



CULTURAL RESOURCES

EASTSIDE RAIL CORRIDOR REGIONAL TRAIL MASTER PLAN PROJECT

FEBRUARY 2016

The Eastside Rail Corridor Regional Trail Master Plan Project develops a baseline inventory and planning guidelines for portions of the Eastside Rail Corridor owned by King County and Sound Transit.

A variety of uses is possible for the corridor in the future, and various agencies and jurisdictions have ownership interests in the corridor. This document is an internal work product supporting a study for future development of a shared use trail in the corridor.

For more information please visit the King County Parks Eastside Rail Corridor – Regional Trail webpage at: <http://www.kingcounty.gov/erc>

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ACRONYMS AND ABBREVIATIONS

AD	anno Domini
BP	Before Present
COA	Certificate of Appropriateness
DAHP	Department of Archaeology and Historic Preservation
EIS	Environmental Impact Statement
ERC	Eastside Rail Corridor
ESA	Environmental Science Associates
I-405	Interstate 405
I-90	Intestate 90
NPS	National Park Service
NRHP	National Register of Historic Places
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
Sound Transit	Central Puget Sound Regional Transit Authority
SR	State Route
TCP	Traditional Cultural Property
WAC	Washington Administrative Code
WHR	Washington Historic Register
WSDOT	Washington State Department of Transportation

1. INTRODUCTION

This chapter addresses potential impacts to precontact, ethnographic, and historic archaeological resources. The EIS consultant team conducted research to identify recorded cultural resources located within the study area. For the purposes of this Master Plan, specific geographic locations of proposed construction have not been identified. Research within the archaeological study area focused on collecting and summarizing data on previously recorded resources, and it did not include fieldwork or evaluation of recorded resources.

Also addressed are relevant state and local regulations and federal requirements, if applicable.

1.1 Master Plan Alternatives

The Master Plan is an early look at how a trail would fit into the Eastside Rail Corridor (ERC). The railbanked ERC right-of-way varies from less than 30 feet wide in some places to 100 feet wide. In the approximately 16.7 miles subject to this Master Plan, about one-third of the ERC is less than 75 feet wide. The railbed is typically located in the center of the ERC.

In general, the Master Plan identifies a “planning envelope”—typically 30 to 40 feet wide—where the trail is anticipated to be located within the ERC. The trail will typically be less than 30 feet wide. Identifying a planning corridor wider than the proposed trail allows for future flexibility for the final trail design.

At this early stage of the project the trail has not been designed, but the Master Plan will provide the framework for the future design, including the basic design criteria and a toolbox of strategies for responding to the conditions in the corridor that will shape the final design of the trail. The analysis presented here identifies the potential for impacts to cultural resources within the ERC. Additional analysis will be conducted once alternatives and project actions are defined.

1.1.1 On-Railbed and Off-Railbed Alternatives

The Master Plan is exploring two build alternative locations for a trail in the ERC. The On-Railbed Alternative is located along the existing railbed and the Off-Railbed Alternative is located as close as possible to one of the edges of the ERC ownership.

In general, the alternative located on the railbed would be easier to construct and cause less ground disturbance. The alternative located on the edge of the right-of-way would provide the most flexibility to accommodate the other future uses envisioned in the corridor (i.e., transit and utilities); however, it would also be more difficult to construct and require construction of retaining walls in areas.

1.1.2 No Action Alternative

King County would undertake minimal maintenance in order to manage and keep the corridor open for public use as a trail, except at major gaps and structures such as the I-90 bridge, I-405 crossing, and Wilburton Trestle. This requires minimal maintenance to protect public safety and to protect the County from liability. Under the No Action Alternative, King County would:

- Inspect and patrol the corridor at intervals
- Provide basic property maintenance, including vegetation management and drainage maintenance

- Install and maintain handrails and decking on bridges kept open for public use
- Install signs at intersections and elsewhere as needed to manage risk
- Grade as needed to avoid hazardous conditions (i.e., filling holes or washouts)
- Preserve the corridor property against encroachment

If sections of the trail require extensive improvements to provide access or safe use, those sections may be temporarily closed.

1.2 Study Area

The archaeological study area includes 15.6 miles of the ERC right-of-way owned by King County and 1.1 miles owned by Sound Transit with a half-mile buffer on either side of the right-of-way. The ERC corridor is separated into three segments—the Lakefront Segment; the Wilburton Segment; and the Valley Segment, which includes the Main Line and the Spur. Figure 1-1 shows the study area and the location of these three segments. Beginning from the south, the ERC includes the jurisdictions of Renton, unincorporated King County, Bellevue, Kirkland, and Woodinville.

1.3 Methods

ESA conducted a literature review of the archaeological study area. Information reviewed included previous archaeological survey reports, ethnographic studies, and regional histories. These records were reviewed in order to determine the presence of any potentially significant cultural resources, including Traditional Cultural Properties (TCPs), near the ERC. Relevant documents were examined at the Washington State Department of Archaeology and Historic Preservation (DAHP), online, and ESA's research library.

1.4 Summary of Findings

Known precontact, ethnographic, and historic use of the study area, in concert with geological and soils data and previous cultural resources surveys performed in the study area, demonstrate that urban development has had the largest impact to the presence of intact cultural resources. As described below, some portions of the ERC have higher risk of impacting cultural resources than others, and potential mitigation measures are discussed.

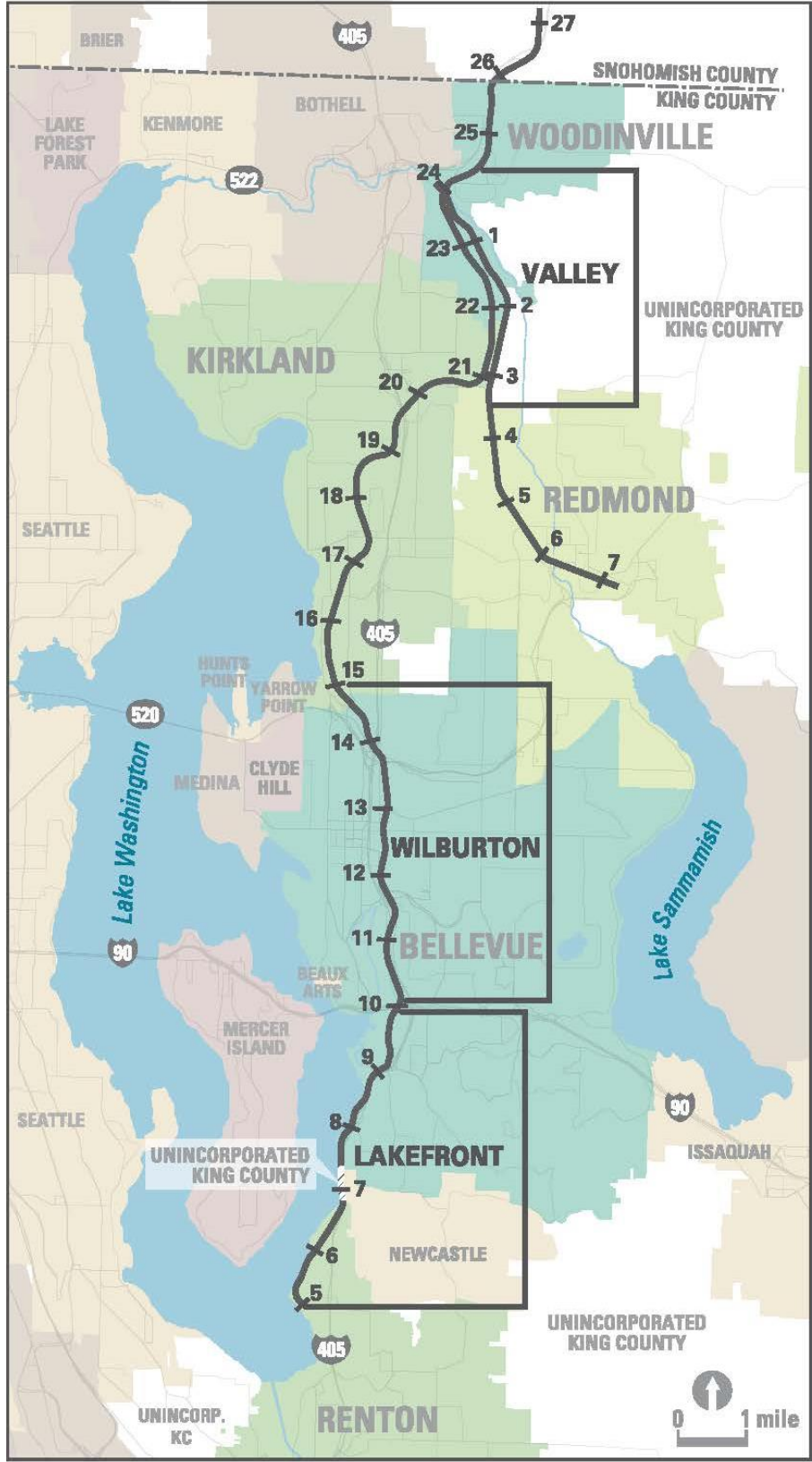


Figure 1-1. ERC Corridor Segments

2. SEPA REVIEW

This report was prepared to comply with SEPA. Because this review is being conducted under SEPA (Chapter 43.21C of the Revised Code of Washington (RCW)), 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. Additional registers that are applicable to the ERC project have different time thresholds, as described below.

Applicable national, state, and local historic preservation registers reviewed for this project include the following:

- 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 (unincorporated King County), and City landmarks in Kirkland and Woodinville.

The nature of significance required for listing in 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 in the NRHP, WHR, and WHBR.

The Cities of Kirkland and Woodinville 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 or Renton.

The age at which a property can be considered "historic" varies by register (Table 2-1). 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 2-1. Historic Registers Applicable to this Project.

State / Local Preservation Register	Standard Age Threshold	Managing Agency
Washington Heritage Register (WHR)	50 years	DAHP
Washington Heritage Barn Register (WHBR)	50 years	DAHP
King County Landmarks	40 years	King County

3. AFFECTED ENVIRONMENT

3.1 Types of Resources

There are three main categories of historic resources: aboveground resources (buildings and structures); belowground resources (including archaeological and ethnographic sites); and Traditional Cultural Properties (TCPs). To be considered a historic or cultural resource, a property (building, structure, or site) generally must meet minimum age requirements. However, historic and precontact cultural resources 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 and cultural resources represent important themes, cultures, or patterns in our past. The significance of a property may be on the national, state, or local level.

Under State law, RCW 27.53, prehistoric archaeological sites are protected in all cases. Historic archaeological sites, on the other hand, must be determined eligible for listing in the WHR or NRHP before they are considered protected. DAHP will make a final determination whether a 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 under WAC 25-48-060. DAHP will then provide the archaeological excavation permit application for review to the appropriate stakeholders, including Tribes. Isolated artifacts, whether prehistoric or historic, are not protected because they do not meet the definition of a “site” under State law.

3.1.1 Aboveground Resources

An historic inventory of aboveground elements in the study area, including the railroad and associated existing elements (i.e., bridges and trestles), has already been prepared (ESA 2015). Only one resource was recommended eligible for listing in the NRHP and the WHR—the Wilburton Trestle (Stewart 1978; Tobin 1992). This 1904 structure was first recorded in 1978 (Stewart 1978), again in 1980 as part of a Historic American Engineering Record Inventory (Soderberg 1980). Depending on project elements, there may be impacts to this resource.

3.1.2 Belowground Resources

Locations of recorded archaeological sites, such as precontact shell middens and historic archaeological sites, were obtained from DAHP during a records search conducted in December 2015. The team also reviewed DAHP’s statewide archaeological predictive model to analyze the potential for additional, unrecorded buried precontact or historic resources to be located within the study areas (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 ESA’s research library.

3.1.3 Traditional Cultural Properties

A Traditional Cultural Property (TCP) is a property that is “eligible for inclusion in the NRHP based on its associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community” (NPS 2012). These can include locations associated with traditional beliefs, Native American groups, historical traditional areas, or even an urban neighborhood that is a traditional home of a particular cultural group (NPS 2012).

3.2 Geology and Soils

The geology and soils of a region help determine the probability of an area to contain intact, buried cultural resources. Each of the three ERC segments is underlain by Holocene alluvium, Vashon recessional outwash, Vashon till, or some variation thereof (Yount et al. 1993). Each of these has potential for containing intact, buried cultural resources. Therefore, urban development is expected to be the primary factor in determining if any resources remain since many buried resources would have been previously disturbed during road, development, and infrastructure projects.

Once project elements are determined, a specific examination of soil conditions using the USDA Natural Resources Conservation Service may be used to determine depths of sediment with the potential to contain cultural resources.

3.3 Precontact History

This section summarizes the time prior to the point of contact between European-American peoples (including explorers, fur traders, and military personnel) and Native American peoples. In the Puget Sound region, the precontact period is considered to have ended with the arrival of the Denny Party in 1851.

The precontact cultural chronology of the Pacific Northwest and Puget Sound from the Late Pleistocene onward has been previously summarized (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 discussion of cultural-historical sequence draws broadly on the various chronologies, but follows Ames and Maschner (1999) by recognizing five periods:

- Paleoindian (before 12,500 years ago);
- Archaic (12,500 to 6,400 years ago);
- Early Pacific (6,400 to 3,800 years ago);
- Middle Pacific (3,800 to 1,800/1,500 years ago); and
- Late Pacific (1,800/1,500 years ago to AD 1851).

The Late Pacific period overlaps slightly with the Ethnographic period, as discussed below. Information about each period is summarized in Table 3-1.

3.3.1 Paleoindian Period

There are few archaeological sites older than 12,500 years ago in the Pacific Northwest region. The Paleoindian Period is primarily represented by the Clovis culture. Dating before 12,500 years ago, this culture is characterized by large, fluted bifaces and bone working technology (Ames and Maschner 1999:65).

While evidence of the Clovis culture has been found in solid contexts in the North American Plains, the Midwest, and the Eastern Woodlands, they are rare in the Pacific Northwest. Isolated Clovis-style points have been found in seven locations in the region, unfortunately each with poor provenience information (Avey 1991; Meltzer and Dunnell 1983; Stein et al. 2004; and Wessen 1988).

Table 3-1. Precontact Time Periods

Time Period	Approximate Date Range	Characteristics
Paleoindian	Before 12,500 years ago	Often referred to as Clovis culture and located in the uplands; represented by projectile points
Archaic	12,500 to 6,400 years ago	Often referred to as Olcott culture and located in riverine and lake settings; represented by cobble tools and lanceolate projectile points
Early Pacific	6,400 to 3,800 years ago	Located in marine and estuary settings; represented by large shell middens and decorative artifacts such as labrets and bracelets
Middle Pacific	3,800 to 1,800/1,500 years ago	Represented by large plank houses, increase in decorative items, woodworking tools (adzes, mauls, wedges)
Late Pacific	1,800/1,500 years ago to AD 1851	Represented by seasonal camps associated with resource procurement and increased variability in burial methods
Ethnographic Period	AD 1792-1851	The same as Late Pacific sites; non-Native tools and materials may be present

Source: Ames and Maschner, 1999

One Paleoindian period site is located near Sequim on the Olympic Peninsula. The Manis mastodon site yielded the 12,800-year-old remains of a mastodon with bone point lodged in one of its ribs. A flaked stone cobble was found in associated sediments (Gustafson et al. 1979).

While Paleoindian sites are uncommon in the region, those that have been identified were found in association with peat deposits on till plains, indicating that these landforms have a higher probability of containing this site type.

3.3.2 Archaic Period

Archaic Period sites are typically found in riverine environments (Nelson 1990:483), since those that were historically in littoral settings have since been submerged by eustatic sea level rise at the end of the Pleistocene epoch (Ames and Maschner 1999:67). Sites of this period contain microblades, cobble tools, and bifaces (Ames and Maschner 1999:69; Chatters et al. 2011), which demonstrates the emerging use of marine resources such as salmon, shellfish, and sea mammals, as well as technological stability amongst rapidly changing environmental conditions (Matson and Coupland 1995:94).

The Olcott culture, which is indicative of the Archaic Period in the Puget Sound, has been found in shallowly stratified sites on terraces including those overlooking rivers in the Snohomish River basin and at Marymoor Farm at the mouth of the Sammamish River (Nelson 1990:482). Artifacts associated with this sequence include scrapers, Cascade-style (lanceolate) bifaces, and choppers. Materials used include obsidian, chert, and basalt (Kidd 1964).

The recent discovery of an Archaic-period site along Bear Creek in Redmond, Washington (45-KI-839) yielded artifacts within a peat deposit dating between 8,420 and 9,840 BP. Detrital charcoal encountered beneath the peat dates to 12,820 BP (Hodges et al. 2009; Kopperl et al. 2010).

Other sites have been found on upland areas near rivers where terrestrial and riverine resources could be exploited. Such sites have been found near the South Fork of the Tolt River (Blukis Onat et al. 2001) and just north of the Puget Sound on the Fraser River (Matson and Coupland 1995). The former site contained leaf-shaped, side-notched, and stemmed points, flake and cobble artifacts, and microblades. The latter had similar materials, as well as a hearth, mammalian remains, and aquatic resources (Matson and Coupland 1995).

3.3.3 Early Pacific Period

In contrast to the dramatic sea level and vegetation changes that occurred during the Archaic Period, the Early Pacific Period is characterized by environmental stability. This led to the utilization of intertidal resources, such as mollusks, a less mobile lifestyle, and the development of more permanent settlements (Morgan 1999; Wessen 1988). With the increased consumption of shellfish came the creation of middens—where shell debris was dumped in piles over a long period. Shell midden sites have been found throughout the Puget Sound region (Ames and Maschner 1999:89-90).

The West Point Site is perhaps the best-known Early Pacific Period site in the Seattle area, dating between 4,250 and 3,500 years ago. Situated in a littoral setting, it contained both terrestrial and marine fauna and finely crafted items including a blanket pin and gaming pieces (Larson and Lewarch 1995).

3.3.4 Middle Pacific Period

The Middle Pacific Period saw dramatic developments in Pacific Coast history, namely, the development of the plank-house and year-round villages. Ames and Maschner argue that the first evidence of social inequality, a storage-based economy, and coastal art is observed during this period (1999:93). Artifacts include more variety in bone and antler tools and the invention of the toggling harpoon which could be made from smaller pieces of material and be used against a wider variety of prey (Ames and Maschner 1999:93-94).

Components of the West Point site dating to this period demonstrated a broad diet and increased mobility for trade and food acquisition (Larson and Lewarch 1995). Dateable non-littoral sites include one located along the former bank of the Sammamish River dating approximately 2,700 years ago that consisted of a shell midden, pit features, and post mold (Shantry et al. 2008). These sites are common throughout the region, especially as the environment started to transform closer to what we experience today.

3.3.5 Late Pacific Period

The environment during the Late Pacific Period was similar to present day and it is surmised that there was a cultural stasis—that those cultures encountered during early non-Native exploration of the area were similar to those around AD 1. The only major environmental fluctuation during the period was a warmer and drier climate between AD 1,150 and AD 1,300, and a cooler and wetter climate during the Little Ice Age after AD 1,350 (Ames and Maschner 1999:94-95).

Foodways remained similar to those in the Middle Pacific Period, including both terrestrial and marine resources. Those sites located on and near rivers, such as Tualdad Altu on the Black River near Renton, have yielded significant quantities of salmon remains and suggest seasonal resource procurement (Chatters 1987).

3.4 Ethnographic Period

The ethnographic period is when the first non-Native peoples came to the area. Generally, the ethnographic period began in 1792 and ended in 1851. Therefore, there is some overlap between the Precontact and Ethnographic periods.

After passage of the 1850 Donation Land Act of Oregon, settlers began to claim homestead lands throughout the Puget Sound region, including within the study area. Early settlements were located in

easily accessible areas, such as boat landings on lakeshores, along trails, wagon roads, and railroads, or at river mouths (U.S. Coast and Geodetic Survey 1902a, 1902b, 1902c; USGS 1895, 1897a, 1897b, 1898, 1900; U.S. Surveyor General 1864a, 1864b, 1864c, 1870, 1872, 1874).

The study area is located within the traditional territory of members of today's Snoqualmie Tribe, Tulalip Tribes, Suquamish Tribe, and Muckleshoot Indian Tribe (Suttles and Lane 1990). These four tribes are federally recognized. The Duwamish Tribe, which is seeking federal recognition, is also an interested tribal group located in the area.

During the ethnographic period, there were many villages along the shores of Lake Washington and Lake Sammamish and on the banks of the 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 within the study area 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 two recorded Native American names for places in or near the study area (Hilbert et al. 2001). These are located along the shore of Lake Washington in the Lakefront Segment. They include *Kwa'kwau*, a small promontory, and *š(a)bal?tx^w*, a "place where things are dried" and where "great quantities of redfish were taken" at May Creek (Hilbert et al. 2001:94; Waterman 1922:191). Since the primary ethnographic record for the region focuses on shorelines, there is little information on potential Native American sites that may be further inland from Lake Washington.

3.5 Historic Period

Several major construction events during the 20th century left lasting impacts on the potential for precontact cultural resources within some portions of the study area. First, the construction of the Hiram M. Chittenden Locks and the 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). Second, a network of highways was constructed through the study area. The Homer M. Hadley Memorial Bridge (Interstate 90) opened in 1940 and Interstate 405 opened in 1957. The Evergreen Point Floating Bridge (State Route 520) opened in 1963. Each of these projects would have severely damaged or destroyed cultural resources present in those areas.

The development of the railroad itself has been discussed in a separate project report (ESA 2015).

3.6 Literature Review

Forty-five archaeological reports have been previously prepared for projects in or adjacent to the ERC, but these surveys cover less than 25% of the corridor (DAHP 2015) (Table 3-2). Most of the ERC has not undergone systematic testing for belowground cultural resources. As of December 2015, no precontact, ethnographic, or historic archaeological sites have been identified in or adjacent to the ERC. Only one precontact site has been identified along the shore of Lake Washington (Ostrander 2014); however, as

mentioned above, the ethnographic record describes several Native American place names along the lake near the ERC (Hilbert et al. 2001).

Table 3-2. Cultural Resources Surveys and Results Conducted within ½-Mile of the Study Area.

Segment	Number of cultural resource surveys	Number of archaeological sites identified
Lakefront	10	3
Wilburton	13	2
Valley	23	2

ERC project alternatives would be constructed within areas classified under all five categories defined within DAHP’s statewide predictive model (ranging from Low to Very High probability for containing precontact archaeological resources) (DAHP 2010). The 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 precontact cultural resources might be found. It accounts for some, but not all large-scale disturbances. The model is not a substitute for conducting site-specific subsurface investigations, which may be required for project-level review. In fact, some of the areas considered “Very High” risk may have been disturbed during previous construction projects, and therefore, have a much lower risk than is represented in the model.

3.6.1 Lakefront Segment

While ten cultural resources studies have been conducted within one half-mile of the Lakefront Segment, coverage of the right-of-way is minimal. Most of the Lakefront Segment has not undergone systematic survey for belowground cultural resources.

No archaeological sites have been recorded within or adjacent to the Lakefront Segment of the ERC corridor. As observed in 2014 during the historical inventory of the study area (ESA 2015), some portions of the railroad corridor along this segment are built-up with ballast, burying the original ground surface. However, there remains a High potential that intact precontact cultural resources may be encountered during ground disturbance in the railroad prism, depending on the depth of ground disturbance. Significant archaeological sites have been found in similar settings on a railroad corridor along Lake Sammamish (Johnson et al., in progress).

Archaeological survey along the Lakefront Segment has involved both aboveground and belowground investigation. The only subsurface survey completed near this segment is the result of work conducted alongside the ERC near the Port Quendall Log Yard. That project demonstrated shallow remnant alluvial deposits near the corridor that are the result of flooding and movement of May Creek. While remains of the former village *Cbal³t^u* may exist in this vicinity, no evidence of it was identified at that time (Bowden et al. 1997:17; Hilbert et al. 2001).

The Quendall Log Yard property contains the remains of the Reilly Tar & Chemical Wharf and T-Dock (45-KI-1107; Kelly 2012). The other two archaeological sites near the Lakefront Segment are the remnants of a dry dock (45-KI-814), and a submerged aircraft, both in Lake Washington (Major 2008; Mester 1990). None of the three sites have been evaluated for listing in the NRHP.

Likewise, a prior survey indicates a Moderate probability for precontact archaeological resources near Ripley Way, but only for those portions of the ERC that are at grade—there is a trestle running parallel to Ripley Way along much of this area (Murphy and Larson 2003:3).

Other projects conducted along the Lakefront Segment conclude that construction of SR 520 and I-90 would have destroyed and/or impacted any existing, buried cultural deposits (Bartoy 2010; Juell 2001; Walker Gray and Juell 2009). This suggests the likelihood of impacting cultural resources near those roadways is lower than indicated in DAHP's model.

Based on the ethnographic record, DAHP's Statewide Predictive Model, previous cultural resources surveys, and known precontact use, there remains a High to Very High Risk of encountering buried cultural resources along parts of this segment, likely due to its proximity to the shores of Lake Washington.

3.6.2 Wilburton Segment

While 13 cultural resources studies have been done within one half-mile of the Wilburton Segment, coverage of the right-of-way is minimal. Within the Wilburton Segment, the best information to characterize archaeological potential comes from geological data. Those portions of the ERC in undeveloped uplands that have Holocene sediments, and those areas where alluvial deposition resulted in thick Holocene deposits retain the best conditions for preserved cultural resources (Baldwin 2014; Boswell et al. 2011:4-48; Bundy 2009).

Like the Lakefront Segment, those areas that underwent road development, specifically SR 520 and I-405, have little to no potential for buried archaeological resources (Hetzl and Elder 2015; Rooke 2012; Solmo and Kelly 2014; WSDOT 2005).

The closest precontact site to the Wilburton Segment is 45-KI-1217, located one half mile west of the ERC in Mercer Slough. This site is currently being evaluated to determine its eligibility for listing in the NRHP. The closest historic period site is Old Lake Washington Boulevard, 0.2 miles west of the northern end of the segment (45-KI-945) (Jordan et al. 2009). This site has not been evaluated for its eligibility for listing in the NRHP. Mercer Slough, however, has a Very High risk of containing precontact cultural resources, further supported by the Sound Transit East Link Light Rail Transit Project Archaeological Resources Monitoring and Treatment Plan (Lockwood et al. 2014), which considered there to be a high probability of identifying shallowly buried cultural resources near Mercer Slough. In addition, the railroad corridor in this area is only slightly above the elevation of the slough and is not built on an artificial prism. The landform also would have likely been utilized by Native peoples for resource procurement.

Most of the Wilburton Segment has not undergone systematic survey for belowground cultural resources. Based on the DAHP Statewide Predictive Model, and known precontact use, there remains a High Risk of encountering buried cultural resources along this segment.

3.6.3 Valley Segment

While 23 cultural resources studies have been done within one half mile of the Valley Segment, coverage of the right-of-way is minimal. Most of the Valley Segment has not undergone systematic survey for belowground cultural resources.

Previous work conducted near the Spur Line of the Valley Segment concluded that there could be a High probability of intact buried cultural resources based on the interface of the fill and alluvial sediments (Shantry 2012:13), making the risk of encountering cultural resources dependent on the depth of project

ground disturbance. At the south end of the Spur Line corridor, other surveys concluded that utilities installed along NE 124th Street would have disturbed or destroyed any cultural resources (Hartmann 2003; Hoyt et al. 2008).

A number of other projects have been conducted along the Spur and Main Lines of this Segment, but do not provide useful information on the geology or archaeological potential applicable to the ERC (Shantry 2012, 2014; Stipe 2014).

The nearest precontact site to the Valley Segment is just over 1,100 feet away on the east side of the Sammamish River and dates to 2,700 BP (Shong et al., 2007), and the nearest historic period site is a former residence a half mile to the east (Gilpin 2012).

Based on the DAHP Statewide Predictive Model, and known precontact use, there remains a High probability for encountering belowground cultural resources, particularly that area near the Sammamish River Valley.

4. OPERATIONAL IMPACTS

At this time, impacts to specific cultural resources are unknown because the locations of project components have not yet been identified.

For belowground cultural resources, any potential impacts to cultural resources would occur during construction. Construction impacts are assumed to be permanent because the resources would be displaced from their context during construction.

For aboveground resources, potential operations impacts may result from visual changes, privacy, restricted access, and noise from traffic.

TCPs could be either belowground or aboveground, and potential impacts to them are the same as those listed above.

4.1 On-Railbed and Off-Railbed Alternatives

4.1.1 All Segments

For aboveground resources, potential operations impacts in the Lakefront, Wilburton, and Valley Segments may result from visual changes, privacy, restricted access, and noise from traffic.

4.1.2 Mitigation

Depending on the alternative, operational impacts may be offset through specific preservation efforts. This would be determined when the alternative is selected.

4.2 No Action Alternative

No operational impacts are anticipated for belowground cultural resources.

Impacts to aboveground cultural resources or TCPs would be determined once an alternative is selected.

5. CONSTRUCTION IMPACTS

The On-Rail and Off-Railbed Alternatives propose some measure of ground disturbance. Any ground disturbance has the potential to impact historic and cultural resources.

Any ground disturbance has the potential to impact belowground cultural resources, if present, including recorded and unrecorded resources. Any construction impacts to intact belowground cultural resources would be irreversible and permanent.

For aboveground resources, potential operations impacts may result from visual changes, privacy, restricted access, and noise from traffic.

TCPs could be either belowground or aboveground, and their potential impacts are the same as those listed above.

5.1 On-Railbed and Off-Railbed Alternatives

Both the On-Railbed and Off-Railbed alternatives would require ground disturbance resulting in minor to significant impacts to cultural resources, if present.

Depending on the extent of urban development, the ERC may be visible from aboveground resources and TCPs, which may cause noise or restricted access impacts.

5.1.1 Lakefront Segment

Both the On-Railbed and Off-Railbed Alternatives would involve ground-disturbing elements. These elements have not yet been determined.

It is not possible to identify likely construction impacts to specific cultural resources at this time because this requires comparing the locations of proposed construction in relation to known and probable cultural resources.

There remains a High probability that buried, intact cultural resources may be encountered during ground disturbance below the railroad prism and for ancillary facilities (i.e. drainage and retaining walls). There is also potential for capped deposits to exist below the current right-of-way, and for cultural resources to be encountered in prism fill, as demonstrated during a project conducted in a railroad corridor along Lake Sammamish (Johnson et al., in progress). It is also possible that these resources would have been impacted during original construction of the railroad, and archaeological materials were used as ballast to create the railroad prism.

5.1.2 Wilburton Segment

Both the On-Railbed and Off-Railbed Alternatives would involve ground-disturbing elements. These elements have not yet been determined. Potential construction impacts would be similar to those in the Lakefront Segment.

5.1.3 Valley Segment

Both the On-Railbed and Off-Railbed Alternatives would involve ground-disturbing elements. These elements have not yet been determined. Potential construction impacts would be similar to those in the Lakefront Segment.

5.1.3.1 Main Line

A portion of the Main Line is on a slight, east-facing slope slightly elevated above the Sammamish River Valley. The entirety of the Line appears to be on natural ground, as opposed to fill. There remains a High probability of buried precontact resources, except at the two ends of the line where urban development and utility installation have impacted the ground. Potential construction impacts would be similar to those in the Lakefront Segment.

5.1.3.2 Spur

Depending on the depths of ground disturbance, there may be impacts to buried cultural resources, if present, along the Spur Line. In particular, this is because the Spur Line is at or only slightly above surrounding ground. In the more developed portions of the Line, such as at the two ends of the line, urban development and utility installation would have disturbed or destroyed any cultural resources. Potential construction impacts would be similar to those in the Lakefront Segment.

5.1.4 Mitigation

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

Once the project alignment has been selected and the locations of major ground disturbance determined, a subsurface survey should be conducted. Survey methods will be developed to account for landform, extent of urban development, and DAHP probability of buried cultural resources. Should impacts to belowground cultural resources be anticipated, avoidance and mitigation measures would be specific to the nature of the identified resources.

Any construction impacts to TCPs, if present, would be related to access, noise, and view.

At a minimum, an Inadvertent Discovery Plan should 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 Chapter 27.44 RCW, archaeological resources identified during construction would need to be evaluated. If the resources are considered significant, any impacts would require mitigation, which would likely entail archaeological investigation such as scientific excavation and analysis. 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.

5.2 No Action Alternative

Under the No Action Alternative, King County would undertake minimal maintenance in order to manage and keep the corridor open for public use as a trail, except at major gaps and structures such as the I-90 bridge, I-405 crossing, and Wilburton Trestle.

If maintenance involves ground disturbance, it is possible for impacts to cultural resources, if present, to occur.

6. RELEVANT LAWS AND REGULATIONS

Laws that apply on non-federal and non-tribal lands within the State of Washington include: Archaeological Sites and Resources Law (RCW 27.53), Indian Graves and Records Law (RCW 27.44), Human Remains Law (RCW 68.50), and Abandoned and Historic Cemeteries and Historic Graves Law (RCW 68.60).

Currently, the ERC Project is subject to SEPA Review (see Section 2.0). If federal funding occurs, the project will be subject to Section 106 of the National Historic Preservation Act, as explained below.

6.1 Federal Regulations

If the Eastside Rail Corridor project receives federal funding or requires a federal permit, compliance with Section 106 of the National Historic Preservation Act will be required. Section 106 requires the lead federal agency to take into account the effects of their undertakings on historic properties. The lead federal agency will determine the appropriate efforts to identify historic properties; it is likely that archaeological survey will be necessary for portions of the alignment. If historic properties are identified, the lead federal agency will need to assess whether project will cause an adverse effect. Depending upon the level of identification efforts, completing the Section 106 process takes at least 60 days.

Although this project is not subject to compliance with federal cultural resources regulations, the state and local preservation regulations 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.

6.2 State Regulations

6.2.1 SEPA Review

The Project is currently under SEPA review. As the project master plan is implemented, additional project level SEPA review may be required. Depending on funding sources, additional regulations may apply to the project.

6.2.2 GEO 05-05

Funding by a State agency engages Washington State Governor's Executive Order 05-05 (GEO 05-05). GEO 05-05 requires state capital projects not otherwise subject to Section 106 of the National Historic Preservation Act be reviewed by the DAHP and the affected tribes consulted to determine potential impacts to cultural resources.

If cultural resources are identified, GEO 05-05 requires the project proponent to:

- 1) work with DAHP and affected tribes on appropriate survey and mitigation strategies;
- 2) consult with affected tribes;

- 3) take reasonable action to avoid, minimize, or mitigate adverse effects to the archaeological or cultural resources; and
- 4) notify DAHP and the Governor's Office of Indian Affairs of any meeting with the affected tribes during which matters concerning cultural resources related to a capital construction project will be discussed.

6.3 Local Regulations

6.3.1 LUD-16 AEP

The King County Executive Procedures for Cultural Resources (LUD 16-1 AEP) are triggered by any County action that may affect cultural resources. LUD 16-1 AEP requires internal review by the King County Historic Preservation Program (KCHPP) to ensure compliance with County policies and regulations. The process is independent of state and federal regulatory compliance.

The LUD-16 AEP process requires that the proponent provide project information so that KCHPP can:

- 1) review the project area to determine whether the project has the potential to affect cultural resources;
- 2) make recommendations on the need for above-ground and archaeological surveying, testing, mitigation, and other measures; and
- 3) help in developing a scope of work for any needed building, structure, or archaeological investigations.

KCHPP will notify the proponent if Tribes should be contacted about the project.

6.4 Permits and Approvals

If the project is not subject to Section 106, an archaeological excavation permit will be required if a protected archaeological site is identified within the project footprint (Archaeological Sites and Resources Law (RCW 27.53)); no protected archaeological sites have been identified to date.

King County typically notifies Tribes, including the Snoqualmie Tribe, Tulalip Tribes, Suquamish Tribe, and Muckleshoot Indian Tribe about projects in the vicinity of the corridor following the guidance in the appropriate regulatory process.

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