4.1 Housing and Socioeconomics

This section considers the impacts of the proposed Land Use Code change on housing and socioeconomics. Specifically, we first evaluate the following questions:

- **Underlying Development Economics.** How might the proposed changes alter the underlying real-estate economics in single-family zones? Could the proposed changes make property in single-family zones more attractive as rental investments rather than as owner-occupied assets?
- **ADU Production.** How many ADUs could be created given the proposed policy changes in each alternative?

This analysis allows us to consider the following types of impacts resulting from the proposed alternatives:

- **Affordability.** What impacts could the proposed changes have on housing affordability?
- **Displacement.** How might the potential housing and socioeconomic impacts vary by neighborhood? What are the potential impacts on marginalized populations (low-income people, people of color, and non-native English speakers)?

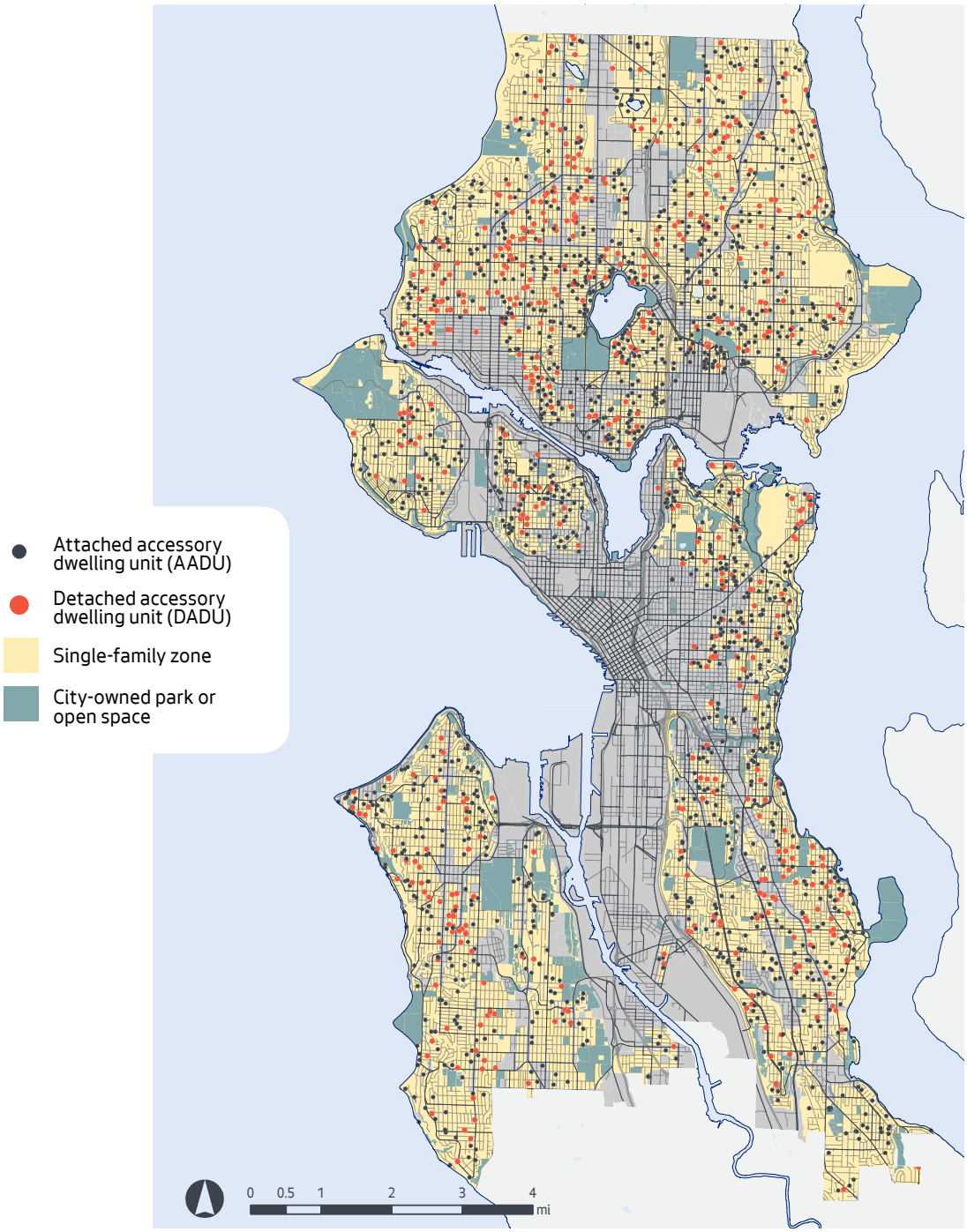
4.1.1 Affected Environment

HOUSING

Seattle has about 348,000 housing units. Between 2010 and 2017, the city gained about 40,000 new housing units. Based on American Community Survey (ACS) data, about 44 percent of homes in Seattle are located in one-unit detached structures, most, but not all, of which are in single-family zones.

Currently, less than two percent of Seattle's roughly 135,000 lots in single-family zones have an AADU. Since their legalization citywide in 2010, about 550 DADUs have been constructed or permitted. On average, 69 DADUs have been permitted annually since 2010, with the highest annual permit volumes in 2016 and 2017 (129 and 118 DADUs, respectively). Exhibit 4.1-1 shows the distribution of Seattle's ADUs.

Exhibit 4.1-1
Distribution of Existing ADUs in Seattle



HOUSING AFFORDABILITY

Housing affordability is typically expressed as a measure of housing costs in relation to household income. The standard for housing affordability is housing costs, including basic utilities, that amount to 30 percent or less of a household's gross income. Households paying more than 30 percent of their gross income for housing costs may have difficulty affording necessities such as food, clothing, transportation, and medical care. The U.S. Department of Housing and Urban Development (HUD) considers households paying more than 30 percent of their income for housing as "cost-burdened" with respect to housing. Households that pay more than 50 percent of their income for housing costs are considered "severely cost-burdened." Housing cost burden is a key measure of housing need.

Housing Cost Burden

HUD estimates that 37 percent of all Seattle households are either cost-burdened or severely cost- burdened. Renter households are significantly more likely to experience cost burden than owner-occupied households. And they are nearly twice as likely to be severely cost-burdened: 20 percent of renter households are severely cost-burdened compared to 11 percent of owner households. Lower-income households are most likely to experience cost burden. Sixty-eight percent of households with incomes less than 80 percent of area median income (AMI) spend more than 30 percent of their income on housing, while 37 percent spend more than half their income on housing. Exhibit 4.1-2 and Exhibit 4.1-3 show how cost burden varies among renter and owner households at various income levels.

Exhibit 4.1-2 Housing Cost Burden among Renter Households by Household Income

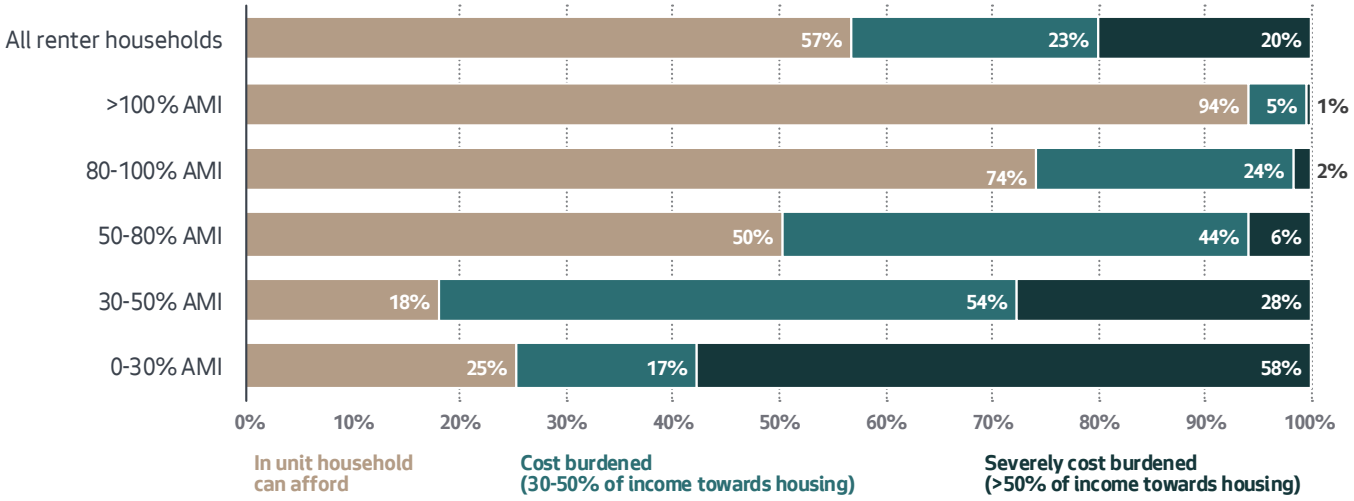
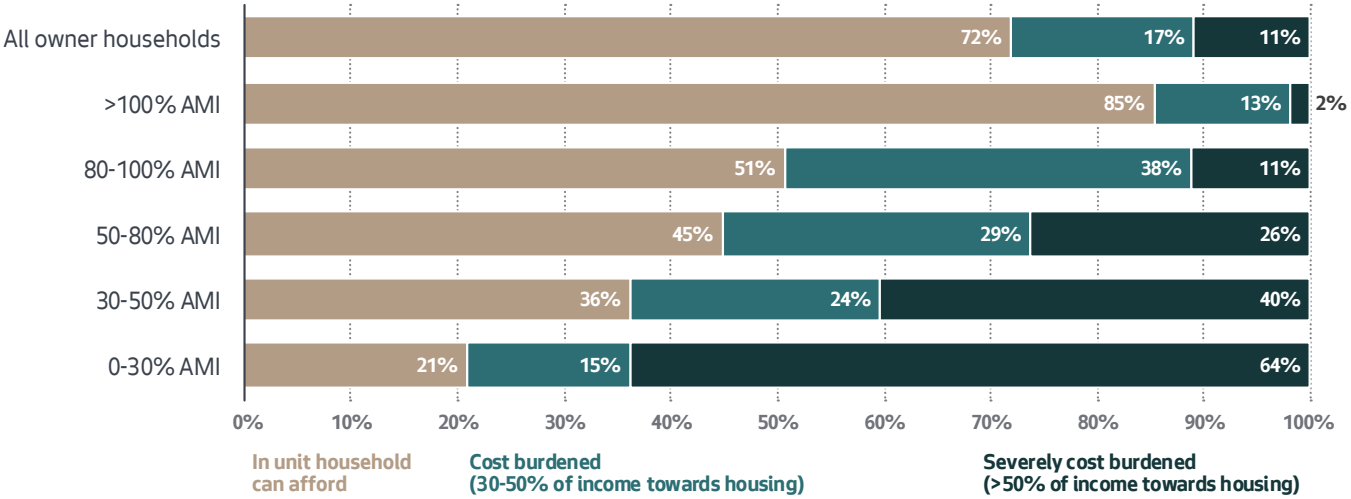
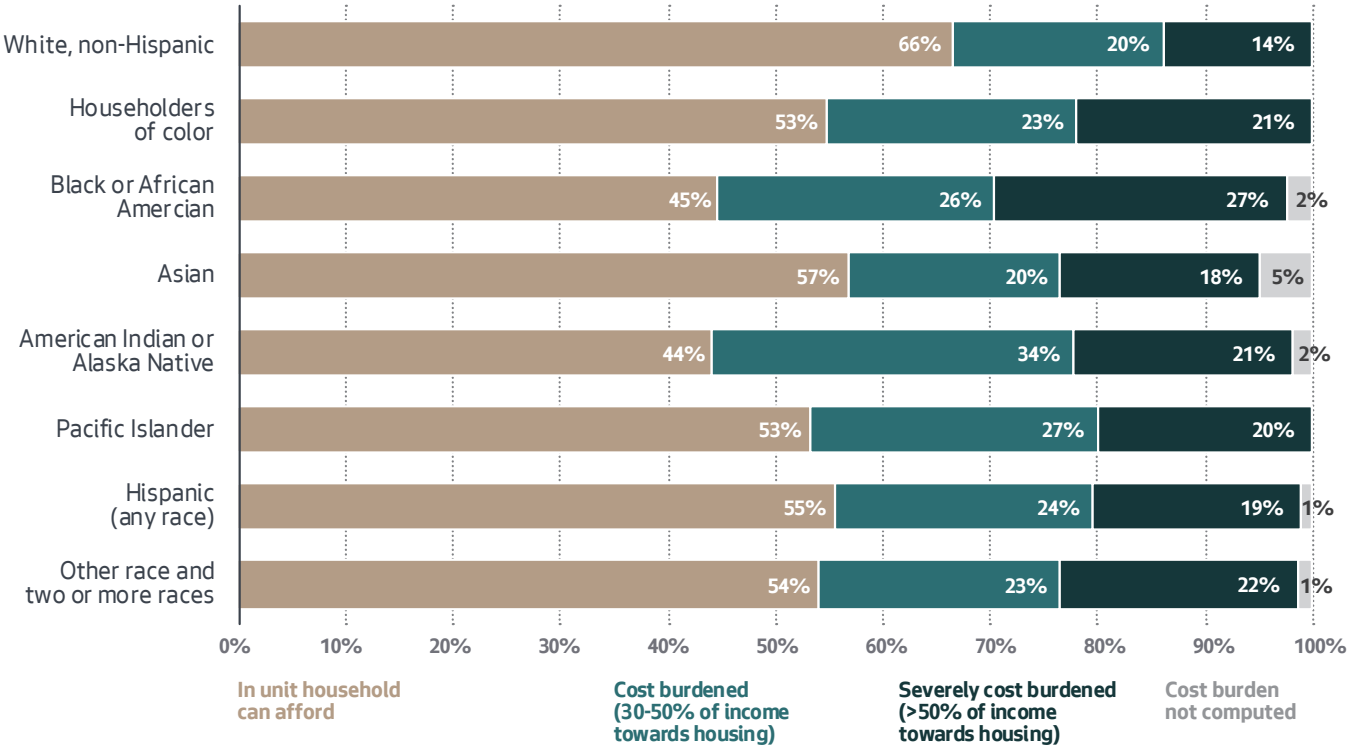


Exhibit 4.1-3 Housing Cost Burden among Owner Households by Household Income



We also see disparity in cost burden among households of different racial and ethnic backgrounds. As shown in Exhibit 4.1-4, two-thirds of households with a non-Hispanic White householder are not cost burdened and only 14 percent are severely cost burdened, the highest and lowest shares for any racial category, respectively. More than half of households with a Black or African American householder experience some level of housing cost burden.

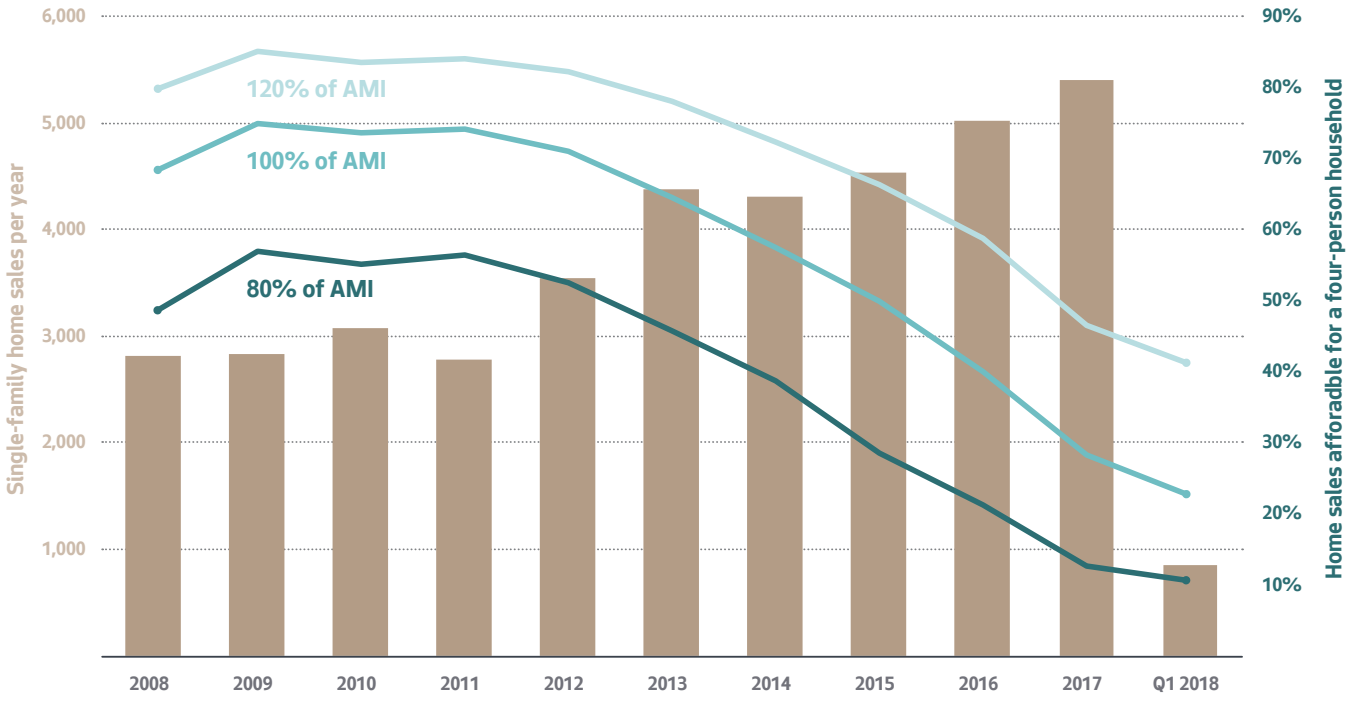
Exhibit 4.1-4 Housing Cost Burden by Race and Ethnicity of Householder



Affordability of Ownership Housing

Sales prices for homes in Seattle have risen substantially in recent years. According to the ~~latest data from the~~ Northwest Multiple Listing Service (NWMLS), the median closed sales price for residential units in King County in 2017 was $627,000. Exhibit 4.1-5 presents information about the number and affordability of homes sold from 2008 through the first quarter of 2018 in Seattle's single-family zones. The share of home sales affordable to a four-person household has declined steadily in recent years.

Exhibit 4.1-5 Home Sales in Single-Family Zones, 2008-2018
Source: City of Seattle analysis of King County Assessor's data



New in the FEIS Exhibit 4.1-5 is a new exhibit in the Final EIS.

As shown in Exhibit 4.1-6, since 2016, only about 12 percent of single-family homes sold in Seattle were at a price affordable to a four-person household earning 80 percent of AMI. About one-quarter of homes sold were affordable to a four-person household with an income of 100 percent of AMI, and less than half for a household with an income of 120 percent of AMI. For two- or three-person households, whose median income is lower, even fewer home sales would be affordable at each percentage of AMI. This analysis assumes a best-case scenario for

financing, e.g., good credit scores. Further, this analysis does not consider whether the down payment (assumed here to be 20 percent of the sale price) would be affordable to households. For the 2018 median home price of $800,000, a down payment of 20 percent would require $160,000 in cash.

New in the FEIS

Exhibit 4.1-6 is a new exhibit in the Final EIS.

Exhibit 4.1-6 Affordability of Single-Family Home Sales in Seattle

Source: City of Seattle analysis of King County Assessor's data

				Share of home sales affordable for a four-person household (annual income)[2]		
	Number of sales	Average home sales price[3]	Median home sales price[3]	80% of AMI ($80,250)	100% of AMI ($100,300)	120% of AMI ($120,350)
2008	2,808	$596,235	$489,000	48%	68%	80%
2009	2,830	$535,317	$449,963	57%	75%	85%
2010	3,068	$540,673	$450,000	55%	74%	83%
2011	2,779	$533,773	$450,000	56%	74%	84%
2012	3,545	$541,807	$467,500	52%	71%	82%
2013	4,382	$595,816	$504,350	46%	64%	78%
2014	4,309	$649,888	$550,000	39%	57%	72%
2015	4,538	$715,514	$601,000	29%	50%	66%
2016	5,025	$778,334	$670,000	21%	40%	59%
2017	5,395	$875,780	$753,800	13%	28%	47%
2018[1]	845	$917,659	$800,000	11%	23%	41%

1 2018 numbers are through first quarter.
2 Analysis assumes 30-year loan term, down payment of 20%, 4.0% interest rate, no PMI, $1,000 annual homeowners insurance premium, and 1.0% property tax. No projection included for increases in property taxes. Unlike affordability models for rental housing, the cost of basic utilites is not included. AMI levels are current as of May 2018. Analysis of affordability by income level uses inflation-adjusted sales prices.
3 Average and median sales prices listed here are not inflation adjusted.

Affordability of Rental Housing

According to the 2012-2016 ~~American Community Survey~~ ACS, 19 percent of detached one-unit structures are renter occupied (25,449 housing units). In 2016, the City analyzed the affordability of unsubsidized occupied rental housing based on surveys conducted by Dupre + Scott Apartment Advisors (Dupre + Scott Apartment Advisors, 2017). The analysis included data on detached single-family homes operated as rental units. Exhibit 4.1-7 summarizes gross rents for single-family rentals and the income levels needed to afford them. According to 2016 Dupre + Scott survey data, median rent for a three-bedroom single-family house was $2,892 per month, which would require a household income of at least 123 percent of ~~area median income (~~AMI~~)~~ to ensure affordability. The 2016 study found that affording a single-family rental at the 25th percentile market-rate rent requires a household income at the 100 percent of AMI level. For households with incomes of 80 percent of AMI, even two- or three-bedroom single-family homes with rents at the 25th percentile, a common marker of rent for the least expensive homes on the market, are out of reach. Exhibit 4.1-8 shows the share of single-family rentals by number of units at each affordability level.

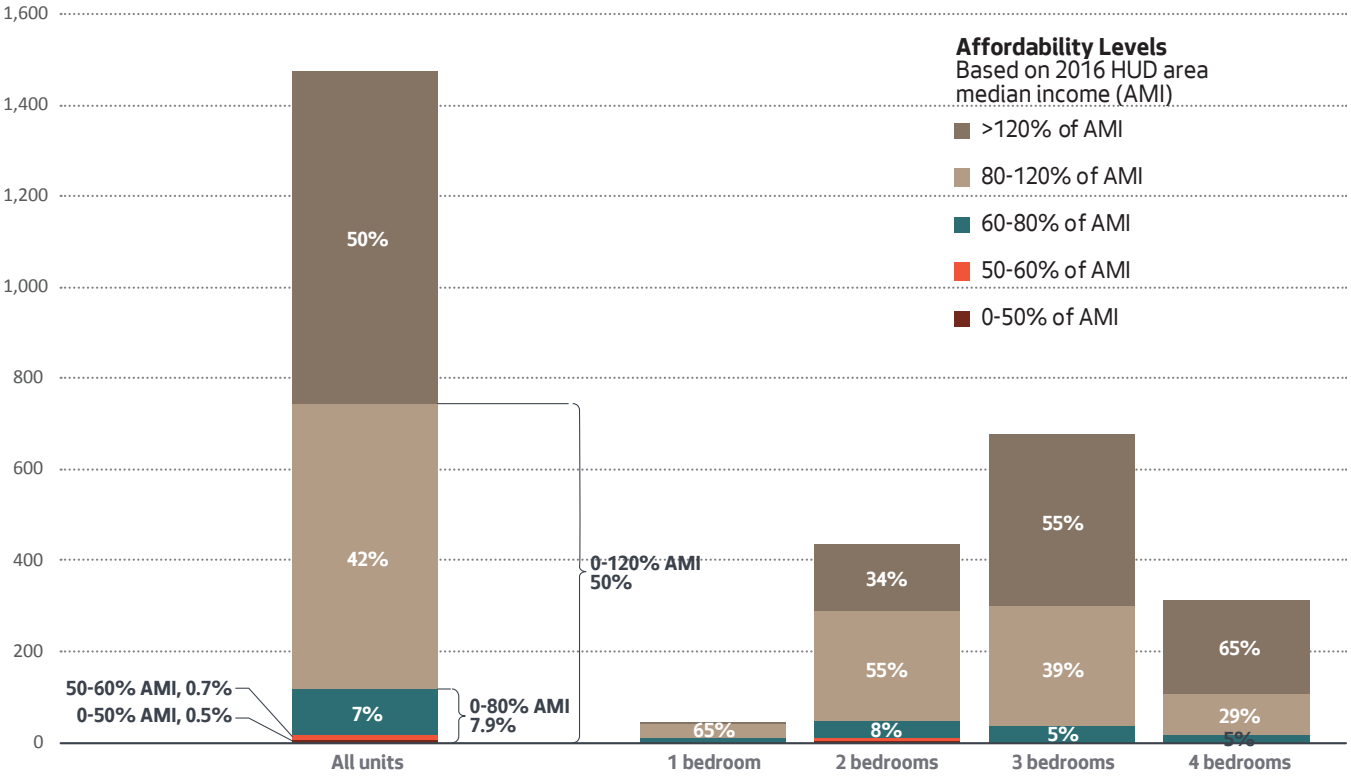
Exhibit 4.1-7 Cost of a Single-Family Rental and Required Income Levels
Source: City of Seattle analysis of custom data tabulations from Dupre + Scott Apartment Advisors.

Single-family rentals	1 BR	2 BR	3 BR	4 BR	Weighted aggregate (all unit sizes)
Average rent	$1,607	$2,237	$2,975	$3,620	
	95% of AMI	110% of AMI	127% of AMI	138% of AMI	123% of AMI
Median rent	$1,588	$2,163	$2,892	$3,497	
	94% of AMI	106% of AMI	123% of AMI	133% of AMI	119% of AMI
25th percentile rent	$1,331	$1,749	$2,468	$2,925	
	79% of AMI	86% of AMI	105% of AMI	112% of AMI	100% of AMI

Based on Dupre + Scott 2016 rent survey data for market-rate rental units. Figures reflect rent plus estimated cost of tenant-paid utilities. Small numbers of studios in single-family rentals were omitted to streamline analysis.

Exhibit 4.1-8 Affordability of Unsubsidized Single-Family Rental Units, Overall and by Unit Size (Number of Bedrooms)

Source: City of Seattle analysis of custom data tabulations from Dupre + Scott Apartment Advisors.



DISPLACEMENT

In the context of housing, displacement refers to a process wherein households are compelled to move from their homes involuntarily due to the termination of their lease or rising housing costs or another factor. This is different than voluntarily choosing to move. There are three different kinds of displacement occurring in Seattle: physical, economic, and cultural. Physical displacement is the result of eviction, acquisition, rehabilitation, or demolition of property, or the expiration of covenants on rent- or income-restricted housing. Economic displacement occurs when residents can no longer afford rising rents or costs of homeownership like property taxes. Cultural displacement occurs when residents are compelled to move because the people and institutions that make up their cultural community have left the area.

Not all households are equally vulnerable to displacement. Renters are at higher risk of physical displacement than homeowners. Marginalized populations (including people of color, low-income people, immigrants and refugees, and English language learners) are also more vulnerable

to displacement. To better understand which areas of Seattle are at higher risk of displacement, the Seattle 2035 Growth and Equity Analysis created a displacement risk index (Seattle 2016). This index combines data about vulnerability, development potential, and market conditions to illustrate variation in displacement risk across the city. We use the Seattle 2035 displacement risk index to contextualize the results of our analysis and how the alternatives may affect physical, economic, and cultural displacement.

Physical Displacement

Various circumstances can cause physical displacement, including demolition of existing buildings to enable the construction of new buildings on the same site. Another cause is rehabilitation of existing buildings; strong demand for housing can encourage property owners to renovate their buildings to attract higher-income tenants. Single-family houses that are rehabilitated, expanded, or demolished and replaced with larger houses tend to result in more expensive units and do not increase the supply of housing. To evaluate potential impacts on physical displacement, we consider whether the alternatives would change the likelihood of various development outcomes, particularly demolishing existing homes.

Economic Displacement

Regulatory changes that affect underlying real-estate economics in the study area can change the likelihood of economic displacement. For example, regulations limiting the number of housing units in a particular area can increase competition for homes and put upward pressure on the cost of housing, making it difficult for residents to continue to afford to live there. To evaluate economic displacement, we consider how the alternatives could affect the cost and availability of housing in the study area.

Cultural Displacement

Cultural displacement occurs when people choose to move because their neighbors and culturally related businesses and institutions have left the area. As described in Chapter 3, people of color, immigrants, and refugees have faced additional barriers to accessing housing in Seattle, particularly in parts of the study area. Challenges to accessing housing due to segregation and discrimination often mirror challenges to accessing other opportunities, such as job and educational opportunities

for these communities. As a result, social networks within racial and ethnic communities may take on a greater importance than for other populations. For communities of color, immigrants, and refugees, social cohesion often plays a larger role in location decisions than it does for other populations. Since cultural anchors, gathering spaces, arts organizations, businesses, and religious institutions may not be widespread elsewhere in the region, the presence of these cultural assets can often have added importance to racial or ethnic minority households in their location decisions.

Measuring cultural displacement is difficult since no systematic survey of households exists that asks why they have chosen to relocate. Some indicators of cultural displacement can be measured at the neighborhood scale. Recall that Exhibit 3-8 shows that some neighborhoods, including Central Area, Beacon Hill, and Columbia City, experienced a substantial decline in the percentage share of racial and ethnic minorities between 1990 and 2010. Because the study area includes only single-family zoning, we do not anticipate direct adverse impacts on cultural institutions, organizations, or businesses, as the proposed Land Use Code changes would not affect those types of land uses. It is possible that policies increasing ADU production could allow more households to create ADUs for rental income or to accommodate changing household sizes and needs, though overall construction costs likely limit this effect.

4.1.2 Impacts

METHODOLOGY

Evaluating the potential housing and socioeconomic effects of the alternatives requires a holistic analysis of development options and housing choices in single-family zones. As described in detail in Appendix A, we used two distinct approaches to analyze the potential effects of the alternatives on housing and socioeconomic conditions in the study area. These two approaches analyze potential effects in different but complementary ways.

The owner of a single-family house in the study area has a number of choices for what to do with it. These choices include whether to sell, rent, or live in the house, as well as whether or not to rebuild, remodel, or add an ADU. The outcome for any given property in any given year depends on the owner's goals, financial resources, and preferences. A hypothetical profit-maximizing developer will seek to maximize return on investment,

but that is not true for all property owners. Homeowners can (and do) make decisions that are unrelated to maximizing the value of their property. The highest and best use of a house might be to tear it down and rebuild a much larger house, but if the homeowner prefers the small house, no change in use would occur until they decide to sell. Building an ADU and renting it out may be most profitable for a homeowner but ruled out because of a preference for privacy or disinterest in becoming a landlord. Even when a property owner does wish to add an ADU or redevelop their site, they may lack the financial capital to do so.

~~Highest and Best Use Analysis~~

To analyze how alternatives might affect underlying development conditions in the study area, we used highest and best use analysis. This analysis considers how the potential Land Use Code changes could alter the highest-value use of a property. In other words, this approach evaluates how the proposed alternatives would affect underlying development economics for lots in Seattle's single-family zones. This analysis identifies the most economically productive use for a particular site, but it does not necessarily predict what will actually happen on a site. This is because it does not consider the motivation and preferences of individual property owners or market demand for a particular real estate product (e.g., an AADU or a single-family house). Thus, highest and best use can tell us how the alternatives could change the underlying real-estate economics in the study area, but it does not predict specific development outcomes for a given parcel or tell us how the alternatives could affect overall development rates in the study area.

Highest and Best Use Analysis

A highest and best use analysis evaluates the reasonable use of a property based on what is physically possible, is financially feasible, and results in the highest present value.

Therefore, to arrive at estimates of ADU production for each alternative, we also developed a forecast model that examines where ADU development has occurred in the past and estimates the effect of policy changes in each alternative.

Exhibit 4.1-9 shows how we use the two approaches together to analyze potential housing and socioeconomic effects. Appendix A provides more detail about the methodology used for each analytical approach.

Exhibit 4.1-9 Analytical Approach

Which analysis helps us answer each research question?	Highest and Best Use	Forecast
ADU production. How many ADUs could be created given the proposed policy changes in each alternative?		yes
Development economics. How might the proposed changes alter the underlying real-estate economics in single-family zones? Could the proposed changes make property in single-family zones more attractive as rental investments rather than as owner-occupied assets?	yes	

Highest and Best Use: Pro Forma Analysis

To analyze the potential impacts of the alternatives on highest and best use in the study area, we used pro forma analysis. Pro forma models are common decision-making tools used by real estate developers and policymakers. Our pro forma model used inputs and assumptions about current market conditions, parcel characteristics, and land use scenarios to calculate a residual land value for more than ~~6,000~~ 8,000 possible development outcomes. By comparing residual land values, we can estimate the highest and best use. Ultimately, the pro forma model allows us to analyze the following questions:

1. What can you build on a lot in a single-family zone?
2. After it is built, what can you do with it? Sell it? Rent it?
3. Based on market conditions, how much rental or sales income can you expect?
4. Which combination of steps 1-3 maximizes the profitability of the project?

Although theoretically possible to use pro formas to analyze highest and best use for every parcel in the study area (by applying specific parcel characteristics and more localized rent data), we used instead a typology approach to facilitate interpretation of the results and to highlight some key differentiators related to ADU production. The typology approach — applying three different neighborhood profiles (higher, medium, and lower price) and four different parcel types — allowed us to analyze the relative profitability of various development outcomes on parcels of different sizes and in different parts of the city without analyzing every parcel individually.

Residual Land Value

Residual land value is a useful metric for comparing the relative feasibility of different development projects. Residual land value is the developer's land budget for a particular project, after taking into account expected costs (including developer profit) and revenues. A higher residual land value for a particular use indicates that the developer can afford to pay more for the land. Whichever developer has the highest residual land value will outbid the others.

To account for varying market conditions across the study area, we categorized every neighborhood in Seattle as either a higher-, medium-, or lower-price neighborhood. Neighborhoods were classified based on a combination of single-family rental rates and single-family for-sale housing prices. Note that these are comparative labels that simply reflect the relative cost of housing in Seattle neighborhoods. From a broader perspective, housing costs in all Seattle neighborhoods tend to be higher than other places in the county and region, and nationally Seattle's housing market is more expensive than most other U.S. cities. Further, housing costs in neighborhoods categorized here as "lower-price" may in fact be rising faster than elsewhere, over time making housing in those areas increasingly similar to medium- and higher-price neighborhoods. Exhibit 4.1-10 outlines the classifications for neighborhoods in Seattle.

Exhibit 4.1-10 Neighborhood Profile Classifications

Neighborhood	Sales price category	Rent category	Overall profile
Madison/Leschi	Higher	Higher	Higher
Queen Anne	Higher	Higher	Higher
Capitol Hill/Eastlake	Higher	Higher	Higher
Magnolia	Higher	Medium	Medium
University	Higher	Medium	Medium
Greenlake/Wallingford	Medium	Higher	Medium
Central	Medium	Higher	Medium
Ballard	Medium	Medium	Medium
Beacon Hill	Lower	Medium	Medium
West Seattle	Medium	Lower	Medium
North Seattle	Lower	Lower	Lower
Rainier Valley	Lower	Lower	Lower
White Center	Lower	Lower	Lower

The characteristics of each parcel set upper bounds on what can be built. Some characteristics are permanent (e.g., size and shape of the parcel) while others can change over time (e.g., size and shape of existing structures). To account for varying parcel characteristics, we developed

four parcel types, each defined by lot size, lot shape, and size of current structures. Exhibit 4.1-11 outlines the assumptions for each parcel type.

Exhibit 4.1-11 Parcel Typology

	Parcel type			
	A	**B**	**C**	**D**
Lot size (square feet)	3,200	3,750	5,000	7,200
Lot width (feet)	32	31	50	60
Lot depth (feet)	100	120	100	120
Footprint of main house (square feet)	940	980	1,050	1,150
Living space in main house (square feet)	1,500	1,600	1,800	1,900
Footprint of accessory structures (square feet)	250	250	250	350
Size of daylight basement (if present) (square feet)	500	600	700	800
Number of parking spaces	2	2	2	2
Implications of assumptions				
Current lot coverage	37%	33%	26%	21%
Maximum ~~DADU~~ footprint available for additional structures (e.g., a DADU) when keeping existing main house (square feet)	540	583	700	1,370
Under which alternatives are AADUs allowed?	All alternatives	All alternatives	All alternatives	All alternatives
Under which alternatives are DADUs allowed?	2, 3, Preferred	2, 3, Preferred	All alternatives	All alternatives

Owners of lots in single-family zones have several different options in terms of altering their property. They could tear down an existing structure and rebuild that structure (with or without an ADU). They could keep an existing house and do nothing, remodel, or add an ADU. To evaluate highest and best use in single-family zones, we analyzed the financial performance of 44 legally permissible development outcomes. These outcomes can be categorized into two main types: outcomes that demolish the existing house and outcomes that retain the existing house.

For each development outcome, there are options for what to do with the property — sell it or rent it? A house can be sold, rented to long-term tenants, or used as a short-term rental. Each option is associated with different revenues and costs that determine which use is ultimately most profitable. For a profit-maximizing owner, this decision will be influenced by the relative strengths of the rental and for-sale markets.

To analyze the relative profitability of the rental and for-sale markets in Seattle today, the model considered four valuation options for each development outcome:

- All units (including any ADUs) are valued based on total for-sale price
- All units are used as long-term rentals (including the main house)[1]
- The main house is valued based on its for-sale price, and ADUs are used as long-term rentals
- The main house is valued based on its for-sale price, and one ADU is used as a short-term rental

The pro forma model reflects the current Land Use Code regulations for development in single-family zones, as well as proposed changes under Alternatives 2 and 3 and the Preferred Alternative. Zoning inputs included information about required setbacks, maximum lot and rear yard coverage, required parking spaces, allowed number of ADUs, allowed size of ADUs, and owner-occupancy requirements.

The pro forma model also considered development and operating costs, including the construction costs of building an AADU or a DADU, permitting fees, architectural and engineering fees, developer fees, and any investment returns associated with rental fees. The Final EIS incorporates anticipated DADU cost reductions in all alternatives to reflect possible separate City efforts. Because these efforts are entirely independent of the proposed Land Use Code changes, we apply them across all alternatives.

Finally, we put all the pieces together and modeled each combination of inputs (parcel typology, alternative, neighborhood profile, valuation) for each development outcome. This resulted in residual land value outputs that could be compared across valuation options and alternatives.

1 For Alternatives 1 and 3, which would maintain the owner occupancy requirement, this option was used only to evaluate development outcomes that had a main house and no ADUs.

Forecast Model

Owners in the study area have multiple options for developing their properties. To arrive at a reasonable forecast of what is likely to happen in the future under each alternative, we needed a methodology that accounted for historical rates of ADU production and examined how policy changes could affect them. While the pro forma analysis helped us understand the most profitable outcomes, it did not necessarily reflect the real-world decisions that people make. People build ADUs for several reasons unrelated to profit, including to gain additional living space or to house a family member. Therefore, we developed a forecast model that allows us to analyze past decisions and trends to determine the factors that affect the likelihood that a parcel will add an ADU and to estimate the potential impact of specific policy changes. By adjusting the input variables in the model, we can forecast the potential impacts of Alternatives 2 and 3 and the Preferred Alternative on the number of ADUs built. We also considered how many parcels would have no change, how many homes would be demolished and rebuilt under each alternative, and how these outcomes might vary by neighborhood and parcel size.

To forecast potential ADU production in each alternative, we used the following process:

1. Analyze historical data on single-family development outcomes.
2. Develop a baseline forecast of 2018-2027 ADU production in Alternative 1 (No Action).
3. Develop forecasts of 2018-2027 ADU production in Alternatives 2 and 3 and the Preferred Alternative.
   - » Update variables in baseline forecast model to account for changes to minimum lot size (Alternatives 2 and 3 and the Preferred Alternative) and FAR (Alternative 3 and the Preferred Alternative ~~only~~).
   - » Evaluate potential number of parcels that would choose to add two ADUs.
   - » Adjust estimates to account for proposed policy changes not reflected in parcel data.

1 Analyze historical data on single-family development outcomes.

First, we used an econometric model to analyze past development events and determine the factors that affect the likelihood that a parcel adds an

ADU or is demolished.[2] We applied this model to all parcels in the study area.

Under current Land Use Code regulations, only owner-occupied properties can add an ADU. This owner-occupancy requirement, which would be removed in Alternative 2 and the Preferred Alternative, restricts the number of properties eligible to add an ADU. To reflect this, we estimated whether each parcel in the study area is owner- or renter-occupied and incorporated that information into the econometric model.

To estimate each parcel's development outcome in a given year, we analyzed King County Assessor's data and City of Seattle permit data for 2010–2017. These sources provided us with parcel characteristics, building characteristics, and information about when properties added ADUs or were redeveloped. We analyzed the effects of the following factors:

- Neighborhood
- Topography
- Square footage of total living space (before and after a teardown, if applicable)
- Age of the home
- Whether the home has a daylight basement
- Number of bedrooms
- Assessed condition of the home
- Whether the lot size allows for a legal DADU
- Total regional employment of the year (PSRC 2015)

The model results indicate that a tradeoff is occurring between adding an ADU and tearing down and rebuilding a house. This suggests that homeowners seeking to expand their living space are deciding between tearing down the home or adding an ADU.

2 Develop baseline forecast of ADU production in Alternative 1 (No Action).

Step 1 above evaluates all parcel-level decisions that occurred from 2010 through 2017. To estimate what decisions will be made over the next 10 years (from 2018 to 2027) under Alternative 1, we must forecast how the underlying variables will change during that period, including changes in

2 Specifically, we used a multinomial logit model to estimate ADU production. A multinomial logit model is a type of behavioral econometric model. For more information about the model specifications, see Appendix A

the regional economy and the ages of individual homes. We implement this in the model by updating the variables for age of the home and regional total employment and recalculating parcel-level probabilities.

This results in estimates of the probability that each parcel in the study area will either add an AADU, add a DADU, be torn down, or have no change over the forecast period in Alternative 1.

3 Develop forecasts of ADU Production in Alternatives 2 and 3 and the Preferred Alternative.

Estimating the potential effects of Alternatives 2 and 3 and the Preferred Alternative over 2018-2027 requires further adjustments to the parcel-level variables in the forecast model. Where a proposed policy change modifies a variable in the model, we update that value in the data to reflect the change and recalculate new probabilities for each alternative. Based on the proposed Land Use Code changes under consideration, we manipulate two elements in the behavioral model: 1) minimum lot size requirement for adding a DADU and 2) maximum FAR for new construction. Then we re-run the model with the adjusted inputs to estimate the probability of each development outcome. For Alternative 2 and the Preferred Alternative, we also modify the universe of parcels that are eligible to add an ADU by applying the ADU forecast model to all parcels (including renter-occupied parcels).

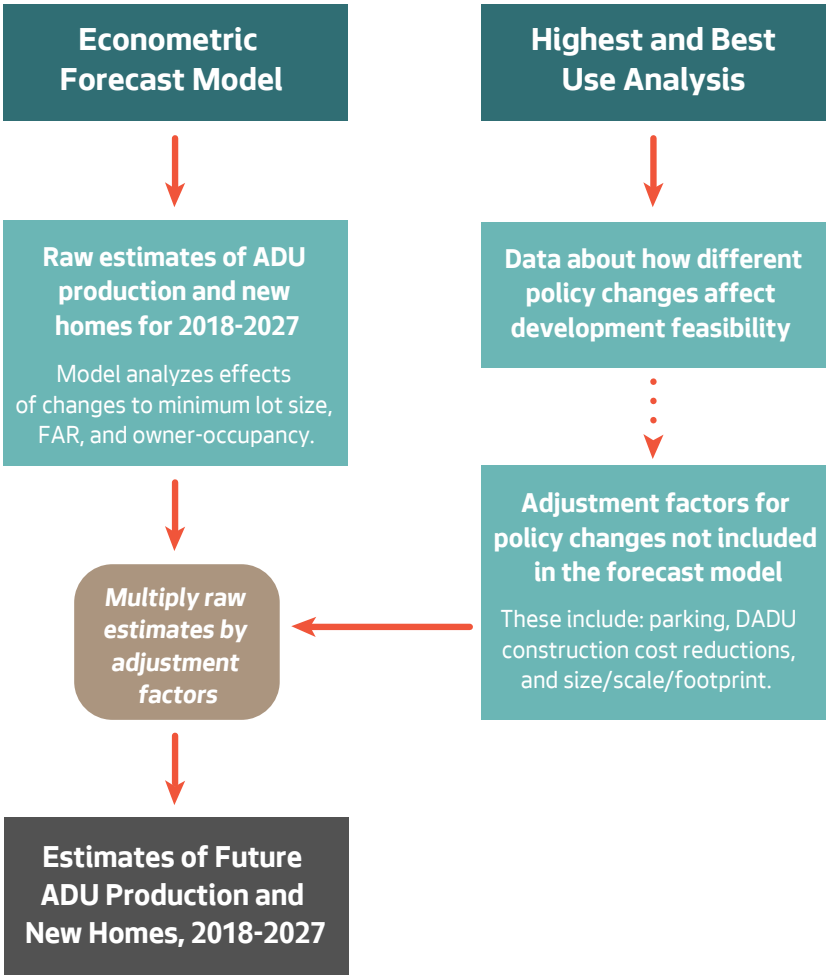
However, the forecast model described above cannot predict the probability of events that do not appear in the historical dataset — namely, the construction of two ADUs on one lot. To estimate the number of lots that might have two ADUs under Alternatives 2 and 3 and the Preferred Alternative, we use a different approach that estimates the total demand for ADUs, without constraining parcels to the variations that are currently legal. To do this, we use the same data and variables from the forecast model[3] used for Steps 1 and 2 above but instead apply a count data model. By combining the results of the two models, we estimate the probability that each parcel will add exactly one AADU, add exactly one DADU, add two ADUs, be torn down, or have no change for the 2018-2027 forecast period.

Finally, we adjust the modeled estimates of ADU production to account for the fact that some of the proposed changes in Alternatives 2 and 3 and the Preferred Alternative are not reflected in the available parcel-

3 For more details about model specification, see Appendix A.

level data. These include changes to ~~owner occupancy,~~ maximum household size, parking requirements, maximum DADU size, and DADU construction cost. To the extent that any of these policy proposals affect the likelihood that a parcel has a particular development outcome, those effects are not captured in the forecast model. To compensate for this limitation and to establish a reasonable upper bound for the potential number of ADUs created, we adjust the modeled estimates based on the results from the pro forma analysis. This accounts for the potential impact of policy changes that we cannot model while still using best available information on the potential impact of those policy changes that we can model. Exhibit 4.1-12 shows this process.

Exhibit 4.1-12 Process for Estimating ADU Production and New Single-Family Development



New in the FEIS

Exhibit 4.1-12 is new in the Final EIS.

MODEL RESULTS

Pro Forma Results

The sections below summarize the results most pertinent to our analysis of impacts. Appendix A shows the full results of the pro forma analysis.

Highest and Best Use

Exhibit 4.1-13 presents the estimates of highest and best use for each combination of parcel type, neighborhood profile, and alternative. The highest residential land value for each combination indicates the development outcome where a developer can afford to pay the most for land — in other words, where the combination of costs and revenues yields the greatest profit. In interpreting, it is important to note that these results do not account for the relative feasibility between different outcomes. In some cases, the second-most feasible option may have a residual land value very similar to the most feasible option, which should be taken into consideration when interpreting results. See Appendix A for additional discussion and more detailed results.

Alternative 1 (No Action). For smaller parcels (A, B, C) in higher- and medium-price neighborhoods, the highest residual land value would result from demolishing the existing structure and rebuilding the largest possible house (i.e., McMansion). For larger parcels (D), and for all parcel sizes in lower-price neighborhoods, the highest residual land value would result from keeping the existing house and adding an AADU.

Alternative 2. Compared to Alternative 1 (No Action), fewer parcel types would have a highest and best use of building a new, very large house. ~~The most feasible outcomes in Alternative 2 would be mostly the same as in Alternative 1 (No Action), with a few exceptions.~~ In higher-price neighborhoods, the highest and best uses for larger parcel sizes (C and D) could shift from demolishing the existing house and rebuilding the largest possible house to keeping the house and adding two ADUs. ~~In addition, the highest and best use of large parcels (D) in medium-price neighborhoods might change from keeping the existing house and adding one ADU to keeping the house and adding two ADUs.~~ In no combination of parcel type and neighborhood is tearing down and rebuilding the most feasible outcome.

A major policy change from Alternative 1 (No Action) to Alternative 2 is that a single lot could have two ADUs. Our analysis indicates that this outcome ~~would be generally more feasible~~ is the most feasible

outcome for nearly all parcel types and neighborhoods, especially on larger parcels in higher- and medium-price neighborhoods. In lower-price neighborhoods, the residual land value of two-ADU outcomes ~~would be about 22 percent less than the most feasible outcome overall~~ is very similar to the residual land value of AADU outcomes.

Alternative 3. Compared to Alternative 1 (No Action), fewer parcel types would have a highest and best use of building a new, very large house. Similar to Alternative 2, the most feasible outcome for most parcel types is to retain the existing house and add two ADUs. The exception is small parcels (A) in higher-price neighborhoods, for which the most feasible option remains demolishing the existing house and rebuilding a new, very large house.

Preferred Alternative. Compared to Alternative 1 (No Action), fewer parcel types would have a highest and best use of building a new, very large house. The most feasible outcomes are the same as Alternative 2. Consistent with Alternatives 1, 2, and 3, outcomes where an existing house is torn down and rebuilt with one or more ADUs generally have the lowest residual land value. Compared to Alternative 1 (No Action), across all neighborhoods the Preferred Alternative increases the relative feasibility of keeping the house and adding one or more ADUs. This increase is the same as in Alternative 2 and larger than in Alternative 3.

Valuation Options

For any given development outcome, the property owner could decide to rent or sell the main house and any ADUs on the lot. For a profit-maximizing owner, this decision will be influenced by the relative strengths of the rental and for-sale markets.

Alternative 1 (No Action). For all neighborhoods and parcel sizes, a house (with no ADUs) operated as a long-term rental would be the least feasible option. Treating the property's entire floor area (including any ADUs) as one large, for-sale unit would result in the highest residual land value for most scenarios, except for small parcels in lower-price neighborhoods and large parcels in medium-price neighborhoods.

These results indicate that, in current market conditions, single-family houses and ADUs would be generally more valuable on the for-sale market than as rental properties. In other words, valuing an ADU as extra square footage on a house for sale may result in a higher residual land value than valuing the ADU based on its achievable rental income.

Alternative 2. Only ~~one~~ two parcel sizes showed a change in the most profitable valuation option between Alternative 1 (No Action) and Alternative 2: Type A and D parcels in medium-price neighborhoods. Treating the entire property (including any ADUs) as one large, for-sale unit would continue to be the most profitable outcome for most scenarios, especially in higher-price neighborhoods. Like Alternative 1 (No Action), renting all units would be the least profitable valuation option for all combinations of neighborhood and parcel size. However, our analysis indicated that the relative feasibility of renting (as opposed to selling) may increase between Alternatives 1 and 2 due to the removal of the owner-occupancy requirement for ADUs. In higher- and medium-price neighborhoods, the estimated residual land value of renting would increase ~~21–24~~ 44-55 percent. In lower-price neighborhoods, the estimated increase would be ~~11–14~~ 26-36 percent.

Alternative 3. Like Alternative 2, ~~O~~only two parcel sizes showed a change in the most profitable valuation option between Alternative 1 (No Action) and Alternative 3: Type A and D parcels in medium-price neighborhoods. Treating the entire property (including any ADUs) as one large, for-sale unit would continue to be the most profitable outcome for most scenarios, especially in higher-price neighborhoods. Like Alternatives 1 and 2, renting all units would be the least profitable valuation option for all combinations of neighborhood and parcel size. The estimated feasibility of renting under Alternative 3 would be similar to Alternative 1 (No Action) and lower than Alternative 2.

Preferred Alternative. Like Alternatives 2 and 3, two parcel sizes showed a change in the most profitable valuation option between Alternative 1 (No Action) and the Preferred Alternative: Type A and D parcels in medium-price neighborhoods. Treating the entire property (including any ADUs) as one large, for-sale unit would continue to be the most profitable outcome for most scenarios, especially in higher-price neighborhoods. Like Alternative 1 (No Action), renting all units would be the least profitable valuation option for all combinations of neighborhood and parcel size. However, our analysis indicated that, like Alternative 2, the relative feasibility of renting (as opposed to selling) may increase between Alternative 1 (No Action) and the Preferred Alternative due to the removal of the owner-occupancy requirement.

Remodel or Teardown and Rebuild?

For any given development outcome, the owner could decide to tear down and rebuild (new construction) or retain the existing house. The pro forma analysis lets us evaluate the relative feasibility of these two options.

Alternative 1 (No Action). In all neighborhood profiles, new construction would be relatively more feasible on small- and medium- sized parcels than on large parcels. In addition, new construction would be more feasible in higher- and medium-price neighborhoods than in lower-price neighborhoods.

Alternative 2. For ~~higher- and medium-price~~ all neighborhoods, Alternative 2 could increase the relative feasibility of keeping the existing house compared to Alternative 1 (No Action). This change would be greatest for larger parcels. Lower-price neighborhoods would see ~~only~~ a ~~minimal~~ smaller (~~<0.2~~ <5 percent) change in the feasibility of keeping the existing house between Alternative 1 (No Action) and Alternative 2.

Alternative 3. Like Alternative 2, Alternative 3 could increase the relative feasibility of keeping the existing house compared to Alternative 1 (No Action). This change would be greatest for larger parcels in higher- and medium-price neighborhoods. Lower-price neighborhoods would see a ~~minimal~~ smaller change in the feasibility of teardowns between Alternative 1 (No Action) and Alternative 3.

Preferred Alternative. Like Alternatives 2 and 3, the Preferred Alternative would increase the feasibility compared to Alternative 1 (No Action) of preserving the existing house rather than tearing it down and rebuilding a large new house. This change would be greatest for larger parcels. Lower-price neighborhoods would see only a minimal change in the feasibility of teardowns between Alternative 1 (No Action) and the Preferred Alternative.

Estimates of Highest and Best Use

Parcel type	Alternative	Neighborhood price		
		Higher	Medium	Lower
A	Alternative 1	Build new house, as large as possible, no ADUs	Build new house, as large as possible, no ADUs	Keep house, convert basement to AADU, long-term rental
	Alternative 2	Build new house, as large as possible, no ADUs	Build new house, as large as possible, no ADUs	Keep house, convert basement to AADU, long-term rental
	Alternative 3	Build new house, as large as possible, no ADUs	Build new house, as large as possible, no ADUs	Keep house, convert basement to AADU, long-term rental
B	Alternative 1	Build new house, as large as possible, no ADUs	Build new house, as large as possible, no ADUs	Keep house, convert basement to AADU, long-term rental
	Alternative 2	Build new house, as large as possible, no ADUs	Build new house, as large as possible, no ADUs	Keep house, convert basement to AADU, long-term rental
	Alternative 3	Build new house, as large as possible, no ADUs	Build new house, as large as possible, no ADUs	Keep house, convert basement to AADU, long-term rental
C	Alternative 1	Build new house, as large as possible, no ADUs	Build new house, as large as possible, no ADUs	Keep house, convert basement to AADU
	Alternative 2	Keep house, convert basement to AADU, and add DADU	Build new house, as large as possible, no ADUs	Keep house, convert basement to AADU
	Alternative 3	Keep house, convert basement to AADU and add DADU	Keep house, convert basement to AADU and add DADU	Keep house, convert basement to AADU
D	Alternative 1	Keep house, convert basement to AADU	Keep house, convert basement to AADU, long-term rental	Keep house, convert basement to AADU
	Alternative 2	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU
	Alternative 3	Keep house, convert basement to AADU and add DADU	Keep house, convert basement to AADU and add DADU	Keep house, convert basement to AADU

Highest residual land value results from valuing the parcel based on the for-sale price of the house and long-term rental income from the ADU.
Highest residual land value results from valuing the parcel based on the combined for-sale price of the main house and ADU(s).

Exhibit 4.1-13 Estimates of Highest and Best Use

Parcel type	Alternative	Neighborhood price		
		Higher	Medium	Lower
A	**Alt 1 (No Action)**	Build new house, as large as possible, no ADUs	Build new house, as large as possible, no ADUs	Keep house, convert basement to AADU, long-term rental
	Alt 2	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, add DADU, long-term rental	Keep house, convert basement to AADU, add DADU, long-term rental
	Alt 3	Build new house, as large as possible, no ADUs	Keep house, convert basement to AADU, add DADU, long-term rental	Keep house, convert basement to AADU, add DADU, long-term rental
	Preferred Alternative	Build new house, as large as possible, no ADUs	Keep house, convert basement to AADU, add DADU, long-term rental	Keep house, convert basement to AADU, add DADU, long-term rental
B	**Alt 1 (No Action)**	Build new house, as large as possible, no ADUs	Build new house, as large as possible, no ADUs	Keep house, convert basement to AADU, long-term rental
	Alt 2	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, add DADU, long-term rental
	Alt 3	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, long-term rental
	Preferred Alternative	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, long-term rental
C	**Alt 1 (No Action)**	Build new house, as large as possible, no ADUs	Build new house, as large as possible, no ADUs	Keep house, convert basement to AADU
	Alt 2	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU
	Alt 3	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU
	Preferred Alternative	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU
D	**Alt 1 (No Action)**	Keep house, convert basement to AADU	Keep house, convert basement to AADU, long-term rental	Keep house, convert basement to AADU
	Alt 2	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU
	Alt 3	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU
	Preferred Alternative	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU	Keep house, convert basement to AADU, and add DADU

Highest residual land value results from valuing the parcel based on the for-sale price of the house and long-term rental income from the ADU.

Highest residual land value results from valuing the parcel based on the combined for-sale price of the main house and ADU(s).

New in the FEIS Exhibit 4.1-13 is updated in the Final EIS.

Forecast of ADU Production

Using the methods described above, we arrive at estimates of ADU production and single-family new construction for 2018-2027. As noted, the forecast model cannot account for all proposed policy changes. To account for those un-modeled policy changes and arrive at a reasonable upper-bounds estimate of ADU production, we apply the percentage increases shown in Exhibit 4.1-14 as adjustment factors to the modeled estimates ~~as adjustment factors~~. In response to comments received on the Draft EIS, we increased the adjustment factors overall, and we present the specific adjustment factors for each unmodeled policy change in Exhibit A-46 of Appendix A.

Exhibit 4.1-14 Total Assumed Percentage Increases in Modeled Number of Events ue to Policy Changes Not Accounted for in Model

	Alternative 1 (No Action)	Alternative 2	Alternative 3	Preferred Alternative
One AADU	0%	~~5%~~ 10%	~~2%~~ 10%	10%
One DADU	20%	~~15%~~ 33%	~~10%~~ 33%	39%
Two ADUs	n/a	~~30%~~ 58%	~~25%~~ 45%	64%
Teardown	0%	0%	0%	0%

We chose these adjustment factors based on review of the highest and best use analysis results. Appendix A provides more detail about the rationale for each adjustment. In general, we chose higher adjustments than indicated by the results of the highest and best use analysis alone in order to arrive at a reasonable upper-bounds estimate for ADU production.

Below we summarize the results most pertinent to the impacts analysis. Appendix A presents the full results of the forecast modeling. The results presented in Exhibit 4.1-15 indicate that ~~both Alternatives 2 and 3~~ all action alternatives would increase the production of ADUs citywide. The results show that about ~~1,890~~ 1,970 ADUs would be created under Alternative 1 (No Action) between 2018 and 2027. In comparison, we estimate that Alternative 2 would result in about ~~3,330~~ 4,280 ADUs over the same 10-year period, ~~and~~ Alternative 3 would result in about ~~3,100~~

3,400 ADUs, and the Preferred Alternative would result in about 4,430 ADUs.

We also find that ~~both~~ Alternatives 2 and 3 and the Preferred Alternative are likely to reduce the number of teardowns. These results reflect~~ed~~ the finding from the production model that, historically, households in Seattle have traded off between adding ADUs and demolishing and rebuilding. The model predicted that allowing DADUs on smaller lots (as proposed in Alternative 2 and 3 and the Preferred Alternative) would increase ADU production on those lots and, at the same time, decrease teardowns. ~~Alternative 3~~ The Preferred Alternative would have the largest potential reduction in teardowns, with an estimated ~~16~~ 22-percent decrease compared to Alternative 1 (No Action). The larger reduction in teardowns under ~~Alternative 3~~ the Preferred Alternative would be due to the proposed FAR limit for new construction.

Exhibit 4.1-15 Estimated Production of ADUs and New Homes, 2018–2027, by Neighborhood Profile

					Percentage change from Alternative 1		
	Alternative 1	**Alternative 2**	**Alternative 3**	**Preferred Alternative**	**Alternative 2**	**Alternative 3**	**Preferred Alternative**
Estimated number of ADUs built							
Higher	~~235~~ 220	~~460~~ 560	~~400~~ 450	580	~~96%~~ 155%	~~70%~~ 105%	164%
Medium	~~1,020~~ 1,000	~~1,880~~ 2,360	~~1,750~~ 1,870	2,450	~~84%~~ 136%	~~72%~~ 87%	145%
Lower	~~635~~ 650	~~990~~ 1,260	~~950~~ 980	1,300	~~56%~~ 94%	~~50%~~ 51%	100%
Estimated number of parcels that build at least one ADU							
Higher	~~235~~ 220	~~330~~ 470	~~320~~ 380	490	~~40%~~ 114%	~~36%~~ 73%	123%
Medium	~~1,020~~ 1,000	~~1,365~~ 2,010	~~1,310~~ 1,580	2,080	~~34%~~ 101%	~~28%~~ 58%	108%
Lower	~~635~~ 650	~~755~~ 1,110	~~725~~ 860	1,140	~~19%~~ 71%	~~14%~~ 32%	75%
Percent of study area parcels that build at least one ADU							
Higher	~~1.9%~~ 2.0%	~~2.7%~~ 4.3%	~~2.6%~~ 3.4%	4.4%	~~40%~~ 114%	~~36%~~ 73%	123%
Medium	~~1.6%~~ 1.7%	~~2.1%~~ 3.4%	~~2.0%~~ 2.6%	3.5%	~~34%~~ 101%	~~28%~~ 58%	108%
Lower	~~1.4%~~ 1.6%	~~1.7%~~ 2.7%	~~1.6%~~ 2.1%	2.8%	~~19%~~ 71%	~~14%~~ 32%	75%
Percent of study area parcels with teardowns							
Higher	~~2.9%~~ 2.5%	~~2.7%~~ 2.1%	~~2.6%~~ 1.6%	1.5%	~~-9%~~ -15%	~~-31%~~ -35%	-38%
Medium	~~2.2%~~ 1.9%	~~2.1%~~ 1.6%	~~2.0%~~ 1.5%	1.4%	~~-7%~~ -14%	~~-18%~~ -20%	-25%
Lower	~~1.8%~~ 1.5%	~~1.7%~~ 1.5%	~~1.6%~~ 1.4%	1.4%	~~-2%~~ -6%	~~-6%~~ -7%	-11%

Note Estimates have been rounded to the nearest 10.

Exhibit 4.1-15 presents the results of the forecast model broken out by neighborhood profile (higher-, medium-, or lower-price). Under Alternative 1 (No Action), baseline rates of ADU production and new construction would be highest in higher-price neighborhoods (where ~~1.9~~ 2.0 percent of lots would add an ADU and ~~2.9~~ 2.5 percent of lots would experience a teardown) compared to ADU production in lower-price neighborhoods (~~1.4~~ 1.6 percent and ~~1.8~~ 1.5 percent, respectively). Medium-price neighborhoods would fall in the middle.

This analysis also indicates that, in ~~Alternatives 2 and 3~~ all action alternatives, higher-price neighborhoods would see the largest potential changes in ADU production, followed by medium-price neighborhoods. Lower-price neighborhoods would see the smallest potential changes in ADU production under ~~either~~ any action alternative. Alternative 2 would ~~nearly~~ more than double the number of ADUs produced in higher-price neighborhoods, a ~~96~~ 155-percent increase relative to Alternative 1 (No Action), while lower-price neighborhoods would experience a ~~more modest~~ smaller but still substantial increase in the number of ADUs (~~56~~ 94 percent).

Likewise, the effect of the FAR limit proposed in Alternative 3 and the Preferred Alternative, which would limit the size of new houses and disincentivize teardowns, would also be greatest in higher-price neighborhoods. In Alternative 3, the estimated number of teardowns in higher-price neighborhoods would decrease ~~31~~ 35 percent relative to Alternative 1 (No Action), but only ~~six~~ seven percent in lower-price neighborhoods.

Similar to Alternatives 2 and 3, the potential effects of the Preferred Alternative on ADU production and new construction would be greatest in higher-price neighborhoods. We estimate that the number of ADUs in higher-price neighborhoods would increase 164 percent compared to Alternative 1 (No Action). Likewise 38 percent fewer single-family houses would be demolished in higher-price neighborhoods under the Preferred Alternative.

IMPACTS ANALYSIS

This section discusses potential impacts of each alternative on housing affordability and displacement.

To evaluate impacts on affordability, we consider the estimated number of ADUs produced between 2018 and 2027 based on our production model. Currently, the number of housing units in Seattle's single-family

zones is relatively stable. This is a result of having few development opportunities in areas that are already built out. People who want to live in these areas have limited options, in terms of both diversity of housing products available and the number of vacant or for-sale units. Expanding the supply of housing in these neighborhoods can reduce the upward bidding pressure for housing that results from product scarcity. Generally, increasing housing supply helps drive up vacancy rates and moderate increases in housing prices. We expect that greater ADU production has a positive effect on affordability by increasing the overall housing supply, and specifically the number of rental housing options available in single-family zones. More availability of rental housing options has a moderating effect on housing price increases.

Changes to size or characteristics of homes can also affect housing affordability in the study area. Larger units tend to be more expensive. Increasing the number of ADUs has the effect of providing smaller, less expensive units in single-family areas. The maximum size of an ADU is 1,000 square feet, compared to the historical average of 1,900 square feet for a detached house in a single-family zone or 3,130 square feet for a typical new detached house.[4] Since teardowns result in new houses, which tend to be large and expensive, higher estimates of teardowns also likely have an adverse impact on affordability.

Decreasing housing costs is the most commonly discussed method of increasing housing affordability, but increasing income can achieve the same effect. For example, a household with an income of $100,000 can afford to pay more for housing than a household with an income of $50,000. An ADU operated as a rental unit may provide a revenue stream that might help people stay in their homes. As of fall 2017, median rent for ADUs listed on Craigslist was $1,400 per month, which might increase a homeowner's annual income by more than $11,000 after accounting for operating expenses. Policies that make it easier or less expensive to build ADUs may also marginally improve affordability for homeowners by providing new income sources, though this may disproportionately benefit those homeowners who have access to credit or other resources available to finance the construction of ADUs.

To evaluate impacts on displacement, we examine the estimated number of homes that would be torn down and the number of expected number ADUs that would be produced under each under each alternative. While

4 3,130 square feet is the median total square footage of single-family houses built 2016-2017 in the study area.

not every teardown means a household was physically displaced — an owner that voluntarily sells their property to capture an increase in value is a different outcome than a renter household forced to move due to rehabilitation or redevelopment — in general we expect more teardowns to indicate a higher likelihood of physical displacement. While economic displacement is more difficult to measure precisely, we expect that, by increasing rental housing options in the study, greater ADU production has a moderating effect on housing prices and thus has a positive effect on economic displacement. We also expect that, in general, greater ADU production could indicate that more households are able to benefit from a new revenue stream that provide stability. However, absent other actions to reduce costs, in all alternatives the overall cost of construction likely limits ADU development to relatively higher-income owners.

Under all alternatives, housing affordability and displacement in the study area would continue to be a concern. Ultimately, housing demand generated by Seattle's strong job market and attractive natural and cultural amenities would continue to lead to competition for a finite number of single-family homes. Seattle's limited land area would also likely continue to contribute to upward pressure on housing costs. Low vacancy rates and tight rental housing inventory would continue to contribute to high rents, especially when demand is fueled by a high-wage workforce.

Impacts of Alternative 1 (No Action)

Under Alternative 1 (No Action), current Land Use Code regulations for development in single-family zones would remain unchanged. We anticipate current trends in ADU production would generally continue. Based on our forecast model, we estimate ~~1,890~~ 1,970 ADUs would be created between 2018 and 2027. Compared to Alternatives 2 and 3 and

the Preferred Alternative, Alternative 1 (No Action) would result in more teardowns, more lots with large new houses, and fewer ADUs overall. The creation of fewer ADUs under Alternative 1 (No Action) compared to ~~both~~ all three action alternatives would result in fewer housing options available in the study area and thus put greater upward pressure on housing prices. The larger number of teardowns under Alternative 1 compared to ~~both~~ the action alternatives also suggests an increased number of larger, more expensive houses.

Impacts of Alternative 2

Affordability

Under Alternative 2, we estimate ~~3,330~~ 4,280 ADUs would be created between 2018 and ~~2017~~ 2027. Compared to Alternative 1 (No Action), the creation of about ~~1,440~~ 2,310 more ADUs in Alternative 2 ~~relative~~ would likely have a slight positive impact on housing affordability. While the affordability of housing would remain a concern and a burden for many Seattle residents, Alternative 2 would increase the number of housing choices available in the study area compared to Alternative 1 (No Action). Although not every new ADU would be renter-occupied (some would be used by the homeowner for additional space), Alternative 2 would likely increase housing supply relative to Alternative 1 (No Action). This would have a positive impact on affordability because the additional housing supply could marginally reduce upward pressure on rents and housing prices.

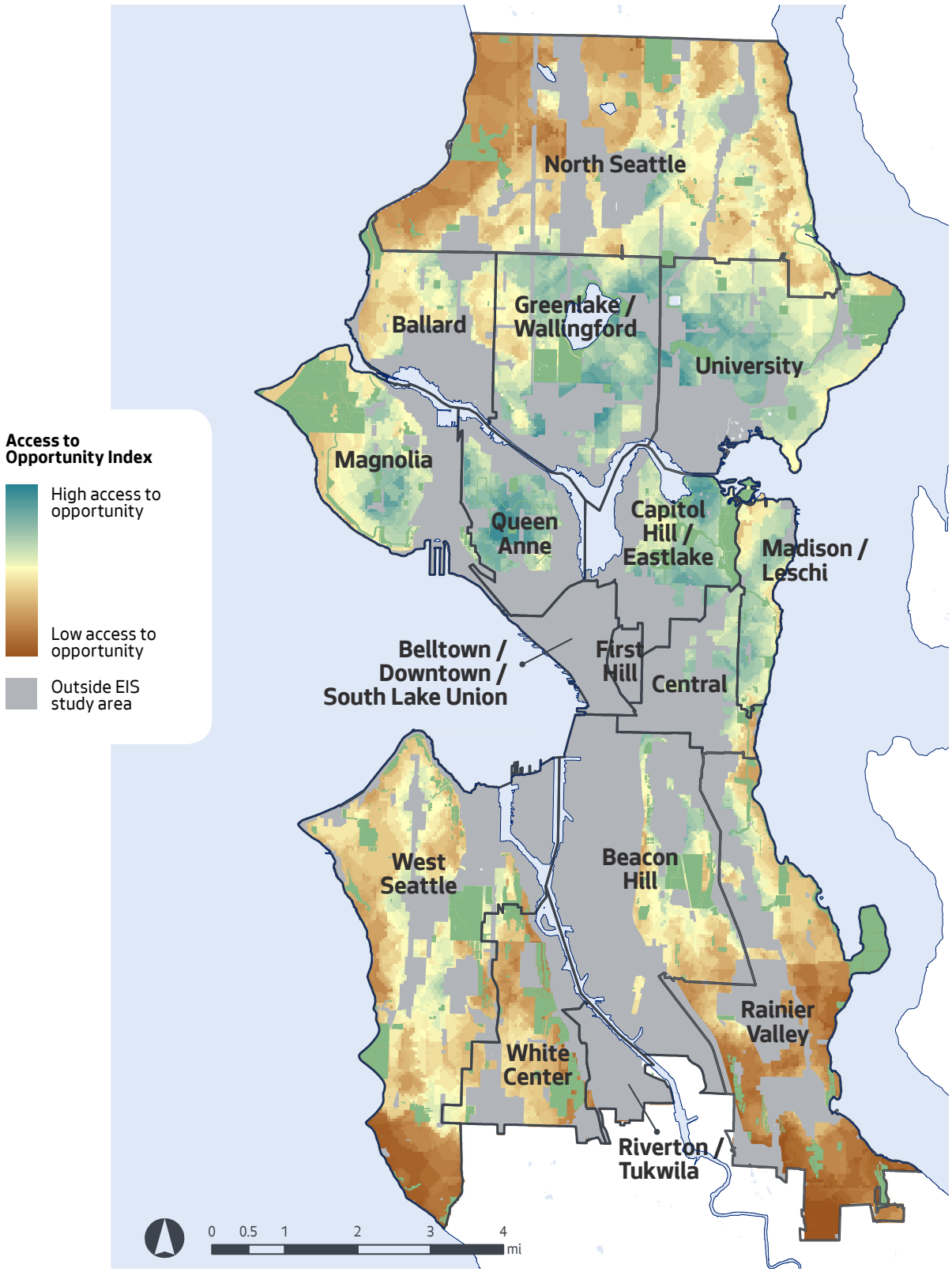
The forecast model also estimates that Alternative 2 would reduce the number of teardowns by about ~~six~~ 11 percent relative to Alternative 1. The reduced number of teardowns would likely have a positive impact on housing affordability (because new houses tend to be larger and more expensive than the homes they replace).

Both the pro forma analysis and the production model find that ADU production rates would likely vary by neighborhood profile, with higher rates of ADU production in more expensive neighborhoods. Further, in higher-price areas where housing is unaffordable to a large share of Seattle residents, Alternative 2 would result in ~~the largest~~ a relative increase of 155 percent in ADU production over Alternative 1 (No Action). As shown in Exhibit 4.1-16, many higher-price neighborhoods are places that offer greater access to opportunity, a measure used in the Seattle 2035 Comprehensive Plan to identify factors that people and communities need to flourish.

Access to Opportunity Index

The 2016 Seattle Growth and Equity Analysis evaluated disparities in the benefits and burdens that marginalized populations like people of color and low-income households tend to experience as a result of growth. The Access to Opportunity Index reflects data on employment, education, and proximity to services, transit, and community resources (Seattle 2016).

Exhibit 4.1-16 Seattle 2035 Access to Opportunity Index
Source: Seattle 2016



A final way of looking at potential effects on the price of housing is to consider estimated changes to the maximum residual land value under each alternative. An increase in the residual land value suggests that developers could afford to pay more for land, and thus that land prices might potentially increase, leading to an eventual increase in housing prices. As shown in Exhibit 4.1-17, the estimated changes in residual land value would vary by lot type and neighborhood cost. ~~In all three neighborhood types (higher-, medium-, and lower-price), residual land value would remain relatively consistent between Alternatives 1 and 2. Some lot types in medium- and higher-price neighborhoods would experience minor increases in residual land value, but in lower-price neighborhoods residual land value would remain consistent between Alternatives 1 and 2.~~ In higher- and medium-price neighborhoods, the amount a developer could afford to pay for land increases for parcel types C and D, suggesting that land prices in those cases could potentially increase. Smaller parcel types (A and B) in higher- and medium-price neighborhoods show minimal changes in residual land value across the four alternatives. In lower-price neighborhoods, the amount a developer could afford to pay shows only small changes across the four alternatives, suggesting minimal change in land values. This indicates that, overall, land prices are unlikely to change substantially for most parcel types.

However, changes to residual land value do not directly impact property values or property tax bills, for several reasons. We use residual land value to better understand the underlying economics of the ADU policies contemplated in this EIS. Changes in property value will appear only to the extent that the potential for ADU creation results in increased sales prices, which is determined by ADU production rates and individual homebuyer and investor decision-making. It is not possible to use the residual land value analysis to directly forecast changes in land prices. ~~and that overall housing prices and rents would not be expected to increase in Alternative 2.~~

Exhibit 4.1-17 Estimated Changes to Maximum Residual Land Value

	Alternative 1	Alternative 2	Alternative 3	Preferred Alternative
Higher				
A	$299	$299	$299	$299
B	$291	~~$291~~ $298	~~$277~~ $294	$298
C	$218	~~$227~~ $253	~~$223~~ $250	$253
D	$151	~~$169~~ $187	~~$166~~ $184	$187
Medium				
A	$225	~~$225~~ $232	~~$225~~ $228	$232
B	$219	~~$219~~ $221	~~$209~~ $217	$221
C	$164	~~$164~~ $189	~~$159~~ $185	$189
D	~~$115~~ $116	~~$122~~ $139	~~$119~~ $137	$139
Lower				
A	$162	~~$162~~ $170	~~$162~~ $165	$170
B	~~$148~~ $149	$149	~~$148~~ $149	$149
C	~~$122~~ $123	~~$123~~ $128	~~$122~~ $124	$128
D	$91	~~$91~~ $95	~~$91~~ $92	$95

In summary, Alternative 2 would result in more ADUs than Alternative 1 (No Action), increasing the supply of rental housing in the study area, especially in neighborhoods with high access to opportunity. ADUs tend to be smaller than the average detached single-family house. Residual land value would remain relatively consistent for parcel types A and B and for all parcel types in lower-price neighborhoods between Alternative 1 (No Action) and Alternative 2, ~~including specifically in lower-price neighborhoods,~~ suggesting land prices are not likely to increase substantially due to changes in development feasibility. Additional ADUs could provide new income sources for some homeowners. The number of teardowns would decrease relative to Alternative 1 (which improves affordability because new homes tend to be more expensive than the homes they replace). Therefore, we do not anticipate adverse impacts on affordability under Alternative 2.

Displacement

Physical and economic displacement can occur anywhere. However, certain populations or communities can be at greater risk of displacement or face greater barriers to finding housing. The Displacement Risk Index is one way the City has evaluated the displacement pressures that marginalized populations experience (see sidebar). As shown in Exhibit 4.1-18, the neighborhoods in the study area with marginalized populations most vulnerable to displacement are Rainier Valley, White Center, Beacon Hill, and North Seattle. Except for Beacon Hill, these are all lower-price neighborhoods. All four neighborhoods also have relatively larger shares of people of color (Exhibit 4.1-19).

Physical displacement impacts could occur if policy changes increase the feasibility of demolishing an existing house relative to other development outcomes, especially in areas at higher risk of displacement. The highest and best use analysis shows that fewer teardowns would occur in all neighborhood types in Alternative 2 compared to Alternative 1 (No Action). We expect the overall number of teardowns to decrease from ~~2,610~~ 2,030 under Alternative 1 (No Action) to ~~2,460~~ 1,800 under Alternative 2, including fewer teardowns specifically in lower-price neighborhoods, where displacement risk could be higher. Because fewer teardowns would occur under Alternative 2 compared to Alternative 1 (No Action), we do not anticipate adverse impacts on physical displacement.

Some people may be concerned that an overall increase in development feasibility could have an adverse impact on economic or cultural displacement by accelerating redevelopment generally, even if the resulting increase in rental housing supply has a positive impact on affordability. This could be a concern specifically for neighborhoods at greater risk of displacement or neighborhoods where current housing prices are relatively lower. Our analysis shows that, in Alternative 2, lower-price neighborhoods are likely to experience smaller changes in development feasibility across all lot sizes than medium- or higher-price neighborhoods. Likewise, the change in redevelopment rates (measured as teardowns or ADU construction) between Alternative 1 (No Action) and Alternative 2 would be smaller in lower-price neighborhoods than in medium- and higher-price neighborhoods. Specifically, the highest and best use analysis finds that property owners in lower-price neighborhoods would tend to keep the main house and add an ADU for rental purposes. Therefore, because changes in development feasibility would be smallest in lower-price neighborhoods, Alternative 2 would not be likely to have adverse impacts on economic displacement. Further, the additional ADUs occurring in Alternative 2 in lower-price neighborhoods would create new housing options and could alleviate some economic displacement impacts compared to Alternative 1 (No Action).

Displacement Risk Index

The 2016 Seattle Growth and Equity Analysis also evaluated the risk of displacement that marginalized populations face. The Displacement Risk Index combines data about demographic factors, like the share of an area's population who are people of color or have low incomes, with physical factors that can precipitate or contribute to displacement pressure, like proximity to frequent transit, services, and job opportunities (Seattle 2016).

Exhibit 4.1-18 Seattle 2035 Displacement Risk Index
Source: Seattle 2016

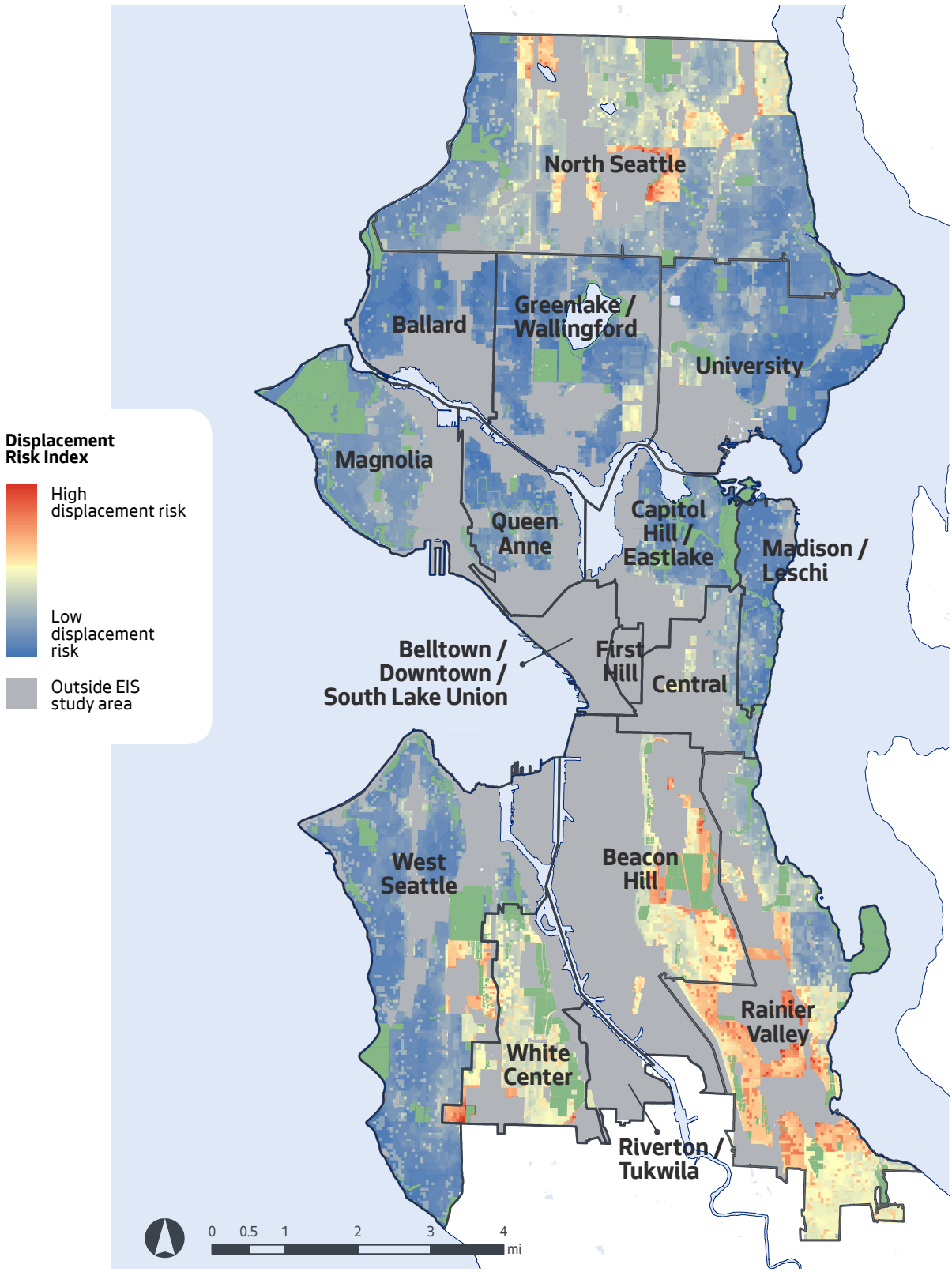
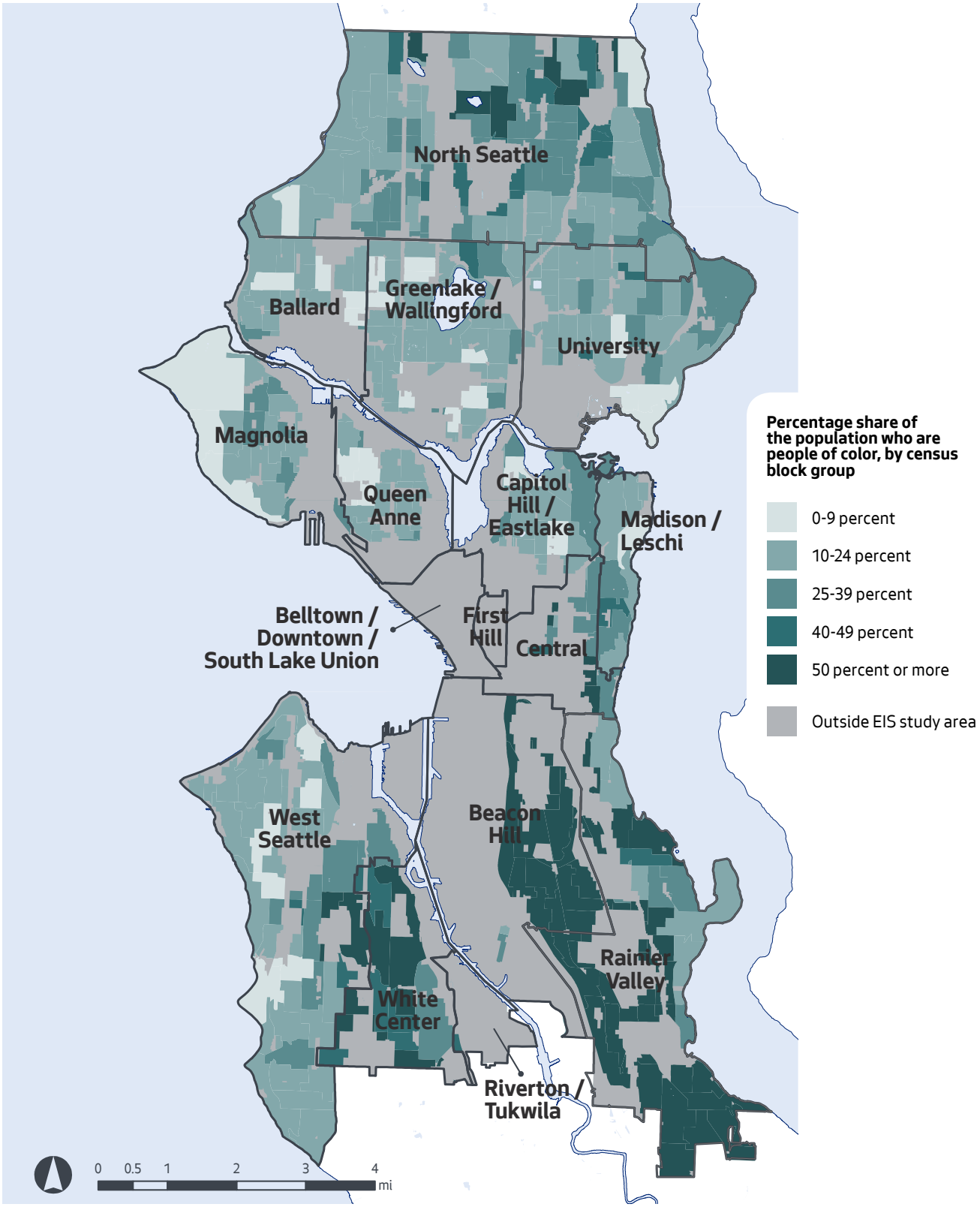


Exhibit 4.1-19 Share of Residents Who Are People of Color

Source: 2016 5-Year American Community Survey



Impacts of Alternative 3

Affordability

We expect ~~3,100~~ 3,400 ADUs would be created between 2018 and 2027 under Alternative 3, ~~less~~ fewer than Alternative 2 (~~3,330~~ 4,280) and the Preferred Alternative (4,430) but more than Alternative 1 (No Action) (~~1,890~~ 1,970). Therefore, under Alternative 3, the positive impacts on affordability due to increased rental housing supply would be similar to, but marginally smaller than, Alternative 2. The addition of about ~~1,210~~ 1,430 more ADUs compared to Alternative 1 (No Action) would have a positive impact on housing affordability, though not as much as the ~~1,440~~ 2,310 additional ADUs estimated under Alternative 2 or 2,460 additional ADUs under the Preferred Alternative. The creation of additional housing options would likely moderate increases in housing prices. In addition, ADUs operated as rentals could provide a new income stream, making housing somewhat more affordable for owners. Overall, we do not expect adverse impacts on affordability under Alternative 3.

Alternative 3 would include ~~MHA requirements~~ incentives for affordable housing when a property owner adds a second ADU. Of the ~~3,100~~ 3,400 ADUs created under Alternative 3 between 2018 and 2027, we estimate approximately ~~745~~ 480 would occur on parcels with two ADUs, as shown in Exhibit 4.1-12. Based on an average ADU size of 500-800 square feet and an ~~MHA~~ affordability incentive payment ~~requirement~~ of $13 per gross square feet, we estimate that ADU production under Alternative 3 would generate ~~$20-30 million~~ $3.1-5.0 million in affordable housing contributions over the 10-year period. The added cost of the ~~MHA requirement~~ the incentive for affordable housing would also marginally decrease the number of parcels adding a second ADU compared to a scenario without ~~MHA requirements~~ affordable housing incentives, thereby somewhat reducing the supply of rental housing, an adverse impact on affordability.

Displacement

Under Alternative 3, the beneficial impacts to displacement would be similar to Alternative 2 and the Preferred Alternative. We expect Alternative 3 would result in fewer teardowns (~~2,200~~ 1,670) than both Alternative 1 (No Action) (2,610) and Alternative 2 (2,460) and slightly more than the Preferred Alternative (1,580). This would reduce the potential for physical displacement impacts even more than Alternative 2. We expect Alternative 3 would alleviate ongoing economic displacement

compared to Alternative 1 (No Action), but somewhat less than Alternative 2 since slightly fewer ADUs, and therefore fewer new rental housing options, would be created under Alternative 3 than in Alternative 2.

Impacts of the Preferred Alternative

Affordability

We expect 4,430 ADUs would be created between 2018 and 2027 under the Preferred Alternative. This would be more than Alternative 1 (No Action) (1,970), Alternative 2 (4,280), and Alternative 3 (3,400). Therefore, we expect the Preferred Alternative would have the greatest positive impacts on affordability resulting from increased rental housing supply — about 2,460 more ADUs compared to Alternative 1 (No Action) — among the four alternatives evaluated in this Final EIS. Compared to Alternative 1 (No Action), the Preferred Alternative would result in about 2,460 more ADUs, a larger increase than under either Alternative 2 or 3. The creation of additional housing options would likely moderate increases in housing prices. In addition, ADUs operated as rentals could provide an income stream, making housing somewhat more affordable for owners. Overall, we do not expect adverse impacts on affordability under the Preferred Alternative.

Displacement

Under the Preferred Alternative, the beneficial impacts on displacement would be similar to Alternatives 2 and 3. We expect the Preferred Alternative would result in the fewest teardowns (1,580) of the analyzed alternatives, 22 percent fewer than under Alternative 1 (No Action). This would reduce the potential for physical displacement impacts even more than Alternatives 2 and 3. We expect the Preferred Alternative would have the greatest potential to alleviate ongoing economic displacement compared to the other alternatives analyzed because it yields the largest number of ADUs and the greatest reduction in teardowns.

4.1.3 Mitigation Measures

Based on the results of this analysis, the proposed Land Use Code changes would have marginal benefits on housing affordability and would not increase displacement impacts. Therefore, no mitigation measures are proposed.

4.1.4 Significant Unavoidable Adverse Impacts

Based on the results of this analysis, the proposed Land Use Code changes would have marginal benefits on housing affordability and would not increase displacement impacts. No significant unavoidable adverse impacts are anticipated to housing or socioeconomics from the proposed Land Use Code changes.