, the upfront cost is woefully inadequate to make even a small dent in needed supply without large development subsidies.

The annual cost to reduce owner burden is \$1.77 billion, or \$8,160 per owner.

**Figure IV-14.
Annual Cost to
Reduce Cost
Burden, by Tenure
and Income**

Income	Renter Households		Owner Households	
	Number of Renters	Cost	Number of Owners	Cost
Less than \$25,000	157,208	\$1,390,000,000	91,883	\$858,000,000
\$25,000 to \$34,999	58,510	\$341,000,000	37,203	\$296,000,000
\$35,000 to \$49,999	54,400	\$264,000,000	44,646	\$331,000,000
\$50,000 to \$74,999	29,181	\$131,000,000	42,577	\$281,000,000
Total	299,299	\$2,126,000,000	216,309	\$1,766,000,000

Note:

Cost is the difference between a household's 35% of income and actual housing costs using 2019 5-year estimates.

Source:

IPUMS and Root Policy Research.

Mitigating Displacement

Households most at risk of being displaced from new development include renter households who have few resources to manage rents and/or who have backgrounds that make them less desirable tenants for landlords (e.g., eviction histories, criminal backgrounds). Owners who are displaced are often those living on fixed incomes without the ability to manage the rising costs of ownership or owners who have stretched to attain ownership and for whom income disruptions—from lost jobs, divorce, medical conditions—compromise their ability to maintain their mortgage debt. Because renters in many markets are more likely to be BIPOC, displacement disproportionately affects people of color.

There is limited research on the effect of new housing development on displacement and gentrification. National data suggest that gentrification (defined here as an increase in high income, college educated individuals living in a neighborhood) only modestly increases out-migration.⁸ Findings from a Philadelphia based study indicate that low-credit score residents of gentrifying neighborhoods were no more likely to move out than similar residents of non-gentrifying neighborhoods. Of those who did move, however, they were more likely to move to lower-income neighborhoods.⁹

Because new development, even if affordable and/or missing middle housing, might spur gentrification and lead to displacement, it is critical to have complementary programs in place to ensure that land use and zoning changes stabilize markets and increase affordable housing options. Strategies that have been studied and found to be effective include:

⁸ Brummet, Quentin, and Davin Reed. "The effects of gentrification on the well-being and opportunity of original resident adults and children." Working paper with the Federal Reserve Bank of Philadelphia (2019).

⁹ Ding, Lei, Jackelyn Hwang, and Eileen Divringi. "Gentrification and residential mobility in Philadelphia." *Regional science and urban economics* 61 (2016): 38-51.

- Inclusionary zoning and deed-restricted housing products;
- Asset building for low income current residents, and
- Sweat equity and land trust ownership models. A recent study in the Journal of Urban Affairs found that community land trusts can slow gentrification.

The most effective programmatic solutions include:

- Resident preference policies or first rights for new affordable units;
- Affirmative marketing requirements of developers (e.g., using multicultural models in advertisements, placing ads in culturally-targeted newspapers and radio stations, using a variety of languages, using accessible formats);
- Eviction mediation and prevention; and
- Property tax exemptions (typically for homeowners but can be applied to taxes passed on to renters) for older adults, residents with disabilities, and low income households.