Character-Compatible, Space-Efficient Housing Options for Single-Dwelling Neighborhoods

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TRANSPORTATION AND GROWTH MANAGEMENT

DEQ

State of Oregon
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1. Executive Summary

The housing types described in this report support higher population densities in single-family neighborhoods in ways that maintain neighborhood character and increase housing options. The housing types studied include:

- Cottage clusters
- Internal division of larger homes
- Corner duplexes
- Accessory dwelling units

In Oregon, urban populations are growing, household sizes are shrinking, and housing prices are rising.[1] Pressures to expand urban growth boundaries in some areas are balanced by efforts to reduce carbon impacts from the housing and transportation sectors. Single-family zoning is still a dominant land use in most Oregon cities. In fact, within the Portland Metro urban growth boundary, single-dwelling residential zones make up 48% of all land area and 77% of all land area currently zoned for housing.[2] As Oregon cities grow, it is anticipated that smaller housing options, such as those outlined in this report, will grow in importance for single-dwelling residential zones.

These traditional housing types have been selected specifically for their small size and ability to nestle discreetly and compatibly within existing neighborhoods of detached, single-unit homes.

Many Oregon communities have already experimented with legalizing one or more of these housing types, or re-legalizing where once allowed. This report provides case studies, analyzes codes, and recommends best practices.

General recommendations across all four housing types

- Allow by-right or through a simple land use process;
- Allow in all single-dwelling zones;
- Minimize off-street parking requirements;
- Customize use restrictions and design compatibility requirements (if any) based on local priorities and concerns;
- Balance regulatory restrictions against desired housing production levels; and
- Periodically review and update regulations based on actual production levels and community feedback (positive and negative) from completed projects.

Cottage Clusters

- Couple density bonuses (up to 2x) with home size caps;
- Avoid minimum lot size requirements for the entire cluster and for individual lots within it;

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[1] Risa Proehl, "Who's Home? – A Look at Households and Housing in Oregon" (Population Research Center, Portland State University, September 2011).

[2] Metro Data Resource Center, Regional Land Information System (RLIS), *http://www.oregonmetro.gov/rlis-live* (accessed December 2015).

- Support community-oriented site plans (e.g., homes fronting on shared central courtyard; vehicle access and parking at periphery) with flexible subdivision regulations or by allowing multiple homes on a single lot through a discretionary review (e.g., planned development) process; and
- Balance strictness of layout and design requirements with the demands of neighborhood compatibility and the flexibility required by the market to see cottage cluster provisions get used in practice.

Internal Division of Larger Homes

- Expand application of provisions currently applied to historically-designated homes to any older home exhibiting key characteristics (quality materials, neighborhood character); and
- Expand or drop zoning code definitions of "household."

Corner Duplexes

- Allow attached housing and increased density (up to 2x) on corner lots;
- Consider individual or combined size limits on new corner duplex homes so their collective massing is similar to that of a single large house; and
- Provide the option of subdividing corner lots with duplexes into two fee-simple lots.

Accessory Dwelling Units (ADUs)

- Avoid owner-occupancy and special use requirements (e.g., restrictions on home-based businesses, affordable housing deed restrictions, short term housing*);
- Ensure that resulting property tax increases, if any, are not so large as to serve as a deterrent to building;
- Consider allowing both a detached and an attached ADU on the same lot; and
- Provide more flexibility in size, allowing for both very small and larger ADU types.

  * A 2013 study by sponsored by Oregon Department of Environmental Quality found that just 5% of ADUs were used as short-term rentals.[3] Both the short-term rental market and ADU market have evolved since then, however, and more recent data are not yet available. Such data could be helpful for cities to determine the appropriateness of regulating this use.

[3] Martin Brown, "Accessory Dwelling Units in Portland, OR: Evaluation and interpretation of a survey of ADU owners" (Oregon Department of Environmental Quality, June 2014).

2. INTRODUCTION AND PURPOSE

Intended or not, many zoning codes in Oregon tend to encourage the development of large, detached homes in residential neighborhoods to the exclusion of anything else. Research by the Oregon Department of Environmental Quality (DEQ) found that building smaller homes was among the best practices to reduce the lifetime carbon and energy impacts of single-dwelling housing.[4] When combined with an appropriate mix of uses, denser housing configurations also support more walkable and less auto-oriented communities.[5] Demographers expect the trend towards smaller households to continue, and many parts of Oregon are experiencing a critical lack of affordable housing. Collectively, these observations motivate research into space-efficient housing models, and methods of supporting their production.

This report showcases local development codes that expand housing choices in single-dwelling neighborhoods. Specifically, it examines zoning codes that support these four housing types:

- Cottage clusters
- Internal division of larger houses
- Corner duplexes
- Accessory dwelling units (also known as secondary dwelling units)

There can be cross-over in how zoning codes define and regulate these housing types. For instance, corner duplexes can be created through internal divisions of older homes or by adding ADUs to existing homes at corner locations. Rules requiring corner duplex units to visually match and to have front doors facing different streets are also commonly found in ADU regulations. And similar trade-offs between density bonus and home size cap can be found both in cottage cluster and corner duplex regulations.

Although historic examples of each of these housing types can be found in communities throughout Oregon, they are sometimes challenging or illegal to build under current municipal zoning codes. This report interweaves case studies from across Oregon, examples of supportive or limiting code language, feedback from developers and residents, and best practice recommendations.

Transportation and Land Use Planning

The State of Oregon's Transportation and Growth Management Program (TGM), a partnership between the Department of Land Conservation and Development (DLCD) and the Oregon Department of Transportation (ODOT), supports communities across the state in their planning efforts to expand transportation options for people and promote efficient use of urban land in order to create vibrant urban areas and protect Oregon's farm and forest lands.
TGM assists communities by publishing the Model Development Code for Small Cities and providing technical assistance to local jurisdictions. The Model Development Code is primarily used by cities of fewer than 25,000 people, but also serves as a menu of options for larger ones. This report bridges DEQ research with case studies and municipal code examples to support TGM's future Model Development Code updates and thereby expand the pallet of housing options available in residential zones.

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[4] Jordan Palmeri, "A Life Cycle Approach to Prioritizing Methods of Preventing Waste from the Residential Construction Sector in the State of Oregon" (Oregon Department of Environmental Quality, September 2010).

[5] *Smart Development Code Handbook* (Transportation and Growth Management Program, Oregon Department of Land Conservation & Development and Oregon Department of Transportation), August 1997.

Single-Dwelling vs. Multi-Dwelling Zones

Each of the four housing types featured in this report can be built today by-right in most multi-dwelling zones. In fact, many of them were common practice before single-dwelling zoning was widely introduced to Oregon municipalities and counties in the late 1950s or, in some communities, before zoning codes were first adopted.[6] However, multi-dwelling zones make up a much smaller portion of zoned acres in most Oregon cities. For example, for the 25 cities in the Portland Metro Urban Growth Boundary, single-dwelling residential zones occupy 48% of all land area and 77% of all land area currently zoned for housing.[7] Therefore, Oregon municipalities have two primary strategies available for supporting the development of smaller, less expensive homes. They can:

1. Designate more land area for multi-dwelling development, and/or
2. Create additional flexibility within single-dwelling zones.

Both approaches are important. This report focuses on the second strategy, in recognition of the enduring popularity of single-dwelling zoning and the associated political challenge of the first approach. The other reason for focusing on options for single-dwelling zones is that it takes particularly careful and creative code writing, as well as regard for neighborhood concerns, to successfully (re)introduce these housing types into existing neighborhoods while maintaining neighborhood character. If cities want to boost density within neighborhoods, it is wise to study and learn from past efforts. This report attempts this for these four housing types.

[6] Interview with Steve Dotterer, November 12, 2015; and Lloyd T. Keefe, "History of Zoning in Portland, 1918 to 1959" (City of Portland, Bureau of Planning, 1975).

[7] Metro Data Resource Center, Regional Land Information System (RLIS).

3. COTTAGE CLUSTERS

Cottage clusters are groups of relatively small homes, typically oriented around a shared common space, such as a courtyard, garden, quiet street, or alleyway. They can be found in urban, suburban, or rural areas, and range in site area and number of dwellings. As architect Ross Chapin, architect and developer of many clustered residential developments, puts it, cottage clusters are designed around peoples' natural "scale of sociability."

As home sizes decrease, the importance of site and building design arguably increase. To support community interactions, provide essential buffer areas between private and public spaces, and ensure they fit in well with the surrounding neighborhood, successful cottage cluster developments rely on design and density strategies that are quite different from patterns found in typical single-dwelling developments.

Third Street Cottages in Langley, WA, is a community of eight detached cottages located on four standard single-dwelling lots, oriented around a shared commons building and tool shed.
(Photo courtesy of Third Street Cottages and Ross Chapin Architects.)

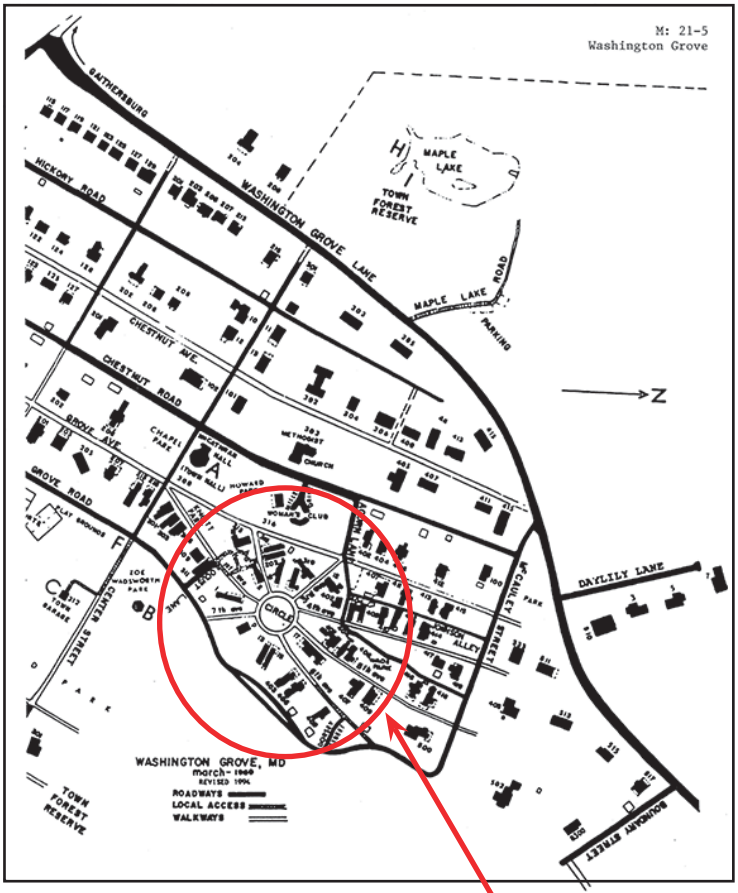
Cottage Cluster Characteristics

Cottage Clusters – Typical Characteristics	
Form	
	• 4-14 detached homes situated around shared open space
	• Home sizes under 1,000-1,200 square feet
	• Recently built cottage clusters often feature deep porches, kitchens facing courtyards, and bedrooms tucked in the back or upstairs. Older examples of the form may have some or none of these design elements.
	• Similar configurations with attached homes may be also called courtyard apartments
	• Parking is either not required on-site or located along the site perimeter
Ownership	
	• Fee simple lots (Case Study: Wyers End)
	• Single-lot Planned Development with condominium ownership (Case Study: Cully Grove)
Density	
	• Varies; up to 225% of single-dwelling densities

History & Regulatory Context

Precedents for small homes clustered around common spaces go back as long as people have been building homes. Early examples of recognizable cottage clusters in the United States find roots in Methodist and other camp meetings from the early 1800s that grew over time into permanent housing developments. One such community that still exists is Washington Grove in Montgomery County, MD, a mostly car-free neighborhood of small, ornate homes, anchored by a cluster of "Cottages in a Circle" around a common green.

A more recent form of cottage cluster housing is the Bungalow Court, which was introduced in Pasadena, CA, in 1909 as a collection of small, inexpensive, detached single family homes around a central garden courtyard.[8] These are quite similar to the courtyard clusters found in Salem (see the Catterlin Cottages case study) and other Oregon cities, mostly built before single-dwelling zoning was widely introduced in the 1950s. Minimum lot sizes and one-house-per-lot requirements, which figured prominently into this new approach to residential zoning, were (and still are) largely incompatible with cottage cluster housing. Couple in the growth of average home sizes and increase in home ownership rates[9] following World War II, and it's easy to see why construction of new cottage clusters ceased - even as pre-existing examples of this housing form continued to provide small, affordable housing options amidst larger and more expensive homes built in the latter half of the century.



Washington Grove, Montgomery County, MD.
(Images courtesy of the Maryland Historical Trust.)

[8] James Curtis and Larry Ford, "Bungalow Courts in San Diego: Monitoring a Sense of Place," *Journal of San Diego History*, Spring 1988.

[9] James Pollock, "Long-term home ownership trends: The US, England, and Canada," *Housing Finance International*, March 2014.

Cottage clusters on Cottage Street NE, Salem, OR.
(Photos courtesy of TGM.)

More recently, cottage housing codes crafted in the 1990s and 2000s were introduced to support housing diversity and affordability on infill sites in single-dwelling zones, primarily aimed at one- and two-person households. In 1995, the City of Langley, WA, working to meet the State of Washington Growth Management Act's urban growth and housing goals, adopted the Cottage Housing Development code provision, the first of its kind to be implemented in the Pacific Northwest. Architect Ross Chapin, who was instrumental in creating this Langley code, has since designed and/or developed a number of cottage cluster communities across the country. He often works with local jurisdictions to adopt supportive zoning code regulations as a necessary precedent to constructing cottage cluster developments (See Wyers End case study in White Salmon, WA).

Code Elements

Cottage cluster codes depart in multiple ways from typical single-dwelling zone standards, as summarized below:

Attribute	Typical Single-Dwelling Zones	Cottage Clusters
Density	3,100 – 10,000 square-foot lot / unit	Can double densities found in single-dwelling zones
Home size	Median size of new U.S. home in 2014 was 2,506 sf[10]	Up to 1,200 sf (and ≤1,000 more typical)
Height	Typically 1-3 stories	Typically 1-1.5 stories
Development size	Varies widely	Typically 4-12 homes; larger communities may have more homes around two or more courtyards on the same or contiguous plots of land
Orientation	Facing a public street or road	Dwellings are oriented toward a common green, courtyard, or other central feature
Common buildings	Rare	May include shared common buildings for meals, guest accommodations, and/or social gatherings
Parking	Street-facing garage or carport houses one to two vehicles	Parking is located on the edge of the property, or no parking is provided/required

[10] *http://www.census.gov/construction/chars/highlights.html*

Attribute	Typical Single-Dwelling Zones	Cottage Clusters
Location	Allowed in any residentially zoned area, regardless of lot size	Sometimes limited to specific overlay zones and/or properties over a minimum size

For the purpose of this study, the key elements of cottage cluster codes are:

1. Home size caps in exchange for density bonuses
2. Relaxed off-street parking requirements

In addition, design requirements are often included to ensure a threshold level of community-oriented design (e.g., covered front porches, homes fronting on shared central courtyard, vehicle access and parking at periphery) and compatibility with neighborhood context. Sometimes codifying design expectations makes adoption of new codes more politically feasible, even if developers might have incorporated them into their projects regardless.

Yet, the cottage cluster regulations uncovered while researching this report were often used just once, when used at all. Since projects built using these codes were quite well received by residents and the surrounding community, it raises the question of whether standard cottage cluster codes might be stricter than they need to be. With so few new built examples, particularly of cottage cluster communities that weren't well received, there are insufficient data to get definitive answers. But it is possible to itemize key features of cottage cluster codes and suggest how they might be adjusted to try and increase production rates of this housing type while still fitting in nicely to existing neighborhoods.

Jurisdictions wanting to see broader use of this model could experiment by:

- Increasing the density bonus and/or the home size cap; and
- Relaxing or removing code requirements (e.g., minimum front porch sizes, requirements that homes be oriented towards central courtyards, parking location standards) geared towards community-oriented design that are helpful for neighborhood compatibility, but not essential to respond to the demand for smaller, more affordable, and environmentally-friendly housing choices.

Summarized below are some common code provisions, and how they may influence the likelihood that cottage clusters will be developed in a particular jurisdiction:

Provision Type	Supportive Codes	Limiting Codes
Density	• Provide density bonus in exchange for unit size caps	• Offer no increase in density
Ownership	• Allow property to be divided into fee-simple lots or have multiple homes on a single lot (that could be rented out or sold as condominiums)	• Require whole cluster to be on a single tax lot, or • Require the creation of multiple lots through a subdivision
Eligible Properties	• Establish overall site size minimums (~6,000 sf) that allow for small, infill clusters • Allow outright in all residential zones	• Establish large lot size minimums (e.g., 21,000 sf) for cottage clusters that rule out many possible development sites • Allow only in a special overlay district or in particular residential zones
Site Features	• Allow building coverage to exceed single-unit dwelling requirement	• Expand side/rear setbacks and building separation requirements • Require inclusion of a "Common house" and other common amenities (e.g., fire pit, etc.)

Provision Type	Supportive Codes	Limiting Codes
Homes	• Allow a range of sizes (e.g., 600 sf – Wyers End; 1,200 sf - Commons at NW Crossing) • Allow both attached and detached homes	• Establish specific building and design requirements, such as porches, height limits, trim, eaves, and other features • Require design review*
Off-Street Parking	• Minimize or waive off-street parking requirements for clusters near frequent transit • Allow on-site parking to be clustered along the edge of property	• Require one or more off-street parking spaces per home
Standard Provisions	• Common open space requirement • Require design review, conditional use, or other discretionary review (true for all cottage cluster codes examined for this report). However, codes could be written to allow clustered housing by right.	

* Note the discussion in Recommendations, below, regarding design requirements.

Recommendations

(1) Couple Density Bonuses with Home Size Caps

It is critical to the success of cottage cluster codes that density bonuses and home size caps go hand-in-hand. Without a density bonus, developers have no financial incentive to opt in to home size limits. With a suitable density bonus, builders can spread the fixed cost of land across more units, allowing them to build smaller homes *and* compete successfully with land buyers who would construct larger homes.

(2) Avoid Minimum Individual Lot Size Requirements

Some jurisdictions set minimum sizes for individual cottage cluster home lots as high as 2,100 square feet. Such a standard could hinder the development of compact home clusters, especially in inner, higher-density residential and mixed-use neighborhoods. Cities could consider leaving out lot size minimums all together, relying instead on compliance with all other appropriate standards to ensure good design and neighborhood compatibility.

(3) Support Community-Oriented Site Plans with Flexible Subdivision or Planned Development Rules

Cottage cluster codes support community-oriented site layouts, particularly for deep lots large enough to accommodate multiple homes. By defining courtyards or common greens as streets (Portland, OR), or by allowing multiple homes on a single lot through a planned development process, cities can legalize a path for developers to orient homes to a central garden, lawn, or other active space rather than a paved central parking area or public street. Although such code provisions support nice site plan designs, they do not encourage the cottage development to be any denser than other residential development allowed in the zone. Without an accompanying density bonus, there's no reason to expect homes in these developments will be smaller than average.

(4) Strike a Balance with Design Requirements

Those cottage cluster codes adopted thus far have tended to have fairly strict design and site layout requirements. Such requirements may have been written for a particular project or to

respond to concerns expressed by neighbors. They may turn out to be insufficiently flexible to accommodate cottage developments on properties elsewhere in the jurisdiction, each with its own unique characteristics. In some cases (e.g., Sisters and Wood Village), cottage cluster codes have been adopted, but remain unused. It is also important to note that while design and other review processes can be highly involved and lengthen project timelines, they can also be critical to a project's success, particularly with housing types that are proposed in a jurisdiction for the first time. City councils may be less likely to consider passing an ordinance without design requirements, or taking any other measure that might allow a project unless they are confident that the ultimate development will be aesthetically pleasing, well-designed, and that existing neighborhood character will be maintained.

(5) Experiment with Geographically-Specific, Limited Adoption
It can be difficult to measure the extent to which design requirements, or any requirement, may constrain the application of cottage cluster codes. Cities may benefit from experimenting with an initial cluster code limited to a very small geography, with the intent to revisit the code in a few years. Since only a small proportion of Oregon communities have cottage cluster ordinances to date, odds are high that a developer wanting to build this type of community would need to pass an ordinance first, as happened in White Salmon, WA; Bend, OR; and Manzanita, OR. This adds some cost and risk to the development process, limiting usage of this housing model to developers who are especially driven to give it a try.

Benefits and Limitations of the Cottage Cluster Housing Type

Benefits	Limitations
More Efficient Use of Land It is not unusual for cottage cluster developments to double the underlying zoning's density. If cottages are clustered densely enough, the cost per unit can be lower than nearby larger single-unit homes (though the cost per square foot is generally higher). *Flexible Ownership Models* Cottage clusters can be rental (Catterlin Cottages in Salem, OR), owned as fee simple lots in a subdivision (Wyers End in White Salmon, WA and Northwest Crossing in Bend, OR), or owned as condominiums (Cully Grove in Portland, OR). *Flexible Scale of Development* Over the past two decades, the Pacific Northwest has witnessed increased demand for cottage clusters across a wide range of city sizes and neighborhood densities. Partly because they can be designed successfully at a wide range of scales, cottage clusters can be found in cities of all sizes, including Portland and Salem, or towns like White Salmon, WA, and tiny Manzanita, OR.	*Availability of Suitable Lots* Unlike other development models in this report that can be implemented at the scale of one single-dwelling residential lot, cottage clusters require relatively large parcels of land, which can be hard to find or assemble in desirable, pedestrian-friendly locations. *Lack of Familiarity with Sharing Space* Many buyers are increasingly gravitating toward housing options that allow them to down-size, economize, and share resources. However, the culture of individual ownership of private homes with fully private yards is deep-rooted, limiting the breadth of demand for cottage cluster housing.

Conclusions

Cottage cluster zoning is a critical infill development tool, providing a larger number of relatively small homes compared to more standard infill at the single home, lot by lot level. On the one hand, this creates the opportunity for efficiencies of scale by building multiple small homes all at once, close to one another. On the other, it can be a more difficult housing type

to site because of the amount of land required per cottage cluster development. So, although clusters are well-suited for under-developed and/or awkwardly shaped pieces of property, these kinds of parcels are more frequently found in more suburban or even rural locations than in built-out neighborhoods.

Although there are many examples of older clustered developments (including cottages and courtyard apartments), this type of housing is only now starting to re-emerge. Part of the reason for this is its appeal to a range of households, including empty nesters and families with children, who tend to prioritize community over large homes. Building cottage clusters around shared spaces doesn't guarantee that a cohesive community will form, but it does stack the odds in favor of residents getting to know one another more than they might in a more conventional neighborhood subdivision setting.

COTTAGE CLUSTER CASE STUDIES

Commons at NorthWest Crossing – Bend, OR

Irregular lot development in an experimental/opportunity district

Location: Skyliners Rd & NW Lemhi Pass Drive, Bend, OR (population 81,236)

Owner/Developer: West Bend Property Company

Architect: Jason Offutt, The Shelter Studio, Inc.

Builder: Tyee Development

Type: 14 single-family cottages on 1.91 acres, Subdivision, owned as fee simple lots with homeowner association

Square Footage: 793–999 sf

Year Built: 2013–2015

The Commons at NorthWest Crossing is a cluster of traditional-style cottages oriented around a common courtyard, with a large gardening and recreation area along the southeastern edge. The Commons offers efficient, relatively affordable homes that are designed to work well for singles, couples, and empty nesters looking to downsize. The project is close to Galveston Avenue restaurants, breweries, Rimrock Park, and adjacent to pedestrian, biking, and hiking paths.

Homes in the Commons range from 793-square-foot one-bedroom units to 999-square-foot two-bedroom units. Unlike typical cottage cluster developments where parking is clustered on the edge of the property, each cottage also has an attached one- or two-car garage. An additional five spaces are located near the Commons entrance.

1,200 square foot cottage, Commons at NW Crossing, Bend, OR. (Photo courtesy of Tyee Development.)

The NorthWest Crossing Residential Cluster Housing Overlay District, based on Langley, Washington's cottage cluster code, was adopted into the NorthWest Crossing Overlay Zone in order for this development to proceed. This Cluster Housing Overlay District sets standards for cottage cluster developments, including maximum cottage floor areas of 1,000 square feet (1,200 with an attached garage), site layout specifications, and open space requirements. The NorthWest Crossing Overlay Zone, within which the Cluster Housing Overlay District is located, allows for a density of up to 12 units per acre, significantly higher than the underlying zone (Bend's Standard Residential/Urban Standard Density zone - RS) allowance of up to 7.3 units per acre.

Commons at NW Crossing site plan, Bend, OR.
(Image courtesy of Tyee Development.)

The Commons, however, has 14 units on 1.91 acres, at a density of 7.33 units/acre, barely over the minimum density allowed in the Standard Density Residential District. Developers indicated that the parking arrangement and relatively low density are responses to local buyer preferences for parking and storage space, as well as challenging site topography. That said, the small increase in allowed density does little to meet the potential that cottage cluster codes have for supporting land-efficient development patterns.

The City of Bend views the NorthWest Crossing Zone area as a laboratory for new housing ideas. Hence, the Commons essentially became a plan district, and was allowed to employ a new set of codes specifically for cottage clusters. Following project execution, Bend is considering extending the cottage cluster provision to additional parts of the city.

Bend now also has a Cottage Housing Development code, which may be applied in the Standard Density Residential (RS), Medium Density Residential (RM), and Medium-10 Residential (RM-10) zones outside of the NorthWest Crossing area. However, increased density is not available in exchange for smaller homes. The Cottage Housing Development code, rather, stipulates that

maximum densities shall not exceed those of the base zone.[11] Further, in addition to an on-site parking minimum (one space per one-bedroom and 1.5 spaces per for two-bedroom cottages), the requirement for an attached garage increases allowable floor area from 1,100 to 1,200 square feet, perhaps making cottage developments less suitable to compact, inner areas.

Supportive Code Provisions

The NorthWest Crossing Cluster Housing Overlay District provides flexibility for commons-oriented design elements such as street frontage and lot coverage. The NorthWest Crossing Overlay Zone allows for up to 12 units per acre, however this density bonus was barely used at this site.

Limiting Code Provisions

Currently, increased density for smaller homes is not offered outside of the NorthWest Crossing Overlay District. Cottage housing developments that are permitted in other single-dwelling zones via the Cottage Housing Development code offer no density beyond the base zone.

Lessons Learned

Even though this project minimally utilized the density bonus provision available to small cottage developments, it demonstrates how cottage cluster zoning can facilitate development of irregular lots with topographic challenges, and meet market demand for significantly smaller units within walking distance of nearby amenities. It is also a successful example of experimental adoption of the cottage cluster housing type in anticipation of expanded applicability to single- and multi-dwelling zones throughout the city.

Current Status

Cottages are being completed and sold in batches, with three homes available at a time. Of the five pre-sold cottages at the time of this report, all buyers are empty nesters and/or second-home buyers.

Project website: *http://thegarnergroup.harcourtsusa.com/Home/Neighborhoods/The-Commons-at-NorthWest-Crossing/5456*

[11] The aforementioned Cottage Housing Development code (Section 4.5.600,"Cottage Housing Development") is not included in the appendix to this report. To find this provision, please visit the City of Bend at *www.codepublishing.com/OR/Bend*.

Wyers End – White Salmon, WA

Site-specific code adoption and subsequent expansion

Location: Fifth Street and Jewett Boulevard, White Salmon, WA (population 2,305)

Owner/Developer: Smart Development Corporation

Architect: Ross Chapin

Builder: Skyward Construction

Type: 11 residential bungalows, 7 cottages, and 10 homes with flexible live/work space within a mixed-use planned unit development on 2.4 acres, owned as fee simple lots with home owner's association

Square Footage: 600–1,500 sf

Year Built: 2006–2008

Wyers End is composed of 28 homes: 11 residential bungalows, 7 cottages, and a yet-to-be-built second phase of 10 homes with flexible live/work space on a 2.4-acre, wedge-shaped infill site three blocks from the center of White Salmon, WA. Wyers End replaced Timms Trailer Court, while preserving the mature oak trees that now shade many front yards and footpaths. Its density is similar to that of the former trailer park: 28 homes replaced 29 single-wide trailers. Home sizes range from 600-square-foot, one-story cottages to 1,500-square-foot, two-story houses.

Designed as a "pocket neighborhood,"[12] Wyers End homes are oriented toward courtyards, small park-like areas, and landscaped walkways. There is also a small common building used mostly as a community meeting space. Parking is provided in attached garages for some units, detached parking for others, and a parking strip along Lower Wyers St. for the smaller cottages.

Live-work homes, Wyers End, White Salmon, WA.
(Photo courtesy of Ross Chapin Architects.)

Wyers End could not have been developed under existing zoning codes, so the developer and architect presented the idea of cottage cluster zoning at a town hall meeting. Sixteen months later, the City adopted Ordinance 2006-08-783, based on Langley, Washington's cottage housing development code (Langley Municipal Code 18.22.180).[13] The amendment added Chapter 17.74 to the Zoning Ordinance for the City of White Salmon, providing for a Mixed Use Planned Unit Development (MU-PUD) overlay zone, with standards for cottage dwellings.

[12] A term coined by Ross Chapin and described in his 2011 book, *Pocket Neighborhoods: Creating Small-Scale Community in a Large-Scale World*, Taunton Press.

[13] Excerpts from Langley's code are included in the Code Appendix to this report.

Chapter 17.74 increased the single-dwelling density permitted in the underlying R-2 (Two-Family Residential) and R-3 (Multi-Family Residential) zones by 200% and 225%, respectively, where the MU-PUD overlay is applied, so long as the developer caps the square footage and height of new homes, organizes them into four-to-ten-home clusters, provides shared common spaces, and meets special design, parking, screening, and setback requirements.[14] Both base zones require 5,000-square-foot minimums for single-family lots, whereas the MU-PUD overlay zone allows densities of one home per 3,500 and 3,000 square feet, respectively. Rather than establishing minimum lot sizes, it states that: "The minimum lot sizes will be the product of compliance with all other standards and criteria applicable to the cottage development as a special use within a PUD."[15] The MU-PUD was intentionally crafted so it could only be used at two or three locations in town, one of which was the site of Wyers End. This allowed White Salmon to explore this development type on a limited basis before deciding whether to make it more broadly available. While no other cottage clusters have been proposed for White Salmon, a City planner indicated that there would likely be enthusiastic support for more.

Cottages, Wyers End, White Salmon, WA.
(Photo courtesy of Ross Chapin Architects.)

Site plan for Wyers End, White Salmon, WA.
(Image courtesy of Ross Chapin Architects.)

[14] Section 17.73.010, "Cottage Infill Projects," White Salmon Zoning Ordinance.
[15] White Salmon Ordinance 2006-08-783, Section 17.74.080.B.6.

Supportive Code Provisions

The MU-PUD provision, adopted specifically to allow this development, offers a substantial density bonus in exchange for more compact homes, shared open space, and other attributes. In addition to the MU-PUD provision, under which Wyers End was permitted, White Salmon's zoning ordinance now offers a Cottage Infill Project overlay (Chapter 17.73) in two residential zones (R2 and R3). Both offer density bonuses for smaller home sizes, but the land use processes differ. Cottage infill projects are treated as conditional uses subject to a special site plan review process, whereas PUDs (as used for Wyers End) are classified as special uses that must meet additional, prescriptive development standards.

Limiting Code Provisions

The MU-PUD Provision, which allowed Wyers End to move forward, has not to date been applied to additional sites or areas. In addition, the Cottage Infill Projects overlay is narrowly applied: the overlay is not allowed in the R-1 (Single-Family Residential District) or the RL (Single-Family Large Lot District) zones, and the minimum site areas for cottage-style developments start at 21,000 or 14,000 square feet. Collectively, these severely limit the number of properties eligible for cottage-cluster-style developments. Furthermore, the Cottage Infill Projects overlay contains a number of requirements, above and beyond capping home sizes, to earn a density bonus. Finally, the allowed bonus (from 5,000-square-foot minimum lot sizes to 3,000 or 3,500 square feet) still yields a fairly low density – and may be insufficient to incentivize cottage cluster development.

Lessons Learned

Meeting the requirements of the MU-PUD provision was already contemplated for the Wyers End development, for which it was written. Adopting a site-specific ordinance allowed White Salmon to experiment with this housing type with minimal worry about possible unintended consequences should early projects be poorly received. Happily, Wyers End was received quite well.

Current Status

Initial buyers were mostly retired couples looking to downsize into a supportive community environment; others were looking to purchase a second, vacation, or investment rental property. Over time, Wyers End owners have opted to make White Salmon their primary residence, including single working adults and a young couple.

Cully Grove – Portland, OR

Community-oriented site layout achieved through Planned Development

Location: Cully Neighborhood, Portland, OR (609,456)

Owner/Developer: Eli Spevak and Zach Parrish, Cully Grove LLC

Architect: Hans Kretschmer, Green Gables Design & Restoration; Mark Lakeman, Communitecture

Builder: Orange Splot LLC

Type: 16 for-sale homes with shared common buildings on two acres, owned as condominiums with HOA

Square Footage: Thirteen 1,450–1,530 sf, three-bedroom homes; three 1,780 sf, four-bedroom homes; one 1,100 sf common house

Year Built: 2012–2013

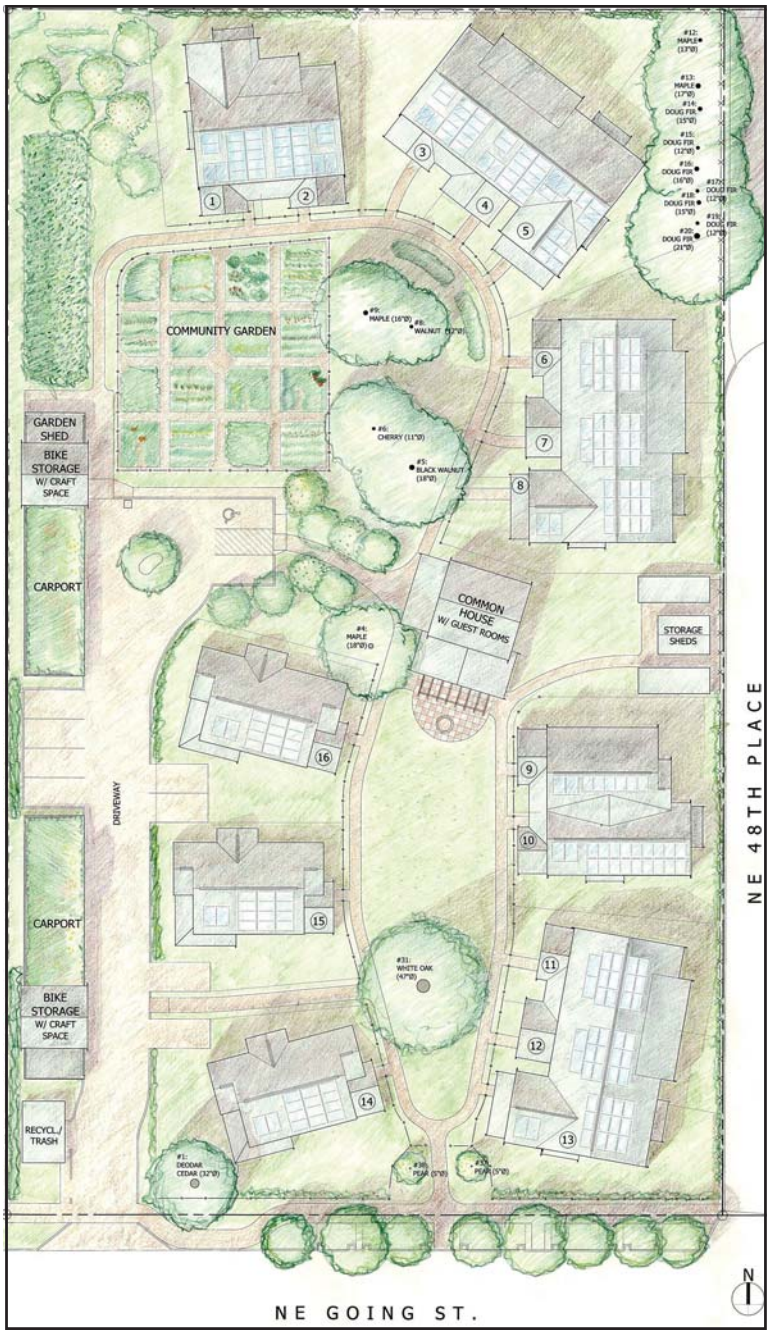
Cully Grove is a 16-home garden community tucked within a Portland neighborhood with relatively large lots, predominantly unimproved streets, and a focus on urban agriculture. Thirteen homes are attached three-bedroom townhomes in two- and three-unit buildings; the remaining three are single dwelling detached four-bedroom homes. The property was never divided into fee simple lots. Instead, the homes (and parking spaces) were sold and financed as condominiums.

Courtyard, Cully Grove, Portland OR.
(Photo courtesy of Communitecture.)

The site is laid out around two internal courtyards, anchored by large trees and a community garden. A shared common house between these courtyards serves as an extension of residents' individual homes. The first floor contains a community gathering space, small kitchen, and half bath. Upstairs, there are two bedrooms and a full bath for community members' out-of-town guests. Shared outdoor spaces at Cully Grove host picnic tables, vegetable and flower gardens, fruit trees, chickens, ducks, children's play areas, a campfire circle, and quieter lawn areas.

Twenty-two on-site parking spaces are located on the edge of the property: two for guests and the rest separately deeded and sold to residents. Shared bike storage and garden tool and wood shop rooms are built into the carport structures, along with two small craft space units for on-site office or art space.

Rather than subdivide the property into multiple single-dwelling lots, as allowed by code, the developers used Portland's Planned Development process to distribute allowed units across the site, free from the constraints of subdivision standards. Design flexibility was instrumental in preserving existing trees, orienting homes around courtyards, using attached townhomes as the primary building type (where the base zone requires detached housing) and sequestering parking and driveway access to the periphery of the site. This discretionary Type III land use process gives staff and a hearings officer, informed by neighbor input, the opportunity to determine whether the proposed alternative layout would be appropriate for this single-dwelling zone.



Site plan, Cully Grove, Portland OR.
(Image courtesy of Orange Splot, LLC.)

Supportive Code Provisions

The Planned Development process allowed site layout flexibility crucial to meeting project design and community goals.

Limiting Code Provisions

Portland's lack of zoning options to increase density in exchange for smaller home sizes was a barrier for this project. The developers would have liked to include smaller homes in this community. But without a density bonus, the fixed per-unit costs associated with land acquisition, site work, and (required) half street improvements made it financially prohibitive to do so. Also, the Planned Development process that was required in order to locate more than one home on a lot in the single-dwelling R5 zone added complexity and costs to the process.

Lessons Learned

Planned Development processes can provide a density-neutral way to support community-oriented site layouts and preserve existing trees and/or homes. However, if a jurisdiction wants to see substantially smaller homes built in single-dwelling zones, they may need to increase allowed densities, decrease minimum lot sizes, and offer density bonuses for smaller homes. Homes in Cully Grove were also pre-sold, as required by the construction lender, which led to more buyer customization and complexity than the developer/builders had expected.

Current Status

All homes are owner-occupied, and there has been no turnover thus far. Approximately half the owners are singles or couples with young children; the others are empty nesters.

Project website: *www.cullygrove.org*

Catterlin Cottages – Salem, OR

World War II-era cottage clusters become market-based affordable rentals

Location: Northeast Neighborhood, Salem, OR (population 160,614)

Owner: Jeff Zeeb

Architect, Builder: Unknown

Type: Six detached cottages on .31 acres; long-term rentals

Square Footage: Each home is single story, approximately 910 sf

Year Built: ~1940

The Catterlin Cottages consist of six detached one-story homes, each approximately 38' x 24' fronting onto a central courtyard. Six angled off-street parking spaces are available off a back alley near the site perimeter.

The Catterlin Cottages' mid-century appeal is starting to come back into favor, and the project has become exemplary of historic, Word War II housing options preserved and updated to maintain appealing, space-efficient housing. Residents have decorated several of the home entry patios with flowers and other custom landscaping. One resident volunteered that he loves living there because of the lack of shared walls between homes. According to the owner, these homes are relatively low-cost, low-amenity rentals. Most renters turn over after two or three years.

The Multiple Family Residential (RM-II) zoning applicable to this parcel supports multi-dwelling housing at a density of between 12 and 28 dwelling units per acre. At 19 dwellings per acre, Catterlin Cottages would be legal to build at this location today. The owner noted,

The Catterlin Cottages in Salem, OR, are six detached one-story homes, each approximately 38'x24', fronting onto a central courtyard.
(Photo by Eli Spevak.)

however, that they wouldn't likely be built as rentals, due to high construction costs relative to potential rental income. Some other cottage clusters in Salem, however, are located in zones with designations that *would not* allow them to be built today.

Supportive Code Provisions

Salem's Multi-Family Residential (RM-II) zone.

Limiting Code Provisions

This housing type, although fairly common in Salem, would not be allowed today in single-dwelling zones.

Lessons Learned

Certain housing types may not be financially feasible, regardless of zoning, if local rents or sales prices are too low to cover current construction costs. Hence, cities that have existing legal, non-conforming ("grandfathered") housing built to older codes may find that preserving these homes provides a valuable source of housing at smaller sizes and lower prices than could be built today.

4. INTERNAL HOME DIVISIONS

Where communities have older housing stock, there may be opportunities for conversions of homes into multiple units to simultaneously provide:

- Small, affordable, energy-efficient dwelling units;
- Increased density; and
- Preservation of neighborhoods' most cherished, beautiful structures.

Some municipalities allow the internal conversion of older homes into two or more units in single-dwelling zones, as long as their exterior is minimally altered and they retain their single-dwelling appearance.

This four-plex still looks like a single-unit home from the street.
(Photo courtesy of Michael Anderson, Bike Portland.)

Internal Home Division Characteristics

Homes can be internally divided in many ways, including:

- Converting a two-story house into stacked flats by adding a side entry door for the first floor unit, converting an upstairs space into a second kitchen, and ensuring that there is a bathroom on each floor;
- Bisecting a two-story house into side-by-side townhomes by using a vertical partition wall to split the house in half from front to back, and adding a second set of stairs;
- Combining both of the above approaches to create a four-plex; and
- Converting basements and/or attics into stand-alone dwelling units by bringing them into the insulated envelope of the structure, installing life safety measures, adding heat sources, and providing independent access.

Internal Divisions – Typical Characteristics	
Form	
	• 2-6 units, ranging from fully separated units to Single Room Occupancies (SROs) with shared kitchens and bathrooms
	• Appearance remains that of a single house
	• Entrances may be shared at the front, or separate entrances may be created around sides or back
Ownership	
	• Rental or condominium
Density	
	• 2-6 times the units allowed on a lot in a typical single-dwelling zone

History & Regulatory Context

The tradition of internally dividing homes into smaller units (and sometimes opening them back up again into single-family homes) in response to changing household compositions and housing demand goes as far back as the residential construction industry. When workers flooded into Portland during World War II to support the shipbuilding industry, one policy response to the associated housing shortage was to allow homes in single-dwelling residential zones to be internally divided into multiple units.[16]

More recently, there has been renewed interest in internal home divisions as a way to meet multiple public policy goals. This is especially true in larger Oregon cities where housing supply has failed to keep up with demand, rents have increased, and public pressure to preserve older homes has grown. Add to this the long-term trend of diminishing household sizes and the increasing number of people either downsizing or living with roommates out of choice or economic necessity, and it's no surprise that older homes are once again being called upon to serve multiple, smaller households, legally or not.

Key Code Elements

Most Oregon zoning codes reviewed for this report did not allow for the conversion of existing homes into multiple units in single-dwelling zones. However, two examples in larger Oregon cities could certainly be adapted for use in any city with older housing stock.

First, Portland allows homes on the historic registry to be internally divided, in single-dwelling zones, into up to one unit per 1,000 square feet of site area.

Portland, OR – Portland Zoning Code 33.445.610.C.2

Additional density allowed when preserving a Conservation Landmark or a Historic Landmark in Single-Dwelling zones

33.445.610 Historic Preservation Incentives . . .

C. Incentives. The following incentives are allowed if the requirements of Subsection D, Covenant, are met. The Incentives are: . . .

2. Additional density in Single-Dwelling zones. Landmarks in Single-Dwelling zones may be used as multi-dwelling residences, up to a maximum of one dwelling unit for each 1,000 square feet of site area. No additional off-street parking is required, but the existing number of off-street parking spaces must be retained. The landmark may be expanded and the new net building are used for additional dwelling units only if the expansion is approved through historic resource review.

[16] Interview with Steve Dotterer, November 12, 2015.

Salem, Oregon, also offers incentives for the adaptive reuse of older homes. Within Salem's Historic Preservation chapter is a provision for "Historic Adaptive Reuse" (Salem Revised Code 230.085, full code text is included in the appendix), which is achieved as a conditional use in residential zones. The provision is more limiting than Portland's in some ways, while more flexible in others:

Limiting provisions:

- Maximum of four dwelling units may be created;
- Adaptive reuse only applies to properties located along arterial and collector streets;
- Historic buildings may not be structurally expanded;
- Parking requirements match those of the underlying zone (typically 1+ per residence, and for commercial and retail);
- Requires a Type III, quasi-legislative land use process for approval; and
- Applicants must demonstrate that any other use for the structure allowed in the zone is not economically practical, and that the property does not meet the criteria for a zone change.

Flexible provisions:

- Allowed in most zones, including RS (Single-Residential) and RD (Duplex-Residential); and
- Allows dwellings to be created in combination with retail, professional services, offices, and others.

Following is an overview of commonly applied code provisions. "Supportive" code provisions are likely to encourage internal division of homes, while "limiting" provisions may serve as disincentives.

Provision Type	Supportive Codes	Limiting Codes
Ownership	• Allow units to be rented out or sold independently as condominiums	• Enforce strict owner-occupancy requirements
Density	• Allow a single home to be internally divided into multiple independent or semi-independent units, increasing density by 2x to 6x	• Default to existing single-dwelling density
Unit Requirements	• Allow additional micro-kitchen(s) within existing homes • Allow shared bathroom (e.g., SRO) housing configurations	• Require all units to be fully self-contained; restrict common elements
Parking	• Waive or reduce per-unit parking minimums • Waive parking minimums at locations well-served by transit	• Apply off-street parking standards for each unit
Approval Process	• Allow by-right	• Allow only through a Type III Land Use or other discretionary review process

Provision Type	Supportive Codes	Limiting Codes
Other	• Charge impact fees, if at all, based on unit size, or another proxy commensurate with impact • Drop the definition of "family" from the code, and/or define "household" as flexibly as possible	• Allow only for homes with historic designations or located within historic districts • Charge impact fees at the multi-unit dwelling rate based on the number of additional units created • Define "household" narrowly to exclude large and non-traditional configurations
Standard Provisions	• Apply commercial building code that requires fire-rated separations between units and/or fire sprinkler systems for internal divisions of three or more units	

Recommendations

(1) Expand Preservation Incentives

Portland and Salem allow homes that are in single-dwelling zones and have historic designations to be internally divided into multiple units. This is one of several incentives made available to owners of historic properties in exchange for strict limitations on modifications to the structure. If cities want to allow internal conversions of older homes that don't have historic designations, they could extend this flexibility to *any* home over a certain age. This could add use value to older homes, and perhaps keep some of them from being demolished.

(2) Revise or Drop Definition of "Household" or "Family"

Most counties and municipalities include a definition of "household" or "family" that stipulates how many people of which relation are allowed to live in a single home (or, in some jurisdictions, a house + ADU). Removing these definitions from the zoning code (as Bend did), or defining households without reference to relationship,[17] could open up spare rooms for occupancy in larger homes. This would also legalize other innovative, community-oriented housing models, such as the co-living model being pioneered in the San Francisco Bay Area.[18] Finally, it would get the zoning code out of the "who's married to whom" and "who's living with whom" business – and cause jurisdictions to rely instead on noise, nuisance, and building code regulations to address life safety and community impact concerns associated with larger households.

(3) Parking

Municipalities concerned about parking may choose to conduct a transit access and older home inventory, assessing whether enough older homes are in fact well-served by transit to warrant waiving or changing off-street parking minimums.

[17] For example, Victoria, BC, defines a household as "one person or group of persons who through marriage, blood relationship, or other circumstances normally live together."

[18] *http://opendoor.io/project/coliving-org/*

Benefits and Limitations of the Internal Home Division Housing Type	
Benefits	**Limitations**
Preservation of Historic Resources Internal divisions of existing homes provide an excellent opportunity to preserve existing homes by increasing their economic value. *Neighborhood Appeal* The strongest appeal to this housing model, from a design perspective, is that it maintains a single-family aesthetic from the street no matter how many units may exist inside. *Existing Transit Access* Many homes were originally built along old streetcar routes in central locations. These same spots, in the present day, are often well served by transit and urban amenities, making them ideal for densification through internal home divisions. Strong transit access can also mitigate the need for additional off-street parking that might otherwise be triggered by an internal home division. *Encourage Mixed-Income Neighborhoods* For many renters entering the housing market, an apartment carved out of a house is an ideal match between affordability and location, frequently more so than new construction. In addition, the creation of smaller, affordable units inside older homes introduces affordability into neighborhoods from which many residents would otherwise be priced out.	*Lack of Acoustical Privacy* Partition walls in internally divided older homes don't come close to providing the acoustic isolation found in newer attached homes. *Fire and Life Safety Building Codes* Even in multi-dwelling zones where internal conversions can be done by-right, the practice is rare. The reason for this often lies not with the zoning code (which likely already allows internal conversions of older homes in *multi-dwelling* zones), but with modern building codes. Residential building codes apply to buildings with one to two units; commercial building codes apply to buildings with three or more units. Homes divided into just two units fall under the One- or Two-Family Residential Building Code, which is easier and less expensive to comply with than the commercial code that applies to three or more residential units. Hence two-unit internal conversions of older homes are more likely to be financially feasible than internal conversions to three or more units. *Parking* As with many infill housing types, parking can become an area of contention with neighbors. On the one hand, residents of smaller units are less likely to have vehicles and older homes are often located close to the city center, where it is less important to have a car. On the other hand, older homes often have few or no off-street parking spaces to begin with. When an older home is internally converted into multiple units, odds increase that the number of vehicles in the neighborhood will grow, so neighbors who rely on street parking might push back on this housing type. *Plumbing, Electrical & Mechanical* Adding bathrooms and kitchens to older homes as part of an internal conversion can strain already-stretched plumbing, electrical, and mechanical systems that may not have been installed properly in the first place. This can trigger extra construction costs to update existing systems (e.g., electrical wiring, plumbing, heating, etc.), which can jeopardize the financial feasibility of a project.

Conclusions

Internal divisions of older homes bring together the interests of planners seeking discreet, space-efficient housing options and neighbors interested in preserving existing homes. Converting a home to multiple units can sometimes increase its economic value such that a deteriorating house may be preserved rather than demolished. Zoning code provisions already on the books for historic homes can be easily adapted to any older home. Such provisions can allow homes over a certain age to be internally converted so long as they retain their original,

single-family appearance from the street.

The major limitations on internal home internal conversions predominantly stem from building, not zoning, codes. Internal conversions to three or more units trigger commercial codes and their accompanying requirements for firewalls and sprinkler systems that can be costly enough to jeopardize the financial feasibility of a conversion. Duplex conversions are more likely to work, since they can be done under the residential (one- and two-family) building code. As an illustration of how modern building codes can stand in the way of this housing type, consider the infrequency with which large single-family homes in *multi-dwelling* zones ever get converted to multiple units. This used to happen regularly. With modern building codes, it probably won't happen nearly as often.

Emerging & Resurgent Housing Types

Beyond the case studies featured in this section, the internal home division model has been implemented in forms that divide large existing or new homes into multiple tiny units.

One example is the co-living model in San Francisco, in which large older homes are organized into extended, intentional, shared housing configurations appealing to young professionals seeking strong communities in an urban setting.[19] Another model is the micro-apartment, in which 6-8 bedroom apartments are built, then rented out by the bedroom to offer relatively affordable housing options in expensive locations within larger cities like Seattle and Portland. Neither of these models is a classic internal home division into self-contained, independent units. But co-living, micro-apartment, and Single Room Occupancy models can all increase density without altering exterior appearances, and frequently add economic value to older homes.

[19] Elise Hu, "Bay Area's Steep Housing Costs Spark Return to Communal Living," *Morning Edition,* National Public Radio, Dec. 19, 2003.

INTERNAL HOME DIVISION CASE STUDIES

Moulton Condo Association – Portland, OR

Increased density in exchange for preservation of historic structures

Location: 2566 NW Lovejoy St, Portland, OR (population 609,456)

Current owner: Moulton Condo Association

Owner/Developer at time of conversion: Charles L. & Lucy H. Metcalf

Type: Historic house on 7,780-sf-lot converted into six condominium units

Square Footage: Units range in size from 706–1,581 sf

Year Built: 1911, *Year Converted:* 1998–1999

This historic home in Portland, OR was built in 1911 for a wealthy lawyer and his family and was converted into seven units, becoming the Moulton Condo Association, in 1998-1999.
(Photo by Madeline Kovacs.)

Moulton House was originally built in 1911, home to a prominent lawyer and his family. The property occupies a corner lot on a busy street close to downtown Portland, abutting commercial retail buildings and a hospital to the east and a hilly, residential neighborhood to the house's immediate west. Two on-site parking spaces are provided near the southeast corner of the property via a driveway off NW 25th Ave., a short dead end street. Unit sizes range greatly, from 706 to 1,581 square feet. Original amenities of the Moulton house are distributed across different units. For instance, the home's front deck is designated as part of the unit on the entry floor, with a railing separating the deck from the common entryway. There are six storage spaces, one for each unit, located on the first story. All units are accessed jointly through the former front door and shared living-room-turned-foyer.

In 1998, owners Charlie and Lucy Metcalf took advantage of a seldom-used zoning code provision available to Conservation Landmarks and Historic Landmarks, dividing Moulton House into six independent residences. Portland allows such buildings to be internally divided up to one unit per 1,000 square feet of site area in single-dwelling zones. The resulting density of one dwelling unit per 1,200 square feet of site area is much greater than the one unit per 7,000 square feet otherwise allowed at this single dwelling (R-7) zoned property.

Originally the living room, now the entryway to multiple second-floor units.
(Photo by Madeline Kovacs.)

Although zoning regulations supported this conversion, historic preservation, building, and fire safety codes presented hurdles the owners/developers had to overcome. Historic Design Review was required as part of the permitting process to ensure that the exterior historic materials that helped classify the property as a Conservation Landmark would be preserved through the renovation and conversion process. Dividing the building into multiple units triggered compliance with present-day fire and life safety requirements. This proved to be a lengthy process that included multiple code appeals to address egress, stair enclosure, light and ventilation, fire wall, and fire suppression (sprinkling) requirements. Sometimes conflicts arose between fire safety requirements and the US Secretary of the Interior's Standard for Rehabilitation of Historic Buildings, in which case tailored, equivalent approaches to meet code intent had to be crafted and approved (through appeal). Going forward, any new development at the condominium must be done in accordance with the City's historic design review criteria.

Supportive Code Provisions

Portland's Historic Resource Overlay Zone (Title 33.445.610.C.2) allowed a density increase on this property of more than 500%, making preservation financially feasible. This same code section exempted the project from having to build additional off-street parking; it only requires that existing parking spaces, if any, be retained.

Limiting Code Provisions

Modern fire codes that increase life safety in multi-dwelling buildings can have the side effect of making internal conversions of existing homes challenging or cost-prohibitive, even if allowed by zoning.

Lessons Learned

Zoning code allowances for internal conversions might be more widely used if expanded to cover any older home, not just those on historic registers. Even so, building and fire code requirements triggered by such conversions could limit their frequency.

Current Status

The Moulton Condo Association currently includes four couples, one retired and two newlyweds, who inhabit the units on the garden through second floors. Two single people occupy the one-bedroom and studio units on the third floor.

Buckman Neighborhood, (Portland, OR)

Legal non-conforming internal home conversions

Location: Buckman Neighborhood, Portland, OR (population 609,456)

Owner/Developer at time of conversion: N/A - converted in 1930s and 1940s

Type: Home #1 converted to a duplex; home #2 converted to an eight-plex; both on 5,000-square-foot lots and managed as long term rentals

Units Square Footage: 2,160 sf (home #1); 2,135 sf (home #2)

Year Built: 1904 (home #1); 1898 (home #2)

Side by side converted duplex and 8-plex, Southeast Portland, OR.
(Photos by Eli Spevak.)

These side-by-side homes were each built over a hundred years ago. In the 1930s or 1940s, both were converted to plexes, as allowed by code at that time. The first house was converted to a duplex, as it remains today. It contains the maximum number of units allowed by the existing (R2.5) residential zoning. When the owner sought permission to add an ADU, she was informed by the City that this is not an option because in Portland, ADUs can be added to single-family homes, not duplexes.

Meanwhile, the house next door (home #2) was converted during World War II to eight units: one one-bedroom unit and seven very small studio apartments. Three of the studios are merely bedrooms with corner kitchenettes; four are bedrooms with separate kitchens. All studio residents share two bathrooms. Such a conversion today would violate zoning density rules and most likely trigger prohibitively expensive building code requirements.

Each tenant at the second Buckman home has a separate rental agreement and rents range from $500-$700/month, covering all utilities. In this neighborhood, standard studio apartments are unavailable for less than $800/month. Most residents are in their twenties, with a 50/50 mix of students and those just starting their careers.

Supportive Code Provisions

Nonconforming use regulations can allow this small, energy-efficient, and relatively affordable housing type that is typically prohibited in single dwelling zones, if the conversion was originally legal.

Limiting Code Provisions

Portland's single-dwelling zones do not allow house conversions even where multi-dwelling development was previously allowed. ADUs cannot be added to duplexes.

Lessons Learned

In high-amenity neighborhoods where competition for relatively scarce single-unit homes can drive values above what the same home would be worth as an internally divided plex, there may be fewer instances of home conversions, even where codes allow multi-unit buildings.

5. CORNER DUPLEXES

Corner lots have some advantages over interior lots on the same block to accommodate additional density consistent with the single-dwelling character of existing neighborhoods:

- Two separate street frontages
- More linear feet of on-street parking
- More available land area in some platting patterns
- More visually prominent and tend to sell for more than interior lots, hence homes built on them are often larger than others on the block

This corner duplex at 2104 NE Wasco St, Portland, OR, was built in 1926. (Photo courtesy of Michael Anderson, Bike Portland.)

Corner Duplex Characteristics

Some cities use the opportunity presented by corner lots to allow an additional dwelling unit on them in single-dwelling zones. This can be achieved through a corner duplex provision that allows attached units (side-by-side or stacked) and/or division of corner lots into two smaller lots.

Corner Duplexes – Typical Characteristics	
Form	
	• Attached housing (stacked or side-by-side) on corner lots in single-dwelling zones
	• Design compatibility with single-dwelling streets on both sides
	• Entrances required on each street
Ownership	
	• Duplex on single lot *or*
	• 2-unit subdivision into fee simple lots with attached, zero-lot-line homes
Density	
	• Up to twice the density of the single-dwelling zone

Both of these approaches can yield environmental benefits. Shared wall (or shared floor) homes have smaller carbon footprints than detached homes of the same size.[20] If two homes are allowed instead of one, and they are each smaller than average, this too reduces carbon impacts.[21]

[20] Jordan Palmeri, "A Life Cycle Assessment Based Approach to Prioritizing Methods of Preventing Waste from Residential Building Construction, Remodeling, and Demolition in the State of Oregon, Phase 1 Report, Version 1.2" (Oregon Department of Environmental Quality, 2009).
[21] Ibid.

When corner duplexes are configured with side-by-side units, off-street parking is usually located either in garages where the units attach, as shown in this picture, or on the outer edges of the building as surface parking (see case studies). In both cases, each unit gets natural light on all three non-attached sides.

When corner duplexes are configured as stacked flats, units get natural light on all four sides and the ground floor unit can be made fully ADA accessible. However, it is more challenging to achieve acoustic isolation between units, and ownership of the property cannot be divided through a land use process. Stacked flat corner duplexes are more often found in older structures, sometimes through internal conversions of larger homes. If provided at all, off-street parking is most often uncovered or in a detached garage.

This side-by-side corner duplex showcases units fronting on opposite streets, and shared parking in between, Northeast Portland, OR.
(Photo by Madeline Kovacs.)

Key Code Elements

Many Oregon jurisdictions, including Medford,[22] Bend,[23] Sublimity,[24] and Ashland,[25] allow duplexes on corner lots in single-dwelling zones. Ownership rules and regulations for corner duplexes vary. With some codes, there's no way to split the lot. Hence duplexes must have a single owner, unless submitted to condominium ownership. In others, corner lots with side-by-side attached homes can be divided into two fee-simple lots, with one house per lot. Portland allows this through either a two-unit partition or a property line adjustment (if there's a pre-existing property line bisecting the property). Medford requires corner duplexes to be built this way in its SFR-4 zone.[26]

Some Oregon cities take the additional step of offering density bonuses for corner duplexes. Salem's corner duplex provision allows the minimum lot size for a corner lot duplex to be less than the total minimum lot size that would be required for two stand-alone homes. Specifically, Salem allows two homes on a 7,000-square-foot lot (yielding 3,500 square feet per home) in its RS or Single-Family Residential zone, which otherwise allows one home on a 4,000 square

[22] http://www.ci.medford.or.us/CodePrint.asp?CodeID=3956
[23] http://www.codepublishing.com/OR/bend/html/benddc02/BendDC0201.html
[24] See code appendix (Code section 2.101.02).
[25] See code appendix (Code section 18.2.3.110).
[26] http://www.ci.medford.or.us/CodePrint.asp?CodeID=3956

foot lot. Portland takes this density allowance further by doubling the allowed density on corner lots in all of its single-dwelling zones. For instance, on a Portland city block platted with 50'x100' lots (zoned for one house per 5,000 square feet), one may build a corner duplex, resulting in one dwelling per 2,500 square feet.[27]

Cities that allow corner lot duplexes frequently also require additional development and/or design standards. For example, Portland requires that "each of the [duplex] units must have its address and main entrance oriented towards a separate street frontage."[28] This and a few other provisions are intended to ensure that the appearance and impact of corner duplexes will be compatible with surrounding houses, namely, "to give the appearance of a house when viewed from [either] street."[29] Portland's code takes the extra step of requiring visual consistency in exterior finish materials, roof pitch, eaves, exterior trim, and windows between two units comprising a corner duplex. It also requires that the heights of side-by-side corner duplexes be within four feet of each other.

The following gives an overview of those provisions that may encourage the development of corner duplexes, and codes that might limit their production:

Provision Type	Supportive Codes	Limiting Codes
Density	• Double density on corners by allowing two units where the zone normally allows one	• Provide no density bonus • Offer a small density bonus by setting the minimum lot size for a duplex slightly less than twice the size for a single home
Ownership	• Allow the duplex on a single lot, or allow a 2-unit partition with zero-lot-line attached homes	• Only allow the duplex on a single lot
Design Compatibility	• Minimize or avoid design match requirements • Allow each attached home to meet size and footprint standards of the zone	• Require units to match (e.g., roof pitch, trim, height) • Limit collective massing and lot coverage to that of a large, single house
Parking	• Reduce or eliminate off-street parking requirement • Waive parking minimums at locations well-served by transit	• Apply the zone's standard off-street parking standards for each unit • Require one driveway per unit per street frontage required
Approval Process	• Allow by-right	• Require conditional use or other discretionary review process
Standard Provisions	• Allow side-by-side or stacked duplex configurations • Require front doors to face different streets, mimicking single family homes from either frontage	

[27] Corner duplexes may sometimes be built in Portland using alternative code provisions. A popular approach to splitting corner lots is to "confirm" (i.e., re-establish) historic lot lines and simultaneously rotate them by ninety degrees through a Property Line Adjustment (PLA). Many homes were originally sited on 2-4 narrow, originally platted lots, leaving the opportunity open for this approach, which avoids a potential 9-month partition process and associated fees. In response to the up-tick in this practice and the irregularly shaped lots sometimes created through the process (to comply with lot width minimums of the zone), Portland recently changed its code so that lots reconfigured through a PLA on a corner can be as small as 1,600 square feet, and 36 feet wide, and be developed with attached or detached houses.

[28] See appendix for full text of Portland's Corner Duplex provision (33.110.240.E).

[29] Ibid.

Recommendations

(1) Allow Increased Density on Corners
Although many Oregon cities allow corner duplexes in single-dwelling zones, Portland and Salem appear to be alone in offering density increases. Since corner duplexes can be designed to resemble single-family homes from either street frontage, they represent a prime opportunity to discreetly absorb density within single-dwelling zones. And since corner duplexes naturally have more street frontage than other homes on a block, there's a decreased likelihood of conflicts with neighbors over limited on-street parking.

(2) Consider Individual or Combined Size Limits on New Corner Duplex Homes
There have been some negative reactions to new corner duplexes in Portland, where their height and bulk can be out of line with older, typically smaller, surrounding homes. Planners are receiving complaints about large, 2,500+ square-foot homes built on mid-block lots too, but massing of these new homes becomes more dramatic when they're doubled-up on corners. One way to address this is to limit the collective massing of new homes created through a corner duplex provision to what's allowed in that zone for a single-family home. This is similar to the logic of cottage cluster zoning, where additional density is provided in exchange for home size (and sometimes height) limits. Such a condition could be applied whether or not the developer subdivides the property into two smaller lots to separate ownership.

There should be no need to place size limits on the internal conversion of existing corner homes into duplexes. This is because the original house presumably complied with applicable size limits for new homes at the time of construction.

(3) Allow Outright or Simplify Approval Process
Corner duplexes are less likely to be built where they are treated as a planned development or require a discretionary land use process. Such processes add cost, time, and risk to projects that have few efficiencies of scale to start with, limiting the number that actually get built. That said, review by the planning commission or another body may be less of a barrier in smaller cities and towns where discretionary reviews are easier to navigate.

(4) Allow Partitions of Corner Lots for Affordable, Fee-Simple, Ownership Opportunities
Allow corner lots to be separated into fee-simple lots so the two halves of a duplex can be sold independently, even if such lots are smaller than would be allowed for other lots in the zone. This flexibility supports lower per-unit land costs on for-sale housing, which can yield lower sales prices (see PCRI case study).

Even if they can't be partitioned, duplexes on single lots do provide relatively low housing costs on a per-unit basis because of the shared land cost. But financing for this housing type requires the borrower to have a higher income and larger down payment than would be required to buy half of a duplex on its own fee-simple lot because, at root, they're buying two homes instead of one (even if one would be rented and generate some income).

In the Salem case study, the owner felt that his inability to legally subdivide the lot so the homes could be sold and financed independently hampered the financial feasibility of the project.

(5) Allow Corner Duplexes in All Single-Dwelling Zones
If a duplex is appropriate in one primarily single-dwelling zone, chances are it should work equally well in others. Regulations regarding size, bulk, lot coverage, and other considerations may be adjusted accordingly.

Benefits and Limitations of the Corner Duplex Housing Type	
Benefits	**Limitations**
Affordability Allowing two units to be built instead of one can aid in the creation of affordable homes, because developers can distribute the fixed cost of land to an additional home. *Neighborhood Compatibility* Corner duplexes also offer a discreet form of density within existing neighborhoods at locations where street parking is typically in good supply. In addition, duplexes facing opposite streets help to complete each streetscape, leaving no blank or inactive street-fronts. *Environmental Footprint* From an environmental perspective, previous Department of Environmental Quality research has shown that attached housing is one of the most important strategies (along with smaller size) to reduce construction waste and greenhouse gas emissions.[30] *Reside Near Family* Some of the interviewees for this project included family members who live in duplexes next to each other. Similar to ADUs and some cohousing communities, duplex arrangements can allow families to live near each other while still maintaining their own, private space. *Privacy + Attached Housing* One interviewee mentioned that she often forgot that her corner duplex home was attached to anyone else's, because she had her own front porch looking directly onto the street, with no direct visual connection from it to the other entry façade. The same was true for her duplex neighbor. Hence, corner duplexes can offer more privacy and autonomy than mid-block duplexes or attached townhomes where main entries both face the same street. *On-Street Parking* Corner lots have more street frontage, and more space for on-street parking, than internal lots of the same size. So additional density at corners will strain on-site parking limitations less than density at other locations.	*Size and Bulk* Collectively, duplexes (particularly new ones) may be larger than other buildings on the street. This is especially dramatic in older neighborhoods where surrounding homes are shorter and smaller than what is allowed by current regulations. *Street Improvement Costs* Corner lots have more street frontage than mid-block homes. Washington County officials were uncertain whether a duplex might also trigger requirements for street improvements, which would be of concern in much of un-incorporated Washington County where streets do not meet current standards. Requirements for street improvements along two street frontages could raise developer costs significantly, and theoretically negate much of the affordability created through reduced land purchase costs per residence.[31] If street improvements are required regardless of whether a single home or duplex is proposed for a corner lot, such a requirement would not specifically constrain the corner duplex model.

[30] Jordan Palmeri, "A Life Cycle Approach to Prioritizing Methods of Preserving Waste from the Residential Construction Sector in the State of Oregon, Phase 2 Report" (Oregon Department of Environmental Quality, September 29, 2010).
[31] Ibid.

Conclusions

Zoning codes allowing duplexes on corner lots are fairly common in Oregon, but they're rarely coupled with a density bonus. Even without density bonuses, corner duplexes offer the environmental benefits of attached housing. But corner lots are also well suited for some extra density, so long as regulations anticipate potential neighborhood concerns. To this end, it's helpful to include design compatibility requirements, entry door location requirements, and height and size limits – with the goal of having the duplex look like a single home from either street frontage (or from just one frontage, in cases of internal conversions with a single entry door).

Corner duplexes offer a neighborhood-friendly way for cities to support relatively affordable, environmentally-friendly housing options. To figure out how many housing units could be created in a community, multiply the number of single-dwelling zoned blocks by four. Of course, only a small fraction of eligible corner lots will ever host duplexes. But as an extreme example, consider that Seattle could allow an additional 60,000+ housing units within existing single-dwelling zones by allowing corner duplexes at twice the density currently allowed.[32] If large enough areas of a city are zoned solely for single dwelling development, low implementation rates might still yield a substantial number of new homes.

[32] David Sucher, "Add housing by allowing one triplex per city block," *Seattle Times*, Nov. 17, 2015. Note: calculation revised from two extra units per block by allowing a triplex to four extra units per block by allowing a corner duplex on each corner

CORNER DUPLEX CASE STUDIES

PCRI, Portland, OR

Attached homes on corners made affordable by sharing land costs

Location: 5105 N Fessenden & 9430 N Exeter, Portsmouth Neighborhood, Portland, OR (population 609,456)

Owner/Developer: Portland Community Reinvestment Initiatives, Inc.

Architect: eMZzed Architecture LLC/Keyan Mizani

Builder: Terra Firma

Type: Two 5,000-square-foot corner properties, each divided into two fee simple lots for attached houses

Square Footage: 1,500 and 1,620 square-foot three-bedroom units

Year Built: 2010

Portland Community Reinvestment Initiatives (PCRI) built two affordable, for-sale duplexes a couple of blocks from one another. Both developments replaced single homes, which were deconstructed. Both also share very similar designs, with each duplex entrance facing a different street.

Affordable corner duplexes built by Portland Community Reinvestment Initiatives (PCRI) on N Fessenden Street, Portland, OR.
(Photos courtesy of PCRI.)

No off-street parking was provided, although one resident chose to add a driveway to the home after purchase. Generally this presents less of a problem on corner lots, where there is typically more street parking available than there would be for an interior lot. The common wall between units was constructed to two-hour firewall standards to avoid sprinkling.

Portland's corner lot provision allows a duplex (two homes on the same lot) or two attached homes (zero-lot-line homes on adjoining lots) to be built on a corner lot that would typically just support one unit "in locations where their appearance and impact will be compatible with the surrounding houses" (Portland Zoning Code 33.110.240.E). Each home must face a different street, and the builder has the option to establish a property line between the units so

they can be sold separately on fee simple lots.

Supportive Code Provisions

Portland's corner lot provision (Title 33.110.240.E) for duplexes allows density on corners to be approximately doubled in any single-dwelling zone. In addition, PCRI projects were supported by an additional allowance to re-establish historic lot lines, saving developers time and resources compared with standard partitions.

Limiting Code Provisions

The only limiting code provisions are design requirements that dictate aspects of the building form, namely:

- Duplex units must face different streets;
- Attached duplex heights must be within four feet of each other; and
- Exterior finish, roof pitch, eaves, trim, and windows of the two units must match.

None of these provisions is onerous, particularly as companion to a code that effectively doubles density on corners.

Lessons Learned

Average new home sizes in Portland can be upwards of 2,400 feet, so being able to offer three-bedroom homes in the 1,500 to 1,620-square-foot range helped reach lower-income and first-time homebuyers. The developer says that being able to share land costs was a key factor in making units affordable.

Current Status

Diverse buyers found these duplex units appealing, including a multigenerational household, a retired couple, a single person, and a young couple about to start a family. PCRI is currently preparing to replicate this process on NE Ainsworth Street, transforming another home on a corner 50x100 foot lot into a corner duplex.

Statesman St. Duplex – Salem, OR

Custom duplex in a single-dwelling zone

Location: Northeast Neighborhood, Salem, OR (population 160,614)

Owner/Developer: Mitch Bell

Type: New duplex on a .20 acre single fee simple lot

Square Footage: 1,760 and 1,550 sf homes

Year Built: 2002

This side-by-side duplex was constructed by Mitch Bell on a lot zoned Single-Family Residential or RS. At the time of development, a duplex could be built on this 10,000 square-foot lot, but it could not be divided into two separate lots. Since then, the City of Salem has amended its code to allow slightly greater density in the RS zone; a developer could now divide this property into two lots and build detached or attached (zero-lot-line) homes.

Corner duplex on Statesman Street, Salem, OR. The owner and his wife live in one unit, and rent the other to a family member.
(Photo courtesy of Google.)

The Salem Revised Code requires two off-street parking spaces per unit. This was accommodated at 590-592 Statesman St. by locating two spaces on each side of the duplex (one in a carport), which takes up a significant amount of site area. Parking is tight, and the back of the second car is 20 feet away from the street line.

The owner/builder expressed that although he is happy with the project result, he likely built to a higher quality than what the market supports in this neighborhood, and for duplexes

in Salem generally. So, making a return on his investment during resale could be difficult, particularly because lots are required to remain adjoined, forcing him to sell the whole building together as a duplex. The owner stated that if he were to begin today, he would probably subdivide the property and build the homes as attached townhomes, which would provide latitude to sell the units independently, and better ensure that he would recoup his development costs.

Supportive Code Provisions

Salem's incentive for duplexes on corners comes from a slight reduction in minimum lot size requirements in the RS zone: 7,000-square-foot minimum for duplex lots, as opposed to 8,000 square feet (or 3,500-square-foot minimum per dwelling instead of the typical 4,000 square feet).

Limiting Code Provisions

This particular site plan was adversely affected by the code's requirement of two off-street parking spaces per unit, particularly at a corner location with ample abutting on-street parking available.

Lessons Learned

Two units are often more valuable if they can be sold separately as attached townhomes on separate lots, rather than selling them as a duplex on a single lot. Flexible corner duplex code provisions are more likely to be used since they allow a developer to craft financially feasible projects, responding to market demand and site-specific circumstances.

Current Status

The developer/builder lives in the 1,550-square-foot unit, while the other unit is occupied by a family member.

6. ACCESSORY DWELLING UNITS

Accessory dwelling units (ADUs) are smaller, ancillary dwelling units located on the same property as a primary residence. ADUs are known by many names that reflect their various potential uses, including granny flats, in-law units, studio apartments, and secondary dwellings. They are self-contained homes with their own kitchen, bathroom, and sleeping area. They can be attached to or detached from the primary residence, and are typically located discreetly on the property in order to preserve a single-dwelling appearance from the street. Primary dwellings and ADUs are almost always owned by the same party, although it is technically possible to separate ownership through the condominium process.

M. Keplinger's backyard detached ADU, Richmond neighborhood, Portland, OR. (Photo courtesy of Ellen Bassett and accessorydwellings.org.)

Accessory Dwelling Unit Characteristics

Most Oregon jurisdictions, Salem being a notable exception, allow ADUs in some variation. Those that do, typically allow them to be created in one or more of the following ways:

- Converting existing living area, attic, basement, or garage;
- Adding floor area to an existing home;
- Building a detached structure on the same lot as an existing home;
- Building a new primary dwelling on the same lot as an existing (small) home, such that the existing home becomes an ADU; or
- Building a new home with an attached or detached ADU.

Accessory Dwelling Units – Typical Characteristics
Form
• Self-contained units with own kitchen, bathroom, and sleeping area
• Either attached (within the main building envelope) with one door facing the street, or detached, separate structure
• Size limits range, but most ADUs are 800 square feet or less
• Detached ADUs are usually required to be set back from the property line and/or behind the primary dwelling
• Parking is either not required on-site or located along the site perimeter
Ownership
• Primary house and ADU owned in common, with either or both units rented out (depending on local regulations) *or* • Primary house and ADU owned as condominiums, which may be owner-occupied or rented (depending on condo documents and local regulations)[33]
Density
• Typically double that of a single-dwelling zone

ADU regulations often address:

- Maximum square footage, placement on the lot, height limits, and entrance locations that reinforce its auxiliary relationship to the main dwelling;
- Design compatibility requirements meant to ensure that ADUs are constructed in a manner consistent with the look and scale of surrounding homes;
- Maximum allowed occupancy between primary dwelling and ADU (typically a single household, as defined by the jurisdiction);
- Use restrictions (i.e., owner occupancy requirements, home-based business limitations, short term rentals, etc.);
- Property eligibility standards (i.e., minimum lot sizes, location within a designated overlay zone, etc.); and
- Rules on sharing of utilities between the ADU and primary dwelling.

History and Regulatory Context

While the term "accessory dwelling unit" may be new, the structure type is not. Older examples include alley apartments and carriage or coach houses. Sometimes settlers would first build a small home, then live in it while constructing their larger primary house, as Thomas Jefferson and his family did while building Monticello. Starting in 1770, Jefferson lived in a two-story, two-room house tucked into the hillside. Two years later, his new wife joined him and they had their first daughter there before moving into the main house.

Before it became the slave quarters for the Monticello estate, Thomas Jefferson, his wife, and their newborn baby lived in this annex (foreground) as the main house (background) was under construction.
(Photo courtesy of Michael Snell and Alamy Stock Photos.)

[33] *Unusual ownership form; see Woodstock Gardens case study for details.*

In the late 1800s, alley-facing ADUs flourished in Washington, DC as an affordable housing choice.[35] With the increasing off-street footprint requirements of garages and the postwar rise of suburban single-family development, accessory dwellings fell out of favor, and nearly ceased to be built (legally) in the United States by the mid-20th century. After a long dormant period, ADUs began making a comeback in the 1980s and 1990s as cities explored ways to support smaller and more affordable housing options within single-dwelling neighborhoods. In response to growing demand for supportive regulations, AARP and the American Planning Association released a model state act and local code for ADUs in 2000 (the full AARP model code is included in the appendix).

> "My favorite building on the grounds [of Monticello] is the South Pavilion, also called the 'outchamber,' where Jefferson lived with his wife Martha and newborn daughter of the same name . . . It consists of only one well-portioned room, with a kitchen in the basement, a Greek Revival roof line and large six-over-six double-hung windows on all four sides. Jefferson and his family lived in the South Pavilion while the main house was under construction.[34]
>
> – Peter Miller

More recently, some cities have been motivated by escalating housing costs, smaller household sizes, and large numbers of illegal ADUs to create legal paths for them. Doing this can simultaneously raise funds (building permits and property taxes) and, in the case of illegal ADUs, get owners to address life-safety issues. In the 1980s, Vancouver, BC, studied utility bills and estimated that as many as a quarter of single-family houses had apartments hidden within them. In response, the City council legalized "family suites," known also as "Auxiliary ADU or AADUs." These allowed owners to construct a complete in-home apartment for a family member. The council also opted to let each neighborhood vote on whether or not to legalize these interior ADUs. The result became a problematic patchwork of areas and zones where ADUs were allowed or banned, which made growth and infrastructure planning difficult. However, by 2004, controversy had died down, and the council legalized AADUs citywide, while relaxing rules for ceiling heights and sprinkler systems.[36]

Vancouver, BC continues to outpace most US cities in its forward-thinking approach to housing affordability and efficient resource use, and it sees ADUs as a key component of those strategies: Since 1990, Vancouver has allowed what it calls laneway houses on 90% of its single-family lots. It's now thinking about extending the allowance of laneway houses to an additional 6% of residential lots and perhaps going so far as to *encourage or require all new houses* to be designed so that future owners can easily convert parts of their homes to apartments, or to be "suite-ready."[37]

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[34] Peter Miller and Charley Miller, *Monticello: The Official Guide to Thomas Jefferson's World* (National Geographic, 2016).

[35] Jamal Kadri, review of *Alley Life in Washington: Family, Community, Religion, and Folklife in the City, 1850-1970*, by James Borchert, *http://accessorydwellings.org/2011/12/05/dwelling-in-the-urban-alleys-of-dc/*

[36] *http://daily.sightline.org/2013/03/07/in-law-and-out-law-apartments/* accessed September 22, 2015.

[37] Ibid.

Key Code Elements

Municipalities differ widely in the strictness of their ADU regulations. For example, this table compares ADU codes in Ashland, Hood River, and Springfield, Oregon; and Vancouver, BC.

ADU Regulation Comparison*

City	ADU Number, Type(s) Allowed	Owner Occupancy	Size Allowances	Off- Street Parking Requirements
Vancouver, BC	2 ADUs total (1 AADU and 1 DADU[38]) per lot	Owner of secondary unit will be a relative of occupier of main dwelling	400 sf or less, or less than or equal to the size of the primary dwelling for AADUs; 280-500 sf and 12.5% or less of lot coverage for DADUs.	None
Ashland, OR	1 ADU (either AADU or DADU) per lot	None	Less than either 1,000 sf or 50% of the maximum gross habitable floor area of the primary residence	0 or 1 off-street space per unit, depending on site characteristics
Hood River, OR	1 ADU per lot	Owner must reside in primary residence or ADU 6 months/year	800 square feet or less	1 per unit
Springfield, OR	1 ADU per lot	Owner must reside in either primary residence or ADU	Lesser of 40% of primary unit, or 750 sf, whichever is smaller; 300 sf minimum	1 per unit

*Full ADU codes are included in the appendix.

Springfield, OR: Springfield Development Code – 5.5-130

Springfield's design standards are exemplary of many cities' standards. They are fairly detailed and apply irrespective of the aesthetic or desirability of the primary residence:

5.5-130 Design Standards

An accessory dwelling unit shall comply with the following standards, where practicable the:

Exterior finish materials shall be the same or essentially the same in terms of type, size, placement and finish as the primary dwelling.

Roof pitch shall match the roof pitch of the primary dwelling.

Trim shall be the same in type, location and finish as the primary dwelling.

Windows shall match those of the primary dwelling in terms of proportion (height and width ratio) and orientation (vertical vs. horizontal).

Eaves shall project from the accessory dwelling unit addition the same distance as the eaves on the primary dwelling.

The full Springfield ADU code is included in the appendix.

[38] AADU stands for Attached ADU, and, DADU stands for Detached ADU.

Following is an overview of supportive and limiting codes for accessory dwelling units, followed by some specific recommendations:

Provision Type	Supportive Codes	Limiting Codes
Use	• Rental and occupancy standards for both primary unit and ADU match what is allowed in single-dwelling zones • Allow one "household" per unit	• Owner-occupancy requirement for one of the dwellings • Limit use as short-term rentals • Allow one "household" for the entire property (primary house + ADU) • ADU residents must be family members of primary home's household
Eligible Properties	• Allow on any residentially-zoned lot with a house or a duplex • Low lot size minimums (e.g., 4,000 sf or less) for a property to be ADU-eligible	• Only allow in some single-dwelling zones or only allow in duplex or multi-dwelling zones • Only allow in overlay zones or specific geographic areas • Large lot size minimums (e.g., 6,100 sf or more)
Size	• Allow a flexible range of ADU sizes, e.g., ranging from small, micro-ADUs of 160 sf (Novato, CA) to detached ADUs up to 80% FAR of the main house (Portland, OR) • Allow 1.5-2 story ADUs • If the code allows garages in side or rear setbacks, allow small, 1-story ADUs there too	• Cap ADUs at very small sizes, e.g., ADU limited to 600 sf (Durham, OR) • Cap ADU height at 1 story
Form	• Allow attached and detached options • Allow up to two ADUs per lot, one internal and one detached	• Only allow attached ADUs in single-dwelling zones
Parking	• Require no on-site parking beyond what's required for the primary house • Waive on-site parking requirement for ADU if site is near transit	• Require one or more additional on-site parking spaces per ADU
Design Compatibility	• Require design compatibility with the primary house only for new ADUs over 1-story tall	• Require ADU's design to match primary residence in all cases, including one-story units (commonly specified items include roof pitch, siding, trim, windows, eaves, and others)
Approval/ Process	• Allow by right	• Require conditional use permit or other discretionary review process
Fees	• Waive or reduce development impact fees • Scale impact fees based on reduced size	• Charge the same development impact fees as for larger single-dwelling homes
Standard Provisions	• Locate ADUs behind the main house and/ or set back a certain distance from the front property line (often 40 to 50 feet) • Limit homes with internal ADUs to one street-facing entry door	

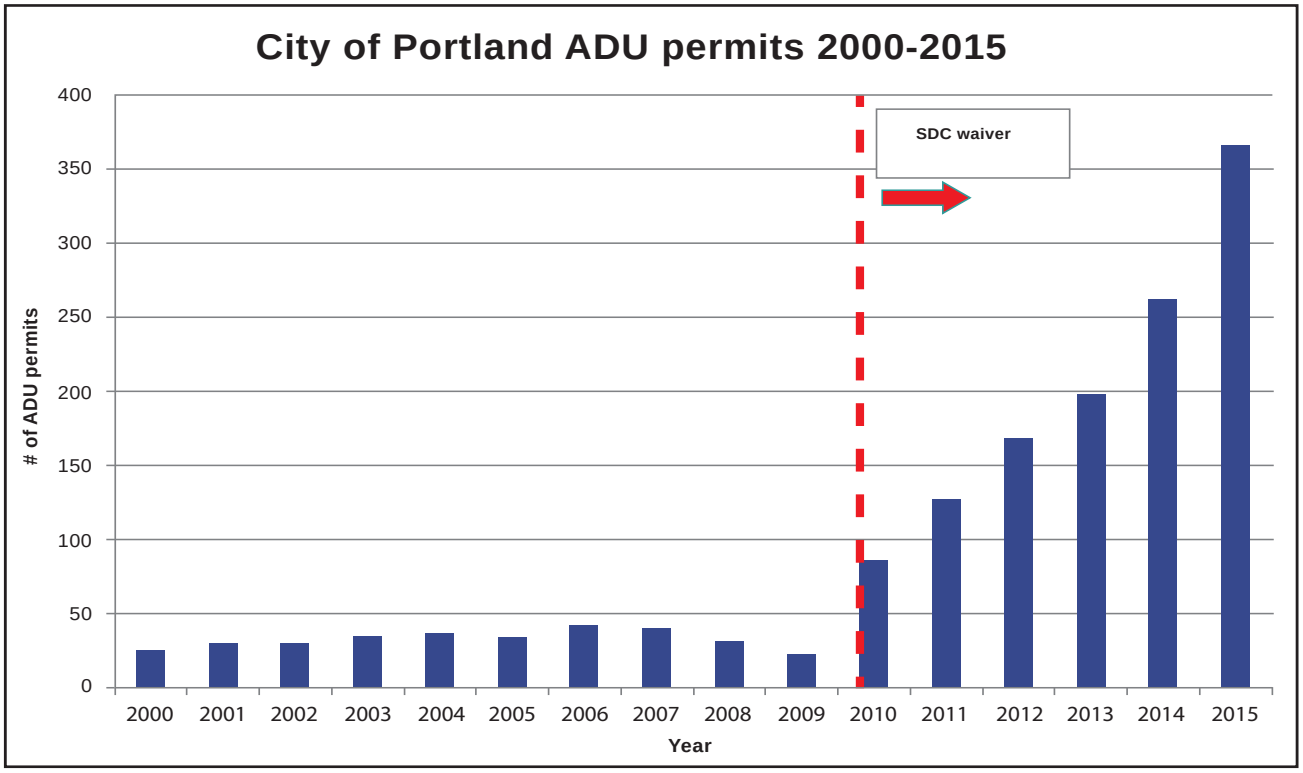
Recommendations

(1) Avoid Owner-Occupancy Requirements

Per DEQ's research, 70% of Portland properties with ADUs and 80% of Ashland properties with ADUs were owner occupied, even without an owner occupancy requirement.[39] Furthermore, such requirements limit financing options for ADUs. If rental of both the primary home and ADU is allowed, lenders can treat it as a duplex for financing purposes. This allows an appraiser to use an income-based valuation, which often comes in higher than a sales comparison approach.[40] A higher appraised value supports a larger loan, which can be the determining factor in whether or not it is possible to finance the purchase of a house with an ADU or the addition of an ADU to an existing house.

(2) Consider Waiving or Reducing Impact Fees or System Development Charges (SDCs)

Bend and Portland, the Oregon cities seeing the most ADU development, have both waived or significantly reduced development fees for ADUs. In Portland, this saved ADU builders an average of $8,000 to $11,000 per project,[41] which turned out to be a significant stimulus for this housing type; six years later, the number of ADUs being built in Portland has grown by ten times from what it was in 2010 when the waiver was first put in place.



Martin Brown, 2014.

[39] Martin Brown, "Accessory Dwelling Units in Portland, OR: Evaluation and interpretation of a survey of ADU owners" (Oregon Department of Environmental Quality, June 2014).

[40] Martin Brown and Taylor Watkins, "Understanding and Appraising Properties with Accessory Dwelling Units," The Appraisal Journal (Fall 2012).

[41] *http://accessorydwellings.org/2014/03/12/city-of-portland-adu-permit-trends/*

(3) Adopt-and-Revise

Jurisdictions interested in allowing ADUs can create a legal path for them based on existing model codes, and then be prepared to make periodic adjustments based on the results of built projects. As interest in ADUs has grown, there's been an accompanying increase in both public excitement about the prospect of building them and concerns about impacts they may have on existing neighborhoods. Communities can (and do) customize design regulations based on local priorities. Nationally, many cities have adjusted their ADU standards over the past couple years to try and strike a balance between regulatory restrictions and desired ADU production levels,[42] and many more are in that process right now.[43] Since each jurisdiction has its own character, priorities, and concerns, there's a strong case for taking an adopt-and-revise approach to regulating ADUs.

Benefits and Limitations of the Accessory Dwelling Unit Housing Type

Benefits	Limitations
Versatility ADUs support a wide range of resident configurations and often get used in different ways over time. Examples include: • ADU as a home for elderly parents or young-adult children • Renting out the ADU to help cover a mortgage • Empty nesters moving into an ADU and renting out the main house or making it available for family or friends • Home office or short term rental, often as a bridge between other uses *Meeting Market Demand* ADUs provide a way to discreetly increase residential densities within existing and new neighborhoods. Their small size matches well with demographic trends towards smaller households, and they typically house more people per square foot of living area, on average, than single-family homes.[44] *Comparably Low Vehicle Ownership Rates* (Where data exist to quantify the trend) Portland ADUs have at least 50% fewer vehicles than typical Portland households.[45] This partially assuages arguments that ADUs will overwhelm street parking availability in neighborhoods.	*Neighbor Concerns* Most limitations on the ADU model relate to some combination of anticipated, perceived, and actual negative impacts ADUs have on immediate neighbors. Neighbor concerns about ADUs tend to fall into four categories: *How they can be used (i.e., student housing, short term rentals, home businesses in residential zones, owner vs. rental occupancy)* These uses can occur in other forms of housing as well. Except for student housing (age is a protected class), ADU uses can be regulated by the local jurisdiction. *Design, Placement, and Privacy* Immediate neighbors sometimes express concern about visual incompatibility with other homes in the neighborhood, loss of privacy in back yard areas, and/or solar shading. Cities can and often do adopt regulations to address these concerns.

[42] Austin, TX; Bend, OR; Honolulu, HI; Berkeley, CA among others

[43] Ann Arbor, MI; Greenfield, MA; Minneapolis and St. Paul, MN; Seattle and Bellingham, WA; Santa Cruz, CA among others

[44] Martin Brown, "Accessory Dwelling Units in Portland, OR: Evaluation and interpretation of a survey of ADU owners" (Oregon Department of Environmental Quality, June 2014, *http://accessorydwellings.org/2014/07/09/are-adus-green-housing/).*

[45] Ibid. (see *http://accessorydwellings.org/2014/07/16/do-adus-cause-neighborhood-parking-problems/)*

Benefits and Limitations of the Accessory Dwelling Unit Housing Type	
Benefits	**Limitations**
Meeting Housing Needs At Any Age Housing needs change over time, and ADUs are flexible for different stages of life. They offer young individuals and couples an entry level housing choice, families a way to expand beyond their primary dwelling, and empty nesters and seniors the chance to age in place without having to leave their neighborhood. *Housing Affordability* ADUs also have a role in addressing the challenge of housing affordability. About 20% of ADUs are lived in for free or rented for far below market value[46] Although market rent for an ADU tends to be slightly higher than a similar sized apartment, they often represent the *only* affordable rental choice in single-dwelling zones, which may have no apartments at all. Finally, ADUs can generate rental income to help homeowners cover mortgage payments, allowing them to stay in their homes.	*Off-Site Impacts* Potential impact on street parking availability is sometimes cited as a concern, and may escalate as an issue if the number of ADUs grows significantly, especially in relatively dense urban areas where street parking is already limited. At present, however, this concern is probably more a matter of public perception than reality. DEQ research shows that "because ADUs are extremely rare (Portland, the nation's ADU 'leader,' has them on less than 1% of eligible lots), and because ADU households have fewer cars than other households, ADUs should have virtually no effect on parking conditions on a citywide basis[47]. *Opposition to illegal ADUs.* Many homes contain detached and interior spaces that have been converted to independent dwelling units without complying with ADU requirements. In some cases, such unpermitted ADUs also fail to meet life/safety codes. From a neighbor's perspective, though, it is hard to know whether a second dwelling unit on a property was permitted properly as an ADU or not. Extreme examples include 2+ story "detached accessory structures" that couldn't legally qualify as ADUs – but which end up being used as self-contained residences after an (unpermitted) kitchen gets added post-completion. Hence the potential for illegal ADUs to give legitimate ADUs a bad name in the public eye

Conclusions

Of the housing types covered in this report, ADUs are the most broadly supported in zoning codes across the state. All larger cities in Oregon allow ADUs except Salem (which is in the process of developing an ADU code), and the Metro regional government requires every jurisdiction within its boundaries to allow ADUs.

However, the rate at which ADUs are created varies widely and seems to track inversely with the strictness of local ADU codes and the size of impact fees.

There is a balance between the strictness of ADU regulations and how often they get built. Portland's relatively liberal ADU regulations, coupled with the waiver of system development charges, is undoubtedly largely responsible for the growth in the ADU market there from about 30 ADUs/year between 2000 and 2009[48] to about one ADU per day in 2015.[49] Meanwhile, in some other jurisdictions ADUs are rarely, if ever, built.

[46] Ibid. (See *http://accessorydwellings.org/2014/08/07/do-adus-provide-affordable-housing/)*
[47] Ibid. (See *http://accessorydwellings.org/2014/07/16/do-adus-cause-neighborhood-parking-problems/)*
[48] Brian Libby, "A Different Kind of Density: Portland's ADU Explosion," *Portland Architecture Blog* (*http://chatterbox.typepad.com/portlandarchitecture/2014/05/a-different-kind-of-density-portlands-adu-explosion.html*).
[49] Steve Law, "County may backpedal on its new property tax policy for granny flats," *Portland Tribune*, November 18, 2015.

According to Alan Durning of the Sightline Institute, the seven most common barriers to ADU development are:

1. Capping the number of ADUs allowed on a lot to one rather than two;
2. Requiring off-street parking spaces;
3. Owner-occupancy requirements;
4. Occupancy limits;
5. Overly-restrictive size limits;
6. Limited locations within the city where they can be legally built; and
7. Requirements to match the design of the primary home.[50]

Individually, these rules don't necessarily inhibit ADU development. But collectively, they significantly hamper ADU development - especially for a housing type with low efficiency of scale and most commonly built by mom and pop builders rather than development professionals.

The development potential for ADUs exceeds that of other infill housing types profiled in this report because of their:

- *Familiarity*. ADUs have been around in various forms throughout our nation's history, show up often in popular culture (e.g., the Fonz lived in an ADU), and many people have direct personal experience visiting or living in small dwellings tucked within or appended to existing homes. The inclusion of ADUs on green home tours has further increased their exposure.
- *Flexibility*. The combination of a primary house and ADU on the same lot can work well for various types of households, income levels, and stages of life. Furthermore, the uses of ADUs can evolve over time in response to the changing needs of the owner.
- *Impact*. The number of ADUs that can be slipped into single-dwelling neighborhoods exceeds that of other housing types studied in this report. If even a small percentage of eligible properties end up being developed with ADUs, the raw number of developed ADUs could still be significant.
- *Acceptance*. Although there have certainly been concerns expressed about ADUs, more cities seem to be writing or updating (typically liberalizing) their ADU regulations than are pursuing the other neighborhood infill options studied in this report.
- *Adaptability*. When local communities are worried about potential undesirable effects from ADUs, they can (and do) craft regulations to screen out particular types, locations, and/or uses. One city might be especially concerned about student rental housing – and insist on an ADU owner occupancy requirement. Another might worry about the imposition of detached ADUs on neighbors' privacy and decide to only allow internal ones. Each city has different priorities and concerns, and there is a wide enough range of possible regulatory controls on ADUs that two communities with very different circumstances could write appropriately different ADU codes. This regulatory flexibility allows ADUs to pass political muster and get adopted in a particularly wide range of jurisdictions.

[50] Alan Durning, "ADUs and Don'ts," (Sightline Institute, May 2013, *http://daily.sightline.org/2013/03/15/adus-and-donts/*).

The primary lesson learned from studying ADUs is the value of experimentation with regulations over time to tune this model to a community's particular needs. Each jurisdiction will have unique priorities for how many ADUs are desired in the housing mix, what forms they should be allowed to take, where they should be allowed to be built, and what they can be used for. Since an ADU regulation may not work exactly as desired on the first try, the best strategy is to periodically evaluate how existing regulations are being used in practice and to update them as necessary.

ACCESSORY DWELLING UNIT CASE STUDIES

Das Chapin & Amanda Punton – Portland, OR

Converted basement ADU with owners living in main house

Location: Buckman Neighborhood, Portland, OR (population 609,456)

Owner: Amanda Punton and Das Chapin

Designer & Builder: Das Chapin and Amanda Punton

Type: Conversion of existing walk-out basement

Square Footage: 700 sf

Year Built: 1899, basement converted to ADU in 2013

About the Project: Owners Amanda Punton and Das Chapin took an 1899 single-unit home and converted the basement into a for-rent ADU. Punton and Chapin had prior experience with ADUs and valued efficient use of resources. In fact, the couple limited their home search to properties with ADU or duplex potential, knowing that a second unit would be another key factor in helping them afford their desired neighborhood. Energy efficiency was another decision-making factor in building out their ADU: small size, physical attachment to the primary residence, energy-saving lighting, and new insulation brought their tenants' electricity bill (for space heat, hot water, and range) to between $30-$50 per month.

Owners Das Chapin and Amanda Punton live on the main and second floors of their house, while they rent out their converted basement ADU on a long-term basis.
(Exterior photo courtesy of Das Chapin. Interior photo courtesy of Lina Menard.)

At the time of purchase, the home's basement was already half-finished. It lacked a kitchen, but had a separate entrance, two bedrooms with egress, and a bathroom. To transform the basement into a functional ADU, Punton and Chapin removed a staircase connecting the basement and first floor and added a kitchen. They renovated their home in phases, first staying with a friend while converting the basement to an ADU, then moving into the basement ADU unit while renovating the rest of the house. Punton noted the difficulty in estimating how much value has been added to the house, and that their ability to perform much of the work themselves helped make the project financially feasible: Punton estimates that Chapin likely put in $25,000 worth of time. The use of owner/builder sweat equity to reduce out-of-pocket costs for ADUs is not uncommon.

Although Punton and Chapin enjoyed the option of utilizing their ADU as a short-term rental, they prefer the stability of renting it out on a longer-term basis. They also appreciate the flexibility of being able to live in either the primary unit or the ADU, as their plans and circumstances may change over time. Currently, income from the ADU covers their mortgage, but not taxes and insurance.

Supporting Code Provisions

Portland's code allows for attached ADUs, and for internal conversion of homes (including attics, basements, or other living areas) and conversion of detached accessory structures (garages) into ADUs.

Limiting Code Provisions

The builders noted no specific development code barriers. However, a building code requirement to de-couple the heating system between the primary house and ADU became a significant project expense.

Lessons Learned

Internal ADU conversions are often the least expensive to create, and hence a tool likely to help increase the availability of affordable housing.

Current Status

Owners live in the upstairs (main and second) floors of their house and rent the ADU out on a long-term basis.

Additional information is available at: *www.accessorydwellings.org*

Bob & Jenny Harris – Eugene, OR

Mother-in-law wing addition

Location: Hawkins View Neighborhood, Eugene, OR (population 159,190)

Owner: Bob & Jenny Harris

Designer & Builder: Rainbow Valley Design & Construction

Type: Addition to primary dwelling

Square Footage: 785 sf

Year Built: 2007

Bob and Jenny learned about Secondary Dwelling Units, or SDUs as they are known in Eugene, when they were attempting to help Jenny's mother find a new home. Their own lot wasn't large enough to allow the addition of an SDU, so they searched for a larger lot where one could be legally added.

The SDU was designed as a wing (addition) on the existing home that was designed to appear as part of the main house. Its entry door is around the corner, invisible from the street. The design is flexible; the SDU can function as a fully self-contained residence or converted into a family room. Accessibility for Jenny's 80-year-old mother was a major consideration and is reflected in a floor plan, bedroom, and bathroom designed for ease of mobility.

Bob and Jenny's attached SDU was located within a Planned Unit Development and in a tree preservation area, so their design had to be reviewed and approved by their homeowner association's architectural control committee and new trees were planted to mitigate for one they removed for the SDU (and others that had been removed previously). Review and permitting went easily, partly because the SDU was designed to appear as a natural extension of the main house. Landscaping costs proved higher than expected, however, in part due to design and planting requirements.

Bob and Jenny Harris's attached, mother-in-law wing ADU was constructed to look like part of the main house. (Photo courtesy of Lina Menard.)

Supportive Code Provisions

Eugene development code gives flexibility in parking placement (parking spaces for the SDU and main house are both accommodated in the main garage).

Limiting Code Provisions

Eugene requires one off-street parking space per dwelling unit, including SDUs. Although it didn't impact Bob & Jenny's project, Eugene has a relatively high minimum lot size, for attached and detached SDUs, of 6,100 square feet (12,500 for flag lots). Lastly, SDUs are allowed in no other zones.

Lessons Learned

Allowing SDUs or ADUs in the form of additions to existing homes can work particularly well for accessible living spaces, multi-generational housing arrangements, and in situations where keeping with existing neighborhood character is paramount. Lot size thresholds for ADUs can also be a significant determinant of the number that will be developed in a particular jurisdiction.

Current Status

Jenny's mother lives in the ADU, conducts most of her day-to-day activities independently, and socializes with family when paths naturally cross.

Additional information is available at: *www.accessorydwellings.org*

Susan Moray - Portland, OR

Detached garage conversion

Location: Ladd's Addition, Portland OR (population 609,456)

Owner: Susan Moray

Designer: Jack Barnes

Builder: Stephen Smith of Design Build Portland

Type: Detached garage conversion

Square Footage: 550 sf

Susan Moray became interested in converting her detached garage into an ADU when her realtor friend shared what she had learned in an ADU class for homeowners. Susan wanted flexibility as she anticipated changes in her housing needs. She valued the option of having family nearby, and the ability to generate additional income. With the help of her architect, Susan converted her garage into a flexible space that could be rented out. At 550 square feet, Susan's ADU is at the smaller end of Portland ADUs, which City of Portland regulations allow to be up to 800 square feet or 75% of the main dwelling size, whichever is less.

Susan Moray's detached garage-conversion ADU. Southeast Portland, OR. (Photo courtesy of Lina Menard.)

Susan lives in Ladd's Addition, a designated historic neighborhood where special design requirements and restrictions apply. The City of Portland classified most original garages in Ladd's Addition as "contributing structures" to the historic designation. Thus, Susan was prohibited from demolishing her garage and building from scratch. Because of code flexibility for conversions of existing structures, however, Susan was allowed to convert her garage as long as she maintained the structure's height and two existing walls. So although Susan would have built a two-story, mid-century modern ADU given the chance, she limited mid-century influence to the interior finishes while maintaining a traditional exterior, to match her house.

Supportive Code Provisions

Portland development code allows for the conversion of detached accessory structures into ADUs, even when located within rear or side setbacks. Since Susan's ADU project was

completed, accessory structure regulations have been updated to allow all one-story structures measuring up to 24'x24' within side and rear yard setbacks (previously allowed only for garage conversions).

Limiting Code Provisions

Portland's development code was only limiting to this project via the property's location within a historic district: First, demolishing the existing garage and building from scratch was not allowed. Second, the builder felt constrained by exterior design requirements.

Lessons Learned

Design compatibility requirements can challenge a builder's original vision for an ADU project. However, design and other provisions may increase the likelihood that a project will be well received by neighbors. According to Susan, "My neighbors have been nothing but supportive, which has been lovely."

Current Status

Susan utilizes her ADU as a furnished rental for friends, family, and others. In the future, Susan may live in her ADU and rent out the main house, or allow her daughter and grandchildren to live there.

Woodstock Gardens – Portland, OR

Three for-sale ADUs and new homes with condominium ownership

Location: Brenton-Darlington Neighborhood, Portland, OR (population 609,456)

Owner/Developer: Kristy Lakin, Woodstock Commons LLC

Type: Cluster of three primary homes & three detached ADUs on three adjoining lots totaling 20,000 square feet (167'x120'), all new construction, sold separately as six condominiums under one home owner association.

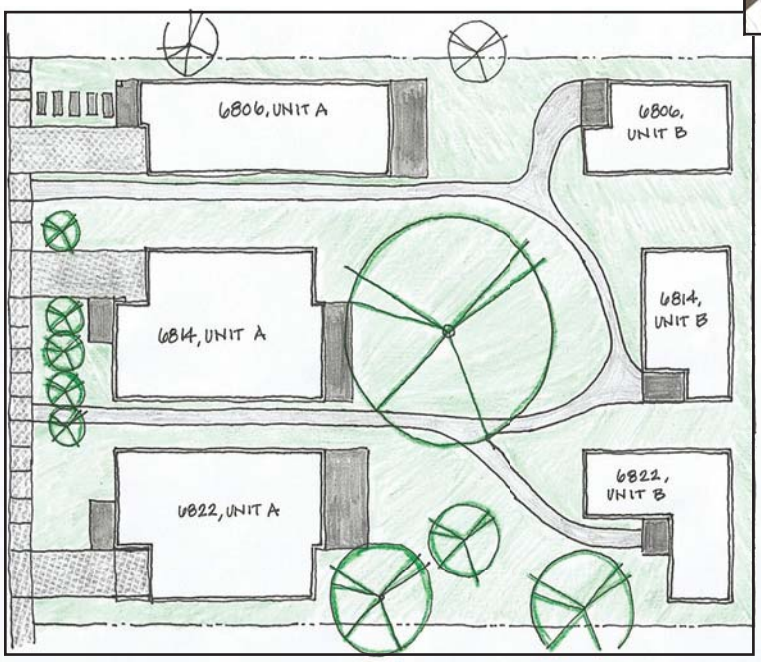
Square Footage: Homes are 2,055–2,512 sf; ADUs are 650–763 sf

Year Built: 2012–2015

Woodstock Gardens is situated on a high frequency bus line in one of Portland's close-in, single-family residential neighborhoods, across from Woodstock Elementary School. The project consists of three primary dwellings, three detached ADUs, and 6,000 square feet of shared common outdoor space on three adjoining lots where there previously had been a single house on a single lot. Both primary homes and ADUs were sold and financed independently as detached condominiums.

Parking for the primary dwellings is provided in driveways and front garages, although this is not technically required because Portland waives parking minimums for sites within 500 feet of high frequency public transit. Off-street parking is not provided for the three ADUs.

Aerial view, Woodstock Gardens, Portland, OR
(Photo courtesy of Woodstock Commons, LLC)



Site plan, Woodstock Gardens, Portland, OR
(Image courtesy of Woodstock Commons, LLC)

By submitting ADUs to condominium ownership, Kristy Lakin created small and more affordable home ownership opportunities, averaging $222,000 each, in a neighborhood typified by larger, expensive homes. Even with a somewhat discounted price for being owned as condominiums, the average sales price of the full sized homes in this development was $508,000. Woodstock Gardens was inspired by another Portland project, Sabin Green (by Orange

Rear detached ADU, Woodstock Gardens, Portland, OR (Photo courtesy of Eli Spevak.)

density on the site and provided for an eight-home community (four primary dwellings and four ADUs). However, it was not possible to simultaneously meet this allowed density and Portland's 36-foot minimum lot width. So the developer sought an adjustment to the minimum lot width through a discretionary planned development process. Initial neighborhood association support for the project shifted to opposition, and a City planner indicated that it would be unlikely for this adjustment to be approved. So the developer reduced the project to three lots to avoid discretionary review and increased the sizes of the primary homes to maintain financial feasibility.

Supportive Code Provisions

Portland code does not require ADUs to have their own off-street parking space, which created more room for shared, outdoor space. Portland also waives off-street parking minimums for properties near transit (not ultimately used for this project). Lastly, Woodstock Gardens benefited from Portland's temporary waiver of system development charges on ADUs .

Splot LLC), which consisted of two ADUs behind two houses that were also sold separately as condominiums. Portland's proposed Comprehensive Plan Update includes policies to encourage similar developments.[51]

The developer's original proposal was to subdivide the property into four 30-foot-wide, 5,000-square-foot lots. This would have achieved the maximum allowed

Street-facing main dwelling, Woodstock Gardens, Portland, OR (Photo courtesy of Eli Spevak.)

Limiting Code Provisions

Portland's minimum lot width standards made it impossible to subdivide deep lots to achieve allowed density. Time, expense, and subjectivity of the adjustment process ultimately rendered a vision for a greater number of smaller homes (still within density allowances) financially impossible.

[51] See Portland Comprehensive Plan Update Proposed Draft, "Policy 5.4: Housing types. Encourage new and innovative housing types that meet the evolving needs of Portland households and expand housing choices in all neighborhoods. These housing types include single dwelling units; multi- dwelling units; accessory dwelling units; small units; pre-fabricated homes such as manufactured, modular, and mobile homes; co-housing and clustered housing/clustered services." Also "Policy 5.36: Variety of homeownership opportunities" references support for the creation of condominiums.

Lessons Learned

The developer stated that this development would likely have been easier and more profitable had she simply sought an adjustment to create four narrow lots without raising the specter of proposing a house and ADU on each of them. However, this would have provided less density, eliminated the shared outdoor space, increased building footprints, and resulted in one of the housing types (long, skinny homes) often most opposed by Portland residents.

Current Status

All three Woodstock Garden ADUs sold quickly, purchased by single people aged 30-50 and one empty nester. The primary dwellings sold later.

Project website: *www.woodstockgardens.com.*

Additional information can be found at: *http://accessorydwellings.org/*

7. SUMMARY AND CONCLUSIONS

Each of the four housing types documented in this report represents a way to discreetly place small, affordable, low energy use homes into the fabric of existing neighborhoods. This is accomplished by allowing more units than would typically be allowed in a single-dwelling zone and/or allowing them to be attached in exchange for restrictions on size, number, placement, use, and design. Following are typical incentive/constraint pairings for each housing type:

Housing Type	Incentive and Constraint pairing
Cottage Cluster	Density bonus up to 2x number of units in exchange for home size limitations and site design/layout standards.
Internal home division	One or more additional units of density in exchange for a requirement to preserve the look of a single home.
Corner Duplex	Up to one additional unit of density on corner lots in exchange for requirements that the structure have the appearance of a single house from either street frontage.
Accessory Dwelling Unit	One or two additional units per lot in exchange for meeting size, location, design compatibility, and use requirements to ensure that the ADU is discreet relative to the main house and supports the look and feel of the surrounding neighborhood.

Lessons Learned

The key lesson from this report is *the importance of balancing regulatory restrictions on these housing types with desired production levels*. Regulations should be restrictive enough to prevent undesirable development trends, but flexible enough that they actually get used. Of the codes studied in this report, some have been used only once (cottage clusters in White Salmon, WA and Bend, OR; internal conversions of historic homes in Portland, OR), some have never been used (cottage cluster codes in Sisters and Wood Village, OR), and some only started getting market traction after several code and fee adjustments stretching over nearly two decades (ADUs in Portland, OR).

Adopt-and-Revise. Although they all have deep historic precedents, these housing types remain quite rare compared with the development of detached single-family homes. If a city would like to see them become more widespread and available, they should accompany new codes with utilization rate targets (as a number of percentage of market share), then plan to adjust regulations periodically based on actual production levels, while also taking into account desired site and building design outcomes, as well as community feedback (positive and negative) from completed projects. Since each jurisdiction has its own character, priorities, and concerns, there's a strong case for taking an adopt-and-revise approach to regulating these housing types.

Each of these types has the potential to boost population density in residential areas while maintaining neighborhood character and increasing housing choices. This supports multiple policy goals, including:

- Affordable housing;
- Compact development (reducing pressure on urban growth boundaries);
- Smaller homes for smaller average households; and
- More low energy use homes (by virtue of being smaller and/or attached).

The housing type from this report with the most promise for broad application is the accessory dwelling unit. However, they all can play an important role in expanding housing choices within Oregon neighborhoods.

8. RESOURCES

Hirt, Sonia, *"The Devil is in the Definitions: Contrasting American and German Approaches to Zoning,"* American Planning Association. Journal of the American Planning Association, Autumn 2001; 73, ABI/INFORM Global p. 436.

Keefe, Lloyd T., *"History of Zoning in Portland, 1918 to 1959,"* August, 1975.

Lehigh Valley Planning Commission, "Cottage Housing Development Guide/Model Regulations," July 31, 2008.

Meck, Stuart, AICP, "Model Planning and Zoning Enabling Legislation: A Short History," in "Modernizing State Planning Statutes: The Growing Smart Working Papers Volume One," American Planning Association, Chicago, IL, March, 1996.

The Housing Partnership, *"Cottage Housing in Your Community: a guide to drafting a cottage housing ordinance,"* Seattle, Washington, June, 2001.

Chapin, Ross, *"Pocket Neighborhoods: Creating Small-Scale Community in a Large-Scale World,"* Taunton Press, Newton, CT, 2011.

9. Appendix

Code Resources

a. Cottage Clusters (Links, Regulations)
b. Internal Home Divisions (Links, Regulations)
c. Corner Duplexes (Links, Regulations)
d. ADUs (Links, Regulations)