Source: City of Seattle (2003) GIS Data (Wetlands); City of Bellevue (2003) GIS Data (Wetlands). Horizontal datum for all layers is NAD83(91), vertical datum is NADV88. Field updates by Parametrix, 2002-2004.

N

0 125 250 500 Feet

- 6-Lane Alternative Footprint
- Park Within 1/4 mile of Project Area
- Madison Park Ped/Bike Path
- Wetland Buffer

Wetland Class

- L1AB - Limnitic Aquatic Bed
- L2AB - Littoral Aquatic Bed
- L1AB/L2AB
- PFO - Forested
- PSS - Scrub/Shrub
- PEM - Emergent
- PEM/PSS

Exhibit 5. **Cover Types and Wetland in the Study Area**

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File Path: P:\Parametrix\168395\180171 SR 520 Bridge Replacement\GIS\Layouts\MadisonPark\Ecosystem\Habitat_Impacts_MadisonPark_Path.mxd, Date: April 28, 2006

The wetland functions of LWS-1 and LWS-2 are rated as follows:

- **Low** for flood flow alteration because the area is located in the receiving body of floodwaters
- **Moderate** for sediment, nutrient, and toxicant removal because of their proximity to pollutants and dense vegetation
- **High** for shoreline erosion control and stabilization, production and export of organic matter, and habitat suitability because of their location on the shoreline, dense vegetation and complexity
- **High** for social values because they are used for recreation

43rd Avenue East Option

There were no wetlands identified in the vicinity of the 43rd Avenue East option.

What are the landscape cover types and wildlife habitat characteristics of the project area?

37th Avenue East Option

The 37th Avenue East option would be constructed over shallow open water and wetlands within a generally undeveloped area that provides habitat for a variety of wildlife uncommon in urban environments (see **Exhibit 5**). The open water is primarily under and north of the SR 520 bridge and provides habitat for a variety of freshwater-associated wildlife. These include waterfowl, the most common of which are American coots, buffleheads, mallards, scaups, goldeneyes, widgeons, Canada geese, double-crested cormorants, pied-billed grebes, and western grebes. Bat species also forage over open water.

Wildlife associated with the wetlands and riparian area include red-winged blackbirds, marsh wrens, great blue herons, belted kingfishers, wood ducks and many of the same water fowl that use open water areas. Beavers, mink, foraging bats (e.g., little brown bats and big brown bats), Pacific treefrogs, and garter snakes also occur. Large cottonwoods, which grow on the shoreline and in areas adjacent to Madison Park, are capable of providing great blue heron, bald eagle, red-tailed hawk, and other raptor nest and perch sites.

43rd Avenue East Option

Wildlife present in the open water habitats in the vicinity of the 43rd Avenue East option are primarily waterfowl and other water birds (e.g.,

coots, buffleheads, mallards, scaups, goldeneyes, widgeons, Canada geese, double-crested cormorants, pied-billed grebes, and western grebes).

Are there any federally listed wildlife species in the project area?

Federally listed wildlife species are those species listed at threatened and endangered by the Federal Endangered Species Act. The Madison Park Bicycle/Pedestrian Path project area contains suitable habitat for only one such species—the bald eagle, which nests in the nearby Broadmoor area.

37th Avenue East Option

The Broadmoor bald eagle pair's territory contains three nest sites in the Arboretum south of SR 520. These birds have been observed during all seasons in the vicinity of the proposed 37th Avenue East option and regularly forage in the wetland complex over which the path would be built. Other wintering bald eagles are also expected to forage in the area.

43rd Avenue East Option

The Broadmoor bald eagles are likely to forage over open water habitats in the vicinity of the 43rd Avenue East option throughout the year.

Are there any state-listed, priority habitat, or other wildlife species of special interest in the project area?

37th Avenue East Option

The Washington Department of Fish and Wildlife (WDFW) defines priority habitats as those habitat types or elements with unique or significant value to a diverse group of species.

The 37th Avenue East option vicinity includes three WDFW priority habitats: urban natural open space, riparian areas, and wetlands. Urban natural open space in the vicinity includes the Washington Park Arboretum. The Arboretum contains native upland and wetland habitat and also maintains an important collection of large, primarily ornamental plant species near the Museum of History and Industry (MOHAI). The upland forests provide habitat for a variety of special interest bird species, including warblers and other songbirds, hairy

woodpeckers, red-tailed hawks, coopers hawks, and band-tailed pigeons. The occurrence of riparian areas and wetlands along the 37th Avenue East option corridor is described in the *Wetlands* and *Fish Resources* sections of this memorandum.

The 37th Avenue East option vicinity provides habitat for a variety of species of special interest Great blue herons and wood ducks forage during all seasons in the wetland complex and adjacent waters over which the 37th Avenue East option would be built. Western grebes and hooded mergansers may forage in the area during the winter months.

Other special interest species that may occur in the 37th Avenue East option vicinity include peregrine falcons, common loons, band-tailed pigeons, and pileated woodpeckers. WDFW also considers raptor nests sites to be of special interest. A red-tailed hawk nest site has been reported at the Broadmoor Golf Club (Raedeke Associates 2005), although the exact location of the nest and the distance from the proposed path have not been confirmed.

43rd Avenue East Option

Great blue herons likely forage during all seasons in the 43rd Avenue East option vicinity, and western grebes forage in the area during the winter. Other special interest species that might occur in the area include hooded mergansers, wood ducks, peregrine falcons, and common loons.

The 43rd Avenue East option vicinity includes no WDFW priority habitats.

What are the general fish resource and habitat characteristics in the project area?

37th Avenue East Option

The area around the 37th Avenue East option consists of shallow water habitat adjacent to Foster Island and the peninsula (owned by WSDOT) immediately south of the island. The water in this area is generally shallow (3 to 6 feet deep), with dense, non-native aquatic vegetation (Eurasian milfoil and white water lily). The 37th Avenue East option would cross primarily over the dense area of white water lilies, with dense Eurasian milfoil along the edges. The dense aquatic vegetation provides poor habitat for most fish species. Species such as yellow perch, largemouth bass, bluegill, and other resident fishes are likely to use the edges of the dense vegetation.

43rd Avenue East Option

The area around the 43rd Avenue East option consists of shallow water habitat at the east edge of Madison Park. The water under the 43rd Avenue East option is generally 3 to 20 feet deep, deeper than the area near the 37th Avenue East option, with sparse or no aquatic vegetation. Some Eurasian milfoil is present near the shoreline, but there is no obvious aquatic vegetation along most of the 43rd Avenue East option. The greater water depths along most of the path option apparently prevent the invasive vegetation from growing. At the Madison Park shoreline, the water depths are generally 2 to 4 feet.

Fishes using these open waters include juvenile Chinook, chum, coho, steelhead, and sockeye salmon migrating out of Lake Washington. Resident fishes such as cutthroat trout, rainbow trout, longfin smelt, peamouth chub, yellow perch, northern pikeminnow, smallmouth bass, black crappie, and pelagic sculpin use open shallow-water habitat within Lake Washington. Other fish species such as river lamprey, largemouth bass, brown bullhead, threespine stickleback, and prickley sculpin are likely sometimes present in this area.

Project Effects

How will the project affect wetlands?

37th Avenue East Option

The 37th Avenue East option would be 14 feet wide and require nine 8-foot-diameter columns to support the bridge portion of the path. Starting at the south end of the bridge, the first column would be constructed on land and would permanently fill less than 50 square feet of wetland buffer. Heading northward, the second through sixth columns would be constructed in the aquatic bed portion of wetland LWS-2 and permanently fill less than 0.01 acre (250 square feet) of this wetland (**Exhibit 6**). The seventh through ninth columns would be constructed in open water.

The 37th Avenue East option would be elevated over 0.06 acre of scrub-shrub and 0.15 acre of aquatic bed wetlands. However, because the

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.

N

0 50 100 Feet

6-Lane Alternative Footprint

At-Grade

Elevated

Columns

Exhibit 6. **37th Avenue East Option Effects on Cover Types**

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path would be narrow and gain elevation quickly (attaining 9 feet above the water by column 2), these wetlands should receive sufficient sunlight to support plant growth. Therefore, shade effects to scrub-shrub wetlands are anticipated only for the area between the first and second columns—approximately 0.03 acre (1,190 square feet).

These minor fill and shade effects on wetlands and buffers would have only minor effects on wetland functions. The limited area of removed vegetation would only slightly reduce habitat and protected shoreline as well as the amount of organic matter that may be generated.

43rd Avenue East Option

The 43rd Avenue East option would also be 14 feet wide and require ten 8-foot-diameter columns to support the bicycle/pedestrian path (**Exhibit 7**). However, with this option, there would be no wetland effects.

What can be done to avoid or minimize negative effects to wetlands?

Although, effects to wetlands could not be avoided entirely with either bicycle/pedestrian path option, the bridge columns would be located and constructed in such a way to minimize effects to wetlands.

37th Avenue East Option

Under the 37th Avenue East option, compensatory mitigation would replace the area of wetland filled and shaded and offset the permanent and temporary loss of wetland functions. The goal of the compensatory mitigation would be to achieve no net loss of wetland area and functions and values. Compensatory mitigation would be designed to meet current applicable requirements for replacing affected wetlands at the time of permit application for constructing the path.

The Washington State Department of Ecology (Ecology) (Grainger et al. 2005) recommends reestablishing or creating Category I wetlands at a 4:1 ratio. Mitigation ratios would increase if mitigation included rehabilitation or enhancement. The 37th Avenue East option would permanently fill less than 0.01 acre (250 square feet) of a Category I wetland. To compensate for these effects, 0.02 acre (1,000 square feet) of new wetland would be created on the WSDOT-owned peninsula south of Foster Island. The wetland mitigation site would also include buffers designed and planted according to Ecology guidelines and City of