CHAPTER 10. LAND USE AND HOUSING

10.1 HOW WERE EXISTING LAND USES AND HOUSING IN THE COMBINED STUDY AREAS EVALUATED?

This chapter describes the types of existing land uses, and planning designations within the combined study area shown in Figure 1-4, as well as applicable land use and housing policies. Land use information was obtained from data maintained by the King County Assessor for property valuation and tax purposes. Existing population and housing supply in the study area are also described, based on U.S. Census data and local comprehensive plans. Since there is no data source specific to the study area itself, for this programmatic evaluation, population and housing data at the city level are used as a proxy to provide context for the study area.

Planning designations were obtained from comprehensive plans and zoning maps from study area communities. Shoreline planning designations were identified using shoreline master programs and Washington State Department of Ecology (Ecology) data.

To provide context for discussion of land use impacts, it is also important to understand the regulatory framework by which land uses are established and regulated. Therefore, this chapter describes the applicable state, regional, and local legislation, policies, and regulations for land use and shoreline planning. The land use and shoreline policies of each study area community that would likely apply to the project (including those related to *essential public facilities*) were identified based on local comprehensive plans and shoreline master programs.

Land Use and Housing Key Findings

Construction would not be expected to lead to land use impacts.

The No Action Alternative would likely lead to declining reliability of the electrical power supply on the Eastside, which could be inconsistent with local planning policies and constitute a significant adverse impact.

Of the action alternatives, Alternative 1, Option A has the greatest potential to create significant adverse land use and housing impacts. The magnitude of probable impacts ranges from minor to significant, depending on final project location and adjacent uses.

Alternative 3 could result in land use changes similar to Alternative 1, Option A, but would require less property acquisition. The severity of probable impacts ranges from minor to moderate, depending on specific project siting and adjacent uses.

Alternative 2 would have the fewest overall land use impacts, ranging from negligible to minor.

10.2 WHAT ARE THE RELEVANT PLANS, POLICIES, AND REGULATIONS?

10.2.1 Comprehensive Planning Framework

In 1990, the State of Washington adopted the Growth Management Act (GMA) in response to rapid population growth and concerns with suburban sprawl, environmental protection, and quality of life. The GMA requires the fastest growing counties and the cities within them to identify and protect critical areas and natural resource lands, designate urban growth areas, prepare comprehensive plans, and implement those plans through capital investments and development regulations. The GMA also establishes a goal related to adequate utilities and services for development – Growth Management Act Goal 12.

Growth Management Act Goal 12: Public facilities and services. Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current *service levels* below locally established minimum standards.

Each study area community has adopted a comprehensive plan in compliance with the GMA. The local comprehensive plans lay out the goals and policies by which housing and employment growth over a 20-year period will be managed by each city and county. At a minimum, plans must provide for land uses and densities, capital facilities, and transportation infrastructure sufficient to meet future needs.

In conjunction with the GMA, regional planning strategies are articulated by the Puget Sound Regional Council (PSRC). The PSRC has published a planning document titled VISION 2040, which serves as the long-range growth management, environmental, economic, and transportation strategy for the central Puget Sound region. VISION 2040 also contains a Regional Growth Strategy that provides substantive guidance for planning for the roughly 1.7 million additional people and 1.2 million additional jobs expected in the region between 2000 and 2040 (PSRC, 2015b).

Puget Sound Regional Council is an association of cities, towns, counties, ports, and state agencies that serves as a forum for developing policies and making decisions about regional growth management, environmental, economic, and transportation issues in the four-county central Puget Sound region of Washington state (King, Pierce, Snohomish and Kitsap Counties).

In complying with GMA, coordinating with regional planning, and setting local planning parameters, local governments establish comprehensive plan land use designations to guide future growth and development. Comprehensive plan land use designations are unique to each study area community but typically reflect the following broad categories:

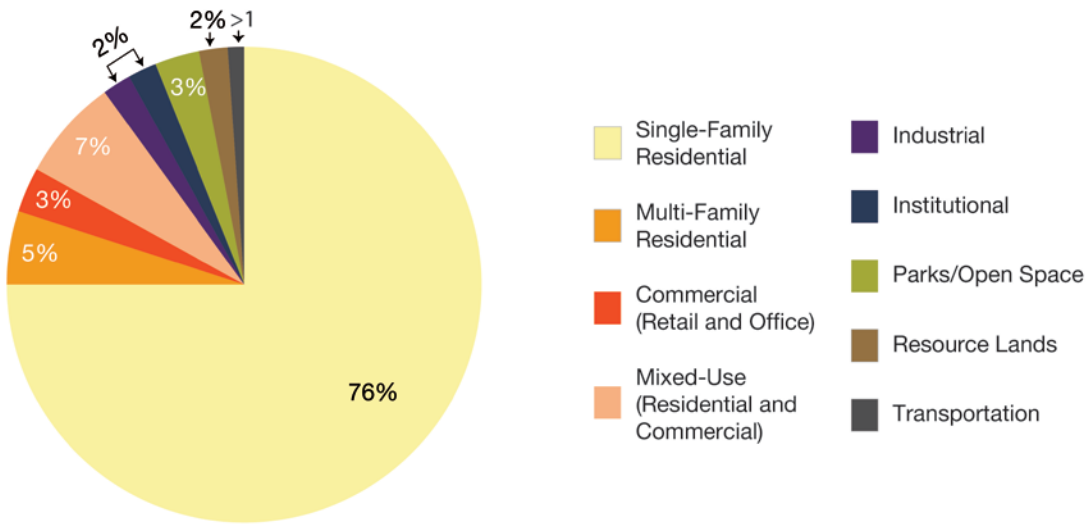
- **Residential** - Depending on the community, designates land for a range of different densities of housing types (characterized as low, moderate, and high). In

some cases allowed or desired housing types may be designated (such as single-family detached, townhouse, etc.).

- **Mixed-Use** – Incorporates both residential and commercial uses in close proximity in the interest of creating high-density communities where housing, services, and employment are within easy walking distance. Some communities designate more specialized areas such as Transit-Oriented Development or Urban Center.
- **Parks/Open Space** - Designates land for parks, recreation facilities, open space, greenbelts, conservation easements, and urban/rural separators.
- **Commercial** - Designates land for commercial uses such as office and retail, and may be divided into specialty classifications such as Business Park or Medical.
- **Industrial** - Designates land for warehouses and manufacturing, and may be divided into categories such as Light Industrial, Heavy Industrial, or Manufacturing.
- **Institutional** - Designates land for public schools, government buildings, civic centers, and other public facilities.
- **Resource Lands** - Designates land for forestry, mining, and agriculture in unincorporated areas of King County.

The comprehensive plans adopted by study area communities that were evaluated for this EIS are listed in Appendix E. For this programmatic Draft EIS, subarea plans were not reviewed, but subarea plans could be applicable at the project level analysis. The comprehensive plan land use designations of these plans vary among the communities and were grouped into generalized categories, reflecting the seven categories above, for the purposes of summarizing planned future land uses consistently across the combined study area. The proportional distribution of designations across categories are shown in Figure 10-1 and mapped in Figure 10-2. Future land uses are mostly single-family residential with a mix of multifamily, mixed-use, and commercial in urban areas.

Figure 10-1. Future Land Use Designation by Type[1]



Sources: City of Bellevue, 2015a; City of Issaquah, 2015; City of Kirkland, 2015b; City of Newcastle, 2015; City of Redmond, 2015; City of Renton, 2015; City of Sammamish, 2015

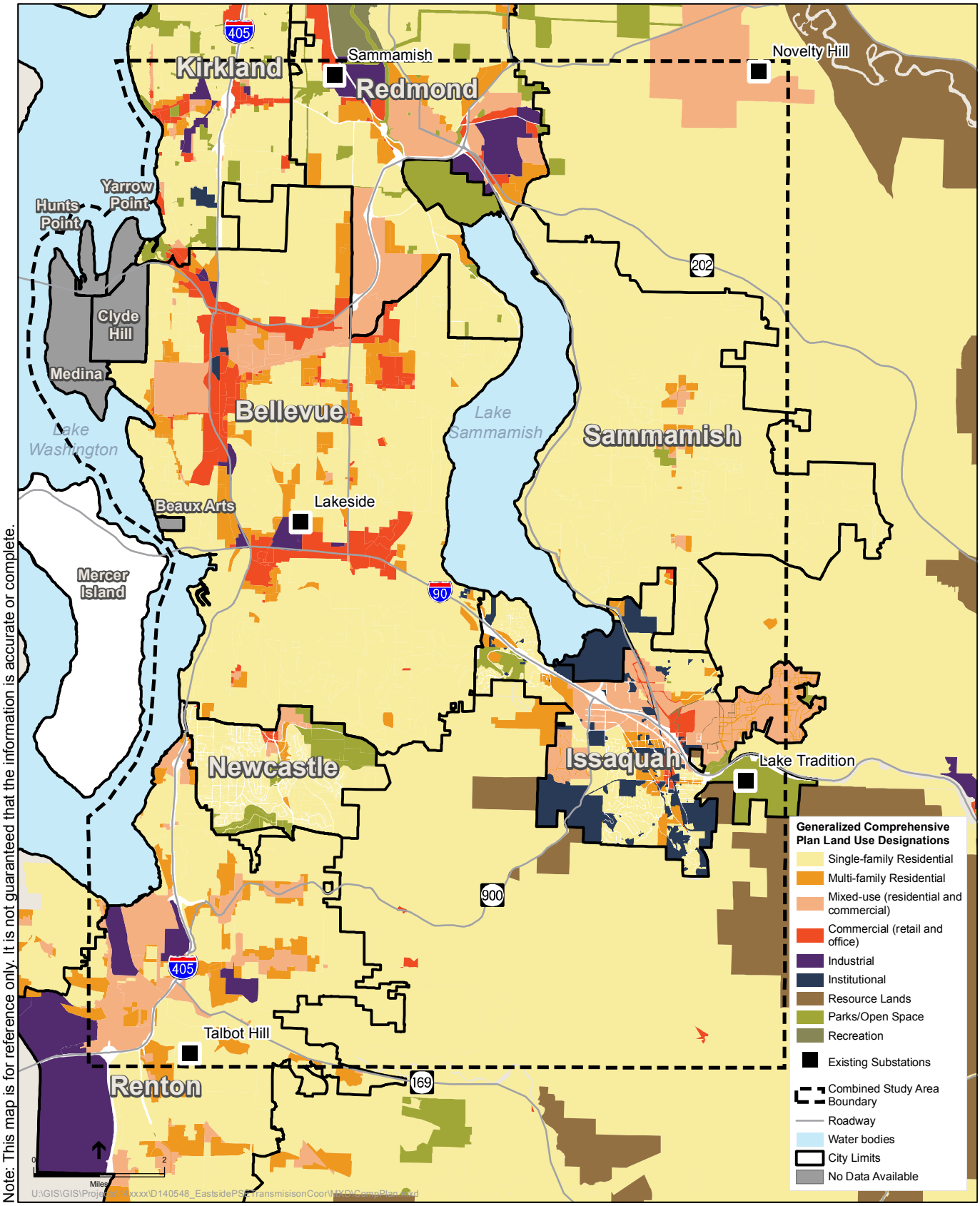
Comprehensive plans also include goals and policies that establish a 20-year vision and roadmap for each study area community's anticipated future. Appendix F lists the comprehensive plan land use goals and policies that could address or guide the Energize Eastside Project's location or type of electrical infrastructure. Goals and policies that relate to electrical infrastructure can be grouped into the following broad topics[2]:

1. **Encouragement of energy efficiency and conservation** - Goals and policies generally promote investment in, and proliferation of, renewable energy resources and reduce the demand for fossil fuels.

2. **Hazardous pipeline safety** - Goals and policies generally require coordination between the pipeline operator, development project proponents, and local jurisdictions to examine the potential for construction and operational conflicts, and to avoid, minimize, or mitigate for such conflicts.

3. **Utility corridor development/management** - Goals and policies generally promote co-location and shared use of utility corridors in order to minimize impacts, except when major adverse safety or land use consequences could result. Timely improvements to infrastructure are encouraged in order to meet anticipated energy demands.

[1] Figures 10-1 and 10-2 do not include the communities of Medina, Clyde Hill, Yarrow Point, Hunts Point, and Beaux Arts Village since GIS data used for this land use analysis were not available from the jurisdictions. The land use within those communities is primarily single-family residential and comprehensive plans indicate no proposed changes from existing land uses (see Figure 10-5).
[2] The "broad topics" provided in this chapter are intended to facilitate comprehension of applicable land use goals and policies and therefore do not exactly match the "topics" in Appendix F, which are applicable to multiple EIS chapters.



Note: This map is for reference only. It is not guaranteed that the information is accurate or complete.

SOURCE: King County 2015; ESA 2015; WAECY 2014; Renton 2015; Newcastle 205; Bellevue 2015; Sammamish 2015; Kirkland 2015; Redmond 2015.
For more info visit www.energizeeastsideeis.org/map-futurelanduse

Energize Eastside EIS 140548

Figure 10-2

Future Land Uses

4. **Protection of community or neighborhood character and safety** - Goals and policies generally support siting and designing utilities to minimize conflicts with community character and maintain safety.

5. **General utility coordination regarding location and service provision** - Goals and policies generally support coordination between the utility purveyors and government to ensure safe, efficient, and reliable service provision consistent with land use regulations.

6. **Ensuring compatibility of land uses** - Goals and policies generally encourage locating, designing, and screening infrastructure to ensure compatibility with the surrounding land use pattern and, where feasible, siting within the area requiring additional service.

7. **Undergrounding of utility lines** - Goals and policies support undergrounding existing and new or expanding lines where safe, practical, and in accordance with rules, regulations, and other utility- and site-specific factors.

8. **Shoreline management** – Goals and policies generally discourage locating non-water-related utilities in the shoreline jurisdiction, particularly in-water. Uses that negatively impact ecological functions are generally prohibited.

9. **Adequate infrastructure for development** – Goals and policies generally acknowledge that electrical service and infrastructure should be available to serve development.

Each comprehensive plan is required to establish a process for identifying and siting essential public facilities (EPFs). State, regional, county, and local agencies are also required to coordinate in determining the location of these facilities. EPFs are facilities that are typically difficult to site, such as airports, state education facilities, and state or regional transportation facilities (RCW 36.70A.200). A determination of whether the Energize Eastside Project qualifies as an EPF would be made by the permitting agency at the time of permit preparation or submittal.

Essential Public Facilities (EPF) are defined by state law (RCW 36.70A.200 and WAC 365-196-550) as necessary facilities that are typically difficult to site. The GMA requires planning so that such facilities can be placed appropriately.

10.2.2 Shoreline Planning Framework

In 1971, the State of Washington adopted the Shoreline Management Act (SMA) to foster reasonable and appropriate land uses along Shorelines of the State (simply referred to as "shorelines" in this document). A goal of the SMA is to protect shorelines and adjacent shorelands from incompatible development as well as "to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines" (Chapter 90.58 RCW, 1971). Ecology oversees management of the shoreline resources in the State of Washington. The SMA applies to all 39 counties and more than 200 towns and cities that have shorelines (RCW 90.58.030(2)) within their boundaries.

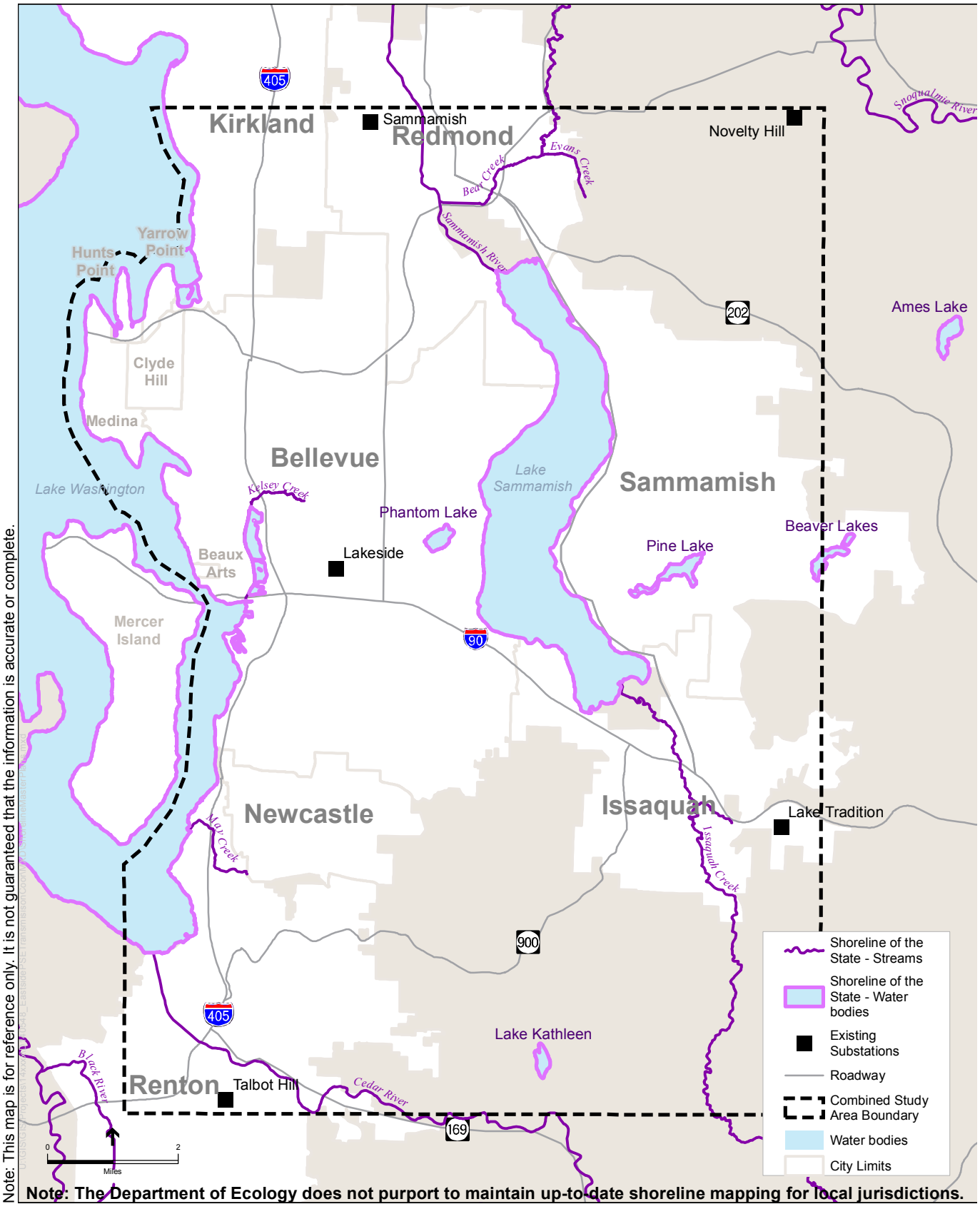
Local jurisdictions with shorelines have adopted shoreline master programs (SMPs) to comply with the SMA. These local SMPs include shoreline management goals and policies, identify shoreline environment designations and allowed uses, and outline regulations and permit requirements for activities within shoreline jurisdiction. An SMP is considered to be both a policy document, identifying the community's 20-year vision of its shorelines, and a regulatory document. SMPs must be consistent with the state implementing regulations for the SMA (WAC 173-26).

Shorelines of the State include:

- All marine waters;
- Streams and rivers with greater than 20 cubic feet per second mean annual flow;
- Lakes 20 acres or larger;
- Upland areas called shorelands that extend 200 feet landward from the edge of these waters; and
- The following areas when they are associated with one of the above:
- Biological wetlands and river deltas; and
- Some or all of the 100-year floodplain including all wetlands within the 100-year floodplain.

The communities of Clyde Hill and Newcastle do not have their own specific SMPs. Newcastle has adopted (and implements) King County's program and Clyde Hill does not have any jurisdictional *shoreline areas*. The City of Bellevue is updating its SMP consistent with state law. Not all shoreline areas have been established on adopted maps. Figure 10-3 shows the location of the available mapped shorelines of the state within the combined study area (Ecology, 2015a-c[3]), including Lake Washington, Lake Sammamish, Sammamish River, Bear Creek, and Issaquah Creek. These shorelines would be regulated in addition to other areas where shoreline jurisdiction would be applied based on criteria described above (e.g., location relative to known waters of the state, rate of stream flow).

[3] The Department of Ecology does not purport to maintain up-to-date shoreline mapping for local jurisdictions.



Note: This map is for reference only. It is not guaranteed that the information is accurate or complete.

Note: The Department of Ecology does not purport to maintain up-to-date shoreline mapping for local jurisdictions.

SOURCE: King County 2015; WA Ecology 2015; Bellevue 2015; Redmond 2015; Sammamish 2015; Issaquah 2015.

Energize Eastside EIS 140548

Figure 10-3

Shorelines of the State

Shoreline Master Programs map and classify known shorelines, and establish policies on how to determine where other regulated shorelines may exist. Shoreline areas are classified into specific shoreline environment designations, based on the existing land use pattern, biological and physical characteristics of the shoreline, and the goals of the community as expressed through comprehensive plans and in conformance with state's recommended classification system (WAC 173-26-211 (4) and (5)). The state code recommends the following six basic shoreline environment designations:

1. **High-Intensity** to provide for high-intensity water-oriented commercial, transportation, and industrial uses while protecting existing ecological functions and restoring ecological functions in areas that have been previously degraded;
2. **Shoreline Residential** to accommodate residential development and appurtenant structures along with appropriate public access and recreational uses;
3. **Urban Conservancy** to protect and restore ecological functions of open space, floodplains, and other sensitive lands where they exist in urban and developed settings, while allowing a variety of compatible uses;
4. **Rural Conservancy** to protect ecological functions and conserve existing natural resources and valuable historic/cultural areas to provide for sustained resource use, achieve natural floodplain processes, and provide recreational opportunities;
5. **Natural** to protect shoreline areas that are relatively free of human influence or that include intact or minimally degraded functions intolerant of human use; and
6. **Aquatic** to protect, restore, and manage the unique characteristics and resources of the areas waterward of the ordinary high water mark.

The SMA states that "the interests of all the people shall be paramount in the management of shorelines of statewide significance." In western Washington, **Shorelines of Statewide Significance** in the combined study area include:

- Lakes or reservoirs with a surface area of 1,000 acres or more (includes Lake Washington and Lake Sammamish); and
- Wetlands associated with all of the above.

Local governments map their designated shoreline environments where known. Each community's SMP describes the criteria for determining shoreline environment classifications around area water bodies. Local governments can develop shoreline environment designations that are different from the general categories listed above.

Appendix F provides a sample of SMP goals and policies from study area communities that could guide the Energize Eastside Project's location or type of electrical infrastructure. The goals and policies for activity within the shoreline jurisdiction can be generally grouped into the following broad topics:

1. **Protection of ecological functions and aesthetics**- Goals and policies generally promote the protection and preservation of vegetation, fish and wildlife species and their habitats, and viewsheds for the enjoyment of current and future generations.

2. **Use priorities** - Goals and policies generally reflect a preference for water-oriented uses and place limitations or prohibitions on non-water-oriented uses.
3. **Avoidance, minimization, mitigation** - Goals and policies generally promote avoidance, minimization, and mitigation of interruptions to natural shoreline functions.
4. **Limitation on infrastructure** – Goals and policies generally state that infrastructure should be limited to the minimum necessary to achieve its purpose. Location outside of the shoreline jurisdiction is preferred unless other locations are infeasible or a water-dependent component exists.
5. **Coordinated management and development** - Goals and policies generally promote coordination between local, state, and federal agencies to prevent harm to shorelines.
6. **Maintenance of natural areas and dynamics** - Goals and policies generally promote maintaining shorelines to perform natural dynamic processes that support fish and wildlife and associated habitat.

Many of the adopted SMPs do not contain specific goals and policies for locating EPFs. Where EPFs are not specifically defined in the SMP, the applicable jurisdiction would preliminarily evaluate the proposed activities, classify the project as a use identified within the adopted SMP (for example, as a "utility" use), and then proceed with project review to ensure consistency with adopted policies and regulations.

10.2.3 Development and Zoning Framework

The comprehensive plans adopted by study area communities are implemented through each City's zoning map and local land use code, which set the stage for land development intensities and patterns. Based on the comprehensive plan land use designations that define a broad range of allowed land uses, local communities establish zoning districts, and develop detailed maps, specific land use type classifications, and development criteria for each of the identified zones.

Examples of land use designations are: the City of Bellevue's Single-Family Comprehensive Plan land use designation, implemented through the 'R-1' zone (Single Family – Residential Estate, one dwelling unit per acre), or Kirkland's Commercial Comprehensive Plan land use designation implemented through the BN zone (Neighborhood Business). A development review process is implemented by each study area community to assess a project's compliance with zoning and code requirements.

Shoreline environment designations, determined under the SMPs described above, also establish land use type classifications and development criteria over and above what zoning allows. The SMP includes shoreline regulations that help to implement the shoreline goals and policies. Some communities include shoreline environment designations as a type of overlay on their zoning maps. Review of SMP compliance and potential impacts to shorelines are assessed as part of development review.

Development of any of the project alternatives would ultimately be subject to the zoning and other development regulations of each community, including shoreline management. Development permits would be required for land disturbing activities and to install most of the components of the project alternatives (concrete pads for transformers and other equipment, security fencing, power poles, transmission and distribution lines, battery storage facilities, etc.). When a project location is determined, PSE would submit permit applications to the applicable study area communities.

In addition to the overall zoning and other code compliance for each City, Bellevue and Kirkland have community municipal corporations enacted by statute in certain areas as a result of past annexations. These corporations have statutory authority to approve or disapprove ordinances of the city council with respect to certain actions, including conditional use permits, special exceptions, or variances. Disapproval cannot affect the application of any ordinance affecting areas outside the community municipal corporation.

In addition to the powers and duties related to the approval of zoning regulations, the community municipal corporation, acting through its community council, may make recommendations and provide a forum for proposals that affect property or land within the service area (of the corporation) and may advise, consult and cooperate with the city council on local matters that may directly or indirectly affect the service area (RCW 35.14.050). The East Bellevue Community Council (EBCC) was established in 1969 and has jurisdiction within a designated planning boundary in East Bellevue (City of Bellevue, 2015b). The Houghton Community Council was established in 1968 and has jurisdiction within the area formerly designated as the Town of Houghton (City of Kirkland, 2015a).

10.3 WHAT ARE THE EXISTING LAND USES, POPULATION, AND HOUSING IN THE COMBINED STUDY AREA?

10.3.1 Existing Land Uses

The combined study area comprises approximately 90,000 acres of land area. According to the King County Assessor's 2015 geographic information systems (GIS) data, the most prevalent land use in this combined area is single-family residential properties (40 percent), followed by vacant land (17 percent), transportation and parking (13 percent), and parks and open space combined with other recreational uses (10 percent).

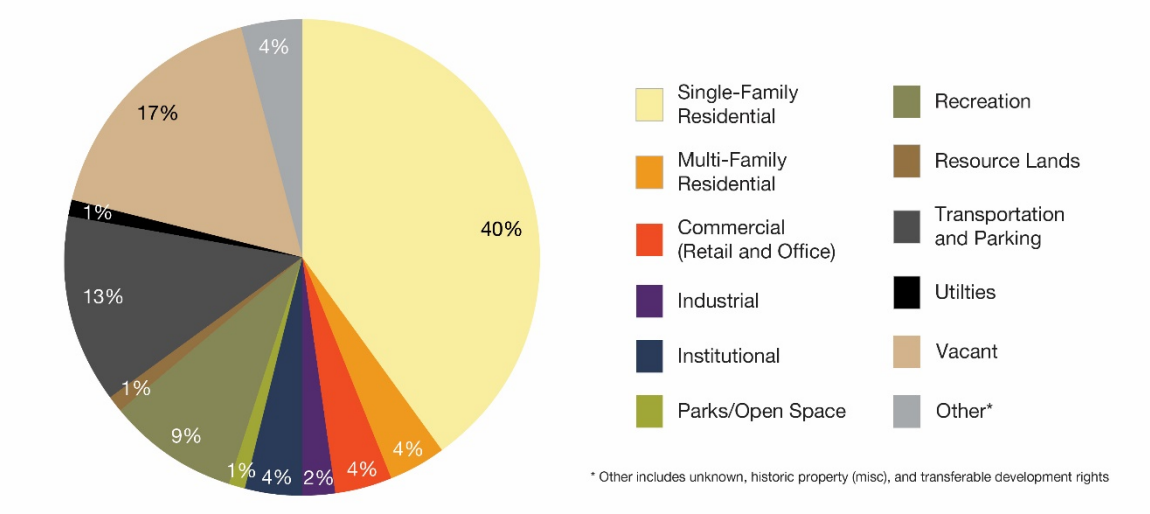
Existing land uses are shown in Figures 10-4 and 10-5[4]. Single-family residential properties are located throughout all of the study area communities, while multifamily properties (4 percent of the project area) are congregated around larger urban areas. Although vacant and recreational land is present throughout the combined study areas, the greatest concentration

[4] Differences may exist between the land uses shown in figures and actual current land uses due to anomalies between Assessor's and Planning Departments' land use categorization, changes in actual land use from the time Assessor's information was obtained, and broad categorization of multiple jurisdictions' discrete land use designations. Because of the large study area coupled with the programmatic nature of this analysis, these discrepancies are relatively minor and therefore not anticipated to have an influence on overall analysis or conclusions; therefore, parcel-by-parcel data reconciliation was not conducted.

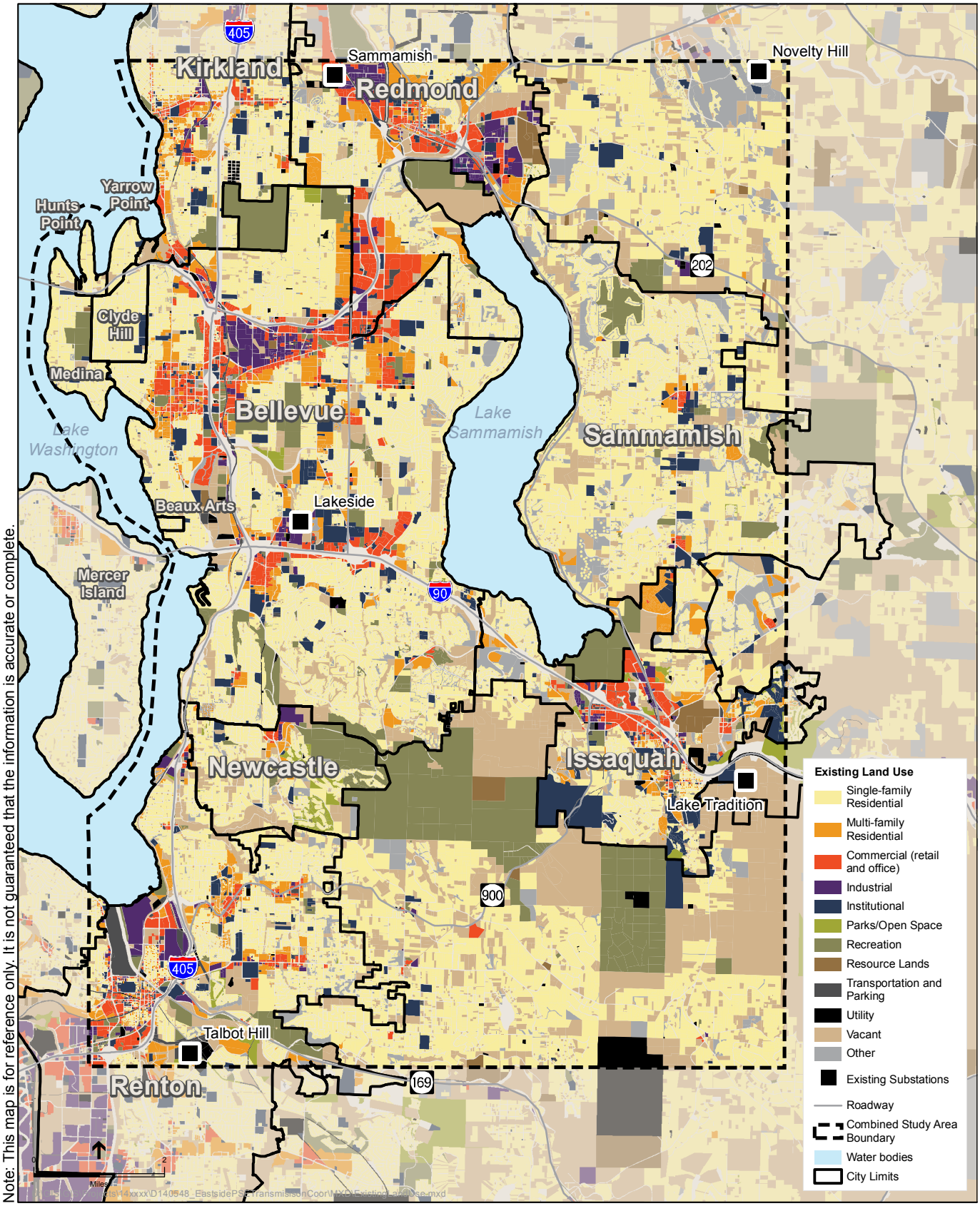
of these land uses is in the southeastern portion of the study area surrounding the southern and eastern boundaries of Newcastle, Bellevue, and Issaquah. This includes the large forested areas comprising the *Issaquah Alps* and undeveloped portions of unincorporated King County. Institutional land uses such as schools, churches, hospitals, and libraries are scattered throughout the combined study area. Commercial land uses are primarily clustered around the city centers and major highways, with the highest concentrations in Bellevue, Redmond, and Issaquah. Industrial uses are relatively scarce in the combined study area, clustered in Bellevue, Redmond, Renton, and Newcastle with small areas in Kirkland, King County, and Sammamish as well.

The Issaquah Alps is the unofficial name for the highlands near the city of Issaquah, and includes Cougar Mountain, Squak Mountain, Tiger Mountain, Taylor Mountain, Rattlesnake Ridge, Rattlesnake Mountain, and Grand Ridge.

Figure 10-4. Existing Land Use by Type



Source: King County, 2015



Note: This map is for reference only. It is not guaranteed that the information is accurate or complete.

SOURCE: King County 2015; ESA 2015; WA Ecology 2014.
For more info visit www.energizeeastsideeis.org/map-existinglanduse

Energize Eastside EIS 140548

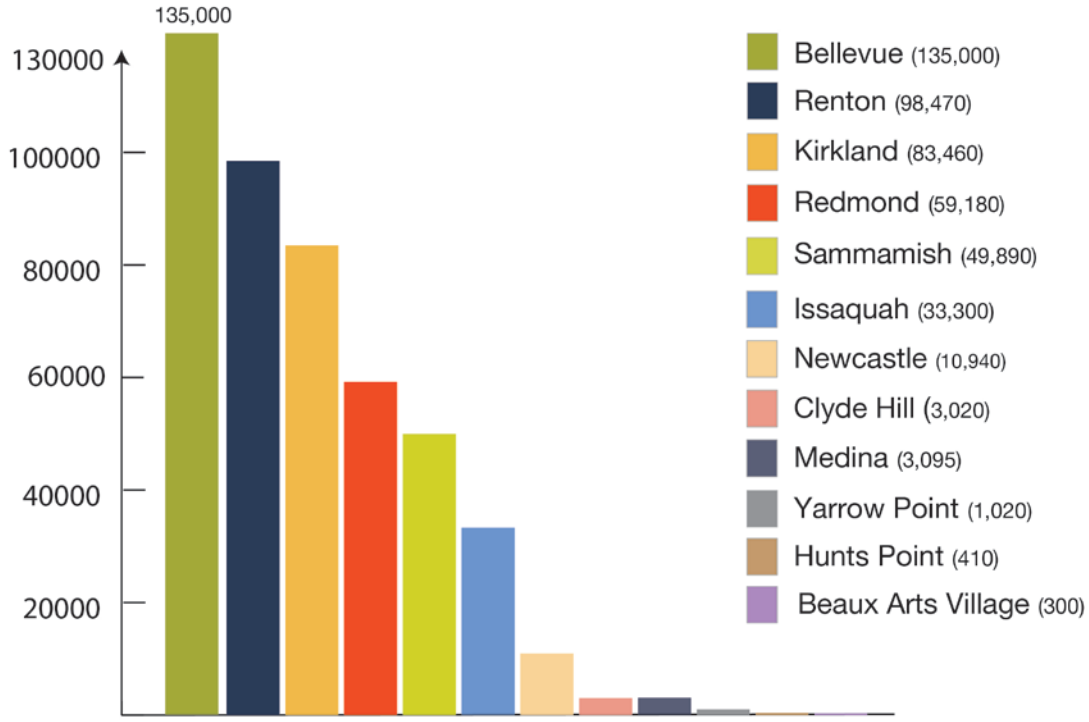
Figure 10-5

Existing Land Uses

10.3.2 Population

The total population in the study area communities was 477,875 as of April 2015 (Figure 10-6). However, the population of the combined study area is smaller because the study area boundaries do not align with city boundaries (or census tract boundaries, which were the basis of the population information for the cities) and portions of some cities are outside of the combined study area. City population data is presented in Figure 10-6.

Figure 10-6. Local Area Population (2015)



Source: Municipal Research and Services Center (MRSC), 2015

The population of the unincorporated King County portion of the combined study area (in 2014) is estimated at 54,800 based on interpolation of Census Block Group data (2010) obtained from the Municipal Research and Services Center (MRSC, 2015). Although these city and county numbers are not exact, they provide a general sense of the population in the combined study area.

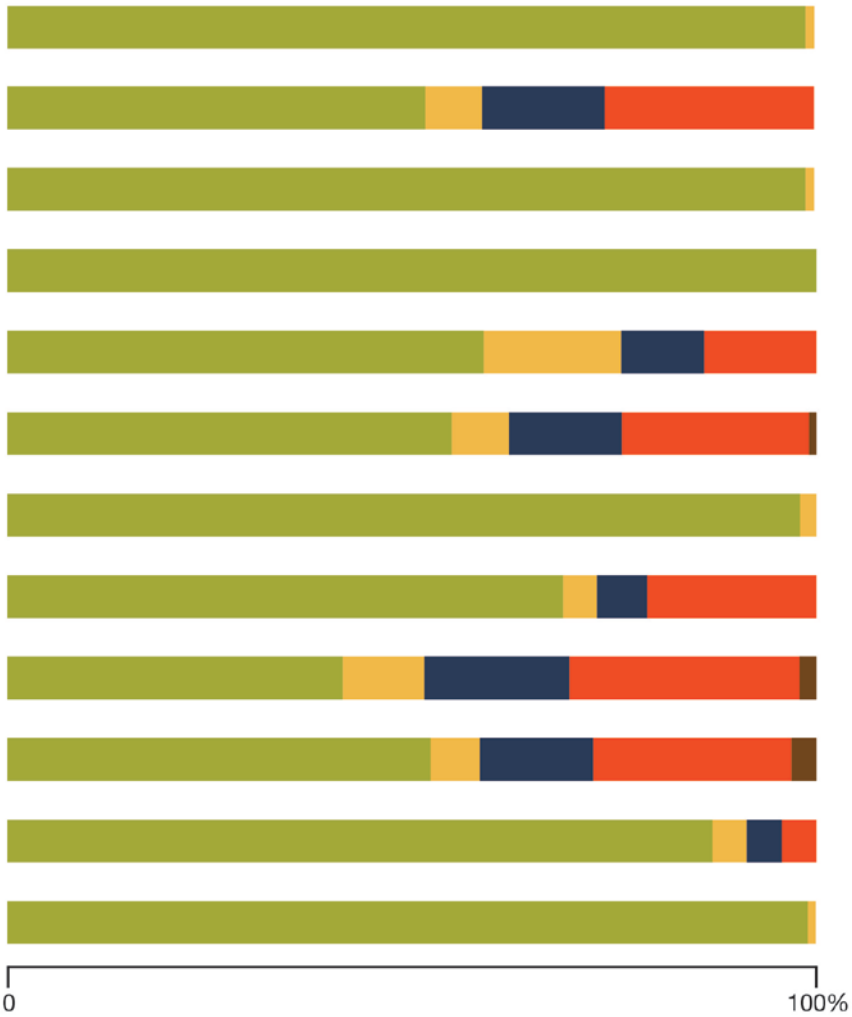
10.3.3 Housing Characteristics

The majority of the housing stock in the combined study area is single-family, detached housing (Figure 10-7). Communities such as Hunts Point (with no employment centers and developed primarily as a residential community) are composed almost entirely of single-family homes, while approximately half of the housing stock in more urbanized areas like Redmond is multifamily. The larger cities in the project area (Kirkland, Renton, Bellevue, Issaquah, Redmond, and Newcastle) typically have apartment complexes with over 10 units per building, composing approximately a quarter of their housing stock (U.S. Census, 2013).

This is indicative of the land use planning strategy seen throughout the Eastside communities, which is to preserve existing single-family residential neighborhoods while fostering population growth in high-density housing in the urban areas.

The communities with the oldest housing stock in the combined study area are Beaux Arts Village, Clyde Hill, and Yarrow Point, where approximately 70 percent of the housing was constructed prior to 1980. The rest of the combined study area communities (Bellevue, Renton, Kirkland, Redmond, Sammamish, Issaquah, Newcastle, Medina, and Hunts Point) experienced residential property development between 1960 and 2010, but generally have a greater proportion of newer housing than the communities previously described. The newest housing is likely to be found in Issaquah or Newcastle where 2.9 percent and 2.2 percent of the housing was constructed after 2009, respectively (U.S. Census, 2013).

Figure 10-7. Housing Types In the Study Area Communities



Note: Data for housing in the areas of King County within the study area is not available, but aerial mapping indicates predominantly single family detached.

Single-Family Detached

Attached and Duplex

3–9 Units

10 or More Units

Mobile Home or Other Type of Housing

10.4 HOW WILL LAND USE, POPULATION, AND HOUSING CHANGE IN THE FUTURE?

Population in most of the study area communities is projected to increase through 2040. The PSRC expects population in the Puget Sound region to grow by about 24 percent to approximately 4.9 million by 2040. Along with that increase in population, the number of households in the region is expected to increase by about 37 percent to approximately 2.1 million (PSRC, 2015a). Consistent with that trend, from 2010 to 2014 the population of King County grew at an average annual rate of 1.1 percent, slightly above the regional average. Between 2013 and 2014, the King County population grew by 35,350 (1.8 percent) and King County is expected to continue to lead the region in growth.

PSRC Growth Centers

Centers are locations characterized by compact, pedestrian-oriented development, with a mix of different office, commercial, civic, entertainment, and residential uses. While relatively small geographically, centers are strategic places identified to receive a significant proportion of future population and employment growth when compared to the rest of the urban area. Centers of different sizes and scales - from the largest centers to the smallest - are envisioned for all of the region's cities.

Concentrating growth in centers allows cities and other urban service providers to maximize the use of existing infrastructure, make more efficient and less costly investments in new infrastructure, and minimize the environmental impact of urban growth.

The Regional Growth Strategy established by VISION 2040 (described in Section 10.2.1) calls for broad shifts in locations where growth should be located within the region. The Strategy establishes six clusters of jurisdictions called "regional geographies" including four types of cities (by size) and two unincorporated types (urban and rural). The study area communities within each cluster are in **bold** font as follows:

1. Metropolitan Cities: Seattle, **Bellevue**
2. Core Suburban Cities: Auburn, Bothell, Burien, Federal Way, Kent, **Kirkland**, **Redmond**, **Renton**, SeaTac, Tukwila
3. Larger Suburban Cities: Des Moines, **Issaquah**, Kenmore, Maple Valley, Mercer Island, **Sammamish**, Shoreline, Woodinville
4. Small Cities: Algona, **Beaux Arts**, Black Diamond, Carnation, **Clyde Hill**, Covington, Duvall, Enumclaw, **Hunts Point**, Lake Forest Park, **Medina**, Milton, **Newcastle,** Normandy Park, North Bend, Pacific, Skykomish, Snoqualmie, **Yarrow Point**
5. **Urban Unincorporated King County**: all unincorporated areas within urban growth areas
6. **Rural Unincorporated King County**: rural- and resource-designated areas outside urban growth areas

The Strategy calls for: (1) increasing the amount of growth targeted to metropolitan cities and core suburban cities; (2) increasing the amount of growth targeted to larger suburban cities; (3) decreasing the amount of growth targeted to urban unincorporated areas, rural designated

unincorporated areas, and small cities; and (4) achieving a greater jobs-housing balance within the region.

As land redevelopment continues within the comprehensive planning framework, land use patterns will change. Figure 10-2 in Section 10.2 shows what land uses are planned to look like in the future. The majority of the combined study area (76 percent) is anticipated to remain suburban in character, with single-family housing, while the current trend of focusing new development within the established city limits and urban growth areas is expected to continue. The majority of new residential and commercial growth is expected to occur as mixed-use and multifamily developments within designated downtown and neighborhood commercial centers. Multifamily residential uses are anticipated to be 5 percent of the total land acreage, commercial uses 3 percent, and mixed-use areas 7 percent. Single-family development will also continue, but likely on smaller lots, resulting in higher densities in some single-family areas.

10.5 HOW WERE POTENTIAL IMPACTS TO LAND USE AND HOUSING ASSESSED?

This chapter evaluates the alternatives' consistency within the general regulatory framework, including applicable land use and shoreline goals and policies. Zoning and shoreline designations in the combined study area were reviewed to confirm whether the alternatives would be allowed in all types of zones and shoreline environments.

Because study area communities would determine whether to designate the project as an EPF as part of the project-specific permit application process, this programmatic evaluation does not include a complete analysis for consistency with EPF policies and regulations. This chapter generally discusses the EPF designation and what it would mean for location and development of the project.

The EIS Consultant Team conducted research to identify potential changes in land use related to transmission lines and other utility components. Information was obtained from land use studies and an interview with a local Assessor's Office (FCS, 2016).

The potential for the project to convert existing non-utility land uses to a utility use was also considered. The evaluation includes the potential for the project to physically separate existing neighborhoods.

10.6 WHAT ARE THE LIKELY CONSTRUCTION IMPACTS TO LAND USE AND HOUSING?

10.6.1 Construction Impacts Considered

The project could be considered to have an adverse land use impact if construction would cause a substantial disruption of normal access, services, or activities.

The magnitude of potential land use impacts during construction is classified as minor, moderate, or significant, which have been defined for this analysis as follows:

Minor - Construction could temporarily disrupt normal access at any one location, but adequate alternate access could be provided to approximate or maintain existing uses.

Moderate – Construction continues for a substantial amount of time at any one location or at numerous locations in close proximity, compromising access sufficiently to adversely affect service provision and site uses for brief periods.

Significant – Long-term construction at any one location or numerous locations in close proximity disrupts normal access to area homes, services, or businesses, where alternate access cannot be provided and uses/services are disrupted.

10.6.2 No Action Alternative

Under the No Action Alternative, the project would not be constructed and no impacts would occur. While some existing equipment could be replaced, no major construction would occur.

10.6.3 Action Alternatives

The study area communities would ensure that appropriate access to properties (homes, businesses, or services) from public rights-of-way would be maintained for all alternatives, options, or components considered.

All alternatives involving construction of new infrastructure (except the Energy Efficiency and Demand Response Components of Alternative 2) would need permits prior to construction. During the permit process, development review would determine how access would be maintained. Negligible land use and housing impacts would be expected from project construction under any of the action alternatives.

10.7 HOW COULD OPERATION OF THE PROJECT AFFECT LAND USES AND HOUSING?

10.7.1 Operation Impacts Considered

10.7.1.1 Consistency with Goals, Policies, and Regulations

The project could have an adverse land use impact if it were inconsistent with planning goals and policies, or if the zoning and shoreline environment designation restrictions of any study area community would prohibit any aspect of the project.

Land use goals and policies of the study area communities (Appendix F) provide some guidance as to where new transmission lines, transformers, or the features of Alternative 2 should be located, and some have goals or policies supporting undergrounding of electrical lines. All of the area comprehensive plans acknowledge a need for adequate infrastructure to support development.

The infrastructure components of all of the alternatives would likely be allowed by most zoning designations of the study area communities. The exceptions are described in the sections below for each alternative. Development regulations related to height/scale and setbacks would be applied depending on specific location and the project component. Specific designs for the project would need to be reviewed by each community to determine compliance with applicable zoning codes and regulations. Most local area SMPs would require new utilities that are not dependent on a shoreline location to be built outside of the shoreline jurisdiction unless there were no feasible alternative. Some study area communities specifically prohibit particular types of utility activities in some shoreline areas, as described for the alternatives below.

Most local area comprehensive plans establish policies for developing EPFs. These generally relate to coordination, applying sustainability principles in siting decisions and intent to ensure impacts are adequately mitigated (see applicable policies in Appendix F). For the project or any component of the project to be considered as an EPF by one or more of the study area communities, the jurisdiction would need to determine that the project is critical infrastructure, important regionally as well as locally and difficult to site. This determination would be made based on a specific project proposal.

10.7.1.2 Conversion of Land or Housing to Utility Use

Properties could be converted to utility uses. If land were converted to utilities it could take away land otherwise available to cities to accommodate the required King County Growth Targets for housing and jobs, including land already developed with housing or commercial uses. Although the planning process that established those targets also identified the need for utilities, none of the study area communities specifically identify how much land is expected to be needed for utility use. Use of land for utilities that would have been used to meet mandated growth targets would not necessarily create an adverse impact. The amount of land converted to utilities would need to be considered in the context of remaining available land to confirm whether an impact would likely occur and whether it would be significant.

Housing impacts would occur in the event that residences needed to be purchased and removed in order to build the project. PSE confirms that due to safety regulations, transmission lines would never be placed directly over homes (Strauch, personal communication, 2015).

10.7.1.3 Classifying Impacts

The magnitude of potential land use impacts from operation of the project is classified as minor, moderate, or significant, which have been defined for this analysis as follows:

Minor – Project could be developed consistent with policies and regulations, and would convert some land to utility uses, but not require the removal of existing homes or businesses.

Moderate – Project could be developed consistent with policies and regulations and would convert a relatively small percentage of land targeted to meet housing or employment goals to utility use.

Significant – Project could not be developed consistent with policies or regulations, and would convert substantial numbers of homes or businesses to utility uses, or otherwise substantially affect the ability of study area communities to meet their housing or employment targets, or other adopted development goals.

10.7.1.4 Property Values

During EIS scoping, a number of public comments were received on the topic of whether the proposed new transmission line would affect property values. Although the effect of transmission lines on property values is an economic rather than an environmental issue as defined by SEPA, the issue is discussed in this land use analysis to the extent that a change in property values could result in a change in land use (for example, a single-family residential use becoming vacant or substantially changed resulting from loss in property value).

To respond to these comments, the EIS Consultant Team reviewed existing studies addressing whether location of transmission lines could affect property values to the extent that devaluation would result in a change of use. A search of online literature databases found over 25 articles and reports related to power line effects on property values. Of that number, one study prepared for The Electric Power research Institute (EPRI) titled *Transmission Lines and Property Values: State of Science* (Mullins et al., 2003) was chosen for use as the source of information for this EIS because it synthesizes and summarizes the findings of over 50 surveys and studies.

EPRI is a nonprofit organization that conducts "research, development and demonstration relating to the generation, delivery and use of electricity for the benefit of the public." See: http://www.epri.com/About-Us/Pages/Our-Business.aspx

The EPRI report finds that the results of previous studies are mixed. In some cases the report found that small decreases in property values had been associated with proximity to a transmission line. In other cases no changes in property values were found. In some cases there were increases in property values. The specific conclusions of the report are provided verbatim below, starting with the statement that findings are not conclusive (Mullins et al., 2003):

> *"Quoting from William N. Kinnard Jr. (1990), no quantitative generalizations about findings from the studies can be made with any degree of reliability. Still today, differences in location and time of data collection, as well as research design, make direct comparisons of results from all of the studies reviewed very difficult. That said, the research projects covered in this report do suggest a number of conclusions that are not substantially different from what we already knew, as listed below.*
>
> - *There is evidence that transmission lines have the potential to decrease nearby property values, but this decrease is usually small (6.3% or lower);*
> - *Lots adjacent to the ROW [right-of-way] often benefit; lots next to adjacent lots often have value reduction;*
> - *Higher-end properties are more likely to experience a reduction in selling price than lower end properties;*

- *The degree of opposition to an upgrade project may affect the size and duration of the sales price effects;*
- *Setback distance, ROW landscaping, shielding of visual and aural effects, and integration of the ROW into the neighborhood can significantly reduce or eliminate the impact of transmission structures on sales prices;*
- *Although appreciation of property does not appear to be affected, proximity to a transmission line can sometimes result in increased selling times for adjacent properties;*
- *Sales-price effects are more complex than they have been portrayed in many studies. Even grouping adjacent properties may obscure results;*
- *Effects of a transmission line on sales prices of properties diminish over time and all but disappear in five years;*
- *Opinion surveys of property values and transmission lines may not necessarily overstate negative attitudes but they certainly understate (or ignore) positive attitudes; and*
- *The release of findings from the Swedish study on EMF[5] and health effects had no measurable influence on sales prices."*

Overall, the EPRI study does not support a conclusion that property value shifts would occur that would lead to negative impacts on land uses. The King County Assessor does consider views of powerlines in assessing property values, as discussed in Chapter 11 Views and Visual Resources. Therefore, the land use analysis in this Phase 1 Draft EIS considered effects on property values but found them to be inconclusive with regard to causing changes in land use.

More recent studies have confirmed the results of the 2003 EPRI report. A 2012 study concluded that effects, if they occurred, ranged from 3 to 6% of value, and other factors such as property use, size, and uniqueness affected property values more significantly (Chalmers, 2012). A 2014 literature review found that the presence of transmission lines does not automatically adversely impact property values of adjacent properties, and what effects are seen dissipate with distance, usually disappearing at 200 – 300 feet (Roddewig and Brigden, 2014). No studies were found indicating a different conclusion than those summarized in the EPRI study.

Examples of Goals and Policies for Reliable Energy Provision

Redmond Policy UT-59: Work with energy service providers to promote an affordable, reliable, and secure energy supply that increases development and use of renewable and less carbon-intensive sources, and that minimizes demand and consumption.

Kirkland Policy U-7.3: Work with and encourage PSE to provide clean and renewable energy that meets the needs of existing and future development, and provides sustainable, highly reliable, and energy-efficient service for Kirkland customers.

[5] The EPRI document cited includes reference to the following study: Des F. Rosiers. 2002. Power lines, visual encumbrance and house values: a microspatial approach to impact measurement. Journal of Real Estate Research 23(3):275–301.

10.7.2 No Action Alternative

Under this alternative, no properties would be purchased, no neighborhoods would be traversed by a new transmission line, and no new transformers would be installed, with no expansions of existing substations. There would be no conversions of other land uses to utility uses and no resulting land use impacts.

However, the No Action Alternative would likely lead to declining reliability of the electrical power supply on the Eastside, which could be inconsistent with Growth Management Act Goal 12, described in Section 10.2.1. It would also be inconsistent with local planning policies for Redmond, Kirkland, Renton, Bellevue, and others regarding provision of reliable energy.

Planning goals in the region recognize the importance of economic development for community stability, creation and retention of jobs, adequate housing, and efficiencies in service provision such as transportation (sometimes referred to collectively as *smart growth*). Without a confident forecast of reliable power by PSE, developers and businesses may choose not to invest in the Eastside area, which could delay growth or shift growth (including housing) to other areas of the region. Since electrical reliability is only one of many factors that developers and businesses consider, in the short term some businesses could ensure against power outages with their own backup generators. In the long term; however, if a trend of unreliable power supply were to continue, it could have a negative impact on the role the Eastside is expected to play in accommodating growth in the region.

Smart growth is an urban planning and transportation concept that concentrates growth in compact walkable urban centers to avoid sprawl. It also advocates compact, transit-oriented, walkable, bicycle-friendly land use, including neighborhood schools, complete streets, and mixed-use development with a range of housing choices.

Therefore, due to policy inconsistencies and potential changes to land use patterns from those planned under the GMA, the No Action Alternative would likely have a moderate to significant land use and housing impact, depending upon the degree to which uncertain power availability affects land development.

10.7.3 Alternative 1: New Substation and 230 kV Transmission Lines

Impacts are described according to the major components associated with Alternative 1. The substation impacts are described first, followed by transmission line options.

This alternative includes placing a new 230 kV to 115 kV transformer near the center of the Eastside at one of three locations described in Chapter 2 (Vernell, Westminster, or Lakeside). PSE has proposed this alternative as their solution to best ensure reliability of the electrical supply system, consistent with local and regional planning goals. In addition, new transmission lines would be constructed connecting the new transformer to the Sammamish and Talbot Hill substations.

The Vernell and Westminster sites shown in Table 10-1 below (owned by PSE) would likely be adequate to accommodate the proposed new substation and impacts to land use and

housing would be negligible. If the Lakeside site were chosen, PSE would need to purchase and develop land adjacent to the existing substation. Table 10-1 summarizes the existing land uses around the three potential substation sites for the new transformer, in order of their prevalence.

Table 10-1. Alternative 1 - Existing Land Uses around Substations Needing Expansion

Substation	Land Use
Lakeside	Industrial, institutional, vacant land (and single-family residential across the street).
Westminster	Parks/open space, recreation, commercial, and single-family residential (across the street).
Vernell	Industrial, transportation, and commercial.

Source: King County Assessor

The conversion of land to utility use at the Lakeside site is considered a minor impact on land use, considering the small amount of land that would be needed along with other appropriate measures that would be employed to address compatibility with adjacent uses, such as screening for visual impacts and addressing potential noise. Impacts from the substation should be considered together with the transmission line impacts of each option, which are described in Sections 10.7.3.1 through 10.7.3.4.

10.7.3.1 Option A: New Overhead Transmission Lines

Overall, the potential impacts to land use and housing with the transmission lines of Alternative 1, Option A could range from minor to significant depending on specific location and whether a new or existing corridor were used for the facility.

10.7.3.1.1. New Corridor

Impacts to specific properties would occur if land were purchased and used for the project. With this option, overhead transmission lines could be placed in entirely new corridors, with conversion of existing uses to utility uses. Conversion could occur with purchase of complete parcels (including homes or businesses), portions of parcels, or easements across land. If the overhead line were placed in a new corridor, it is assumed the corridor would be approximately 150 feet wide under the worst-case scenario described in Chapter 2. Given that a new corridor would need to be at least 18 miles long, this width would mean a change to utility land use for approximately 327 acres out of the approximately 90,000 acres in the combined study area.

PSE would attempt to avoid placing a new transmission corridor directly where single-family or multifamily housing structures now exist and lines would not be allowed directly over residential structures (Strauch, personal communication, 2015). However, a new transmission corridor would likely not be able to completely avoid housing impacts due to the predominance of residential uses in the combined study area. If a route crossing existing

housing were needed, those homes would need to be purchased and removed. In this scenario, direct land use and housing impacts would range from moderate to significant, depending on the specific corridor location and proximity of housing to the corridor.

10.7.3.1.2. Existing Corridor

Placing the line through existing PSE corridors or other dedicated utility easements, or along roadways, would be more consistent with land use and utility policies supporting utility co-location, although it could still result in some conversions of adjacent properties or purchases of housing. These conversions could occur in the event that the corridors needed to be widened to accommodate the new utility and allow an adequate clear zone between the lines themselves and between lines and other structures. Up to 50 feet of additional clear zone could be needed throughout the corridor. This could require removal of some structures, including housing, and would reduce the availability of vacant land for additional housing or other development. The use of an existing shared corridor would have a lower potential for impacts from property conversion than a new corridor. Impacts would range from minor to moderate, depending on location and actual design.

High Consequence Land Use is a use which, if located in the vicinity of a hazardous liquid pipeline, would present an unusually high risk in the event of pipeline failure due to its function, including utilities providing regional service.

Alternative 1, Option A would be generally consistent with local planning policies listed in Appendix F except in the event that PSE intended to co-locate the transmission line with the Olympic Pipeline Company (OPLC) high pressure pipeline described in further detail in Chapter 16. While some local planning policies encourage co-location with utilities where safe (see Chapter 8), three study area communities (King County, Redmond, and Kirkland) have policies or regulations that could specifically prohibit combining new or expanded transmission lines (which are considered high consequence land uses) with hazardous material pipelines. Development regulations would need to be consulted for all study area communities. The City of Bellevue, for instance, has one code section (LU 20.20.255) which would disfavor site selection in residential areas.

Some of the study area communities have zoning requirements (including shoreline overlay requirements) that would specifically prohibit placement of this alternative in certain locations. Table 10-2 shows the zoning districts and shoreline environment designations in which Beaux Arts Village, Hunts Point, Issaquah, Newcastle, Redmond, Renton, and Yarrow Point appear to prohibit all or portions of Alternative 1[6]. This table will also apply to the other options of Alternative 1.

[6] The City of Bellevue is updating its SMP. The existing, adopted SMP was used for this analysis.

Table 10-2. Potential Land Use Restrictions for Alternative 1

Study Area Community	Use Restriction
Beaux Arts Village	New utilities prohibited in following shoreline environment designations: Urban Conservancy, Residential, and Aquatic
Hunts Point	• Primary electrical utilities prohibited in: Stormwater Utility • Primary electrical utilities prohibited in these shoreline environment designations: Natural, Residential, and Aquatic
Issaquah	Utilities not allowed in: Mineral zoning district
Newcastle	Utility yards not allowed in: Mixed Use, Urban Residential, Neighborhood Business zoning districts
Redmond	• Regional utilities not allowed in these neighborhoods: Anderson Park, Carter, East Hill, Old Town, River Bend, River Trail, Sammamish Trail, Trestle, Town Square, Town Center, or Valley View • Substations (and utility storage) not allowed in these shoreline environment designations: Aquatic, Natural, Urban Conservancy • No additional utilities allowed in: utility corridor along the west side of the edge of Lake Sammamish containing the City's sewer line[7]
Renton	All utilities prohibited in: Shoreline Natural shoreline environment designation
Yarrow Point	Primary utilities prohibited in the following shoreline environment designations: Urban Conservancy, Residential, Natural, Aquatic

Note: This list of restrictions is not intended to be comprehensive. Study area communities may identify other regulations not included here during review of a project level proposal in Phase 2 of this EIS.

Other study area communities not listed in the table would appear to either allow the alternative outright or as a conditional use in all zones; some would prohibit the project in some or all shoreline areas unless there was no other alternative. In some cases, the zoning code does not specifically articulate whether the project would be allowed or prohibited. In those circumstances, the local government would need to perform a code interpretation to determine if the project were allowed, conditionally allowed, or prohibited. The same would be true in the event that project development were proposed inconsistent with zoning and shoreline regulations.

10.7.3.2 Option B: Existing Seattle City Light 230 kV Transmission Corridor

The Seattle City Light (SCL) transmission line is an existing corridor with a 230 kV line. Sharing the transmission line with SCL would likely require rebuilding the existing system of transmission lines as described in Chapter 2. Because the other utility's functioning lines could not be taken out of service during construction, new lines would be built adjacent to the existing lines. For this analysis, it was assumed that that width of the existing corridor would

[7] Determination of whether additional/new components added to an existing utility would be considered a new use or expansion of an existing use would be made by the jurisdiction(s) with approval authority at the time of permit submittal.

not need to be expanded. However, if it was expanded, additional adjacent property may need to be purchased in order to maintain adequate, safe clearance between construction activities and the operating line and thus similar conversions of properties or houses could occur as with existing corridors under Alternative 1, Option A. This would likely be a minor impact, because this likelihood is considered to be low.

In addition, some west-east transmission lines would be needed outside of the existing north-south corridor to connect to the existing substations, leading to some land or easement purchases and changes in land use. Additional land would also be needed for a new Lakeside substation as described in Chapter 2.

This option would have some of the same zoning consistency issues as Option A (Table 10-2) including potential for co-location with a high consequence land use, since it also crosses the OPLC pipeline in places and is parallel to it in other locations. Option B would not affect Lake Washington shorelines to the extent that Option D would, but could intersect shorelines associated with other waterbodies such as Kelsey Creek.

10.7.3.3 Option C: Underground Transmission Lines

An underground line placed within a new corridor would be narrower than Alternative 1, Option A's overhead line, because the underground facilities require a more narrow clear zone. A new corridor for underground transmission might require less land, easement area, or homes to be purchased than for Option A. As with Option A, PSE would attempt to avoid the removal of residential structures in establishing a route for the line. Potential impacts for a new corridor would likely be minor in nature due to the relatively narrow corridor and more limited likelihood for land conversion to utility uses than with Option A.

With this option, the underground transmission line could be entirely or partially constructed through existing PSE 115 kV overhead transmission line rights-of-way, other utility rights-of-way (such as roadway or rail corridors), or new rights-of-way. As with Option A, new property could be needed for new corridors or additional property could be needed to widen existing corridors depending on space available. However, existing underground utilities present constraints in siting new underground corridors in the highly developed study area. This option has a lower potential for land use impacts than Option A, because of the reduced corridor width. Overall, impacts would be expected to be minor.

Alternative 1, Option C would have the same general zoning and shoreline constraints as Option A (Table 10-2). An underground transmission line would have the same potential constraints as Option A's overhead line regarding co-location with OPL's pipeline. Co-location may not be allowed if the uses are determined to be incompatible or unsafe. If co-location were not permissible, either the pipeline would need to be relocated (likely given the prior easement rights owned by PSE in the corridor as described in Chapter 16) or the proposed transmission line would need to be sited elsewhere, with consideration given to current easement holders of the utility corridor.

10.7.3.4 Option D: Underwater Transmission Line

This option would be subject to the same types of zoning and shoreline restrictions as Alternative 1, Option A (see Table 10-2). The in-water component would not generate changes to land use; the potential for land use impacts would begin at the shoreline where the line would transition from in-water to on-land and where vaults would be needed. PSE would acquire land for vaults either outright purchase or through easements.

Once away from the shoreline area, the potential changes to land use from the transmission line would be the same as for Option A (minor to significant), with two lines routed generally west to east (either overhead or underground) to connection points, as described in Chapter 2. There are some existing east west corridors that could be used, except in the Kirkland area. In that location, a new corridor would be required to provide the connection to substations.

In Beaux Arts Village and Yarrow Point, a transmission line would be prohibited in the Shoreline Aquatic environment, which includes Lake Washington. Therefore, if proposed in those communities, the underwater component could have a significant impact due to inconsistency with shoreline regulations.

10.7.4 Alternative 2: Integrated Resource Approach

A number of the communities in the Alternative 2 study area have energy policies that would appear to specifically support some of the types of actions and features of this alternative. There are no local planning policies that would oppose or discourage the components of Alternative 2, although some development regulations would prohibit some components in certain locations as described below.

10.7.4.1 Energy Efficiency and Demand Response Components

These components would have negligible land use impacts, with no new structures and no purchases of land required. They would not likely lead to changes in use of properties or housing impacts, and would therefore have negligible impacts to land use and housing. No development regulations have been identified that would prohibit these components.

10.7.4.2 Distributed Generation Component

This component would likely have negligible land use impacts because it would involve adding small-scale infrastructure (generation sources such as anaerobic digesters, gas turbines, reciprocating engines, microturbines, or fuel cells). The component would not lead to changes in existing land use or housing impacts. If these types of facilities were installed in conformance with all applicable development regulations, consistency with adjacent land uses would be ensured, and these types of facilities would not create trends for changes in land use.

Local development regulations would address specific site compatibility issues for such structures, ensuring proper setbacks from property lines, appropriate access, and site landscaping; any specific height, bulk, and scale limitations established by local zoning codes would be applied as the site was being designed. Generally, these facilities would not be considered utility uses, but would be regulated along with the primary land use on the site.

Table 10-3 shows four cities in the Alternative 2 study area that have zoning designations (including shorelines) where these types of facilities may not be allowed or where they could be restricted in size.

Table 10-3. Land Use Restrictions for Alternative 2

Study Area Community	Use Restriction
Beaux Arts Village	New utilities prohibited in following shoreline environment designation: Urban Conservancy, Residential, and Aquatic
Kirkland	Utility production and processing facilities[1] prohibited in these shoreline environment designations: Natural and Aquatic
Redmond	No additional utilities allowed in: the utility corridor along the west side of the edge of Lake Sammamish containing the City's sewer line
Renton	• Electrical power generation and co-generation **is** permitted as an accessory use when located more than 100 ft. from any property zoned for residential use and production of less than 10 MW of electricity. In the CO zone the use must be accessory to a medical institution. • All utilities prohibited in: Shoreline Natural shoreline environment designation

[1]"Facilities for the making or treatment of a utility such as power plants and sewage treatment plants or parts of those facilities" (Kirkland Municipal Code 83.80.130).

10.7.4.3 Energy Storage Component

This component would likely have minor to moderate land use impacts. PSE would locate the site for this component near the load to be served. It would ideally be adjacent to one or more existing substations, and would occupy approximately 6 acres, Similar to the substation component of Alternative 1, Option A, an existing substation footprint could be expanded to accommodate the site, or PSE could place the facility on land not adjacent to one of its substations, which PSE may not currently own. Existing housing could be purchased and converted to this new utility use. There would be a potentially negligible to minor land use/housing impact considering that 6 acres is a relatively small land area compared to the land area of the Eastside. A 6-acre site could require removal of more than one home or business depending on location.

10.7.4.4 Peak Generation Plant Component

Three peak generation plants could be placed on sites of approximately 1 acre, and each would be adjacent to or within existing PSE substations on the Eastside. Land use impacts would be similar to but smaller than for the substation component of Alternative 1, Option A. As with the energy storage component, peak generation plants would likely encompass entire sites near the load to be served. These sites would need to be purchased and maintained by PSE, converting some land uses, possibly including housing, to a utility land use (or the use classification determined by the governing authority). Impacts would be minor to moderate but similar to energy storage as there would be relatively compact, types of development (compared to transmission corridors).

The local code restrictions described above (see Table 10-3) would likely apply to peak generation plants, and the same type of local site review (setbacks, height, and other parameters) would occur.

10.7.5 Alternative 3: New 115 kV Lines and Transformers

10.7.5.1 Substations

As discussed in Chapter 2 and shown in Table 2-3, provision of the new 115 kV transmission lines would necessitate expansion of five existing substations for this alternative, as opposed to the one substation needing alteration with Alternative 1. Table 10-4 below describes the existing land uses around the substation sites that would be expanded with Alternative 3. One of the facilities, the Lakeside substation, would likely expand onto property already owned by PSE. Work at the other substations listed would require purchase of property.

Table 10-4. Alternative 3 - Existing Land Uses around Substations Needing Expansion

Substation	Percent Expansion	Abutting Land Uses
Hazelwood (Newcastle)	200%	Single-family residential, vacant, and other uses, with recreation (Hazelwood Park) and institutional (Hazelwood Elementary) uses in the immediate vicinity
Clyde Hill (Bellevue)	50-60%	Single-family residential
Sammamish (Redmond)	10-20%	Utility, commercial, industrial, recreation, and vacant uses
Lakeside (Bellevue)	10-20%	Industrial, institutional, vacant (and single-family residential uses across the street)
Talbot Hill (Renton)	5-10%	Transportation, utility, parks and open space, multifamily residential, vacant and recreation uses

10.7.5.2 Transmission Lines

The same types of property conversions expected for the transmission line of Alternative 1, Option A, would also occur for Alternative 3, with potential purchase and demolition of homes or other uses; however, Alternative 3 would only install the new lines overhead along existing road or utility rights-of-way, and not in a new corridor. The utility easement for a new 60-mile long, 40-foot wide corridor could involve a conversion of up to 291 acres from other land uses to utilities. The potential impacts of this alternative could range from minor to moderate, depending on location and specific adjacent uses. As with Alternative 1, this alternative would likely be consistent with local planning policies stating a need to plan for adequate power supply.

The same types of development regulations that would apply to Alternative 1would be applied by study area communities to Alternative 3. This alternative would be subject to the same zoning and shoreline restrictions as Alternative 1, Option A (see Table 10-1).

10.8 WHAT MITIGATION MEASURES ARE AVAILABLE FOR POTENTIAL IMPACTS TO LAND USE OR HOUSING?

Planning, locating, and designing the project consistent with local policies and regulations would generally ensure compatibility of land uses.

To limit impacts associated with conversion of properties to utility uses, PSE could apply the following measures:

- Use existing utility corridors or properties already in PSE-ownership to the extent feasible.
- Underground all or part of the line, or place the line through Lake Washington.
- Provide relocation assistance for any residents displaced or businesses purchased.

10.9 ARE THERE ANY CUMULATIVE IMPACTS TO LAND AND SHORELINE USE OR HOUSING AND CAN THEY BE MITIGATED?

The project would add utility infrastructure to a highly developed area where it is already commonly found, expected to exist, and needed to support existing and future land uses. No cumulative adverse impacts are expected.

10.10 ARE THERE ANY SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS TO LAND AND SHORELINE USE OR HOUSING?

No significant unavoidable adverse impacts to land use or housing are expected with any of the action alternatives. Alternative 1, Option A, would likely have significant impacts if a new transmission corridor was developed, but mitigation is available as discussed above.

The No Action Alternative could lead to unavoidable significant adverse impacts in the long term if unreliable power supply were to outweigh the regional factors amenable to growth and development, leading to development inconsistent with regional growth plans and targets.