CHAPTER 13. HISTORIC AND CULTURAL RESOURCES

13.1 HOW WERE HISTORIC AND CULTURAL RESOURCES IN THE COMBINED STUDY AREA EVALUATED?

This chapter addresses two main types of historic and cultural resources: (1) aboveground historic properties; and (2) recorded and potential archaeological resources. The EIS Consultant Team conducted research to identify recorded historic and cultural resources located within the combined study areas (Alternatives 1, 2, and 3 as depicted on Figure 1-4 in Chapter 1).

For the purposes of this programmatic EIS, specific geographic locations of proposed construction have not been identified. Research within the study areas focused on collecting and summarizing data on previously recorded resources, and it did not include fieldwork or evaluation of recorded resources. For the Phase 2 Draft EIS, additional detail will be developed on the presence of and potential impacts to historic resources.

13.1.1 Historic Properties

The analysis of aboveground historic properties focused on buildings or structures currently listed on a historic register. In some cases, an aboveground historic property also includes a belowground archaeological component, as with a historic cemetery; these have been categorized with aboveground resources within this chapter. To be considered historic, a property (building, structure, or site) generally must meet minimum age requirements. However, historic properties are not defined solely by their age but also by criteria related to their historic or cultural importance; this is known as “significance”. Significant historic properties represent important themes, cultures, or patterns in our past. The significance of a property may be on the national, state, or local level.

Recorded historic properties that are listed on federal, state, or local historic registers were identified through a review of records at the Washington State Department of Archaeology and Historic Preservation (DAHP) and the King County Historic Preservation Program. The Cities of Issaquah, Kirkland, Newcastle, and Redmond participate in DAHP’s Certified Local Government program; their historic registers are maintained through an interlocal agreement with the King County Historic Preservation Program. No municipal historic registers exist for the Cities of Bellevue, Clyde Hill, Hunts Point, Medina, Mercer Island, Renton, Sammamish, or Yarrow Point.

Historic and Cultural Resources Key Findings

There are no known significant impacts to historic and cultural resources that cannot be avoided through appropriate mitigation measures.
Other information reviewed included local histories, historic property inventories, King County and City Landmarks List, the National Register of Historic Places (NRHP), Washington Heritage Register (WHR) properties, and historic maps. Examined documents were acquired from DAHP, online, and within Environmental Science Associates’ research library.

### 13.1.2 Archaeological Resources

Locations of recorded archaeological sites were obtained from DAHP during a records search conducted in July 2015. The team also reviewed DAHP’s statewide archaeological predictive model to analyze the potential for additional, unrecorded buried resources to be located within the combined study area (DAHP, 2010).

Other information reviewed included archaeological survey reports and site forms and ethnographic studies. Documents were examined at DAHP, the University of Washington Libraries, online, and Environmental Science Associates’ research library.

### 13.2 WHAT ARE THE RELEVANT PLANS, POLICIES, AND REGULATIONS?

There are several Washington State laws protecting archaeological resources that apply to this project: Archaeological Sites and Resources (Chapter 27.53 RCW), Indian Graves and Records (Chapter 24.44 RCW), Abandoned and Historic Cemeteries and Historic Graves (Chapter 68.60 RCW), and Human Remains (Chapter 68.50 RCW).

Because this review is being conducted under SEPA, consideration of impacts to cultural resources by the project is required. Cultural resources are defined in SEPA as buildings, structures, or sites that are on or near the project area, over 45 years old, and listed or eligible for listing in national, state, or local historic preservation registers (WAC 197-11-960).

Applicable national, state, and local historic preservation registers reviewed for this project include the following (for more information, see Appendix J):

- National Register of Historic Places (NRHP), as established through the National Historic Preservation Act (NHPA);
- Washington Heritage Register (WHR) and Washington Heritage Barn Register (WHBR); and
- King County Landmarks (including Cities of Issaquah, Kirkland, Newcastle, and Redmond).

The historical significance required for listing on each register varies based on criteria including association with significant events, significant people, distinctive architectural or artistic value, or ability to inform our past. Properties can possess significance on multiple levels and thus be listed on more than one register. For example, there are 16 barns throughout the state that are listed on the NRHP, WHR, and WHBR.
The age at which a property can be considered “historic” varies by register (Table 13-1). For the NRHP, WHR, and WHBR, the standard threshold is 50 years, while for King County Landmarks the standard threshold is 40 years. A property that has achieved exceptional significance within a shorter timespan can also be considered eligible for the NRHP and King County Landmarks, although this is rare. Changes to designated King County Landmarks are managed through the Certificate of Appropriateness (COA) process (King County, 2015b). The COA process typically involves multiple meetings and includes an appeals process.

**Table 13-1. Historic Registers Applicable to this Project**

<table>
<thead>
<tr>
<th>State / Local Preservation Register</th>
<th>Standard Age Threshold</th>
<th>Managing Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHR</td>
<td>50 years</td>
<td>DAHP</td>
</tr>
<tr>
<td>WHBR</td>
<td>50 years</td>
<td>DAHP</td>
</tr>
<tr>
<td>King County Landmarks</td>
<td>40 years</td>
<td>King County</td>
</tr>
</tbody>
</table>

WHR = Washington Heritage Register; WHBR = Washington Heritage Barn Register; DAHP = Department of Archaeology and Historic Preservation

This project is not subject to compliance with federal cultural resources regulations because there is no federal funding, federal permits, or federal lands involved. However, the state and local preservation regulations under SEPA refer to NRHP eligibility; therefore, familiarity with the eligibility criteria is helpful. In brief, a resource can be eligible for listing on the NRHP if it has integrity of location, design, setting, materials, workmanship, and feeling and is associated with significant events, significant people, embodies distinctive architectural characteristics, or has the potential to yield important information about history or prehistory.

### 13.3 WHAT HISTORIC AND CULTURAL RESOURCES ARE PRESENT IN THE COMBINED STUDY AREA?

#### 13.3.1 Precontact Period

The *Precontact* cultural chronology of the Pacific Northwest and Puget Sound extending from the Late Pleistocene era to the *Postcontact Period* has been studied and interpreted in several publications (e.g., Ames and Maschner, 1999; Blukis Onat et al., 2001; Kidd, 1964; Matson and Coupland, 1995; Nelson, 1990). The various chronologies generally agree on broad patterns in culture but may differ regarding the timing and significance of changes in specific aspects of culture, such as subsistence, technology, and social organization. The following overview of Precontact sequences draws broadly on the various chronologies, but follows Ames and Maschner (1999) by recognizing five time periods: Paleoindian.

**What does “Precontact” Mean?**

Precontact archaeological sites date prior to the point of contact between European-American peoples (including explorers, fur traders, and military personnel) with Native American peoples. In King County, the Precontact period is considered to have ended with the arrival of the Denny Party in 1851.
What does “Postcontact” or “Historic” Mean?

Postcontact or historic archaeological sites date to after the point of contact between European-American peoples (including explorers, fur traders, and military personnel) with Native American peoples. In King County, the Postcontact or historic period is generally considered to have started with the arrival of the Denny Party in 1851.

Table 13-2. Precontact Time Periods

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Approximate Date Range</th>
<th>Characteristics</th>
<th>Associated Recorded Archaeological Resources in Study Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paleoindian</td>
<td>Before 12,500 years ago</td>
<td>Often referred to as Clovis culture and located in the uplands; represented by projectile points (Ames and Maschner, 1999:65)</td>
<td>Yes (45-KI-839*)</td>
</tr>
<tr>
<td>Archaic</td>
<td>12,500 to 6,400 years ago</td>
<td>Often referred to as Olcott culture and located in riverine and lake settings; represented by cobble tools and lanceolate projectile points</td>
<td>Yes (45-KI-1227)</td>
</tr>
<tr>
<td>Early Pacific</td>
<td>6,400 to 3,800 years ago</td>
<td>Located in marine and estuary settings; represented by large shell middens and decorative artifacts such as labrets and bracelets</td>
<td>None known</td>
</tr>
<tr>
<td>Middle Pacific</td>
<td>3,800 to 1,800/1,500 years ago</td>
<td>Represented by large plank houses, increase in decorative items, woodworking tools (adzes, mauls, wedges)</td>
<td>None known, but likely present</td>
</tr>
<tr>
<td>Late Pacific</td>
<td>1,800/1,500 years ago to AD 1851</td>
<td>Represented by seasonal camps associated with resource procurement and increased variability in burial methods</td>
<td>None known, but likely present</td>
</tr>
</tbody>
</table>

*Smithsonian Archaeological Site number format
The combined study area is located within the traditional territory of the Duwamish and Snoqualmie people (Suttles and Lane, 1990). During the Postcontact period, these groups had villages along the shores of Lake Washington and Lake Sammamish and on the banks of the former Black, Cedar, and Sammamish Rivers (Haeberlin and Gunther, 1930; Smith, 1940; Spier, 1936; Swanton, 1979). During the winter, groups lived in permanent villages of cedar plank houses and practiced local hunting and fishing while sharing supplies of preserved food such as smoked fish and shellfish and dried berries. During the rest of the year, groups moved seasonally to known gathering locations for berries, roots, bulbs, sprouts, nuts, marine and freshwater fish, shellfish, land game, and waterfowl. These resources were used for winter supplies and trade, as well as immediate consumption. Salmon was a dietary staple. Other important resources included plants for medicinal or other uses; western red cedar for rope, baskets, and numerous household items; and reeds such as tules and cattails for mat making. The range in landforms would have provided a variety of gathering opportunities for these types of items and subsistence needs. Traditional burial practices at the time of European-American contact included tree burials, whereby the deceased was placed in a canoe and then raised into a tree or on a frame.

There are over 40 known (recorded) Native American names for places within the combined study area (Hilbert et al., 2001; Miller, 2014; Waterman, 1922). The majority of these are concentrated along the shores of Lake Sammamish, Lake Washington, Sammamish River, Issaquah Creek, Bear Creek, Evans Creek, Cedar River, and the former Black River. Of these 40 places, 25 were recorded on the eastern shoreline of Lake Washington between today’s Kirkland and Renton, including one on the southern tip of Mercer Island. Other concentrations are located along the shores of Lake Sammamish, the lower reach of the Sammamish River, and within the Issaquah valley. Further, numerous place names were recorded in the vicinity of today’s Renton, which was once the confluence of the Black and Cedar Rivers. The place names range between villages, resource procurement sites, geographical features, and locations with oral tradition and spiritual associations.

The U.S. Government entered into treaties with many of the local Native American groups during the 1850s. Although a signatory of the Treaty of Point Elliott in 1855, the Duwamish were not given their own reservation lands. The Duwamish continue to reside in and around Seattle and are petitioning the U.S. Government for federal recognition. The Snoqualmie were awarded federal recognition by the U.S. Government in 1999.

13.3.2.1 Industrial Development

Industries within the combined study area during the 19th century were primarily logging and coal mining. By 1897 most of the study area between Lake Washington and Lake Sammamish was logged (USGS, 1897a, 1897b). Major industries during the 20th century included agriculture and dairying with smaller operations such as the American Pacific Whaling’s headquarters on Lake Washington during the 1920s and 1930s and the Lake Washington Shipyards during the 1940s. A population boom after World War II contributed to the rise in single-family residences throughout the combined study area (Bryant, 2000; Eastside Heritage Center, 2006; Fish, 1981; Gellatly, 1977; Hardy, 2006; McDonald, 2000; Way, 1989).
Several major construction events during the 20th century disturbed the ground and modified shorelines, likely reducing the potential for intact archaeological resources within some portions of the combined study area. First, the construction of the Hiram M. Chittenden Locks and Lake Washington Ship Canal between 1911 and 1916 resulted in an approximate 9-foot drop in Lake Washington shorelines, exposing former lakebed and eliminating the flow of the Black River (Bryant, 2000). The resulting drop means that any archaeological sites along the original shorelines have likely been subject to development. Secondly, construction of a network of highways required major ground disturbance. Interstate 90, which includes the Lacey V. Murrow Memorial Bridge, first opened in 1940, and Interstate 405 opened in 1957. State Route 520, including the Evergreen Point Floating Bridge, opened in 1963.

### 13.3.3 Previous Archaeological Work

More than 200 archaeological reports have been previously prepared within the combined study area, but these surveys cover less than 25 percent of the area (DAHP, 2015). The reports were prepared by a range of project proponents for a variety of project types, including construction of highways and roads, mass transit, conversion of former railroads to pedestrian trails, and installation of various utilities. The reports vary from simple literature reviews to summaries of differing levels of fieldwork, including surveys to identify historic properties and archaeological resources up to archaeological site investigations at identified sites. Reports have been conducted at a variety of jurisdictional levels.

As of July 2015, previous archaeological reports have identified a combined total of 94 archaeological sites in the combined study area. The locations of these sites are protected from public disclosure under state law (RCW 42.56.300) and therefore are not mapped for this study (see Appendix H for a list). Of the recorded sites, 43 are located within all three study areas. The 94 recorded archaeological sites include 42 from the Precontact period and 52 from the historic period. The 42 recorded Precontact sites include permanent and temporary camps, cemeteries, culturally modified trees, and fishing, hunting, and resource gathering sites. There are 14 isolated artifacts (10 Precontact and 4 historic); isolated artifacts are typically not eligible for inclusion on historic registers. There are 15 recorded cemeteries; 14 are historic and thus treated here as aboveground historic properties, while 1 cemetery (45-KI-51) dates to the Precontact era and thus is treated here as an archaeological site. There are 6 submerged historic period resources, all of which are located within the Alternative 1 study area; these include sunken vessels, aircraft, railroad cars, and docks. For a summary comparison of recorded resources within each study area, see Table 13-3.

#### Table 13-3. Comparison of Recorded Archaeological Resources by Alternative

<table>
<thead>
<tr>
<th>Alternative Study Area</th>
<th>Total Number of Recorded Sites</th>
<th>Precontact</th>
<th>Historic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative 1</td>
<td>52</td>
<td>21</td>
<td>31</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>43</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>Alternative 3</td>
<td>88</td>
<td>42</td>
<td>46</td>
</tr>
</tbody>
</table>

Source: DAHP, 2015
13.3.3.1 Precontact Archaeological Sites

Archaeological evidence indicates that Native Americans have lived within the region and along the shorelines of Lake Sammamish for more than 12,000 years (45-KI-839, the Bear Creek Site). DAHP’s statewide predictive model classifies the combined study area as ranging from low to very high risk for containing Precontact archaeological sites (Figure 13-1). The statewide predictive model is a tool used by archaeologists and planners to evaluate potential archaeological risks on a broad scale. The model was developed to statistically evaluate multiple environmental factors (i.e., elevation, slope percent, aspect, distance to water, soils, and landforms) in order to predict where archaeological resources might be found (Kauhi, 2013). It is not a substitute for conducting site-specific subsurface investigations, which may be required for project-level review.

13.3.3.2 Historic Period Archaeological Sites

As of July 2015, there were 41 recorded historic archaeological sites located within all three of the study areas (DAHP, 2015). Generally, these sites date to the late 1800s and mid-1900s. Historic sites typically include infrastructure such as railroads, roads, bridges, docks, and piers; ruins of commercial factories, water conveyance and reservoirs, lumber mills, and mines; submerged vessels, aircraft, and railroad cars; and residential farmsteads, houses, and scatters of historic debris. Of these historic archaeological sites, none are listed on the NRHP; 30 sites are classified as potentially eligible and 11 sites have been determined not eligible for listing on the NRHP. One is listed on the Washington Heritage Register: the Renton Coal Mine (45-KI-211).

13.3.4 Aboveground Historic Register Listed Properties

As of July 2015, there were a total of 69 structures or buildings listed on historic registers within the combined study area: 55 are aboveground historic structures of buildings and 14 are recorded historic period cemeteries (Appendix I) (DAHP, 2015; King County Historic Preservation Program, 2015b). Aboveground historic properties are shown on Figure 13-1. For a comparison of historic properties by alternative, see Table 13-4. The listed properties date from 1880 to c. 1938 and are either listed on the NRHP, WHR, WHBR, or are designated King County Landmarks. Some properties are listed on multiple registers. All properties listed on the NRHP are automatically also listed on the WHR.

Table 13-4. Comparison of Historic Register Listed Properties by Alternative

<table>
<thead>
<tr>
<th>Location</th>
<th>Historic Register Listed Properties</th>
<th>Recorded Historic Period Cemeteries</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative 1</td>
<td>37</td>
<td>8</td>
<td>45</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>39</td>
<td>8</td>
<td>47</td>
</tr>
<tr>
<td>Alternative 3</td>
<td>55</td>
<td>14</td>
<td>69</td>
</tr>
</tbody>
</table>

Source: DAHP, 2015; King County Historic Preservation Program, 2015b
Two designated King County Landmarks have also been determined eligible for listing on the NRHP: the Justice William White House (45-KI-190) and the Jacob and Emma Reard House (45-KI-659). There are 19 properties listed on both the NRHP and WHR; 7 properties are only listed on the WHR, while 1 property is listed on the WHR and is also a designated King County Landmark (Newcastle Cemetery, 45-KI-141). There are 30 designated King County Landmarks, 9 of which are also listed on the NRHP and WHR. Finally, there are 6 WHBR properties.

Historic period cemeteries are recorded in all three alternative study areas. Cemeteries are protected under state law (Abandoned and Historic Cemeteries and Historic Graves, Chapter 68.60 RCW).
Historic Registered Properties

SOURCE: King County 2015; ESA 2015; WA Ecology 2014.

Figure 13-1
Historic Registered Properties
(Refer to Appendix G)
13.4 HOW WERE POTENTIAL IMPACTS TO HISTORIC AND CULTURAL RESOURCES ASSESSED?

It is not possible to identify likely construction impacts to specific historic properties and archaeological resources because the locations of proposed construction areas in relation to documented and probable historic properties and archaeological resources are not yet known.

Any ground disturbance has the potential to impact belowground archaeological resources, if present, including recorded and unrecorded archaeological resources. Any construction impacts to intact belowground archaeological resources would be irreversible and permanent, and considered a significant adverse impact. No impacts to belowground archaeological resources would be minor or moderate, as any disturbance to the depositional integrity (i.e., context) of buried archaeological resources is irreversible.

For aboveground historic resources, potential impacts may range from minor to significant, and have been assessed here depending on their potential permanence.

**Minor** – Temporary impacts and potential minor impacts from increased vibration, increased dust, and alterations to a historic resource that do not impact its ability to convey its historical significance.

**Moderate** – Those impacts which are reversible or can be mitigated through design choices. Potential moderate impacts include alterations to a resource’s architectural elements (i.e., window replacement, insulation or cladding modifications, and rooftop additions). Moderate impacts have the potential to diminish the ability of the property to convey its historical significance, if not done in a style that is architecturally sympathetic to the property’s significant historical characteristics.

**Significant** – Permanent impacts to the resource. Construction vibration may cause moderate to significant impacts, depending on the proximity to and structural stability of potential nearby historic resources. Vibration from pile driving, for example, has the potential for cumulative significant impacts to the structural integrity of historic buildings, particularly those constructed of brick. Impacts to a building’s structural integrity may limit its ability to convey its historical significance, and would be considered a significant impact.

13.5 WHAT ARE THE LIKELY CONSTRUCTION IMPACTS RELATED TO HISTORIC AND CULTURAL RESOURCES?

13.5.1 Construction Impacts Considered

All of the action alternatives propose some measure of ground disturbance. Any ground disturbance has the potential to impact archaeological resources. Impacts could occur from trenching, dredging, clearing and grading, excavation, pile driving, and compression from driving construction equipment over a resource, or staging construction material or equipment over a belowground resource. While over 200 archaeological reports have been
written for projects in the combined study area, these studies cover limited areas around their associated projects. Much of the combined study area for the Energize Eastside Project has not undergone systematic testing for archaeological resources. Based on the high number of recorded archaeological resources throughout the combined study area, as well as review of the DAHP Statewide Predictive Model, Precontact use, and Postcontact history, all study areas contain high-probability locations for encountering archaeological resources.

To continue to meet PSE’s conservation goals under any alternative, customers would voluntarily continue to implement energy efficient improvements. Expected types of conservation include energy efficiency (weatherization, efficient lighting, etc.), fuel conversion (from electric to gas), distributed generation (customer generated heat and power, solar, wind, etc.), distribution efficiency, and demand response. All of these have the potential to change the appearance of historic resources, such as through window replacements, adding rooftop equipment, and other building modifications.

13.5.2 No Action Alternative

Under the No Action Alternative, no new construction would occur. This alternative would consist primarily of maintenance of existing facilities and infrastructure.

The No Action Alternative includes implementation of energy efficiency conservation measures (weatherization, efficient lighting) and distributed generation (solar panels, wind turbines, or rooftop generators) that may result in minor to moderate impacts to aboveground historic properties and archaeological resources. No ground disturbance is expected under the No Action Alternative, and therefore no impacts to archaeological resources are anticipated.

13.5.3 Alternative 1: New Substation and 230 kV Transmission Lines

Impacts are described according to the major components associated with Alternative 1. The proposed new substation and installation of a new transformer is discussed first, followed by descriptions of the transmission line options.

Alternative 1 proposes construction of a new substation and installation of a new transformer at either the existing Lakeside substation, or at either of the possible new substations sites at Vernell and Westminster. This would require ground disturbance for foundations for the transformer and associated switchgear, drainage, and other underground components. Construction of a new substation at Vernell or Westminster would require ground disturbance for foundations.

The land surrounding the proposed Westminster substation site is classified in the statewide predictive model as having a low to moderately low risk for Precontact archaeological resources, while the land surrounding the proposed Vernell substation site is classified as having moderately low to moderate risk (see Figure 13-2). The existing Lakeside substation is classified as high and very high risk for Precontact archaeological resources (see Figure 13-2).
Figure 13-2
Statewide Predictive Model for Archaeological Risk

SOURCE: King County 2015; ESA 2015; WA Ecology 2014; DAHP 2015.
A review of Assessor data indicates that the Vernell location is surrounded by several structures built in the 1950s and 1960s, while the Westminster location is bordered by structures built in the 1970s and 1980s. Adjacent to the Lakeside location are buildings constructed in the 1960s and later. Buildings or structures 40 years or older at the time of potential impacts would qualify for consideration as a potential King County Landmark based solely on the age criterion. In addition, any building or structure 50 years or older at the time of potential impacts would qualify for consideration regarding its potential eligibility for the National Register of Historic Places, the Washington Heritage Register, and the Washington Heritage Barn Register. Therefore, the structures adjacent to the Vernell location would qualify for consideration as potential historic properties, based solely on their age. For the structures adjacent to the Westminster and Lakeside locations, the date of potential impacts will determine if these structures meet the minimum age requirement for consideration to a historic register (for example, if construction were to start in 2020, then those built in and before 1980 would need to be evaluated, as they would be 40 years or older in age at the time of potential impact).

Alternative 1 also includes new 230 kV transmission lines between the new substation and existing Sammamish substation and Talbot Hill substation, which could be overhead, underground, or submerged in Lake Washington. Overhead lines would have the least area of ground disturbance per mile of transmission line, requiring excavations only for pole footings. Underground lines would require excavation for the entire length of the alignment or portion of the alignment that is placed underground. The area of disturbance would be proportional to the length of transmission line installed underground.

The Alternative 1 study area contains the fewest recorded historic properties (37) and 52 recorded archaeological resources, which is the second highest of the three study areas. Existing surveys provide coverage of about 15 percent of the study area for Alternative 1, which is the middle amount of all the alternatives.

13.5.3.1 Option A: New Overhead Transmission Lines

A minimum of 18 miles of new overhead transmission lines may be constructed wholly or partially within existing utility easements and partially within new locations currently not dedicated to utility operations. Depending on the location of the new transmission lines, there may be significant impacts to archaeological resources, if present, during installation of the transmission line poles. This is because any disturbance to the depositional integrity of archaeological resources is irreversible.

The transmission lines may pass near historic properties that meet the minimum age qualifications for consideration to be listed on federal, state, and local historic registers. Construction of new lines may involve impacts from noise and vibration; however, these impacts are considered minor. Therefore, no adverse effects from noise or vibration are expected on historic structures, where present.
13.5.3.2 Option B: Existing Seattle City Light 230 kV Transmission Corridor

Use of existing Seattle City Light lines would necessitate replacing most of the existing structures and conductors. This may involve building a replacement line adjacent to the existing line and placing the new line in service prior to removing the existing structures. This would result in ground disturbance and the potential for minor to significant impacts to archaeological resources, if present. Noise and vibration resulting from construction may impact historic structures, if present, but these impacts are considered minor.

13.5.3.3 Option C: Underground Transmission Lines

The installation of underground transmission lines wholly or partially within existing utility easements and partially within new locations currently not dedicated to utility operations would cause ground disturbance and the potential for minor to significant impacts to archaeological resources, if present. Noise and vibration resulting from construction may impact historic structures, if present, and these impacts range from minor to moderate, depending on the historic structure.

13.5.3.4 Option D: Underwater Transmission Lines

Alternative 1 is the only alternative to propose in-water work along the eastern shoreline of Lake Washington. There are six known submerged archaeological resources within these portions of Lake Washington: two sunken vessels, one aircraft, a grouping of derailed coal cars, and two former dock complexes.

Underwater transmission line could be installed within 1,000 feet of the eastern shoreline of Lake Washington from Kirkland to Renton, including within the entire channel along Mercer Island. Underwater transmission line would be either buried 3 to 5 feet below the lake bottom or laid directly on the lake bottom. Installation methods would involve dredging, open-cut trenching, and sheet piling. At least three shoreline landing points would be needed, and up to six vaults would be constructed at each landing point. Constructing the vaults and burying underwater transmission line would require ground disturbing excavation. Shorelines are generally higher probability areas for encountering buried archaeological resources. Construction methods proposed by Alternative 1, Option D would result in ground disturbance and therefore have the potential for significant impacts to archaeological resources, if present. Noise and vibration resulting from construction may impact historic structures, if present, but these impacts are considered minor.

For the underwater portion of the line, the lack of information for Lake Washington increases the likelihood that a cultural resources survey would need to be completed. Although several underwater archaeological resources have been identified in Lake Washington, little of Lake Washington has undergone underwater survey. Based on the results of the survey, additional study to determine impacts to archaeological resources may be required. If a submerged archaeological resource is identified during construction, redesign may be possible to avoid or minimize disturbance to the resource. If there is no redesign option, the submerged archaeological resource may need to be recorded and removed. Removal would cause a significant impact.
There are 8 recorded historic period cemeteries within the Alternative 1 study area. It is assumed that no construction would occur within cemetery boundaries, but there may be noise and dust impacts to those cemeteries. These impacts are considered minor and temporary.

### 13.5.4 Alternative 2: Integrated Resource Approach

The components being considered under Alternative 2 have the potential for minor to significant impacts to archaeological resources, if present, depending on the proposed locations. If the historic properties are King County Landmarks, a Certificate of Appropriateness (COA) may be necessary depending on the terms of the designating ordinance.

The Alternative 2 study area contains 39 historic register properties (the second highest amount of the three study areas) and 43 recorded archaeological resources (the least of the three study areas). Existing surveys provide coverage of about 25 percent of the study area, which is the highest amount of all the alternatives. The Alternative 2 study area includes the eastern shoreline of Lake Sammamish. There are many recorded archaeological resources along these shorelines. Alternative 2 contains the same 8 recorded historic period cemeteries as Alternative 1 and impacts would be the same.

#### 13.5.4.1 Energy Efficiency Component

The types of potential impacts from energy efficiency efforts may include modifications to existing buildings (weatherization, efficient lighting). Weatherization could include replacement of original windows which has the potential to diminish a building or structure’s integrity of design, materials, workmanship, and feeling, if the replacement windows are not in-kind with their original architectural character, thus impacting the property’s potential for conveying its historical significance (Myers, 1981). Any modifications that are permanent have the potential to impact a property’s ability to convey its historical significance, which would be significant impact, as described in Section 13.4. No impacts are anticipated to potential archaeological resources under this component. Continued implementation of existing energy efficient improvements may result in minor to significant impacts to historic properties and archaeological resources.

#### 13.5.4.2 Demand Response Component

Few impacts to historic properties and archaeological resources are anticipated from this component. No impacts are expected to occur to archaeological resources, if present. Meter installation may contribute minor visual impacts to historic properties, if present.

#### 13.5.4.3 Distributed Generation Component

Ground disturbance could result from the installation of gas turbines, anaerobic digesters, reciprocating engines, microturbines, and fuel cells. Construction of these facilities would range from rooftop installations to larger facilities requiring up to 1 acre; larger facilities would require ground disturbing clearing and grading. Depending on the location of these larger facilities, there may be significant impacts to archaeological resources, if present.
Noise and vibration resulting from the construction of larger facilities may impact historic structures, if present, but these impacts are considered minor.

### 13.5.4.4 Energy Storage Component

Ground disturbance is anticipated to occur with installation of energy storage systems. This may cause significant impacts to archaeological resources, if present. Noise and vibration resulting from construction may impact historic resources, if present, but these impacts are considered minor.

### 13.5.4.5 Peak Generation Plant Component

Under this component, ground-disturbing trenching to access upgraded natural gas, water, and wastewater utility lines would be required to install three peak generation plants at or adjacent to existing PSE substations within the Eastside. This may cause significant impacts to archaeological resources, if present. Noise and vibration resulting from construction may impact historic resources, if present, but these impacts are considered minor. Noise from the operation of peak generation plants is considered significant and may cause minor to significant impacts to historic properties at these locations, if present.

This component may also necessitate an upgrade to major natural gas or water supply lines in order to supply the generators. Installation of these underground utilities could also encounter archaeological resources.

### 13.5.5 Alternative 3: New 115 kV Lines and Transformers

Alternative 3 proposes construction of three new transformers at existing substations: Sammamish, Talbot Hill, and Lake Tradition. This alternative also includes rebuilding or expanding five existing substations: Sammamish, Lakeside, Talbot Hill, Clyde Hill, and Hazelwood. Approximately 60 miles of new 115 kV transmission lines would be constructed within existing or new rights-of-way.

Construction of transmission lines would involve ground disturbance and thus have the potential for significant impacts on archaeological resources, if present, depending on the proposed corridors. Installation of new transformers at the Sammamish, Talbot Hill, and Lake Tradition substations would require ground disturbance and has the potential for significant impacts to archaeological resources, if present.

No cultural resources surveys of the three substation properties have been performed. The conservation efforts component of Alternative 3 is anticipated to have the same potential impacts as the No Action Alternative (minor to moderate impacts to historic properties, if present, and no impacts to archaeological resources due to no proposed ground disturbance).

The Alternative 3 study area is geographically the largest of the three and contains the greatest amount of historic properties (55) and recorded archaeological resources (88). Existing surveys provide coverage of less than 10 percent of the study area, which is the lowest amount of all the alternatives. Alternative 3 is the only alternative to propose work at the Lake Tradition substation. There are two recorded Precontact period archaeological resources on the east side of Lake Tradition within 1,200 feet of the substation (45-KI-481...
and 45-KI-430). Ground disturbance may cause significant impacts to archaeological resources, if present.

The Alternative 3 study area contains all 15 recorded historic period cemeteries. It is assumed that no construction would occur within cemetery boundaries, but there may be minor impacts to those cemeteries from noise and dust. Noise and vibration resulting from construction may impact historic structures, if present, but these impacts are considered minor.

13.6 HOW COULD OPERATION OF THE PROJECT AFFECT HISTORIC AND CULTURAL RESOURCES?

13.6.1 Operation Impacts Considered

For belowground resources, any potential impacts to historic properties and archaeological resources would occur during construction.

For aboveground resources, potential operational impacts may result from visual changes to register properties resulting from construction of new electrical facilities. There may also be noise impacts affecting the setting of nearby cemeteries. Depending on the nature of the energy efficiency measures proposed by Alternatives 1, 2, and 3, these may incentivize a loss to the architectural integrity of historic properties through the replacement of original windows with modern energy-efficient types, if not in-kind with the original architectural character. However, for historic properties that are designated King County Landmarks, replacement of windows would likely require a COA.

13.6.2 No Action Alternative

Under the No Action Alternative, no construction would occur. No impacts to archaeological resources are anticipated. Conservation efforts could impact aboveground historic properties as described in Section 13.5.2.

13.6.3 Alternative 1: New Substation and 230 kV Transmission Lines

No impacts are expected from operation of the substation. Potential operational impacts from the transmission line options are discussed below.

13.6.3.1 Option A: New Overhead Transmission Lines

Noise, vibration, and visual impacts resulting from maintenance of overhead transmission lines, such as pole replacement, may impact aboveground historic properties, if present. Depending on the resource and proximity of the overhead line to the resource, these impacts would range from minor to significant. Noise and visual impacts from maintenance work would be considered temporary and thus minor, however pole replacement has the potential for causing significant impacts to the structural integrity of historic properties built of brick, if present and depending on proximity to areas being maintained.
13.6.3.2 Option B: Existing Seattle City Light 230 kV Transmission Corridor

Noise and visual impacts resulting from operation of overhead transmission lines may impact historic structures, if present. However, since these lines would replace existing lines, the impacts are considered minor, depending on proximity.

13.6.3.3 Option C: Underground Transmission Lines

No operational impacts are anticipated to occur to aboveground historic properties, if present.

13.6.3.4 Option D: Underwater Transmission Lines

No operational impacts are anticipated to occur to aboveground historic properties, if present.

13.6.4 Alternative 2: Integrated Resource Approach

13.6.4.1 Energy Efficiency Component

An increase in energy efficiency implementation (for example, replacement of windows with styles that are not in-kind with the original architectural style) may reduce the integrity of the design, materials, and workmanship of historic resources, if present. This may result in minor to moderate impacts to historic and cultural resources, as described in Section 13.5.1.

13.6.4.2 Demand Response Component

Visual impacts resulting from the presence of new meters may impact historic and cultural resources, if present. These may reduce the integrity of setting for historic resources, if present, but are not anticipated to permanently impact a property’s ability to convey its historical significance. These impacts would be minor.

13.6.4.3 Distributed Generation, Energy Storage, and Peak Generation Plant Components

Increased noise and visual impacts resulting from distribution generation, energy storage, or peak generators measures may reduce the integrity of setting for historic resources, if present, but they are not anticipated to permanently impact a property’s ability to convey its historical significance. These impacts would be minor.

13.6.5 Alternative 3: New 115 kV Lines and Transformers

Increased noise and visual impacts resulting from operation of overhead transmission lines and transformers may reduce the integrity of setting for historic resources, if present, but are not anticipated to permanently impact a property’s ability to convey its historical significance. These impacts would be minor to moderate, depending on the proximity to potential resources.
13.7 WHAT MITIGATION MEASURES ARE AVAILABLE FOR POTENTIAL IMPACTS TO HISTORIC AND CULTURAL RESOURCES?

Impacts to specific cultural resources cannot be determined at this time because locations of project elements have not yet been identified. The following mitigation measures are typically used.

13.7.1 Construction Measures

If the selected alternative presents potential impacts to eligible or listed historic properties, mitigation measures would depend upon the nature of the property and the characteristics contributing to its significance. If impacts to a designated King County Landmark are proposed, the project will be subject to the Certificate of Appropriateness (COA) process with the King County Landmarks Commission.

An archaeological survey of proposed areas of ground disturbance is typically conducted prior to construction. Should impacts to belowground archaeological resources be anticipated, avoidance and mitigation measures would be specific to the nature of the identified resources.

Under state law (RCW 27.53), prehistoric archaeological sites are protected in all cases. Historic archaeological sites must be determined eligible for listing in the Washington Heritage Register (WHR) (RCW 27.34.220) or National Register of Historic Places (NRHP) before they are considered protected. DAHP will make a final determination whether the resource is eligible or not eligible for register listing. If a resource that is considered protected cannot be avoided, the project proponent must apply for an archaeological excavation permit from DAHP (WAC 25-48-060) to conduct any activity that disturbs the site. DAHP will then provide the archaeological excavation permit application for review to the appropriate stakeholders and Tribes.

At a minimum, an Inadvertent Discovery Plan would be prepared for use during construction. The Inadvertent Discovery Plan would outline the procedures to be followed in the event that archaeological resources are identified during construction activities. Under state law (RCW 27.44), archaeological resources identified during construction would need to be evaluated. If the resources are considered significant, any impacts on archaeological resources would require mitigation, which would likely entail archaeological investigation such as scientific excavation and analysis. For archaeological resources found during construction, an emergency archaeological excavation permit may be issued by DAHP and is typically received within three business days. It is possible that archaeological monitoring would be recommended for portions of the project; this work would be conducted under an Archaeological Resources Monitoring Plan.

Best management practices would be implemented during construction to minimize impacts from dust, noise, and vibration. Vibration monitoring may be conducted at historic buildings to document that vibration does not exceed acceptable levels.
13.7.2 Operation Measures

If the selected alternative presents potential operational impacts to eligible or listed historic properties, mitigation measures would depend upon the nature of the property and the characteristics contributing to its significance. If impacts to a designated King County Landmark are proposed, the project will be subject to the COA process with the King County Landmarks.

Operational impacts to aboveground resources may include noise, vibration, and views. The impacts to each identified historic resource will need to be assessed individually to determine mitigation measures, which may include redesign options or measures to minimize noise and vibration impacts. No operational impacts are anticipated for belowground archaeological resources.

13.8 ARE THERE ANY CUMULATIVE IMPACTS TO HISTORIC AND CULTURAL RESOURCES AND CAN THEY BE MITIGATED?

It is assumed that any impact to a belowground archaeological resource would occur during construction and would be mitigated during the construction phase. Thus cumulative impacts related to belowground archaeological resources are considered unlikely.

For aboveground eligible or listed historic properties, impacts may occur under all alternatives through the promotion of energy efficiency, which is assumed to include replacement of original windows, as described in Section 13.5.1. Any loss of historical integrity, together with ongoing projects in the region, would continue the past and current trends of historic buildings being modified and destroyed. However, no impacts are anticipated from the Energize Eastside project that cannot be mitigated. For King County Landmarks, any loss of historical integrity would be mitigated through the COA process. Therefore, no cumulative impacts on aboveground historic properties are anticipated.

13.9 ARE THERE ANY SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS TO HISTORIC AND CULTURAL RESOURCES?

Based on the programmatic evaluation, no known significant impacts to historic and cultural resources have been identified that cannot be avoided through appropriate mitigation measures. However, the exact location of the project is not known. For the Phase 2 Draft EIS, site-specific analysis will be conducted to more definitively determine potential impacts.