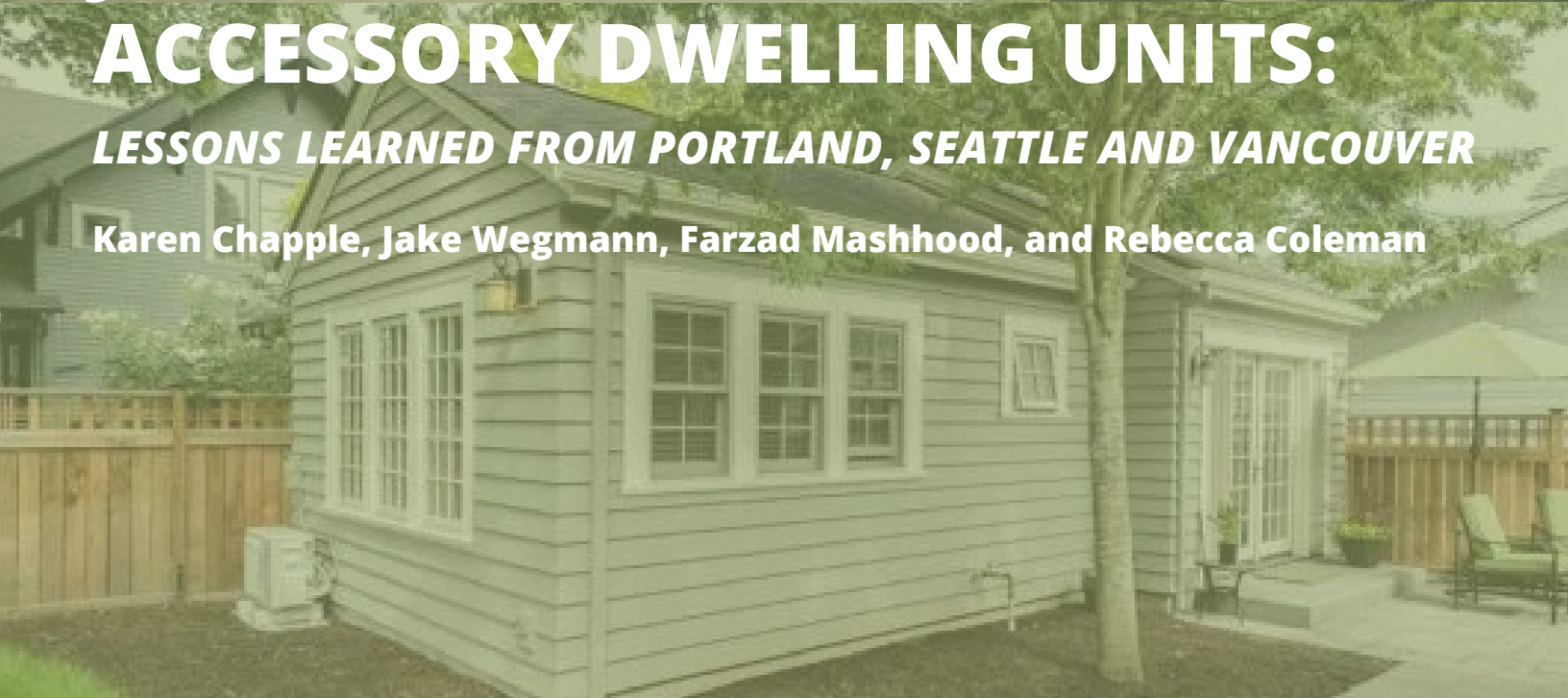




JUMPSTARTING THE MARKET FOR ACCESSORY DWELLING UNITS:

LESSONS LEARNED FROM PORTLAND, SEATTLE AND VANCOUVER

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WHY ACCESSORY DWELLING UNITS?

Across the United States, communities are experiencing challenges in building the housing they need to maintain affordability and accommodate future growth. Accessory dwelling units (ADUs), or separate small dwellings embedded within single-family residential properties, are an effective solution due to their low cost and immediate feasibility, with homeowners building in their own backyards.¹ In fact, California researchers suggest that such small-scale infill development could account for as much as half of new development capacity in coming decades.² Many cities and states have recently passed legislation easing zoning and permitting regulations for ADUs, most notably Senate Bill 1069/Assembly Bill 2299 in California, signed into law on January 1, 2017.³

Despite government attempts to reduce barriers, a widespread surge of ADU construction has not materialized.⁴ The ADU market remains stalled. To find out why, this study looks at three cities in the Pacific Northwest of the United States and Canada that have seen a spike in construction in recent years: Portland, Seattle, and Vancouver. Each city has adopted a set of zoning reforms, sometimes in combination with financial incentives and outreach programs, to spur ADU construction. Due to these changes as well as the acceleration of the housing crisis in each city, ADUs have begun blossoming.

Based on a homeowner survey and stakeholder interviews, this report tells the story of successful ADU implementation in the three cities, to help policymakers enact more effective reforms. Homeowners in these cities have embraced ADUs because of the flexibility these units provide, with the ability to use the space as housing or office, for rental income or a friend/family member in need, depending on the circumstances. Because construction costs are relatively low, the housing produced is generally affordable: the majority of new ADUs are leased for below-market rents. Many homeowners experienced barriers in terms of zoning, permitting, or finance, but solutions emerged, often due to city actions.

The report begins with a brief review of previous research on barriers to identify the gaps in our knowledge. It then describes the context for ADUs in the three cities, including the policies each implemented to spur more construction. Next, the report turns to the survey methods and results. A conclusion suggests policy approaches to spur more ADU construction. Most prominent among them are efforts to make loans for ADU projects more accessible to more homeowners. This would be a difficult undertaking but one with a likely high payoff. In addition, providing city-approved manuals detailing the regulatory, design, and project management processes for ADU projects for homeowners, coupled with technical assistance and promotional efforts would also likely help boost production.

UNDERSTANDING THE BARRIERS TO ADUS

Several factors clearly deter homeowners from constructing ADUs. Most prominent are the zoning and permitting barriers, including the building and lot regulations and permitting fees. These not only can make building an ADU physically infeasible, but also can constitute a psychological barrier for homeowners who already have minor code violations or face neighbor opposition with regard to new construction. Lack of capital is another challenge, with lenders hesitant to develop loan products tailored to this housing type. At a most basic level, homeowners—and even contractors—lack experience with the overall process, and can be too intimidated to even start.

Zoning laws put in place since the post-World War II housing boom have largely restricted ADU development in many US contexts.⁵ Historically, even when states like California have taken specific steps to undo restrictive zoning practices, local governments continued to impose burdensome regulatory requirements and delay enactment of local laws.⁶ Restrictions on parking, lot size, and setbacks can render ADU construction prohibitively expensive or impossible on many lots.⁷ Beyond specific zoning practices, neighborhood group opposition to increased density can deter policymakers from allowing ADUs.⁸ Yet, organized efforts to reverse regulatory barriers have increased, beginning with the American Association of Retired Persons, which wrote a model state law in 2000, and are now apparent in websites like accessorydwellings.org.⁹

Many studies have explored financial barriers, including high upfront costs and the inability to access loans.¹⁰ A study of Oregon ADU owners found that most owners actually built theirs out of cash savings.¹¹ Developers may not see adding an ADU as providing enough of a profit margin.¹² Structural challenges also make borrowing for an ADU difficult. Most lending institutions do not allow appraisals to factor in the expected rental income from an ADU to estimate market value of a residential property. Because of this and other factors, homes with ADUs were found in one study to be undervalued by up to 9.8%.¹³

Another barrier can be the experience level of the ADU developer. Those building ADUs tend to be homeowners unfamiliar with real estate and construction and see building an ADU as a major and risky project.¹⁴ Navigating zoning and building codes could be a barrier for those not experienced with development, or concerned about city inspectors flagging unrelated code violations on their lot.¹⁵

The greater variety and prevalence of rental housing in Canada raise questions about how the institutional context may shape construction. For example, secondary suites (to use a Canadian term largely equivalent to attached ADUs)—both legal and illegal—have long been an important supply of rental housing across cities, towns, and rural areas.¹⁶ In order to encourage the upgrading of units to meet building, fire and safety standards, many local governments have developed popular programs that provide inter-



ADU in Portland, photo credit: Tom Hudson's ADU, <http://www.accessorydwellings.org>.

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est-free loans and forgivable grants.¹⁷ Because the National Model Construction Codes provide the basis for provincial codes, regulations tend to be similar across municipalities, a streamlining that may aid developers.¹⁸

In addition to these regulatory and financial barriers, other contextual factors may affect how many ADUs get built. For instance, in some regions, ADUs are already part of the landscape, whether because of the architectural vernacular (in places where in-law units have commonly been built), cultural practices of multigenerational living, or high housing demand from immigrants, students, and other groups facing rental housing shortages (many living in unpermitted dwellings). In others, such as planned subdivisions or common interest developments managed by owners' associations, ADUs are rare or nonexistent. Likewise, a region's topography and amount of buildable land can shape ADU construction patterns; one obvious example is San Francisco, which has seen considerable backyard living due in part to its constrained geography.

What can cities do to spur implementation? A few case studies provide examples. The Austin Community Design and Development Center provides design and planning assistance to low- and moderate-income households and also partners with another venture to help build and manage ADUs on people's properties.¹⁹ The City of Santa Cruz is often cited as a model for implementation, due to its multi-pronged approach to encouraging ADU construction via an ADU manual, architectural prototypes, loan fund, fee waivers, and community workshops.²⁰ Most recently, a local Habitat for Humanity branch has created the pilot My House My Home program to assist with ADU construction, allowing seniors to age in place.²¹ However, no studies to date have identified which interventions work best to spur production. A deeper look at the success stories in the Pacific Northwest can help other cities devise successful ADU reforms.



ADU in Portland, photo credit: Susan Moray's ADU, <http://www.accessorydwellings.org>.

STORIES OF SUCCESS: PORTLAND, SEATTLE, AND VANCOUVER

As cities around the country try to ramp up ADU production, many look to the three large cities considered North American ADU leaders: Portland, Seattle, and Vancouver. The three share a regional ecological context (often called “Cascadia”) and hot housing markets: in all three cities, housing prices have increased in recent decades, particularly the past five years (Figure 1). As described next, interviews with local experts helped identify key factors behind the success in each city. For a description of ADU regulations in each city, please see Appendix A.

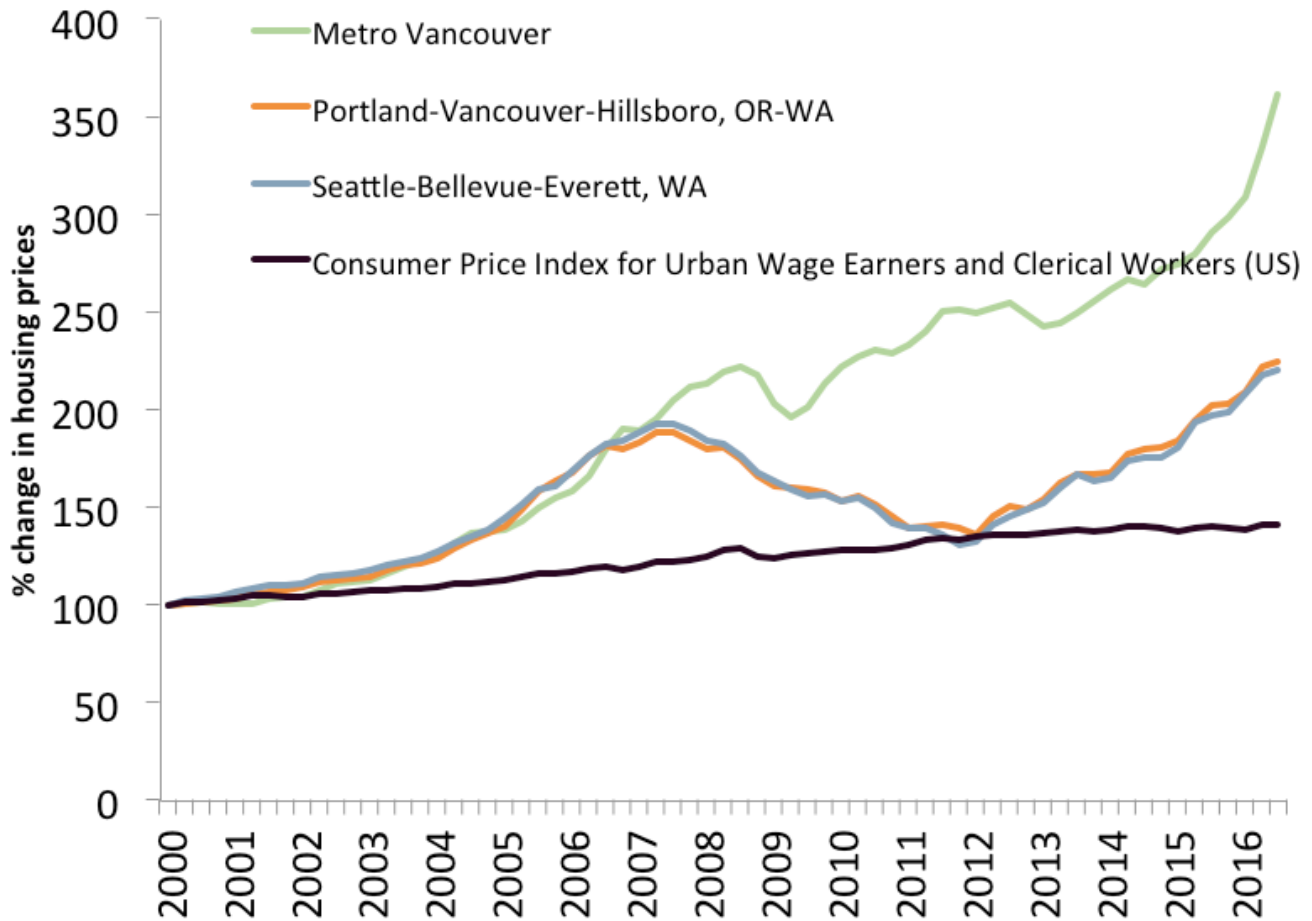


Figure 1. Percent Change in Housing Prices (2000=100).

Sources: House Price Index, Federal Housing Finance Authority (Seattle and Portland); House Price Index, Teranet and National Bank of Canada (Vancouver); Consumer Price Index, US Bureau of Labor Statistics.

PORTLAND



ADU in Portland, photo credit: Kristy Lakin's ADU, <http://www.accessorydwellings.org>.

In the U.S., Portland, Oregon stands out for its success in enabling ADU construction. The city has seen a boom in ADU building in recent years: almost 2,000 ADU permits have been issued since 2010 (Figure 2).²²

Portland's success can be attributed to a combination of regulatory, financial, and social factors:

- **Regulatory:** Portland stands out as one of the most progressive cities in the U.S. in terms of having permissive ADU regulations. The city has no owner occupancy requirement, no design review, a by-right process, and fee waivers.
- **Financial:** in 2010 the city waived one time System Development Charges (SDC) fees based on the new or increased use of a property (impact fees for parks, sewers, water, and streets that average 7% of the total cost of a new home)—a critical step to paving the way to more ADU production.²³
- **Social:** in 2008 and 2009, green building advocates joined forces with ADU advocates to host bike tours and additional educational events. This educational push by the two different constituencies has gone a long way in increasing awareness and popularity of ADUs.²⁴

The importance of the system development charge waiver from the City of Portland for ADU's cannot be overstated. On my ~\$30k project, SDC's would have amounted to \$10-15k, making the project impossible.
—Portland homeowner

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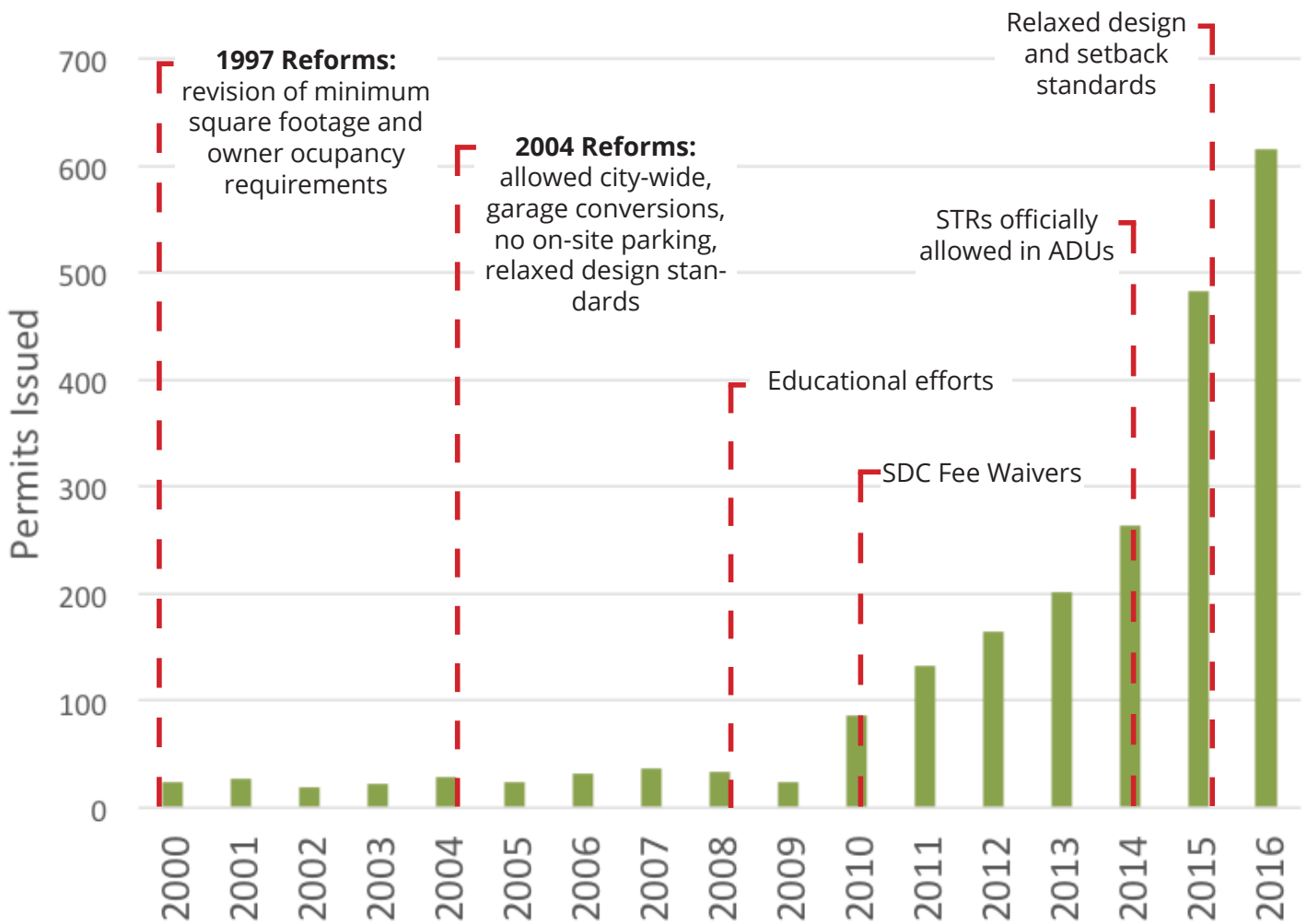


Figure 2. ADU permitting and reforms in Portland.

In addition to its hot housing market, Portland also features a supportive demographic in its aging population: Portland ADUs may be particularly well suited to serve older persons since they are disproportionately owned by 55-64 year olds.²⁵

Portland advocates continue to push for more reforms. Advocates are currently working to bring back a loan product called 80/20 loans that had been available before the mortgage crisis. These loans made it possible to take out a second mortgage based on the improvement value of the new ADU. Another idea in the works is to develop a financing program similar to the property-assessed clean energy (PACE) model, which allows governments to finance the up-front cost of energy improvements, subject to repayment by the property owners.

SEATTLE

Likewise, Seattle has experienced a growth spurt in ADU permitting and construction (Figure 3). However, this is perhaps due less to zoning reforms than to a hot housing market and an ongoing public discussion about potential policy reforms.

Seattle has allowed attached ADUs since the mid-1990s and detached ADUs (DADUs) since 2006 (Figure 3). From 2006 to 2009 a pilot program allowed DADUs to be constructed in specific areas. It went very well, leading the city to extend the program across Seattle in 2010. Until 2014, production was consistent but slow, but as the city began to study options to increase production, permit activity increased. After the city released this study and prompted further public discussion, even bolder changes were proposed, including removing parking requirements, changing owner occupancy requirements, and allowing both attached and detached ADUs.²⁶



Seattle ADU, photo credit: City of Seattle.

To date, most ADU applications have come from wealthier homeowners, due in part to the escalating cost of construction (as much as \$250-300 per square foot). Still, city staff argue that because even new ADUs typically rent for less than conventional housing units, they provide a relatively affordable option in Seattle's expensive neighborhoods.

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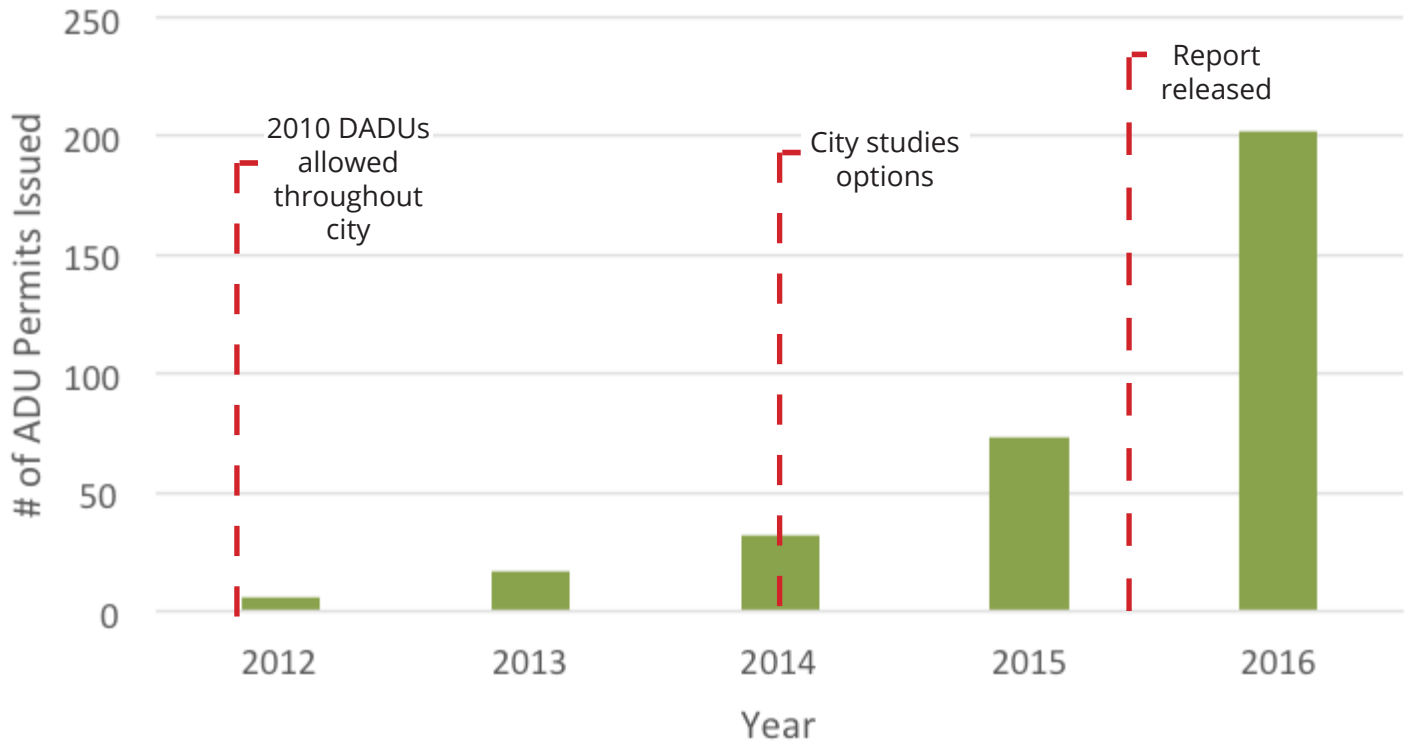


Figure 3. ADU permitting and reforms in Seattle.



Seattle ADUs, photo credit: City of Seattle.

VANCOUVER

In Vancouver, the context for ADU construction was set by a decades-long battle over secondary suites. Secondary suites are basement or ground-floor apartments in single-family houses. Originally encouraged during World War II to alleviate housing shortages, secondary suites, many of which were not built to code, were subsequently considered a nuisance and made illegal; for three decades, the Council repeatedly passed legislation to improve enforcement. In the 1980s, Vancouver finally made it legal to house secondary suites in half of the city's single-family zones, and in 2004, permitted secondary suites citywide. A 2009 study found that there were at least 25,000 suites in Vancouver, most providing relatively affordable housing within less expensive homes.²⁷ Although the City has attempted to create a path to legalize secondary suites, the majority (with the exception of recently constructed units) remain illegal. Legal secondary suites are now often included in new single-family homes: between 2010 and 2015, 1,937 of the single-family homes built had secondary suites.²⁸



Secondary suite in Vancouver, photo credit: Karen Chapple.

In the context of a hot housing market and a lack of vacant land, a new movement also began supporting new legislation to build laneway houses, or small detached houses built on single family lots facing the alley (or the “lane” in Canadian parlance). Vancouver’s urban form—with its grid layout, alleys intersecting many blocks, and deep residential lots (typically 33’ x 122’)—have made laneway dwellings possible. Support also came from the 2006 Vancouver Eco-Density Initiative, a city-led push to reduce greenhouse gas emissions, reuse infrastructure, and foster new green systems through more dense land use. The Council adopted laneway house regulations for the two largest single-family home districts in 2010, and then passed amendments allowing the dwellings citywide in 2013 (Figure 4). This last set of reforms permitted extra floor area (up to 940 square feet), eliminated the garage requirement (replacing it with an external parking pad), and allowed ministerial approval. There is no owner occupancy requirement for Vancouver’s laneway houses. Notably, institutions like Vancity, a local financial co-operative, provide loan products that are appropriate for laneway dwellings, for instance by allowing homeowners to count rental revenue as part of their income.

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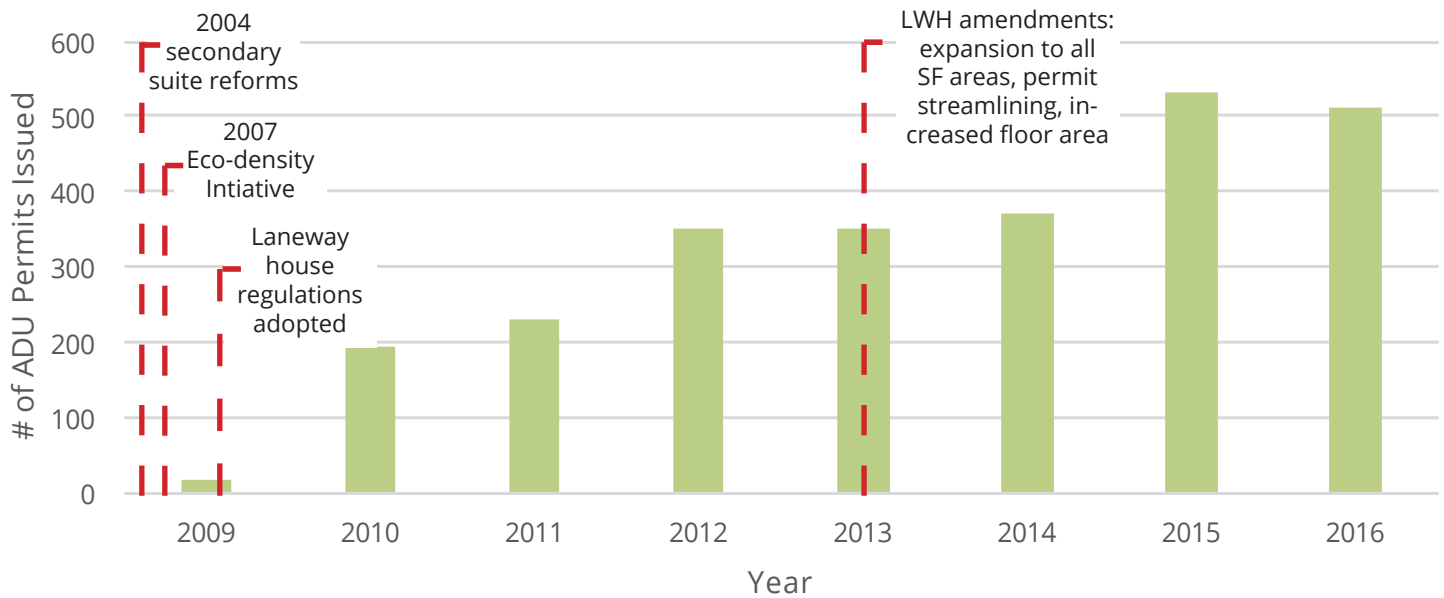


Figure 4. ADU (laneway housing) permitting and reforms in Vancouver.

Vancouver's design context—the lanes and walkability of the city—as well as its high housing prices clearly contribute to the spurt in ADU construction. However, another key to its success has been the proactive and ongoing efforts by the city to provide technical assistance to homeowners and to amend ordinances to make it easier for homeowners to build. Careful design guidelines ensure that the new laneway houses will not intrude on the neighbors: decks and balconies are oriented to the lane, the upper floor has just 60% of the floor area of the main floor, there is a 16' separation from the main house, and a 3' landscaped setback at the lane. At present, there is more demand than the city can accommodate, and permitting is considerably backlogged.



Laneway house in Vancouver, photo credit: Karen Chapple.

THE ROLE OF ADU REFORM

These three cases illustrate how ADU reform in a hot housing market can allow this dwelling type to play a major role in a city's mix of housing options. In Portland, Seattle, and Vancouver, ADUs accounted for only 3.0%, 0.8%, and 0.6%, respectively, of issued housing permits in 2009. In 2015, following key reforms in all three cities, this share had risen to 10.9%, 2.1%, and 6.3%, respectively.²⁹

Similar cities that have only recently enacted zoning reforms demonstrate slower progress. Like the Cascadia cities reviewed in this report, both Salt Lake City, Utah and Austin, Texas have hot housing markets.³⁰ Yet, in Salt Lake City, only one ADU had been permitted in the city since September 2012 when the City Council adopted an ordinance permitting ADUs as of September 2015. The city is currently considering regulatory changes to requirements related to location, permit limit, building height, maximum square footage, lot area, and parking to jumpstart the market.^{31, 32}

In Austin, the number of building permits issued was sluggish for many years, with practically no ADU permits issued until 2007, when the number of permits jumped to 32. In November 2015, the City Council approved a series of reforms that accelerated the number of permits to a projected 387 in 2017. It is important to note that there are at least a couple of additional factors that may contribute to this increase in permits: a) Austin is not landlocked—its city limits are still expanding outward, and b) Austin also has some very large infill tracts inside its city limits with new home building, including ADUs.

SURVEY METHODOLOGY

This study surveyed homeowners in Portland, Seattle, and Vancouver who had built ADUs (or recently purchased a property with a new ADU). After obtaining a list of addresses in each city that had received a permit to build an ADU in the recent past, we sent postcards inviting homeowners to respond to our online survey instrument to a random sample of addresses. We sent three rounds of postcards to each home (for more details, see Appendix B). Of a total of 1,837 addresses contacted, we obtained 414 responses, for a 23% response rate, including an estimated 37% in Seattle, 26% in Portland, and 11% in Vancouver.³³ Of those, 71% completed the full survey.³⁴

The sampling methodology created some bias. Most importantly, our sample only includes those who have successfully navigated the ADU construction process, from design to permitting to construction and occupancy. Thus, we were not able to obtain the views of those who had tried to build an ADU but failed. As a result, the report findings likely underreport the extent of the barriers homeowners face. In addition, there was likely some response bias as the homeowners most interested in responding to the survey were those with either a positive or negative experience. Finally, because we sent the postcard to the main address, rather than the ADU address, we may have inadvertently undersampled homeowner respondents who now live in the ADU.

ADUS IN THE SURVEY: WHAT DO THEY LOOK LIKE, HOW WERE THEY BUILT, AND HOW ARE THEY USED?

In this section, we report some of the basic characteristics of the ADUs from the three cities and how their owners use them. Given that we only surveyed properties that had been granted ADU permits, most (77%) of our survey respondents reported having completed their ADUs, while 20% still had an ADU under construction, and the remainder had not yet begun construction. The ADU development and construction process was fresh in the minds of most of our respondents, since 87% had completed their project within the last five years and fully 27% had completed or were planning to complete theirs in 2017. (See Figure B1 in the Appendix B for the full breakdown by year completed.)

Physical characteristics

Most (67 percent) of the ADUs in our sample are detached from the main building on the property (Table 1). We believe this reflects the greater propensity for homeowners with detached ADUs to seek construction permits, given that their ADUs are more likely to attract attention from code enforcement. Among detached ADUs, by far the most common type is a freestanding cottage (56%), while most of the rest are freestanding garages (25%) or converted garages (18%). Among attached ADUs, by far the most common configuration is a converted basement (65%), perhaps because it tends to be comparatively inexpensive to execute.

ADU Type	Share
Detached	67%
Stand-alone detached unit	56%
Apartment above or beside a new freestanding garage	18%
Freestanding garage converted to an apartment	18%
Apartment above or beside an existing freestanding garage	7%
Other	33%
Attached	65%
Part or all of basement converted to an apartment	12%
Attached garage converted to an apartment	11%
Attached addition to house	9%
Rooms inside main part of house converted to an apartment	4%
Other	
Total	100%

Table 1. ADU types among survey respondents (n = 265)

Permit design restrictions did not allow me to add 200 additional square feet with additional garage space below despite having lot size and total developable square foot allowance on property - this would have helped the economics tremendously.
—Vancouver homeowner

I think laneway houses should only be considered where there is good public transit. My neighbourhood has that and so we don't have as many two and three car households.
—Vancouver homeowner

As is typical for ADUs in general, most of the units in our sample are quite small; the majority of the ADUs we sampled were one bedrooms (52%) and most of the rest efficiency units (29%). Only 19% have two or more bedrooms. Very few of the 244 respondents, 5%, reported having more than one bathroom. While units in the sample ranged from as small as 220 to as large as 1,575 square feet, for the most part they are clustered between those extremes, with an average reported size of 631 square feet and a standard deviation of 237 square feet. Almost all, or 97%, of the respondents reported that their units adhered to the full definition of an ADU by including kitchens.

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Most ADUs in the sample include at least some off-street parking spaces: 24% have one, 34% have two, and 17% have three or more. Only 12% of ADUs report including no off-street parking. Given the small sizes (detailed below) of ADU occupant households, these results suggest that it is unlikely that the recent wave of ADU construction in the three cities is materially contributing to on-street parking congestion.

Cost characteristics

The average ADU in our sample cost its owner approximately \$156,000 to build, albeit with a considerable standard deviation of approximately \$120,000.³⁵ This total cost figure varies considerably by city, with almost double the cost per square foot in Vancouver as in Portland, and Seattle in-between (Figure 5). These costs are comparable to the square foot costs for multifamily construction.³⁶ However, it should be noted that ADU costs do not generally include land costs, owner profit, or underground parking structures. They also have much lower carrying costs because the duration of construction is so much shorter.

Construction labor (33%) and materials (34%), which vary little by city, are the two biggest cost components of the average ADU project (Table 2), shares that are not terribly dissimilar from commercial-scale real estate developments. Architecture and engineering are a little on the high side at about 8%, though this is not surprising given that ADUs are small projects. City permits account for about 8%, and utility connections about 5% (slightly less in Vancouver). Thirteen percent of costs fall into the “other” category, likely due to variations in how respondents interpreted the various categories. On the whole, these figures suggest that the opportunity for cities to reduce costs is probably quite limited beyond further relaxing land use restrictions that inhibit certain efficient types of construction, such as taller ADUs. Permit and utility connection waivers might help on the margins, but according to our figures would not yield a radical reduction in costs in the average case.

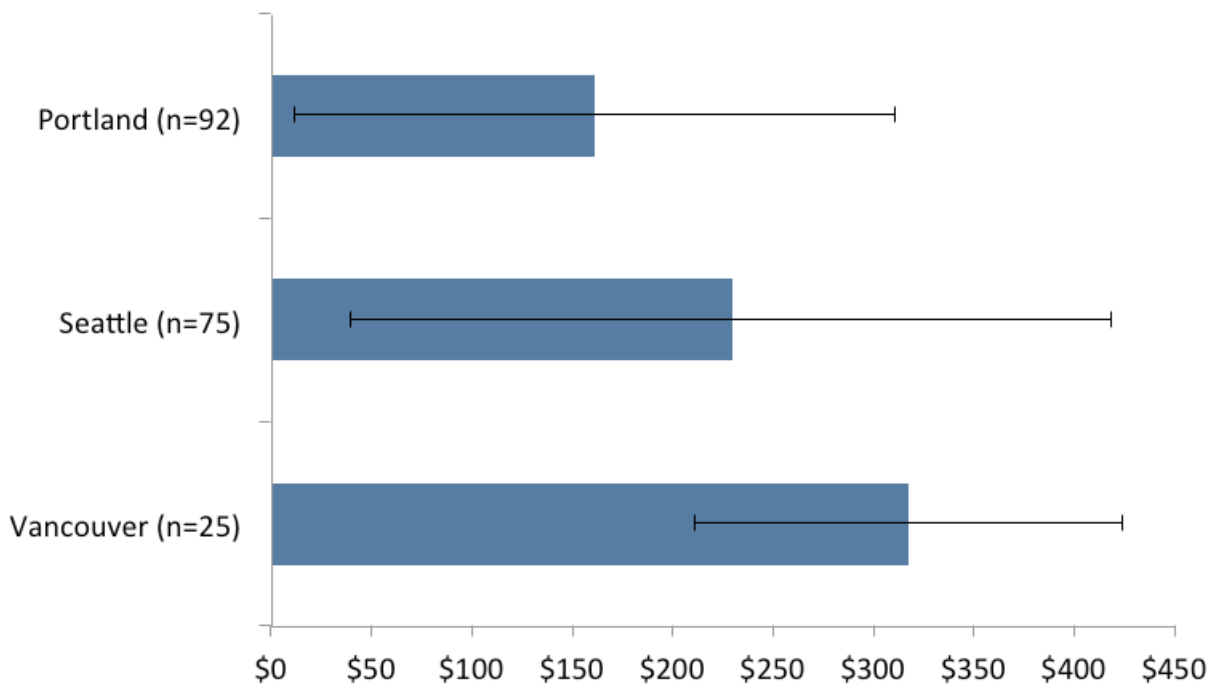


Figure 5. Reported Average ADU Project Cost Per Square Foot.
Note: error bars indicate one standard deviation above and below mean.

Development team composition

Respondents (n=203) reported a variety of project delivery mechanisms to get their ADUs constructed. A design-build contractor was used in 25% of cases, while a traditional architect-contractor team was more common (40%). In 16% of cases, only a contractor (not doing design work) was involved in the project—presumably stock plans were used in these circumstances. These results suggest that homeowners are using a variety of teams to meet their goals, which could include simplicity (design-build), thoroughness (architect-contractor), and desire to economize on design costs (contractor only), depending on homeowners' individual preferences.

This ADU was the first one for the builder so it was a learning process for all of us in various stages of ADU journey. (builder, site contractor, main home owners, and myself (a family member living in ADU).
 —Seattle homeowner

Current or intended use of the ADU

A majority (51%) of our respondents reported that their ADUs are used as a current or intended primary residence, with a further 9% reporting they are used as extra space for main house residents (Figure 6). Thus 60% of ADUs are or will be used for the purposes of permanent housing, as compared to 12% for short term rentals. Several respondents commented that the planned use of the ADU for rental income made it possible for them to purchase the entire property. Our data therefore do not support the argument, sometimes brought up during public debates, that increased ADU production will not contribute to long-term housing for local residents because they will mostly be used for tourist rentals.

"The cost of housing in Vancouver is astronomical. Most of the people that I know who have built laneway houses have done so to allow family members to have a place to live in the neighbourhood where they grew up."
 —Vancouver homeowner

Cost component share	Average share of project budget
Construction labor	33%
Construction materials	34%
Architecture & engineering	8%
City permits	8%
Utility connections	5%
All others	13%
Total	100%

Table 2. Components of Total ADU Project Cost (n=171)
 Note: Actual total of these reported components differs slightly from 100% due to rounding.

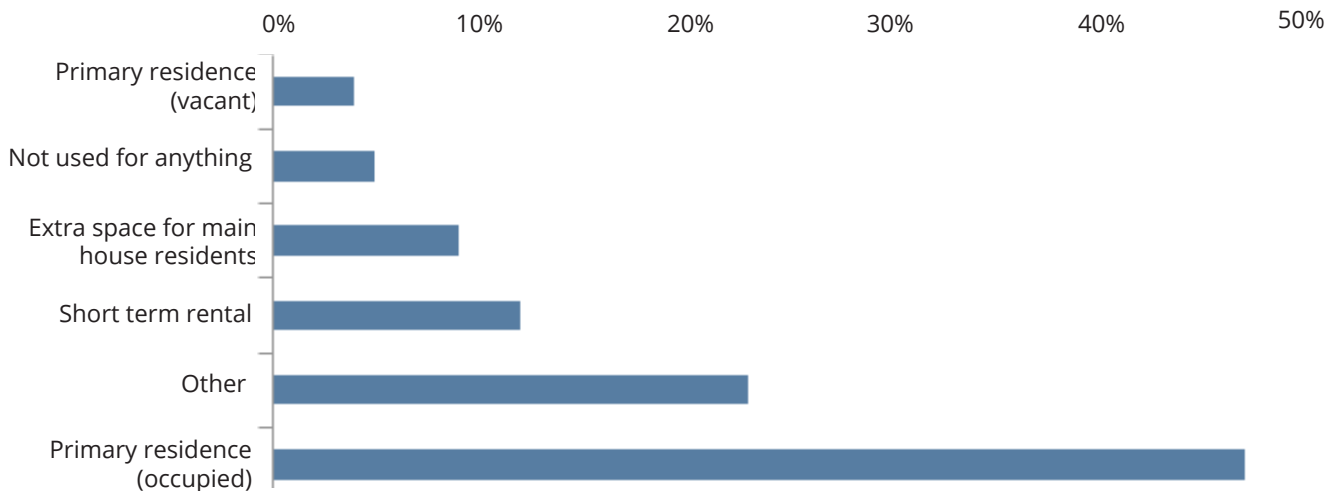
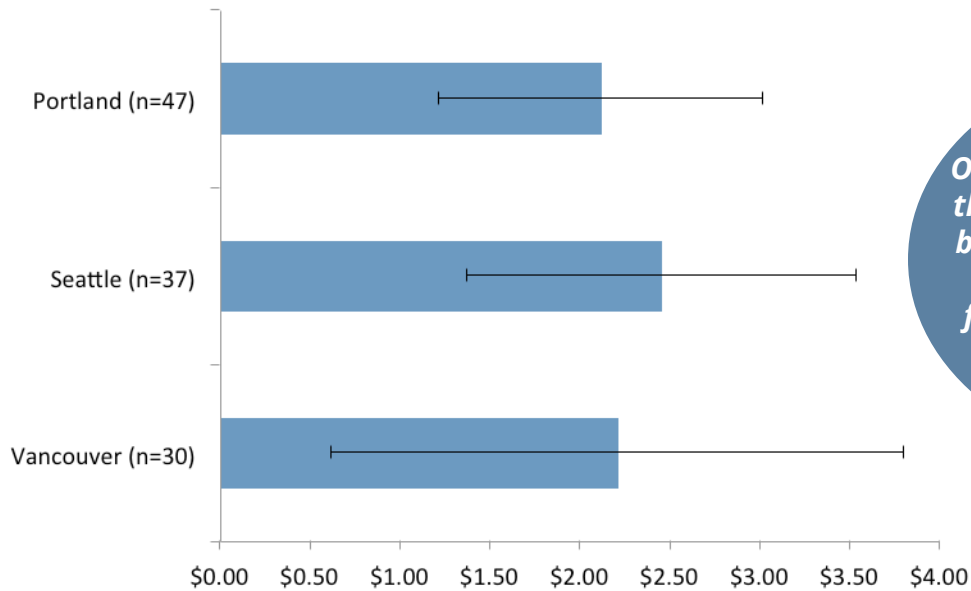


Figure 6. Current use of ADU (n=255).

Rental characteristics

The average ADU in our survey that was rented to a tenant garnered \$1,298 in monthly rent, with a considerable standard deviation of \$632. Surprisingly, the per-square foot rents do not differ significantly across the three cities (Figure 7). As is well-known from previous studies of ADUs, most ADU occupant households are small, consisting of either one person (57%) or two people (36%). Only 7% of cases have a different household composition.



Overall we are very happy that the city of Seattle allows ADUs both for financial reasons and for the fact that an elderly family member is able to live nearby.
—Seattle homeowner

Figure 7. Average Reported Monthly Rent, \$/square foot (leased ADUs).
Note: error bars indicate one standard deviation above and below mean.

In instances where there is someone living in the ADU, in a plurality of cases (46%) the ADU is rented by someone with an arms'-length relationship to the homeowner. Most of the remainder of cases consist of tenants that either receive or might be expected to receive favorable treatment from the landlord because of their relationship: a friend or family member staying for free (17%) or a friend or family member paying rent (12%).³⁷

The majority of ADUs rent for below market rates whether rented at arm's length or not, and thus may be considered a form of affordable housing. Overall, 58% of homeowners report renting below the market rate, with only about 40% of these ADUs occupied by family or friends.

Homeowners with ADUs rented to tenants reported increasing the rent only once every 24 months or less often (or never) in 30% of cases, while 40% reported increasing rent every 7 to 12 months. Thus, we see that depending on individual circumstances and specific landlords, in a substantial number of cases renting an ADU can be a bargain over time from the tenant's point of view.

We needed a housing option for my mother who is 68 now and in good health. Building an ADU was by far the least expensive option for us to own a dwelling for her. In addition, we've been surprised about the added benefits and flexibility the ADU has added.
—Portland homeowner

CHALLENGES AND OPPORTUNITIES

In this section we report on results from the survey that shed light on challenges and opportunities in ADU development.

Motivation for building ADUs

By far the two most common reasons respondents cited for deciding to build ADUs are extra income from a long-term rental (38%) and creating living space for a household member or helper (28%). Both short-term rentals and the desire for flexible future were cited at 11% apiece.³⁸ All other reasons add up to only 12%. Collectively, these results suggest that homeowners have a variety of motivations and that a substantial minority enter into the ADU development process with the expectation of the use of their ADUs changing over time. This suggests to us that public sector efforts to micromanage the uses in ADUs may be counterproductive for the goal of maximizing production.

The top three factors cited by respondents that led them to “pull the trigger” on initiating an ADU project (206 top three responses drawn from n=86 separate respondents) were, in descending order, easing of land use rules (42%), obtaining enough money to begin (19%), and learning about ADUs through an educational website, event, or tour (15%) (Figure 8). Among those who were asked a follow-up question after citing easing of land use rules as a factor (87 top three responses from n=42 separate respondents), by far the two most consequential were minimum lot size (n=37%) and allowable floor area (n=29%). Notably, it was in Seattle, which has yet to enact significant zoning reforms, that many respondents indicated a need to ease zoning rules.

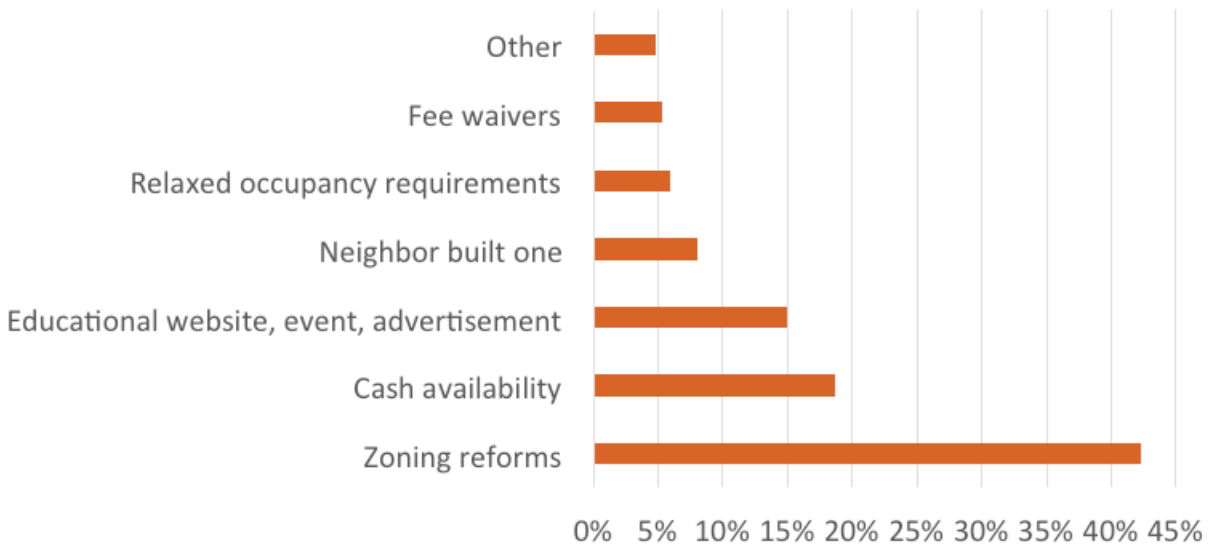


Figure 8. Most important factors leading to the decision to build an ADU.

These results suggest that, as suspected, the easing of some land use restrictions on ADUs in the three cities have done a great deal to motivate ADU production. Further easing could help still more, particularly with respect to minimum lot size and maximum ADU size. At least some of those concerned about obtaining enough money to begin an ADU project could be encouraged through innovative financing products (discussed further below). Finally, the fact that websites, events, and tours promoting ADUs were almost tied for second as a

We invited the neighbors to tour our ADU when finished.
—Seattle homeowner

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triggering factor for the ADU “build” decision suggests that these efforts have a high “bang for buck” ratio: they cost relatively little but can have a surprisingly large impact. Indeed, a prominent ADU builder and activist in Portland told us that promotional activities have been instrumental in accelerating ADU production in that city. Something as basic as informing members of the public that ADUs exist and that they are a viable option for many homeowners, it would seem, is surprisingly important.

Biggest challenges faced by homeowners who successfully built an ADU

Of all the mentions of challenges faced by survey respondents in developing their ADU (i.e. those challenges that appeared in the top 3), by far the most common were obtaining a loan (34% of mentions) and paying for the cost of construction (18%). Almost 5% of respondents were turned down for loan finance on their first attempt, though most were able to overcome this problem by turning to another financial institution or product. Though opportunities to reduce cost of construction through public policy may be limited, these results confirm that interventions in the lending market for ADUs may have a significant impact on increasing ADU production.

*I LOVE my ADU. All of my neighbors love it, too. It is very cute and fits right into its setting behind our 1916 house. I was the 83 person in Seattle to get the permit to build a Backyard Cottage . The Seattle guide to building a backyard cottage is a very good resource.
—Seattle homeowner*

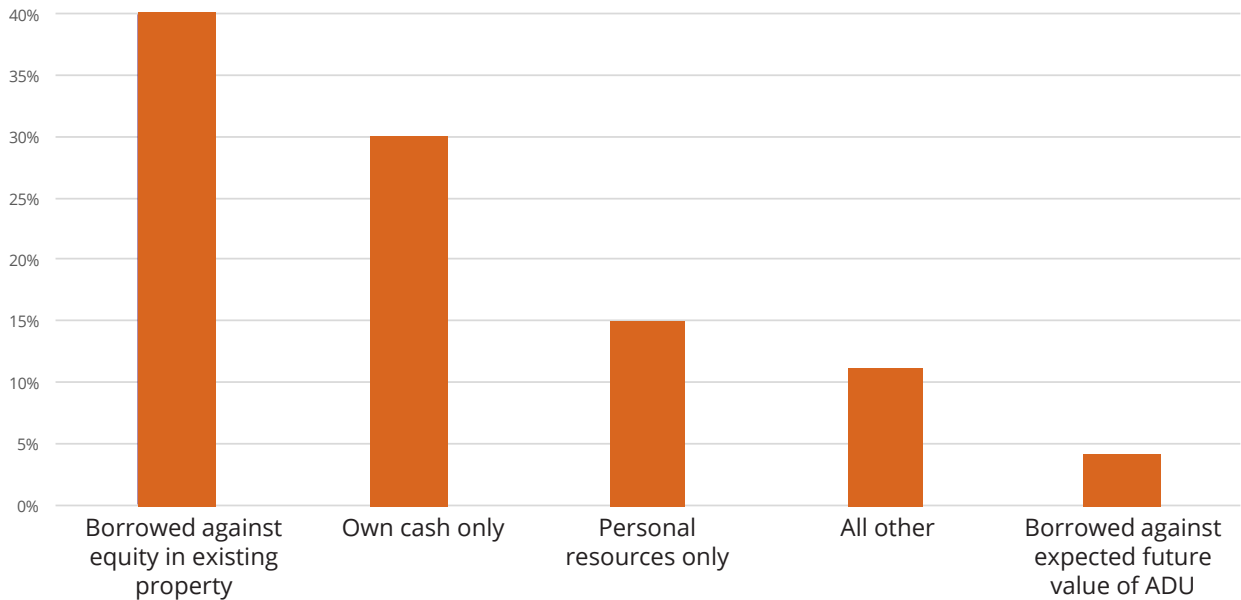


Figure 9. Source of Financing for ADU Development (n=210).

Note: Categories are mutually exclusive. "Borrowed against equity in existing property" and "Borrowed against expected future value of ADU" are sources of financing that in many cases were combined with other sources.

*It has been 15 years since we completed our ADU. I am disappointed in how it has affected the appraised value of our property. Appraisers can't find similar properties for comps and they do not consider the added value of the income in valuing the property.
—Portland homeowner*

Financing source

To finance their ADU project, 30% of respondents used only their own cash. An additional 15% drew entirely on other personal resources such as credit cards (Figure 9). Among the remainder, 40% of respondents reported borrowing against the existing equity in their property in some way, such as via a Home Equity Line of Credit (HELOC) or a cash-out refinance. A paltry 4% reported borrowing, at least in part, against the future expected value of the unbuilt ADU to help finance its construction.

These results are, to us, a strong indication of a market failure. The low development costs and comparatively high rents obtained by ADUs ought to make it possible, in many cases, for homeowners to borrow against the future value of an unbuilt ADU, but this does not appear to be happening often.

Of the lending on ADU projects that does occur, locally-focused lenders seem to be disproportionately important. Of the 91 respondents who reported getting a loan of some type and who indicated what type of institution made the loan, 60% reported borrowing either from a credit union or a local or regional bank. Only 34% reported receiving a loan from a national bank. This suggests that efforts to encourage or create innovative financing products to ease ADU financing might most productively focus on partnerships with locally-focused lending institutions that already understand the local real estate market in general and ADUs in particular. Indeed, our interviewees suggested that some local and regional lenders, such as Vancity in Vancouver and Umpqua Bank in Portland, have already been instrumental in innovating ADU lending programs and practices.

Financing is critical. With changing bank requirements for income, it seems anybody without a high-paying job is out of the running for an ADU. For example [t]he soon to retire or retired couple with a house almost paid off would not qualify for a refinance.

Neighbors! Many were supportive but a few objected to the city and made up spurious complaints which the city had to come out and inspect, though we were never cited as in violation of anything.
—Seattle homeowner

On the whole, I can see the value in work being inspected, but the permitting process isn't something I'd ever hope to go through again. Next time I build a small house it'll be on wheels.
—Seattle homeowner

Working with the City of Portland was a MAJOR pain. First acquiring information, then going through the multitude of steps. Information seemed to change as the project went along. It was SUPER frustrating.
—Portland homeowner

Permit problems and project duration

Only 19% of respondents (n=209) reported being turned down for a permit. By far the largest number of those—almost half—overcame the setback by making design changes. On the other hand, 70% of respondents (n=200) experienced unanticipated events that led to delays and cost increases to the project. The most common issues (n=139 reported issues from 133 separate responses) are issues with the permitting process (36%), poor professional assistance (22%), and existing infrastructural problems (16%). From this we surmise that most homeowners enter into the ADU permitting process with a high probability of ultimate success—with the possible exception of Seattle, where respondents detailed having to overcome a variety of challenges with permitting. However, anything that could make the permitting process more transparent and predictable would likely be helpful. Such efforts could arise either from within local government, or via technical assistance provided by outside entities, such as architectural design and project management services provided at low cost by students under faculty supervision at local universities.

Even with a large majority of respondents reporting delays, ADU projects are still strikingly fast when compared to other types of real estate development. multifamily development projects, for example, routinely take three or more years from conception to opening. The equivalent time span for our respondents for their ADU projects (n=197) was 18 months or less in 83% of cases, and six months or less in just under a quarter. These “lean” schedules are driven by short construction phases, which take less than a year in 83% of cases and less than six months in 45%. Efforts to reduce these time periods might, therefore, achieve comparably little. However, better predictability in the development and permitting process would probably be quite helpful in avoiding delays. After all, delays may not faze a professional developer but are often aggravating and discouraging for everyday homeowners seeking to add an ADU to their properties.

*I have discovered that our local building codes and inspection regime add significant cost without, in many cases, adding significant value in terms of function or safety.
—Seattle homeowner*

Desired resources for aiding ADU development

When asked what resources they wished they had had while developing their ADUs, respondents (n=157) gave a variety of answers. The following responses (aside from “not applicable”) accounted for at least 60% of the total: professionals with ADU knowledge (24%); an easy-to-understand and comprehensive guide through the entire process (20%); better assistance from city government (15%); and better financing options (10%). The first desired resource, professionals with ADU knowledge, ought to begin to resolve as ADU production spreads and increases. Easy-to-understand and comprehensive guides through the entire process would be relatively easy and comparatively cheap for cities to produce, requiring perhaps several thousand dollars. As discussed earlier, intervening in the market for financing ADUs would likely be highly productive, but also would require a great deal of effort and lie at least partly out of cities’ purview. Thus, among these responses, the city-produced guide to the ADU development process stands out as truly “low hanging fruit” for municipalities interested in boosting their ADU production.

CONCLUSION AND POLICY IMPLICATIONS

Despite the push for ADU reforms, prior to this study little was known about the extent to which they succeed at jumpstarting the ADU market. This survey of homeowners describes the unique role that ADUs play in hot housing markets, and how zoning reforms in particular have spurred construction. ADU owners in Portland, Seattle, and Vancouver value their ADUs as small and flexible spaces that can be built relatively quickly. Though built for a variety of purposes, the majority are actually affordable housing.

Three factors are key to the success of ADU implementation. First, in cities that have reformed their zoning regulations (particularly minimum lot size and floor area) production has jumped. Also important are minimizing design review and easing owner occupancy requirements. In general, homeowners appear to greatly value the ability to use an ADU flexibly—an ADU could be rented to a stranger today, used to house an aging parent tomorrow, and rented nightly to out-of-town visitors sometime later. For this reason, local governments need to resist the inevitable pressures to unduly restrict not only how they are built, but how they are used after they are built. If homeowners lack the confidence that a new ADU can be used in the way they see fit at the time they need it, fewer of them will commit the considerable financial and logistical resources to build one.

Second, waiving fees such as permit or utility connection fees can spur homeowners to build—but aside from such waivers it will be difficult to reduce construction costs for ADUs. ADUs are already likely the cheapest way to add housing units to a built-up neighborhood. This is not only because they are small, but also because they use a cheap, efficient form of construction, they can be built quickly, and, of course, because their land costs are zero.

Finally, cities that take steps to educate homeowners (for instance, via ADU manuals and prototype plans), as well as providing technical assistance, will likely see a payoff for relatively minimal cost and effort. A big part of winning hearts and minds in the battle for more ADUs is simply raising awareness. Local governments can play a catalytic role in publicizing the possibility for homeowners. Ideally, civil society groups will then pick up the mantle in promoting ADUs, advocating for better policies, and disseminating information that helps homeowners otherwise intimidated by the permitting, design, and construction processes. Along the way, the dominant narrative about ADUs can shift from their burdens and impacts to their benefits and even cultural cachet. We learned that this is exactly what has occurred in Portland over the past decade.

To date, no city has developed a comprehensive and fully effective approach to assisting homeowners with financing ADUs. As a result, aside from homebuilders, only the most affluent homeowners, who can tap into savings, are building ADUs. The robust growth in ADU construction seen in Portland and Vancouver and, to a lesser extent, Seattle, can accelerate further, reach a wider constituency, and spread to other large cities once new lending practices emerge that allow homeowners to borrow against the future value of the asset they seek to build on their own properties. These innovative financing models stand the best chance of success if local governments collaborate with lending institutions, particularly locally-focused ones such as credit unions, to bring them into being. If and when this “Holy Grail” of lending is achieved, the ADU market will truly be jumpstarted.

NOTES

1. In certain densely-built urban regions, such as Los Angeles, opportunities may exist to incrementally add ADU-like units to residential properties that already include more than one home, such as duplexes or triplexes. However, in the vast majority of the metropolitan areas of the United States, including in the Pacific Northwest cities that we study, most urban territory is zoned for single-family housing only. This means that most opportunities for adding ADUs will come from single-family lots, and that is what we focus on in this study.
2. Jonathan Woetzel, Jan Mischke, Shannon Peloquin, and Daniel Weisfield, "A Tool Kit to Close California's Housing Gap: 3.5 Million Homes by 2025," McKinsey Global Institute, 2016 (October); Jake Wegmann and Karen Chapple, "Hidden Density in Single-Family Neighborhoods: Backyard Cottages as an Equitable Smart Growth Strategy," *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, vol., 7 (2014), 307–329.
3. For a list of ordinances around the country, see <https://accessorydwellings.org/adu-regulations-by-city/>
4. For instance, in the year after Berkeley passed its ADU reforms, it received about a dozen applications for ADUs, up from about 5 per year.
5. Maurizio Antoninetti, 'The Difficult History of Ancillary Units: The Obstacles and Potential Opportunities to Increase the Heterogeneity of Neighborhoods and the Flexibility of Households in the United States', *Journal of Housing For the Elderly*, 22.4 (2008), 348–75 <<https://doi.org/10.1080/02763890802458320>>.
6. Margaret F. Brinig and Nicole Stelle Garnett, *A Room of One's Own? Accessory Dwelling Unit Reforms and Local Parochialism* (Rochester, NY: Social Science Research Network, 29 May 2013) <<http://papers.ssrn.com/abstract=2271781>> [accessed 17 September 2016].
7. Karen Chapple, Jake Wegmann, Alison Nemirow, and Colin Dentel-Post, "Yes in My Backyard: Mobilizing the Market for Secondary Units," 2012, Center for Community Innovation (UC Berkeley), <http://communityinnovation.berkeley.edu/reports/secondary-units.pdf>.
8. *The Alley Flat Initiative*, Working Paper Series (University of Texas Center of Sustainable Development, July 2008) <<http://251.sustainablesources.com/alleyflat2016demo/af-content/uploads/2016/02/AFI-SOA-2008-report.pdf>>.
9. Rodney L. Cobb and Scott Dvorak, "Accessory Dwelling Units: Model State Act and Local Ordinance," *AARP*, 2000 <http://www.aarp.org/home-garden/housing/info-2000/accessory_dwelling_units__model_state_act_and_local_ordinance.html> [accessed 18 September 2016].
10. Jake Wegmann, "Financing Ancillary Apartments on Residential Properties: Challenges and Solutions," August 2015, Institute for Governmental Studies (UC Berkeley), https://igs.berkeley.edu/sites/default/files/2015_housing_research_brief_8-25-15.pdf. Gerald E. Buker, "A Study of Backyard Cottage Policy in Seattle, Washington: Existing Conditions Study, Capacity Analysis, and Survey in Conjunction with Seattle's Department of Planning and Development" (unpublished Master's thesis, University of Washington, 2015) <<http://search.proquest.com/docview/1730399825/abstract/F0F707FF859E4EBAPQ/1>> [accessed 23 September 2016].
11. Martin John Brown and Jordan Palmeri, *Accessory Dwelling Units in Portland, Oregon: Evaluation and Interpretation of a Survey of ADU Owners* (State of Oregon, Department of Environmental Quality, 1 June 2014), pp. 1–47 <<https://accessorydwellings.files.wordpress.com/2014/06/adusurveyinterpret.pdf>> [accessed 17 September 2016].
12. *The Alley Flat Initiative*, Working Paper Series (University of Texas Center of Sustainable Development, July 2008) <<http://251.sustainablesources.com/alleyflat2016demo/af-content/uploads/2016/02/AFI-SOA-2008-report.pdf>>.
13. Martin John Brown and Taylor Watkins, 'Understanding and Appraising Properties with Accessory Dwelling Units', *Appraisal Journal*, 80.4 (2012), 297.

14. Brown and Palmeri, op. cit.
15. Alison Steele, *2014-Innovation-and-Practice-in-House-Design-Research-Grant-3-8-15.pdf*, 2014 <<http://251.sustainablesources.com/alleyflat2016demo/af-content/uploads/2016/02/2014-Innovation-and-Practice-in-House-Design-Research-Grant-3-8-15.pdf>> [accessed 4 November 2016].
16. Canada Mortgage and Housing Corporation, *Accessory Apartments: Characteristics, Issues, Opportunities* (Ottawa, Canada: CMHC, 1990).
17. Canada Mortgage and Housing Corporation, "Research Highlight: Literature Review and Case Studies of Local Jurisdictions that Permit Secondary Suites," (Ottawa, Canada: CMHC, 2015).
18. Ibid.
19. Steele, op. cit.
20. Chapple et al. 2012, op. cit.
21. See <https://www.habitatmontereybay.com/own-a-home> and <http://www.santacruzsentinel.com/article/NE/20160210/NEWS/160219960>
22. Jake Wegmann, and Alison Nemirow, *Secondary units and urban infill: a literature review*, Working Paper (Berkeley, CA: Institute of Urban and Regional Development, 2011).
23. Home Builders Association of Metropolitan Portland, System Development Charges. Accessed April 6, 2017 at <http://hbapdx.org/advocacy/system-development-charges/>
24. Notably, the website <http://www.accessorydwellings.org/>, which provides a central repository of information to navigate the ADU production process, was created and is still maintained by volunteers in Portland.
25. Brown and Palmieri, op. cit.
26. These are under consideration but not yet approved.
27. "The Role of Secondary Suites: Rental Housing Strategy Study 4," December 2009, Social Developing-Housing Policy, Community Services Group, City of Vancouver, <http://vancouver.ca/docs/policy/housing-secondary-suites.pdf>.
28. Figures provided by Heather Burpee, City of Vancouver.
29. Portland ADU permit figures from "The Ascent of ADUs in Portland," February 27, 2017, accessorydwellings.org (URL <https://accessorydwellings.org/2017/02/27/the-ascension-of-adus-in-portland/>). Seattle and Vancouver ADU permit figures obtained from staff from each city. Note that Vancouver figures are likely an undercount as they only include laneway houses and infill homes (ADU-like units allowed on certain properties as part of a historic preservation strategy), and do not include secondary suites, for which annual issued permits totals are not maintained by the city. Overall Portland and Seattle building permit figures are from the Building Permits Survey of the US Census. Vancouver overall building permit figures are from BC (British Columbia) Stats.
30. Between 2011 and 2017, housing prices have increased by 42% in Salt Lake City, from \$193,758 to \$259,908, while in Austin, prices have increased by 56%, from \$198,950 to \$310,850 (in 2017 dollars), compared to a nationwide average increase of 25%. Sources: ZHVI All Homes (SFR, Condo, Co-op) Time Series (\$), <https://www.zillow.com/research/data/#median-home-value>
31. "Accessory Dwelling Units Amendment." Salt Lake City Planning Division. <http://www.slcgov.com/sites/default/files/documents/planning/2016/ADU%20Initiative.pdf>
32. Additionally, zoning changes will be necessary because ADUs are actually prohibited in most areas of the city. See "Growing SLC: A Five Year Housing Plan: 2017-2021." Salt Lake City Housing and Neighborhood Development. Draft February 2017. http://www.slcdocs.com/hand/Housing_plan_short.pdf
33. About 35% of respondents neglected to enter the survey ID that allowed us to identify their home city, making it challenging to determine response rate by city. We were not able to determine the distribution of these respondents, so in estimating the response rate, we assumed that the distribution of these respondents with unknown geographies was the same as those with known geographies.

34. Most (80%) of the incomplete surveys came from respondents with unknown geographies.
35. Because the economies of the US and Canada are so similar and intertwined, and because their respective currencies have at times been at parity, in this report we simply lump US and Canadian dollar figures together for simplicity and ease of comparison. See Ryan Macdonald, "Do Relative Canada/U.S. (United States) Prices Equate to the Exchange Rate?," January 2012, Statistics Canada, Economic Insights No. 003, Catalogue no. 11-626-X.
36. Source: RS Means, <http://learn.rsmeans.com/rsmeans/models>
37. Although the survey did not ask about situations in which the main house is rented and the ADU is occupied by the landlord, several respondents volunteered that this was their situation.
38. Several respondents noted in the comments that they rent via Airbnb, but did not select the short-term rental response option because they did not realize it was the same thing. Thus, the 12% figure may be a slight underestimate.

APPENDIX A: ADU REGULATIONS

ADU Criteria across the Pacific Northwest

ADU Criteria	Portland	Seattle	Vancouver
Detached allowed?	Y	Y	Y
Attached allowed?	Y	Y	N/A
Both Allowed? (2 per lot?)	N	N	N
Minimum lot size (Sq. ft.) - Interior	N/A	Y	Y
Minimum lot size (Sq. ft.) - Corner	N/A	N/A	N/A
Setbacks	Y	Y	Y
Number parking spots required	N	1	N/A
Tandem parking allowed?	N/A	Y	N/A
Covered parking?	N/A	N/A	N/A
Parking waiver?	N/A	Y	N/A
Owner-occupancy requirement	N/A	Y	N/A
Maximum size Sq. ft. (detached)	Y	Y	Y
Maximum size Sq. ft. (attached)	Y	Y	N/A
Separate metering requirement?	N	N	N
Height limit	Y	Y	Y

Sources: Bureau of Development Services Program Guide: Accessory Dwelling Units; Portland Title 33, Planning and Zoning Chapter 33.205 Accessory Dwelling Units; Seattle Government Municipal Code; Removing Barriers to Backyard Cottages; Accessory Dwelling Unit (Mother-in-Law Apartment); City of Vancouver Land Use and Development Policies and Guidelines: Laneway House (LWH) Guidelines; City of Vancouver Bylaws: Zoning Section 2 Definitions; City of Vancouver Bylaws: Zoning Section 10 General Regulations; City of Vancouver Bylaws: Zoning Section II Additional Regulations.

APPENDIX B: SURVEY METHODOLOGY

Compiling addresses of ADUs

Portland

Portland did not have a complete list of addresses with ADUs. However, there is an online database of building permits issued as far back as 2000. This provided a substantial share of the city's total permitted ADUs as they were only legalized a few years earlier. (Our interviewees told us that permit issuances were far lower in the earliest years.) This database allowed us to select building permits issued for ADUs since 2000. We found 1,569 addresses with ADU permits.

Seattle

Seattle also did not have a complete list of addresses with ADUs. However, the city released a report about backyard cottages that has addresses of homes with backyard cottages that received permits from 2011 to 2014. In addition, the city has a similar online database to Portland's from which we were able to get building permits issued for any type of ADU from 2012 to November 2016. We put these samples together and removed the duplicate addresses. This led us to have a total sample frame of 426 addresses with ADUs from Seattle.

Vancouver

City staff from Vancouver sent us a list of all ADUs permitted between 2011 and 2015, separating them into a list of addresses for secondary suites (attached ADUs) and a list of addresses for laneway homes (detached ADUs). There were 1,371 laneway suites and 2,573 secondary suites. In Vancouver, laneway homes are given a separate address from the main house, rather than being called "unit b" or something similar, as was the case for ADUs in Portland and Seattle. We were able, however, to find the main house addresses for these secondary suites. Additionally, in Vancouver it is possible to have one of each type of ADU, laneway house and secondary suite, on the same residential property, so some addresses have both a laneway home and secondary suite. Thus, we created a list of 423 addresses with both a laneway home and secondary suite, 2,158 homes with only a secondary suite and 922 homes with only a laneway suite.

Creating samples

After compiling the addresses for the cities, we had to create samples. Wanting to get a consistent number of results among the cities, we decided to send equally sized samples to each city. Our budget allowed us to send postcards to more addresses than we had for Seattle, so we decided to send postcards to every address we had for Seattle — 426 — and to then send an equal number of postcards to Vancouver and Portland. This allowed us to send 713 postcards to each of those two cities. Given the unique conditions of the data for each city, we were able to stratify our samples somewhat. Portland offered an interesting split of permitting in early 2010 when the city decided to waive many of the development fees. Thus, we took two samples of addresses: i) up to and including March 2010 and ii) those from April 2010 and later. There were only 344 total addresses from the earlier time period, which is less than the 713 postcards we could send, so we sent postcards to all of those addresses and sent slightly more, 369, to the addresses that got permits in April 2010 and later. Finally, we did a similar split for Vancouver, sending about a third of the 713 postcards each to the three groups of addresses we made. So, we sent 238 postcards to addresses with only a secondary suite, 238 postcards to addresses with only a laneway house, and 237 postcards to addresses with both.

For the sake of simplicity in keeping track of these addresses, we issued each address a four-digit ID number with the first digit corresponding to the city. Survey respondents were asked to enter their code when taking the survey. This allowed us to remove the addresses whose occupants had already responded to the online survey from the second and third mailings of postcards.

Sending the postcards

With the samples in place, we sent out the postcards in three rounds: from December 2016 to January 2017 in Portland and Seattle, and January to February 2017 in Vancouver. Postcards were addressed to the ADU Homeowner.

Returned postcards

Approximately 8% (148) of the postcards were undeliverable. These were evenly distributed between Portland and Seattle. Just one postcard was returned from Vancouver, but this low total may be due to policies that limit returns across international borders. In Seattle, 1/3 were returned and most of the remainder because there was “no such number.” In Portland, 20% were vacant, almost 30% were “no such number,” and the remainder were “undeliverable as addressed.” These delivery problems may have occurred at addresses where the permitted ADUs had never actually been built. To calculate the response rate, we subtracted the returned postcards from the denominator.

Responses by year completed

Figure B1. Number of Responses by Year ADU Completed, All Three Cities (n=215).

