

APPENDIX A

## Archaeological Survey Plan

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*Final Report*



**Sound Transit East Link:  
Archaeological Survey Strategy of  
Preferred Alternative for  
FEIS and Project Design**

Submitted to

**CH2M Hill**

Bellevue, Washington

Submitted by

**Historical Research Associates**

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*This report was prepared by HRA Principal Investigator Gail Thompson, Ph.D., and HRA Research Archaeologist Jennifer Gilpin, M.A., who meet the Secretary of the Interior's professional qualifications standards for archaeology. This report is intended for the exclusive use of the Client and its representatives. It contains professional conclusions and recommendations concerning the potential for project-related impacts to archaeological resources based on the results of HRA's investigation. It should not be considered to constitute project clearance with regard to the treatment of cultural resources or permission to proceed with the project described in lieu of review by the appropriate reviewing or permitting agency. This report should be submitted to the appropriate state and local review agencies for their comments prior to the commencement of the project.*

## Table of Contents

1.0	Overview to FEIS Survey Strategy .....	1
2.0	Archaeological Sensitivity Models .....	2
3.0	Selection of Geotechnical Boring Locations for Archaeological Survey .....	2
	3.2 Methods .....	3
	3.3 Results .....	4
4.0	Methods for Survey Tract Selection .....	4
5.0	Staged Archaeological Survey .....	6
	5.1 Stage 1 Archaeological Survey Methods .....	6
	5.2 Stage 2 Archaeological Survey Methods .....	7
6.0	References .....	9

## Appendices

Archaeological Sensitivity Maps Showing Survey Tracts and Proposed Geotechnical Boring Locations .....	Appendix A
Rationale for Selecting Geotechnical Boring Locations .....	Appendix B
Stage 1 Survey Tract Table .....	Appendix C

## List of Tables

<b>Table 1.</b> Geotechnical Boring Locations Selected by HRA for Survey and Probing Pre-Drill .....	4
<b>Table 2.</b> Description Of Colors Used To 'Code' HRA Proposed Final EIS Survey Tracts .....	5



## 1.0 Overview to FEIS Survey Strategy

In response to the Department of Archaeology and Historic Preservation's (DAHP) comment on the 2008 Draft EIS requesting additional archaeological survey, HRA has developed an expanded the cultural resources survey strategy to identify potential prehistoric and historical archaeological sites along the preferred alternative for East Link. To develop the survey strategy, HRA used information gathered about known archaeological resources and the patterns of prehistoric, ethnographic, and historic use of the area, along with the results of the previous cultural resources assessment, which was conducted in advance of the Draft EIS (DEIS) (Thompson et al. 2007). Archaeological field survey is intended to target a reasonably representative sample of the Project's preferred alternative. HRA intends to include a systematic examination of a number of parcels, concentrating on high probability areas, but also including some lower probability areas; some open and undeveloped areas; more developed, urbanized areas; and some public and private ownership areas, within the APE of the preferred alternative.

Project archaeologists first identified areas of greater or lesser archaeological probability by reference to models developed by HRA for the East Link Project, and by the DAHP. Section 2.0 provides a brief summary of these sensitivity models, their origin, and how they were utilized in developing the survey strategy.

HRA initially examined Sound Transit's lists of potential locations for geo-technical exploratory borings, in Project Segments A through D, to determine if the drilling equipment could impact high probability areas, which should be included in the survey. The methods used in this process are outlined in Section 3.0. Concurrently, the archaeological team selected a number of survey tracts, largely in high probability areas, but also in moderate- to low-probability areas. Section 4.0 includes a description of the methods used to select these tracts for archaeological survey.

Due to varying accessibility in terms of ownership and development (which often results in paved ground surfaces), the archaeologists propose to examine the survey tracts in two stages. The Stage 1 archaeological survey will occur as part of the Final EIS. Stage 1 tracts are:

- highly sensitive, archaeologically;
- largely publicly accessible (i.e., owned by the Cities of Bellevue or Redmond [Cities], King County, or Washington Department of Transportation [WSDOT]); and
- mostly unpaved and not covered by a hard surface.

Figures 1 through 4 (Appendix A) depict 11 areas for Stage. Based on information from this survey, a second pre-construction survey (Stage 2) would be prepared, refined and implemented. Survey tracts associated with Stage 2 are outside of public ownership, or are paved or otherwise less accessible at the time of Final EIS preparation. Portions of several Stage 1 tracts extend onto private property, and these portions will be noted and potentially surveyed in Stage 2. As Sound Transit acquires parcels for the project to be built, which will occur after the issuance of FEIS and Record of Decision (ROD), Stage 2 would be implemented. Information gathered from these surveys will inform the preparation of the Archaeological Resources Monitoring and Treatment

Plan (ARMT). Section 5.0 outlines the methods of archaeological inquiry that HRA proposes to utilize in Stage 1 and 2.

## 2.0 Archaeological Sensitivity Models

HRA's archaeological predictive model, developed for the Draft EIS, defines areas as having either high or low sensitivity for prehistoric and historical archaeological materials. HRA's sensitivity model was based on local environmental and cultural variables, assisted by a windshield survey in confirming areas of varying environmental characteristics. Environmental variables taken into account included slope, topographic position, distance to permanent water sources/channels, and vegetation ecotone, while cultural variables included locational and land-use information gleaned from ethnohistoric information on Native American use of the area (e.g., Hilbert et al. 2001) and historic-period maps (e.g. General Land Office [GLO] plats and Sanborn Fire Insurance maps). Figures 1 through 4 (Appendix A) show the areas of high sensitivity in Segments B through E, as recommended by HRA. Segment A is not included because it consists primarily of the highly developed Interstate 90.

The DAHP's archaeological predictive model, prepared for their use by GeoEngineers, used standardized and repeatable statistical methods (Bayesian and Kriging) with statewide environmental and cultural resources data. Data on geology, soils, landform, and information gleaned from historic-period GLO plats, were correlated with locations of known archaeological sites to "...determine the probability that, under a particular set of environmental conditions, another location would be expected to contain an archaeological site." (Kauhi and Markert 2009:2-3)

DAHP's model combines local information from field surveys to identify locations with five resulting sensitivity management groups: Very High (5), High (4), Moderate (3), Low (2) and Very Low (1). These were refined for management purposes, with groups (1) and (2) Archaeological Survey Contingent upon Project Parameters, group (3) Archaeological Survey Recommended; and groups (4) and (5) Archaeological Survey Required.

## 3.0 Selection of Geotechnical Boring Locations for Archaeological Survey

As part of preliminary engineering for the project's FEIS, geotechnical borings will be conducted for the project. The borings will assess general subsurface soil and groundwater conditions. The borings measure up to 8 inches in diameter and can extend from 50 to 200 feet deep. HRA has determined that these borings would provide relatively little useful archaeological data because of the methods that are used in drilling. As a result, FTA proposed and DAHP concurred that no archaeological monitoring would be conducted during this exploratory work. However, HRA has reviewed available information and recommends "pre-excavation archaeological surveys" to be conducted on three boring locations. Survey of these borings will be included as part of Stage 1. The methods and results for selecting the three borings are described below.



## 3.2 Methods

Several sources of information were examined during the selection process, pertaining to potentially sensitive boring locations. HRA archaeologists first examined archaeological sensitivity maps of the Project APE developed for the DEIS (see Section 2.0, above), comparing these data with GIS maps showing the locations of proposed bore holes plotted on an aerial photograph background. HRA then utilized a table which outlined the identification (i.e., designation), locations, and several additional characteristics of each proposed boring. These characteristics included: proposed depth overall, depth to a hard (i.e., glacial, bedrock) surface, whether the bore would be placed on pavement or grass, and the potential for disruption of traffic.

HRA used these three documents, in combination with the results of HRA's previous archaeological survey for the Project, to winnow the list of potentially sensitive probe locations to those for which HRA would propose a pre-drilling archaeological survey. The major concern at this point in the process is that the act of drilling itself (e.g., moving equipment, storage) could impact an unknown and unrecorded archaeological site. This would most likely occur on a soft surface, such as grass, that has not previously received an archaeological survey.

As a final cross-check, to potentially further refine boring locations, HRA examined the data for eight geotechnical borings excavated for the Project DEIS (Jacobs Associates 2007) and 18 previously-excavated borings along the Project alignment in Segment B (<http://geomapnw.ess.washington.edu/index.php?toc=maintoc&body=services/onlinemap/main.htm>). The eight borings described by Jacobs Associates (2007: Appendix A) are all located in Segment C, and were therefore of low relevance in developing the survey strategy. However, 18 bores – the results of which are available on the website operated by the Pacific Northwest Center for Geologic Mapping Studies – were drilled in the direct vicinity of the Project alignment in Segment B.

The high-sensitivity boreholes chosen by HRA are located in Segments B, C, and D. Segment A was not included because it consists largely of Interstate 90, and no borings are presently planned for Segment E. The selected borehole locations are:

- Located in the previously-mapped zones of higher archaeological sensitivity;
- Proposed to be excavated on a grassy surface. This narrowed down the probe locations to several in Segment B, with none in Segments C or D, in which the borings in sensitive areas, archaeologically, are proposed to be drilled on pavement;
- Situated on as little estimated fill depth as possible. This step eliminated several probes that are located close to the I-90 on/off ramps to Bellevue Way SE; and
- Located outside of HRA's previously-surveyed tracts of Segment B.

Appendix B includes a table, narrowing down to the most sensitive boring locations and providing rationale for why several were not selected for archaeological survey.

### 3.3 Results

Table 1 lists the locations and relevant characteristics of the borings proposed for pre-excavation archaeological survey. These locations (shown in Figure 1) will be surveyed as a part of Stage 1 archaeological investigations of the Project APE. As was mentioned above, portions of several Stage 1 tracts extend onto private property. All geotechnical boring locations are located within larger proposed Stage 1 Survey Tract 5.

**Table 1. Geotechnical Boring Locations Selected by HRA for Survey and Probing Pre-Drill.**

Exploration Number (shown on maps)	Planned Depth (feet)	Purpose	Archaeological Observations/ Comments	Est. Depth to V. Dense (feet)	Surface	HRA Stage 1 Survey Tract	Exploration Location (Parcel Number)
B-B-ES-12p	120	New information	Possibility for pre-bore check - immediately to west of Mercer Slough West	40?	Grass	Tract 5	PRIVATE PROPERTY (066288TRCT)
B-B-AG-5p	120	New information	Possibility for pre-bore check - immediately to west of Mercer Slough West	40?	Grass	Tract 5	PRIVATE PROPERTY (066288TRCT)
B-B-AG-6p	120	New information	Possibility for pre-bore check - immediately to west of Mercer Slough West	40?	Grass	Tract 5	PRIVATE PROPERTY (066288TRCT)

### 4.0 Methods for Survey Tract Selection

HRA created a color-coded priority system to aid in the selection of archaeological survey tracts. The process of prioritizing was undertaken with reference to the HRA and DAHP sensitivity models, and by taking into account perceived local ground disturbance. Table 2 outlines this color-based priority system, with the general guidelines applied by HRA while coding each proposed survey segment. Based on this method, 11 tracts were identified for Stage 1 survey (Appendix C). Additional tracts were also identified using this method. However, because there are uncertainties about the project, including the fact that the FEIS and ROD have yet to be issued, and the final corridor has yet to be selected, this report does not include a full description of the Stage 2 tracts.

**Table 2.** Description Of Colors Used To 'Code' HRA Proposed Final EIS Survey Tracts

<b>Flag Color</b>	<b>HRA Sensitivity (Approximate)</b>	<b>DAHP Sensitivity (Approximate)</b>	<b>Additional Factors</b>
<b>Red</b>	High	5 (Survey Highly Advised: Very High Risk) Can be 4 Survey Highly Advised: High Risk)	Generally, fewer disturbances seen (i.e., vegetated), but largely a factor of very high sensitivity.
<b>Yellow</b>	High	5 (Survey Highly Advised: Very High Risk) 4 Survey Highly Advised: High Risk) Can be 3 (Survey Recommended: Moderate Risk)	Generally showing more developed and/or paved surfaces, but still recommended for survey due to high sensitivity
<b>Green</b>	Low	4 Survey Highly Advised: High Risk) 3 (Survey Recommended: Moderate Risk) Can be 2 (Survey Contingent Upon Project Parameters: Moderately Low Risk)	Generally, fairly developed and/or paved surfaces; some moderate risk. These can be used as control or comparison areas for lower probability
<b>Blue</b>	Low	2 (Survey Contingent Upon Project Parameters: Moderately Low Risk) 1 (Survey Contingent Upon Project Parameters: Low Risk)	Generally, very developed and/or disturbed, with lowest archaeological sensitivity

HRA coded the proposed tract as "Red" when both sensitivity models classified the area as "High" to "Very High" risk, and it appeared (using aerial photographs) that the vicinity showed few obvious disturbances (i.e., much of the area shows vegetation). "Yellow" survey tracts are those with generally high sensitivity (HRA and/or DAHP), but usually with increased disturbance; for instance, development or paved surfaces. HRA coded tracts as "green" when, (a) archaeological probability was high to moderate (generally, by the DAHP's model) and predicted disturbances were quite extensive, or (b) archaeological probability was more moderate, but fewer disturbances were evident while examining aerial photographs of the alignment. "Blue" survey tracts are those in low-probability areas for archaeological resources, and they are, generally, also perceived to be at least moderately impacted by development. This color coding system was then used as a basis for assigning proposed survey tracts to Stage 1 and 2 as described below.

Based on HRA's color-coded priority system, 11 tracks have been identified for survey as part of the FEIS because these are:

- Identified as high probability for archaeological resources under both HRA and DAHP models;
- Mostly owned by a public agency; and

- Not paved or otherwise readily accessible.

Based on the information gained from Stage 1 research and archaeological investigations, including as geotechnical borings, and after the Final EIS and ROD have been issued, a second pre-construction survey plan (Stage 2) would be refined and implemented. Stage 2 tracts are outside of public ownership or are paved or otherwise less accessible at the time of Final EIS preparation. Portions of several Stage 1 tracts extend onto private property (for example, in Segment B), and these portions will be noted and potentially surveyed in Stage 2.

## 5.0 Staged Archaeological Survey

### 5.1 Stage 1 Archaeological Survey Methods

The goal of Stage 1 survey is to provide additional information about areas of high archaeological sensitivity. Therefore, more emphasis is placed in Segments B and E than other segments with less sensitivity. HRA selected 11 tracts for archaeological survey in Stage 1: the first 7 are located in Segment B and the remaining 4 are located in Segment E. Figures 1 through 4 (Appendix A) depict areas for Stage 1 survey overlaid on DAHP and HRA sensitivity model results. In addition, three locations associated with the drilling of geotechnical borings are proposed for Stage 1 survey, based on the location and surface characteristics (see Section 3.2 above) of these borings. All boring locations are situated within larger proposed Stage 1 Survey Tract 5; however, these borings are located on private property in these tracts, and additional permits will be required prior to archaeological survey. The table presented in Appendix C provides details regarding the proposed Stage 1 survey tracts.

Stage 1 work will be divided into three tasks: Stage 1a will consist of rechecking GLO maps, and examining available historical topographic maps, to compare the historical and modern topographic features of survey tracts. This will help verify sensitive landforms, such as stream terraces, and will identify areas where historical disturbance has altered the landform. Stage 1b will consist of a windshield examination of the survey tracts to verify sensitivity characteristics, as well as aspects of the survey tracts identified during their selection and Stage 1a review. It is possible that the Stage 1a and 1b work may drop some tracts from the Stage 1a field survey.

The cultural resources field survey in Stage 1c will be accomplished by the use of systematic pedestrian transects performed at intervals not exceeding 20-meter (m) (66-foot [ft]). The field director will take into account local disturbances, topography, and field conditions (i.e., large amounts of fill or other recent disturbances, standing water) to determine where the archeologists will excavate auger or shovel probes, or other standard manual excavation techniques. These will also be placed at about 20-m (66-ft) intervals, down to sterile materials or about 2 m (7 ft) depth (depending on the vertical depth for the APE in each survey area).

Excavated matrix will be screened through ¼-inch mesh and examined for prehistoric- and historic-period artifacts. Cultural items found will be documented on HRA shovel probe forms and, if diagnostic, by digital photography, before being returned to the excavated hole; no artifacts will be collected.

The sediments observed in each positive probe hole will be described on the shovel probe form and in the field director's field notes, including evidence of subsurface disturbances and cultural material integrity. The shovel probes will be immediately backfilled following their termination and recording, and the turf will be replaced, as appropriate.

Included in the above-described regimen of strategic shovel probes are three locations where Sound Transit plans to drill geotechnical borings (Table 1, above). Prior to the borings, HRA proposes to examine the grassy (or otherwise unpaved) ground surface surrounding these drill locations, and to excavate a shovel probe at the approximate drill location, to determine if the drilling (including the movement of drill-related machinery) will disturb an unrecorded archaeological site.

The location of survey transects and shovel probes will be recorded using a handheld Trimble® Global Positioning System (GPS) unit loaded with ArcGIS® software. Prehistoric and historical archaeological isolates and sites that are discovered during the Stage 1c survey will be mapped, photographed, and recorded using Washington Archaeological Isolate and Site Inventory forms. During Stage 1, HRA will conduct a preliminary assessment of each archaeological site encountered regarding its eligibility for inclusion in the National Register of Historic Places (NRHP); however, depending on the perceived integrity of the site, HRA may recommend additional testing (to be conducted at a later phase).

The information on local sediments and disturbances gathered by HRA during Stage 1c archaeological survey will be used to inform, and potentially refine, survey locations and strategy during the Final EIS archaeological assessment. A summary report will be prepared as a result of Stage 1, describing findings and results. The summary report will include recommendations for refining Stage 2 archaeological work.

## 5.2 Stage 2 Archaeological Survey Methods

Based on findings of Stage 1 and after the Final EIS and ROD have been issued, a more detailed archaeological survey plan will be developed for Stage 2, in consultation with DAHP. Stage 2 archaeological survey will be implemented during the Final Design and before project construction starts. Stage 2 tracts are areas of archaeological sensitivity (based on DAHP and HRA's models) and where hardened surfaces or deeper fill will need to be removed with mechanical equipment prior to archaeological survey. Portions of Stage 1 tracts that extend onto private property may also be included in Stage 2 survey. The Stage 2 survey is anticipated to take place as such tracts become available for work. Results of Stage 2 work would provide guidance as Sound Transit prepares the Archaeological Monitoring and Treatment Plan.

In several areas, most notably the vicinity of Mercer Slough in Segment B, and the Sammamish River and Bear Creek in Segment E, HRA proposes that mechanical test pits (TPs) be excavated at selected intervals. The depositional environment in these locations is alluvial, and, as such, archaeological sites may be more deeply buried than on the surrounding topography (formed in compacted glacial till and outwash). A precedent for using the mechanical excavation method locally was set during Northwest Archaeological Associates' (NWAA) 2008 cultural resources assessment for proposed rehabilitation of Lower Bear Creek in Redmond (northeast of the confluence of Bear Creek with the Sammamish River). During this project, cultural materials,

likely dating to several thousand years old, were observed below silty, clayey 'diatomaceous' earth, in association with deposits of peat, at 4.3 to 5.9 ft (1.3 to 1.8 m) below surface (Hodges et al. 2009).

In the vicinity of Mercer Slough, the Sammamish River, and Bear Creek, where cultural materials may be buried more deeply than can be reached using hand excavation, HRA recommends following the proposed regimen of shovel probes with the excavation of mechanical test pits (TPs) and, as required, backhoe trenches (BT) along the preferred alternative. Test pits will be dug by a backhoe equipped with a 3- to 4-ft (1- to 1.2-m) bucket, measuring approximately 10 ft (3 m) long, and initially excavated to a depth at which cultural deposits are observed, or a depth of 4 ft (1.2 m) – generally, this is the accepted trench depth in which an individual can work without additional benching or shoring of the side walls (according to the Occupational Safety and Health Administration [OSHA]). At this point, the wall profiles will be cleaned and examined, soils will be described, and the pit will be recorded by the monitoring archaeologist (both long walls photographed and sketched). Excavation will continue until cultural deposits are observed, until sterile sediments (i.e., glacial outwash or till) are reached, or as deeply as feasible. As long as a cultural layer is not reached, the monitoring archaeologist will continue to record the characteristics and depths of excavated sediments as clearly as feasible, examining back dirt, as it is removed, for the presence of potentially cultural horizons and archaeological materials. Archaeological equipment will include, as appropriate, a shovel, trowel, and screens of 1/4- and 1/8-inch mesh.

A backhoe will be used to remove layers of asphalt, concrete, and potentially fill, in targeted locations within the proposed survey tracts. Once hardened surfaces and fill sediments are removed, initially only to a depth of 4 ft (1.2 m) (to meet OSHA standards), shovel probes may be placed within excavated trenches. The procedures for pedestrian transects and shovel probing outlined for Stage 1c will also apply to those areas surveyed in the Stage 2 archaeological investigation. Samples for tephra analysis and/or radiocarbon dating will be collected, as appropriate, during Stage 1 and later stage archaeological investigations, upon the discovery of cultural materials and/or features within any archaeological sites in the APE.

## 6.0 References

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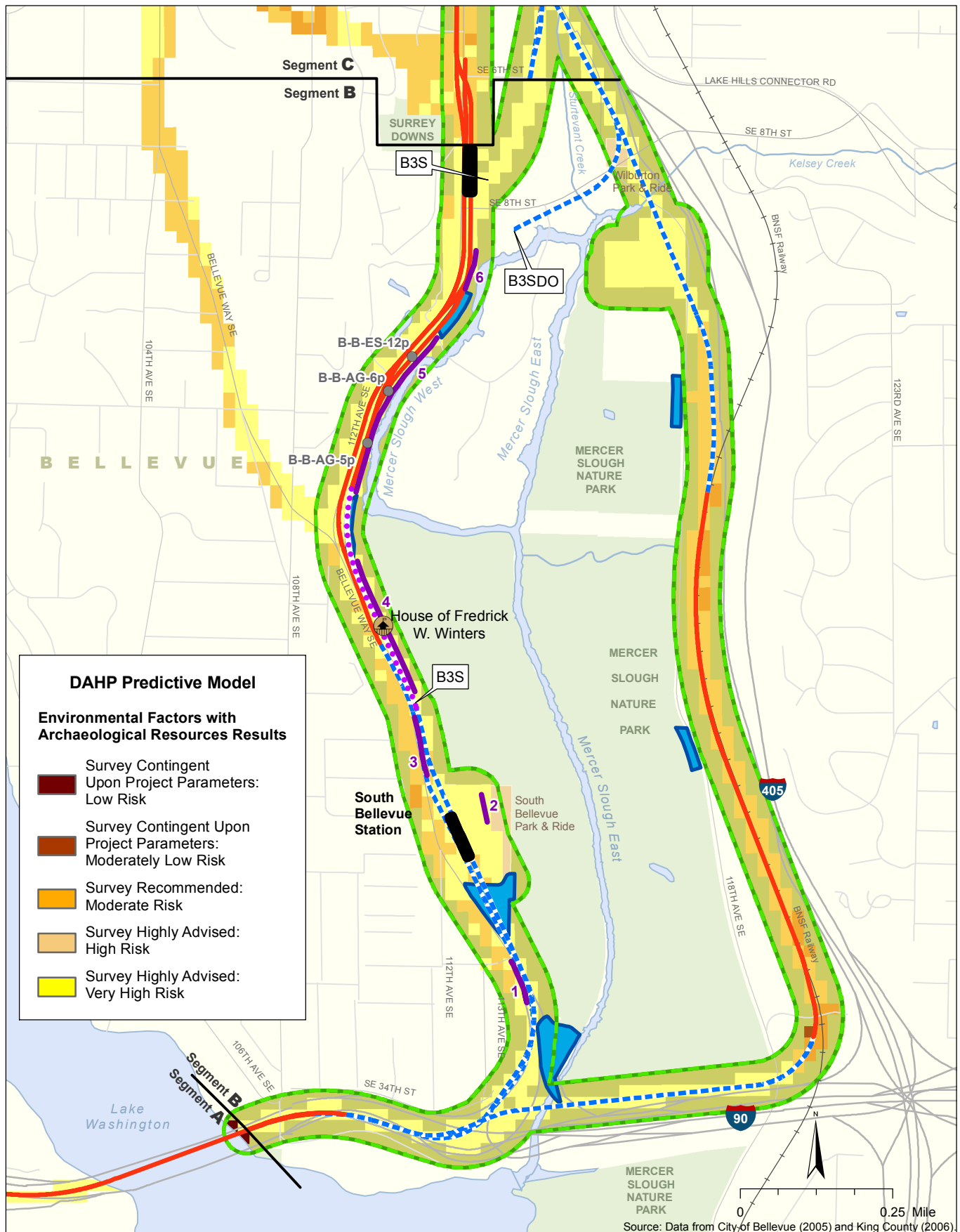


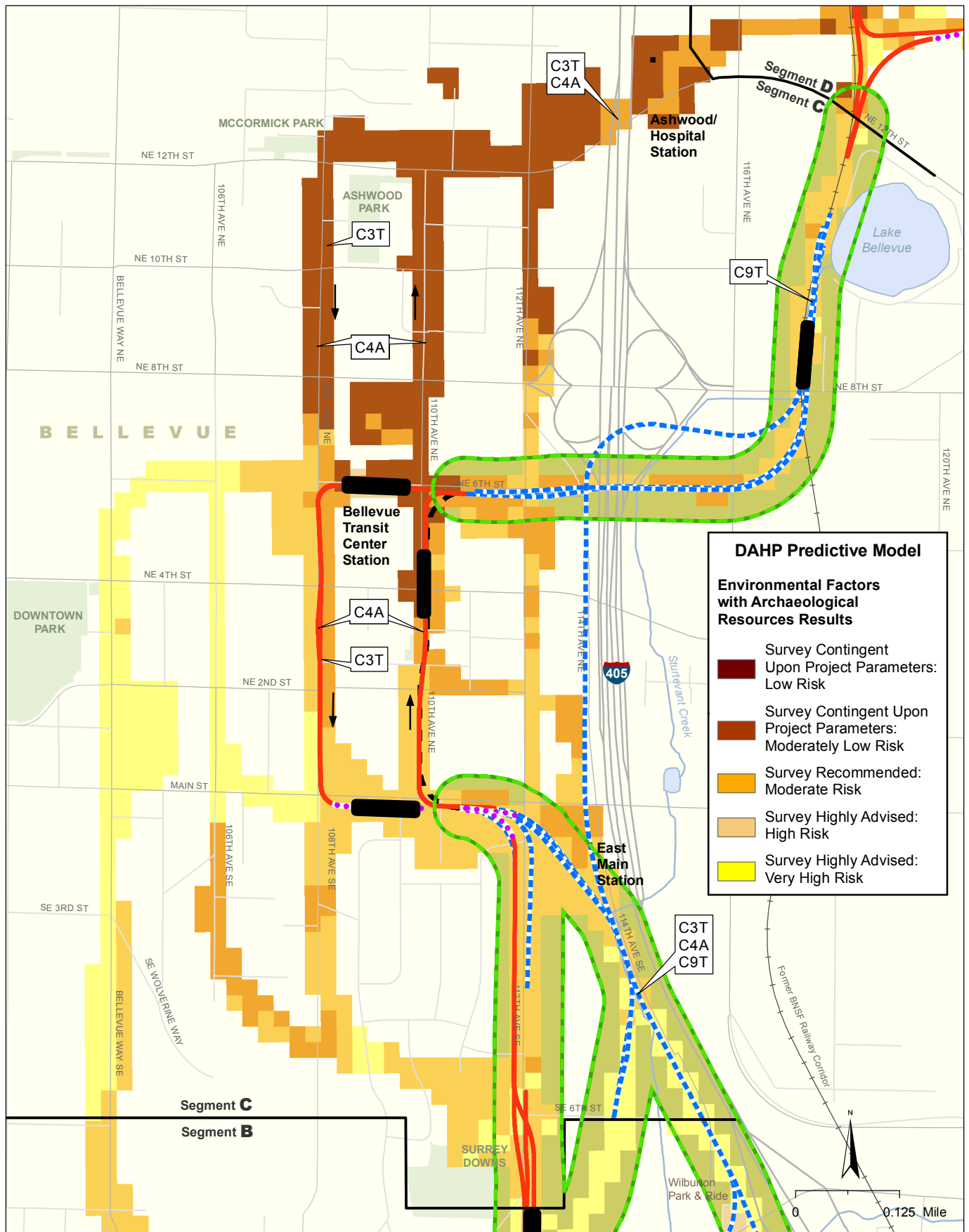


## Appendix A

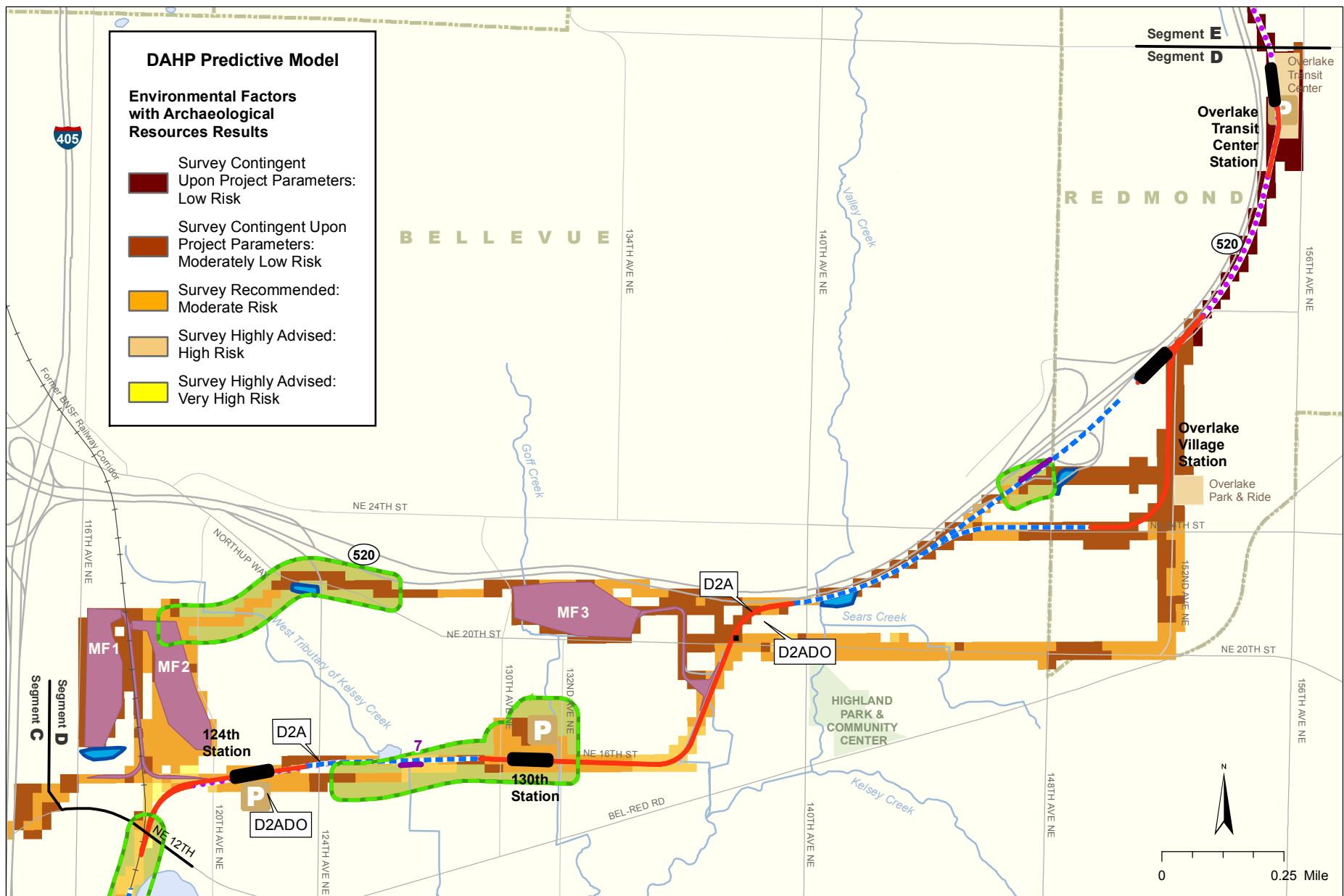
### Archaeological Sensitivity Maps Showing Survey Tracts & Proposed Geotechnical Boring Locations





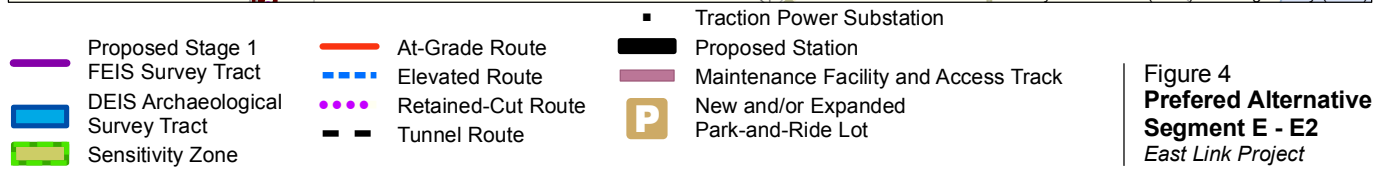
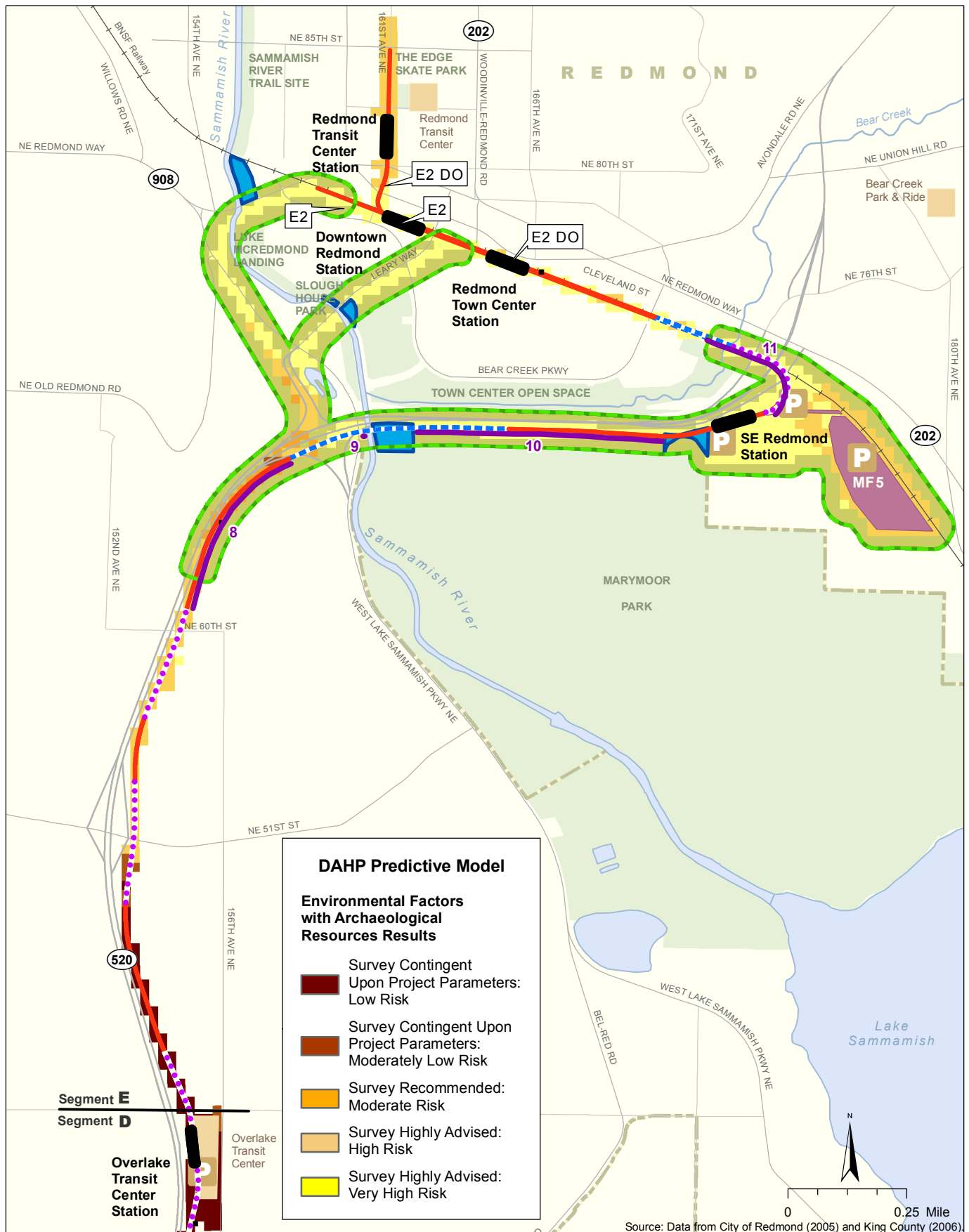


Source: Data from City of Bellevue (2005) and King County (2006).



Source: Data from City of Bellevue (2005), City of Redmond (2005), and King County (2006).

**Figure 3**  
**Segment D**  
**Preferred Alternative D2A**  
**East Link Project**



**Figure 4**  
**Preferred Alternative**  
**Segment E - E2**  
 East Link Project



## Appendix B

### Rationale for Selecting Geotechnical Boring Locations





Most Sensitive Boring Locations  
Sound Transit Eastlink Project

Sound Transit, East Link, Proposed Segments A through D Exploration Plan for 100% Design													
Modified for HRA:	16-Oct-09 (J. Gilpin)												
	Grassy or vegetated surface: shallow undiscovered resources may be damaged by equipment												
	Grassy surface, but: likely fill (i.e., close to highway) or possibility to park on nearby paved?												
	Possibility for Pre-Drill Survey (grassy surface and NOT in previous HRA survey tract)												
Segment	Structure Name/ID	Exploration Number (shown on maps)	Planned Depth (feet)	Purpose	Archaeological Observations/Comments	Est. Depth to V. Dense (feet)	Days to Complete Drilling	Surface	Color Code Explanation	Est Rig Type	Exploration Locaton	Traffic Control?	Piezometer & Special Testing
Segment B	Elevated Structure/ ES	B-B-ES-1DST	200	New information	Near highway	20?	3	Grass	At highway interchange: likely fill	Truck or track	WSDOT ROW	Limited	Downhole Seismic
Segment B		B-B-ES-2p	150	New information	Near highway	20?	3	Grass	At highway interchange: likely fill	Truck or track	WSDOT ROW	Limited	Piezo
Segment B		B-B-ES-3p	100	New information	Near highway	20?	2	Grass	Between highway offramp and surface	Truck or track	WSDOT or City of Bellevue ROW	Limited	Piezo
Segment B		B-B-ES-7	100	New information	In Survey Tract 2: historic-period artifacts to 32 cmbs (high water table)	20?	1.5	Grass	Far off-paved	Truck	City of Bellevue ROW	Limited	NO
Segment B		B-B-ES-9p	120	New information	Possibility for pre-bore check - north of obviously disturbed park and ride, but looks to be near residence	30?	2.5	Grass NOW IN PARKING LOT	Off paved area	Truck	City of Bellevue ROW	Limited	Piezo
Segment B		B-B-ES-11p	120	New information	In Survey Tract 3: appears to be largely modern 'artifacts' in nearby shovel probes to 80 cmbs (so likely disturbed and/or fill)	40?	2.5	Vegetated	Far off-paved	Track	City of Bellevue ROW	Limited	Piezo
Segment B		B-B-ES-12p	120	New information	Possibility for pre-bore check - immediately to west of Mercer Slough West	40?	2.5	Grass	Off paved area? May park on paved	Truck or Track	CITY PARK? (was classified as City of Bellevue ROW)	Limited	Piezo
Segment B		B-B-ES-13p	120	New information	In Survey Tract 4: described as fill to 60 cmbs	40?	2.5	Grass	Off paved area? May park on paved	Truck or Track	City of Bellevue ROW	YES	Piezo
Segment B		B-B-BPR-2p	100	New information	In Survey Tract 2: historic-period artifacts to 32 cmbs (high water table)	20?	2	Grass	Far off-paved	Truck	City of Bellevue ROW	Limited	Piezo
Segment B		B-B-BPR-7p	100	New information	Appears to be in immediate vicinity of park-and-ride (turf and possible fill)	20?	2	Grass	Off paved area? May park on paved	Truck	WSDOT ROW	Limited	Piezo
Segment B		B-B-BPR-9p	100	New information	Appears to be in immediate vicinity of park-and-ride (turf and possible fill)	20?	2	Grass	Off paved area? May park on paved	Truck	WSDOT ROW	Limited	Piezo

Most Sensitive Boring Locations  
Sound Transit Eastlink Project

Segment	Structure Name/ID	Exploration Number (shown on maps)	Planned Depth (feet)	Purpose	Archaeological Observations/Comments	Est. Depth to V. Dense (feet)	Days to Complete Drilling	Surface	Color Code Explanation	Est Rig Type	Exploration Locaton	Traffic Control?	Piezometer & Special Testing
Segment B	At-Grade or Retained FIII/ AG	B-B-AG-1p	120	New information	Possibility for pre-bore check - north of park and ride	40?	2.5	Grass or Pavement		Truck or Track	CITY PARK? (was classified as City of Bellevue ROW)	Limited	Piezo
Segment B		B-B-AG-2	120	New information	Possibility for pre-bore check - approaching Fredrick W. Winters House	40?	2	Grass NOW IN PARKING LOT		Truck or Track	City of Bellevue ROW	Limited	NO
Segment B		B-B-AG-3p	120	New information	Possibility for pre-bore check - approaching Fredrick W. Winters House	40?	2.5	Grass NOW IN PARKING LOT		Truck or Track	City of Bellevue ROW	Limited	Piezo
Segment B		B-B-AG-5p	120	New information	Possibility for pre-bore check - immediately to west of Mercer Slough West	40?	2.5	Grass	Off paved area? May park on paved	Track or Truck	NOW PRIVATE PROPERTY (was classified as City of Bellevue ROW)	Limited	Piezo
Segment B		B-B-AG-6p	120	New information	Possibility for pre-bore check - immediately to west of Mercer Slough West	40?	1.5	Grass	Off paved area? May park on paved	Track or Truck	NOW PRIVATE PROPERTY (was classified as City of Bellevue ROW)	Limited	Piezo

Borings in Potentially Sensitive Locations  
Sound Transit Eastlink Project

Sound Transit, East Link, Proposed Segments A through D Exploration Plan for 100% Design											
Modified for HRA:	15-Oct-09	(J. Gilpin)									
Segment	Structure Name/ID	Exploration Number (shown on maps)	Planned Depth (feet)	Purpose	Est. Depth to V. Dense (feet)	Days to Complete Drilling	Surface	Est Rig Type	Exploration Locaton	Traffic Control?	Piezometer & Special Testing
Segment A	East Channel Bridge/ ECB	B-A-ECB-3DST	150	Verification, limited information	60?	3	Gravel	Truck	WSDOT or City of Bellevue ROW	Limited	Downhole Seismic
Segment A		B-A-ECB-4p	120	Verification, limited information (Alternative Location)	60?	2.5	Asphalt Pavement	Truck	WSDOT or City of Bellevue ROW	Limited	Piezo
Segment B	Elevated Structure/ ES	B-B-ES-1DST	200	New information	20?	3	Grass	Truck or track	WSDOT ROW	Limited	Downhole Seismic
Segment B		B-B-ES-2p	150	New information	20?	3	Grass	Truck or track	WSDOT ROW	Limited	Piezo
Segment B		B-B-ES-3p	100	New information	20?	2	Grass	Truck or track	WSDOT or City of Bellevue ROW	Limited	Piezo
Segment B		B-B-ES-4	100	New information	20?	1.5	Pavement	Truck	WSDOT or City of Bellevue ROW	YES	NO
Segment B		B-B-ES-5	100	New information	20?	1.5	Pavement	Truck	City of Bellevue ROW	Limited	NO
Segment B		B-B-ES-6p	100	New information	20?	2	Pavement	Truck	City of Bellevue ROW	YES	Piezo
Segment B		B-B-ES-7	100	New information	20?	1.5	Grass	Truck	City of Bellevue ROW	Limited	NO

Borings in Potentially Sensitive Locations  
Sound Transit Eastlink Project

Segment	Structure Name/ID	Exploration Number (shown on mans)	Planned Depth (feet)	Purpose	Est. Depth to V. Dense (feet)	Days to Complete Drilling	Surface	Est Rig Type	Exploration Locaton	Traffic Control?	Piezometer & Special Testing
Segment B		B-B-ES-9p	120	New information	30?	2.5	Grass	Truck	City of Bellevue ROW	Limited	Piezo
Segment B		B-B-ES-10p	120	New information	40?	2.5	Pavement	Truck	City of Bellevue ROW	YES	Piezo
Segment B		B-B-ES-11p	120	New information	40?	2.5	Vegetated	Track	City of Bellevue ROW	Limited	Piezo
Segment B		B-B-ES-12p	120	New information	40?	2.5	Grass	Truck or Track	City of Bellevue ROW	Limited	Piezo
Segment B		B-B-ES-13p	120	New information	40?	2.5	Grass	Truck or Track	City of Bellevue ROW	YES	Piezo
Segment B		B-B-ES-14	120	New information	30?	2	Pavement	Truck	Private Property	Limited	NO
Segment B		B-B-ES-15p	120	New information	20?	2.5	Pavement	Truck	Private Property	Limited	Piezo
Segment B		B-B-ES-16p	120	New information	20?	2.5	Pavement	Truck	Private Property	Limited	Piezo
Segment B	Station and Parking Structure/ BPR	B-B-BPR-1p	100	New information	20?	2	Pavement	Truck	WSDOT	Limited	Piezo
Segment B		B-B-BPR-2p	100	New information	20?	2	Grass	Truck	City of Bellevue ROW	Limited	Piezo



Borings in Potentially Sensitive Locations  
Sound Transit Eastlink Project

Segment	Structure Name/ID	Exploration Number (shown on maps)	Planned Depth (feet)	Purpose	Est. Depth to V. Dense (feet)	Days to Complete Drilling	Surface	Est Rig Type	Exploration Location	Traffic Control?	Piezometer & Special Testing
Segment B		B-B-BPR-3	100	New information	20?	1.5	Pavement	Truck	WSDOT ROW	Limited	NO
Segment B		B-B-BPR-4p	100	New information	20?	2	Pavement	Truck	WSDOT ROW	Limited	Piezo
Segment B		B-B-BPR-5p	150	New information	20?	3	Pavement	Truck	WSDOT ROW	Limited	Downhole Seismic ?
Segment B		B-B-BPR-6	100	New information	20?	1.5	Pavement	Truck	WSDOT ROW	Limited	NO
Segment B		B-B-BPR-7p	100	New information	20?	2	Grass	Truck	WSDOT ROW	Limited	Piezo
Segment B		B-B-BPR-8p	100	New information	20?	2	Pavement	Truck	WSDOT ROW	Limited	Piezo
Segment B		B-B-BPR-9p	100	New information	20?	2	Grass	Truck	WSDOT ROW	Limited	Piezo
Segment B		B-B-BPR-10	100	New information	20?	1.5	Pavement	Truck	WSDOT ROW	Limited	NO
Segment B	Retaining Wall/ RW	B-B-RW-1p	35	New information	20?	1	Pavement	Truck	City of Bellevue ROW	YES	Piezo
Segment B	At-Grade or Retained Fill/ AG	B-B-AG-1p	120	New information	40?	2.5	Grass or Pave	Truck or Track	City of Bellevue ROW	Limited	Piezo

Borings in Potentially Sensitive Locations  
Sound Transit Eastlink Project

Segment	Structure Name/ID	Exploration Number (shown on maps)	Planned Depth (feet)	Purpose	Est. Depth to V. Dense (feet)	Days to Complete Drilling	Surface	Est Rig Type	Exploration Locaton	Traffic Control?	Piezometer & Special Testing
Segment B		B-B-AG-2	120	New information	40?	2	Grass or Pave	Truck or Track	City of Bellevue ROW	Limited	NO
Segment B		B-B-AG-3p	120	New information	40?	2.5	Grass or Pave	Truck or Track	City of Bellevue ROW	Limited	Piezo
Segment B		B-B-AG-4p	120	New information	40?	2.5	Pavement	Track or Truck	City of Bellevue ROW	YES	Piezo
Segment B		B-B-AG-5p	120	New information	40?	2.5	Grass	Track or Truck	City of Bellevue ROW	Limited	Piezo
Segment B		B-B-AG-6p	120	New information	40?	1.5	Grass	Track or Truck	City of Bellevue ROW	Limited	Piezo
Segment C	Elevated Structure/ ES	B-C-ES-1p	80	New information	20?	2	Pavement	Truck	City of Bellevue ROW	Yes	Piezo
Segment C		B-C-ES-2	80	New information	20?	1.5	Pavement	Truck	Private Property	Limited	NO
Segment C		B-C-ES-3	80	New information	20?	1.5	Pavement	Truck	Private Property	Limited	NO
Segment C		B-C-ES-4p	80	New information	20?	2	Pavement	Truck	Private Property	Limited	Piezo
Segment C	East Main Street Station/ EMS	B-C-EMS-1	80	New information	20?	1.5	Pavement	Truck	Private Property	Limited	NO

Borings in Potentially Sensitive Locations  
Sound Transit Eastlink Project

Segment	Structure Name/ID	Exploration Number (shown on plans)	Planned Depth (feet)	Purpose	Est. Depth to V. Dense (feet)	Days to Complete Drilling	Surface	Est Rig Type	Exploration Location	Traffic Control?	Piezometer & Special Testing
Segment C		B-C-EMS-2p	80	New information	20?	2	Pavement	Truck	Private Property	Limited	Piezo
Segment C	Tunnel Portal/ PT	B-C-PT-1p	120	New information	20?	2.5	Pavement	Truck	City of Bellevue ROW	Yes	Piezo
Segment C		B-C-PT-2p	120	New information	20?	2.5	Pavement	Truck	City of Bellevue ROW	Yes	Piezo
Segment C	Bored Tunnel/ BT	B-C-BT-1p	150	New information	20?	3	Pavement	Truck	City of Bellevue ROW	Yes	Piezo
Segment C	Bellevue Transit Center Station/BTC	B-C-BTC-3p (JUST ADJACENT TO SENSITIVE ZONE)	150	New information	20?	3	Pavement	Truck	City of Bellevue ROW	Yes	Piezo
Segment C		B-C-BTC-4p (JUST ADJACENT TO SENSITIVE ZONE)	150	New information	20?	3	Pavement	Truck	City of Bellevue ROW	Yes	Piezo
Segment D		B-D-ES-3p	70	New Information	20?	1.5	Pavement	Truck	Private Property	Limited	Piezo
Segment D		B-D-ES-4p	70	New Information	20?	1.5	Pavement	Truck	Private Property	Limited	Piezo
Segment D		B-D-ES-5 (UNSURE LOCATION)	70	New Information	20?	1.5	Pavement	Truck	Private Property	Limited	NO
Segment D		B-D-ES-6p (UNSURE)	70	New Information	20?	1.5	Pavement	Truck	City of Bellevue ROW	YES	Piezo

Borings in Potentially Sensitive Locations  
Sound Transit Eastlink Project

Segment	Structure Name/ID	Exploration Number (shown on maps)	Planned Depth (feet)	Purpose	Est. Depth to V. Dense (feet)	Days to Complete Drilling	Surface	Est Rig Type	Exploration Locaton	Traffic Control?	Piezometer & Special Testing
Segment D	130th Ave Station Side Platform/	B-D-130ST-1p	40	New Information	20?	1	Pavement	Truck	Private Property	Limited	Piezo





## Appendix C

### Stage 1 Survey Tract Table



## HRA Proposed Stage 1 FEIS Archaeological Survey Tracts

Map Sheet*	FEIS First Stage Designation	HRA Designation	HRA Probability	Color Code	DAHP Probability**	Approx. Length (feet/ meters)	Approx. Width (feet)	Approx. Area (acres)	Parcel ID (on map - see Map Sheet designation)	Parcel ID (assessor parcel)	Ownership	Survey Method***	Approx. # of SPs (at ~25-m intervals): Stage 1	Survey ahead of Geotechnical Boring?	Comments	Estimated Accessibility
14 (2009 All)	1	HRA B3S-3	High	Red		5 500/ 152	80	0.9	Unknown	Unknown	City of Bellevue?	SP?; trench?	6		Just to side of Bellevue Way. Trenching may be necessary in this and subsequent survey tracts along Segment B alignment due to the presence of peat	Good
16 (2009 All)	2	HRA B3S-4	High	Red		5 300/ 92	100	0.7	2152	7000100360	WSDOT	SP; trench?	5		New(?) area just east of Park and Ride - possibly equipment storage?	Good
16 (2009 All)	3	HRA B3S-5	High	Red		5 400/ 122	80	0.7	2259	824059278	City of Bellevue Parks	SP; trench?	5		To north of Park and Ride, looks vegetated. Borings will tell us more about this area (i.e., how much fill)	Good
16 (2009 All)	4	HRA B3S-6a	High	Red		5 200/ 61	80	0.4	2295	524059254	City of Bellevue Parks	SP; trench?	3		To north of Park and Ride, looks vegetated. Borings will tell us more about this area (i.e., how much fill). Width can be cut down to 50 ft if necessary	Good
16, 18 (2009 All)	4	HRA B3S-6b	High	Red		5 1,200/ 366	80	2.2	2358	524059084	City of Bellevue Parks	SP; trench?	15	Yes - survey and SP at Soil Boring B-B-AG-1p	Looks vegetated - and survey as much as possible. Some places will not be feasible, i.e., around Winters House. Borings will tell us more about this area (i.e., how much fill). Width can be cut down to 50 ft if necessary	Good
18 (2009 All)	4	HRA B3S-6c	High	Red		5 500/ 152	80	0.9	2404	662870090	City of Bellevue Parks	SP; trench?	6		Looks vegetated. Borings will tell us more about this area (i.e., how much fill). May extend into City of Bellevue Road parcel at west edge	Good
18, 20 (2009 All)	5	HRA B3S-7	High	Red		5 1,200/ 366	100	2.7	Unknown and 4035	Unknown and 066288TRCT	City of Bellevue? TRCT is unavailable	SP; trench?	15	Yes - survey and SP at Soil Borings B-B-AG-5p, B-B-AG-6p, and B-B-ES-12p	ROW widens slightly here. Surface appears vegetated. Borings will tell us more about this area (i.e., how much fill). Previous HRA survey tract 3 just to south of this proposed survey area - HRA observed some disturbance in upper levels, and two shovel probes saw peat-like lens starting between 20 and 60 cmbs.	Good
20 (2009 All)	6	HRA B3S-8a	High	Red		5 600/ 183	100	1.4	Unknown and 4061	Unknown and 066288TRCT	City of Bellevue? TRCT is unavailable	SP; trench?	10		ROW widens slightly here. Surface appears vegetated. Borings will tell us more about this area (i.e., how much fill).	Good
25 (PA Map)	7	HRA D2A-4	High	Red		4 250/ 76	80	0.5	2825059296, 2825059240	2825059296, 2825059240	City	SP; trench?	3		Covers the proposed D2A ROW surrounding a ponded portion of 'West Tributary' Kelsey Creek. Assumes that the 'retained cut' D2A route is not chosen	Good to Moderate (Likely high water table here)
32, 33 (PA Map)	8	HRA E2-3	Low into High	Green		4 2200/ 67	80	4	Unknown (roads); 943530UNKN, 9435300123, 5422560680, 5422560670, 5422560660, 5422560650, 5422560640	Unknown (roads); 943530UNKN, 9435300123	WSDOT (road, 0123) and City of Redmond (road?); unknown (UNKN); remainder private	SP; trench?	27		Vegetated area north of NE 60th St and along SR 520. Portions appear less visibly disturbed than vicinity, and likely will target these portions of this stretch, based on field observations	Good to Moderate
34 (PA Map)	9	HRA E2-4	High	Red		5 500/ 152	80	0.9	Unknown (SR 520, W Lake Sammamish)	Unknown (SR 520, W Lake Sammamish)	WSDOT, City of Redmond	SP; Trenches	6		Vicinity of Sammamish River. Paleo archy site within ~600 ft NE of this location. Deep trenching, if possible, for elevated route. Possible SPs, especially closer to the river	Poor at highway; Moderate to Good closer to River

HRA Proposed Stage 1 FEIS Archaeological Survey Tracts

Map Sheet*	FEIS First Stage Designation	HRA Designation	HRA Probability	Color Code	DAHP Probability**	Approx. Length (feet/ meters)	Approx. Width (feet)	Approx. Area (acres)	Parcel ID (on map - see Map Sheet designation)	Parcel ID (assessor parcel)	Ownership	Survey Method***	Approx. # of SPs (at ~25-m intervals): Stage 1	Survey ahead of Geotechnical Boring?	Comments	Estimated Accessibility
34 (PA Map)	10	HRA E2-5a	High	Red	5	1450/ 442	80	2.7	Unknown (SR 520), 1125059016, 1125059037	Unknown (SR 520), 1125059016, 1125059037	WSDOT (SR 520); King County (Marymoor Park)	SP; Trenches	18		Elevated track here. Vicinity of Sammamish River and Bear Creek. Paleo archy site within ~400 ft N of this location. Deep trenching, if possible, depending on APE depth due to elevated route. Systematic SPs, especially closer to the river, and depending on levels of fill. No boring locations planned at this time for this location	Good to Moderate
34, 35 (PA Map)	10	HRA E2-5b	High	Red	5	1800/ 549	80	3.3	Unknown (SR 520); 1125059037	Unknown (SR 520); 1125059037	WSDOT (SR 520); King County (Marymoor Park)	SP; Trenches	22		At-grade track here. Vicinity of Sammamish River and Bear Creek. Deep trenching, depending on depth of APE. Systematic SPs and depending on levels of fill (previous HRA Survey Tract 16 to East showed historic fill). No boring locations planned at this time for this location	Good to Moderate
36 (PA Map)	11	HRA E2-7	High	Yellow	5	600/ 183	80	1.1	Unknown	2439705555	Unknown (WSDOT?); King County owns RR ROW	SP; trench	8		Approaching and along RR ROW (owned by King County) in 'retained cut'. May be able to trench and place shovel probes along edges of RR ROW. Since retained cut, and approaching Bear Creek, should plan to trench as move west	Poor to moderate (close to highway)
37 (PA Map)	11	HRA E2-8	High	Red	5	1100/ 335	80	2	1225059266, 1225059265	1225059266, 1225059265	King County (9265); BNSF (9266)	SP; trench	13		Short 'retained cut' and then elevated over Bear Creek. Need to plan for systematic probing and likely trenching in this segment, particularly around Bear Creek	Good to moderate (BNSF)
* "2009 All" = FEIS All Alternatives Map Book (Segment B only), received by HRA in November, 2009																
"C9T Map" = Alternative C9T Map Book, received by HRA in November, 2009																
"PA Map" = Preferred Alternative Map Book, received by HRA in November 2009																
** DAHP 5 = Survey Highly Advised: Very High Risk																
DAHP 4 = Survey Highly Advised: High Risk																
DAHP 3 = Survey Recommended: Moderate Risk																
DAHP 2 = Survey Contingent Upon Project Parameters: Moderately Low Risk																
DAHP 1 = Survey Contingent Upon Project Parameters: Low Risk																
*** SP = shovel probe (generally ~12-18" in diameter, using shovels and 4-in augers).																
The size (horizontal and vertical dimensions) of trenches will depend on a number of variables, including the built environment surrounding the trench (i.e. Survey methods are suggested, based on sensitivity levels and estimated amounts of disturbance, as deduced from aerial photographs and previous																