4.4 PLANTS and ANIMALS

4.4.1 Impacts of the Proposed Master Plan

Plants

The Proposed Master Plan would result in clearing and grading of the portions of the site identified as Urban (U), moderately vegetated habitat. A majority of the existing trees would be removed (see Figure 2.6-4). These trees are a mixture of planted ornamental and native species. Some trees would be retained, and a large number of new trees would be planted. In addition, lawns and other landscape vegetation would be established where appropriate along streets and among buildings.

Most of the remaining native open space area, largely at the east end of the site, would be retained. The area in the eastern portion of the site totals approximately six acres and would be designated as an open space. This area includes some King County designated sensitive areas. Small portions of this area would be disturbed in order to construct detention/water quality facilities. However, construction activities would not occur within the on-site wetland and stream located within the eastern ravine or within their associated buffers. A modification would be required if the wetland buffer is less than 25 feet.

The remaining native forest vegetation along the western boundary of the site would be largely contained with the rear portions of residential lots (see Figure 2.6-4). The only exception is the small area of wetland buffer at the north end of the western site boundary. Because the forested slopes would be located within the rear lot areas, it could be cleared and graded to provide a building pad for the houses on each lot, or to provide rear yard landscaping. Portions could be retained in a native state.

Wetlands

The Proposed Master Plan would not directly affect any wetland habitats. The on-site wetland is located within the ravine along the eastern edge of the property that would be retained as native open space. Salmon Creek 1 wetland (White Center Pond), is located just off-site to the west (see Appendix B). Clearing, grading, and new construction could affect the amount of impervious area tributary to the on-site wetland and to the nearby Salmon Creek 1 wetland, which could affect hydrologic conditions of these two wetland areas. For example, increases in impervious area has the potential to increase water level fluctuations, which could adversely impact plant communities and wildlife therein (e.g., Azous and Horner 1997, 2000). However, the effective impervious surface area in the Duwamish and Mallard Lake Basins, which drain to the on-site wetland and the Salmon Creek 1 wetland, respectively, would not likely increase over existing conditions. *The Greenbridge Preliminary Plat – Level 2 Downstream Analysis and Preliminary Drainage Control Plan* (Goldsmith, 2003) contains detailed calculations of the effective impervious area for pre and post development conditions (see Pages 37 and 38, paragraphs 1 and 2). Effective impervious surface area may slightly decrease compared with current conditions. As a result, the Proposed Master Plan is not expected to have adverse hydrologic impacts to the wetland.

The Proposed Master Plan includes a Level 2 stormwater control as well as water quality treatment in the eastern portion of the site to provide on-site storage and treatment of water quality prior to discharge to the on-site wetland consistent with King County (1998) requirements. The Proposed Master Plan also includes construction of a water quality pond in the western portion of the site to provide treatment of water quality prior to discharge to the Salmon Creek 1 wetland. With the additional stormwater runoff control and water quality treatment, this alternative would not likely result in significant impacts to hydrologic conditions in the on-site wetland or within the Salmon Creek 1 wetland, as no stormwater control or treatment is provided under current conditions. Therefore, the Proposed Master Plan may reduce the overall quality of stormwater runoff.

The Proposed Master Plan would maintain or reduce existing runoff flow rates and durations without reducing the runoff volumes directed to the wetland. Therefore, he hydrologic conditions of the wetland would be maintained. The Proposed Master Plan would provide flow control to the wetland system by reducing the effective impervious area (via LIDs) or through conventional flow control BMPs.

As demonstrated in the *Greenbridge Preliminary Plat – Level 2 Downstream Analysis and Preliminary Drainage Control Plan* (Goldsmith, 2003) impacts to these downstream systems would be insignificant (see Page 54, paragraph 1 of the Level 2 analysis)

Wildlife

Direct alteration (reduction) to the distribution, composition, and amount of native vegetation can affect the distribution and composition of wildlife populations in a given area. Because the majority of the project site is currently urban residential habitat, removal of the existing trees, lawns, buildings, and roads, would affect habitat suitable mainly for urban-adapted wildlife species, such as European starlings, American robin, pigeon (rock dove), various gulls, and others. Clearing, grading, and construction activities would thus remove habitat temporarily for these species, many of which are non-native, invasive species. As new site landscaping becomes established, habitat for these species would again be provided. The primary loss of shelter or cover would be removal of many of the larger trees (both ornamental and native species) that occur on site on landscaped areas.

The existing native vegetation along the eastern boundary of the project site would be retained. This would preserve some native habitat that is contiguous with off-site habitats located along the slopes that descend to the Duwamish River farther east of the project site. Wildlife species that occupy this area would be largely unaffected by the Proposed Master Plan.

If the deciduous forest on the slopes along the western boundary of the project site is removed, this would eliminate native deciduous forest cover, which provides habitat for a variety of wildlife including native birds, mammals, amphibians, and reptiles. Removal of this forest cover could eliminate some species from the site. The forested buffer on the lower portion of the slopes in this area would be retained, however, and would continue to provide nesting, foraging, and cover for a variety of native species.

Clearing, grading, and new construction could indirectly cause additional disturbance to wildlife species inhabiting the native forest areas along the east and west boundaries of the project site through increased noise and human activity. Once construction is completed, human disturbance would subside to levels similar to existing conditions. The increased human

population on-site has the potential to increase human disturbance or use of adjoining native habitats and wildlife species that inhabit them.

Over time, the Proposed Master Plan would provide similar habitat to what currently exists. This habitat is typically suited primarily to urban-adapted species. The potential for human disturbance of retained natural habitats would increase under the Proposed Master Plan due to a larger on-site population. However, the area of human activity would remain essentially the same as under existing conditions. Although some of the native deciduous forest along the west boundary of the project site may be removed, most of the natural vegetation on-site would be retained, and thus would continue to provide habitat. The Proposed Master Plan is not expected to result in significant adverse impacts to wildlife.

Endangered, Threatened, Sensitive, and Other Priority Species

No endangered, threatened, or sensitive plant species are known or likely to occur on-site. Consequently, the Proposed Master Plan would not adversely impact such species (see Appendix G of this Draft EIS).

Similarly, redevelopment of the project site is not expected to affect endangered, threatened, or sensitive animal species, as none have been documented on the site, and potential habitat on site is either lacking or very limited. Although bald eagles, a state and federal threatened species, may have been observed in the vicinity on occasion, no nest sites are known to occur on the property. Except for potential perching habitat on the slopes along the western portion of the site, the site lacks suitable foraging or nesting habitat (mature trees along fish-bearing waters or areas of waterfowl use). No nest sites occur in the vicinity of the project site or within several miles. Primary foraging areas likely focus on fish-bearing waters of Puget Sound or potentially along the Duwamish River.

No other priority animal species would be adversely affected by the Proposed Master Plan, because none are known or likely to inhabit the site.

4.4.2 Impacts of the Alternatives

Design Alternative Master Plan

Plants

Impacts to plant and animal habitat would be similar to the Proposed Master Plan. The same general area would be redeveloped and retained native open space would occur in essentially the same areas. Thus, as with the Proposed Master Plan, the majority of the clearing and grading on site would affect the existing urban habitat, retaining most of the natural vegetation cover in open space tracts. More existing trees may be removed. However, a large number of new trees would be planted. In addition, as under the Proposed Master Plan, lawns and other landscape areas would be re-established where appropriate along streets and among buildings. The landscaped and developed open space areas would likely cover less area, however, due to additional infrastructure requirements (e.g., road rights-of-way, stormwater facilities).

As under the Proposed Master Plan, the remaining native forest vegetation along the western boundary of the site would be largely contained with the rear portions of residential lots, except

for the small on-site area of wetland buffer, which would be retained in a separate tract as native open space. As under the Proposed Master Plan, the forested area could be cleared and graded to provide a building pad for the houses on each lot, or to provide rear yard landscaping. Portions could be retained in a native state.

Wetlands

Wetland impacts would be essentially the same as under the Proposed Master Plan. No direct impacts (i.e., fill) to wetlands are expected to occur. An SAO modification could be required if the wetland buffer is less than 25 feet. Salmon Creek 1 wetland (White Center Pond) would be provided with a minimum 50-foot buffer (most of which lies off the site to the west), as required by King County (2001, 2002). The Design Alternative Master Plan is expected to result in more effective impervious area than the Proposed Master Plan, which has the potential to increase water level fluctuations within the Salmon Creek 1 wetland and could adversely impact plant communities and wildlife therein (e.g., Azous and Horner 1997). However, the Design Alternative Master Plan would include Level 1 stormwater control on the western portion of the site, as appropriate, in addition to water quality treatment, consistent with King County (1998) requirements. With the additional stormwater runoff control, this alternative would not likely result in significant impacts to hydrologic conditions in the Salmon Creek 1 wetland, as no stormwater control is provided under existing conditions.

The Design Alternative Master Plan would result in the removal of more existing trees than that associated with the Proposed Master Plan. However, as with the Proposed Master Plan, new street trees would be provided along streets within the development and internal to the project site.

The Design Alternative Master Plan is not expected to adversely affect water quality of the wetland, compared with current conditions. Water quality of stormwater runoff to the wetland may actually improve, as no water quality treatment is provided under current conditions.

Wildlife

Impacts to wildlife would be essentially the same as for the Proposed Master Plan. Clearing and grading of the site for redevelopment would remove existing trees, shrubs, lawns, and buildings that currently provide habitat primarily for urban-adapted species. This would be a temporary impact; habitat for these species would again be provided over time as the new site landscaping becomes established. The primary loss of shelter or cover for wildlife on site would be removal of many of the larger trees (both ornamental and native species) that occur on site on landscaped areas.

If the deciduous forest on the slopes along the western boundary of the site is removed, this would eliminate native deciduous forest cover from that portion of the site. Consequently, some species that inhabit this cover could find reduced habitat on site or be eliminated from the site. Off-site forest along the wetland edge would continue to provide such habitat. Human disturbance impacts to retained habitats are expected to be similar to those under the Proposed Master Plan.

The Design Alternative Master Plan is also not expected to have significant adverse impacts to wildlife habitat over the long term. Upon completion, the project site would continue to provide habitat for mostly urban-adapted species. Although some of the native deciduous forest along

the west boundary of the site may be removed, most of the natural vegetation on site would be retained, and thus would continue to provide habitat similar to existing conditions.

Endangered, Threatened, Sensitive, and Other Priority Species

No endangered, threatened, or sensitive plant or animal species are known or expected to inhabit the site (see Appendix G of this Draft EIS). Similarly, no other priority animal species are known or likely to inhabit the site. No impacts to such species would occur.

No Action Alternative

The process of natural forest development (succession) would continue to occur in the existing natural open space areas. The small areas of forest and shrubland areas would continue to grow and develop into forests of varying mixes of Douglas fir (and other scattered conifers) and deciduous trees. Given enough time and lack of a major disturbance (such as fire), conifer species (such as Douglas fir and western hemlock) now present in the young deciduous and mixed forest communities on the perimeter slopes would assert their dominance over deciduous species (such as red alder and big-leaf maple) because the conifers live longer and grow larger. Some blowdown of existing trees in these natural open space areas could occur over time. No impacts to plants and animals are expected to occur.

4.4.3 Mitigation Measures

The Proposed Master Plan would retain sensitive areas and buffers in open space tracts. Thus, at least six acres of the site would be retained in a natural condition.

The Proposed Master Plan includes implementation of standard temporary erosion and sedimentation control measures during construction. This includes directing stormwater runoff from the project site to stormwater detention and water quality facilities to provide flow and duration control where required and to provide water quality treatment. In addition, "built-green" and low-impact design principles would be implemented to limit effective impervious surface area and provide biofiltration of stormwater runoff.

Introduction of noxious weeds or invasive species would be avoided to the extent practicable in developed and landscaped areas. Together with the species planted or seeded, this would help limit the unnecessary spread of invasive species that can adversely affect the suitability of native habitats on site and in the vicinity for wildlife.

Interpretive or educational materials could be developed and/or made available in order to foster an understanding and appreciation of natural features (e.g., Salmon Creek 1 wetland, low-impact development and "built-green" principles, stormwater management, and water quality treatment).

Landscaping with native plant species, especially trees and shrubs, would provide ground cover for nesting birds, cover for small mammals, and feeding sites (such as where landscaped areas abut native growth areas). This would increase habitat values of otherwise altered landscapes. In addition, landscape and irrigation design concepts could include water-conservation, low-volume irrigation, and minimal use of exotic ornamental plantings.

4.4.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to plants and animals are anticipated.