RESEARCH REPORT

# Making Room for Housing near Transit: Zoning's Promise and Barriers

## An Examination of Policy and Outcomes in the Puget Sound

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*January 2023*

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# Acknowledgments

This report was funded by a grant from Amazon. We are grateful to them and to all our funders, who make it possible for Urban to advance its mission.

The views expressed are those of the authors and should not be attributed to the Urban Institute, its trustees, or its funders. Funders do not determine research findings or the insights and recommendations of Urban experts. Further information on the Urban Institute's funding principles is available at urban.org/fundingprinciples.

Thanks to Sophia Weng for her assistance in reviewing zoning codes. We appreciate the detailed feedback provided to us by Gregg Colburn, Mary Cunningham, Paul Inghram, Courtney Jones, Christina Stacy, and Liz Underwood-Bultmann. We also appreciate feedback from planning staff in 20 jurisdictions who offered in-depth review of their respective zoning codes.

# Executive Summary

**Nestled between the Cascades and the Olympic Mountains, blessed with moderate weather, and home to a strong job market, the Puget Sound is one of the most attractive metropolitan areas in the United States. These conditions have encouraged growth: among the country's 50 largest cities, Seattle grew faster than all but Fort Worth and Austin from 2010 to 2020.[1] This momentum, however, has had negative consequences. Affordability has declined, and the region has struggled to attract residents or retain its existing population. The Puget Sound does not have adequate housing to meet demand, and tens of thousands of residents are experiencing homelessness.[2]**

## Key Findings

The Puget Sound region has a unique opportunity to build on its strengths by expanding access to housing near transit for all residents. Although new housing construction has slowed in recent decades, new land-use policies implemented locally or statewide could accelerate construction, add space for residents, and reduce housing costs.

Major transit investments could transform regional mobility, but local rules currently limit housing growth. Most housing is built in neighborhoods zoned for multifamily housing, but about one-third of station-adjacent land is zoned for only single-family homes. Almost 50 percent of this land requires at least one parking spot per unit, adding to housing costs.

Additionally, zoning allowances for new housing are not proportionate to real estate demand. Many of the region's most popular jurisdictions have particularly stringent land-use regulations, but with new zoning, these municipalities could make room for more homes and increase housing availability. Statewide reforms, for example, could promote construction in jurisdictions that have restricted growth, increasing housing production in the coming decade by up to 70 percent compared with the status quo.

A diverse range of reforms scaled to community needs is necessary to meet increased demand for housing. Reforms allowing high-density housing near transit would be most effective overall, but reforms allowing the construction of two- to four-unit buildings could provide significant benefits in suburban communities like Bellevue and Redmond.

Now undertaking the nation's largest transit improvement program, decisionmakers in the Puget Sound have a remarkable opportunity to continue to promote new housing construction and to do so in the neighborhoods closest to affordable, environmentally sustainable public transportation. More homes can provide residences for new inhabitants while reducing housing costs overall. If located in communities with well-funded public services and employment access, those homes could improve quality of life for many. But land-use regulations put into place by cities and counties—including zoning policies that regulate building use and form—are inhibiting housing construction. Zoning policies are not the only explanation for inadequate housing availability. High construction and financing costs, limited land availability, and few public subsidies for affordable housing also contribute, but they play a key role in influencing how much housing can be built.

In this report, we examine housing availability and zoning in the transit-served areas of the Puget Sound, while evaluating whether regulatory changes could spur growth. New housing is concentrated in neighborhoods near light rail and bus rapid transit stations. But some of the region's municipalities with the highest home values, indicating development demand, have regulations that inhibit construction, particularly of a diversity of housing types that are affordable to all residents. With these regulations, localities contribute to the region's high housing costs. Allowing higher construction densities could make way for a more equitable distribution of available housing and ultimately produce more affordable living. We focus on three questions:

- How is housing availability currently distributed throughout the region, and how does that availability compare with the Puget Sound's demographics?
- In the areas near transit, to what degree do zoning rules promote or inhibit housing construction given the housing market, and what is the likelihood of future construction?
- What are the potential impacts of regionwide zoning reforms that promote transit-adjacent residential growth on new construction rates and its distribution throughout the Puget Sound?

## Housing Availability Is Inequitably Distributed

Over the past few decades, housing construction has declined in the Puget Sound, contributing to the region's growing housing prices; the share of renters spending more than 35 percent of their incomes on housing has increased from 29 percent in 1970 to 37 percent in 2020. At the same time, the number of inhabitants per dwelling unit has increased over the past decade, meaning increased crowding.

Although almost 200,000 housing units were added in the region between 2010 and 2020, those units were inequitably distributed. Among jurisdictions with transit access, we find that:

- **A disproportionate share of new housing is concentrated in high housing-cost cities.** These include Issaquah, Kirkland, Newcastle, Redmond, and Seattle. Each community features median housing values above the metropolitan average, allowing them to attract development interest.
- **But some high-cost cities have little housing growth; they are leveraging local policies to inhibit construction**. Despite demand from real estate investors, cities such as Bellevue, Lake Forest Park, Normandy Park, and Mercer Island have added relatively little housing since 2010.
- **Low housing-cost cities have added few housing units, likely because developers are unable to make projects financially viable because of inadequate resident incomes and limited market demand**. Representative cities include Everett, Federal Way, Lakewood, SeaTac, and Tacoma.
- **Federally subsidized affordable housing units are not available everywhere**. This housing is concentrated in Everett, Lynnwood, and Seattle. It is nonexistent in many suburbs, including DuPont, Edgewood, Fircrest, Lake Forest Park, Mukilteo, and Newcastle, speaking to the difficulty for families with low and moderate incomes to live in these areas.
- **Transit areas are diverse and populous**. Almost one-quarter of the region's inhabitants—1 million people—live within a half mile of existing or planned rail and bus rapid transit stations. Compared with people in the rest of the region, they are more racially and economically diverse.
- **Recent regional housing growth is focused near transit**. These areas attract the most housing permits. Seattle alone is responsible for two-thirds of the region's transit-adjacent housing permits, despite only having one-quarter of the region's transit-adjacent land (although it has had the most transit investment until recently). The vast majority of new units are located in large structures with 50 or more units, reflecting market demand and limited land availability.

## Zoning Near Transit Varies, but Is Often Restrictive in Communities Likely to Attract Development

We assembled zoning data for 37 jurisdictions, identifying what type of development is allowed by right, meaning that it is reviewed only by planning administrators and does not need discretionary

review, public hearings, or rezonings. We compared those policies with existing and potential development in areas near transit. Current zoning does make room for considerable housing growth (we refer to the theoretically maximum housing availability as the "zoning envelope"), but those allowances vary considerably by jurisdiction and by station area. Our key findings include:

- **Recent housing growth near transit is mostly in zones where apartments are legal**. Almost 90 percent of housing permitting in the past decade was in neighborhoods zoned to allow multifamily housing construction, particularly in Seattle.
- **Restrictive land-use regulations remain common.** A third of land near stations is reserved exclusively for single-family home construction, and on almost a quarter of transit-adjacent land, localities imposed very high parking mandates: two required spaces per new unit.
- **Regionally, zoning ordinances theoretically make room for new housing growth, but much of those allowances are in areas without much demand**. Cities with less demand, such as Everett and Tacoma, have zoning allowing high housing densities near transit, but many high-demand cities limit growth. Moreover, while there is room for 100,000 units in two- to four-unit buildings on parcels occupied by single-family homes, trends indicate those are unlikely to be developed.
- **Some wealthy suburbs feature restrictive zoning**. Bellevue, Kenmore, Lake Forest Park, Mercer Island, Mill Creek, Mukilteo, Redmond, and Renton—which have high resident incomes—each allow low housing densities near transit. Many prevent existing property owners from adding housing units to their parcels through backyard construction.
- **Current zoning policy combined with market demand could result in inadequate construction levels**. About 95,000 units could be added near transit—fewer than needed to encourage a dramatic increase in availability or meet regional needs. That said, Lynnwood, Mountlake Terrace, and Shoreline have policies that position them well to attract housing.
- **There are several major non-zoning obstacles limiting housing development**. Building small apartments may be unlikely because it would require many single-family homeowners to add units to their yards. Moreover, while many large parcels are zoned to permit housing, these are often occupied by institutions (e.g., universities), retail, corporations (e.g., office parks), or public entities, none of which may desire housing-focused redevelopment. And many properties that are underbuilt compared with zoning—meaning fewer housing units exist than are theoretically allowed—are in areas with higher poverty rates, which have trouble attracting development.

# Regionwide Zoning Reforms Could Increase Building

We model a series of possible zoning changes for neighborhoods near transit that could be implemented at the local or state level. We test four potential changes:

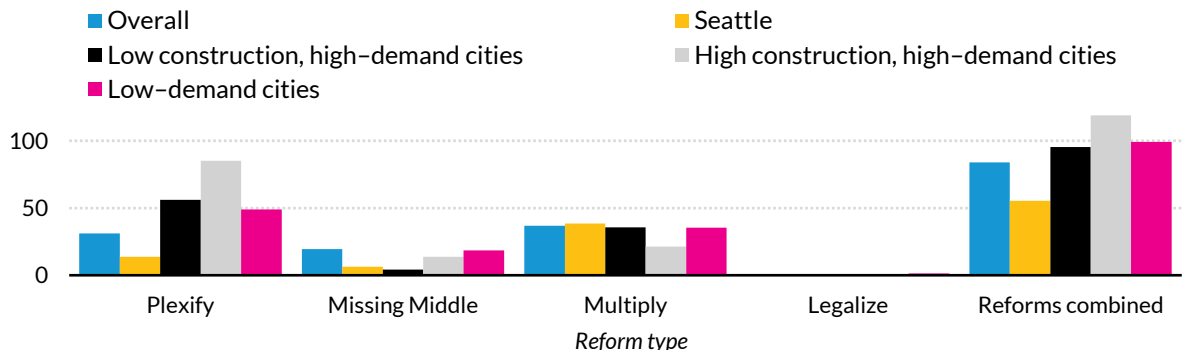
- **"Plexify":** Allow duplexes and fourplexes on parcels zoned only for single-family homes.
- **"Missing Middle":** Allow up to 12-unit apartments on all moderate-density parcels.
- **"Multiply":** Double the allowed density on parcels located close to stations.
- **"Legalize":** Allow residential uses on commercial and public parcels.

These changes could almost double the size of the zoning envelope of transit areas regionwide if implemented collectively (figure 1). This could add space for 500,000 future homes over the long term. The impacts of each reform we studied, however, are dependent on jurisdictions and the housing market. A "Plexify" reform would most dramatically increase development opportunities in station neighborhoods with the most restrictive zoning policies, in parts of cities such as Bellevue and Redmond—areas with high demand. But the "Multiply" reform is best designed to respond to the market demand to live close to transit in walkable, mixed-use neighborhoods. It is most likely to result in the construction of large numbers of housing units. We project that if the government implemented all reforms together, the number of transit-adjacent housing units produced could increase by about 70 percent over the next decade, adding more than 60,000 units compared with the status quo.

FIGURE 1

**Zoning Reforms Allowing Fourplexes on Single-Family Parcels and High Densities Near Transit Would Be Most Effective in Creating Space for Future Housing Development**

*Percent change in zoning envelope from status quo conditions*

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**Source:** Authors' calculations based on First American data.
**Notes:** Includes data for properties located within a half mile of fixed-guideway transit stations in the Puget Sound.

# Policymakers Have an Opportunity to Promote Quality of Life Through Housing-Growth Strategies Near Transit

Our findings provide new insight into current housing availability near transit and the ways that today's land-use regulations encourage or restrict new housing development. This research shows that Puget Sound jurisdictions have a variety of opportunities to leverage more accommodating zoning rules to encourage more construction, allowing the region to better meet housing needs, potentially reduce housing costs for residents, and ensure that people can live near transit. We provide evidence that adopting less-restrictive zoning codes—particularly in the municipalities with rules that inhibit growth the most—could aid the region in achieving these outcomes.

We identify a series of specific municipalities in the Puget Sound that feature significant development demand but also restrictive zoning policies. These jurisdictions—including Lake Forest Park, Mercer Island, and Renton—are using local land-use regulations to inhibit construction, to the detriment of the regional housing supply. The regulations in certain parts of the city of Seattle, such as West Seattle, also undermine the goal of promoting more housing construction. As a result, each of these municipalities is enforcing exclusionary policies and hoarding wealth within their borders while ultimately preventing more people from being able to move in and encouraging higher housing costs. New land-use regulations that allow more housing—whether created locally or imposed on all localities by the state government—could help address this source of inequity. A variety of zoning policies may be needed to address needs in different communities.

Altering land-use regulations, however, is necessary but insufficient to solve all the region's housing challenges. More federal, state, and local funding for subsidized housing, which could include direct public development, is needed to provide homes for people with low and moderate incomes, who are unlikely to access affordable housing in quality, market-rate units. Leveraging publicly owned land to concentrate new development could be a particularly promising strategy. In the region's less-well-off communities, obstacles such as low resident incomes are the primary constraining factor preventing new development, rather than zoning policy. Finally, by-right zoning allowances alone are likely inadequate to encourage the development of small apartment buildings on single-family parcels, multifamily units on the parking lots of commercial properties, or large new complexes on corporate office campuses. Additional financial or other incentives, plus comprehensive planning, may be necessary to make those transformations possible.

# Background: A Growing Puget Sound in Search of New Housing

The growth of the tech and aviation sectors combined with a beautiful natural setting in the Puget Sound have attracted hundreds of thousands of well-paying jobs. But this growth has had negative consequences: homes in high-opportunity locations near public transit, well-funded schools, jobs, and public services are too often inaccessible because of high costs. Many people with low incomes can only afford homes in neighborhoods far from effective public transportation, preventing them from saving money through reduced car ownership—and worsening the environmental impacts of the transportation system.[3] These conditions reduce the region's ability to attract a diversity of new inhabitants and limit communities' ability to retain existing residents—especially those with lower incomes.[4]

One key explanation for high costs is inadequate housing availability that has not kept up with demand (Anthony 2022; Pennington 2021). The Puget Sound has added hundreds of thousands of new units over the past few decades, but the population has grown at an even faster rate.[5] Housing construction largely occurs when landowners, developers, and financial institutions can "pencil out" plans for individual sites that make a profit (King and Handelman 2016); as such, it is heavily influenced by the costs of financing, construction materials, labor, and land, as well as the value of development after it is built. But development is also influenced to a large degree by local land-use regulations, which are the rules used by municipalities and counties to determine what type of construction—including building size, form, and use—is allowed where. If these rules are too restrictive, they may limit the ability of developers—both for-profit and nonprofit—to invest in housing. In this way, zoning policies that accommodate new construction are a necessary but insufficient condition to address inadequate housing supply and high housing costs.

In this report, we develop a new database of zoning and property data for jurisdictions and parcels located near stations on the Puget Sound region's growing fixed-guideway transit system (rail and bus rapid transit lines). We answer three interconnected questions related to housing accessibility:

- How is housing availability currently distributed throughout the region, and how does that availability compare with local demographics?

- In the areas near transit, to what degree do zoning rules promote or inhibit housing construction, and what is the likelihood of future construction given current zoning and real estate market demand to build in certain communities?
- What are the potential impacts of regionwide zoning reforms that promote transit-adjacent residential growth on new construction rates? How might these reforms affect the distribution of new transit-adjacent construction throughout the Puget Sound?

We find that restrictive land-use regulations are a feature of many jurisdictions throughout the Puget Sound region, including those near existing and planned transit stations. Those restrictions, which include limiting development to just single-family homes and requiring expensive parking spaces in association with new development, are likely contributing to high housing costs and inequitable distribution of residents by income and race or ethnicity (Glaeser 2017). Zoning rules are also one explanation for the inequitable distribution of housing construction in the Puget Sound in recent years. The vast majority of development on transit-adjacent land in the region is on land zoned for multifamily residential uses by right, resulting in a housing deficit in the nearly 60 percent of land zoned for other uses. While some municipalities have added substantial new housing supply, especially near existing and planned transit stations, others—including areas with high housing values such as Bellevue, Lake Forest Park, Mukilteo, and Newcastle—have added very few, despite considerable market demand; these communities also feature few federally subsidized affordable housing units. Even in Seattle, where most transit-adjacent housing growth is concentrated, many station areas are zoned for low densities by right.

Our analysis shows that the region is on track to add fewer housing units than it needs to match expected population growth by 2050. The Puget Sound Regional Council (PSRC) estimates a need for about 275,000 new housing units in the region over the next decade—about a third more than were added during the 2010s. Although current zoning policies provide room for additional housing growth near transit, much of that potential is in communities where real estate development demand has been limited in recent decades; on the other hand, many jurisdictions with high development demand have very little room for new homes, inhibiting new construction. And property owners may not have an incentive to redevelop their properties for more housing even with accommodating zoning policies, either because they are content with their current environment or because they are more likely to make a profit with fewer units or nonresidential uses. We conclude by projecting that land-use reforms executed at the regional level could conservatively encourage an almost 70 percent increase in housing production over the next decade and result in a fairer distribution of housing availability across the region.

All in all, our research shows that municipalities and counties in the Puget Sound have the ability to increase access to housing through reformed land-use regulations that encourage additional residential construction in areas near public transit lines. Entrepreneurial local governments could pursue these initiatives individually, or the state could implement policies that encourage or require such outcomes. Officials could aim such policies at reducing the inequities in funding for public services and access to employment that currently exist between jurisdictions by allowing higher housing densities in exclusionary communities that currently offer little space for housing growth. These changes could help create a region that is more accommodating, more affordable, and more equitable, though we recognize that zoning is not the only limitation for housing production in many areas of the region, given variation in real estate market demand. The fact that significant additional housing *could* be added in cities like Everett does not mean that there is demand from households or developers for building such units. The resident owners of single-family homes may simply want to keep their properties as they are, even if technically they could add more housing to their backyards. There may also be neighborhoods where new development could beget significant displacement risk for existing residents. Other efforts such as financial support for—or direct construction of—affordable housing could be important complements to zoning change.

We hope that this work furthers understanding of local conditions and highlights the policy areas in which stakeholders can work to advance housing accessibility in the region. But there is no simple remedy to the housing shortage in the Puget Sound. Even with the best intentions and strategic planning, fostering equitable development takes time and depends on many factors, many of which are outside the direct control of local governments. Regional transit agencies must continue to pursue the rapid construction of new transit lines; developers must be able to access reasonable financing and affordable labor and materials costs for new construction; and property owners must be willing to alter their own properties to welcome more neighbors. In developing this analysis of zoning constraints, capacity, and opportunities, we understand that it will only serve as one piece of the housing puzzle facing the region and others nationwide.

# Inadequate Housing Construction

Encompassing King, Kitsap, Pierce, and Snohomish Counties in Washington, the Puget Sound was home to 4.2 million residents and 1.7 million housing units in 2020. This region encompasses two Census-defined metropolitan areas (Seattle–Tacoma–Bellevue, in which most people live, and Bremerton–

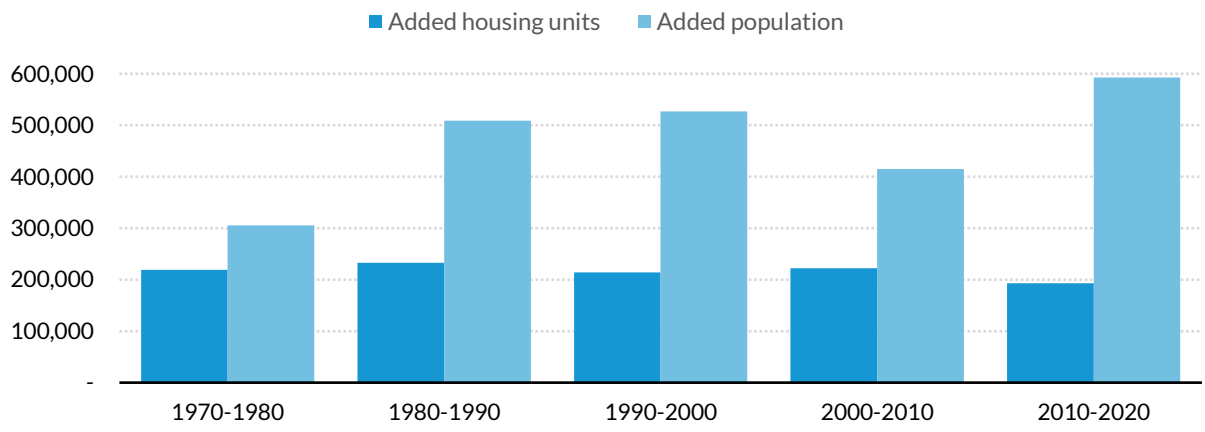
Silverdale–Port Orchard). The Seattle metro area is the nation's 15th-largest metropolitan area and the most populous in the northwestern United States.

The region has grown steadily over the past few decades, adding 2.3 million inhabitants since 1970, according to US Census data. Over that period, the region also added more than 1 million additional housing units (figure 2). Housing growth has been relatively flat, with about 200,000 units added to the regional total each decade, though population growth has fluctuated from an additional 300,000 residents in the 1970s to an additional 600,000 in the 2010s.

FIGURE 2

**Roughly 200,000 Housing Units Have Been Added per Decade to the Puget Sound Region—even as Population Growth Accelerated**

*New housing units and population increases by decade in the Puget Sound region*

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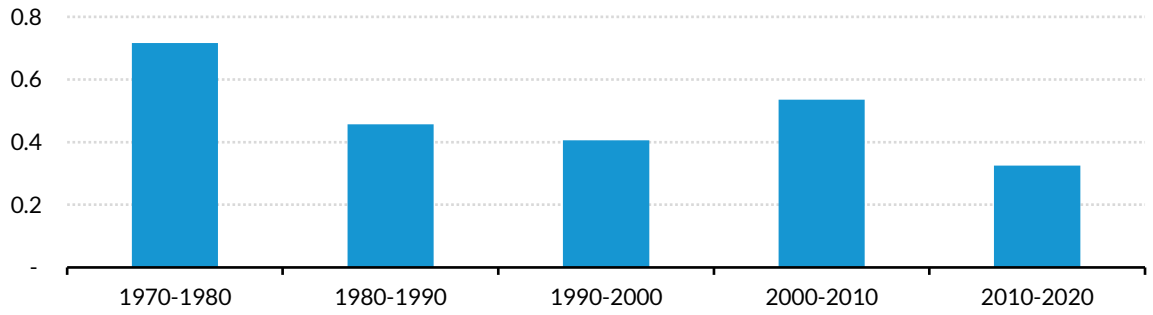
**Source:** Authors' calculations based on US Census Bureau data.
**Notes:** Includes data for King, Kitsap, Pierce, and Snohomish Counties.

Housing growth has not kept up with the region's rapidly growing population. While the region added 0.7 housing units for every new resident between 1970 and 1980, it added only 0.3 units between 2010 and 2020 (figure 3). This trend affected living patterns, potentially encouraging homelessness because of inadequate housing availability. For example, in 1970, there were 2.83 residents per dwelling unit in the region; this declined to just 2.35 by 2010, meaning growth in housing stock provided more housing availability and allowed new households to form. Yet by 2020, this rate increased to 2.43 residents per unit. In other words, the region's housing has become more crowded over the past decade—and the decline in new housing per capita could increase crowding further if local and state governments do not make changes to local housing policy.

FIGURE 3

**Housing Production Is Slowing in the Puget Sound**

*New housing units per new resident, by decade*

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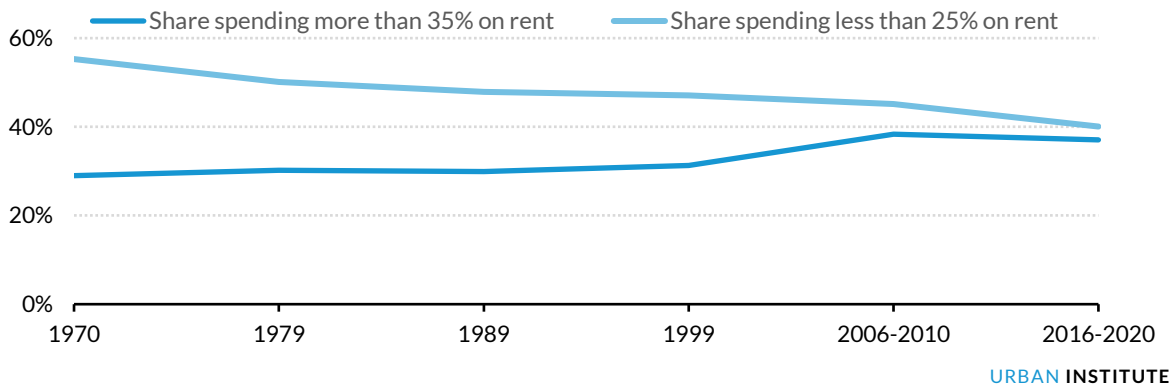
**Source:** Authors' calculations based on US Census Bureau data.
**Notes:** Includes data for King, Kitsap, Pierce, and Snohomish Counties.

Some of the increased crowding may simply mean more people living in larger homes. But slowing housing production has likely affected the cost of housing in the region due to increasing competition for limited units. Figure 4 shows that the share of Puget Sound renters spending more than 35 percent of their incomes on housing costs has increased from 31 percent in 1999 (which was similar to the share recorded by the Census Bureau in 1970, 1979, and 1989) to 37 percent in 2016–20 (though there was a small decline from 2006–10). Meanwhile, the share of renter households spending less than 25 percent of their incomes on rent declined steadily, from 55 percent in 1970 to 40 percent in 2016–20. Over the same period, the share of renters paying more than 50 percent on rent increased from 18 percent to 21 percent. More than 130,000 households find themselves paying more than half of their income on rent as of the latest data.

FIGURE 4

**Cost Burden for Renter Households Has Increased Dramatically Since the 1990s**

*Gross rent as a percentage of household income*




**Source:** Authors' calculations based on US Census Bureau data.
**Notes:** Includes data for King, Kitsap, Pierce, and Snohomish Counties. Does not include data for households for which the percentage was not calculated.

The PSRC, the region's metropolitan planning organization (MPO), makes projections for future housing needs as part of its regional plan. Recent estimates indicate that the region is expected to grow by 1.8 million residents and 830,000 households by 2050 (PSRC 2018). Current increases in housing availability may not adequately accommodate this rate of growth. An increase of 200,000 housing units per decade, similar to recent trends, could leave many households with no place to live in three decades. An increase of 52 units per 1,000 residents—maintaining the housing construction rate of the 2010s—would still be inadequate to keep up with growth. The situation would worsen if the region becomes more appealing. Significant household growth in the context of inadequate housing availability is likely to result in increased housing costs. This could result in higher rates of homelessness, people doubling up in housing units, people choosing not to live in the region at all, or some combination of all three.

# The Opportunity for Transit-Linked Development

In this study, we focus on housing availability and potential future construction in the municipalities with high-quality transit service and in the neighborhoods near transit. This choice was informed by the commitment of the region's voters to fund a massive new public transportation investment, which will bring hundreds of thousands of existing residents to areas within reasonable distance of rail and bus rapid transit (BRT) stations—while likely attracting thousands more to newly developed areas nearby. Many areas will not benefit from such access, but by concentrating housing growth in the areas near

public transit, the metropolitan region will encourage fewer people to drive, create more walkable communities, reduce environmental pollution, and limit the traffic effects of growth.

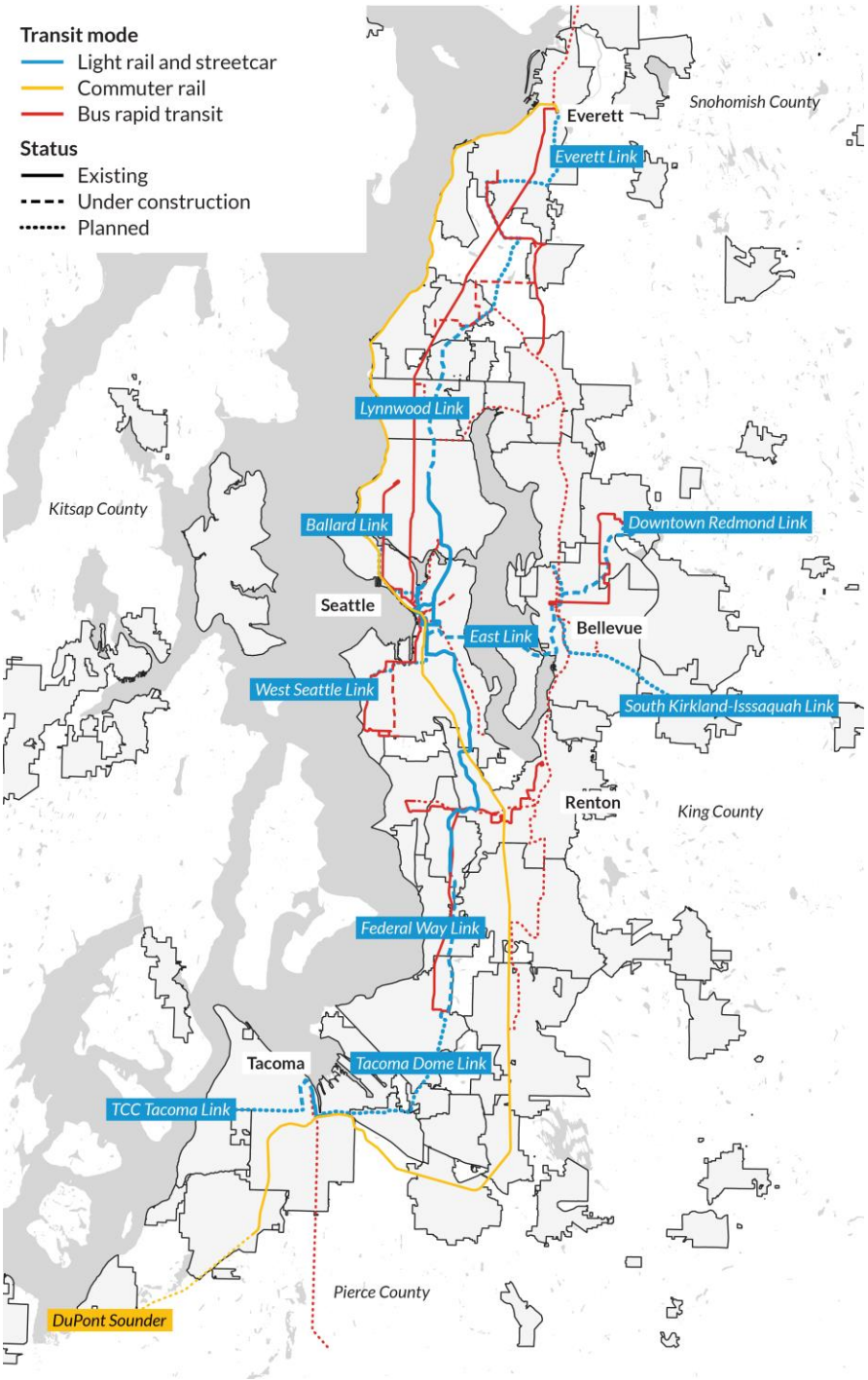
Sound Transit manages bus, streetcar, light rail, and commuter train services throughout the Puget Sound urban area. Its light rail service (Link), which currently runs from Northgate in Seattle through downtown Seattle to Angle Lake in SeaTac, is the backbone of the region's system. Sound Transit served over 3.1 million riders in September 2022, the most recent month for which boarding data were collected, although monthly ridership was slightly more than 4 million before the COVID-19 pandemic (Link ridership has recovered, but express bus and commuter rail ridership have not).[6] The region is served by separate transit systems in King (King County Metro, which runs buses and streetcars and is the largest provider by daily riders, serving about twice as many as Sound Transit), Kitsap (Kitsap Transit), Pierce (Pierce Transit), and Snohomish (Community Transit) Counties, as well as the city of Everett (Everett Transit). The region also has a network of ferries operated by Washington State Ferries.

In the coming years, the region is planning an ambitious expansion of these public transit systems—the largest in the nation per capita, with $54 billion in expenditures between 2017 and 2041.[7] With voter approval, Sound Transit plans to build upward of 25 projects in King, Pierce, and Snohomish Counties, including 62 miles of extensions to the Link light rail (to Everett, Issaquah, Redmond, and Tacoma), the Sounder commuter rail line, and several new BRT lines, as well as improvements to parking and access at several stations (figure 5).[8]

It will take more than a decade for some of these projects to come to fruition, although many are already under construction, including light rail links to Bellevue, Federal Way, and Lynnwood.[9] Community Transit is in the process of upgrading the Swift Blue Line BRT to expand access to and from Link.[10] The result will be hundreds of light rail and BRT (which we collectively refer to as "fixed-guideway") stations. As of writing, there are 240 stations operating, 39 that are under construction, and 160 that are planned. Sound Transit expects 600,000 daily riders on its light rail network alone once current projects are completed.

FIGURE 5

**The Puget Sound Region Features a Growing Fixed-Guideway Transit Network**

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**Source:** Transit Explorer 2, based on regional transit plans as of 2022.
**Notes:** Major rail expansion projects are noted in blue. Incorporated jurisdictions are outlined and colored in gray. Some planned lines may change alignment as plans advance through the environmental review process.

# The Key Role of Land-Use Policy in Housing Access

Access to housing and its affordability are the product of a confluence of decisions by the public and private sectors, choices of individuals and their families, and access to employment opportunities. As such, increasing housing availability requires not only making regulatory changes but also accounting for societal issues. Several factors that inform housing construction include:

- **Land-use regulations implemented by local governments.** State constitutions delimit the powers of local governments, and one power given to some types of localities is control over land use.[11] Land-use regulations establish what building forms and uses are allowed where. They also enable the public to participate in decisions related to zoning and its implementation, which can slow project development and undermine the goal of increased housing availability when neighbors actively oppose investment (Einstein, Glick, and Palmer 2019).
- **Costs of labor and construction**. Any addition of housing stock requires construction. If the costs of labor and materials increase, the ability to make a development project "pencil out" financially declines.[12] As such, developers may be less likely to invest.
- **Land costs and availability**. Real estate development requires land. When that land becomes more costly, making projects financially feasible becomes more difficult (Glaeser and Gyourko 2002). Land costs reflect land-use regulations to some degree, but also overall land availability; in regions with significant natural barriers or natural preserves (like the Puget Sound), land availability declines and land becomes more expensive (Nelson et al. 2002).
- **Real estate market demand from landowners and developers**. Most land development in the United States is undertaken by private investors who make choices about how to spend their limited equity. Developers may choose to invest only in certain regions or neighborhoods that they expect to produce higher property values or rents after redevelopment (Korver-Glenn 2021; Parker et al. 2012). Homeowners may choose to redevelop their own land or leave it as it is for their enjoyment. And the public sector or nonprofit entities may value certain uses, such as those related to the arts or affordable housing, over others that are more profitable.
- **Access to financing**. Private projects require financing by banks and other financial institutions that make choices about how to distribute loans. Without access to adequate financing, projects may be difficult to undertake.
- **Households and household income**. Ultimately, private housing development is only feasible when there are households available with the means to rent or buy new homes. Developers

may be unwilling to invest in a particular community without a clear sense that households there will be interested in living in new homes and capable of paying their costs (Feins 1977).

- **Government subsidies and other policies**. Local, state, and federal governments use tax and grant policy to choose what sorts of households and real estate developments to support. For example, the federal government provides a mortgage interest tax deduction to encourage households to buy, rather than rent, homes.[13] Many state governments cover the expense of new highways to exurban areas, in effect subsidizing development there by reducing transport costs for future inhabitants.[14] Many governments subsidize some families with low and moderate incomes who rent homes through vouchers or support for new housing construction.

In this report, we focus on the first element—local land-use regulations—but acknowledge that any comprehensive approach to add new units or ensure their equitable distribution requires tackling all the issues noted above (Freemark 2021). In this section, we review scholarly findings on mechanisms by which land-use regulations impact housing availability, particularly in metropolitan areas with jurisdictional fragmentation—meaning many local governments making policy choices. Most incorporated US municipalities such as towns and cities make choices about land-use regulations through zoning texts and maps, which divide jurisdictions into districts where predefined building types can be built and inhabited. In some cases, townships and counties also make these choices.[15] Zoning is one element of a large structure of rules, people, and processes that affect development (Freemark et al. 2022).

Despite the variations in land-use regulations between localities and between states, the initial implementation of zoning regulations had some commonalities nationwide. In the 1920s, the federal government promoted a standard state zoning enabling act that allowed localities to define districts separating building types by form and use; many states implemented such laws.[16] The accelerating deployment of zoning by localities in the 1920s was also motivated, first, by widespread policymaker sentiment that urban areas were too densely settled—in other words, that people and industry were too closely packed, depriving people of light and air (Silver 2016). Second, policymakers were concerned that the co-location of industrial and residential uses was exposing people to unhealthy pollution (Schilling and Linton 2005). Finally, many white policymakers were convinced that neighborhoods should be separated based on race and class, since they held inaccurate racist and classist beliefs that white and wealthy people living in the same neighborhoods as Black people and people with low incomes would harm society (Whittemore 2021).

Collectively, these conditions encouraged localities to develop zoning policies that separated uses (so that residential, commercial, and industrial uses could not be co-located in the same building or sometimes even in the same neighborhood) and that limited building scale. The result was that many communities zoned large portions of their land for the construction of only detached single-family homes. Over the next half century, many localities made their respective zoning policies more restrictive to entrench single-family home neighborhoods and prevent other forms of construction from being adjacent to such houses (Manville, Monkkonen, and Lens 2020; Whittemore 2012).

As noted above, restrictions on allowed density limit options for types of housing stock other than single-family homes (Kahlenberg 2017). Small-scale multifamily housing with two to four units has become increasingly unavailable in neighborhoods nationwide (Wegmann 2020). And even communities that allow those types of buildings retain regulatory barriers that impede construction, such as setback requirements and minimum lot sizes.[17] The result of these limitations on allowed housing construction is that little new housing is being added to the communities that practice these sorts of restrictions (Chakraborty et al. 2010).

Allowances for multifamily housing construction are important because these types of structures can help relieve housing demand as they concentrate more units onto less land area.[18] But density limitations on apartment buildings—such as height limits, maximum allowed densities, minimum lot requirements, and parking minimums—can increase construction costs, constrain the number of units allowed, and reduce their profitability, ultimately disincentivizing development (Blumenthal et al. 2016; Gray and Furth 2019; Murray and Schuetz 2019). These limitations also apply to subsidized housing projects, thus inhibiting people with low or moderate incomes from living in some neighborhoods.

If housing availability is partly a product of zoning allowances, that limitation on supply goes on to influence affordability. More restrictive land-use controls are associated with higher housing costs (Glaeser and Gyourko 2002). This reflects the fact that limitations on the supply of available housing—in the face of considerable demand for that housing—increases price. With limited housing available, it is perhaps unsurprising that communities with well-funded public services and other desired amenities become more and more popular, and thus more expensive.

Limitations on housing development exacerbate the challenges resulting from inadequate support for subsidized affordable housing. Federal government support for investments in housing that is affordable to families with low incomes has declined in the 21st century (Vale and Freemark 2019). Local governments have frequently become reliant on private-market developers to finance affordable housing through programs such as inclusionary zoning, which incentivizes or requires that projects

include a certain number of affordable units. This can be an effective tool in areas with steady demand for market-rate housing but does not assist communities unable to attract private spending (Spauster, Lo, and Freemark 2021).

These outcomes partly reflect the exclusionary decisions of some localities, which use zoning to maintain the class and racial segregation that is a feature of US metropolitan areas. The structure of US governance, which allows wealthy cities to essentially zone out affordable housing to maintain a tax base of residents with higher incomes, concentrates families with low incomes in small areas, reinforcing segregation and unequal access to opportunities such as well-funded schools (Freemark and Steil 2022; Rothwell 2012). Localities that enforce more restrictive zoning are less racially integrated than those that are more open to development (Trounstine 2020). Restrictive zoning is associated with higher income segregation (Rothwell and Massey 2010), and this encourages interjurisdictional inequality (see below).

## The Potential for Zoning Change to Add Housing and Increase Affordability

If restrictive land-use regulations hamper housing production, limit affordability, and encourage segregation, zoning reforms that allow bigger buildings might improve outcomes. One frequently cited approach is upzoning, which allows more housing units per land area, increases allowed building size, or takes similar measures that support increased density. In theory, by altering land-use rules to provide space for more housing, supply should increase to meet demand.

Without zoning changes, a large share of residential land in localities throughout the United States will remain off limits to all but single-family homes. Many current zoning limitations make it impossible for developers to build multifamily housing. And developing subsidized housing units is especially difficult because affordable housing is more financially feasible in multifamily structures. Evidence is mixed, however, on the effectiveness of zoning changes. Some recent studies show little to no impact of upzonings on increasing housing production (Freemark 2020; Gabbe, Kevane, and Sundstrom 2021; Limb and Murray 2022), at least in the short term within neighborhoods where upzonings occurred.[19]

Other studies, however, provide reason for optimism. Research in Auckland, New Zealand, and Sao Paulo, Brazil, shows that upzoning in these cities increased housing availability (Anagol, Ferreira, and Rexer 2021; Greenaway-McGrevy and Phillips 2022). A similar study in Portland, Oregon, suggests that upzoning increased the likelihood of development, though it had less effect on the overall housing supply (Dong 2021). And a recent cross-sectional study indicates that easing density restrictions is an effective way to increase the supply of multifamily housing (Kulka, Sood, and Chiumenti 2022).

The effectiveness of zoning changes designed to increase housing supply depends on reform details (Lo et al. 2020). As such, different reforms have varying impacts, and upzonings have different impacts on different neighborhoods (e.g., they may increase construction in in-demand neighborhoods but not in low-income communities). Their impacts may also vary over time. It is possible that localities looking to develop policies that increase housing supply may have to alter their approach repeatedly. And other strategies, such as direct investment in affordable housing, may ultimately be more effective in reducing housing costs. But the fact remains that communities with restrictive zoning codes limit housing construction; ultimately, reforming these land-use rules must be part of the solution.

## Zoning's Impact on Gentrification and Displacement

One particular concern about rezoning is that expanding the number of allowed units or increasing the size of allowed buildings could increase property values and rents, thus encouraging gentrification and eventually the displacement of existing residents. This concern could be merited for several reasons. First, a boost in allowed building size should increase property value because more can be built on a specific parcel; this could threaten the affordability of low-scale homes and multifamily buildings that are smaller than the zoning code allows because they become targets for redevelopment.

Second, an incentive for new development could encourage a neighborhood to become more interesting to investors and wealthier residents.[20] Eventually, a neighborhood could become more attractive and less affordable to people with modest means (Telles 2000). Both conditions could occur even if housing prices decline regionwide because rents could still rise in an area where upzoning occurs (Freemark 2020; Rossi-Hansberg, Sarte, and Owens 2010).[21]

Opponents of rezoning have raised these concerns to fight changing land-use policy. They have been active in large cities with high rents, arguing that allowing new private-market development could threaten the survival of working-class neighborhoods where people of color predominate (Hankinson 2018). Others argue that maintaining existing development standards is necessary to prevent development and keep high-poverty neighborhoods from becoming gentrified (Leguizamon and Christafore 2021).

At the same time, *not* allowing neighborhood redevelopment could also encourage the problems we described above. Not building any new homes could increase costs by causing more people to compete for the same units (Calder 2017; Kendall and Tulip 2018; Zabel and Dalton 2011). Limited investment in neighborhoods could condemn people with low incomes to poorly maintained, old housing (Jones, Squires, and Nixon 2021). And fighting rezoning in neighborhoods that are on the path to gentrification

could justify residents of higher-income neighborhoods to continue using zoning to exclude people with low incomes and people of color (Lewyn 2017).

Evidence here, again, is mixed on the influence of upzoning on housing affordability. Several recent studies indicate that, in the wake of upzoning, property costs increase in the short term (Freemark 2020; Kuhlmann 2021). This likely results from the fact that upzoning allows for more development on an individual parcel, increasing its value. Over the long term, however, costs are lower in jurisdictions with greater housing supply (Lewyn 2017). And even if property costs increase, this increase may not make new units more expensive. For example, a single-family property whose value increases from $300,000 to $500,000 after upzoning could pose problems for gentrification, but if that property is then redeveloped into four units in total worth $800,000, each housing unit would cost less than the original property.

The preponderance of research on the impacts of housing construction, moreover, indicates that new housing does *not* raise property values in surrounding areas (Been, Ellen, and O'Regan 2019; Phillips, Manville, and Lens 2021). This could be a relief for those working to protect neighborhoods from displacement. Even if new projects are more costly than older housing units, a neighborhood with new development is more likely to be affordable overall.

There are also policy strategies that could reduce the probability of gentrification and displacement (Chapple and Loukaitou-Sideris 2021). Public investment in affordable housing units could provide homes for families with low or moderate incomes who otherwise could not live in new market-rate projects. At the same time, local governments could consider instituting tenant protections, such as rent stabilization and protections against redeveloping existing rental units (Phillips, Flores, and Henderson 2014). Similarly, requiring property owners to give tenants the opportunity to purchase their homes before putting them on the market may also be effective.[22]

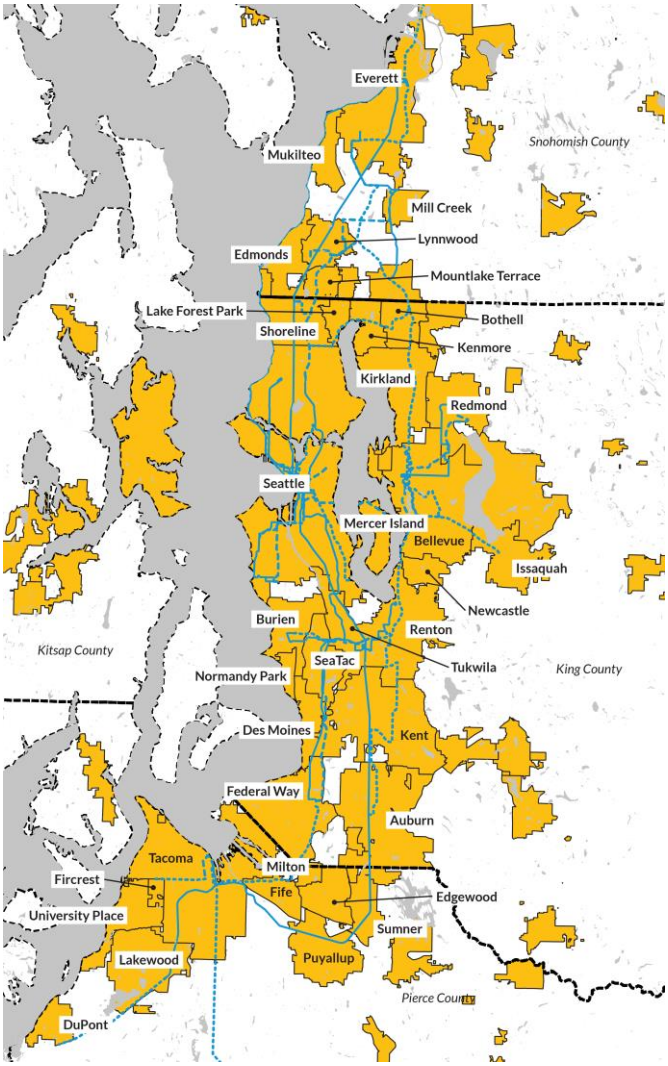
Finally, upzoning may reduce the probability of displacement if it is focused in neighborhoods with high-income residents—typically suburban communities that have historically restricted housing development (Mallach 2020). Such neighborhoods are unlikely to experience gentrification and displacement since they are already largely wealthy. And opening these communities to multifamily and more affordable projects could allow households with low and moderate incomes to live in areas with a high quality of life and well-funded public services.

## Impacts of Fragmented Governance

US metropolitan areas are jurisdictionally fragmented, meaning residents, employment, and community services are distributed across many different political entities, each of which has its own elected representatives and administrative bureaucracy. The Puget Sound's four counties include 82 incorporated towns and cities. Of the region's 4.2 million residents, 3 million, or about 70 percent of the population, live in those incorporated places, with the rest living in unincorporated areas outside of the towns and cities. Figure 6 maps the incorporated jurisdictions and counties in our study area.

FIGURE 6

**The Puget Sound's Growing Transit Network Will Reach Dozens of Local Jurisdictions**




URBAN INSTITUTE

**Source:** US Census Bureau data.

**Notes:** Transit lines are shown in blue (see figure 4 for details). Incorporated areas are shown in yellow; unincorporated areas are in white. Municipalities with land within a half mile of a fixed-guideway transit station are labeled; those farther away are not.

The division of metropolitan areas into dozens of local jurisdictions affects the built environment. Each locality has some control over local taxation and regulations, such as zoning, and local rules can vary. Localities leverage that variation to compete to attract residents and investments in order to raise revenues (Savitch and Adhikari 2017). In some cases, this can benefit the regional economy as localities provide more accommodating business environments (Goodman 2019).

At the same time, jurisdictional proliferation can encourage what is referred to as resource hoarding. This occurs when well-off municipalities develop policies intended to attract and retain wealthy inhabitants and exclude people with low incomes (Freemark, Steil, and Thelen 2020). For example, municipalities might use zoning that prevents the construction of all but relatively expensive single-family homes. Hoarding can also encourage municipalities to avoid providing social services, leaving key local needs unmet, or to reduce access to well-funded services like public schools among people with low incomes (Rose 2010). In the end, more fragmentation produces increased income inequality and segregation due to spatial sorting of people by class and sometimes race (Hendrick and Shi 2015).

# Zoning Policy in the Puget Sound

Zoning in Washington state is authorized by state law, which allows incorporated localities to use land-use regulations to limit the use and form of parcels.[23] Large sections of western Washington, including the entire Puget Sound region, must plan under the purview of the state's Growth Management Act (GMA)—a series of laws requiring jurisdictions to develop comprehensive plans every eight years to manage population growth without degrading natural resources.

The GMA establishes 14 goals for localities to consider as they formulate comprehensive plans. It requires that comprehensive plans designate and protect natural resource lands and mandates that localities identify urban growth areas that will promote new population and employment. Outside of these areas, growth is only permitted if it is rural in nature.[24] Counties must plan within the context of the state's population projections. Recent projections from 2017 estimate that the four-county area's population will expand from about 4.3 million to 5.2 million in 2040.[25]

## Recent Local Rezoning Initiatives

To adapt to projected population growth and GMA requirements, some Puget Sound communities have considered altering their zoning. In 2021, the Seattle City Council voted to rename the city's single-family zones as "neighborhood residential zones." While the move did not have policy impacts, it highlighted the Council's intentions moving forward, indicating that it may eventually allow a greater diversity of housing types in such communities. The Council is considering an upzoning of all residential neighborhoods for the city's 2024 comprehensive plan update.[26] Seattle has taken several other steps toward implementing less-restrictive zoning practices in the past few years, including through legislation passed in 2019 to encourage the construction of accessory dwelling units (ADUs).[27] In recent

years, the city has also announced plans for a mandatory housing affordability initiative by expanding the amount of land zoned for residential small lots from 7 to 768 acres, which could include about 6,200 single-family lots.[28] This would allow multiple dwellings on a single lot in such areas while maintaining design standards, including maximum height, that are otherwise consistent with single-family zones.[29]

Meanwhile, the 2021 Home in Tacoma initiative recommends updating city housing policies to enable midscale and "Missing Middle" housing (buildings with 2 to 10 units) and taking actions to make housing more affordable. Other changes would eliminate single-family zoning.[30] These changes may eventually result in upzoning.[31] Like Seattle, Tacoma has relatively permissive ADU policy.[32]

Similarly, the Shoreline Council approved an amendment in 2022 to consider allowing duplexes and triplexes in areas currently zoned for single-family homes. If implemented, the amendment would have drastic implications for the city: aside from some exceptions for ADUs and basement dwellings, around 70 percent of the city is zoned exclusively for single-family homes. This action, however, is a preliminary step, as it merely tasks the city's planning commission with engaging in community outreach, studying environmental factors, and determining necessary changes to land-use codes as the jurisdiction moves toward promoting more inclusive housing forms.[33] Leaders in Shoreline have also prioritized additional zoning reforms in anticipation of two new Sound Transit light rail stations that are expected to be constructed before 2030. The city has made way for new housing, funded new sidewalks, and raised funds for a new pedestrian and bicycle bridge adjacent to the stations.[34]

Other cities throughout the region have similarly initiated zoning changes to make way for transit-oriented development. In 2016, the city of Lynnwood announced plans to develop a city center around its upcoming light rail station, expected to open in 2024. Development updates have included expanded pedestrian spaces. More recently, the council voted to continue permitting new housing units and office spaces in this city center through streamlined permitting review, with the goal of eventually adding 3,000 units to the area.[35] The Everett City Council, meanwhile, adopted a comprehensive overhaul to zoning and development regulations in late 2018 designed to prompt development downtown and other adjacent districts. Among other changes, the overhaul introduced four street classification types planned to be compatible with development; notably, Transit-Oriented Development Streets were set to be the most active in terms of allowed densities. The council will encourage high building transparency, foot traffic generation, and limited parking visibility along these streets.[36]

More municipalities in the region have encouraged transit-oriented development through subarea plans—documents which guide future planning decisions within a specific area. The city of Edmonds adopted a subarea plan in 2017 for an urban district along SR-99, increasing height maximums up to

unlimited heights near one major intersection.[37] Additional subarea plans near transit are in place in Mountlake Terrace, which, in 2019, expanded the boundaries of its town center to increase development capacity near the future Link Station, and in Snohomish County, where the Council is developing a subarea plan to encourage transit-oriented development around its preferred locations for two light rail stations between Everett and Lynwood.[38] Any changes in all jurisdictions named above that have been officialized through zoning are reflected in the data analysis we conduct for this study.

## Recent State Policy Initiatives

Recent bills considered in Olympia underscore the growing interest in expanding housing availability through more permissive zoning. The state recently prohibited the imposition of off-street parking requirements for ADUs within one quarter mile of stops served by frequent transit running at least every 15 minutes during peak hours.[39] This measure follows momentum in California and Oregon, two states that have eliminated single-family zoning in many municipalities.[40]

Since 2020, however, legislation designed to promote housing options has not passed the state assembly. The legislature reviewed several bills that would lift further restrictions on ADUs (H.B. 1660 and H.B. 1337), expand the ability to build "Missing Middle" housing, and incentivize looser zoning; however, none passed.[41] The 2020 bill S.B. 6536 would have effectively banned single-family zoning and allowed the construction of multiplex buildings with as many as six units in areas within a half mile of transit stops in cities with populations greater than 15,000.[42] A similar 2022 bill would have legalized sixplexes in all zones within a half mile of transit and fourplexes everywhere else in cities with 20,000 or more people; it would also have permitted duplexes in all cities with populations of 10,000 or more. Although polls indicate that the measure was supported by more than 60 percent of Washington voters, it died when the House declined to consider it. A follow-up bill is anticipated for 2023.[43]

The state legislature also reviewed, but failed to pass, bills supporting these efforts by implementing Housing Benefit Districts (H.B. 1880 and S.B. 5861). These would augment the capacity of the state's existing Transportation Benefit Districts by creating funds for localities to promote equitable development through more affordable and walkable neighborhoods near transit.[44] Finally, lawmakers considered a "carrot" approach in a slate of bills, offering modest financial incentives for cities loosening zoning.[45] Despite the lack of concrete action, recent bills indicate the legislature is considering changes.

# Methods and Data

Given the significant local and state interest in zoning change, new information is needed to understand land-use regulations and their impact on housing availability. In this section, we describe our approach to evaluating current and potential future access to housing in areas near fixed-guideway transit, using a new model that leverages property-level data to understand current conditions, the constraints of today's zoning envelope, and the potential impacts of future regionwide changes.

## Data

### Housing and Demographic Data

We collected information about housing availability at the municipal and property scales. For the municipal scale, we assembled municipal and block group data from the 2010 and 2020 Census on the number of housing units in each Puget Sound county and in all municipalities with at least some land within a half mile of a fixed-guideway transit station. We also assembled data from the five-year, 2016–20 American Community Survey on shares of population by race or ethnicity, shares of adults with a bachelor's degree or higher, median household incomes, shares of households who are owners, shares of households with no cars, median rents, median housing values, and poverty rates.

We also collected data from the PSRC Residential Building Permit Geo-Database, last updated in August 2021 and spanning the period from 2000 to 2019. For each permit, we identified the year it was issued. We only included permits for new residential uses. We used the PS variable = 0 to exclude cancelled or voided permits.[46] We then identified the number of permits by municipality regionwide.

We collected information from the National Housing Preservation Database on the location of federally subsidized housing. This database identifies all units with place-based subsidies available to households with low and moderate incomes—including low-income housing tax credits, public housing, and project-based Section 8 housing—but does not include housing choice vouchers or other tenant-based subsidies. We identified the number of subsidized units within each municipality.

To evaluate property-level information, we collected data on parcels (properties) in King, Pierce, and Snohomish Counties from First American Home Warranty Corporation (we did not include properties in Kitsap County because it does not have existing or planned fixed-guideway transit). For

each property, we associated it with demographic data from its respective block group and identified the local jurisdiction in which it was located.

For properties for which no residential units were indicated but which nonetheless had bathrooms and bedrooms, we used the property's land-use class to estimate the number of units on site. For non-condominium parcels, we grouped parcels sharing latitudes and longitudes; for condominium and nonresidential parcels, we grouped parcels by a parcel code used by First American. As such, for buildings composed of many condominium units, we sum information about the full building rather than treating each unit as its own property (even though in the tax rolls, they are separated). We then collected the following information about each property from the database:

- lot size in square feet (available for more than 99 percent of properties)
- effective year built (adjusted for the most recent year of renovations; 98 percent)
- whether the property is owner occupied
- the built condition of the building (97 percent)
- the number of residential and commercial units per parcel
- the number of square feet on the ground floor per parcel (89 percent)
- the number of square feet for the building overall, and the number of square feet of living area
- assessed value (total, land, and improvement values; 99 percent)

To assess the validity of the cleaned data, we compared the number of estimated residences in Census data with those in the property database. We identified a total of 1.62 million units in both, though data reliability depended on which municipality we examined. While we found only a 1 percent difference in counts for Bellevue between Census and First American data, we found an 8 percent difference in Seattle. This may be occurring because of different sampling dates (November 2021 for the property data versus April 2020 for the Census), or another difference for which we did not account.

## Zoning Data

We identified the 36 municipalities with land within a half mile of an existing or planned station. For each municipality, as well as for King, Pierce, and Snohomish Counties (which zone unincorporated areas), we downloaded the most recent zoning text and zoning shapefiles in July 2022. For 18 municipalities, we were unable to find shapefile data; for these, we contacted municipal officials or filed

public data requests. Ultimately, we assembled data for all fixed-guideway, transit-served jurisdictions in the metropolitan area and created a unified zoning map divided into zoning districts by jurisdiction.

Among the total of 39 jurisdictions evaluated, we identified 1,265 individual zoning districts. We examined all zoning texts to identify by-right rules, which means without review beyond administrative approval by local planning agencies (large projects sometimes must pass through design review, even if they are theoretically allowed by right). Many projects use "flexibility measures" to go beyond the by-right code, such as through variances, conditional uses, and rezonings, but we do not consider such changes. For each district we collected the following data:

- whether the district is for "planned development" or is an "overlay" district
- whether the district allows residential uses
- maximum allowed dwelling units per parcel and maximum allowed dwelling units per acre
- minimum lot area per square feet for residential uses and minimum lot area per unit
- maximum height in feet and stories for residential uses
- maximum share of lot area that can be covered by buildings and maximum building footprints
- maximum floor area ratio (building square footage divided by lot area) for residential uses
- minimum front, side, and rear setbacks from the property line
- whether the property allows accessory dwelling units
- minimum number of in-parcel parking spaces required per dwelling unit

Many zoning texts only specify some of these characteristics for certain districts, so we account for missing information when estimating zoning constraints on development (see below). We shared our simplified zoning district data with planning staff of each of the jurisdictions to ensure its accuracy. We received feedback from 20 of the jurisdictions and adjusted our data accordingly. For the other jurisdictions, we reviewed the data carefully a second time to identify and correct mistakes.

Once we assembled the zoning data, we linked them with the other databases (both Census and First American). We identified the share of each block group and municipality located within each zoning district and identified the zoning district located at the centroid of each property. This allowed us to combine information about each zoning district's regulations with the characteristics of each property.

### Transportation Investments

We collected data on public transportation from the Transit Explorer 2 database, updated in June 2022.[47] That database includes geospatial information on all existing, under construction, and planned fixed-guideway transit in the United States; in the Puget Sound, it includes projects funded by Community Transit, King County Transit, and Sound Transit. The database includes the location of lines and stations. We excluded Amtrak intercity rail services, the Seattle Monorail, and SeaTac Airport people mover services. The database included the following transit infrastructure in the region:

- existing light rail and streetcar services operated by Sound Transit and King County Metro, plus five light rail and streetcar extensions under construction and eight planned light rail and streetcar extensions
- existing commuter rail service operated by Sound Transit, plus one planned extension
- eight existing BRT services operated by Community Transit and King County Metro, plus three BRT services under construction and 10 planned BRT services
- 281 existing or under-construction stations on light rail, streetcar, commuter rail, and BRT lines, plus 166 planned stations

We linked the transportation data to the other databases. We identified the share of each block group and municipality within a half mile of an existing or planned station. And we calculated the distance of each property to the closest existing, under construction, or planned station.

# Methods

## Estimating Housing Unit Availability

#### ESTIMATING CURRENT HOUSING UNITS

We began by identifying the number of housing units in 2010 and 2020 for each municipality using Census data. We used areal interpolation on block group data to estimate units and people within a half mile of stations.[48] We also identified the number of permits and subsidized units in each municipality, compared local information with regional averages to specify underproducing municipalities, and identified how unit counts and permitting compared with underlying zoning policies.

We then used our property dataset to make a refined estimate of the number of housing units adjacent to each station and within each municipality. We identified the types of housing units present in each area. We used this refined property dataset as the baseline with which to compare our estimates of zoning impacts—both under today's code and under potential zoning reforms—for each area.

### ESTIMATING THE ZONING ENVELOPE UNDER CURRENT POLICY

The zoning envelope, defined as the number of units that can be built per parcel under zoning policy, defines the absolute upper bound on housing potential. We calculate this constraint on housing production, recognizing that the relationship between zoning envelope and actual units is indirect. This envelope may need to be quite a bit larger than the existing housing stock to allow for significant new housing construction given that most parcels are unlikely to be redeveloped, even if land-use regulations theoretically allow more development (Phillips 2022). Indeed, many areas will not yield 100 percent of the housing possible under the full zoning envelope for several reasons:

- **Inadequate development demand**: In some neighborhoods, landowners and developers may be unable to finance new projects. This may happen because there is a lack of local demand for a certain type of unit or a mismatch between construction costs and resident incomes.
- **Inadequate demand for housing compared to other investment types**: Other land uses may crowd out the possibility for residential construction. Historically, in downtown Seattle, commercial uses such as office towers are typically more valuable than residential buildings.
- **A desire to keep conditions as they are**: Another possibility is that property owners are happy with current conditions; a single-family homeowner may want to maintain the lot as is, even if theoretically they could make money by building a three-flat apartment. An owner of a three-flat apartment, similarly, may be uninterested in the development time, cost, and risk it would take to build a 10-unit apartment building, even if eventually that would make more money.
- **Other constraints**: Developers may be unable to take advantage of a parcel's zoning envelope due to site layout, environmental factors, engineering, financing, design, and public processes.

On the other hand, some parcels have more housing than by-right capacity allows. This can occur because housing was developed under previous zoning laws allowing higher densities than current rules. Some housing is developed through flexibility measures, such as zoning bonuses, that allow developers to add units in exchange for some public benefit. Finally, our calculations may be incorrect, due to missing or inaccurate information. As a result, on sites where there are more units than the zoning envelope would predict, we assume that existing buildings and their units would remain in place.

To calculate the zoning envelope, we used the zoning data that we assigned to each property and then made estimates for possible housing units on each parcel based on the following calculation:

- If zoning on the parcel does not allow residential uses on the site, we assumed no units could be built there.
- If zoning allows only single-family homes, plus the lot is at least 2,000 square feet and bigger than the minimum lot area per unit (if applicable), we assumed one home per parcel. If the lot was too small and only allowed single-family units, we assumed no housing could be built there. For communities that allow "cottage" unit development (more than one home per single-family parcel), we use those requirements, which allow a higher density level.
- For properties on which multifamily buildings can be constructed to account for the potential influence of different zoning code elements, we took the minimum of the following to be the number of allowed units on site, dependent on whether the district describes a restriction or not; (Z) indicates that the data derive from requirements in the zoning text:
    - maximum units per acre (Z)/parcel lot area, adjusted for maximum lot coverage (Z)
    - parcel lot area/minimum allowed square footage per lot (Z)
    - floor area ratio (Z) times parcel lot area, divided by 1,200 square feet per unit
    - parcel lot area (minus space for setbacks (Z)) times maximum allowed height in stories (Z), adjusted for maximum lot coverage (Z)

We relied on several assumptions, based on discussions with stakeholders and publicly available information, when zoning data and/or property data were unavailable.[49]

### ESTIMATING POTENTIAL HOUSING UNITS ON UNDERUTILIZED PROPERTIES

We next sought to explore development on parcels where units could be added without demolishing existing structures. We estimated additional possible units under the existing zoning envelope (meaning units that could be added to a parcel by right), including:

- additional units built elsewhere on the lot, such as in the backyard (full units, not ADUs)
- units added by building up
- additional units added both elsewhere on the lot and by building up

We calculated the unbuilt footprint and potential additional units for each property, using setbacks, buildable area, lot square footage, ground floor square footage, maximum lot coverage, maximum

building footprint, and maximum allowed heights. We assumed that each additional unit requires 1,200 square feet (including stairways and shared space).

### ESTIMATING POTENTIAL HOUSING UNIT YIELD GIVEN MARKET DEMAND

We constructed a redevelopment probability index to estimate potential housing units on each site given market demand. Our index comprises four equally weighted components that collectively balance a parcel's potential future profitability against the value of its current use. These four components include the age of the existing building on site, the attractiveness of the surrounding neighborhood for land-use development, the parcel's land value relative to the value of the construction on it (interacted with the absolute land value), and the ratio of existing development to potential development under current zoning (the zoning envelope).

We referred to literature on housing redevelopment probabilities to construct this index. Krause's (2015) study on single-family and low-rise multifamily redevelopment potential in Seattle provided us with a base model. Guerrieri, Hartley, and Hurst (2013) and Helms (2003) emphasize the importance of a parcel's location relative to both the central business district and wealthy neighborhoods in influencing redevelopment potential. Dye and McMillen (2007), Munneke and Womack (2020), and Tsai and Wang (2022) note the importance of considering land value relative to the value of existing construction on that land, and these authors plus Charles (2013), Helms (2003), and Schuetz (2020) argue that a parcel's redevelopment likelihood rises with its age; if the building's year of construction dates back to roughly 1940, it becomes a historic property with a higher cost to redevelop and/or higher value to preserve.

We used the following methods for constructing each of the four components of our index, using variables developed based on a review of the aforementioned studies:

- **Building age:** We established each building's age using the property dataset's effective year-built variable. We then created a new variable of age redevelopment, called "attractiveness." This was largest for buildings built in 1940s, descending to 0 for buildings completed in 2010 or later. We set this index to 0 for buildings completed before 1940. This variable was then scaled to a minimum of 0 and a maximum of 25.
- **Neighborhood attractiveness:** Much of the research finds a statistically significant influence of the surrounding neighborhood's characteristics on a parcel's redevelopment likelihood (Guerrieri, Hartley, and Hurst 2013; Helms 2003; Krause 2015). Key components influencing neighborhood attractiveness include: a parcel's distance to the central business district (we

chose the intersection of Seattle's 3rd and Seneca Streets); the share of a parcel's neighborhood land zoned exclusively for single-family development (from our zoning dataset); the block group's transit index score from the Center for Neighborhood Technology's public data, accessed through the AllTransit tool available online; whether a parcel is in a low-income neighborhood (below the regional median household income); a parcel's distance to the nearest wealthy neighborhood (which we define as one in the top quartile of regional median household incomes); the share of housing in a parcel's neighborhood that is owner occupied (from the property dataset); and the share of neighborhood properties built since 2010 (from the property dataset). We acknowledge that these are not the only possible influences on neighborhood attractiveness; other features, such as school quality, are likely also important but difficult to quantify. To identify the relative influence of each on a neighborhood's development attractiveness, we regressed each of these characteristics (in 2010 for demographic data) on the share of that neighborhood's housing built since 2010 (see appendix A for a table with descriptive statistics and regression results). Once we established these coefficients, we multiplied them against 2020 characteristics of the block groups in our sample and rescaled that variable to a range of 0–25.

- **Land to improvement score:** We compared property-assessed land value to improvement value (meaning, generally, the value of a parcel's buildings). This can be used as a proxy capturing the likelihood of a parcel having higher value if redeveloped. We constructed this variable by creating a two-part land value score: the first half is a ratio of a property's assessed land value to its assessed improvement value. We then assigned these to quintiles (lots with high land values relative to their improvement values were scored 5, while lots with high improvement values relative to their land values scored 1). Then, we divided properties into quintiles based on absolute land values (high at 5 and low at 1) and multiplied this against the land to improvement ratio, yielding a final land attractiveness score within a range of 1–25.
- **Zoned unit potential:** Finally, we identified a parcel's redevelopment likelihood based on the maximum earning potential of a parcel as indicated by its zoning envelope. Our mechanism for estimating this variable was to divide each parcel's zoning envelope by the existing number of units. Other research finds that redevelopment is only feasible when it at least doubles a parcel's value (Charles 2013), so we exempted parcels with potential ratios of less than two. Then, we created a scaled redevelopment potential variable stepwise according to the quintiles of the remaining parcels' unit potential (ranges included: 1 = 2–3; 2 = 3–5; 3 = 5–9; 4 = 9–20; and 5 = 20–2000) and multiplied it by 5 to create a zoned potential variable ranging from 0–25.

Once we created these four components, we summed individual elements into a composite index and adjusted scores in situations for which redevelopment was known to be highly unlikely. These included parcels where the existing building's effective age was less than 10 years old, parcels whose size was greater than 62,500 square feet (the size of a downtown Seattle block), parcels where residential uses are prohibited, and cases where we estimated no possibility for additional units under the zoning envelope. In each those cases, we set the index to zero.

In an ideal world, our redevelopment probability index would weigh the real costs of acquisition and development against projected market returns from the sale of potential future units, such as through a pro forma. This would allow us to avoid equally weighing each of the four components. But we do not have access to the data necessary to conduct such an analysis on a property-by-property level.

### Projecting the Impacts of Land-Use Policy Change

Using our regional property-based model, we estimated the potential impacts of several potential zoning reforms. Our goal was to understand the effects of broad land-use policy change conducted through municipal, regional, or state-level action. We examined the following four potential reforms:

- **"Plexify":** Allowing four-flat apartments in any residential zone that currently limits development to one-, two-, or three-unit buildings
- **"Missing Middle":** Allowing up to 12 units in multifamily zones
- **"Multiply":** Allowing a 100 percent increase in developable housing units on lots within a quarter mile of stations
- **"Legalize":** Allowing residential development on parcels that are currently zoned only for commercial, neighborhood retail, and public use

We developed these reforms in consultation with stakeholders in the Puget Sound region and after evaluating recent state policy initiatives. We describe how we examined each of these possible reforms in the section "What Impacts Could Zoning Reforms Have on Outcomes" (page 77).

## Limitations

Our research offers new insight into the availability of housing and the accessibility of the burgeoning transit system. By exploring how land-use policies influence housing availability, we offer new data on

the degree to which regulatory *change* might make the region more accommodating to more people, more affordable, and more equitable. We acknowledge that to improve a region's housing market, we must consider more than just the total number of units available. When making policy changes, research—and then legislative efforts—could include ensuring access to a variety of housing types, such as middle housing, or increasing access to neighborhood amenities where discrimination and historical exclusion have limited choice. Our study, however, is limited by several constraints on the analytical approach we undertook.

First, our property-level dataset may not accurately reflect conditions. We identified some large discrepancies between unit counts in the property data compared with Census data when examining Seattle. It is possible that the property data are not reliable, even if they are regionally valid. The zoning codes we studied also change over time; for example, a city may alter its zoning to allow for more development than we estimate. This could then alter possible construction levels near transit.

Second, our process for analyzing constraints on development imposed by land-use regulations may be flawed, in part because of our effort to create a uniform zoning classification system for the entire region, which inherently required simplifications. We do not account for development that uses flexibility measures such as zoning bonuses, planned developments, or conditional uses; given the reliance of large-scale developers on such changes, we may be underestimating the possibility for housing growth in the current regulatory environment. We may not be accurately representing the current zoning policies of any individual community, though we have done our best to interpret today's zoning policies and contacted several local planners to review our data. We do not account for special forms of development, such as accessory dwelling units, in our count of overall possible units that could be developed. Moreover, we do not account for parcel-level changes, such as the combination of multiple lots, nor do we examine the covenants some private developers place in the deeds of new developments that limit redevelopment.

Third, real estate development in the context of transit investments is likely to vary based on the speed at which projects open. It will take several decades to complete all of Sound Transit's planned light rail lines. Given that development responds to the availability of transportation options, it is possible that our results overestimate development potential in certain areas where stations are a long way off. Moreover, while we treat all land within a half mile of rail and BRT stations equally, some stations, such as those for light rail, offer faster, more reliable, and more frequent services than those for commuter rail and some BRT lines. Additionally, we ignore areas farther away from fixed-guideway lines, even though they are served by other types of transit, such as regular bus lines that do not include dedicated bus lanes or special stops. These services may be particularly important in communities such

as Seattle, where the city has worked with county transit authorities to expand frequent services to an increasing share of the resident population.

Fourth, while our analysis provides insight into the potential impacts of some reforms, it may not highlight the most promising reforms. For example, altering the zoning code to eliminate parking requirements near transit could reduce construction costs and ease building. But we do not analyze this potential change in this report.

Finally, we are unable to account for the potentially dramatic changes that could occur because of the pandemic. The region's recent prosperity has been built on the presence of fast-growing, large employers. If the pandemic encourages a long-term rise in the share of people working from home, the metropolitan area may no longer generate as much demand for development. This could have both positive and negative effects. On the one hand, it could mean less competition for housing units, reducing housing costs and making the region more affordable; on the other, it could mean less interest from developers in building new housing units, reducing supply. In either case, we will not know the long-term effects of the pandemic for many years.

# How Are Housing and Housing Growth Distributed in the Puget Sound?

In this section, we describe the distribution of housing availability in the metropolitan area today, with a focus on communities near high-quality public transportation. While developers are adding more housing in neighborhoods near transit, those units are inequitably distributed. Some of the region's wealthiest municipalities added few new housing units over the past decade, and many have few federally subsidized affordable units. These municipalities have high housing values, indicating demand for development, but they are likely using land-use regulations to limit construction. We show that the city of Seattle hosts a disproportionate share of the region's transit-adjacent housing units and has permitted a majority of the region's transit-adjacent housing. Regionwide, most new housing completed near transit in recent years has been in large apartment buildings.

## Which Municipalities Are Building Units?

Although the region's housing growth rate has declined since the 1970s (figure 2), municipalities with land within a half mile of existing or planned fixed-guideway transit grew at a faster rate than across the region overall (17 percent and 12.8 percent, respectively). Their housing stock grew more quickly in the 2010s than in the 2000s, resulting in further concentration of housing in transit-adjacent neighborhoods. These are positive trends for sustainable mobility use: in the future, more residents will live in locations near high-quality train or bus access.

Among incorporated municipalities, total housing stock ranged from fewer than 3,000 units (Normandy Park) to 370,000 units (Seattle) (table 1). The number of federally subsidized housing units per 1,000 people ranged from 0 in six suburban municipalities to 93 (Lynnwood). Median housing values, non-white population shares, and housing permits per capita also varied considerably between municipalities.

TABLE 1

**Municipal Housing Unit and Demographic Data**

*Data for incorporated municipalities within a half mile of existing or planned fixed-guideway transit*

| Municipality | Housing units, 2020 | Unit change, 2010–20 | Subsidized units, 2022 | Subsidized per 1,000 residents | Median housing value | Share pop. non-white | Permits per 1,000 residents 2010–19 |
|---|---|---|---|---|---|---|---|
| Auburn | 31,947 | 14.8% | 2,398 | 30 | $356,200 | 47.9% | 53 |
| Bellevue | 64,688 | 16.4% | 2,116 | 14 | $887,700 | 52.3% | 61 |
| Bothell | 20,138 | 41.3% | 839 | 18 | $587,900 | 35.5% | 93 |
| Burien | 20,785 | 45.1% | 598 | 12 | $419,500 | 52.1% | 37 |
| Des Moines | 13,222 | 5.0% | 755 | 24 | $379,300 | 50.3% | 49 |
| DuPont | 3,791 | 17.0% | 0 | 0 | $343,400 | 36.6% | 66 |
| Edgewood | 5,125 | 34.8% | 0 | 0 | $430,600 | 16.6% | 183 |
| Edmonds | 19,305 | 5.0% | 225 | 5 | $587,200 | 25.2% | 22 |
| Everett | 47,193 | 5.8% | 5,959 | 54 | $359,900 | 38.0% | 30 |
| Federal Way | 37,677 | 6.3% | 2,545 | 26 | $359,000 | 56.9% | 21 |
| Fife | 4,326 | 11.1% | 114 | 11 | $325,500 | 56.3% | 37 |
| Fircrest | 2,926 | 2.8% | 0 | 0 | $375,600 | 27.5% | 11 |
| Issaquah | 17,303 | 24.4% | 701 | 18 | $677,500 | 40.7% | 135 |
| Kenmore | 9,589 | 11.9% | 222 | 10 | $617,000 | 26.6% | 56 |
| Kent | 49,157 | 35.0% | 3,106 | 24 | $378,800 | 58.5% | 34 |
| Kirkland | 40,019 | 64.4% | 615 | 7 | $724,700 | 31.1% | 118 |
| Lake Forest Park | 5,565 | 5.6% | 0 | 0 | $676,400 | 23.3% | 11 |
| Lakewood | 26,999 | 1.7% | 471 | 8 | $309,600 | 51.9% | 10 |
| Lynnwood | 16,212 | 8.5% | 3,575 | 93 | $443,100 | 46.4% | 46 |
| Mercer Island | 10,570 | 6.4% | 89 | 3 | $1,386,300 | 30.6% | 42 |
| Mill Creek | 9,068 | 14.5% | 486 | 23 | $584,400 | 38.4% | 66 |
| Milton | 3,650 | 18.5% | 151 | 18 | $340,600 | 28.1% | 4 |
| Mountlake Terrace | 9,202 | 7.0% | 180 | 8 | $424,700 | 33.8% | 47 |
| Mukilteo | 8,711 | 1.9% | 0 | 0 | $624,900 | 35.1% | 9 |
| Newcastle | 5,471 | 29.4% | 0 | 0 | $780,100 | 54.0% | 137 |
| Normandy Park | 2,807 | –1.1% | 105 | 16 | $685,800 | 18.3% | 17 |
| Puyallup | 18,106 | 12.0% | 1,091 | 26 | $352,800 | 23.7% | 45 |
| Redmond | 31,738 | 31.3% | 936 | 14 | $788,500 | 50.9% | 119 |
| Renton | 43,362 | 11.4% | 2,254 | 22 | $442,600 | 55.8% | 37 |
| SeaTac | 11,774 | 13.6% | 1,143 | 39 | $338,000 | 66.6% | 14 |
| Seattle | 368,308 | 19.4% | 31,734 | 43 | $713,600 | 37.4% | 135 |
| Shoreline | 24,043 | 5.5% | 1,183 | 21 | $582,000 | 35.6% | 35 |
| Sumner | 4,492 | 5.0% | 74 | 7 | $347,500 | 22.6% | 38 |
| Tacoma | 92,309 | 7.6% | 6,017 | 28 | $311,700 | 42.4% | 33 |
| Tukwila | 8,742 | 12.7% | 568 | 28 | $314,200 | 72.2% | 8 |
| University Place | 14,427 | 6.3% | 442 | 13 | $387,800 | 33.5% | 33 |
| **Three-county overall** | 1,650,246 | 12.8% | 70,692* | 29* | $427,650* | 37.7%* | NA |

**Sources:** US Census 2010 and 2020 (housing units); National Housing Preservation Database 2022 (subsidized units); American Community Survey five-year 2016–20 (median housing value and share population non-white); Puget Sound Regional Council 2021 (housing permits).

**Notes:** Subsidized units are those classified as either "active" or "inconclusive" in the subsidized housing database. "Share population non-white" classifies people who are Hispanic as non-white.

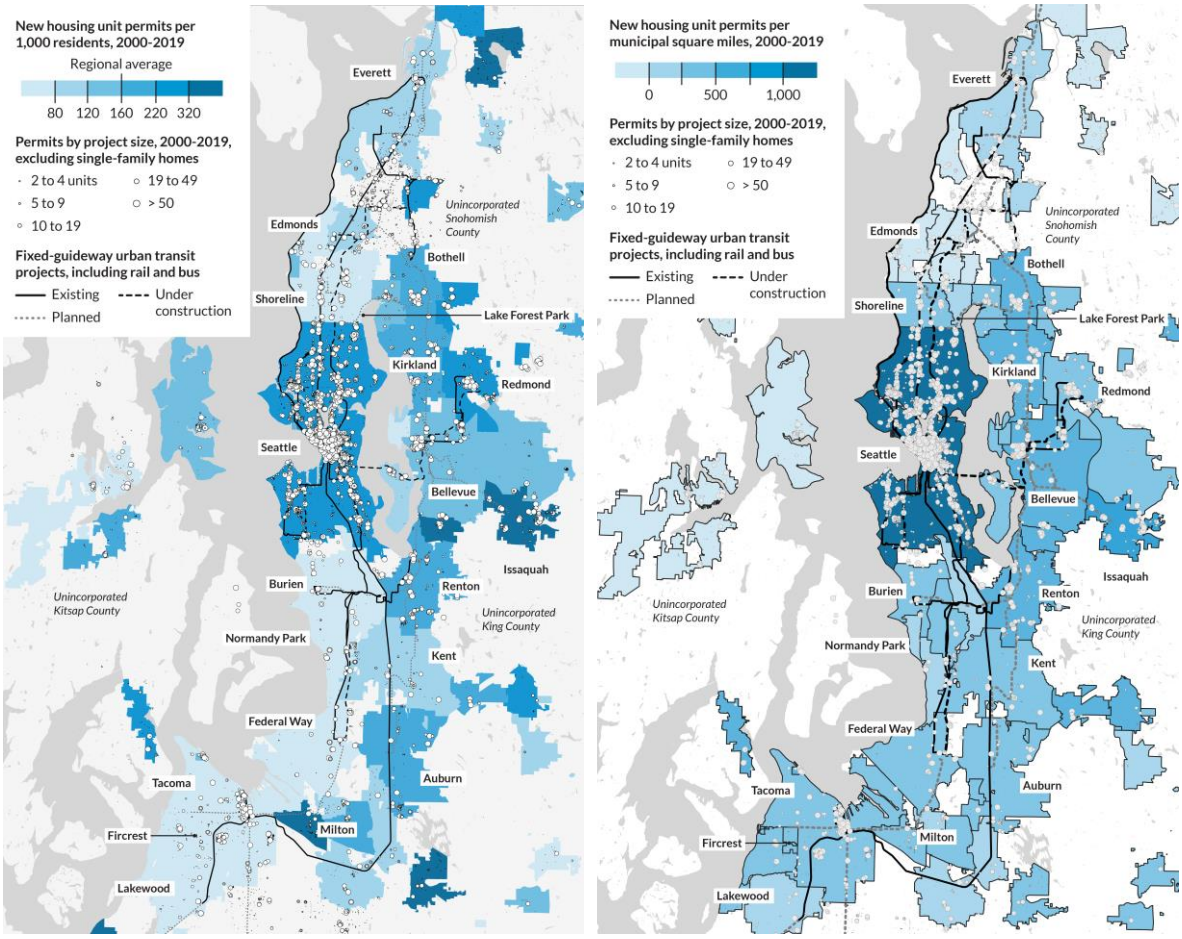
* Among municipalities in table.

The growth in housing unit availability varied dramatically by municipality across the region. As noted in table 1, the change in the housing stock from 2010 to 2020 ranged from –1.1 percent (Normandy Park) to +64.4 percent (Kirkland). Seattle stands out among incorporated cities along

current and planned transit lines as having high permitting rates, both per capita and per land area (figure 7). Permitting rates per capita between 2010 and 2019 were very low in some jurisdictions around the region's perimeter, where lower home values may limit demand from developers to build, such as in Fircrest and Milton. Housing growth rates were also low in some jurisdictions closer to the region's center, such as in Lake Forest Park and Normandy Park, where home values are higher. In these communities, lack of development may result from limitations on allowed residential construction inscribed into the zoning code.

FIGURE 7

**New Housing Construction in the Puget Sound**




URBAN **INSTITUTE**

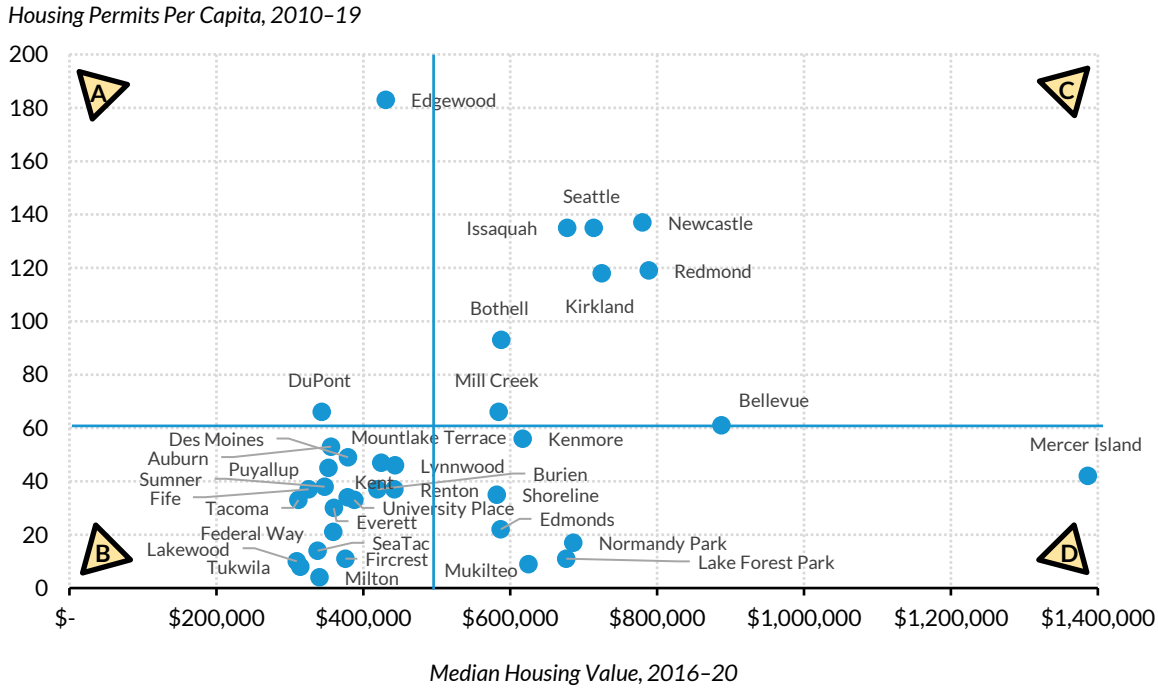
**Source:** The authors, based on data from Puget Sound Regional Council, the US Census Bureau, and Transit Explorer 2.
**Notes:** Uses population data from the 2000 Census as a base.

Municipal real estate trends in the Puget Sound, as in every region, may be summarized as the intersection of two key values: demand for housing development and the rate of housing production.

Housing values act as a useful proxy for housing demand because they reflect the value of a combination of local amenities; interest from potential residents; and distance to employment, services, and other daily needs (Herath and Maier 2010). We illustrate this intersection in figure 8, which groups municipalities into four typologies. For municipalities with low housing prices—below the regional median housing value of $471,900 in 2016–20 American Community Survey data—type A municipalities have high development rates (just two municipalities fall in this category), while type B municipalities such as Lakewood or Tukwila have low development rates, below 50 percent of the regional average of about 120 units per capita. Conditions in type B municipalities with relatively low housing values and low development levels may reflect less demand from developers. This lack of interest may stem from fears developers may have about being able to make projects "pencil out" or make a profit—fears that are sometimes influenced by racial biases.[50]

FIGURE 8

**Comparing Municipal Median Housing Values and Permits Per Capita**

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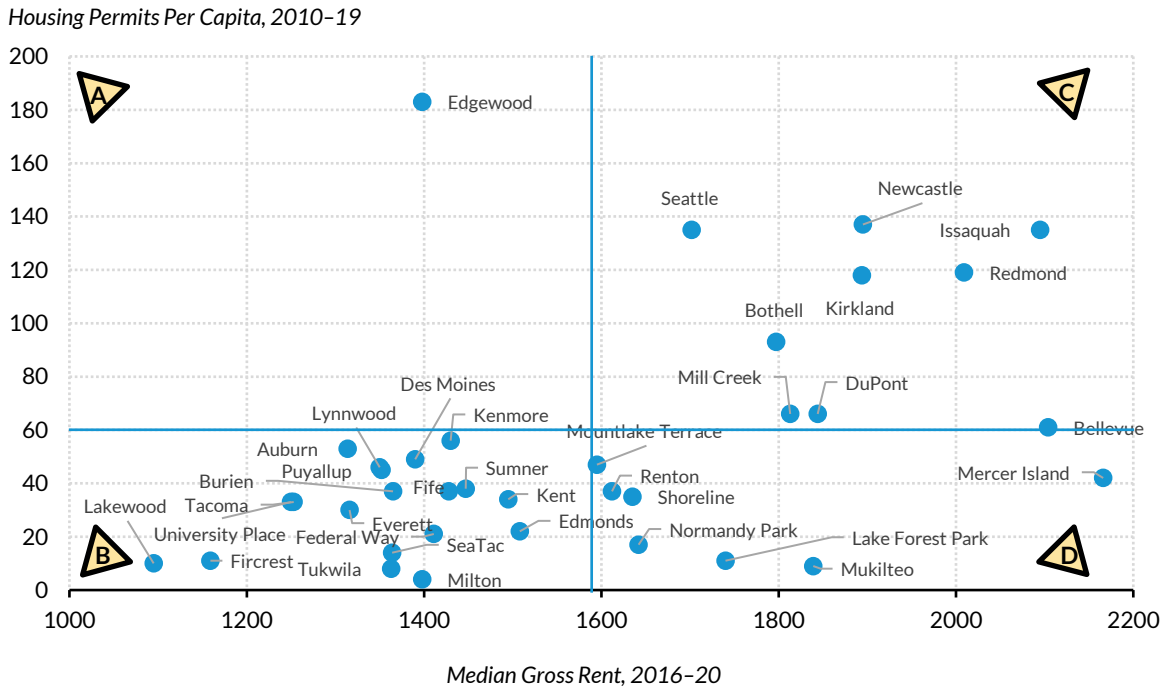
**Source:** The authors, based on data from Puget Sound Regional Council and the US Census Bureau.
**Notes:** Uses population data from the 2000 Census as a base. Regionally, permitting averaged about 120 permits per capita. The region's median housing value in 2016–20 was $471,900. Type A municipalities have low housing costs and high housing production; type B have low costs and low production; type C have high costs and high production; and type D have high costs and low production.

Among municipalities with higher housing values, we expect increased demand for development due to the profitability of new construction (and thus more cities defined as type C in figure 8). This is the case for cities such as Kirkland, Newcastle, Redmond, and Seattle. There are, however, municipalities with high housing values and less housing production than we might expect given their housing costs (type D), including Lake Forest Park, Mercer Island, and Normandy Park. These data reflect *past* land-use regulations and development demand. Several municipalities have recently altered their zoning policies to increase the zoning envelope, encouraging more development. As such, trends may reverse in the coming years. Moreover, there may be significant differences in demand by neighborhood within jurisdictions.

We identify similar trends when comparing rents and permitting (figure 9). Lake Forest Park, Mercer Island, and Normandy Park permit few housing units despite arguably high demand, as evidenced by their high rent levels above the regional average.

FIGURE 9

**Comparing Municipal Median Housing Values and Permits Per Capita**

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**Source:** The authors, based on data from Puget Sound Regional Council and the US Census Bureau.
**Notes:** Uses population data from the 2000 Census as a base. The region's median gross rent in 2016–20 was $1589. Type A municipalities have low housing costs and high housing production; type B have low costs and low production; type C have high costs and high production; and type D have high costs and low production.

Using the quadrant assignments in figure 8, we divided municipalities into four groups, used for comparative analysis in several other sections of the report (we do not include unincorporated areas in this portion of the analysis due to their significant variation). We use the same groupings to assess block groups individually.

- **Group A**: Low housing values (less than $471,900 median housing value, the regional level) and high development rate (greater than 60 housing units permitted per capita, or greater than 50 percent of the regional level): DuPont and Edgewood
- **Group B**: Low housing values and low development rate (less than 60 housing units permitted per capita, or less than 50 percent of the regional level): Auburn, Burien, Des Moines, Everett, Federal Way, Fife, Fircrest, Kent, Lakewood, Lynnwood, Milton, Mountlake Terrace, Puyallup, Renton, SeaTac, Sumner, Tacoma, Tukwila, and University Place
- **Group C**: High housing values (higher than $471,900) and high development rate: Bellevue, Bothell, Issaquah, Kirkland, Mill Creek, Newcastle, Redmond, and Seattle
- **Group D**: High housing values and low development rate: Edmonds, Kenmore, Lake Forest Park, Mercer Island, Mukilteo, Normandy Park, Renton, and Shoreline

Comparing municipalities with the highest rates of new housing growth and those with the lowest, on average, the 10 fastest-growing jurisdictions between 2010 and 2020 had populations that were more likely to be non-white (in particular, they were more likely to be Asian), more likely to be renters, and more likely to pay higher rents than residents in the 10 slowest-growing jurisdictions. These populations also had, on average, higher levels of educational attainment, higher household incomes, fewer cars, higher property values, and lower poverty rates. That said, none of these differences were statistically significant and were likely a consequence of the variation in housing production between municipalities.

# Housing and Population Near Transit Today

About 976,000 people (22.8 percent of the regional total) and 470,000 housing units (26.8 percent) were located within a half mile of existing or planned stations, according to 2020 Census data (table 2). The relatively high concentration of housing units reflects that households near transit lines—generally living in higher-density, mixed-use neighborhoods—are more likely to have fewer people per housing unit. Housing farther from transit is more likely to be single-family homes, with greater space, allowing more individuals per household.

TABLE 2

**Demographics of People and Households in the Puget Sound by Adjacency to Transit Stations**

*Data for four-county region and block groups within a half mile of existing or planned fixed-guideway transit*

| Variable | Region overall | Block groups near transit |
|---|---|---|
| Population | 4,197,443 | 980,526 |
| Share non-Hispanic white | 62.9% | 53.9% |
| Share non-Hispanic Black | 5.6% | 8.8% |
| Share non-Hispanic Asian | 13.5% | 17.9% |
| Share Hispanic | 10.2% | 11.2% |
| Share of workers who drove alone to work | 65.1% | 52.5% |
| Share of workers who took transit to work | 9.1% | 15.8% |
| Share of workers who bike or walked to work | 5.0% | 10.9% |
| Median household income | $98,189 | $83,850 |
| Housing units | 1,731,510 | 467,078 |
| Share of units that are owner occupied | 60.4% | 38.7% |
| Share of households with 0 vehicle | 8.1% | 17.1% |
| Median rent | $1,391 | $1,579 |
| Median housing value | $486,905 | $457,651 |
| Share of population under federal poverty line | 8.7% | 11.8% |

**Source:** 2016–20 five-year American Community Survey.
**Notes:** Transit data are calculated using areal interpolation.

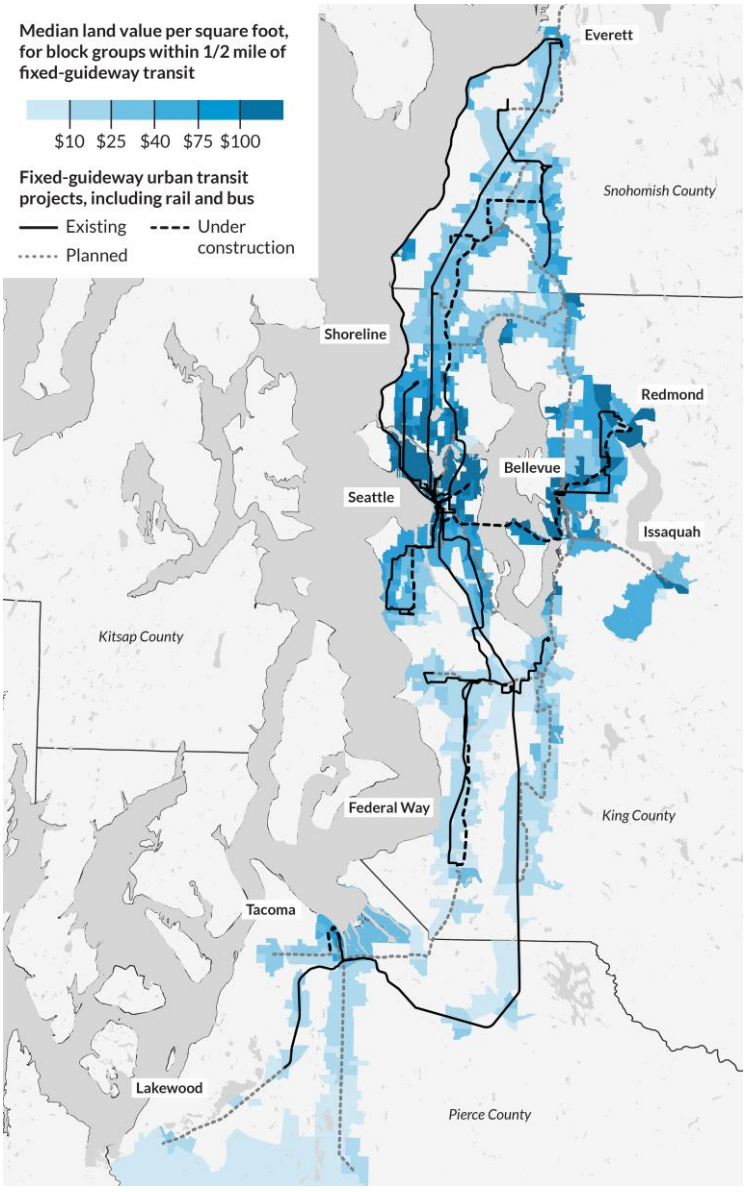
Between 2000 and 2019, local jurisdictions permitted 338,640 units in the four-county region. Of these, 180,404 (53.3 percent) were located within a half mile of stations. This indicates that a growing share of the region's housing units are concentrated in areas near transit, which will likely result in greater transit use over the long term and a region that is less automobile dependent. These findings reaffirm that municipalities with access to transit are growing faster than those farther away.

Compared with the region overall, neighborhoods near transit are more diverse, with higher shares of Black, Asian, and Hispanic residents. Workers who are more likely to use transit, walk, or bike to get to work live in these neighborhoods. Transit-adjacent areas also have lower household incomes, lower rates of homeownership, higher rents, and a higher share of people living under the federal poverty line than the region overall (table 2).

To be clear, block groups near transit do not share uniform characteristics. Land values vary tremendously in neighborhoods adjacent to stations (figure 10). In central Seattle, Bellevue, Redmond, and select other parts of the region, land is valued at more than $100 per square foot on average. But land is valued at less than $10 per square foot on average in many neighborhoods on the southern side of the region, such as in southern Tacoma. These differences reflect where developers choose to invest.

FIGURE 10

**Land Values in Block Groups Near Transit Stations**




URBAN **INSTITUTE**

**Source:** The authors, based on data from First American and Transit Explorer 2.
**Notes:** Does not include data from parcels with negligible land area.

Access to existing and future fixed-guideway transit stations is inequitably distributed across municipalities. Seattle has the largest share of housing units and population within a half mile of stations (58 percent), with Lynnwood (55 percent) and SeaTac (50 percent) close behind (table 3). But other cities including Auburn, Federal Way, Kirkland, Lakewood, and Puyallup have less than 20 percent of their housing and populations near stations.

TABLE 3

**Land Area, Population, and Housing by Municipality**

*Data for municipalities and unincorporated parts of counties overall and near transit stations*

| | Overall | | | Within Half Mile of Existing or Planned Transit Station | | | |
|---|---|---|---|---|---|---|---|
| Jurisdiction | Land rea | Population | Housing units | Land area | Housing permits | Share population | Share housing |
| Auburn | 30.6 | 80,914 | 31,947 | 3.8 | 1,165 | 17% | 19% |
| Bellevue | 33.7 | 146,145 | 64,688 | 8.8 | 10,070 | 36% | 41% |
| Bothell | 13.7 | 46,386 | 20,138 | 4.1 | 2,915 | 32% | 34% |
| Burien | 10.6 | 51,588 | 20,785 | 2.3 | 1,760 | 26% | 30% |
| Des Moines | 6.8 | 31,983 | 13,222 | 2.2 | 972 | 41% | 37% |
| DuPont | 5.9 | 9,514 | 3,791 | 0.3 | 183 | 12% | 13% |
| Edgewood | 7.8 | 12,010 | 5,125 | 0.0 | 0 | 0% | 0% |
| Edmonds | 9.1 | 42,347 | 19,305 | 1.5 | 686 | 22% | 25% |
| Everett | 34.3 | 110,840 | 47,193 | 7.6 | 3,741 | 33% | 34% |
| Federal Way | 18.8 | 96,812 | 37,677 | 3.0 | 1,035 | 19% | 19% |
| Fife | 5.0 | 10,345 | 4,326 | 0.6 | 56 | 10% | 10% |
| Fircrest | 1.6 | 6,844 | 2,926 | 0.4 | 53 | 31% | 31% |
| Issaquah | 10.4 | 38,707 | 17,303 | 0.6 | 440 | 3% | 4% |
| Kenmore | 6.2 | 22,969 | 9,589 | 1.5 | 925 | 27% | 30% |
| Kent | 33.7 | 130,038 | 49,157 | 8.1 | 2,072 | 37% | 36% |
| King County (un.) | 1,690 | — | — | 1.7 | 335 | — | — |
| Kirkland | 20.5 | 91,146 | 40,019 | 1.8 | 1,328 | 10% | 10% |
| Lake Forest Park | 3.0 | 13,455 | 5,565 | 1.0 | 101 | 32% | 33% |
| Lakewood | 19.0 | 60,564 | 26,999 | 0.9 | 246 | 6% | 6% |
| Lynnwood | 6.7 | 38,538 | 16,212 | 4.0 | 2,087 | 55% | 58% |
| Mercer Island | 6.3 | 25,820 | 10,570 | 0.7 | 1,082 | 19% | 25% |
| Mill Creek | 4.1 | 20,750 | 9,068 | 1.7 | 1,236 | 38% | 42% |
| Milton | 2.7 | 8,211 | 3,650 | 0.0 | 0 | 0% | 0% |
| Mountlake Terrace | 3.2 | 21,328 | 9,202 | 1.2 | 277 | 24% | 23% |
| Mukilteo | 6.2 | 21,414 | 8,711 | 0.4 | 73 | 5% | 5% |
| Newcastle | 4.0 | 12,078 | 5,471 | 0.1 | 20 | 3% | 3% |
| Normandy Park | 2.2 | 6,643 | 2,807 | 0.0 | 0 | 0% | 0% |
| Pierce County (un.) | 1,542 | — | — | 8.2 | 1,402 | — | — |
| Puyallup | 12.3 | 41,666 | 18,106 | 0.6 | 38 | 6% | 7% |
| Redmond | 16.6 | 67,959 | 31,738 | 5.0 | 6,872 | 39% | 43% |
| Renton | 19.6 | 101,871 | 43,362 | 6.4 | 4,760 | 24% | 26% |
| SeaTac | 8.6 | 29,102 | 11,774 | 4.5 | 353 | 50% | 49% |
| Seattle | 90.7 | 741,251 | 368,308 | 37.0 | 115,297 | 58% | 64% |
| Shoreline | 9.6 | 56,835 | 24,043 | 3.7 | 2,185 | 38% | 38% |
| Snohomish County (un.) | 1,967 | — | — | 9.7 | 11,176 | — | — |
| Sumner | 6.5 | 10,246 | 4,492 | 0.4 | 52 | 12% | 12% |
| Tacoma | 63.3 | 215,766 | 92,309 | 11.7 | 5,259 | 28% | 30% |
| Tukwila | 7.3 | 20,265 | 8,742 | 2.3 | 137 | 31% | 31% |
| University Place | 7.2 | 33,661 | 14,427 | 0.1 | 0 | 2% | 2% |

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**Source**: 2020 US Census; 2016–20 five-year American Community Survey; PSRC 2021 (permits, 2010–19).

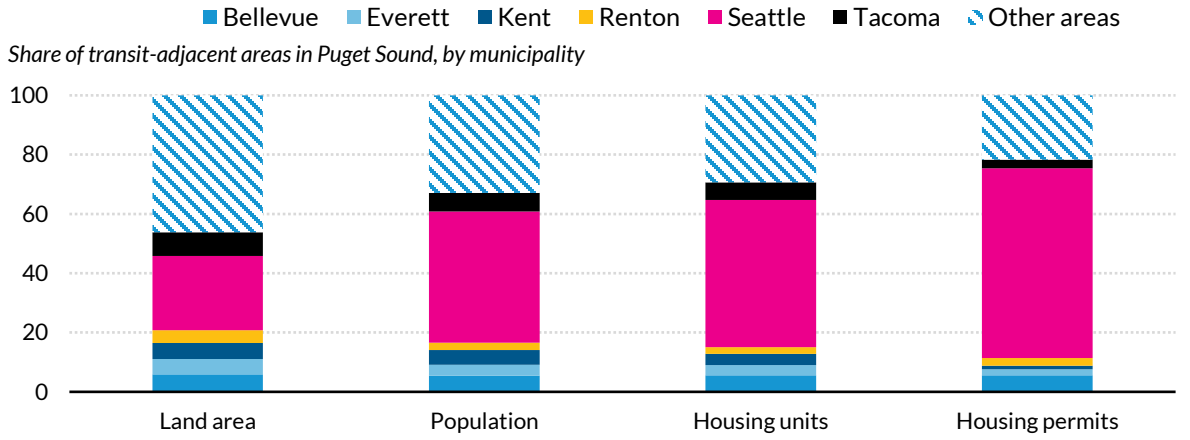
**Notes**: Land area is calculated in square miles. Some data are unavailable for counties because portions of each county are located in incorporated municipalities that are not included in this table.

The region's six most populous municipalities, which each had at least 100,000 residents in 2020, contain about half of the land within a half mile of existing and planned stations (Bellevue, Everett, Kent, Renton, Seattle, and Tacoma). These municipalities collectively house about 1.4 million residents, accounting for slightly more than a third of the regional population. But more than two-thirds of the region's transit-adjacent population lives in those cities. Seattle alone, with just 18 percent of the region's population, has 44 percent of its transit-adjacent population and 50 percent of its transit-adjacent housing units. It also permitted 64 percent of the region's transit-adjacent housing units between 2010 and 2019 (figure 11).

FIGURE 11

**Puget Sound Region's Transit-Adjacent Population and Housing Are Concentrated in Seattle**

*The region's six largest municipalities account for about half of land near transit*

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**Source:** Authors' calculations based on 2016–20 US Census data and Puget Sound Regional Council (housing permits, 2010–19).
**Notes:** Transit-adjacent areas are defined as those within a half mile of an existing or planned fixed-guideway transit station. Housing permits from 2010–19.

Among the municipalities with access to fixed-guideway transit, permitting near transit varies substantially. Between 2010 and 2019, several municipalities permitted units at a much higher rate than would be expected given their preexisting housing stock. Standouts on this front, in decreasing order, included Issaquah (691 permits per 1,000 housing units), Redmond (507), Seattle (492), Bothell (431), Renton (428), and Mercer Island (403). But other jurisdictions permitted little: the worst performers among jurisdictions with reasonable amounts of land near transit included Puyallup (32 permits per 1,000 housing units), Tukwila (50), Lake Forest Park (55), Fircrest (58), and SeaTac (61).

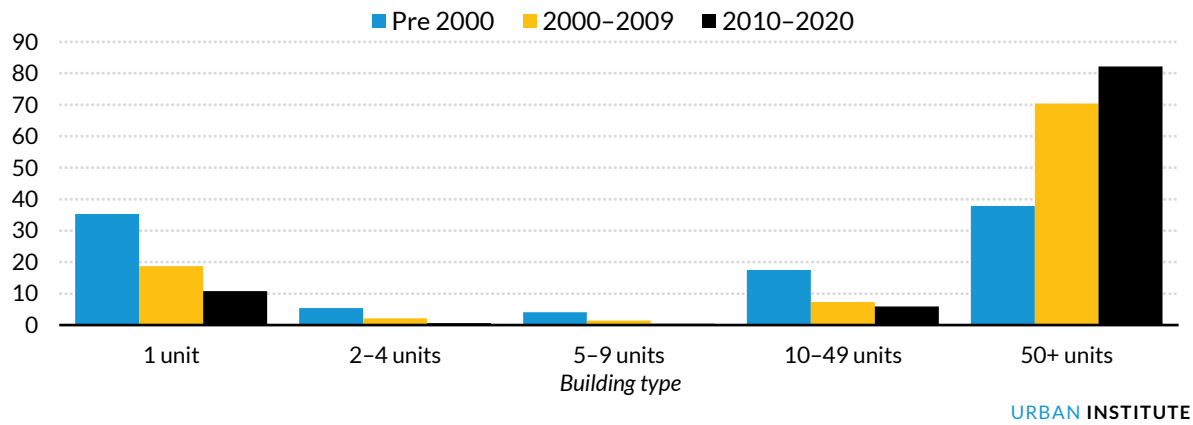
Our analysis of housing construction near transit also demonstrates an increasing focus on construction in large-scale buildings. Before 2000, a plurality of housing units built near transit were

single-family homes; less than a third were in buildings of 50 or more units (figure 12). But such large structures contain more than 80 percent of the units built since 2010. The share of new units completed in two- to nine-unit buildings has declined from about 10 percent before 2000 to about 1 percent in 2010 and after. It is unclear whether these trends reflect market demand, construction efficiencies, lack of developable land, or another unmeasured factor.

FIGURE 12

**An Increasing Share of Recent Transit-Adjacent Housing Has Been in Large Buildings**

*Share of housing units completed in transit-adjacent areas, by building type and by completion year*




**Source:** Authors' calculations based on First American property data.
**Notes:** Transit-adjacent areas are defined as those within a half mile of an existing or planned fixed-guideway transit station.

# Access to Subsidized Housing

There were 80,543 federally subsidized housing units affordable to people with low and moderate incomes in the Puget Sound region in 2022, according to the National Housing Preservation Database. This figure includes units subsidized through public housing, the low-income housing tax credit, project-based Section 8, and other programs. Everett, Lynnwood, and Seattle, which collectively account for 36 percent of the region's population, contain 58 percent of these housing units. Conversely, some suburbs—DuPont, Edgewood, Fircrest, Lake Forest Park, Mukilteo, and Newcastle—have none. Newcastle and Lake Forest Park have the highest and third-highest median household incomes, respectively, among transit-adjacent municipalities (figure 13).

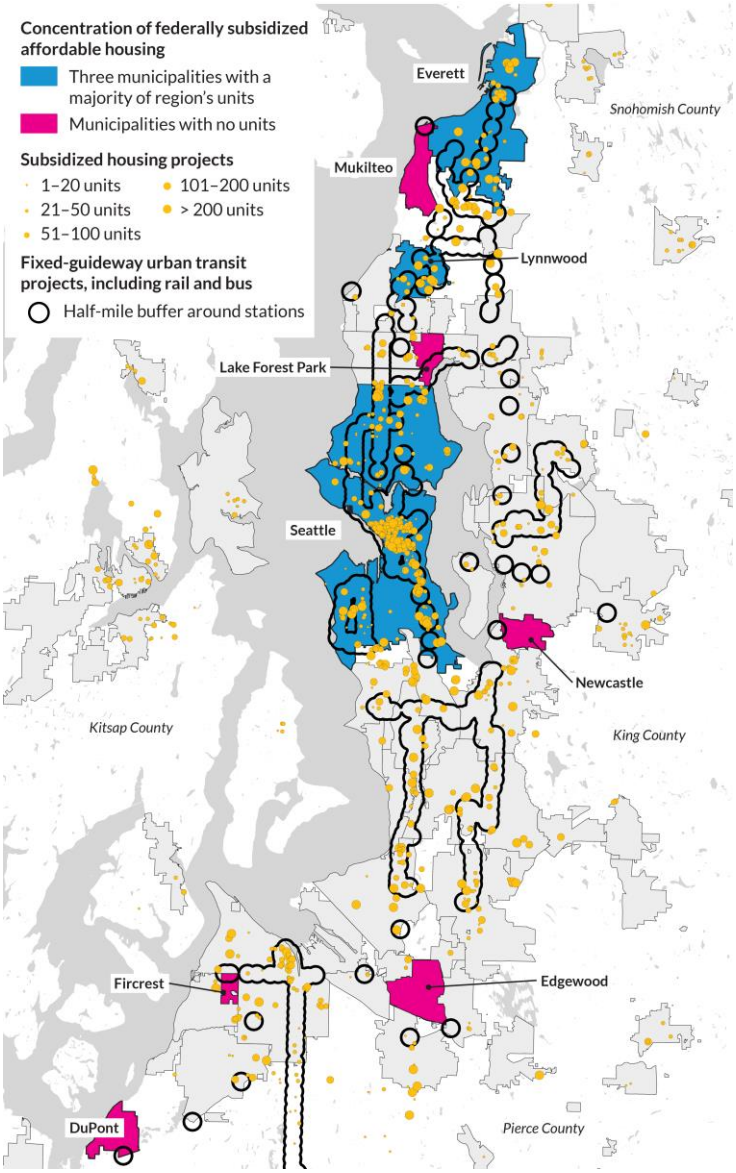
Within a half mile of stations, there were a total of 43,843 subsidized units, or about 54 percent of the regional total. This share declined slightly over the past decade, indicating that despite significant investments in transit during that period, local policymakers did not expand their focus on investing in

affordable housing in those areas. The city of Seattle accounts for 55 percent of the region's transit-adjacent subsidized units, far greater than its regional share of housing (21 percent), and greater than its share of subsidized units (40 percent). More than three-quarters of subsidized housing in Seattle is located within a half mile of stations.

FIGURE 13

**Everett, Lynnwood, and Seattle Concentrate a Majority of the Region's Subsidized Housing**

*Some suburban municipalities have no provisions for federally subsidized, project-based units*

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**Source:** Authors, based on National Housing Preservation Database, 2022.
**Notes:** Only includes project-based subsidized units, not tenant-based units.

# How Does Zoning Affect Current and Future Housing Supply?

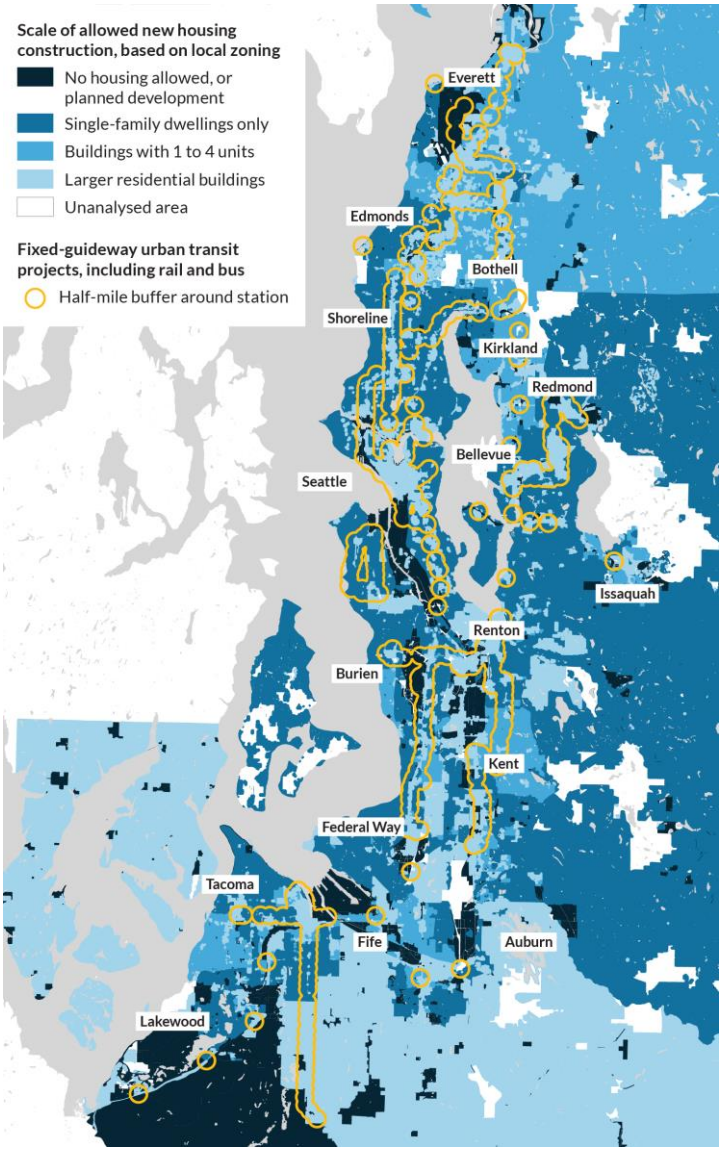
Land-use regulations influence the availability of housing in communities across the nation. In the Puget Sound region, zoning rules vary. Most municipalities allow for the construction of accessory dwelling units (ADUs) and a significant share enforce no parking requirements on new housing. But zoning on roughly 24 percent of land near transit requires at least two parking spaces per residence. Overall, municipalities with more liberal land-use regulations have higher permitting rates, and almost all residential construction has occurred in multifamily zones. Overall, we find that current zoning theoretically allows for the construction of hundreds of thousands of additional units. But there are obstacles to development. Current ownership patterns and differences in real estate demand by jurisdiction hinder construction. New development is unlikely to reach housing densities on par with Seattle's average today. And zoning policies in many cities are restrictive, blocking off a large share of transit-adjacent land for development despite market demand.

## Links Between Zoning Policy and Housing Availability

We examined municipal and county zoning codes with the goal of identifying the zoning envelope of each area near transit—defined as the maximum number of units that could theoretically be built by right. We began by mapping the distribution of zoning allowances throughout the region (figure 14). In Pierce and Snohomish Counties, zoning regulations in municipalities and unincorporated areas are somewhat more permissive than those in much of King County. In central Bellevue, Seattle, and Tacoma, zoning allows for the construction of buildings with five or more units. But for a large share of the land area near transit, new housing is forbidden, or only single-family dwellings are allowed. Single-family zoning is common not only in suburban areas far from transit (especially in King County), but also within transit-adjacent neighborhoods such as West Seattle and South Tacoma.

FIGURE 14

**Allowed Housing Construction in the Puget Sound**

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**Source:** Authors' analysis based on data from municipality and county zoning texts and maps.
**Notes:** Analysis does not account for accessory dwelling units, nor what can be constructed after the use of flexibility measures such as rezonings, variances, and conditional use permits.

Several cities in the region do not zone any land exclusively for single-family homes (DuPont, Fife, Kirkland, Normandy Park, and University Place) (table 4). But in three other cities—excluding allowances for ADUs—exclusive single-family zoning accounts for more than 80 percent of land (Lake

Forest Park, Mercer Island, and Shoreline). Even in some of the largest cities, like Bellevue and Seattle, single-family zoning is in place on most land (76 percent and 64 percent, respectively).

TABLE 4

**Key Zoning Characteristics by Municipality**

*Data for municipalities and unincorporated parts of counties overall and near transit stations*

| | All Land | Residential Land | Within a Half Mile of Existing or Planned Transit Stations | | | |
|---|---|---|---|---|---|---|
| Jurisdiction | Single-family-only zoning | Share allowing ADUs | No housing allowed | Single-family only | 2–4 units | 5+ units |
| Auburn | 45.5% | 75.4% | 18.5% | 5.7% | 13.9% | 61.9% |
| Bellevue | 76.1% | 83.8% | 4.2% | 41.9% | 0.0% | 53.9% |
| Bothell | 0.3% | 93.3% | 8.6% | 1.1% | 37.4% | 30.5% |
| Burien | 74.8% | 96.7% | 2.1% | 32.4% | 0.0% | 35.9% |
| Des Moines | 77.1% | 93.2% | 17.8% | 60.8% | 2.3% | 19.1% |
| DuPont | 0.0% | 0.0% | 48.7% | 0.0% | 0.0% | 50.5% |
| Edgewood | 39.4% | 96.2% | 63.6% | 0.0% | 36.4% | 0.0% |
| Edmonds | 73.6% | 0.0% | 17.2% | 36.5% | 0.0% | 46.4% |
| Everett | 3.8% | 87.5% | 24.6% | 1.1% | 35.2% | 39.0% |
| Federal Way | 68.0% | 0.0% | 6.3% | 44.4% | 1.8% | 44.8% |
| Fife | 0.0% | 87.4% | 46.1% | 0.0% | 41.6% | 12.3% |
| Fircrest | 60.3% | 88.8% | 21.4% | 56.9% | 0.0% | 21.7% |
| Issaquah | 18.5% | 60.2% | 31.5% | 23.1% | 2.8% | 42.3% |
| Kenmore | 69.1% | 92.1% | 13.7% | 50.7% | 0.0% | 35.6% |
| Kent | 10.6% | 84.0% | 4.7% | 4.8% | 49.2% | 35.7% |
| King County (un.) | 95.9% | 99.5% | 4.8% | 44.2% | 0.0% | 43.6% |
| Kirkland | 0.0% | 74.6% | 18.6% | 0.0% | 47.3% | 34.1% |
| Lake Forest Park | 95.5% | 96.3% | 1.2% | 91.6% | 0.0% | 7.2% |
| Lakewood | 41.2% | 87.9% | 27.4% | 26.0% | 6.8% | 39.2% |
| Lynnwood | 61.4% | 68.1% | 14.4% | 44.6% | 0.0% | 40.9% |
| Mercer Island | 87.0% | 97.5% | 18.9% | 54.4% | 0.0% | 26.7% |
| Mill Creek | 40.4% | 81.9% | 12.5% | 25.9% | 0.0% | 61.6% |
| Milton | 8.9% | 88.2% | — | — | — | — |
| Mountlake Terrace | 0.6% | 80.7% | 18.7% | 0.0% | 5.8% | 75.4% |
| Mukilteo | 58.0% | 96.6% | 13.8% | 69.9% | 0.0% | 16.3% |
| Newcastle | 92.6% | 73.5% | 0.0% | 94.7% | 0.0% | 5.3% |
| Normandy Park | 0.0% | 100.0% | 0.0% | 0.0% | 100.0% | 0.0% |
| Pierce County (un.) | 0.0% | 0.1% | 30.4% | 0.0% | 0.0% | 69.6% |
| Puyallup | 46.4% | 91.2% | 13.4% | 0.0% | 40.7% | 45.9% |
| Redmond | 61.8% | 78.8% | 11.1% | 27.0% | 0.0% | 61.9% |
| Renton | 61.8% | 77.6% | 15.0% | 36.6% | 2.8% | 45.7% |
| SeaTac | 29.6% | 71.7% | 58.4% | 19.4% | 0.0% | 22.2% |
| Seattle | 63.5% | 86.8% | 11.8% | 50.1% | 0.0% | 38.2% |
| Shoreline | 80.7% | 100.0% | 3.9% | 66.5% | 0.0% | 29.5% |
| Snohomish County (un.) | 0.2% | 99.4% | 10.1% | 3.3% | 25.9% | 60.0% |
| Sumner | 33.0% | 100.0% | 1.2% | 46.5% | 0.0% | 3.3% |
| Tacoma | 44.4% | 95.9% | 10.0% | 43.9% | 7.4% | 32.8% |
| Tukwila | 33.6% | 60.5% | 16.3% | 32.5% | 2.1% | 49.1% |
| University Place | 0.0% | 88.9% | 0.0% | 0.0% | 6.6% | 93.4% |

**Source:** Authors' analysis of municipality and county zoning texts and maps.
**Notes:** ADU = accessory dwelling unit. 2–4 unit zoning means buildings with up to four units per parcel are allowed; 5+ unit zoning means buildings with five or more units per parcel are allowed.

Trends are somewhat different near transit stations. Some cities (DuPont, Edgewood, Fife, and SeaTac) concentrate industrial and commercial uses in those areas, prohibiting residential construction on more than a third of transit-adjacent land. Others allow large multifamily buildings—a majority of land near transit in Auburn, Bellevue, DuPont, Mill Creek, Mountlake Terrace, Redmond, and University Place allows buildings of five or more units to be constructed on each parcel. Though only about 38 percent of transit-adjacent land in Seattle allows large multifamily buildings, that is a higher proportion than in the city overall.

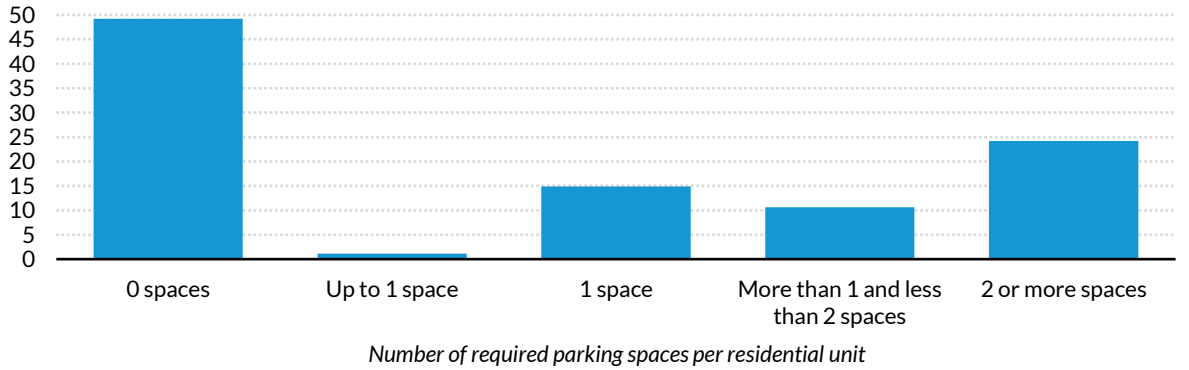
Most municipalities along transit lines include substantial provisions for ADU construction (table 4). These ADUs could provide additional housing in neighborhoods that are otherwise exclusively single-family homes, since they can be built in backyards and basements.[51] Recent research shows that Seattle's ADU policy achieved moderate success between 1996 and 2020, adding about 2,600 units to the city's housing stock (Stacy et al. 2020).

We also examine jurisdictions' use of parking requirements (figure 15). These requirements increase the costs of housing projects, making some financially infeasible. They also encourage additional driving. Most land near transit has no parking requirements, which reduces costs and encourages non-automobile commuting. There are exceptions, though: development on 24 percent of transit-adjacent land requires two or more parking spaces for each new residential unit.

FIGURE 15

**Parking Remains a Requirement for Almost a Quarter of the Area Near Transit Stations**

*Share of residential land within a half mile of a station*




**Source**: Authors' calculations based on municipality and county zoning texts and maps.

**Notes**: When parking space requirements depend on size of unit (e.g., studio or one bedroom), we use data for one-bedroom units. Seattle's parking requirements vary based on distance to rail and bus stations.

In general, municipalities and block groups with high development rates (types A and C) have a smaller share of land dedicated for single-family units, a greater share designated for five or more unit buildings, and less land area requiring two or more parking spaces per residential unit than those of the other development types (types B and D) (table 5). This suggests an association between the restrictiveness of municipal zoning policy and development rates, in line with previous scholarship (McConnell, Walls, and Kopits 2006).

TABLE 5

**Key Zoning Characteristics by Development Environment Near Transit**

*Data for municipalities and unincorporated counties within a half mile of transit stations*

| | A: Low housing value, high development | B: Low housing value, low development | C: High housing value, high development | D: High housing value, low development |
|---|---|---|---|---|
| **By municipality** | | | | |
| Land area share for single-family zoning | 0.0% | 26.2% | 41.3% | 60.5% |
| Land area share for 5+ unit zoning | 47.7% | 38.4% | 42.4% | 30.1% |
| Land area share requiring 2 or more parking spaces/unit | 49.7% | 23.0% | 14.1% | 61.5% |
| **By block group** | | | | |
| Land area share for single-family zoning | 13.7% | 26.2% | 21.1% | 73.8% |
| Land area share for 5+ unit zoning | 72.5% | 51.0% | 64.5% | 18.9% |
| Land area share requiring 2 or more parking spaces/unit | 5.3% | 37.8% | 10.1% | 48.4% |

**Source:** Authors' analysis of municipality and county zoning texts and maps.

**Notes:** Low housing value means a median housing value in 2016–20 of less than $471,900 (the regional average); high housing value means a median housing value of $471,900 or more. High development means at least 60 housing units permitted per capita at the municipal level between 2010–19; low development means fewer than 60 units permitted per capita over the same period. Does not include data related to unincorporated areas.

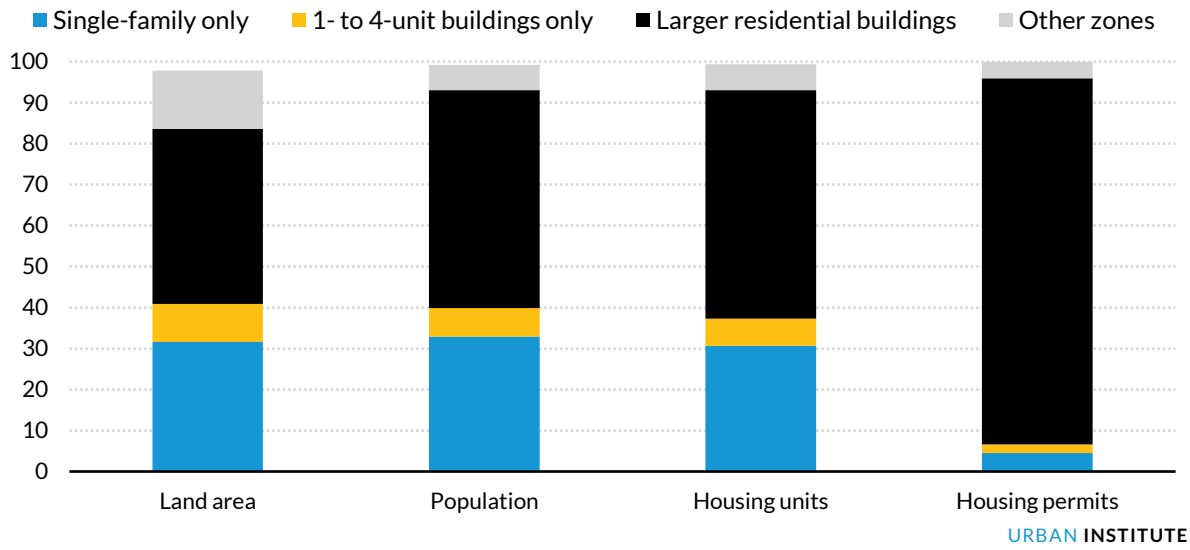
At minimum, zoning that allows the construction of multifamily apartments is a prerequisite to significant housing construction. On transit-adjacent land across the region, about 15 percent prohibits new residential construction, a third of land allows only single-family homes, 10 percent allows up to four-unit buildings, and about 40 percent allows buildings of five units or more per parcel (figure 16). But a disproportionate share of transit-adjacent population and housing units is located on land zoned for these larger multifamily buildings (53 percent and 56 percent, respectively). Dramatically, 89

percent of housing units permitted by local governments were in these zones. A very small share of units was permitted in zones allowing only single-family homes or allowing the construction of two- to four-unit buildings.

FIGURE 16

**Housing Is Disproportionately Permitted in Multifamily Zones**

*Share of transit-adjacent areas, by type of buildings allowed by zoning district*




**Source:** Authors' calculations based on 2016–20 US Census data, Puget Sound Regional Council (for permits 2010–19), and municipality and county zoning texts and maps.
**Notes:** Includes data for land within a half mile of existing and planned fixed-guideway transit stations in King, Pierce, and Snohomish Counties.

# Existing Housing Availability Compared to Zoning

In this section, we estimate the zoning envelope of transit areas: how much housing could theoretically be built under current regulations. In other words, assuming developers were to tear down every building and build housing to the maximum level now allowed, how much housing would the region have? Here, we make these estimates assuming no change in land-use policy and assuming projects proceed by right. This is, admittedly, a hypothetical enterprise. First, the entire region's building stock will not be rebuilt anytime soon. Second, much of the existing stock is in good condition, and tearing it down would be wasteful and often contrary to the wishes of property owners. Finally, this portion of our model assumes that developers would build residential units if reconstruction were allowed. But in many cases, landowners may want to invest in other types of construction, such as office space or retail.

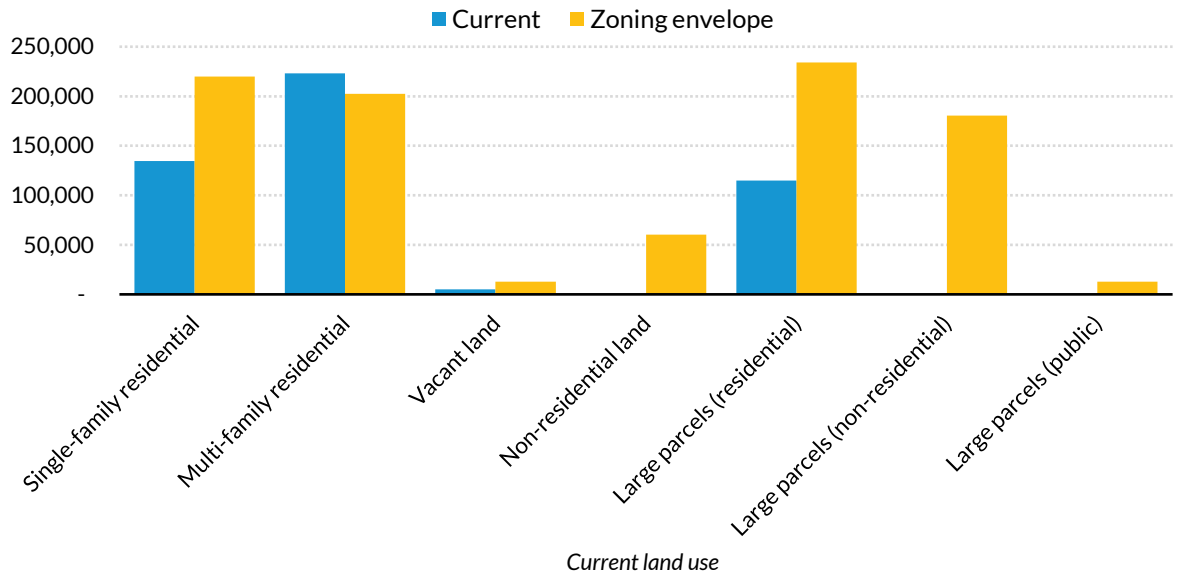
Using the property dataset, we estimate that there are currently 480,398 housing units within a half mile of stations (this figure is only about 3 percent different from the 467,078 units we calculated using Census data in table 2, affirming the validity of the property dataset). Of these, about 268,000 are located within a quarter mile of stations and 213,000 are located between a quarter and half mile of stations. We estimate that, were landowners to build on their properties to the maximum number of units allowed (assuming current units are eliminated), the number of transit-adjacent units could almost double, to 936,706. However, the current characteristics of each parcel matter (figure 17). Zoning theoretically allows the number of units on land currently occupied by single-family homes to increase by two-thirds, to about 220,000 units. But zoning allows *fewer* units than now exist for parcels where multifamily housing is currently located. This effect likely occurs because many multifamily buildings were built before current, more restrictive, zoning codes or were completed using exceptions to the standard zoning code, such as rezonings, variances, conditional uses, or zoning bonuses.

Figure 17 also shows that new units could be built on vacant land (about 13,000 units) and non-residential land (about 60,000). More units could theoretically be built on large parcels, which we define as at least 62,500 square feet (the size of a 250- by 250-foot downtown Seattle block). These parcels account for 1.3 percent of properties, but 43.2 percent of land area, near transit. We argue below that these parcels are unlikely to be redeveloped soon because many are currently used for purposes such as college campuses, corporate offices, and the like. Excluding large parcels, we estimate that the number of units near transit is about 364,000, with allowances for about 497,000 units under current policy.

FIGURE 17

**Zoning Allowances Leave Room for More Housing—Except Where Multifamily Units Are Present**

*Current transit-adjacent units and potential units if built at maximum allowance under the zoning code*

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**Source:** Authors' calculations based on First American property data and municipality and county zoning texts and maps.
**Notes**: Includes data for properties on land within a half mile of existing and planned fixed-guideway transit in King, Pierce, and Snohomish Counties. Single-family residential, multifamily residential, vacant, and nonresidential land estimates do not account for properties on large lots, which are defined as larger than 62,500 square feet.

Our estimates show that about 64,000 parcels near transit are occupied by the same number of units as is allowed by zoning; these parcels have about 68,000 units, or 14 percent of the regional total; 92 percent of these are single-family homes. We also estimate that about 64,000 parcels are occupied by *more* units than are currently allowed by zoning. All in all, we estimate that—assuming that no parcel would be redeveloped with *fewer* units than it currently has—today's zoning near transit theoretically allows:

- About 65,000 units to be constructed on parcels currently vacant or occupied by nonresidential uses (on reasonably sized lots smaller than 62,500 square feet)
- About 164,000 units to be constructed on reasonably sized parcels currently occupied by single-family homes (which currently house about 19,000 units)
- About 147,000 units to be constructed on reasonably sized parcels currently occupied by multifamily buildings (which currently house about 52,000 units)

- About 400,000 units to be constructed on any sort of large lot (with more than 62,500 square feet; these currently house about 40,000 units)
- In total, assuming every reasonably sized lot were redeveloped to the maximum allowed residential construction (or grandfathered in), the regional transit area zoning envelope is roughly 668,000 units, a 304,000-unit increase over today's figures. This means that existing housing occupies about 54 percent of the zoning envelope on reasonably sized parcels. As we will show, however, that allowance varies tremendously by jurisdiction and station area.

In table 6, we estimate existing housing units and the zoning envelope near transit on reasonably sized parcels. This table shows that all Puget Sound jurisdictions have zoning codes that theoretically allow more housing than is currently available near transit. This is particularly true for jurisdictions relatively far from the region's core, such as Auburn, Bothell, Edmonds, Everett, Mountlake Terrace, and Puyallup, as well as unincorporated Pierce and Snohomish Counties, where the zoning envelope is at least twice as large as the number of current units. Auburn, Everett, Mountlake Terrace, and Puyallup averaged median housing values of $373,000 (far lower than the metropolitan level of $471,900) and relatively slow housing development (figures 7 and 8), indicating that the large zoning envelope shown here may go unfilled due to a lack of demand. Bothell and Edmonds have higher median housing values, suggesting more development demand, though Bothell has recently permitted significantly more units than Edmonds.

TABLE 6

**Existing Housing and Zoning Envelope by Jurisdiction**

*Data for municipalities and unincorporated parts of counties overall and near transit stations*

| | Existing Units | | Change from Existing to Zoning Envelope* | | | | |
|---|---|---|---|---|---|---|---|
| Jurisdiction | Overall | Single-family lots | Overall | Single-family lots | Other residential land | Nonresidential land | Ratio, envelope/existing units |
| Auburn | 3,990 | 1,346 | +5,737 | +3,626 | +967 | +1,144 | 244% |
| Bellevue | 7,666 | 3,894 | +3,049 | +515 | +985 | +1,549 | 140% |
| Bothell | 3,712 | 2,129 | +4,582 | +2,255 | +1,324 | +1,003 | 223% |
| Burien | 3,424 | 1,277 | +3,527 | +2,247 | +1,192 | +88 | 203% |
| Des Moines | 2,562 | 1,789 | +4,691 | +1,594 | +2,799 | +298 | 283% |
| DuPont | 143 | 143 | +120 | +0 | +0 | +120 | 184% |
| Edgewood | 3 | 3 | +0 | +0 | +0 | +0 | 100% |
| Edmonds | 1,867 | 1,110 | +5,462 | +3,348 | +917 | +1,197 | 393% |
| Everett | 10,110 | 5,143 | +48,769 | +25,671 | +16,915 | +6,183 | 582% |
| Federal Way | 3,650 | 2,509 | +1,423 | +146 | +367 | +910 | 139% |
| Fife | 43 | 25 | +375 | +215 | +0 | +160 | 972% |
| Fircrest | 631 | 618 | +245 | +0 | +0 | +245 | 139% |
| Issaquah | 33 | 33 | +0 | +0 | +0 | +0 | 100% |
| Kenmore | 1,708 | 1,054 | +1,059 | +472 | +396 | +191 | 162% |
| Kent | 9,218 | 6,344 | +5,673 | +3,339 | +1,339 | +995 | 162% |
| King County (unincorporated) | 1,674 | 1,359 | +450 | +333 | +16 | +101 | 127% |
| Kirkland | 2,173 | 1,791 | +1,375 | +1,028 | +217 | +130 | 163% |
| Lake Forest Park | 1,687 | 1,434 | +401 | +203 | +38 | +160 | 124% |
| Lakewood | 1,245 | 523 | +1,041 | +468 | +498 | +75 | 184% |
| Lynnwood | 3,798 | 2,962 | +1,317 | +564 | +258 | +495 | 135% |
| Mercer Island | 1,107 | 422 | +820 | +308 | +511 | +1 | 174% |
| Mill Creek | 657 | 653 | +29 | +23 | +0 | +6 | 104% |
| Mountlake Terrace | 1,684 | 1,684 | +23,986 | +22,547 | +0 | +1,439 | 1524% |
| Mukilteo | 359 | 345 | +372 | +101 | +28 | +243 | 204% |
| Newcastle | 113 | 113 | +0 | +0 | +0 | +0 | 100% |
| Pierce County (unincorporated) | 7,091 | 5,234 | +19,294 | +14,780 | +3,771 | +743 | 372% |
| Puyallup | 1,437 | 845 | +3,771 | +2,408 | +664 | +699 | 362% |
| Redmond | 6,135 | 2,257 | +488 | +166 | +80 | +242 | 108% |
| Renton | 6,593 | 4,337 | +2,915 | +1,540 | +626 | +749 | 144% |
| SeaTac | 2,821 | 2,198 | +1,325 | +851 | +344 | +130 | 147% |
| Seattle | 234,286 | 57,929 | +108,641 | +24,865 | +56,168 | +27,608 | 146% |
| Shoreline | 9,558 | 6,940 | +22,253 | +19,112 | +1,503 | +1,638 | 333% |
| Snohomish County (unincorporated) | 5,432 | 4,575 | +9,996 | +8,584 | +421 | +991 | 284% |
| Sumner | 765 | 625 | +24 | +15 | +0 | +9 | 103% |
| Tacoma | 23,452 | 11,691 | +19,830 | +2,985 | +1,894 | +14,951 | 185% |
| Tukwila | 1,962 | 877 | +393 | +236 | +123 | +34 | 120% |
| University Place | 11 | 11 | +60 | +0 | +0 | +60 | 645% |

**Source:** Authors' calculations based on First American property data and municipality and county zoning texts and maps.

**Notes:** Includes data for properties on land within a half mile of existing and planned fixed-guideway transit stations in King, Pierce, and Snohomish Counties. Only includes parcels with area of 62,500 square feet or less.

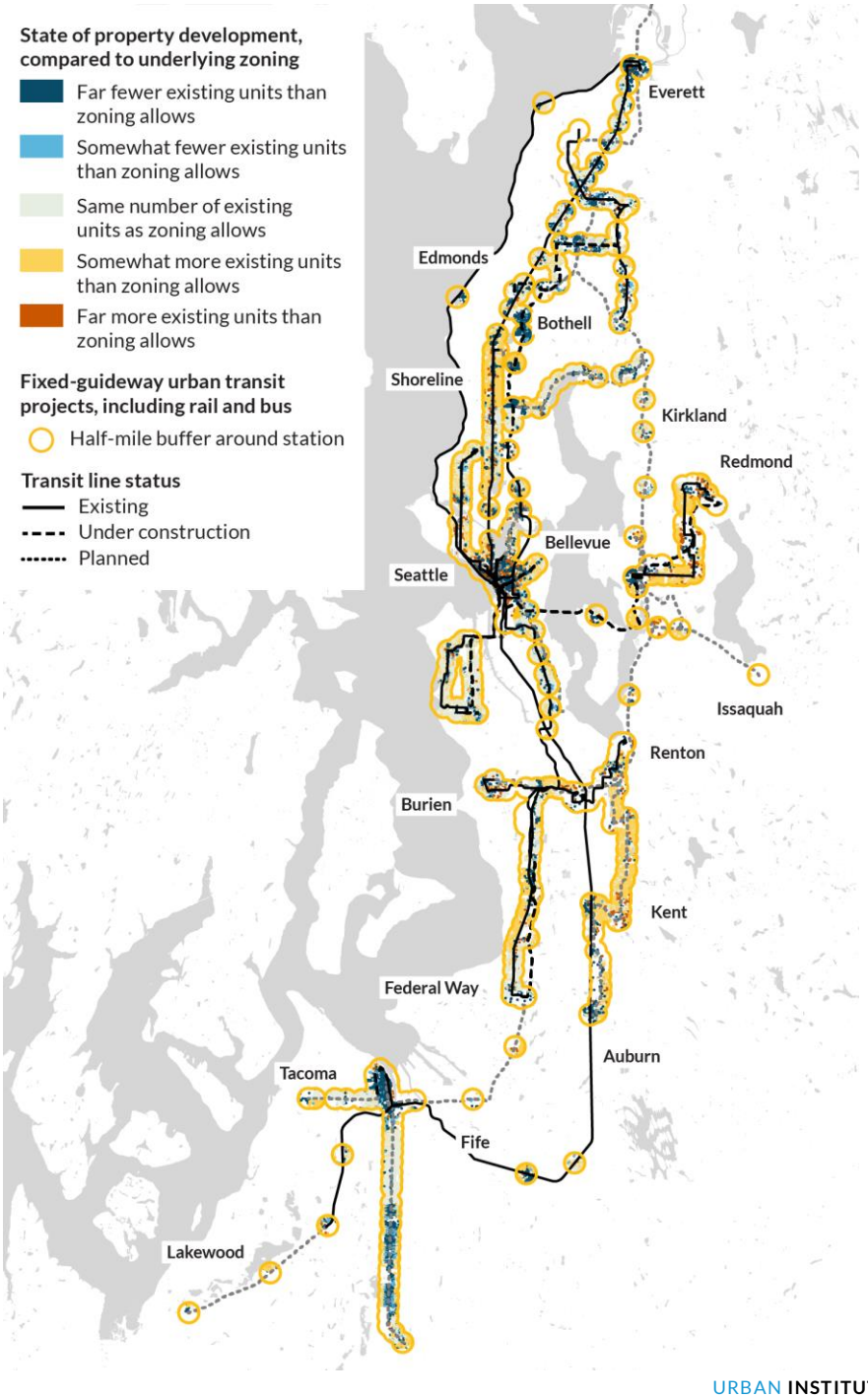
* Figures assume that properties would not be redeveloped at a lower housing density than currently on site; this allows properties to be "grandfathered in."

Table 6 shows that some jurisdictions have zoning envelopes that allow for relatively few additional units. We estimate that among municipalities with at least 500 existing units near transit, Federal Way, Fircrest, Lake Forest Park, Lynnwood, Mill Creek, Redmond, Sumner, and Tukwila have zoning envelopes that are only—at best—40 percent larger than current housing counts. On average, these municipalities have median housing values of $486,000, similar to the metropolitan level, indicating local real estate demand for new investment. But these jurisdictions may not be providing adequate opportunity for significant additional housing construction. In figure 18, we show how the number of existing housing units per parcel in the region compares with the number of units projected under their respective zoning codes.

FIGURE 18

**Puget Sound Transit Zones**

*Comparing existing units and maximum units that could be built under the zoning code, by parcel*

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**Source:** Authors' calculations based on municipality and county zoning texts and maps.
**Notes:** Includes data for land within a half mile of existing and planned fixed-guideway transit stations in King, Pierce, and Snohomish Counties.

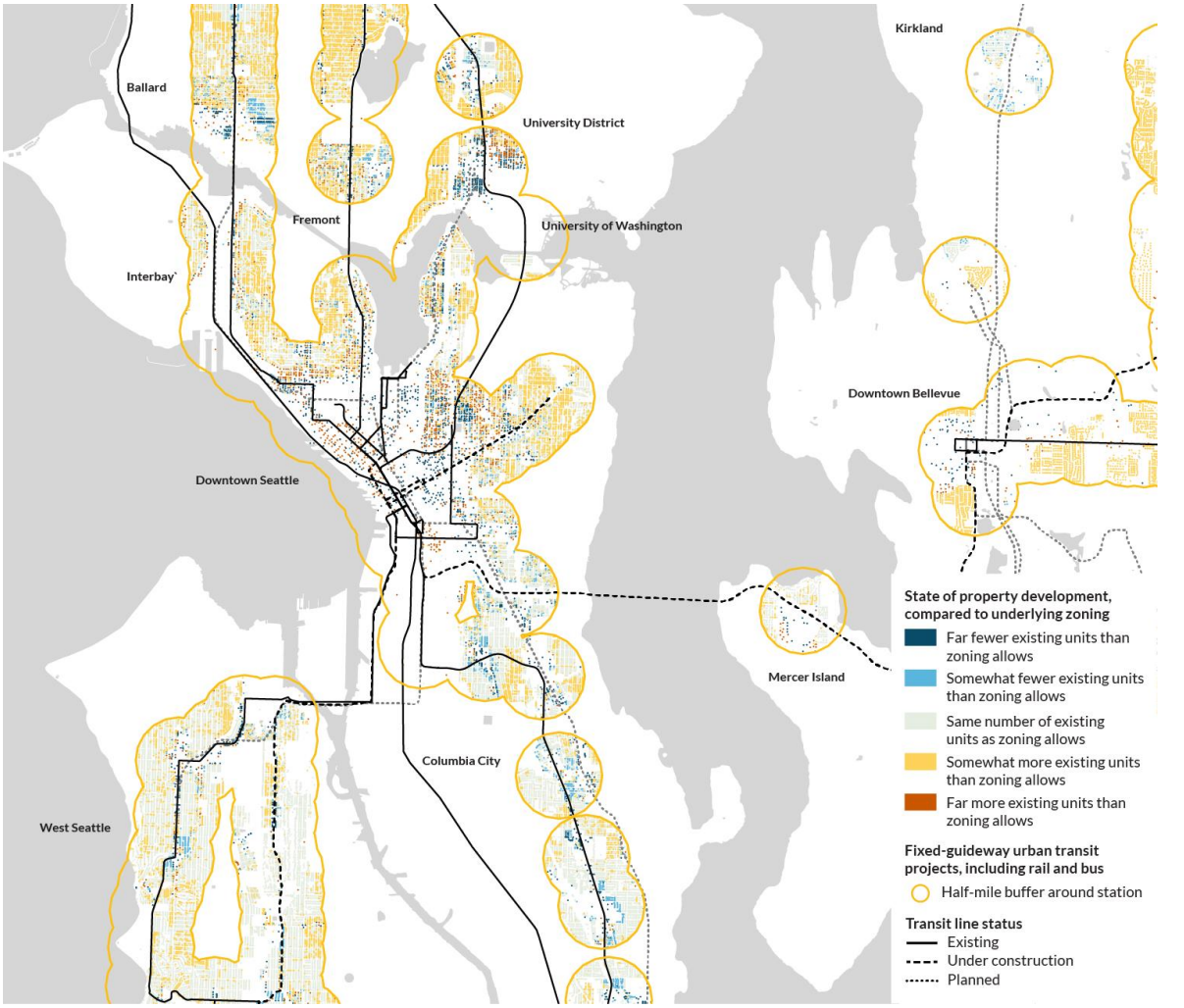
Figure 18 shows that in much of the region zoned exclusively for single-family homes, we estimate that the same number of units could be built under the code as it currently exists. But we also show that there is a concentration of underbuilt areas—areas where there are fewer units than theoretically allowed under by-right zoning—around certain stations, particularly in the region's north and south sides. And we find that there is a concentration of *overbuilt* areas—neighborhoods where more housing is built than would otherwise be allowed by the zoning code—in central parts of the region.

In figure 19, we illustrate the region's center; there are some transit-adjacent neighborhoods with considerably more existing units than zoning allows (much of downtown Seattle, the University District, and West Seattle), but there are also neighborhoods with room to add units in the current code (much of Columbia City, though at a relatively small scale, and parts of downtown Bellevue).

FIGURE 19

**Transit Zones in the Center of the Metropolitan Area**

*Comparing existing units and maximum units that could be built under the zoning code, by parcel*

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**Source:** Authors' calculations based on municipality and county zoning texts and maps and First American data.
**Notes:** Includes data for land within a half mile of existing and planned fixed-guideway transit stations.

In table 7, we estimate average existing housing unit densities per square mile, by jurisdiction, as well as the possible number of housing units that could be added under the zoning envelope. The table shows that most jurisdictions are planning for significantly more housing than they currently have near transit—especially for their existing and under-construction stations. Key exceptions to this trend are Issaquah, Lake Forest Park, Mill Creek, Redmond, Sumner, and Tukwila, which have not provided for significant additional housing in their zoning envelopes around stations compared with their current conditions.

That said, table 7 shows that existing and planned housing densities near stations vary tremendously. Seattle's current housing densities near its existing stations are by far the highest in the region, more than double those in the next-highest city, Tacoma, and much higher than most other cities. Seattle's average zoning envelope near stations, however, is actually lower than that in Mountlake Terrace, and only somewhat higher than plans in Everett, Shoreline, and Tacoma. These are the cities where the most housing growth is possible in the coming years. Some cities, on the other hand, have maintained tight zoning envelopes around their existing or under construction transit stations, with Bellevue, Bothell, Lynnwood, Redmond, Renton, Sumner, and Tukwila each planning for a housing density of fewer than 1,500 units per square mile—far less than Seattle's planned 10,229 per square mile.

Similar trends emerge when examining data for planned stations (on the right side of table 7; this represents the land within a half mile of planned stations *but not* within that distance of existing or under-construction stations). Here, we see that Auburn, Bellevue, DuPont, Federal Way, Fife, Issaquah, Kent, Kirkland, Lake Forest Park, Lynnwood, Newcastle, Renton, Tukwila, and University Place are each planning for low housing densities. (Note that these calculations do not account for large parcels of 62,500 square feet or greater or the potential to build accessory dwelling units; adding in those types of dwelling units could change the way these data may be interpreted.)

TABLE 7

**Municipalities Differ in Terms of Their Allowances for New Housing Near Transit**

*Mean existing unit counts per square mile, and unit counts under the zoning envelope per square mile, for properties within a half mile of stations, by jurisdiction where station is located*

| | Average for Existing or Under-Construction Stations | | | Average for Planned Stations | | |
|---|---|---|---|---|---|---|
| Jurisdiction | Station count | Housing density (existing) | Housing density (zoning envelope) | Station count | Housing density (existing) | Housing density (zoning envelope) |
| Auburn | 1 | 1,370 | 5,737 | 9 | 965 | 1,754 |
| Bellevue | 23 | 960 | 1,410 | 3 | 598 | 604 |
| Bothell | 2 | 300 | 1,066 | 8 | 1,160 | 2,436 |
| Burien | 6 | 1,951 | 3,958 | 0 | NA | NA |
| Des Moines | 12 | 1,158 | 3,261 | 0 | NA | NA |
| DuPont | 0 | NA | NA | 1 | 458 | 843 |
| Edmonds | 5 | 1,249 | 4,903 | 0 | NA | NA |
| Everett | 14 | 1,374 | 7,934 | 2 | 395 | 3,778 |
| Federal Way | 11 | 1,095 | 1,525 | 1 | 64 | 64 |
| Fife | 0 | NA | NA | 1 | 66 | 639 |
| Fircrest | 0 | NA | NA | 2 | 1,433 | 1,990 |
| Issaquah | 0 | NA | NA | 1 | 44 | 44 |
| Kenmore | 0 | NA | NA | 4 | 1,123 | 1,819 |
| Kent | 11 | 917 | 2,715 | 16 | 1,256 | 1,479 |
| King County (unincorporated) | 5 | 641 | 770 | 6 | 6,224 | 8,145 |
| Kirkland | 0 | NA | NA | 4 | 1,088 | 1,547 |
| Lake Forest Park | 0 | NA | NA | 5 | 1,410 | 1,745 |
| Lakewood | 1 | 1,189 | 2,680 | 1 | 1,799 | 2,139 |
| Lynnwood | 11 | 839 | 1,125 | 1 | 69 | 188 |
| Mercer Island | 1 | 1,608 | 2,799 | 0 | NA | NA |
| Mill Creek | 8 | 338 | 353 | 0 | NA | NA |
| Mountlake Terrace | 4 | 1,039 | 15,855 | 0 | NA | NA |
| Mukilteo | 1 | 789 | 1,607 | 0 | NA | NA |
| Newcastle | 0 | NA | NA | 1 | 761 | 761 |
| Pierce County (unincorporated) | 1 | 40 | 46 | 17 | 1,067 | 3,974 |
| Puyallup | 1 | 1,829 | 6,637 | 0 | NA | NA |
| Redmond | 18 | 1,230 | 1,333 | 0 | NA | NA |
| Renton | 13 | 776 | 1,398 | 13 | 901 | 1,009 |
| SeaTac | 16 | 594 | 872 | 0 | NA | NA |
| Seattle | 99 | 6,876 | 10,229 | 55 | 4,008 | 5,081 |
| Shoreline | 14 | 2,019 | 7,133 | 3 | 2,315 | 3,690 |
| Snohomish County (unincorporated) | 28 | 794 | 2,259 | 4 | 1,005 | 2,591 |
| Sumner | 1 | 1,186 | 1,224 | 0 | NA | NA |
| Tacoma | 14 | 2,856 | 6,949 | 23 | 1,517 | 1,806 |
| Tukwila | 10 | 732 | 884 | 2 | 145 | 145 |
| University Place | 0 | NA | NA | 1 | 114 | 736 |
| Regional total | 273 | 3,749 | 7,577 | 158 | 2,086 | 3,461 |

**Source:** Authors' calculations based on municipality and county zoning texts and maps and First American data.

**Notes:** Not all municipalities within a half mile of transit are included as the list just includes municipalities where actual station is located. Density is defined as housing units per square mile. Planned station count does not include properties within a half mile of existing or under-construction stations. Only includes data on parcels with 62,500 square feet or fewer.

Finally, we sought to understand what local characteristics are associated with a parcel's likelihood of being underbuilt (it has fewer housing units than zoning allows) or overbuilt (it has more units than zoning allows). We evaluate these in multivariate regressions, including two models that incorporate fixed effects for the jurisdictions to account for local political differences (table 8).

We make several key findings. First, underbuilt parcels are significantly more likely in neighborhoods with more people living under the federal poverty line and fewer households that own. Parcels in cities such as Bothell, Edmonds, Everett, Fife, Kirkland, Mountlake Terrace, and the unincorporated areas of Pierce and Snohomish Counties, are much more likely to be underbuilt compared with the city of Seattle, after controlling for local demographics. These jurisdictions thus have an accommodating zoning envelope. But they are also likely less attractive for new real estate investment.

Second, overbuilt parcels are significantly more likely to be in neighborhoods with higher housing values and fewer people living under the federal poverty line (table 8). The cities of Auburn, Bellevue, Des Moines, DuPont, Edgewood, Edmonds, Fircrest, Kent, Lakewood, Mill Creek, Newcastle, Puyallup, Redmond, Renton, and Shoreline are more likely to have overbuilt properties than the city of Seattle, even after controlling for local demographics. Apart from DuPont, Edgewood, Newcastle, and Redmond, these cities all had relatively few housing permits per capita over the past decade (figures 8 and 9). Parcels in all these jurisdictions, except Auburn, Edmonds, Puyallup, and Shoreline, also are less likely to be *underbuilt* than those in Seattle, indicating little room for new investment under the by-right code.

TABLE 8

**Local Demographics and the Jurisdiction Where a Parcel is Located Influence Its Adherence to Zoning**

*Multivariate regressions assessing correlates of parcel building status*

| | Is a Parcel Underbuilt? | | Is a Parcel Overbuilt? | |
|---|---|---|---|---|
| **Variable** | **I** | **II** | **III** | **IV** |
| Share non-Hispanic white | 0.13 (0.01) *** | −0.06 (0.01) *** | −0.19 (0.01) *** | 0.24 (0.01) *** |
| Population density (log) | −0.02 (0.00) *** | 0.00 (0.00) | −0.04 (0.00) *** | 0.07 (0.00) *** |
| Housing value (log) | −0.08 (0.00) *** | 0.01 (0.00) | 0.14 (0.00) *** | 0.16 (0.00) *** |
| Share population below federal poverty line | 0.22 (0.01) *** | 0.22 (0.01) *** | −0.52 (0.02) *** | −0.09 (0.01) *** |
| Share households who own | −0.28 (0.01) *** | −0.27 (0.01) *** | 0.01 (0.01) | 0.00 (0.01) |
| *Jurisdictional fixed effects* | | | | |
| Auburn | | 0.03 (0.01) ** | | 0.56 (0.01) *** |
| Bellevue | | −0.12 (0.00) *** | | 0.69 (0.00) *** |
| Bothell | | 0.10 (0.01) *** | | −0.03 (0.01) * |
| Burien | | 0.04 (0.01) *** | | −0.09 (0.01) *** |
| Des Moines | | −0.1 (0.00) *** | | 0.78 (0.01) *** |
| DuPont | | −0.05 (0.01) *** | | 0.77 (0.01) *** |
| Edgewood | | −0.04 (0.00) *** | | 0.79 (0.01) *** |
| Edmonds | | 0.12 (0.01) *** | | 0.46 (0.01) *** |
| Everett | | 0.37 (0.01) *** | | −0.13 (0.01) *** |
| Federal Way | | −0.11 (0.00) *** | | 0.00 (0.01) |
| Fife | | 0.21 (0.08) * | | 0.13 (0.08) |
| Fircrest | | −0.07 (0.01) *** | | 0.76 (0.01) *** |
| Kenmore | | 0.02 (0.01) | | −0.11 (0.01) *** |
| Kent | | −0.07 (0.00) *** | | 0.71 (0.01) *** |
| King County (un.) | | −0.01 (0.01) | | 0.55 (0.01) *** |
| Kirkland | | 0.43 (0.01) *** | | −0.18 (0.01) *** |
| Lake Forest Park | | −0.05 (0.00) *** | | −0.12 (0.01) *** |
| Lakewood | | −0.14 (0.01) *** | | 0.70 (0.02) *** |
| Lynnwood | | −0.08 (0.00) *** | | 0.07 (0.01) *** |
| Mercer Island | | −0.03 (0.01) *** | | −0.17 (0.02) *** |
| Mill Creek | | −0.03 (0.00) *** | | 0.41 (0.02) *** |
| Mountlake Terrace | | 0.85 (0.01) *** | | −0.23 (0.00) *** |
| Mukilteo | | 0.05 (0.01) *** | | −0.08 (0.02) ** |
| Newcastle | | −0.07 (0.00) *** | | 0.6 (0.03) *** |
| Pierce County (un.) | | 0.29 (0.01) *** | | 0.32 (0.01) |
| Puyallup | | 0.10 (0.01) *** | | 0.52 (0.01) *** |
| Redmond | | −0.06 (0.00) *** | | 0.63 (0.00) *** |
| Renton | | −0.09 (0.00) *** | | 0.65 (0.01) *** |
| SeaTac | | −0.09 (0.01) *** | | −0.04 (0.01) *** |
| Shoreline | | 0.08 (0.00) *** | | 0.54 (0.01) *** |
| Snohomish County (un.) | | 0.31 (0.01) *** | | 0.02 (0.01) ** |
| Sumner | | −0.06 (0.01) *** | | 0.23 (0.02) *** |
| Tacoma | | −0.02 (0.00) *** | | −0.02 (0.01) *** |
| Tukwila | | −0.17 (0.01) *** | | 0.71 (0.01) *** |
| Intercept | 1.43 (0.03) *** | 0.22 (0.05) *** | −0.91 (0.04) *** | −2.58 (0.07) *** |
| Adjusted $r^2$ | 0.04 | 0.16 | 0.03 | 0.30 |

**Source:** 2016–20 five-year American Community Survey; First American data.

**Notes:** A parcel is underbuilt if it contains fewer residential units than the zoning code allows; it is overbuilt if it has more. Note that these are not opposites: if a parcel is *not* underbuilt, for example, it could either be overbuilt or simply built to the current zoning code, which the case for many properties. Demographics represent the block group in which the parcel is located. Robust standard errors are in parentheses. Fixed effects use Seattle values as reference. *** p < 0.001; ** p < 0.01; * p < 0.05. n = 141,035

## Current Zoning Impediments to Construction

We estimate that, of transit-adjacent parcels, roughly 41 percent (64,000) have more residential units than are currently allowed by right under zoning (as noted, due to "grandfathering in" and the use of flexibility measures). These parcels total about 301,000 housing units, of which:

- Almost 10,000 are on parcels in zoning districts that currently prohibit residential uses
- Almost 55,000 are currently single-family homes that could not be built under present zoning
- About 10,000 are on parcels that currently have two- to four-unit structures on them
- About 236,000 are on parcels with five-or-more-unit multifamily housing today

Among the single-family home parcels, about 25,000 have too small of a parcel area to abide by minimum lot area requirements. About 4,700 are on parcels arguably too small for a new single-family home (less than 2,000 square feet). Among those parcels with five or more unit structures, we estimate that current zoning provides less space for new housing (about 80,000 units) than currently exists (236,000 units). Many are built at a higher unit density than allowed per acre; many others violate floor-area ratio rules and other constraints.

These findings suggest that, in many jurisdictions, zoning limits housing construction simply by making it impossible to rebuild neighborhoods with the same number of units as currently exist because many buildings have more units than zoning allows. These conditions are likely a result of less infill construction than we might otherwise expect, given the demand to live in areas near transit.

## Reasons to Be Skeptical of Development on Large Parcels

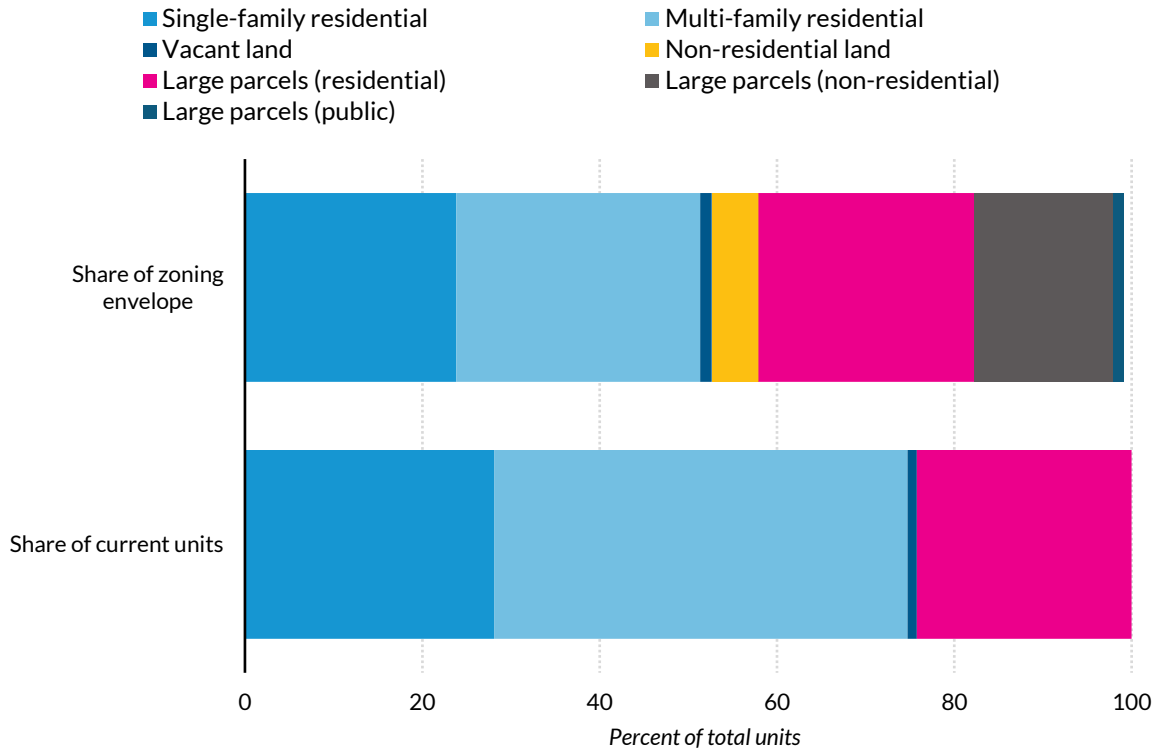
One of the biggest problems with the "from the zone up" model of housing production we described above is that large parcels concentrate many of the new units theoretically possible under zoning. Our calculations show that, of parcels where we project more housing could be built than is currently present, a total of about 780,000 units could be completed—compared with about 110,000 units on those same parcels today. But many units would be on parcels of more than 62,500 square feet—large parcels that are likely to be difficult to redevelop. We illustrate this issue of large parcels concentrating potential new housing development in figure 20. While less than a quarter of total transit-adjacent housing is on large parcels, 41 percent of those that we project could be constructed under zoning are on that land, including about 195,000 projected units on what is currently nonresidential land. Fewer

potential units could be located on reasonably sized parcels that are currently nonresidential (about 65,000) or vacant (about 15,000).

FIGURE 20

**More than 40 Percent of Zoning Envelope is Located on Large Parcels**

*Current transit-adjacent housing units, and zoning envelope for housing units if built at maximum allowance under the zoning code, by current land use*

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**Source:** Authors' calculations based on 2016–20 US Census data, Puget Sound Regional Council (for permits 2010–19), and municipality and county zoning texts and maps.
**Notes**: Includes data for land within a half mile of existing and planned fixed-guideway transit stations in King, Pierce, and Snohomish Counties. Large parcels are defined as at least 62,500 square feet. Allows grandfathering in.

The problem with relying on large parcels for development can be summarized when evaluating the characteristics of some large parcels zoned to allow housing construction. The largest include the following:

- the waste processing plant in Lynnwood
- part of the University of Washington
- the St. Pius X Catholic Church in Mountlake Terrace

- the strip mall at the intersection of 208th Street Southeast and the Bothell–Everett Highway
- the strip mall at the intersection of 128th Street Southwest and 4th Avenue West in Everett

These parcels may be good candidates for redevelopment. But further evaluation is necessary. These parcels are more likely to be subject to discretionary review by local governments because of their scale and thus are not as useful for this analysis, For the remainder of the report, we focus on properties with parcels smaller than 62,500 square feet, which are more likely to be developed over the short term under by-right zoning.

# Reasonable Construction Potential Without Demolition

We next analyze how many new residential units could be added to existing parcels without requiring demolition of existing buildings, while remaining within the zoning envelope. In total, we estimate that about 300,000 additional units could be built on reasonably sized parcels (table 9), similar to the overall difference between current units and the zoning envelope. This indicates that there is substantial room for housing growth through incremental infill.

TABLE 9

**Unit Production for Parcels Based on Current Residential Units and Additional Construction Allowed without Demolishing Existing Buildings**

| Property Type | Total Number of Additional Units Allowed |
|---|---|
| Single-family | 143,240 |
| Small multifamily (2–9 units) | 39,945 |
| Large multifamily (10–39 units) | 24,810 |
| Largest multifamily (> 40 units) | 29,744 |
| Current parcel has zero residential units | 64,214 |

**Source:** Authors' calculations based on municipality and county zoning texts and maps and First American data.
**Notes:** Includes data for land within a half mile of existing and planned fixed-guideway transit stations in King, Pierce, and Snohomish Counties. Excludes large parcels with at least 62,500 square feet.

Most of these new units could be added in backyards or on top of existing single-family homes. But this estimate raises questions, given that few recently added units have been located on parcels zoned for two- to four-unit buildings, where such units are legal (figure 15). Of the 15,464 transit-adjacent parcels where such building types could be built under zoning, more than 70 percent remain occupied by single-family homes. Are owners of such homes, many of whom are owners, simply not interested in adding units to their parcels? Does their reluctance result from a sense that such investments would be unprofitable—or that they are unwilling to give up part of their yards to allow in more housing?

On the other hand, parcels with larger multifamily buildings typically have little room for additional development—they are near or at the zoning envelope (table 9). These buildings tend to have smaller available yards for potential construction or less available additional height to build up. Finally, we find that almost 64,000 units could be added on parcels with no residential units. Many of these could likely be built on land now occupied by surface parking lots. But eliminating such parking, too, could be unimaginable for property owners used to the design and function of their strip malls.

We then compare availability for new housing without demolishing existing buildings with the demographics of the surrounding neighborhoods. We find variation by this measure, particularly for block groups where people who are Hispanic account for a larger share of the population. Indeed, of the total units we estimate could be built, almost 61 percent are in neighborhoods where the Hispanic population share is larger than the regional median (even though transit areas have similar shares of Hispanic residents as the metropolitan area; table 2). We also find that a disproportionate share of potential new units could be completed in neighborhoods with high poverty rates. Both statistics raise questions about the likelihood that the parcels we identify here will be developed, since neighborhoods that are wealthier and have more white residents are more likely to attract real estate investment.

In table 10, we calculate the top jurisdictions in terms of allowed additional residential units without demolishing existing buildings. Unsurprisingly, we find that Seattle and Everett—two of the region's largest cities—top the list. Missing, however, is Bellevue, which had more housing units than Everett in 2020, and Federal Way, Kirkland, and Renton, which had almost as many. These municipalities have zoning codes that are particularly restrictive in terms of allowing additional housing units on parcels without provoking complete redevelopment.

TABLE 10

**Top Jurisdictions and Stations by Number of Additional Units Allowed Without Demolition**

| Top Jurisdictions | Total Additional Units Allowed | Top Stations | Total Additional Units Allowed |
|---|---|---|---|
| Seattle | 103,133 | 8th Avenue (RapidRide G; planned BRT) | 49,138 |
| Everett | 47,410 | 5th Avenue (RapidRide G; planned BRT) | 46,575 |
| Mountlake Terrace | 23,670 | 3rd Avenue (RapidRide G; planned BRT) | 30,182 |
| Shoreline | 21,633 | Lake Union (South Lake Union Line; existing streetcar) | 22,081 |
| Tacoma | 19,658 | Mercer (RapidRide C; existing BRT) | 21,538 |
| Pierce County (unincorporated) | 19,248 | Terry/Mercer (South Lake Union Line; existing streetcar) | 21,215 |
| Edmonds | 10,375 | Westlake/Mercer (South Lake Union Line; existing streetcar) | 21,120 |
| Auburn | 5,678 | Westlake-Ballard (Link Extension; planned LR) | 20,860 |
| Des Moines | 5,320 | Westlake/Thomas (South Lake Union Line; existing streetcar) | 20,849 |
| Kent | 5,193 | Midtown-Ballard (Link Extension; planned LR) | 20,546 |

**Source:** Authors' calculations based on municipality and county zoning texts and maps and First American data.
**Notes:** Includes data for land within a half mile of existing and planned fixed-guideway transit stations in King, Pierce, and Snohomish Counties. Construction may be units or building stories. Excludes large parcels with at least 62,500 square feet. Note that properties may be present in multiple station areas. BRT = bus rapid transit; UC = under construction.

We also show the transit stations around which the most additional units are possible in table 10. Of the top stations, half operate now; the rest are planned. Most of the stations where additional units could be constructed without demolishing existing units are within Seattle, including many stops along the planned RapidRide G BRT, which is set to open in in 2024.

# Reasonable Construction Given Market Demand

The question of how many units could be built under existing development regulations raises a second question: how many of those units are *likely* to be built given what we know about market demand? To answer this question, we estimate parcel development likelihood, allowing for demolition (unlike in the previous section). This is an essential next step because it allows us to account for variables beyond land-use regulations. Given recent developer demand and current zoning, construction is likely to continue concentrating in Seattle. Cities such as Bellevue, Mountlake Terrace, and Shoreline, which have relatively high property values, are close to the region's center, and have moderately accommodating zoning envelopes, are also likely to absorb a disproportionate share of development. High-wealth communities with tight zoning envelopes, such as Mercer Island and Redmond, are likely to add few units near transit, despite developer demand; this is also true of low-income communities, such as Federal Way and Puyallup, because of inadequate developer interest and low resident incomes.

We made these conclusions by developing a model that indexes a parcel's redevelopment attractiveness and that projects whether developers would be able to achieve higher returns from redeveloping existing properties into more intense uses. Our index captures four elements of a lot's development potential: the age of the existing structure, the attractiveness of the surrounding neighborhood, the absolute and relative land value relative to the improvement value on that land (the land value index score), and the ratio of projected buildable units under current zoning over the current built units. This index captures the attractiveness of redevelopment properties well.

Table 11 compares the characteristics of properties based on their redevelopment index. It shows that those with the lowest index (1), on average, have newly built structures, are far from the central business district and wealthy neighborhoods, would allow for few additional units under the current zoning envelope, have low land values, and are mostly occupied by owners. On the other hand, units scored higher if they were older, closer to the central business district, closer to wealthy neighborhoods (if the units were in neighborhoods in the bottom 50 percent of median home values), had higher unit construction potential under current zoning, had more valuable land and fewer valuable residential buildings on them, and were more likely to be renter occupied.

TABLE 11

**Average Parcel Characteristics by Redevelopment Index Quintile**

| | Index Quintile | | | | |
|---|---|---|---|---|---|
| | **Least Likely to Be Developed 1** | **2** | **3** | **4** | **Most Likely to Be Developed 5** |
| Index Range | 5.0–18.4 | 18.4–25.7 | 25.7–31.8 | 31.8–39.3 | 39.3–99.7 |
| **Age of unit, in years** | 13.5 | 24.8 | 32.5 | 45.7 | 54.2 |
| **Distance to central business district, in miles** | 16.5 | 14.4 | 11.1 | 10.3 | 9.58 |
| **Distance to a wealthy block group, in miles *** | 2.2 | 1.8 | 1.3 | 1.1 | 0.9 |
| **Projected additional buildable units** | 1.2 | 1.5 | 2.5 | 4.2 | 9.2 |
| **Land value index score** | 2.0 | 2.5 | 2.9 | 3.6 | 7.5 |
| **Assessed total lot value** | $497,000 | $608,000 | $821,000 | $1,170,000 | $1,240,000 |
| **Total residential units on lot** | 0.6 | 0.7 | 1.4 | 2.5 | 1.4 |
| **Share of units that are owner occupied** | 73% | 65% | 56% | 54% | 47% |

**Source**: Author analysis of First American and zoning data

**Notes:** The count of projected additional buildable units is calculated by finding each lot's maximum buildable units under current zoning and subtracting the existing number of housing units recorded on that lot. The land value index score is created by dividing the land value by the improvement value, and then creating quintiles of that score that weight properties with land as more valuable than the improvement on the high end and those with improvements or buildings as more valuable than the land on the low end. This was then multiplied by a variable that set properties' absolute land value into quintiles (1 to 5, with 5 being the highest values), generating a final land value index running from 1 to 25.

* Distance to a wealthy block group indicates distance to a block group in the top 25 percent of median housing values if the block group in question is in the bottom 50 percent of median housing values.

This index captures characteristics that other scholars flag as important for redevelopment attractiveness. Table 12 documents the demographic characteristics of the block groups around parcels in terms of their redevelopment potential. We found few clear trends in terms of the race of nearby residents. But we did find that parcels that were more likely to be developed were in neighborhoods with somewhat higher population densities, higher educational achievement levels among residents, and higher home values. This is logical: neighborhoods with these characteristics are more attractive to developers.

TABLE 12

**Average 2020 Census Block Group Characteristics by Redevelopment Index Quintile**

| | Index Quintile | | | | |
|---|---|---|---|---|---|
| | Least Likely to Be Developed 1 | 2 | 3 | 4 | Most Likely to Be Developed 5 |
| **Index Range** | 5.0–18.4 | 18.4–27.7 | 27.7–31.8 | 31.8–39.3 | 39.3–99.7 |
| **Population** | 1,450 | 1,450 | 1,430 | 1,450 | 1,430 |
| **Population density** | 6,630 | 7,560 | 8,540 | 9,020 | 10,000 |
| **Housing units** | 569 | 588 | 618 | 643 | 655 |
| **Share non-Hispanic white** | 58% | 61% | 58% | 60% | 60% |
| **Share non-Hispanic Black** | 8% | 7% | 8% | 8% | 7% |
| **Share adults with bachelor's degree or higher** | 39% | 44% | 48% | 49% | 53% |
| **Median household income** | $92,700 | $96,000 | $95,300 | $95,400 | $94,500 |
| **Median gross rent** | $1,640 | $1,630 | $1,650 | $1,650 | $1,650 |
| **Median home value** | $467,000 | $527,000 | $565,000 | $579,000 | $604,000 |

**Source**: Authors' analysis of First American property data, zoning data, and US Decennial 2020 Census data.

Through this index of redevelopment potential, we ranked properties and selected the top-scoring lots using two benchmarks, creating a conservative estimate of the number of units we expect to be completed over the next decade. Because we focus our investigation on where newly developed units would be located within the region, we set the threshold for number of properties developed based on two standards. The first benchmark, unit-based, is set at roughly 90,000 units (the average number of units developed per decade for the period 2000–2019). The second benchmark, land-area based, is set at 3.6 percent of regional transit-adjacent residential *land area* (43.9 million square feet; the amount of land developed in transit areas between 2010–2010).

Both models may be conservative. The first model's roughly 90,000 units would represent just 2.7 percent of all parcels surrounding transit stations; but the 2010–2019 decade saw 5.6 percent of those parcels developed. That is a higher share of parcels than the 3.6 percent of land in the second model. Both models are built on the assumption that developers and their financiers have limited capacity to develop new housing. Instead, they will focus their investments on the parcels that are most financially attractive, which we refer to as high redevelopment potential parcels (HRP parcels). The two models allow a range of possible development outcomes, assuming the continuation of the previous decade's trends.

Both models have a baseline projection of 90,314 units constructed on 4,103 parcels under the current zoning envelope. These parcels currently host 5,433 units, netting about 85,000 new units in transit areas (table 13). Our index prioritizes housing development on very underbuilt parcels, but this model would generate a 20-fold increase in units on these lots if developers build to the zoning envelope. Nonetheless, this suggests existing zoning would not accommodate a major increase in housing availability compared with recent experience.

TABLE 13

**High Redevelopment Potential Parcels and Resulting Units by Jurisdiction Under Land Area Model**

| Municipality | Total Parcels | HRP Parcels | City's Share of HRP Parcels | HRP Share of Transit-Adjacent Lots | Existing Units on Parcels | HRP Projected Units per City | Share of Total Projected Units |
|---|---|---|---|---|---|---|---|
| Auburn | 1,835 | 74 | 2% | 4% | 0 | 2,306 | 3% |
| Bellevue | 4,116 | 377 | 9% | 9% | 73 | 1,695 | 2% |
| Bothell | 3,559 | 51 | 1% | 1% | 19 | 1,579 | 2% |
| Burien | 1,500 | 64 | 2% | 4% | 0 | 1,258 | 1% |
| Des Moines | 1,928 | 20 | 0% | 1% | 0 | 616 | 1% |
| Edmonds | 1,558 | 49 | 1% | 3% | 38 | 1,230 | 1% |
| Everett | 6,904 | 155 | 4% | 2% | 153 | 8,858 | 10% |
| Federal Way | 3,029 | 6 | 0% | 0% | 2 | 232 | 0% |
| Fife | 51 | 1 | 0% | 2% | 0 | 3 | 0% |
| Kenmore | 1,138 | 23 | 1% | 2% | 5 | 422 | 0% |
| Kent | 6,570 | 56 | 1% | 1% | 0 | 1,576 | 2% |
| Kirkland | 1,932 | 10 | 0% | 1% | 0 | 78 | 0% |
| Lake Forest Park | 1,462 | 14 | 0% | 1% | 0 | 252 | 0% |
| Lakewood | 631 | 3 | 0% | 0% | 1 | 87 | 0% |
| Lynnwood | 4,913 | 99 | 2% | 2% | 92 | 1,728 | 2% |
| Mercer Island | 453 | 143 | 3% | 32% | 0 | 219 | 0% |
| Mill Creek | 645 | 1 | 0% | 0% | 1 | 11 | 0% |
| Mountlake Terrace | 1,703 | 318 | 8% | 19% | 308 | 10,786 | 12% |
| Puyallup | 980 | 26 | 1% | 3% | 25 | 570 | 1% |
| Redmond | 2,353 | 21 | 1% | 1% | 14 | 516 | 1% |
| Renton | 4,648 | 30 | 1% | 1% | 0 | 789 | 1% |
| SeaTac | 2,277 | 24 | 1% | 1% | 0 | 515 | 1% |
| Seattle | 68,517 | 2,014 | 49% | 3% | 4,384 | 40,098 | 44% |
| Shoreline | 7,268 | 368 | 9% | 5% | 0 | 9,078 | 10% |
| Spanaway | 2,495 | 5 | 0% | 0% | 4 | 145 | 0% |
| Tacoma | 16,131 | 144 | 4% | 1% | 314 | 5,552 | 6% |
| Tukwila | 945 | 7 | 0% | 1% | 0 | 115 | 0% |
| **Total** | **149,541** | **4,103** | **100%** | **4% (avg)** | **5,433** | **90,314** | **100%** |

**Source**: Authors' analysis of First American property data and US 2020 decennial census data

**Notes**: BG = block group. HRP = High redevelopment potential. Only examined parcels with lot area less than 62,500 square feet.

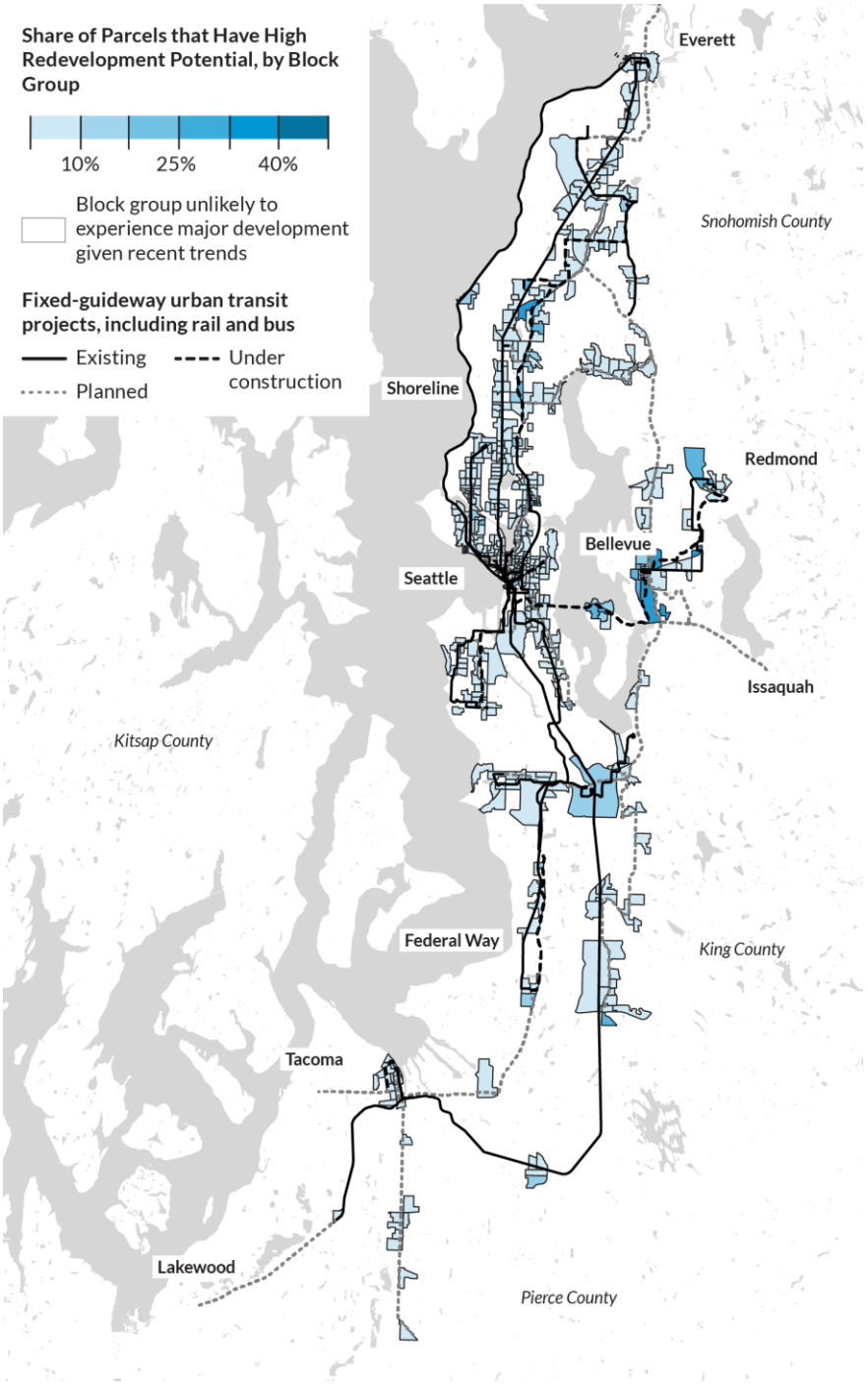
Seattle hosts the largest share of HRP parcels and projected units (49 and 44 percent of the regional total, respectively). We project that despite their proximity to the central business district, major cities hosting large shares of non-white populations (e.g., Tukwila) will not see large amounts of

new development. Conversely, other jurisdictions near the central business district (e.g., Lake Forest Park, Mercer Island, and Redmond) will also likely experience limited development due to constrained zoning envelopes and larger shares of owner-occupants, both of which reduce redevelopment potential.

Our model's projected 90,314 units represent less than half of the roughly 275,000 units that the region needs over the next decade to accommodate population growth and housing affordability (per PSRC's estimate), though that larger figure also encompasses areas farther than a half mile from fixed-guideway transit stations. HRP parcels and their potential unit production are distributed in certain parts of the region (figures 21 and 22).

FIGURE 21

**High Redevelopment Potential Parcels as a Share of Total Block Group Parcels**

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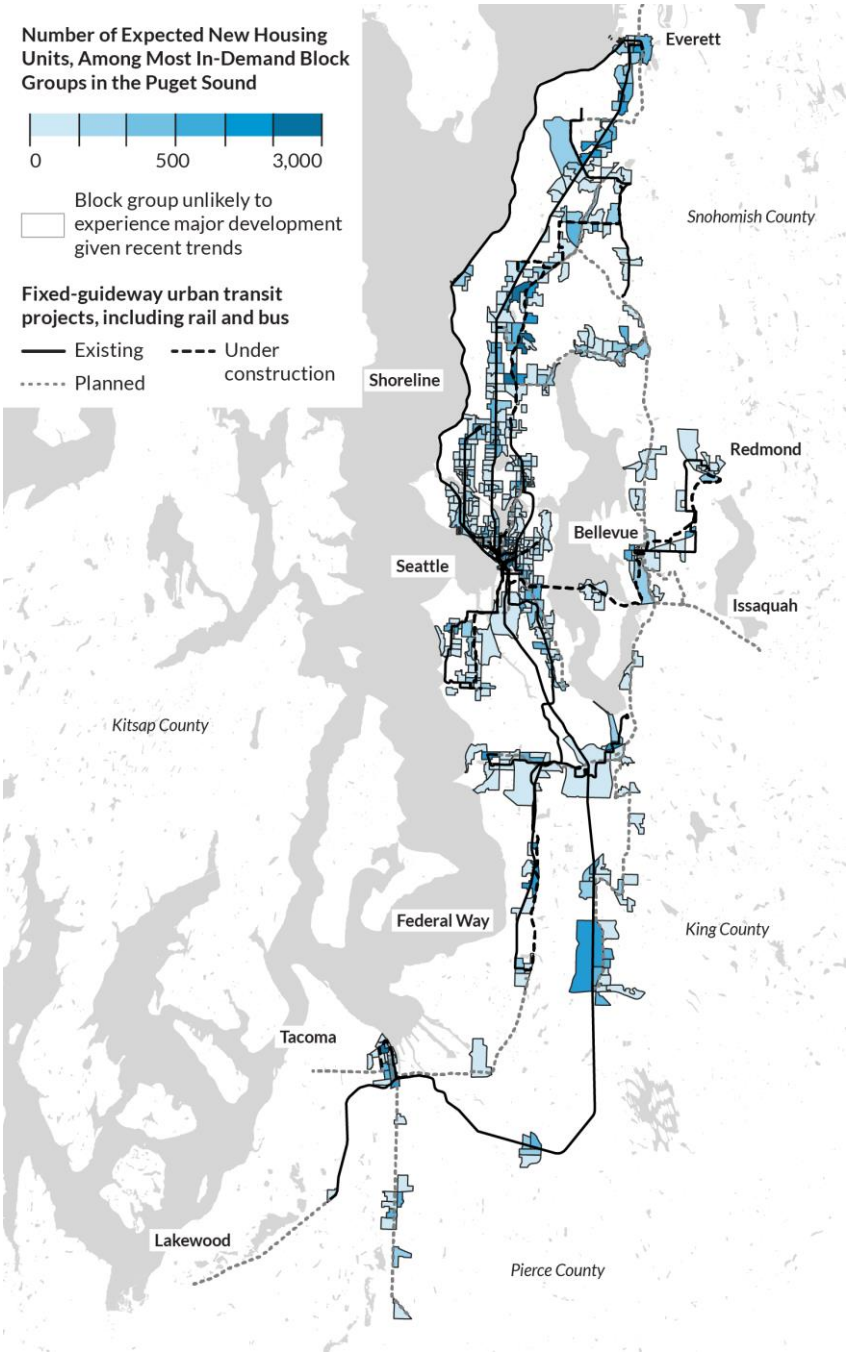
**Source**: Authors' calculations based on municipality and county zoning texts and maps.

**Notes**: Includes data for land within a half mile of existing and planned fixed-guideway transit stations in King, Pierce, and Snohomish Counties. Port of Tacoma is highlighted as an area of high potential development; note that much of the port's land is unlikely to be redeveloped because it is used for industrial purposes that are not likely to be displaced.

FIGURE 22

**Number of Projected New Housing Units from High Redevelopment Potential Parcels, by Block Group**

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**Source**: Author calculations based on municipality and county zoning texts and maps.
**Notes**: Includes data for land within a half mile of existing and planned fixed-guideway transit stations in King, Pierce, and Snohomish Counties.

We project that the distribution of units on HRP parcels is highly unequal across the region. The top 10 block groups are expected to yield 24,121 housing units on 424 parcels, representing 27 percent of all projected units and 10 percent of all HRP parcels from just 2 percent of all block groups. These block groups are in Seattle (9,626 projected units of those parcels in the top 10 block groups), Mountlake Terrace (8,275), Shoreline (4,596), and Tacoma (1,624). These areas are likely to see high rates of redevelopment in the coming years based on current zoning policy and developer demand.

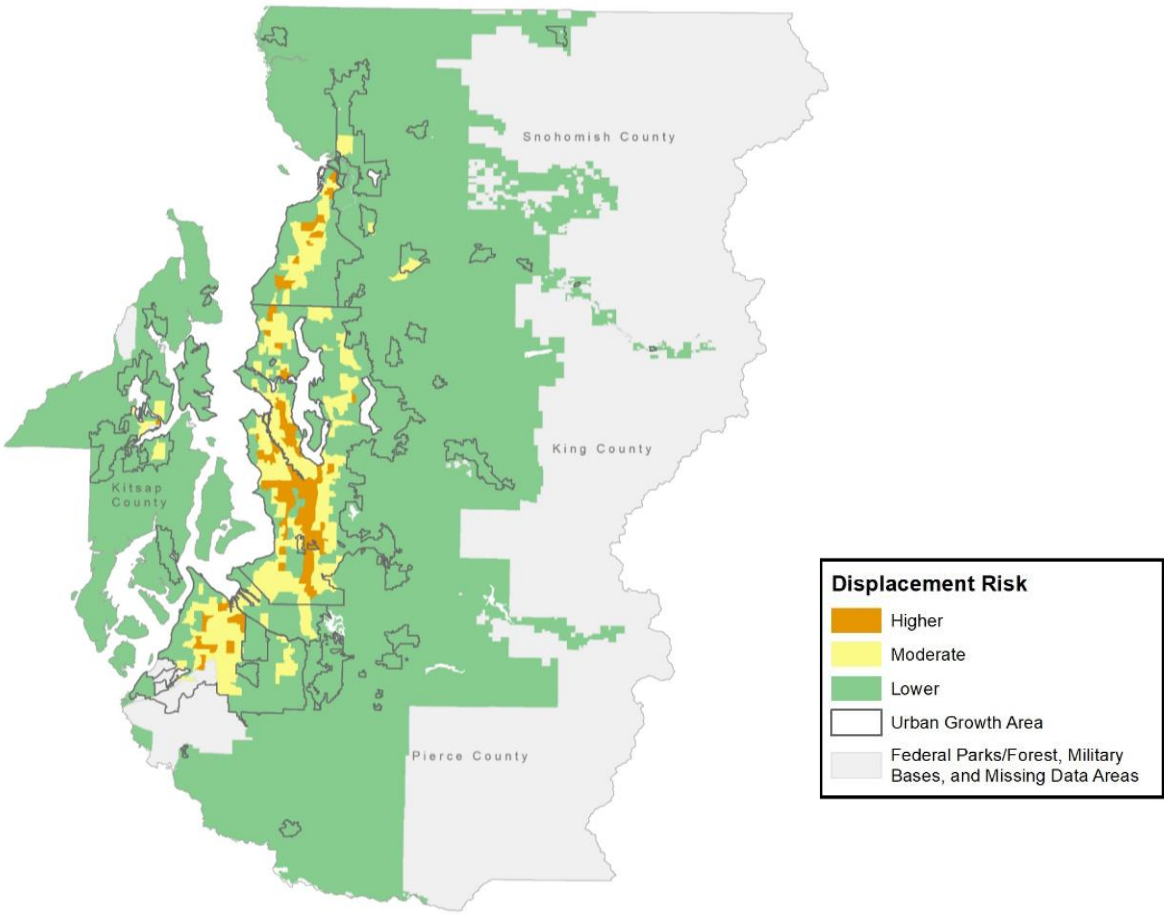
In contrast, despite having high land values and high redevelopment likelihood shares, Bellevue, Burien, and Mercer Island are likely to produce few units in the coming years based on current trends despite their proximity to amenities and the central business district. These jurisdictions already have lower population densities than much of the remainder of the region because of their concentration of single-family homes. Will these jurisdictions alter their land-use policies to host a fairer share of projected future development?

## Relationships between Redevelopment, Gentrification, Displacement, and (In)equitable Neighborhood (Dis)investment

The development we project above should be placed in a human context that considers the effects that demolition and reconstruction have on residents of existing communities. Over the past two decades—in line with increasing housing costs overall—Seattle has experienced extreme gentrification (by some measures, the third-highest rates in the country).[52] Gentrification occurs when residents with high incomes and high levels of education move into neighborhoods that had previously been largely populated by non-white residents and/or families with low incomes. The region's projected increases in population and employment over the next few decades mean that gentrification of in-demand communities is likely to continue, potentially leading to the displacement. PSRC has mapped neighborhoods that are vulnerable to displacement using a composite of social, demographic, housing-related, and neighborhood indicators (figure 23).[53] The 15 indicators integrated into the agency's displacement vulnerability index include racial composition; linguistic isolation; educational attainment; housing tenancy; cost burdens and household incomes; three indicators of transit access and quality; neighborhood proximity to jobs, services, parks, and wealthier areas; zoned development capacity; and voter turnout (PSRC 2019). Areas with a higher share of Black or Hispanic residents and located nearer to city centers and wealthy neighborhoods are at higher risk for displacement.

FIGURE 23

**PSRC Puget Sound Regional Displacement Risk Map**

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**Source**: PSRC (2019).

PSRC's neighborhood displacement risk scores harmonize with our findings presented above on development likelihood. Together, these datasets identify neighborhoods not only vulnerable to displacement but also those that, given market and development demand modeling, are likely to see high development rates in the coming years. Table 14 presents the most vulnerable station areas for displacement compared with the top 10 highest lot-share projected redevelopment stations.

TABLE 14

**Top Ten Displacement Risk Stations Compared with Top Ten Redevelopment Stations**

| | Rank | Station Name | County | City | PSRC Risk Class | PSRC Risk Score | No. of HPR Lots | Share of HPR Lots within 0.5 Miles of Station | No. of Projected New Units |
|---|---|---|---|---|---|---|---|---|---|
| Displacement Risk | 1 | Othello | King | Seattle | 5 | 65.25 | 22 | 1% | 466 |
| | 2 | Int'l District/Chinatown | King | Seattle | 5 | 61.95 | 2 | 10% | 45 |
| | 3 | Graham St | King | Seattle | 5 | 60.03 | 25 | 2% | 646 |
| | 4 | Stadium | King | Seattle | 5 | 59.61 | 29 | 7% | 1,590 |
| | 5 | Tukwila Int'l Blvd | King | Tukwila | 5 | 59.46 | 26 | 5% | 102 |
| | 6 | Pioneer Square | King | Seattle | 5 | 59.05 | 15 | 18% | 6,912 |
| | 7 | Rainier Beach | King | Seattle | 5 | 58.92 | 15 | 1% | 321 |
| | 8 | Federal Way TC | King | Federal Way | 5 | 58.74 | 2 | 5% | 102 |
| | 9 | Beacon Hill | King | Seattle | 5 | 58.17 | 18 | 1% | 413 |
| | 10 | Lynnwood TC | Snohomish | Lynnwood | 5 | 57.30 | 3 | 3% | 159 |
| Development Potential | 1 | East Main | King | Bellevue | 3 | 45.77 | 225 | 64% | 676 |
| | 2 | Bellevue Downtown | King | Bellevue | 3 | 47.70 | 62 | 47% | 1,270 |
| | 3 | Tacoma Dome | Pierce | Tacoma | 5 | 55.93 | 19 | 40% | 1,187 |
| | 4 | Mercer Island | King | Mercer Island | 1 | 35.32 | 143 | 32% | 219 |
| | 5 | Richards Road | King | Bellevue | 1 | 36.17 | 91 | 31% | 91 |
| | 6 | Spring District/120th | King | Bellevue | 1 | 38.62 | 4 | 29% | 90 |
| | 7 | U District | King | Seattle | 5 | 56.24 | 260 | 25% | 6,007 |
| | 8 | Pioneer Square | King | Seattle | 5 | 59.05 | 15 | 18% | 6,912 |
| | 9 | Mountlake Terrace | Snohomish | Mountlake Terrace | 2 | 43.55 | 165 | 17% | 8,971 |
| | 10 | NE 145th St | King | Shoreline | 2 | 45.48 | 159 | 17% | 3,674 |

**Source:** Authors' analysis of Sound Communities Station Area Knowledge Base data (Sound Communities 2022), First American property data, zoning data, and the 2020 Census.

**Notes:** PSRC Risk Class and Risk Score pertain to PSRC's displacement risk scoring system stored in the Sound Communities Station Area Knowledge Base interface. Number of units per station may be duplicative; this counts all new projected units within a half mile of each station, even if they may be closer to another station.

Stations with high displacement risk are not necessarily all prime candidates for redevelopment, and not all stations with a high share of lots that are likely to be redeveloped face displacement risk. Neighborhoods surrounding the Stadium, Rainier Beach, Beacon Hill, Graham St, or Lynnwood Town Center stations are unlikely to see significant shares of their residential lots redeveloped, meaning that vulnerable residents will likely not face developer-initiated displacement pressure, though they may continue to face other displacement pressures. Conversely, neighborhoods surrounding the Bellevue

Downtown, Mercer Island, and NE 145th Street stations will likely see dramatic development, but their residents are relatively well off and are less likely to face displacement pressure.

Stations where the displacement and development indexes are both high, however, raise other concerns. These neighborhoods include the areas around the Tacoma Dome, Pioneer Square, and U District stations. Several local governments, including King County, have worked to create equitable development initiatives that propose measures to prevent or mitigate displacement.[54] These measures may be best directed at the areas that feature both displacement and development pressures.

# What Impacts Could Zoning Reforms Have on Outcomes?

The variety of approaches to land-use policy across jurisdictions is one explanation for why development focuses on some neighborhoods and not others; it raises questions about whether every community in the region has developed policies that appropriately encourage more housing construction. The examples we provide above of limited-housing growth areas despite significant development demand—in Bellevue, Redmond, and Renton, for instance—exemplify the challenge of trying to encourage more housing production when local policies get in the way.

Local and state officials have been evaluating new regulations that would adjust zoning to allow for housing growth. Although we do not measure the impacts of any specific proposed zoning reform, we developed four prototypical policies and measure how they might impact outcomes. These concepts are inspired by various approaches to zoning reform across the country. But they are not meant to be fully indicative of all possible zoning reforms. These are the four interventions we explore:

- **"Plexify":** We would allow two-, three-, or four-flat apartments on parcels currently zoned for single-family homes. We assume that for this policy to function, zoning rules would be altered to eliminate minimum lot requirements per unit, increase maximum units per acre to at least 43.56 (equivalent to a minimum of 1,000 square feet in parcel area per unit), reduce building setbacks, and allow for 50 percent maximum lot coverage.[55]
- **"Missing Middle":** We would allow up to 12 units on parcels currently zoned for between 3 and 11 units. We assumed that for this policy to function, zoning rules would be altered to eliminate minimum lot requirements, increase maximum units per acre to at least 43.56, reduce setbacks, and allow for 70 percent maximum lot coverage.
- **"Multiply":** We would allow a 100 percent increase in the potential number of units that could be developed for parcels currently zoned for at least five units within a quarter mile of stations.
- **"Legalize":** We would allow multifamily housing on properties that are currently zoned for commercial, retail, or public uses (excluding parks and historically preserved land) but not currently zoned to allow residential uses. We assumed that for this policy to function, zoning rules would be altered to eliminate minimum lot requirements, increase maximum units per acre to at least 176, eliminate front and side setback requirements, allow for 80 percent maximum lot coverage, allow up to 10-story buildings, and allow floor-area ratios of up to 3.

Figures 24–27 illustrate how these four zoning changes could impact station-area neighborhoods.

FIGURE 24

**Illustrating the Potential Impact of the Plexify Reform on a Prototypical Neighborhood**

*The Plexify reform would allow buildings with up to four units on parcels currently zoned for single-family homes within a half mile of stations*


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**Source**: Illustration by TBD Studio for the Urban Institute

FIGURE 25

**Illustrating the Potential Impact of the Missing Middle Reform on a Prototypical Neighborhood**

*The Missing Middle reform would allow buildings with up to 12 units on parcels currently zoned for 3 to 11 units within a half mile of stations*


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**Source**: Illustration by TBD Studio for the Urban Institute

FIGURE 26

**Illustrating the Potential Impact of the Multiply Reform on a Prototypical Neighborhood**

*The Multiply reform would double the allowed residential construction on parcels within a quarter mile of stations*


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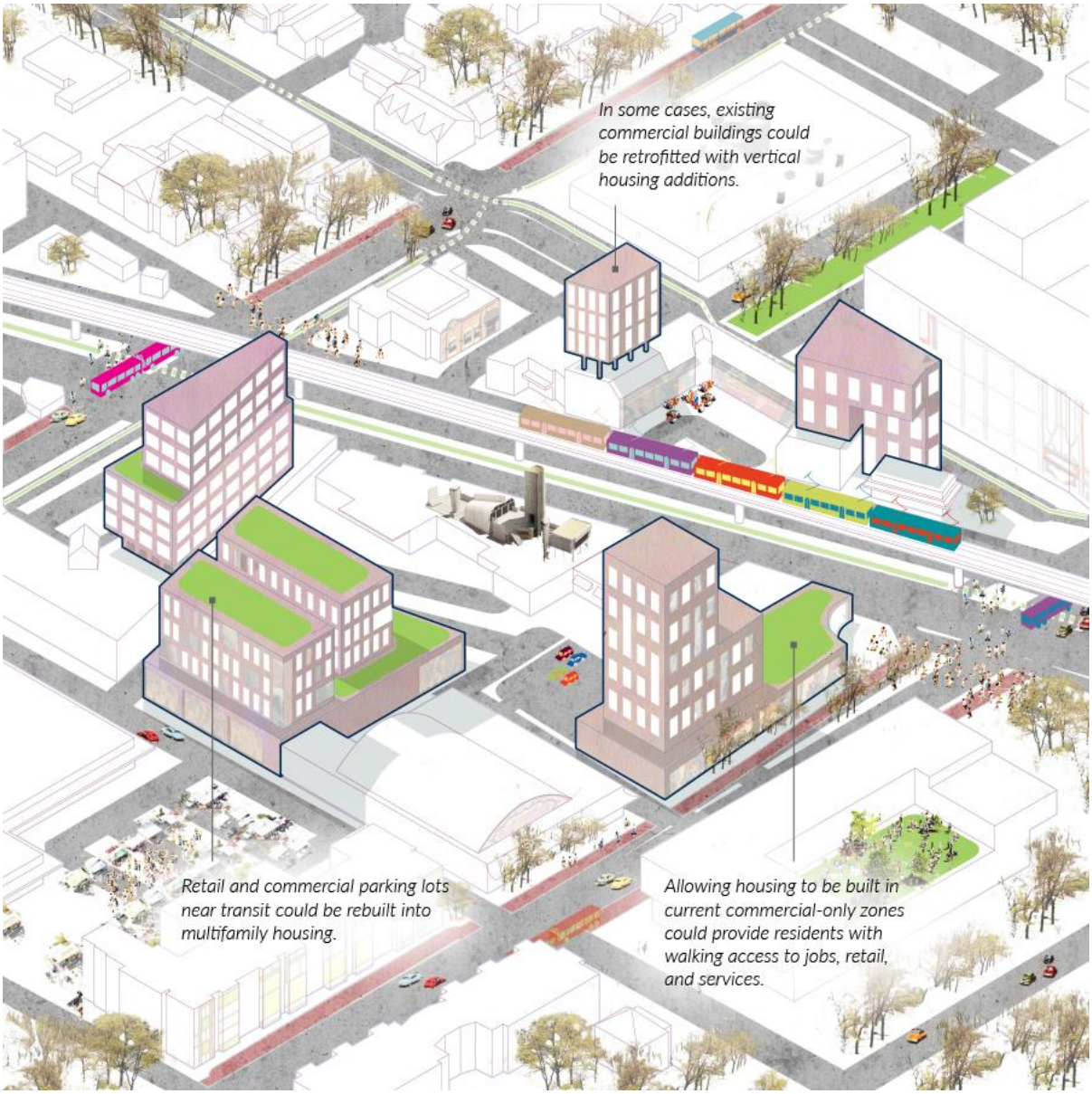
**Source**: Illustration by TBD Studio for the Urban Institute

FIGURE 27

**Illustrating the Potential Impact of the Legalize Reform on a Prototypical Neighborhood**

*The Legalize reform would allow multi-family housing on parcels currently zoned exclusively for commercial or public uses within a half mile of stations*

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**Source**: Illustration by TBD Studio for the Urban Institute

Because each of these approaches apply to different zones, we also evaluated what would be possible if all four of these reforms were undertaken simultaneously. Table 15 shows that the reforms would increase the zoning envelope of reasonably sized parcels near transit by less than 1 percent

compared with today's zoning policies for the "Legalize" reform, by 18 percent for the "Missing Middle" reform, 31 percent for the "Plexify" reform, 37 percent for the "Multiply" reform, and 84 percent if all the reforms were implemented together, allowing landowners to leverage the best development strategy for their respective lots. The reforms would also increase development potential on large lots, but for the reasons discussed above, we hesitate to infer too much about those parcels.

TABLE 15

**Potential Regional Zoning Reforms Could Almost Double Zoned Capacity**

*Despite allowances for new development, most parcels are unlikely to be redeveloped in the next decade*

| | Existing Units | Current Zoning Envelope | "Plexify" Reform | "Missing Middle" Reform | "Multiply" Reform | "Legalize" Reform | Reforms Combined |
|---|---|---|---|---|---|---|---|
| **Regular lots overall** | **364,057** | **668,057** | **875,805** | **789,017** | **914,445** | **673,649** | **1,229,185** |
| Current SF lots | 136,616 | 281,398 | 486,594 | 378,789 | 362,088 | 284,526 | 651,252 |
| Current 2–4 units | 19,488 | 42,080 | 43,428 | 56,966 | 61,004 | 42,514 | 73,100 |
| Current 5+ units | 207,953 | 279,843 | 279,843 | 292,417 | 379,410 | 280,460 | 387379 |
| Current non-residential | - | 64,736 | 66,040 | 69,845 | 111,943 | 66,149 | 117,454 |
| Seattle only | 235,117 | 343,839 | 390,981 | 365,325 | 475,259 | 344,809 | 533,948 |
| **Large lots** | **116,232** | **475,823** | **477,049** | **567,038** | **720,769** | **503,438** | **820,590** |

**Source**: Authors' analysis of First American property data and municipal zoning data.

**Notes**: Analysis assumes that a property would not be redeveloped into fewer units than currently existing on a parcel. SF = single-family. Regular lots are defined as properties of less than 62,500 square feet; large lots are those with greater sizes. Reforms combined assume all reforms are passed and properties can be developed to their maximum level among the provisions of the different reforms.

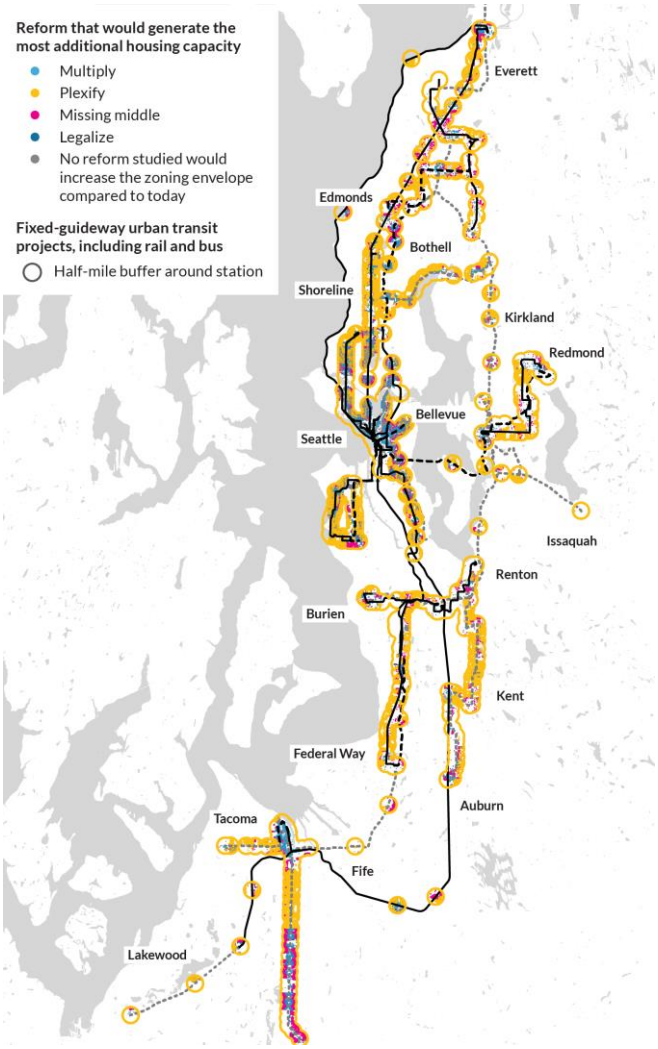
The reforms would have different effects on different types of property. The "Plexify" reform, unsurprisingly, would primarily influence the zoning envelope of parcels that are currently occupied by single-family homes, roughly doubling potential housing on those properties. The "Missing Middle" reform would be most effective in encouraging the development of housing on parcels that are currently occupied by two- to four-unit buildings. And the "Multiply" reform would result in the most space for new units on land very close to transit stations. In other words, each of the reform types could have a different type of impact on the overall housing market.

The "Multiply" reform would be most effective in generating additional space for housing for 8 percent of the properties in the region; "Plexify" would be best for 60 percent; "Legalize" less than 1 percent; and "Missing Middle" 13 percent (these are the percentages of properties, not units, which are shown in table 15). Nineteen percent of properties would not have their zoning envelopes expanded by any of the reforms we evaluated. In figures 28 and 29, we show which reform type would be most effective in generating the most space for new housing in different parts of the region.

FIGURE 28

**Land-Use Reform Efficacy Is Likely to Vary Based on the Station Neighborhood**

*A combination of reforms could unlock the most new housing production*

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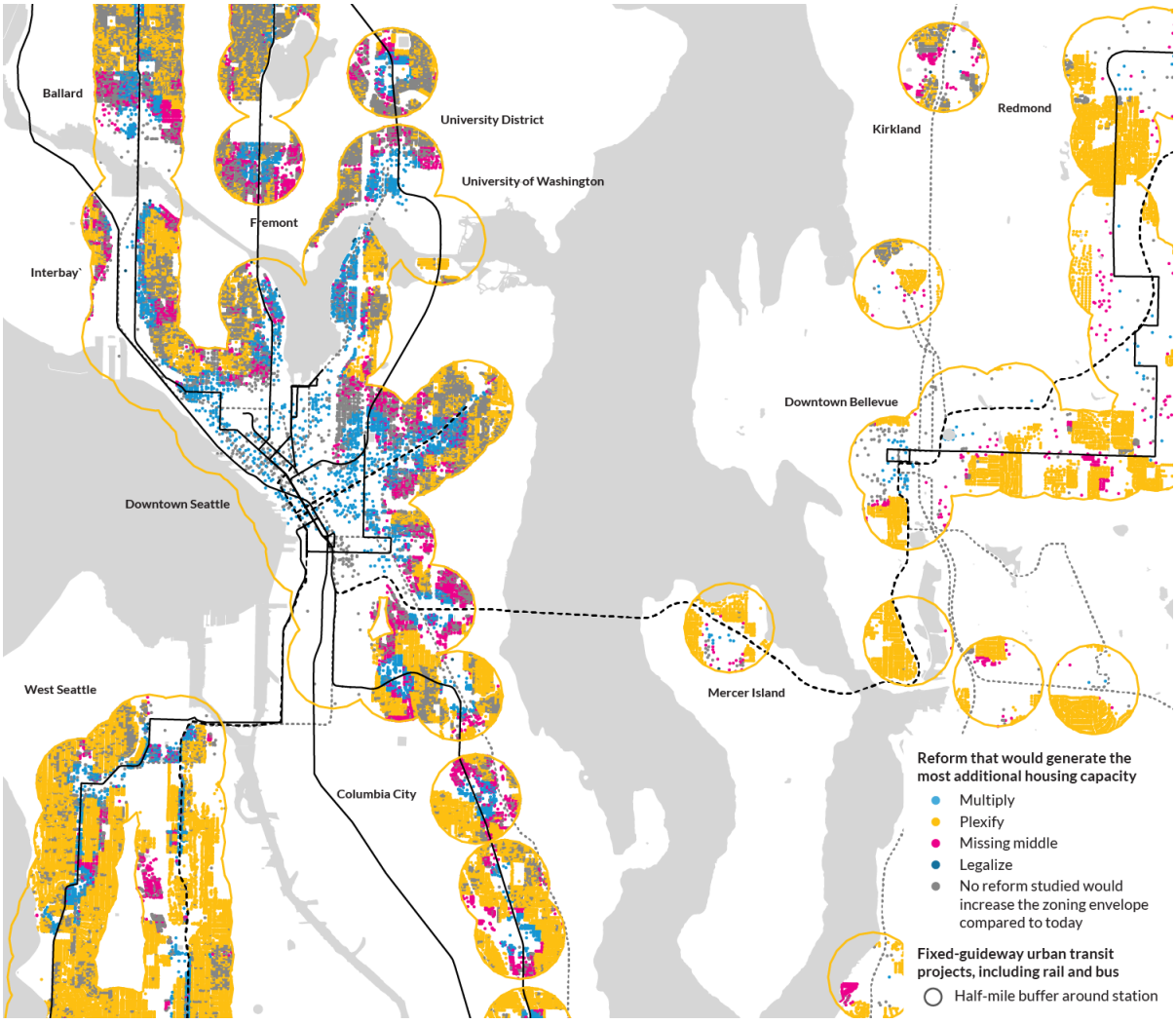
**Source**: Authors' analysis of First American property data and municipal zoning data.
**Notes**: Showing properties within a half mile of existing, under construction, or planned fixed-guideway transit stations in the Puget Sound. Properties with 62,500 or more square feet are not included.

FIGURE 29

**Potential Reform Impacts in the Central Part of the Puget Sound Region**

*Illustrating where different reform types would be most effective in adding capacity for housing*

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**Source**: Authors' analysis of First American property data and municipal zoning data.
**Notes**: Showing properties within a half mile of existing, under construction, or planned fixed-guideway transit stations in the Puget Sound. Properties with 62,500 or more square feet are not included.

We also examine reforms using the model of redevelopment likelihood based on real estate market demand that we developed in the previous section. The reforms could have multiple effects (table 16): the "Plexify," "Missing Middle," and "Multiply" reforms would each expand the number of units likely to be developed by 1 to 61 percent, assuming a steady amount of land available for redevelopment. If all reforms were combined, we expect that the number of units completed over the next decade would increase by about 69 percent compared to the status quo. Together, these reforms could dramatically

increase likely construction levels in certain highly in-demand cities, including Lake Forest Park (+66 percent), Kenmore (+30 percent), Mercer Island (+159 percent), and Mill Creek (+173 percent), each of which added fewer than 200 housing units near transit between 2010 and 2020.

The "Multiply" reform—which would encourage major upzonings in the areas closest transit—is the most productive individual reform in terms of meeting development demand that we expect, given the desire for new investments in large apartment buildings very close to stations. It alone would increase likely development by 62 percent compared with the status quo.

TABLE 16

**Zoning Reforms Could Encourage Significantly More Housing Construction Than Current Policy**

*Larger projects are more likely to be financially viable than small-scale units*

| | Current zoning | "Plexify" reform | "Missing Middle" reform | "Multiply" reform | "Legalize" reform | Reforms combined |
|---|---|---|---|---|---|---|
| Parcels | 4,103 | 4,103 | 4,105 | 4,132 | 4,103 | 4,132 |
| Existing units | 5,433 | 5,432 | 4,411 | 5,676 | 5,432 | 5,676 |
| Total redevelopment units | 90,314 | 92,096 | 92,993 | 145,539 | 90,403 | 152,797 |
| Magnitude of increase per lot | 16.6x | 17.0x | 21.1x | 25.6x | 16.6x | 26.9x |

**Source**: Authors' analysis of First American property data, municipal zoning data, and local demographic and real estate market indices.

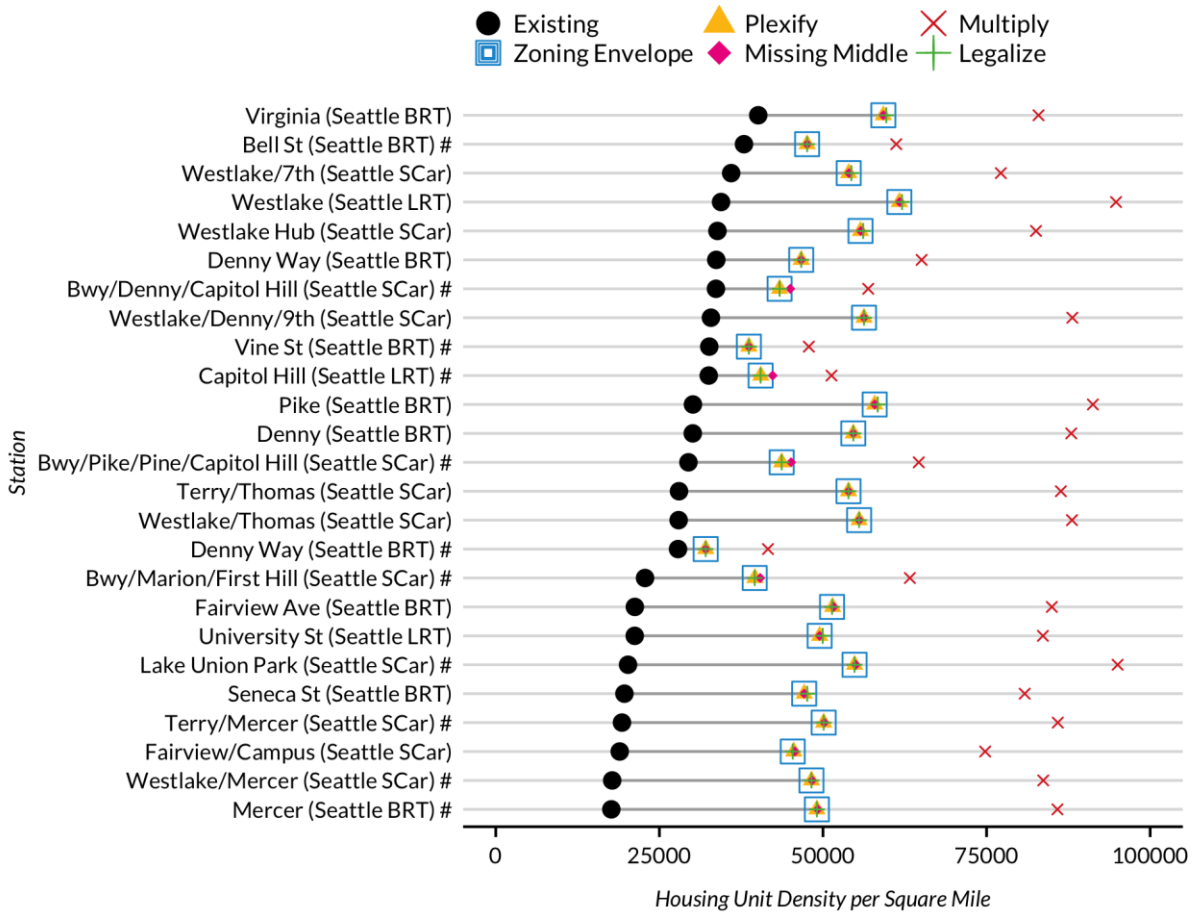
**Notes**: Only examines potential development on properties of less than 62,500 square feet in residential zones within half a mile of stations. Assumes that 2.7 percent of all parcels would be redeveloped for housing uses yielding roughly 90,000 units under the baseline zoning envelope, which is half of the share of parcels developed in 2010–2019 but the same number of units.

Table 16 shows that the largest increase in expected housing construction would happen if the reforms were implemented together. This is because the different reforms would encourage development in different ways in different types of communities. We began by examining the stations with the highest densities of housing currently surrounding them (figure 30). Among the region's 273 existing and under-construction stations, the top 25 on this metric are all in the city of Seattle, and most in the center of the city, near BRT, light rail, and streetcar stops. These have housing densities of 18,000 or more per square mile in areas within a half mile of transit. And we identify many stations as being in neighborhoods with high development probabilities based on our analysis in the last section.

FIGURE 30

**Neighborhoods with High Housing Densities Today Are All in Seattle, and Could Benefit from Multiplying Allowed Development on Land Close to Transit**

*Stations with highest current housing densities*

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**Source**: Authors' calculations based on municipality and county zoning texts and maps.

**Notes**: Includes data for land within a half mile of existing and under construction fixed-guideway transit stations in King, Pierce, and Snohomish Counties. Municipality where station is located and transit mode are noted in parentheses. BRT = bus rapid transit. LRT = light rail. SCar = streetcar. Does not include lots with land area of more than 62,500 square feet. Station areas may overlap; each station is presented with data about all properties within a half mile, even if those are also within a half mile of another station. Zoning envelope is defined as the maximum possible number of units that could be constructed if all parcels near transit were redeveloped to their maximum allowed housing densities or kept as current if existing units are larger than otherwise allowed (grandfathered in). # = Station in neighborhood with high development potential.

For those high-density stations, we compare current housing densities with those under the current zoning envelope and those that would be possible were zoning reforms implemented. We limit our comparison to the reasonably sized parcels of less than 62,500 square feet. This comparison shows that most of these station areas could see increases in maximum possible housing densities under their

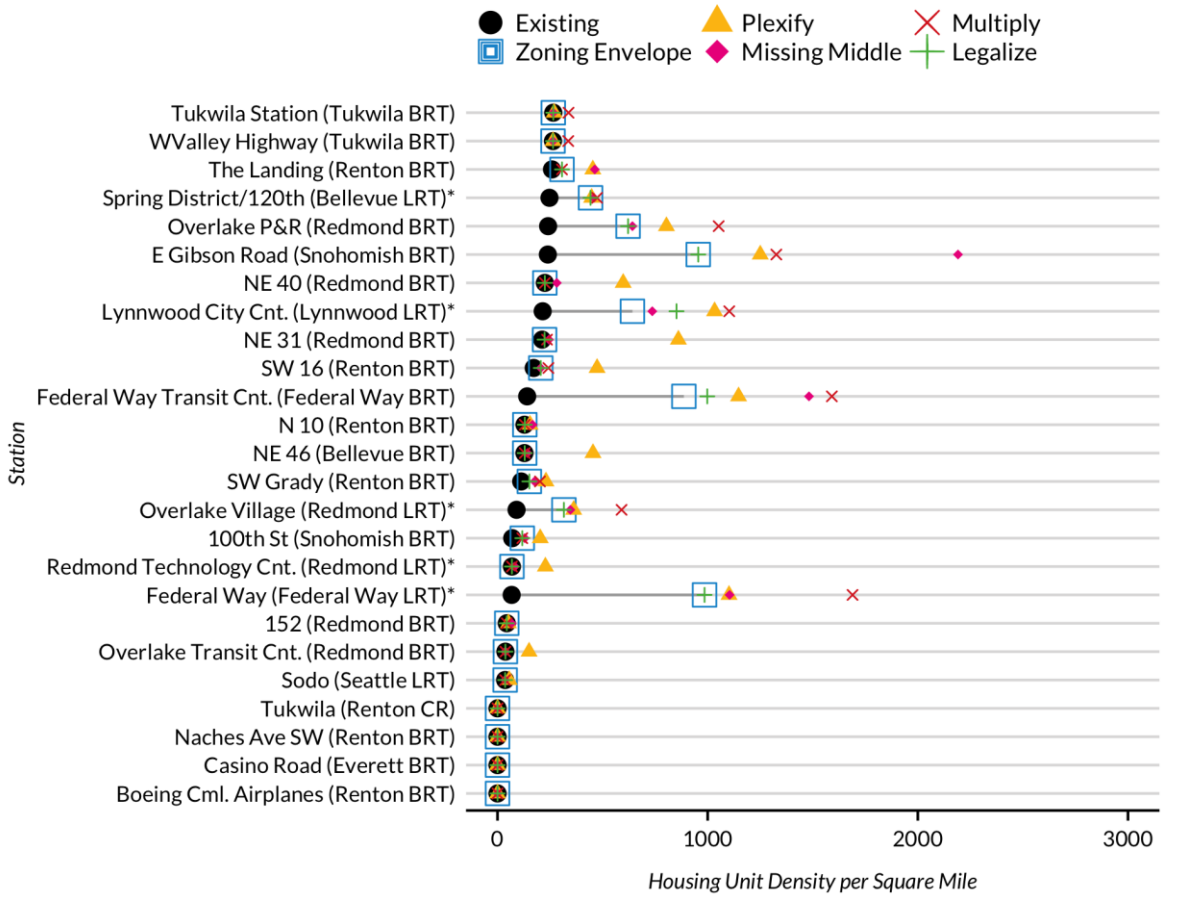
existing zoning envelopes, with the top 25 increasing their average number of units near stations from about 28,000 to 49,000, or 77 percent. But figure 23 also shows that the "Multiply" reform—allowing a doubling of allowed housing units in the areas within a quarter mile of stations—could effectively ramp up the possibility for housing construction in neighborhoods such as First Hill and Westlake. On average, this could increase allowed housing densities to almost 76,000 per square mile.

We then examined the stations on the opposite end of the spectrum: those with the lowest current housing densities in their surrounding neighborhoods (figure 31). These stations are often located in communities with commercial or industrial uses (such as in Everett, Redmond, Renton, and Tukwila). This comparison is somewhat more sobering; we estimate that the average station in this group of 25 only has 131 housing units within its neighboring half mile—and that the current zoning envelope only allows for an average of 283 units in that area. This is not true for all stations—those in Federal Way and Lynnwood, for example, have provided for substantial new housing densities—but the housing that could be built in these communities is far less dense than anything in central Seattle, as illustrated above. There is some opportunity for "Plexify," "Missing Middle," and "Multiply" reforms to support more housing in these areas, but the quantity of future housing is station dependent. Moreover, none of these stations are in neighborhoods we identified as having high development potential based on recent trends.

FIGURE 31

**Stations with Low Housing Densities Are Unlikely to Be Readily Redeveloped**

*Stations with lowest current housing densities*

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**Source**: Authors' calculations based on municipality and county zoning texts and maps.

**Notes**: Includes data for land within a half mile of existing and under construction fixed-guideway transit in King, Pierce, and Snohomish Counties. Municipality where station is located and transit mode are noted in parentheses. BRT = bus rapid transit. CR = commuter rail. LRT = light rail. Does not include lots with land area of more than 62,500 square feet. Station areas may overlap; each station is presented with data about all properties within a half mile. Zoning envelope is defined as the maximum possible number of units that could be constructed if all parcels near transit were redeveloped to their maximum allowed housing densities or kept as current if existing units are larger than otherwise allowed (grandfathered in). * = Station under construction.

Next, we identified stations where the current zoning envelope of the surrounding neighborhoods is largest compared with the number of current housing units (figure 32). These stations are mostly in Everett and unincorporated Snohomish County, which lack substantial market demand and are thus less likely to see new construction. That said, there are several under-construction light rail stations in Federal Way, Mountlake Terrace, Seattle, and Shoreline that also fall into this group. These stations are primed for increases in housing density: The average number of units in surrounding areas could

increase from about 1,100 today to 8,000 if construction is built out to the zoning envelope. These are the communities where local governments have made the most substantial efforts to plan for future housing growth.

FIGURE 32

**Stations with Large Current Zoning Envelopes Could Benefit from "Multiply" and "Missing Middle" Reforms**

*Stations with highest percentage difference from current conditions to current zoning envelope*


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**Source**: Author calculations based on municipality and county zoning texts and maps.

**Notes**: Includes data for land within a half mile of existing and under construction fixed-guideway transit stations in King, Pierce, and Snohomish Counties. Municipality where station is located and transit mode are noted in parentheses. ART = arterial rapid transit. BRT = bus rapid transit. CR = commuter rail. LRT = light rail. Does not include lots with land area of more than 62,500 square feet. Station areas may overlap; each station is presented with data about all properties within a half mile. Zoning envelope is defined as the maximum possible number of units that could be constructed if all parcels near transit were redeveloped to their maximum allowed housing densities or kept as current if existing units are larger than otherwise allowed (grandfathered in). * = Station under construction. # = Station in neighborhood with high development potential.

This group of stations could expand their zoning envelopes even further with the broad reforms we examine. Many of the stations would see a small increase in their envelopes if they allowed four-unit apartment buildings on single-family housing lots (figure 32). Others would be most affected by the "Missing Middle" housing reforms allowing up to 12-unit development on many lots, which could increase potential densities to more than 10,000 per square mile on average. And several stations, such as the planned light rail stations in Mountlake Terrace and Tacoma, would have their zoning envelopes expanded significantly under the "Multiply" reform. This would increase potential densities to more than 11,000 per square mile.

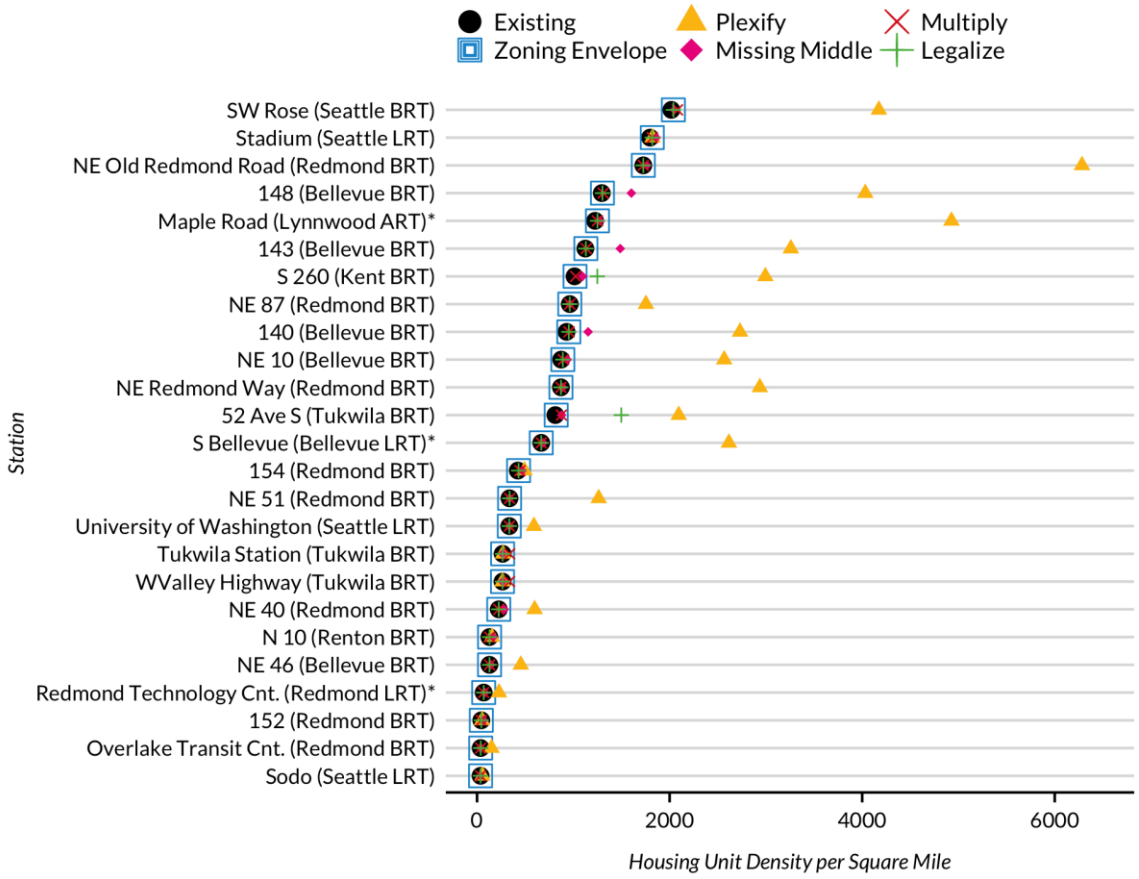
Finally, we examine housing conditions in the communities where the current zoning envelope provides for virtually no increase in overall housing units compared with current conditions (figure 33). These are stations where municipal land-use policy has failed to address the potential for redevelopment, in many cases because of a hostility to redevelopment of neighborhoods that are largely comprised of single-family homes. The stations that fall into this category include many in Bellevue and Redmond, as well as some that would be difficult to redevelop because they are located on land surrounded by institutional or industrial uses (such as those in Seattle and Tukwila, and some in Redmond, such as the Overlake Transit Center, which is surrounded by Microsoft buildings on a giant campus). None of these stations have high development potential based on recent trends; that is likely a consequence, at least in part, of their restrictive zoning policies.

Figure 33 shows that, among this group of stations, the "Plexify" reforms would provide the most effective approach to expand the zoning envelope for the plurality. Such changes would make it possible to transform single-family neighborhoods near transit into denser communities with a diversity of building types and higher levels of affordability. Because of the composition of the surrounding areas, the other reform types would have less of an impact on these stations. It is worth noting, however, that recent evidence indicates minimal interest among developers or landowners to build the types of units made possible under the "Plexify" reforms (figure 12).

FIGURE 33

**Stations Where Local Zoning Is Most Restrictive Would Benefit Most if Zoning Allowed Fourplexes in Single-Family Residential Zones**

*Stations with the lowest percentage difference from current conditions to current zoning envelope*




URBAN **INSTITUTE**

**Source**: Authors' calculations based on municipality and county zoning texts and maps.

**Notes**: Includes data for land within a half mile of existing and under-construction fixed-guideway transit stations in King, Pierce, and Snohomish Counties. Municipality where station is located and transit mode are noted in parentheses. ART = arterial rapid transit. BRT = bus rapid transit. LRT = light rail. Does not include lots with land area of more than 62,500 square feet. Station areas may overlap; each station is presented with data about all properties within a half mile. Zoning envelope is defined as the maximum possible number of units that could be constructed if all parcels near transit were redeveloped to their maximum allowed housing densities or kept as current if existing units are larger than otherwise allowed (grandfathered in). * = Station under construction.

The figures we present in this section suggest that the Puget Sound region can make room for hundreds of thousands of new housing units on the land near transit—and, in the process, generate thousands more units than would otherwise be built over the next decade. Much of this opportunity is already available in the current zoning code of municipalities throughout the region. But regional land-use reforms, perhaps implemented by the Washington State Legislature, could go a long way in helping

to expand the zoning envelope in station areas where new construction is often too difficult. Our major findings include the following:

- Multiplying the available zoning envelope of larger, multifamily parcels in the areas directly adjacent to transit stations is most likely to lead to major increases in housing construction, due to developer interest in building higher-density apartment buildings.
- Allowing residential construction on commercial and publicly owned parcels would significantly increase the zoning envelope in several neighborhoods in central Seattle, which already has the stations with the highest surrounding housing densities.
- Many station areas have low surrounding housing densities, in part due to commercial or industrial uses, such as the Boeing factory in Renton. Even zoning reforms may be unlikely to have a major effect on increasing housing construction near these areas.
- Municipalities such as Everett and several cities along the routes of under-construction light rail lines have zoned for massive increases in housing near their transit stations, some of which may be built, depending on demand. Nevertheless, their focus seems to be on the construction of large multi-unit apartment buildings, providing little incentive for moderate-scale apartment buildings of up to 12 units; this could be addressed by zoning reforms.
- Some communities, such as Bellevue and Redmond, have not provided for much additional housing construction in the neighborhoods around some of their transit stations. Reforms allowing for duplexes, triplexes, and fourplexes on current single-family parcels would provide a major boost to the zoning envelopes around those stations.

Even with the implementation of broad-scale reforms such as these, municipalities throughout the Puget Sound may still consider implementing additional zoning changes to provoke development above and beyond what is currently allowed. In addition, our analysis in this section did not engage with the largest parcels in the region, with lot sizes of more than 62,500 square feet. It is possible that those parcels are most apt for new housing construction, but future research is needed to examine them specifically.

# Conclusion

With an expansive public transportation system that will only continue to grow—combined with a need for more housing—governments and developers across the Puget Sound have the opportunity to link community development initiatives to the region's transit network in an equitable manner. The Puget Sound could set a national standard for responding proactively to demand for housing. Regional stakeholders are aware that there is a strong interest in living in—and moving to—the region, yet that today's housing construction rates are inadequate to keep up with growth. They also are interested in developing strategies that support increased housing affordability, access to opportunity for all, better access to public transportation, and more equitable outcomes. As such, they could work collectively to develop land-use regulations that aim to address these needs.

A thoughtful approach in the Puget Sound could generate support for similar changes in other parts of the nation. The Seattle region could become a model community for its high quality of life, high levels of employment, and high housing affordability. It could offer as many people as possible the opportunity to live near public transportation and boast neighborhoods that feature deep social and racial integration. In the process, the Puget Sound could offer an inclusive model for growth that sets the stage for a better life for more Americans.

We acknowledge that our work builds upon the significant efforts that are already underway at the local level in the Puget Sound region. Many municipalities, including Seattle, Shoreline, and Tacoma, are considering major reforms that would encourage increased housing supply. State legislators in Olympia have been discussing potential reforms that could encourage a more equitable distribution of housing. Advocates have been leading this crusade.

We also emphasize that resolving the by-right zoning-related issues we discuss in this report is just one effort to increase the housing supply and ensure adequate affordable residences for all. Zoning is one factor in the larger real estate ecosystem that is also affected by development finance, construction costs, labor availability, and local demand for new housing. We cannot expect reforms of land-use regulations to address deficiencies in these other areas; zoning reforms are necessary but insufficient to address all factors. Moreover, any land-use reform should be accompanied by updates to each jurisdiction's comprehensive plan, a change that only occurs once every few years.

Just as importantly, in this report we largely do not take a position on which communities should be most accommodating of new housing. We note the potential of encouraging more development near quality public transit, but we acknowledge that other parts of the region also need new housing

investment. It is also true that we do not necessarily recommend more housing in every part of the region. Some neighborhoods have poor access to quality public services such as schools and parks, are subject to disproportionate levels of pollution, have inadequate local infrastructure, or are poor prospects for additional housing for other reasons. Ensuring that those factors are considered as part of the comprehensive planning process is an important next step for local and state officials in the region.

## Implications for State and Local Policymakers

This research can help policymakers in each jurisdiction better understand their land-use constraints and opportunities. We document the current state of housing in various jurisdictions, including where there may be existing opportunities for more housing. We note some areas where zoning rules may not be the primary constraint for housing development. For areas where zoning is a constraint, we analyze the comparative value of different land-use reforms, such that policymakers can consider where to focus their efforts for the most effective and place-sensitive outcomes.

For state-level policymakers, there may be value in requiring municipalities and counties to allow "plexes" broadly in these transit-rich areas. Given that many of the existing multifamily units are built above the current zoning envelope, many of the highest-yield multifamily developments (those that add most to the housing supply) may have to go through time-consuming, costly discretionary reviews for zoning relief. Given the potential value of additional density on existing multifamily parcels, state lawmakers may want to consider minimum by-right zoning allowances for these areas. This could reduce time and costs for development and increase housing yield but may need to take account of infrastructure capacity. Finally, the state may want to consider model "Missing Middle" zoning language for municipalities to implement—and perhaps require its use in appropriate areas. But we are also aware that few small-scale apartment buildings have been built in the Puget Sound's transit zones in recent years. Local and state policymakers may consider developing incentives that support the construction of these types of buildings.

We believe that a broad-scale state rezoning policy could be an effective mechanism to encourage a fairer distribution of housing throughout the Puget Sound. Requiring every community to demonstrate how it will provide the space for new units in the coming years—and actually ensuring that units get built in these locations—is a reasonable fair housing strategy and one that could counter the pernicious racial and class segregation that affects much of American society. State laws already require that comprehensive plans demonstrate that cities and counties have sufficient capacity for planned growth over the next twenty years at different affordability levels.[56] These plans are tracked and compared to

real-time growth through Buildable Lands reports.[57] That said, we are also aware that major reforms, especially those that impose requirements on local governments, take time and negotiation. It may be appropriate for state legislators—and local city councils—to take reforms one step at a time. Not everything has to be done at once.

We also believe it is essential for policymakers to consider the intersection between development and neighborhood demographic change to ensure that transit areas remain communities where everyone has an opportunity to live. This requires a multifaceted approach that reflects different real estate markets. Equitable housing development does not simply mean preventing displacement; instead, it involves creating balanced interventions that respond to the challenges faced at each point along the spectrum of housing inequity risk (figure 34). This can mean creating new strategies across the range of market sectors. For exclusive communities such as Lake Forest Park and Mercer Island, that might mean investing directly in affordable housing strategies and reforming the zoning code to allow more market-rate development. For communities with both economic vulnerability and higher levels of development attractiveness—the places with higher likelihood of displacement—this might mean land banking and tailored policies like rent stabilization. And for communities facing disinvestment, policymakers may consider funds for economic development programs, public services, and other changes that improve quality of life while also including measures to protect that community from being threatened by displacement.

FIGURE 34

**The Housing Inequity Risk Spectrum**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**Source**: The authors.
**Note:** This figure is an extreme simplification of the challenges that different neighborhoods present. There are many neighborhoods with high economic vulnerability that also allow very little construction, and other neighborhoods with high development attractiveness that are inclusive and welcome new construction. The figure, though, captures the most common housing inequity types that neighborhoods face.

## Implications for Landowners and Real Estate Developers

Private landowners and real estate developers will be the ones to finance and build most projects that deliver additional housing units. Our analysis shows that there are some communities with a zoning envelope that is broad enough to help deliver needed units today. But changes in land-use regulations made by the government, whether at the state or local level, will not make a difference unless these individual actors choose to produce more housing. In some cases, this can occur by building larger multifamily rental buildings; in others, it could involve building more midsize apartments and condo buildings. In still other cases, it could implicate the conversion of single-family houses into small multi-unit duplexes, triplexes, or quadplexes. Our analysis shows areas that are most likely to be feasible for such housing, which could help landowners and developers make decisions about when and where to invest in more housing.

This report also clearly demonstrates that there are large sections of the region where existing zoning rules allow more housing—but where developers have been, at least recently, reluctant to invest. We hope that these data help jurisdictions make the case to developers that they have significant land available for new housing. With the expansion of the region's transit network, more communities that have historically seen limited interest from developers could become top prospects for new housing.

## Implications for Affordable Housing Advocates

The Puget Sound area has a vibrant community of housing advocates who have supported critical actions for producing housing and affordable housing. They can take many of the same insights as policymakers to help guide their focus on specific locations and types of land-use changes. This analysis could help advocates identify jurisdictions that have not thus far focused on housing policy but that have a significant opportunity to contribute to regional housing needs while reducing the pressure on at-risk or low-income neighborhoods.

Our research on the availability of subsidized affordable housing by jurisdiction makes apparent the inequities in access to such units across different parts of the metropolitan area. Advocates can use these data to inform their arguments in favor of new housing investments—including potentially through direct public development—in some neighborhoods that are currently underserved. Finally, this analysis can help anti-displacement advocates prioritize neighborhoods and areas that may not be good candidates for land-use reforms or that may need additional investments and supports to reduce the risks of harm to residents with low incomes.

# Future Research Areas

While our research offers considerable new information about the Puget Sound's current housing availability and the potential for new development, we believe there are several additional areas of research that could usefully supplement this work. First, more scholarship is necessary to connect what we know about current housing availability, allowances for new construction under the zoning envelope, and potential reforms with possible impacts on gentrification and displacement. PSRC and several local jurisdictions have begun this analysis, but more detail would help specify which neighborhoods are most at risk of change—and which could benefit from it.

Second, we need better information about the interplay between zoning policy change and transit investments. If land-use regulations change, what will the magnitude of their effects be, how will those magnitudes change over time, and which types of communities are most likely to be affected? And, given the decades-long construction process for the regional transit system, will development respond before construction, during construction, or after the opening of new stations?

Third, while we have worked to model the zoning envelope of jurisdictions throughout the region, we acknowledge that the reliability of this model may be limited. Future research should endeavor to refine the assumptions we used, allow for other types of zoning changes, and consider the impact of zoning processes that are outside of the by-right zoning system. This latter issue is important in many parts of the region where large projects often must undergo design review and other discretionary evaluations before approval. And, since we found that large parcels could offer considerable opportunity for new development, a necessary next step is to find ways to model new housing on these parcels.

Finally, our research narrowly focuses on additional housing units rather than identifying how zoning changes can also increase the availability of different types of units, such as middle-scale housing, to accommodate the needs of different types of families. Indeed, researchers should evaluate how governments can orient zoning changes to go beyond the goal of just adding units; future analyses should consider the ideal types of housing needed to expand neighborhood access where discrimination and historical exclusion have limited choice and prevented many households from living in certain areas.

# Appendix A. Development Attractiveness Model

TABLE A.1

**Parcel Housing Characteristics**

*Summary statistics of data used for development attractiveness model*

| Parcel Characteristics | Minimum | Median | Mean | Maximum | Standard deviation | Missing values | Share missing |
|---|---|---|---|---|---|---|---|
| Property age | 0 | 33 | 33.70 | 81 | 27.10 | 1499 | 1.0% |
| Current residential units | 0 | 0 | 2.53 | 2100 | 17.10 | 234 | 0.2% |
| Maximum units under zoning envelope | 0 | 1 | 3.11 | 767 | 13.80 | 209 | 0.2% |
| Potential-to-current ratio | 1 | 1.00 | 2.09 | 749.00 | 9.95 | 234 | 0.2% |
| Assessed land value | $0 | $252,000 | $431,000 | $533,000,000 | $2,770,000 | – | – |
| Assessed improvement value | $0 | $253,000 | $582,000 | $1,320,000,000 | $5,950,000 | – | – |
| Land-to-improvement ratio | 0 | 1 | 19 | 48100 | 290 | – | – |

**Source:** Authors' analysis of First American data.

**Notes:** n = 151,497. The potential-to-current ratio was calculated by dividing the number of potential lots buildable under the zoning envelope by the existing number of units on the lot. The land-to-improvement ratio was calculated by dividing the assessed land value by the assessed improvement value.

TABLE A.2

**Parcel Neighborhood Characteristics**

*Summary statistics of data used for development attractiveness model*

| Neighborhood Attractiveness Characteristics | Minimum | Median | Mean | Maximum | Standard Deviation | Missing Values | Share Missing |
|---|---|---|---|---|---|---|---|
| Share of parcels in block group built since 2010 | 0% | 5% | 8% | 100% | 0.079 | | |
| Density | 5 | 253 | 344 | 11900 | 379 | 3311 | 2.20% |
| Share of block group land zoned for single-family only | 0% | 61% | 53% | 100% | 0.365 | 124 | 0.10% |
| Share of block group units renter-occupied | 0% | 41% | 43% | 100% | 0.221 | 124 | 0.10% |
| Distance to Seattle CBD | 0 | 9.3 | 12.0 | 38.4 | 9.110 | | |
| Distance to wealthy block group | 0 | 0.5 | 1.4 | 8.2 | 1.890 | 124 | 0.10% |

**Source:** Authors' analysis of First American data.

**Notes:** n = 151,497. CBD = central business district. Density in residents per square mile. Distances in miles.

TABLE A.3

**Multivariate Regression on Parcel Data for Neighborhood Development Attractiveness Index**

| Variable | Coefficient |
|---|---|
| Population density (log) | −0.006 * |
| Share of block group land zoned for single-family residential only | −0.021 ** |
| Share of block group housing units that are renter occupied | 0.057 *** |
| AllTransit index score | 0.004* |
| Distance to Seattle CBD (log) | −0.016 *** |
| Within 0.5 miles of top quartile income block group (binary) | 0.011 * |
| Top quartile income block group (binary) | 0.005 |
| Intercept | 0.073 * |
| $R^2$ | 0.07 |

**Source:** Authors' analysis of First American data.

**Notes:** Robust standard errors. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. CBD = central business district. n = 925.

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