

SR 520 Bridge Replacement and HOV Project Draft EIS

Appendix W Madison Park Bicycle/Pedestrian Path Options Technical Memorandum

Prepared for

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Federal Highway Administration
Sound Transit

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May 2, 2006

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Acronyms and Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
ADA	American with Disabilities Act
ASTM	American Society for Testing and Materials
BMPs	best management practices
Ecology	Washington State Department of Ecology
EDR	Environmental Data Resources, Inc.
EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
GIS	geographic information system
HRM	Highway Runoff Manual
ICR	independent cleanup report
LUST	leaking underground storage tank
NGVD	National Geodetic Vertical Datum
NPGIS	non-pollutant generated impervious surface
NRHP	National Register of Historic Places
Ql	Lake deposits
Qm	Vashon till
Qvrl	Vashon recessional lacustrine sediments
Qvt	Quaternary Vashon till
Qyal	younger alluvium
UST	underground storage tank
WDFW	Washington Department of Fish and Wildlife
WSDOT	Washington State Department of Transportation



Introduction

As the Washington State Department of Transportation (WSDOT) began the planning and preliminary engineering for the SR 520 Bridge Replacement and HOV Project, the Local Impact Committee (a committee tasked with analyzing the local effects of the proposed project) identified the potential for a nonmotorized connection between Madison Park and the proposed SR 520 bicycle/pedestrian path. The potential connection was supported by local bicycle advocacy groups. In response, the City of Seattle asked WSDOT to study the connection as part of the proposed project environmental impact statement (EIS) process.

WSDOT agreed to study the proposed connection, with the stipulation that it be done in partnership with Seattle. Furthermore, Seattle agreed to lead public outreach for the study, including meetings with the Citizen Advisory Group and local community councils, and WSDOT agreed to provide the technical analysis.

Based on the public outreach, WSDOT identified two bicycle/pedestrian path options for further study (see **Exhibit 1**). Both the options, which are evaluated in this document, would connect to SR 520 via a bridge built specifically for nonmotorized traffic. Either path option could be added to any of the SR 520 Bridge Replacement and HOV Project alternatives, but for this study, WSDOT has designed the option routes to fit with the 6-Lane Alternative.

This analysis qualitatively evaluates how the two path options compare in their potential environmental effects and also identifies proposed mitigation measures for each option.

Because the Madison Park Bicycle/Pedestrian Path would have no adverse effects on the following resources:

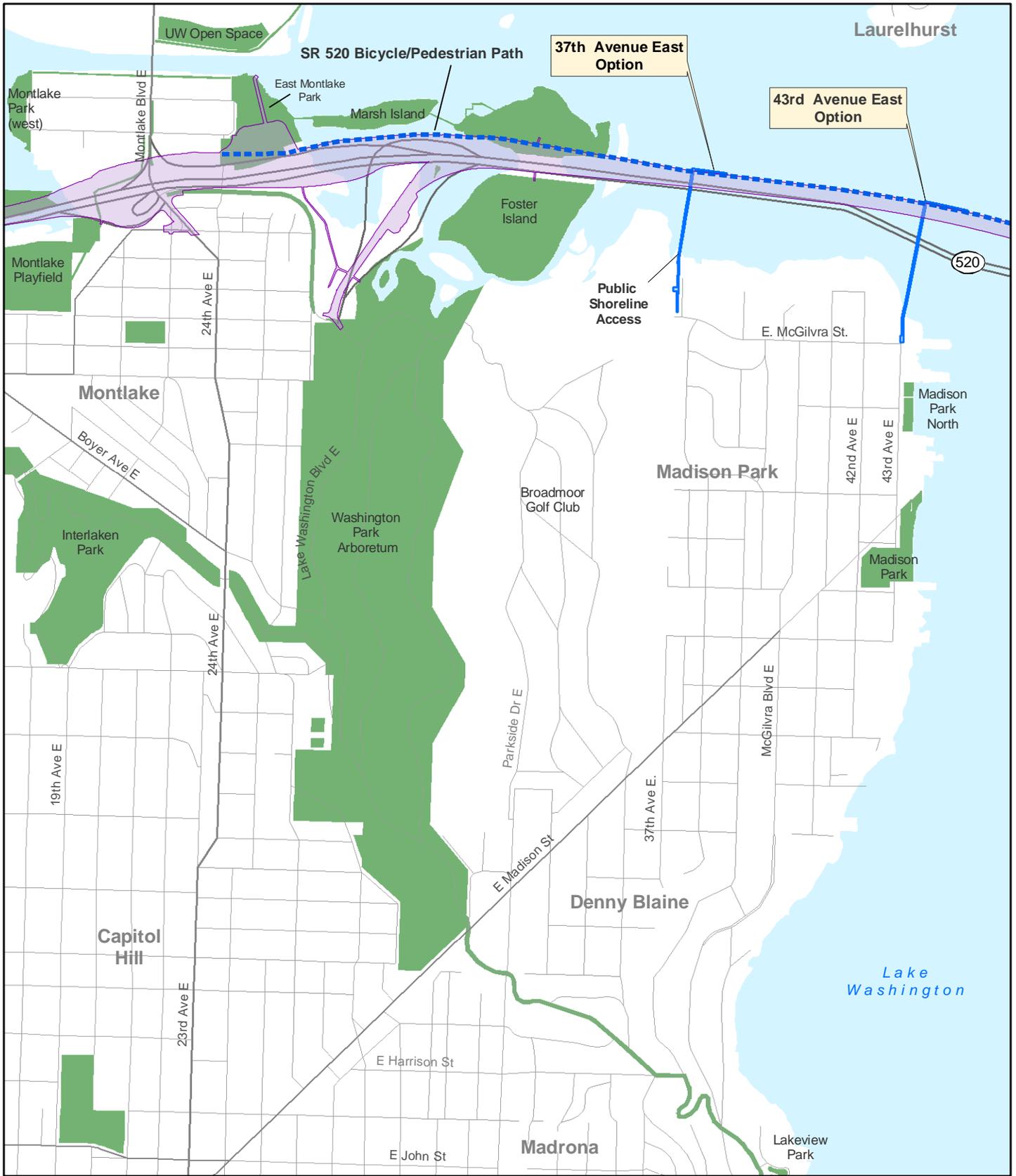
- Air Quality
- Economics and Relocation
- Energy
- Environmental Justice
- Noise
- Public Services and Utilities
- Social
- Indirect and Cumulative Effects

These disciplines are not discussed in this document.

What are the Madison Park Bicycle/Pedestrian Path options?

Both Madison Park Bicycle/Pedestrian Path options would provide a 14-foot-wide wide path and bridge between the Madison Park neighborhood and the new SR 520 bicycle/pedestrian path. At their south end, both options would require some grading and paving to accommodate a short section of path between the local road and the bridge. The at-grade portion of the path would be 500-feet long under the 37th Avenue East option, and 300-feet long under the 43rd





SR 520 Bicycle Routes
 - 6-Lane Alternative Footprint (purple line)
 - Bicycle/Pedestrian Path (dashed blue line)

- Parks (green shaded areas)



**Exhibit 1. Madison Park
 Bicycle/Pedestrian Path Options**
 SR 520 Bridge Replacement and HOV Project

Avenue East option. A bridge, which would begin at the shoreline with both options, would require a number of 8-foot-diameter concrete support columns. The bridge would rise at an approximately 4.5 percent grade and at its highest point would be 25 feet above Lake Washington. The bridge between the shoreline and SR 520 would be 750-foot long with 9 support columns under the 37th Avenue East option, and would be 1,000-foot long with 10 support columns under the 43rd Avenue East option.

As shown in **Exhibits 2 and 3**, the new bicycle/pedestrian path bridge under both options would cross under the SR 520 bridge deck to the north side. The path would then turn east and run parallel to SR 520. Because of the height difference between the path option and the SR 520 bridge, the path option would rise at a 5 percent grade until it reached the bridge deck, where it would connect with the SR 520 bicycle/pedestrian path.

Both options would route bicyclists along public streets and route pedestrians along sidewalks. The existing bicycle routes that serve Madison Park generally run north to south (see **Exhibit 4**), accommodating nonmotorized travel between areas north of the Lake Washington Ship Canal (the University of Washington and adjacent neighborhoods) and neighborhoods south of the Ship Canal and east of Capitol Hill (the Washington Park Arboretum and Montlake, Broadmoor, Madison Park, Washington Park, Denny Blaine, and Madrona neighborhoods) (see **Exhibit 4**). In addition to linking these areas, the existing routes are used by both commuter and recreational bicyclists as a through route connecting to the larger system of local and regional bicycle routes. This larger system includes bicycle routes east of Lake Washington, currently reached by a bicycle/pedestrian path on the I-90 bridge, and by public transit busses with bicycle racks that cross the Evergreen Point Bridge.

The 37th Avenue East option would connect from SR 520 to public right-of-way at the end of 37th Avenue East (see **Exhibit 2**). The approximately 750-foot-long bicycle/pedestrian bridge would come ashore at a Seattle-owned site. The route would proceed south along a short stretch of public right-of-way used for access to the shoreline and access to two single-family residences. The route would then head east on East McGilvra Street, turn south on McGilvra Boulevard East, cross East Madison Street, and continue south on McGilvra Boulevard to its intersection with Lake Washington Boulevard. From there, the route would merge with the Seattle's designated on-street bicycle route.





- 6-Lane Alternative Footprint
- SR 520 Pedestrian/Bicycle Path

Madison Park Path - 37th Ave E Option

- At-Grade
- Elevated
- Columns (8-foot Diameter)

Source: City of Seattle (2003) Comprehensive Plan (Land Use); King County (2003) GIS Data (Streets and Waterbodies). Horizontal datum for all layers is NAD83(91), vertical datum for layers is NAVD88.



0 50 100 Feet



Exhibit 2. 37th Avenue East Option

SR 520 Bridge Replacement and HOV Project



- 6-Lane Alternative Footprint
- SR 520 Pedestrian/Bicycle Path

Madison Park Path - 43rd Ave E Option

- At-Grade
- Elevated
- Columns (8-foot Diameter)

Source: City of Seattle (2003) Comprehensive Plan (Land Use); King County (2003) GIS Data (Streets and Waterbodies). Horizontal datum for all layers is NAD83(91), vertical datum for layers is NAVD88.

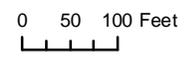


Exhibit 3. 43rd Avenue East Option

SR 520 Bridge Replacement and HOV Project

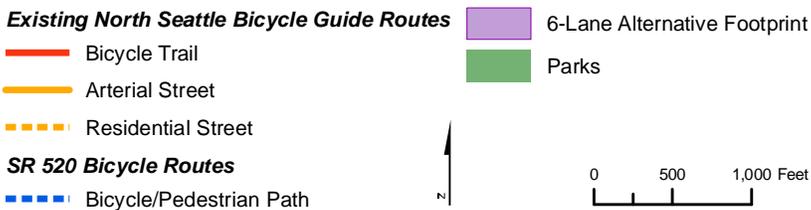
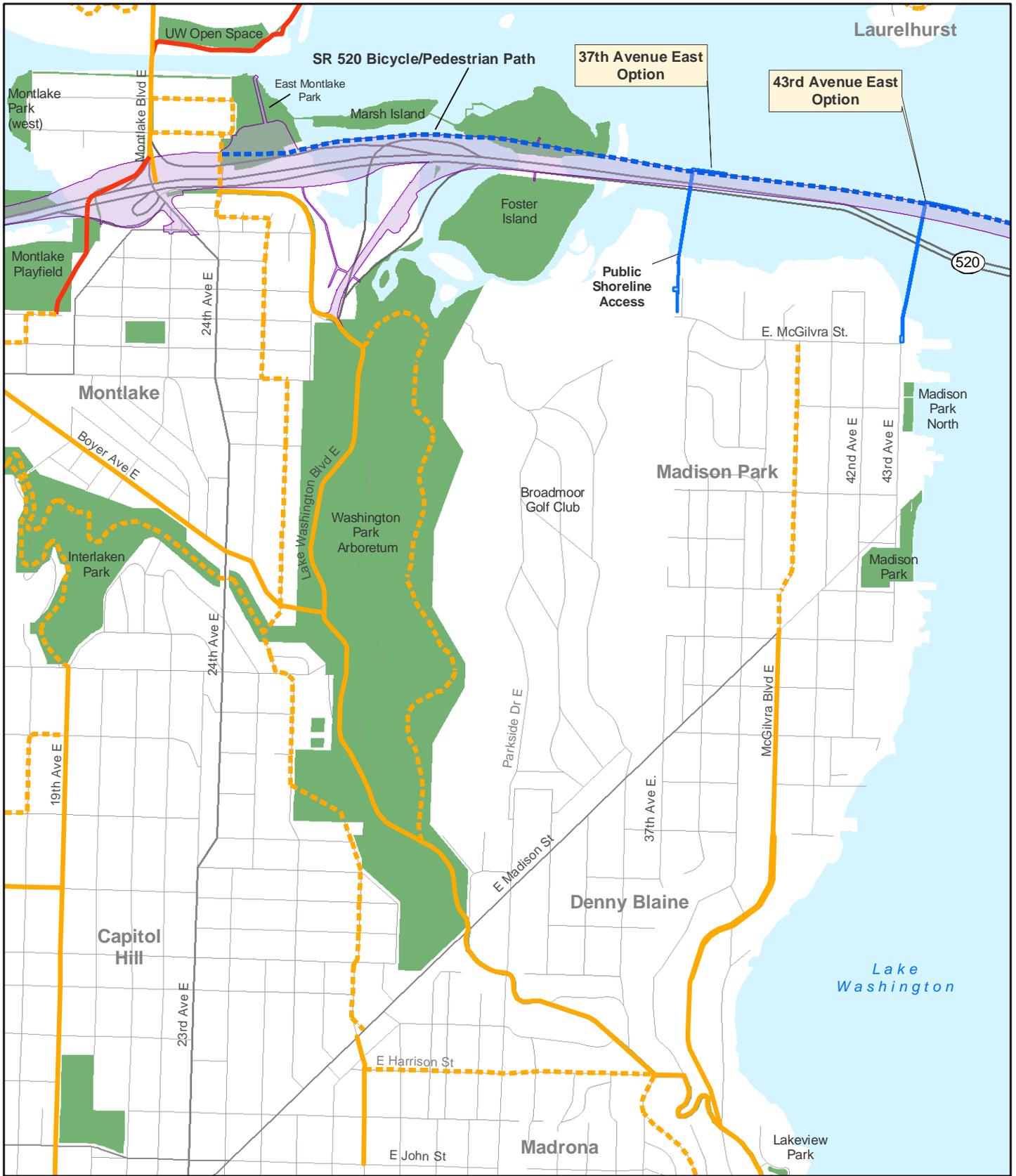


Exhibit 4. Existing Bicycle Routes
 SR 520 Bridge Replacement and HOV Project

The 43rd Avenue East option would connect from SR 520 to public right-of-way at the end of 43rd Avenue East via an approximately 1,000-foot-long bicycle/pedestrian bridge (see **Exhibit 3**). The right-of-way in this area is currently used for access to multifamily residences and for ornamental plantings. Because part of 43rd Avenue East is one-way northbound, this route would proceed west on East McGilvra Street, and then south on McGilvra Boulevard East. From there it would share the same route as 37th Avenue East Option.

All facilities that would be built as part of the proposed Madison Park Bicycle/Pedestrian path (e.g., bicycle/pedestrian bridges and connections to public streets and sidewalks) would be designed to conform to guidelines and standards developed as part of the Americans with Disabilities Act (ADA) and by the American Association of State Highway and Transportation Officials (AASHTO).

Cultural Resources

Affected Environment

How was information collected?

The cultural resources discipline team conducted a site records search at the Washington State Department of Archaeology and Historic Preservation, a visual survey of the study area and a more intensive pedestrian reconnaissance survey along the corridors for both path options.

The site records search at the Washington State Department of Archaeology and Historic Preservation revealed no known/recorded archaeological sites along the path options corridors.

How were archaeological and ethnological resources investigated?

On February 7, 2006, CH2M HILL archaeologists (Dr. James Bard and Mr. Robin McClintock) conducted a pedestrian survey along the corridors of both options. For the pedestrian reconnaissance survey, the archaeologists walked along two closely spaced transects (5 meters apart, about 16.4 feet) from the south to the north along the eastern half of the corridors, and then walked back from north to the south along



the western half for both path options. They did not conduct subsurface tests.

Along the 37th Avenue East option route, only 10 to 50 percent of the ground surface was visible and not covered by vegetation, gravel, or pavement. These are approximate measures of the openness of the ground surface for archaeological inspection. For example, in an area with 100 percent visibility, the ground is completely exposed. Ground surface visibility was highest in the corridor toward the south and lowest closer to Lake Washington, where the ground surface was mostly covered with leaf litter, discarded/dumped garden clippings, and dense shoreline shrub vegetation.

The surface visibility for the 43rd Avenue East option ranged from 0 to 50 percent, with higher visibility in the north part of the corridor closer to Lake Washington and lower visibility closer to East McGilvra Street, where gravel and pavement obscure the native ground surface. At the northern end, small pieces of concrete and broken ceramic and concrete pipe fragments have been dumped on the surface, along with a several-inch-thick layer of dumped garden trimmings and clippings.

No prehistoric Native American archaeological remains were observed along either path option.

Are there any archeological high probability areas?

With the possible exception of the area immediately encompassed by the East McGilvra Street/38th Avenue East intersection, the entire south-north trending corridor lies on land that was under the surface of Lake Washington until 1916. (In 1916, the lake was lowered with the breach of the Montlake Cut). Because the East McGilvra Street/38th Avenue East intersection is slightly higher in elevation than the surrounding area, it may represent a portion of the pre-1916 lakeshore. Native American occupation sites would have been on dry land, so this particular intersection area can be considered to have a moderate to high probability of containing archaeological resources.

How were historic structures and buildings Investigated?

Properties constructed before 1961 were identified through King County Assessor's Records. To be consistent with the analysis for the SR 520 Bridge Replacement and HOV Project Draft Environmental Impact



Statement (EIS), the year 1961 was chosen to conservatively include all resources that could be 50 or more years old by the time the new Evergreen Point Bridge and Madison Park bicycle/pedestrian path are constructed. The cultural resources discipline team considered properties that face Lake Washington whose views could potentially be affected by the path options.

The following properties were identified:

37th Avenue East Option

- 2520 37th Avenue East, constructed in 1938, renovated in 1976
- 3800 East McGilvra Street, constructed in 1916
- 3701 East McGilvra Street, constructed in 1956
- 2416 38th Avenue East, constructed in 1957

43rd Avenue East Option

- 4217 East McGilvra Street, constructed in 1955, renovated in 1978
- 2346 43rd Avenue East, constructed in 1947
- 2411 42nd Avenue East, constructed in 1938

On February 7, 2006, CH2M HILL architectural historian Catherine Barrier conducted a visual survey of the project area and photographed the above-listed properties. Her survey concluded that none of the properties are eligible for the National Register of Historic Places (NRHP) under criterion C for their architectural merit. In order to meet criterion C, a property must embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value. Subsequent research did not reveal any information that would appear to make these properties eligible under other criteria, such as an association with historic events or persons. Therefore, there are no historic standing structures in the project area for either path option.

What are the recommendations for additional study?

Because the team archaeologists identified a small portion of the 37th Avenue East option route (where McGilvra Street intersects with 38th Avenue East) as a moderate to high probability area for prehistoric archaeological remains, subsurface testing should be conducted. This would ensure that potentially harmful project effects on archaeological resources are considered during design and construction.



Project Effects

How would the project affect cultural and historic resources?

Construction of either path option would include some clearing and grading along either option route. This type of disturbance could damage or destroy archaeological resources if they are present.

37th Avenue East Option

Construction at the southern end of this path option could affect the East McGilvra Street/38th Avenue East intersection, an area that is recognized as a moderate to high probability area for prehistoric archaeological remains. Subsurface testing of this area should be conducted to ensure that potentially harmful project effects on archaeological resources are taken into consideration.

The team architectural historian did not identify any NRHP-eligible historic standing structures in the 37th Avenue East option cultural resources study area. Therefore, there is a finding of no historic properties affected for standing structures.

43rd Avenue East Option

No archaeological high probability areas or NRHP-eligible historic standing structures were identified in the 43rd Avenue East option cultural resources study area.

What can be done to avoid or minimize negative effects to cultural and historic resources?

If a significant archaeological site is found during subsurface testing, and if such a site cannot be avoided by redesigning the path option(s), then WSDOT will consult with other relevant government agencies to determine if preconstruction “data recovery” is an appropriate mitigation measure.

Ecosystems

Because of the unique characteristics the project area ecosystem resources, the ecosystems analysis is divided into the three topics – wetlands, wildlife and habitat, and fish resources.



Affected Environment

How was information collected?

The ecosystems discipline team relied on information that was generated as part of the SR 520 Bridge Replacement and HOV Project. This information included wetland boundaries, wetland classifications and ratings, aerial photographs, the basic landscape cover types, and specific wildlife habitats within each cover type for the area, and aquatic habitat conditions within Lake Washington. The team further supplemented the existing information with data they collected from the area along and around the path option corridors. Attachment 1 lists the species in the project area.

Where in the project area do wetlands occur?

37th Avenue East Option

Wetlands in the vicinity of the 37th Avenue East option are identified as LWS-1 and LWS-2 in **Exhibit 5**. For our analysis the wetlands have been identified using a two-letter abbreviation of the watershed location, (LW for Lake Washington), a single letter for direction (S for south of SR 520), and a number. For example, LWS-1 refers to the Lake Washington basin, on the south side of SR 520, wetland number 1. These names are consistent with those used in the SR 520 Bridge Replacement and HOV project. Both of these wetlands are lake fringe wetlands. LWS-1 is a scrub-shrub emergent and aquatic bed wetland located on the northern shoreline of Madison Park. The shoreline supports willows, hardhack, red-osier dogwood, and cattail. The aquatic bed is primarily white water lily, which is an invasive species.

LWS-2 is a large, complex wetland containing forested, scrub-shrub, emergent, and aquatic bed classes. All but the forested class of this complex wetland, occur in the western portion of the Madison Park area. The vegetation in this wetland is predominantly willows, hardhack, red-osier dogwood, cattails, and white water lily.

