The SMP divides the Shoreline District into 11 distinct shoreline environments. The Comprehensive Plan states that the Urban Residential (UR) Environment allows residential use in the Shoreline District when developed in a manner that protects shoreline ecological functions (Shoreline Areas G37). Within the UR Environment, ADUs are allowed only on upland (non-waterfront) lots per Table A for SMC 23.60A.540. DADUs are not allowed in the Shoreline District pursuant to SMC 23.60A.

TREE CANOPY AND VEGETATION

Tree Canopy Cover

Tree canopy cover is the layer of branches, stems, and leaves of a tree that cover the ground when viewed from above.

Canopy cover assessments tell us the extent of Seattle's trees and where they are located and inform urban forestry work planning, management, and investments.

Seattle has a long-standing commitment to its urban forest. Given their many social, environmental, and economic benefits, urban trees are essential to enhancing the community's quality of life. In many single-family zones, typical houses are one or two stories, surrounded by yards and open space that support the growth of large trees. This open space provides much of the city's tree canopy.

Comprehensive Plan policies encourage preservation and expansion of tree canopy throughout the city (Growth Strategy 3.8) and set a goal of increasing canopy coverage to 30 percent by 2037 and to 40 percent over time (Environment 1.2).

Adopted by the City Council in 2013, the Urban Forest Stewardship Plan (UFSP) outlines goals to achieve 30 percent tree canopy and a thriving urban forest that includes a healthy diversity of tree species and ages.

In 2016, the City obtained LiDAR (light detection and ranging) data to assess progress toward its 30- percent canopy cover goal. This study represents the most accurate accounting of Seattle's urban canopy to date and shows:

- Overall, Seattle has 28 percent tree canopy cover.
- Most of Seattle's urban trees are found in residential areas (representing 67 percent of land area with 72 percent of Seattle's tree canopy) and in rights-of-way throughout the city (representing 27 percent of land area and 22 percent of tree canopy).
- Single-family residential areas specifically account for 63 percent of Seattle's overall canopy cover.
- About 72 percent of Seattle's tree canopy is deciduous and 28 percent is coniferous. Most conifers are in single-family residential areas (52 percent).

The assessment report and presentation materials are available at www.seattle.gov/trees.

ENVIRONMENTALLY CRITICAL AREAS

Seattle's ECA Code governs development in areas that provide critical environmental functions. The goal of the City's ECA regulations (SMC Chapter 25.09) is to protect these areas effectively and assure public safety while allowing reasonable development.

Designated ECAs are defined in SMC 25.09.012 and generally include:

- Geologic hazard areas
- Flood-prone areas
- Wetlands
- Fish and Wildlife Habitat Conservation Areas
- Abandoned landfills

The City's ECA regulations have no special provisions for ADUs; rather, ADUs must meet current standards of SMC Chapter 25.09 in addition to the single-family zoning requirements in SMC Chapter 23.44.

Exhibit 4.2-8 summarizes the amount of each ECA type that exists in the EIS study area compared to the total citywide. Maps of ECAs are available on the website of the Seattle Department of Construction and Inspections (SDCI) at http://seattlecitygis.maps.arcgis.com/apps/webappviewer/index.html?id=f822b2c6498c4163b0cf908e2241e9c2.

Exhibit 4.2-8 Acreage of Environmentally Critical Areas in EIS Study Area

ECA Type	ECAs on Parcels in the Study Area (acres)	ECAs Citywide (acres)	Percentage Share of ECAs in the Study Area
Wildlife Habitat	595.7	5,538.5	11%
Wetland	85.8	546.9	16%
Steep Slope Area	1,706.6	4,379.5	39%
Riparian Corridor	452.0	1,496.5	30%
Potential Slide	1,756.3	4,471.4	39%
Potential Liquefaction Area	472.8	8,023.5	6%
Peat Settlement Prone Area	190.1	1,943.8	10%
Landfill	275.6	1,820.4	15%
Known Slide	172.4	380.9	45%
Flood-Prone Area	83.5	1,010.5	8%

4.2.2 Impacts

This section discusses the potential land use impacts from Alternatives 1, 2, and 3. Alternatives 2 and 3 differ in the scale and focus of the proposed changes. Alternative 2 represents the broadest range of changes to the Land Use Code and would allow the greatest flexibility for constructing ADUs. Alternative 3 considers more modest adjustments to the Land Use Code that would result in fewer ADUs constructed than under Alternative 2.

METHODOLOGY

Land use impacts can result from many factors, such as intensifying uses (rezoning a residential area to allow for commercial uses); incompatible uses (an industrial development near homes); or land use changes inconsistent with the Comprehensive Plan. Two types of land use impacts are relevant to the construction of ADUs and considered in this analysis:

- **Increased density.** Increased density occurs when there is an increased number of people or dwelling units on a single-family lot. Increased population density can cause impacts from more noise, pedestrian and vehicle traffic, and parking constraints. Increases in the density of dwelling units can result in impacts from vegetation and tree removal.
- **Change in building scale.** Land use impacts may occur from increasing the scale of buildings that can be built in an area. These impacts can result from constructing larger and/or taller buildings, increasing maximum height or floor area ratio (FAR) limits, or modifying required setbacks. Increased building scale can cause impacts from view blockage, decreased access to light and air at ground level, and reductions in privacy.

Impacts from increasing density and changes to building scale were evaluated by considering the potential for the change to constitute a fundamental change in land use form. Our threshold for impacts centered on whether newly constructed ADUs would be incompatible with existing development in the city's single-family zones. Given that single-family dwellings are the principal use permitted outright in these zones, the primary question was whether ADUs were compatible in scale and density with the existing land use pattern of single-family zones? Some examples of changes that might be considered a fundamental change in land use form include allowing subdivisions, duplexes, apartments, or rezoning to a denser zoning, such as Residential Small Lot, or multifamily.

To determine the potential changes in population density from constructing additional ADUs, we calculated the potential increase in population that could be expected on each single-family lot with an ADU. We anticipate the average number of people living in an ADU would be lower than the overall average household size in Seattle's single-family zones because ADUs tend to be smaller than single-family houses. As data was not available for the average number of people living in an ADU in Seattle, we used available data from Portland, Oregon, as a proxy (Horn et al 2013). The Portland data showed that an average of 1.36 people live in each ADU. For purposes of this analysis, we rounded up that number to assume an average of 1.5 people per ADU. On lots with two ADUs, this would equate to 3 people living in ADUs. Although not anticipated, we also considered the maximum number of ADU occupants based on the proposed Land Use Code changes. For Alternatives 1 and 2, this would result in 4 people per ADU; for Alternative 3, we assumed 4 people per ADU on a lot with one ADU and 2 people per ADU on a lot with two ADUs.

IMPACTS OF ALTERNATIVE 1 (NO ACTION)

Under Alternative 1 (No Action), no changes would be made to the Land Use Code. Population and housing growth would continue in accordance with the Seattle 2035 Comprehensive Plan and current zoning regulations. Real estate and housing market considerations aside, the current trajectory for the construction of ADUs would continue, and we anticipate that approximately 1,890 ADUs could be constructed between 2018 and 2027. Because existing regulatory barriers to ADU development would remain, fewer ADUs would be constructed under Alternative 1 (No Action) compared to Alternatives 2 and 3. Negligible impacts to building and population density would be anticipated from the ADUs constructed over time. There would be no change to the scale of ADUs allowed under existing Land Use Code regulations.

IMPACTS OF ALTERNATIVE 2

Land Use

Under Alternative 2, the proposed Land Use Code changes to encourage ADU development would be consistent with the Seattle 2035 Comprehensive Plan. No changes to existing zoning designations are proposed. Alternative 2 supports the Comprehensive Plan's vision for housing options that create a thriving, vibrant city. Specifically, the Land Use Code changes would:

- Support more housing development, consistent with the Seattle 2035 Comprehensive Plan's established growth strategy and Housing Affordability and Livability Agenda (HALA) recommendations.
- Maintain existing land use patterns in single-family zones by continuing to allow detached single-family housing as the principal use permitted outright and ADUs that are compatible in scale with single-family houses.
- Gradually increase density and building scale in single-family zones as development occurs that is consistent with existing land use patterns.
- Encourage greater variety of housing types in the city's residential areas.

As described in Section 4.1 Housing and Socioeconomics, compared to Alternative 1 (No Action), Alternative 2 could result in 1,440 additional ADUs (or 3,330 total ADUs) throughout Seattle between 2018 and 2027. This would include:

- 880 additional lots in single-family zones with both an AADU and DADU constructed, which is not allowed under Alternative 1 (No Action)
- 270 fewer lots in single-family zones with only one AADU constructed
- 50 fewer lots in single-family zones with only one DADU constructed

Alternative 2 would increase the likelihood of two ADUs constructed on the same lot but decrease the number of lots with only one ADU constructed. For analysis purposes, we assumed that every new ADU constructed would use the maximum available square footage and height. The 3,330 ADUs that could be constructed under Alternative 2 —1,400 ADUs more than in Alternative 1 (No Action) — could lead to minor changes to building scale.

Changes to scale would result from alterations to the development standards for DADUs, including:

- Decreasing the minimum lot size from 4,000 square feet to 3,200 square feet
- Increasing the maximum gross floor area limit for a DADU from 800 square feet to 1,000 square feet and excluding garage and storage areas from the gross floor area calculation

- Increasing the rear yard coverage limit for DADUs and other accessory structures from 40 to 60 percent, if the DADU is 15 feet or less in height [2]
- Increasing the maximum height limits 1-3 feet (with 1-2 additional feet for a DADU that meets green roof standards)
- Allowing height limit exceptions for projections like dormers that add interior space

Collectively, these changes would allow construction of slightly larger DADUs on smaller lots than currently allowed.

We anticipate the Land Use Code changes proposed under Alternative 2 could decrease the number of existing houses torn down and redeveloped from 2,610 under Alternative 1 (No Action) to 2,460. The highest and best use analysis discussed in Section 4.1, Housing and Socioeconomics, finds that Alternative 2 would tend to increase the feasibility of retaining an existing house and adding one or two ADUs (rather than demolishing) compared to Alternative 1 (No Action). Although a minor decrease, this reduction in teardowns would help preserve the existing land use form in single-family residential zones. For discussion of the aesthetic impacts, including how the proposed changes would impact the visual character of neighborhoods in the study area, please see Section 4.3 Aesthetics.

Changes to building density would result from the creation of additional ADUs. Relative to Seattle's 348,000 existing housing units and the 40,000 new units constructed between 2010 and 2017, the addition of approximately 1,440 ADUs more than Alternative 1 (No Action) would be a small change. These impacts would be minor as the density changes would unfold incrementally over 10 years and would likely continue to be distributed throughout the city.

Changes in population density would result from the creation of additional ADUs. On each lot where an ADU is constructed, we anticipate an increase in population density of an average of 1.5 people per ADU (or maximum of 4 people per ADU). This would correspond to about 2,160 more residents (or a maximum of 5,760 residents) than under Alternative 1 (No Action) over the 10-year study period. These impacts would be minor as the population changes would unfold incrementally over 10 years and would likely continue to be distributed throughout the city.

2 Rear yard coverage for structures other than a DADU cannot exceed 40 percent.

Localized impacts could occur if ADU production is higher in a concentrated area, such as a particular block in the study area. Impacts in areas with increases in population density could include greater noise, exposure to cooking smells, and changes in privacy due to the presence of more neighbors. These impacts are likely to be minor.

Overall, these impacts would be negligible to minor and would not constitute a fundamental change in the land use pattern of Seattle's single-family zones. Because they are either part of an existing house (AADU) or allocated in a detached "backyard cottage" structure with a familiar physical form and smaller scale than allowed for a principal house (DADU), ADUs would be associated and compatible with single-family residential zones. Since urban form varies across the study area, specific impacts of Alternative 2 to architectural character and design features like building setbacks and yards due to greater ADU production could vary depending on neighborhood context but are likely to be minor.

Shorelines

Alternative 2 would not alter existing regulations for ADU development on lots in the Shoreline District. DADUs would continue not to be allowed in the Shoreline District pursuant to SMC 23.60A. Any additional AADUs constructed in the Shoreline District would be subject to existing regulations. Therefore, impacts to shorelines would not occur.

Tree Canopy and Vegetation

The anticipated increase in DADU construction under Alternative 2 could result in more vegetation and tree removal than under Alternative 1 (No Action) as more property owners would use some of their rear yard for the footprint of a DADU. Compared to Alternative 1 (No Action) (990 DADUs), Alternative 2 (1,380 DADUs) could result in 390 additional DADUs. Allowing a one-story DADU to cover more of the rear yard by increasing the rear yard coverage limit from 40 percent to 60 percent could also result in a greater loss of vegetation or tree canopy.

While single-family zones account for a large share of the city's tree canopy, the specific percentage of canopy in the rear yard of a given lot varies widely. It would be speculative to predict an amount of tree canopy loss that could result from either the 390 additional DADUs in Alternative 2 or the proposed increase in the rear yard coverage limit. However, we can roughly estimate the scale of potential impact from Alternative 2 in the context of all land in Seattle's single-family zones and the canopy

cover it provides. Single-family residential areas currently provide 9,574 acres of tree canopy cover. If all 390 additional DADUs maximize the size limit of 1,000 square feet, the total footprint of DADUs would be just under nine acres, or less than 0.1 percent of the total tree canopy in single-family residential areas. If these nine acres were entirely tree canopy today, removing them would have minor to negligible impact on the overall tree canopy in single-family residential areas. This upper-limit estimate also assumes that existing tree regulations would not require preservation of any trees in the DADU footprint area and that homeowners voluntarily would make no design or siting choices in order to preserve existing trees.

At the same time, removing the off-street parking requirement could reduce the amount of vegetation and tree removal otherwise needed to accommodate a parking space when creating an ADU.

Alternative 2 does not propose any revisions to existing tree regulations in Seattle's Tree Protection Ordinance (SMC 25.11). Under SMC 25.11, the City would review tree removal required for constructing a DADU as part of the permit application. Exceptional trees could be removed only if protecting the tree during construction would prevent use of the maximum allowed lot coverage.

Exceptional Trees

Defined in Director's Rule 16-2008, exceptional trees have important historic, ecological, or aesthetic value due to their size and species.

It would be speculative to estimate the net effect of Alternative 2 with respect to tree canopy and vegetation since potential impacts vary for every lot depending on the presence of existing trees and vegetation, the City's review of any potential tree removal, and whether the owner elects not to provide a parking space. Overall, the 390 additional DADUs constructed in Alternative 2 compared to Alternative 1 (No Action) could have a small impact on tree canopy and vegetation. In the context of the 135,000 lots in Seattle's single-family zones, impacts from 390 additional DADUs would likely be minor overall.

Environmentally Critical Areas

Alternative 2 would not alter the regulations for ECAs as described in SMC 25.09. Development of ADUs would continue to be subject to ECA regulations. Therefore, current trends regarding the types and degree of impact to ECAs are likely to continue under Alternative 2.

IMPACTS OF ALTERNATIVE 3

Land Use

Land Use Code changes to encourage ADU development under Alternative 3 would be consistent with the Seattle 2035 Comprehensive Plan, and no changes to existing zoning designations are proposed. Alternative 3 supports the Comprehensive Plan's vision for housing options that create a thriving, vibrant city. Specifically, the Land Use Code changes would:

- Support more housing development, consistent with the Seattle 2035 Comprehensive Plan's established growth strategy and Housing Affordability and Livability Agenda (HALA) recommendations.
- Maintain existing land use patterns in single-family zones by continuing to allow detached single-family housing as the principal use permitted outright and ADUs that are compatible in scale with single-family houses.
- Gradually increase density and building scale in single-family zones as development occurs that is consistent with existing land use patterns.
- Encourage greater variety of housing types in the city's residential areas.

Construction of additional ADUs in the study area as a result of the proposed Land Use Code changes under Alternative 3 could increase the density and scale of development. However, the impacts of these changes would be less than under Alternative 2, since we anticipate fewer ADUs would be constructed.

As described in Section 4.1 Housing and Socioeconomics, compared to Alternative 1 (No Action), Alternative 3 could result in 1,210 additional ADUs (or 3,100 ADUs total) throughout Seattle between 2018 and 2027. Alternative 3 could result in:

- 740 additional lots in single-family zones with both an AADU and a DADU constructed, which is not allowed under Alternative 1 (No Action)
- 250 fewer lots in single-family zones with only one AADU constructed
- 30 fewer lots in single-family zones with only one DADU constructed

Construction of 3,100 ADUs (1,210 more than Alternative 1) could lead to minor changes in population and residential density and to building scale.

Changes to building density would occur directly from the creation of ADUs. Relative to Seattle's 348,000 existing housing units and the 40,000 new units constructed between 2010 and 2017, the addition of approximately 1,210 ADUs would be a small change. These impacts would be minor as the density changes would occur incrementally over 10 years and be distributed throughout the city.

Changes in population density would result from the creation of additional ADUs. Unlike Alternative 2, no change to the maximum household size would occur in Alternative 3, so changes to population density would be the result only of additional ADU production and therefore would be somewhat smaller than Alternative 2. On each lot where an ADU is constructed, we anticipate an increase in population density of an average of 1.5 people per ADU (or maximum of 4 people per ADU). This would correspond to about 1,815 more residents (or a maximum of 1,860 residents) than under Alternative 1 (No Action) over the ten-year study period. These impacts would likely be minor as the population changes would unfold incrementally over 10 years and would likely continue to be distributed throughout the city.

Localized impacts could occur if ADU production is higher in a concentrated area, such as a particular block in the study area. Impacts in areas with increases in population density could include greater noise, exposure to cooking smells, and changes in privacy due to the presence of more neighbors. These impacts are likely to be minor.

Changes to scale would occur from alterations to the development standards for DADUs, including:

- Decreasing the minimum lot size from 4,000 square feet to 3,200 square feet
- Increasing the gross floor area limit from 800 square feet to 1,000 square feet, including garage and storage areas
- Increasing the rear yard coverage limit for DADUs and other accessory structures from 40 to 60 percent, if the DADU is 15 feet or less in height
- Increasing the maximum height limits by 1-3 feet
- Allowing height limit exceptions for projections like dormers that add interior space

Collectively, these changes would allow construction of slightly larger DADUs on smaller lots than currently allowed. The changes would be slightly less than described under Alternative 2. Alternative 3 also includes an FAR limit that would limit the size of detached single-family

houses, moderating building scale impacts since new construction would be more similar in size to existing structures. The effect of the FAR limit would further lessen scale impacts compared to Alternative 2.

We anticipate the Land Use Code changes proposed under Alternative 3 would decrease the number of existing houses torn down and redeveloped compared to Alternative 1 (No Action). While Alternative 2 could also reduce demolitions from 2,610 under Alternative 1 (No Action) to 2,460, Alternative 3 could result in even fewer demolitions (2,200). Our analysis finds the feasibility of retaining an existing house and adding one or more ADUs would be higher under Alternative 3 than under Alternatives 1 and 2, primarily due to the maximum FAR limit for new construction.

Like Alternative 2, these density and scale impacts would be minor and would not constitute a fundamental change in the land use pattern of Seattle's single-family zones. Because they are either part of an existing house (AADU) or allocated in a detached "backyard cottage" structure with a familiar physical form and smaller scale than allowed for a principal house (DADU), ADUs would be associated and compatible with single-family residential zones. Since urban form varies across the study area, specific impacts of Alternative 3 to architectural character and design features like building setbacks and yards due to greater ADU production could vary depending on neighborhood context but are likely to be minor.

Shorelines

Alternative 3 would not alter existing regulations for ADU development in the Shoreline District. DADUs would continue not to be allowed in the Shoreline District pursuant to SMC 23.60A. Any additional AADUs constructed in the Shoreline District would be subject to existing regulations. Therefore, impacts to shorelines would not occur.

Tree Canopy and Vegetation

Impacts to tree canopy and vegetation would be less than those described under Alternative 2, both because fewer DADUs would be constructed and the FAR limits imposed. Compared to Alternative 1 (No Action) (990 DADUs), Alternative 3 (1,330 DADUs) could result in 340 additional DADUs. In addition, the proposed FAR limit would tend to reduce the footprint of new houses, which would also reduce the potential for impacts to tree canopy and vegetation.

Alternative 3 would require off-street parking for lots with two ADUs, reducing the positive impact on trees and vegetation compared to Alternative 2, where no off-street parking would be required. Still, it would be speculative to estimate the net effect of Alternative 3. While we estimate 50 fewer DADUs would be constructed compared to Alternative 2 (340 instead of 390), more lots would likely create off-street parking. Like Alternative 2, overall impacts on tree canopy and vegetation from Alternative 3 would likely be minor in the context of the 135,000 lots in single-family zones.

Environmentally Critical Areas

Alternative 3 would not alter the regulations for ECAs as described in SMC 25.09. Development of ADUs would continue to be subject to ECA regulations. Therefore, current trends regarding the types and degree of impact to ECAs are likely to continue under Alternative 3.

4.2.3 Mitigation Measures

No significant adverse impacts are anticipated to land use; therefore, no mitigation measures are proposed.

4.2.4 Significant Unavoidable Adverse impacts

Under all three alternatives, Seattle would continue to experience population growth that would increase housing development in neighborhoods throughout the city. Single-family zones would continue to see some existing structures renovated, enlarged, and demolished as new construction occurred to accommodate new households and respond to changing economic conditions. This is an outcome we expect in a dynamic, growing city. Some localized land use conflicts and compatibility issues in single-family zones could arise under any alternative as growth occurs. However, no significant unavoidable adverse impacts on land use are anticipated as a result of the proposed Land Use Code changes.