

Benefit analysis for small-footprint apartment buildings in Oregon

May 2024

Context: HB 3395 (2023) included a provision to remove barriers to small-footprint apartment buildings by allowing single-staircase access above the third story in certain limited conditions. HPAC recommended implementing this with clear and objective rules under particular conditions.

Even with additional safety measures such as small floorplates and higher sprinkler, alarm, or fireproofing standards, these buildings might not be appropriate for departments without equipment that allows access to 4-6 story buildings. Therefore, Oregon's Building Codes Division faces a policy decision of how to distinguish between different types of fire districts in order to carve out those with less equipment. Should Oregon use a clear and objective standard, as recommended by HPAC? Should it give complete discretion to the local fire official, as requested by local fire officials during the legislative process? Is there a middle ground that might give discretion to local fire officials, but on a somewhat narrower question?



Research question: How much benefit, in additional housing or housing quality, might Oregon reasonably expect from a well-executed version of this reform? A precise answer to this question is impossible. Instead, we'll offer several approaches to the question and some data associated with each.

Method 1: Production in other jurisdictions

Seattle has allowed single-stair buildings of up to six stories since 1977.¹ Officials there estimate that in that time, "hundreds" of such buildings have been constructed. Denver-based architect Sean Jursnick has

¹ Smith, Stephen, and Mendoza, Eduardo. "[Point Access Block Building Design](#)." Cityscape, U.S. Department of Housing and Urban Development, 2024.

identified 100 such buildings in Seattle either built or currently in development, each with between 4 and 24 homes.²



New York City has also allowed single-stair buildings for decades. Building conditions there are different: regardless of stairway count, New York requires concrete or steel construction for new multifamily buildings. However, the building type is quite popular: 30,000 homes have been built since 2000 in more than 4,000 single-stair buildings, an average of 7.5 homes per building.³

Outside the United States, the contrast is even starker. Only the U.S., Canada, South Africa and Uganda ban single-stair buildings above three stories even when sprinklers are present.⁴ In most of the developed world, high floorplate efficiency and layout flexibility mean that single-stair designs are by far the most common way to build multifamily buildings: either with a single staircase on a small lot, or multiple adjacent single-staircase stacks.⁵ Though there are too many differences in context to consider quantitatively, the overwhelming global popularity of single-stair designs speaks to their long-term potential in Oregon.

Method 2: Potentially viable sites in the Portland metro area

This housing type is particularly intended for small lots where multifamily development would currently be considered all but impossible due to the need to assemble multiple lots to accommodate a standard large-floorplate apartment building. Therefore, one way to estimate its potential is to consider the number of **small lots in relatively desirable locations that are not already fairly intensely developed**.

² Jursnick, Sean. "[Point Access Blocks](#)." Google Maps, 2024.

³ Unpublished research by Stephen Smith for the Center for Building in North America, 2024.

⁴ Speckert, Conrad. [SecondEgress.ca](#). 2021.

⁵ Smith and Mendoza, HUD, 2024.

For simplicity's sake, we restricted our query to Metro's RLIS database of taxlots in greater Portland. We filtered that database of 649,105 properties for those meeting these conditions:

- Between 2,500 and 10,000 square feet
- With an estimated land market value above \$200,000 *and* above \$40 per square foot
- With estimated building market value below \$400,000
- Zoned for residential or commercial (but not industrial) development

Finally, as a quick and dirty way to ignore sites with more demand for on-site parking, we eliminated all such lots except those in Portland and a handful of large or close-in suburbs: Beaverton, Gresham, Hillsboro, Lake Oswego, Maywood Park, Milwaukie, and Tigard.

This left **89,091 lots** sitting on an aggregate **19,127 acres** around the metro area—about 6 percent of the metro area's current residential and commercial land. Of these, 79% (70,558) sit in Portland proper and almost all (98%) are currently zoned for the lowest densities (1-4 homes). If future zoning changes were to allow 4-6 story multifamily construction on some of these small lots in relatively desirable locations, anything above three stories would generally be geometrically infeasible without building code written with such "tall and skinny" buildings in mind.

If 5% of such lots were to eventually develop with the average 7.5 homes seen in New York City's modern single-stair buildings, they'd account for **33,409 homes** in these relatively high-amenity locations.

Method 3: Hard costs of stairwells

An architect's analysis in 2022 in Charlottesville, VA, showed that the hard costs of stairs enclosed in a concrete masonry unit shaft in a six-story building with two-hour fire rating was a bit over \$63,000 per flight. This number did not include furring, drywall, or any financing costs. This comes to **\$378,000** in non-revenue-producing hard costs for a six-story building, about the same as an apartment. That's not a major cost barrier in a larger building, but in a 24-unit building it's enough to kill the project.

Method 4: Better matching Oregon's future housing stock to its future residents

Multifamily construction in Oregon currently leans toward **disproportionately large structures and disproportionately small homes**. This in turn limits the number of people, especially families and other larger households, who can be well served by multifamily housing. It also limits the location of new multifamily buildings to parts of the city with larger lots, often in greenfields or along busy arterial streets.

Due in part to the double-staircase requirement, multifamily housing production in Oregon currently depends heavily on quite large structures and relatively large parcels of land. From 2000 to 2019, structures of 50 or more homes accounted for 45 percent of all homes produced in new Oregon

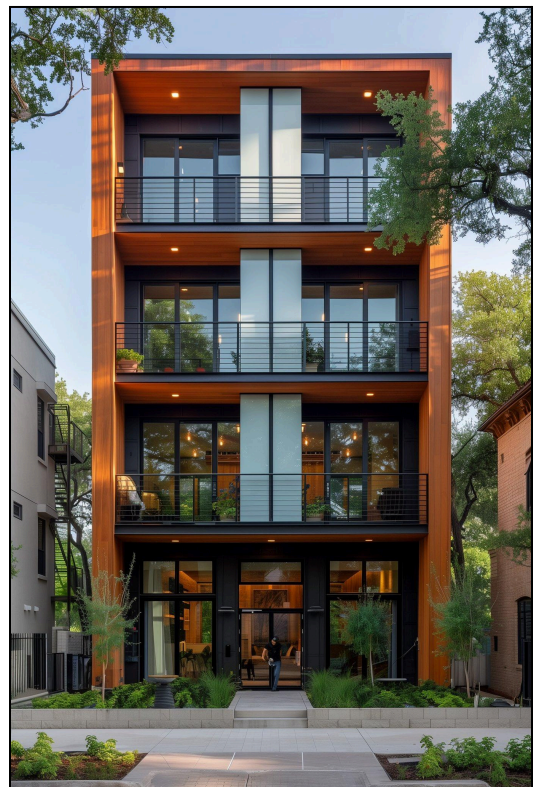
buildings of 5 or more units. Smaller-scale structures of 5 to 19 homes had fallen to 34 percent of such new production in those years.⁶

Double staircases lend themselves to large buildings and double-loaded corridors, which in turn—because most homes rely on a single wall of windows—lend themselves almost entirely to narrow studio and one-bedroom homes.⁷ Though the American Housing Survey does not offer statewide data in Oregon, within the Portland metro area it finds that in structures of 50 or more homes, 65 percent are either studios or one-bedrooms, compared to just 32 percent of structures of 5 to 19 homes.⁸

Many new family-size apartments are built in single-stair buildings—they're just limited by the state building code to three stories in height, even if local zoning would allow more.

Conclusion: One reason it's difficult to predict the effect of allowing single-stair designs in parts of Oregon is that this building code change is only one of several essential ingredients for eventually unlocking small-footprint apartment buildings in Oregon cities.

To take full advantage of their greater floorplate efficiency, small-footprint single-stair apartment buildings are unlikely to be constructed anywhere without minimal setbacks, parking mandates, or market demand for on-site parking. However, their popularity in cities with all those conditions suggests significant long-term potential in the more walkable, transit-rich areas of a handful of Oregon cities such as Portland, Eugene, Salem, Oregon City, and Bend. (Encouraging their legalization and use is one of the items in Portland's draft Housing Production Strategy.) Last year, Oregon's Climate-Friendly and Equitable Communities rules removed mandatory off-street parking from almost all these areas, so Oregon is already closer to unlocking this housing type than most of the United States.



Oregon could take a modest step toward maximizing housing choice and abundance, especially in currently exclusive and high-amenity urban areas, by approving a usable building code for small-footprint apartment buildings in the 2025 OSSC.

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⁶ 2022 American Community Survey, table B25127.

⁷ Justus, Andrew. "[How to Get More Family-Sized Apartments](#)." Niskanen Center, 2022.

⁸ 2019 American Housing Survey of Portland-Vancouver-Hillsboro MSA.