



# Policy Brief

## **The Economics of Accessory Dwelling Units (ADUs) in Denver**

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# Executive Summary

Denver, like many American cities, needs more housing. Approximately 80,000 units need to be added to the Front Range. One recent action the City took to address this shortage was to revise the ADU zoning to allow two-story structures, slightly taller sidewalls on the structures, and allowing larger ADUs. An expected outcome of this revision is to make it easier to build ADUs and thus generate an additional mechanism for adding units.

A combination of factors makes building urban ADUs more expensive than multi-unit development on a per-unit basis. Unlike multifamily development, an ADU is typically built by an individual homeowner rather than a professional developer. Financing generally is obtained through HELOCs, refinanced mortgages, etc. In Denver, long-narrow lots present a construction and design challenge typically addressed by custom builds for each lot.

Within the context of a typical Denver lot, we sought to identify design elements and construction practices that might streamline the process and reduce the overall cost of an ADU to below that of custom design-build. Should such efficiencies be identified as pushing the cost of ADUs close to multi-unit structures, it could indicate that ADU infill may be of significant importance for addressing the housing shortage.

A collaboration between owners, designers/project managers, and a local builder resulted in a prototype ADU. The final structure has a 525 sqft 1 bed/1 bath apartment above a 2-car garage. Plans were submitted for permits in August 2023, and COA is expected to be received in December 2024. The total cost was in the high \$300,000s. This report details the design vision, cost breakdown, and timeframe of planning and construction. Additionally, we compare the cost of this ADU with the cost of other current Denver construction. Finally, we consider the financing mechanisms available for ADU construction.

ADUs are unlikely to be deployable at a scale that would meaningfully impact the housing crisis. They offer amenities not possible in a multi-unit building but are roughly 30% more expensive than multiplexes or large low-rise units of similar sizes. Furthermore, the construction of ADUs requires financing by individual owners. Various options exist for this, though homeowners with higher incomes and more equity have an easier time accessing the necessary financing under existing rules.

The recent ordinance change's reduction of ADU barriers did no harm, but cannot result in meaningful change to the housing supply, and thus is not suitable or sufficient for solving Denver's housing issues. Additional policy changes enabling more homebuilding in Denver, such as citywide upzoning or single-stair reform, are needed to spur the construction of more units.

# Introduction

**David Pardo**, Education Lead with YIMBY Denver: my job within YIMBY Denver is to be knowledgeable about housing policy, zoning, and building code issues so that I can share that knowledge with others. Denver has a housing shortage (policy+zoning), so building ADUs (zoning+building codes) helps to add to the city's housing stock. I helped plan the prototype ADU and will be its first tenant.

**Chris Miller**, homeowner: As an active member and former lead with YIMBY Denver, there is no more apparent urgent societal need than making housing possible where it's valuable to have more housing for equity, social justice, environment, climate change, health and safety, community, and so much more, that requires building more homes in our cities. My spouse, Katy Barnhart, joined me in this endeavor. Saying "Yes In My Back Yard" is typically more symbolic than literal; we also say Yes! to the hundreds of new neighbors in the apartment buildings recently constructed a short block away from us. With our build/design/construction team, we proposed a compelling question: How affordably can someone deliver high-quality ADUs tailored to the Denver neighborhoods? Innovation requires experimentation, and this experiment was to see how much someone with knowledge and a fresh perspective could lower costs for new homes.

A fully realized prototype informs just how limited the opportunity is for deeper ADU affordability working within all of the constraints of zoning and building codes. We propose policy suggestions to make further ADUs more affordable, but most costs are unavoidable. To that end, we have a deeper appreciation for the necessity of multi-unit buildings to add more homes where people need a home.

I hope this report serves as a clarion call to legislators about the benefits and, crucially, the limitations of ADUs in solving the housing crisis. They are a piece of the puzzle but are inadequate to meet the moment. To claim otherwise is unserious, and the depths of our crisis demand a serious policy response.

# Project Background

This ADU was built to test a design that works on various lots under the Denver laws passed in 2023, allowing 2-story ADUs. While many companies do custom builds for each ADU, this is relatively inefficient because many months are spent on the design phases. Any mistakes or imperfections will be locked into this structure but eliminated in future design iterations.

Customization adds expense and time to the build process. If the ADU is meant to be a rental unit, it's better to reduce costs, speed up construction, and utilize a tested and perfected design

completed by a specialist in apartment layouts, short-term rental operations, and building science.

Everything about the prototype ADU is meant to reduce the complexity of construction and operations. All plumbing is one area of the building, the walls are easy to construct, the windows all fit between studs without much additional framing, and the design uses standard-sized building materials with minimal waste. It's also designed to surpass Denver's energy code, reducing operating costs. It offers an insulated, slightly oversized two-car garage, allowing owners to store possessions, work out, do projects, and store automobiles all at once without eating up too much of a lot's backyard.

Overall, the goal is an easy-to-repeat ADU build that offers Denver customers something otherwise unavailable in Denver.

## ADU Costs

With few exceptions, the hard costs (e.g., construction) and soft costs (e.g., design fees, permits) of the ADU are as low as reasonably possible. Incremental costs for upgraded materials account for a small fraction of the final price. Almost all upgraded materials will improve energy efficiency and have long-term value. However, estimating the exact value of the energy efficiency improvements relative to the baseline requires a computational simulation of the building with standard and upgraded material. It is far beyond the scope of this report.

## Incremental Costs

Many design choices are functional requirements of energy efficiency code and building code, providing a base cost for ADU construction. We primarily note upgrades over a base cost:

- Structurally Insulated Panels (SIPs) were an upgrade, with energy efficiency gains expected.
- Triple-pane windows were an upgrade over double-pane windows, with energy efficiency gains expected.
- An energy recovery ventilator (ERV) exchanges air while minimizing thermal losses. Traditional building methods would have allowed airflow by being less airtight, eliminating the need for an ERV but at the cost of significant HVAC operating expenses.
- A skylight was installed.
- Energy-efficient blinds were an upgrade.

## Remaining Balance

All other construction and design fees necessary for the project's completion brought the final cost to the upper \$300,000.

## Lost Incremental Rent

The 5+ months of unnecessary delay caused by Xcel have cost over \$10,000. Any delay, such as the ones caused by Xcel, can cause delayed rental income ranging from \$2000-\$3000 per month (depending on short vs. long-term rental rates).

## Policy Opportunities

Select regulatory reform could yield approximately \$30,000 in savings. Utility prioritization of new construction dwellings could reduce or diminish the impact of lost incremental rent. Pattern books with pre-approved plans could reduce design costs by up to \$15,000 per ADU and shorten timelines. Reducing sewer fee connections could save up to \$5,000.

## Timeline

With planning and construction, the project took approximately two years. However, half of this time was before the rule change that allowed two stories. The ADU was planned in anticipation of those rule changes. Once plans were submitted, it took three months to get the permits and roughly ten months to construct the ADU, including a multi-month delay caused by Xcel Energy. Future reproducible ADUs will likely be completed in under one year, including pre-submittal work, permit issuance, and construction. The design is complete, with only minor modifications needed on future units; the permitting process will be faster because all revision-causing issues have now been solved, and construction will also be faster using the lessons of the first ADU to avoid pitfalls and speed up the process.

Optimally, the construction team will be able to produce ADUs in 8-10 months from customer sign-up to Certificate of Occupancy.

## Policy Considerations

The Denver metro area has a shortage of 80,000 units.<sup>1</sup> Ensuring that the policy decisions that are intended to close this gap do what is desired means policymakers **must** understand the efficacy of proposed solutions. We believe that the policy *results* must match the policy *intentions*: that legislators are addressing our housing crisis.<sup>2</sup>

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<sup>1</sup> Approximate consensus number from <https://www.denverpost.com/2023/10/23/colorado-housing-home-shortfall-pandemic/>, <https://upforgrowth.org/apply-the-vision/2023-housing-underproduction/>, and <https://www.commonsestituteus.org/colorado/research/housing-and-our-community/colorado-housing-affordability-report>

<sup>2</sup> The YIMBY Denver position is “That everyone who lives here can stay and that everyone who moves here is welcomed” <https://yimbydenver.org/about-us/>

ADUs have been a significant focus of housing policy in recent years.<sup>3</sup> Denver has worked to ensure that ADUs are legal to build in more places within the city, and the state followed with the passage of HB24-1152. Both city and state policies are intended to be one tool in a toolbox for tackling Colorado's housing crisis.<sup>4</sup> How effective has the policy been in Denver?

As of Oct 15, 2024, fewer than 550 ADUs have been permitted within Denver under the liberalization of ADU rules, and fewer than 400 have been completed, approximately one-half of one percent of the estimated need.<sup>5</sup>

There are three significant barriers to the construction of more ADUs:

- Unit cost: Every construction project has many set costs, whether you're building a small, single-story ADU, a large single-family home, or an apartment building. These include government fees, architecture/design fees, construction supervision costs, and general worksite costs (power, porta-potties, etc). With an ADU, set costs comprise a much more significant percentage of the total cost of a given project, making small projects like individual ADUs significantly more expensive on a per-sqft and per-unit basis, increasing the cost to finance and rent out these units.
- Household capital: Given the price, only wealthy homeowners likely can access the necessary capital.
- Desire for ADUs: Many homeowners who support ADUs as a concept may not want to lose yard space or demolish their existing garage and may be perfectly happy not to have neighbors, whether strangers or family, living on their lot.

Because of these barriers, it is unreasonable to expect that (1) the cost of an ADU can be drastically reduced in many contexts within Denver and (2) that there is a sufficient confluence of interest and capital to accelerate ADU production far above current levels.

If the housing crisis is to be solved collectively, legislators at the city and state levels must take additional steps to enable the construction of more multi-unit homes on more land in the Denver metro region.

For example, allowing a second ADU on every lot but requiring the second ADU to be AMI-limited would help remedy the affordable housing shortage. Ending the 2.5-story height limits on buildings that include an affordable ADU (IE, allow for a full 3-story), or better yet, 2-3 floor-size-unlimited dwelling units that can be deeded separately, would also increase the availability of more affordable housing by allowing Boston-style triple-decker housing forms.

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<sup>3</sup> The YIMBY Denver report on ADUs contains links to 14 different news articles on ADUs in the span from 2018 to Nov 2021 and is not an exhaustive list on reporting on ADUs in Denver:

<https://www.yimbydenver.org/whats-going-on/adus-in-denver/>

<sup>4</sup> We need an all-hands approach to tackle Colorado's housing crisis, and that includes allowing homeowners to have Accessory Dwelling Units on their properties," Rep. Judy Amabile,

<https://coloradonewsline.com/2024/01/31/colorado-more-accessory-dwelling-units/>

<sup>5</sup> <https://denverite.com/2024/10/15/denver-adu-changes-citywide/>

Even more helpful would be rezoning all larger SU (single-unit) lots to TU (two-unit) lots, allowing two primary units PLUS 2-4 ADUs, or just allowing a total unit count of 4-6 units on each lot. Additionally, setting the minimum lot size to 4500-6000 sqft throughout Denver (currently, some lots require as much as 12000 sqft) would allow builders to divide large lots for additional housing production in neighborhoods. These reforms would significantly lower land costs for redevelopment, allowing for more low-priced homes.

Affordable, market-rate, new construction, family-friendly housing (multi-bedroom dwellings in neighborhoods, not studios in bar districts or on arterials) is not allowed today in most of Denver because of city, state, zoning, and building code issues. This is easy to fix: enable more units to be built on neighborhood lots. For the price of four 500 sqft 1-bed/1-bath ADU sans parking, you could create four 1000 sqft 3-bed/2-bath units in a fourplex that would work for families, with a covered parking space for each unit.

Those reforms would be beneficial but must also happen in conjunction with broader housing reforms, commonly described as “missing middle” housing. Finally, expanding the locations where homebuilders can build larger buildings will continue to be helpful. Within one block of the prototype ADU, two new apartment buildings were constructed on one city block, providing 411 homes. That is more homes than a decade of liberalized ADU policy has provided for across all of Denver. Approximately 5,000 homes per quarter are given building permits over the past decade in the Denver metro area, an order of magnitude more homes per quarter than the entirety of liberalized ADU policy.<sup>67</sup>

While the state has passed legislation that will enable more homes in places that need it most, we believe it imperative that the work of legislative changes continue until there is no housing shortage. There is a suite of proven, evidence-backed solutions - such as city-wide upzoning and single-stair building reform - available to policymakers, which will ensure broader housing affordability while complementing and enhancing neighborhood character.<sup>8</sup>

We encourage policymakers to contact YIMBY Denver for guidance on shifting legislative priorities to policies that will have a more meaningful impact on housing affordability than ADU policies.

## Conclusion

While great strides have been made on ADU legalization and constructability by both the city of Denver and the state of Colorado, construction costs have risen simultaneously, and construction costs are not expected to drop. Allowing two-story ADUs along alleys in Denver is a positive development for homeowners and ADU designers, and rezoning the city to enable ADUs on all lots is an excellent move on the part of the state.

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<sup>6</sup> <https://daniels.du.edu/assets/Apartment-Market-Trend-Report-Q4-2023.pdf>

<sup>7</sup> <https://fred.stlouisfed.org/graph/?g=1zGz7>

<sup>8</sup> <https://yimbydenver.org/our-solutions/>

ADUs are great for flexibility and offer additional homeowner opportunities, including an income-generating asset that can be achieved against ADU financing. However, there are a confluence of factors necessary to build one to completion, and solutions like the one we used made it manageable and achievable. That aside, ADUs - even at scale - cannot address Denver's housing alone. More multifamily structures must be built to make housing affordable for families and lower-income individuals. For social equity reasons, that means rezoning Denver to allow, at a minimum, moderate density everywhere, not just along busy streets, near transit stations, and next to train tracks. This can be done with minimal changes to lot coverage allowances, bulk planes, setbacks, and design guidelines. Still, it will require ending or severely changing how unit counts are limited within structures.