3.3 PLANTS AND ANIMALS

Technical reports documenting existing conditions and impacts to plant and animal resources from the proposed development were included as Appendices I, J and K of the Draft EIS. The summary of this information is provided below and has been updated as follows for the Final EIS.

3.3.1 Existing Conditions

3.3.1.1 Wood Trails

The Wood Trails site is situated adjacent to an area of low-density residential development and an industrial park. Residential properties, many with substantial tree cover, abut the entire east side of the site and a portion of the south edge. The remainder of the south edge of the site, as well as the entire west edge, abuts an industrial park. The north edge of the site borders a tract of forested area that is located along the west side of the Wellington Hills Golf Course property. The Wood Trails site is one of Woodinville's only remaining large contiguous land tracts that is comprised of a deciduous/conifer forest.

This site is located on a west-sloping hillside with approximately a 180-foot drop from east to west. The eastern side of the site includes relatively flat areas interspersed with several steep-sided ravines. A small stream is located just off-site to the north, at the bottom of a steep-sided, forested ravine. There is a small, isolated wetland located in the southwest corner of the northern half of the site.

Onsite Habitat Conditions

The Wood Trails site is a heavily forested area that consists of a mix of deciduous and coniferous trees. It is crossed by a few informal trails and footpaths, as well as a utility corridor/abandoned roadbed extending from 201st Avenue NE west into the industrial park. The beds of abandoned roads are apparent in several places, as is evidence of excavation and what may have been the foundation of a building in the western part of the site. Section 3.1.1 provides additional discussion of historical disturbance on the site.

The Wood Trails site has a comparatively high ambient noise level as a result of machinery operation and other activities in the industrial park and traffic on the roadways located to the west (the Woodinville-Snohomish Road and SR 522). The noise is most noticeable on the western half of the property, where the westerly aspect is oriented most directly toward the noise sources. A patch of this size in an urban/suburban, noisy setting usually provides habitat for a certain suite of highly tolerant and adaptable species. Its value as habitat in the landscape setting is somewhat limited as a result of the fragmented habitat created by surrounding development. Numerous scientific studies evaluating habitat patch size have indicated that patches smaller than 250 acres are generally occupied by small animals with very small home ranges, but are not able to support populations of larger animals; site use by the latter animals would be restricted to transient activities.

Existing vegetative cover on the Wood Trails site is shown on Figure 3.3-1. The slopes on the west side of the Wood Trails site are characterized by an overstory of second- and third-growth Douglas fir (*Psuedotsuga menziesii*), big-leaf maple (*Acer macrophyllum*), bitter cherry (*Prunus emarginata*), scattered western red cedar (*Thuja plicata*) and red alder (*Alnus rubra*). The northern half of this area (the northwest portion of the site) has an immature alder and maple overstory with scattered Douglas fir. The understory in these areas consists of patches of stinging nettle (*Urtica dioica*), salmonberry (*Rubus spectabilis*), Indian plum (*Oemleria cerasiformis*), sword fern (*Polystichum munitum*), salal (*Gaultheria shallon*), Oregon grape (*Berberis nervosa*), beaked hazelnut (*Corylus cornuta*) and Himalayan blackberry (*Rubus discolor*). Some large logs are found in this area, but snags are uncommon.

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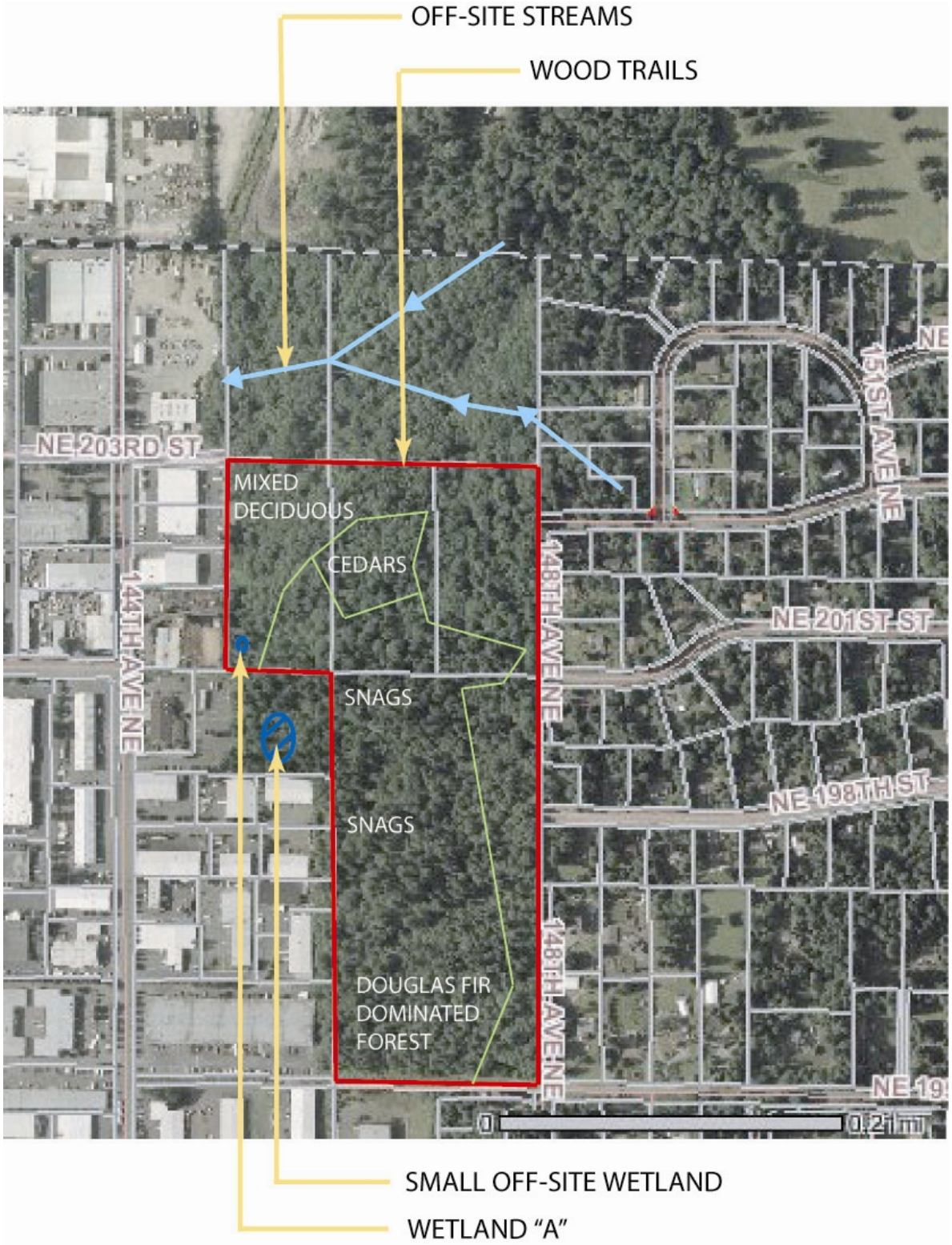
Figure 3.3-1 Existing Habitat Types, Wood Trails



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The ravines near the center of the site, and particularly the southwest portion of the site, have numerous, mature second-growth 24- to 36-inch dbh Douglas firs in the overstory. Understory in this area includes dense thickets of salal as well as Oregon grape, Indian plum, beaked hazelnut, creeping blackberry (*Rubus ursinus*), oceanspray (*Holodiscus discolor*), and scattered holly (*Ilex* spp.). This area has numerous large conifer snags, as well as good interspersion of small and medium conifer snags. Most of these snags have numerous cavities excavated by pileated woodpeckers (*Dryocopus pileatus*). The ravine areas on the southern half of the site also have numerous mountain beaver (*Aplodontia rufa*) burrows scattered throughout the hillsides.

The eastern and northern areas of the site consist of a relatively flat plateau area, with a younger deciduous forest of stump-sprout origin big-leaf maple, large bitter cherry, and smaller Douglas firs ranging up to 18 inches in diameter at breast height (dbh). A large area of intermediate-sized cedar is located near the north central portion of the property. This area has a minimal shrub layer and evidence of past soil disturbance.

A small (1,389 square feet) scrub-shrub wetland, identified as Wetland A, is located near the southwest corner of the northern half of the site. This isolated wetland is a low-function stand of non-native, invasive Himalayan blackberry with some red alder, salmonberry and a single large cottonwood (*Populus balsamifera*). It is not a unique wetland, and contains vegetation that is typical of disturbed sites. This wetland is likely supported primarily by surface runoff from the ravine slopes to the east. This wetland meets the WMC criteria for a Class 3 wetland, as it is slightly above the minimum regulated size of 1,000 square feet. Appendix I of the Draft EIS provides additional information on this wetland.

Species Use

Observations of tracks, trails, droppings and bedding areas indicate that Black tail deer (*Odocoileus hemionus*) and coyote (*Canis latrans*) frequently use the west edge of the site, primarily the ravines and the steeper areas with more protective cover. Game trails in this area traverse the topographic contours and generally cross the main trails at right angles. Wildlife movement through the site appears to be primarily in a north-south direction which connects to the off-site forested areas. A stream located off-site to the north appears to be the only water source in the vicinity of the site. There are no streams on the site itself, and only one small wetland that likely is not even seasonally inundated during typical years. Two immature mule deer bucks were observed in the southwest portion of the site approximately 200 feet south of the east-west trail/utility crossing. These deer appeared to be adapted to the high noise level on the site, as well as to the proximity of the industrial and residential uses. Other than the species noted above, and other common species listed in Appendix K to the Draft EIS, no species of significance were noted on the site. Key habitat features on the site include the undisturbed forested areas, a small wetland and numerous large snags.

The Wood Trails site has no known recorded rare plant communities or listed plants, according to a search of the Washington Natural Heritage Program database conducted by the Washington Department of Natural Resources (WDNR 2004; see Appendix K). In addition, there are no known identified or documented uses of the site by any state or federally listed threatened or endangered species, based upon site observations as well as a search of the Priority Habitats and Species Program database conducted by the Washington Department of Fish and Wildlife (WDFW 2004).

A pair of pileated woodpeckers was observed on the northwest side of the site just south of the off-site stream and ravine on a January 8, 2004 site visit. Pileated woodpeckers are listed as a “State Candidate” species, with breeding locations or nests identified by WDFW as the specific concern area (Lewis and Azerrad 2003). No specific or designated protections are given to this species at this time.

Although two pileated woodpeckers were spotted foraging on small snags in this area during one of many visits to the Wood Trails site, no nest cavities were observed on the site. Lack of observation does not preclude pileated woodpecker nesting potential, however. Pileated woodpeckers generally nest in cavities of trees ranging from 20 to 60 inches in diameter, and the Wood Trails site contains many trees in that size category. Pileated woodpeckers prefer conifers, ideally western red cedar. Pileated woodpeckers generally use second-growth and old-growth forests, but can use stands as young as 40 years of age (such as much of the forest on the site) for foraging habitat. Home ranges for pileated woodpeckers in the Northwest are typically in the 1,000- to 2,000-acre range for a breeding pair, and larger for individuals or young pairs. There are a large number of snags throughout the Wood Trails site. Most of the larger snags are in the area proposed for retention as open space. The eastern portion of the site (proposed for clearing) has numerous small snags, which appear to be suitable only for foraging.

WDFW has some general recommendations for management of pileated woodpeckers in urban/suburban areas (Lewis and Azerrad 2003). These include maintaining as much forest as possible, as well as maintaining and creating snags. In urban areas, large patches (74+ acres) of forest are ideal, but are often not present. Where large patches are not available, smaller patches that are no less than 7 acres in size should be maintained. Forest patches with high densities of existing snags and live trees are preferred; additional creation of snags or decaying live trees can also be beneficial for pileated woodpeckers in these areas. Retention of trees in the largest size classes is preferred.

Off-Site Habitat

The heavily forested Wood Trails site is set within a larger patch of forested area, which extends north partially into the Wellington Hills Golf Course, approximately 75 acres in size. As noted above, Wood Trails and the larger forested patch are surrounded by residential and industrial development, a golf course, and associated roads. A large ravine covered with a stump-sprout origin, deciduous overstory of big-leaf maple is located just off-site to the north. The ravine contains a stream that flows to the west, where it enters a large-diameter stormwater conveyance pipe at the eastern edge of an industrial-park property. Drainage pipes and/or open ditches convey the flow of this stream through the industrial park to a discharge point at Little Bear Creek, to the west. Several informal trails lead down to this stream from the Wood Trails site.

As indicated in Figure 3.3-1, there is a small off-site wetland located just to the west of the Wood Trails site. This wetland is within a small parcel of undeveloped, forested land bounded to the south and west by the industrial park and on the north and east by the Wood Trails site. Unlike on-site Wetland A, the vegetation within the off-site wetland is dominated by a more diverse assemblage of native species. The off-site wetland, as with Wetland A on the Wood Trails site, is likely supported primarily by surface runoff from the slopes to the east.

No fish-bearing streams are present on the Wood Trails site, although the site occupies headwater and fringe areas of the Little Bear Creek drainage in the overall Lake Washington basin. A small, non-fish-bearing stream passes through a ravine in the undeveloped parcel adjacent to the Wood Trails site on the north. This stream also carries the runoff draining from the wetland on the Montevallo site. As such, no fish or fish habitat are present on the site. Any potential impacts to fish or fish habitat from the proposed projects would occur only in areas somewhat removed from and downslope of the site, namely in Little Bear Creek and waters farther downstream. Any impacts would be based on the quantity, quality, and timing of the surface water and, to a lesser extent, groundwater flows originating from the site as influenced by their present conditions and eventual development.

Little Bear Creek (WRIA stream #08-0080) represents off-site aquatic habitat of local or regional significance with respect to the proposed development. Little Bear Creek is located approximately one-half mile to the west from the Wood Trails site. Little Bear Creek is an important fish-bearing stream that

contains most species of salmon and trout. These species are sensitive to changes in water quality, quantity and flow rates, as well as increases in sedimentation that can affect redds and juvenile survival. Little Bear Creek is known to be used by chinook (*Oncorhynchus tshawytscha*), sockeye (*O. nerka*), kokanee (*O. nerka*), and coho (*O. kisutch*) salmon and coastal cutthroat (*O. clarki clarki*) trout (Washington Department of Fisheries 1975). Kokanee, sometimes also known as silver trout, are a landlocked form of sockeye salmon. Steelhead/rainbow trout (*O. mykiss*) are also presumed to use the creek (Kerwin 2001). Puget Sound chinook salmon have been listed as threatened under the Endangered Species Act (Federal Register, 24 March 1999); Puget Sound-Strait of Georgia coho salmon are a Candidate Species (Federal Register, 25 July 1995); and Puget Sound steelhead have recently been listed as threatened (Federal Register, 29 March 2006). Life history characteristics, habitat use and stock conditions for these species have been documented in detail by the Washington Department of Fish and Wildlife and other sources.

Currently, stormwater runoff from the Wood Trails site eventually discharges to Little Bear Creek (see discussion in Section 3.2.1.4). A small tributary draining from the wetland on the Montevallo site flows north to join with other local drainage channels on the Wellington Hills Golf Course. The upper portion of this stream flows through a wooded ravine directly north of the Wood Trails site, while the lower segment is piped through an extensive industrial area and under SR 522. A small part of the Wood Trails site drains north to this stream, while most of the stormwater from the Wood Trails site reaches Little Bear Creek separately via the other stormwater systems serving the industrial area. Runoff originating from the Wood Trails and Montevallo sites enters Little Bear Creek between approximately 1.5 and 2 miles upstream of the confluence with the Sammamish River. Flow pathways between the sites and Little Bear Creek are depicted in Appendices E and H of the Draft EIS.

The Wood Trails site is currently not developed and does not generate sanitary sewage flows. The area immediately to the east of the site is developed, however, and all of these homes are on individual septic systems. These septic systems are a potential source of some downslope contamination to the tributary that passes along the north side of the site and eventually drains to Little Bear Creek.

3.3.1.2 Montevallo

The Montevallo site is bordered by low-density residential development on the east, south and west sides. The east side of the site abuts 156th Avenue NE (also known locally as 75th Avenue SE and Bostian Road in Snohomish County), which is the most heavily used street in the area. The north side of the site abuts an approximately 20-acre forested tract in the eastern part of the Wellington Hills Golf Course property.

The site is nearly completely developed, with four single-family residences on the east side of the site and a single home near the west side of the site. There is also a large barn located just south of the western home. The rest of the site, excluding the wetland on the west side, is grazed pasture currently used by several horses. The extreme western portion of the site includes a forested and emergent wetland and a small portion of forested upland.

On-Site Habitat Conditions

Existing vegetative cover on the Montevallo site is shown on Figure 3.3-2. The majority of the Montevallo site is grazed pasture covered with typical pasture grasses and weedy species. The northeast side of the site contains a row of 25-foot pines (*Pinus* spp.) and Sitka spruce (*Picea sitchensis*), apparently planted as a screen. The center of the site contains a small patch of 10- to 20-year-old alder with a sparse understory that has been disturbed by past grazing.

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Figure 3.3-2 Existing Habitat Types, Montevallo

A small, forested and emergent wetland (Wetland A/B) and small area of adjacent upland on the west side of the site have the highest value for habitat on the site (see Appendix J of the DEIS). This wetland was delineated with an area of 71,567 square feet (1.64 acre) and is considered a Class 2 wetland under the Woodinville Municipal Code because it is larger than 1 acre in size and includes a forested wetland component (WMC 21.24.320). The current standard minimum buffer for Class 2 wetlands is 100 feet from the edge of the wetland (WMC 21.24.330).

The wetland acts as a headwater to a small ditched channel that eventually joins an apparently perennial stream located on the golf course property to the north and west. (This stream appears to flow to the west and through the parcel immediately north of the Wood Trails site, as described in Section 3.3.1.1.) This wetland is surrounded by residential development and has been heavily impacted by past disturbance and conversion of buffer area to lawn and pasture. Grazing has caused compaction of the soil and removal of all woody vegetation. The site has some vegetated cover along the ditched riparian corridor. Additionally, the immature forest to the north along the golf course, although itself confined by roads and development, does offer some habitat for human-tolerant wildlife (see additional discussion below).

The site's suburban character and level of past disturbance, as well as its isolation by residential homes on three sides and the golf course on the north, limit its ability to support any wildlife other than common,

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human-tolerant species typically seen in this area of Western Washington. The site's most valuable habitat feature is the wetland located on the west side of the property. This wetland provides hydrologic support to a stream of higher order located to the west of the site and draining to Little Bear Creek. Such streams within the drainage support important fish habitat in Little Bear Creek. The hydrologic support that the on-site wetland provides to these off-site features, although not large, may provide an important contribution in maintaining summer base flows. The site also allows wildlife to get to and from the wetland from the immature forest to the north, as well as the golf course area.

Species Use

Evidence (tracks, scat, nests, etc.) of several species of wildlife was observed within the wetland and elsewhere on the Montevallo site. Based upon tracks within the wetland, the main species passing through the site (primarily early in the morning and at night) and the neighborhood to the south and west are coyote, raccoon (*Procyon lotor*), and Black tail deer. Species observed include European starling (*Sturnus vulgaris*), common crow (*Corvis corax*), winter wren (*Troglodytes troglodytes*), black-capped chickadee (*Parus atricapillus*), mule deer, coyote, opossum (*Didelphis virginiana*), raccoon, Norway rat (*Rattus norvegus*), eastern gray squirrel (*Sciurus carolinensis*), tree frog (*Hyla regilla*), and common garter snake (*Thamnophis sirtalis*). Many more human-tolerant species reportedly use the site, although they were not observed during the field investigation. Some of the wildlife species potentially using the site are listed in Appendix K of the Draft EIS.

The upland pasture on the site likely offers habitat to human-tolerant species typically found in agricultural areas. These include Black tail deer, raccoon, opossum, common crow, Norway rat, house mouse (*Mus musculus*), European starling, barn swallows (*Hirundo rustica*), coyote, garter snake, and several songbird species. Occasionally red-tailed hawks (*Buteo jamaicensis*) and sharp-shinned hawks (*Accipiter striatus*) reportedly use the pasture for hunting.

The Montevallo site has no known recorded rare plant communities or listed plants, according to a data search conducted by the WDNR (2004) Natural Heritage Program (see letter in Appendix K of the DEIS). In addition, there are no documented uses of the site by any state or federally listed threatened or endangered species, based upon site observations and the results of a data search conducted by the WDFW (2004) Priority Habitats and Species Program. In comments on the Draft EIS, an area resident reported observing pileated woodpeckers in the forested wetland on the site.

Off-Site Habitat

Due to close proximity of the Wood Trails and Montevallo sites, the areas share many of the same offsite habitat characteristics. As discussed previously, most of the land adjacent to Montevallo site has been developed for residential purposes.

There is an immature forest area to the north of the site on the golf course property that offers some habitat for human-tolerant wildlife. This forest appears to have been logged of conifers 20 to 30 years ago and has since grown up with an alder/cottonwood overstory. Sapling-stage conifers have started to regenerate within the understory of the deciduous overstory. This area has a shrub stratum composed of salmonberry, thimbleberry (*Rubus parviflorus*), Indian plum, stinging nettle and dense patches of Himalayan blackberry. No unique habitat features were noted within this forest area.

No fish-bearing streams are present on the Montevallo site, although the site occupies headwater and fringe areas of the Little Bear Creek drainage in the overall Lake Washington basin.

Little Bear Creek is located approximately three-quarters of a mile west from the Montevallo site. Currently, stormwater runoff eventually discharges to Little Bear Creek (see discussion in Section

3.2.1.4). The runoff enters Little Bear Creek between approximately 1.5 to 2 miles upstream of the confluence with the Sammamish River. Flow pathways between the site and Little Bear Creek are depicted in Appendices E and H of the Draft EIS.

A small tributary draining from the wetland on the Montevallo site flows north to join with other local drainage channels on the Wellington Hills Golf Course. The upper portion of this stream flows through a wooded ravine directly north of the Wood Trails site, while the lower segment is piped through an extensive industrial area and under SR 522.

3.3.2 Impacts of the Proposed Action

The primary potential impacts for the proposed projects include loss of existing wildlife habitat as a result of vegetation removal and other construction actions, displacement of wildlife species currently using the affected habitat, possible effects on wildlife movement, direct impacts to wetlands and buffers, and potential water quantity or quality impacts to off-site aquatic habitat. These issues are addressed below as applicable for each proposed subdivision.

3.3.2.1 Wood Trails

Wildlife Habitat

The Proposed Action includes the development of three contiguous clusters of lots extending from the east edge of the site. Clearing of forest on the Wood Trails site would include areas of immature mixed forest and some third-growth deciduous forest. The forest area to remain is mostly third-growth mature forest comprised of both conifer-dominant and some stump-sprout-origin deciduous forest. A strip of forest cover along the southern edge of the site would also be cleared to accommodate extension of a sewer line to the site.

Removal of forest cover on the eastern portion of the site would result in elimination of existing habitat in that area and displacement of wildlife currently using that habitat. Generally, the species found on the site that would be displaced are common, human-tolerant species that are able to move and adapt to changed conditions. Some species using this area would likely relocate to the westerly areas of the site that would not be developed, or north of the site into the undeveloped ravine and forest areas; some species or individuals would relocate to habitats that are neither onsite nor in the immediate vicinity. There are no special or significant habitat features on the eastern side of the site that would be removed. There are no protected or sensitive species using this area, with the previously-noted exception of some foraging, and perhaps nesting, by pileated woodpeckers.

A contiguous area of 21 acres (approximately 57 percent of the site) on the western side of the property would be designated as a Native Growth Protection Area (NGPA) and would remain undisturbed under the Proposed Action. This feature of the proposal would retain essentially intact the most valuable habitat on the site, particularly for pileated woodpeckers. This area currently has the greatest density of high–value, large habitat trees on the site that are ideal for use by pileated woodpeckers. Many larger snags, which provide good foraging and potential nesting and roosting sites for this species, are also found in this part of the site. This alternative would also avoid disturbing the conifer forest with the most habitat value, which is located along the southwest side of the site.

As discussed above in Section 3.3.1.1, the site and the forested patch within which it sits are too small to support populations of large animals (other than transient activities), and are affected by noise and disturbance from surrounding development. Although the patch size would be further reduced by the proposed project, thereby reducing the numbers of each species that could be present, the suite of species using the remaining habitat is not likely to change.

Wildlife Movement

A tiered series of six rockeries, each approximately 8 feet tall and spaced 16 feet apart, would be constructed on the slope above the detention pond. The rockeries would extend approximately 100 feet to the east from the pond, and be oriented in a north-south direction. There is an additional 100 feet of undisturbed area between the easternmost rockery and the westernmost proposed lot. Because wildlife appear to move primarily from north to south in this area, the pond and rockeries are located in a primary travel corridor.

The rockeries would not block wildlife passage through the site in a north-south direction, as there would be five separate benches, each 6 feet wide, on which wildlife could travel, in addition to the 100-foot-wide swath east of the rockeries. The flat benches between the rockeries would be planted with a mix of native trees and shrubs to provide cover and restore a native plant community through this area. In addition, resulting north-south corridors would not be fenced. Wildlife would be blocked from traveling in an east-west direction in the immediate area of the rockeries. However, east-west travel would be possible on either end of the rockeries.

The wildlife corridor through the western portion of the property is approximately 170 feet wide at its narrowest point, which is approximately 300 feet north of the proposed detention pond location. This corridor widens to 600 feet on the south end. With the development as proposed, the remaining corridor area should be wide enough to allow all species utilizing the site to pass unencumbered through the property in either a north or south direction. Species that would be migrating through the site are clearly adapted to and tolerant of narrow corridors and residential settings, as evidenced by their presence within the City. Even after project modifications to the site, the functional, vegetated corridor would be as large as a typical urban habitat corridor.

Due to the nature of the steep slopes on the Wood Trails site (see Earth Section 3.1), installation of a narrow vaulted stormwater system as opposed to an open stormwater pond, would be a better solution for slope stability. It would also provide wider corridors for wildlife movement and reduce the need for native vegetation removal.

Wetlands

The Wood Trails site includes a stormwater detention pond located on the west side of the north half of the site. Wetland A, a 1,389-square-foot Class 3 wetland, is in this same location and would necessarily be filled for construction of the stormwater pond. This would result in a complete loss of Wetland A and elimination of its wetland functions, which consist primarily of minimal wildlife habitat value and some stormwater storage. As previously noted, the wetland contains non-native, invasive Himalayan blackberry with some red alder, salmonberry and a single large cottonwood.

Development activity on the Wood Trails site would not have any disturbing effects on the off-site wetland located to the west of the site. Because this wetland is likely supported primarily by surface runoff from the slopes to the east, developed conditions on the Wood Trails site are not likely to result in a significant change in the local hydrology that supports this off-site wetland. Most of the Wood Trails acreage that is upslope of this wetland would be included in the NGPA and would continue to provide drainage to the wetland. Runoff from some of the lots in the southern part of the Wood Trails development would be infiltrated through dispersion trenches and would contribute to groundwater recharge from upslope areas.

Off-Site Aquatic Habitat

Potential water resource impacts from the Proposed Action and alternatives are addressed primarily in Water Section 3.2.2. Potential effects on aquatic habitat from water quantity and/or quality changes are also addressed in Section 3.3.

The stormwater management system for the Wood Trails project has been designed to maintain existing flow rates and durations from the site. Accordingly, no measurable change to the hydrologic characteristics of Little Bear Creek, the off-site eventual receiving water body, is anticipated as a result of this project (see Section 3.2.2 for more detailed discussion). Habitat for fish and other aquatic organisms in Little Bear Creek would not be adversely affected by water quantity changes associated with the Wood Trails project.

Similarly for water quality, the Wood Trails stormwater system has been designed to include both a wetpond and a leaf compost filter for treatment of the discharge from the stormwater pond. These water quality features would provide the level of water quality treatment for stormwater contaminants required by City, County and State stormwater standards. The pre-approved water quality treatment measures are known to be effective in removing pollutants and are presumed to be sufficient to meet water quality standards. Therefore, the stormwater runoff from the Wood Trails site should have no significant impact on downstream water quality, and no significant adverse effect on aquatic habitat in Little Bear Creek.

The Proposed Action includes extension of public sanitary sewer service to the site. Extension of sewer service would provide properties adjacent to the sewer route with the opportunity to connect to the sewer system. If many or most of the existing residences converted over time from on-site septic systems to the public sewer system, a possible long-term result would be remove potential contaminants that eventually flow to Little Bear Creek. The long-term result of providing sewer service to the area, and the high level of water quality treatment for stormwater runoff from Wood Trails, could be a net improvement in water quality for flows draining to Little Bear Creek. The aquatic habitat in Little Bear Creek could benefit from any such improvement in water quality.

3.3.2.2 Montevallo

Wildlife Habitat

The Proposed Action for this site is the construction of a residential subdivision with 66 single-family lots, associated roads and a stormwater system. While much of the existing vegetation on the Montevallo site would be cleared to accommodate the proposed subdivision, that vegetation is primarily lawn and pasture that provides minimal habitat value. The only habitat of note is the wetland area in the western part of the site (see below). Consequently, development of the Montevallo subdivision would result in negligible impacts to existing wildlife habitat and use. Some common, human-tolerant wildlife species that are currently using the site to some degree would likely be displaced to less-developed areas in the general vicinity of the site. Extension of a sanitary sewer line to the Montevallo site would also require construction disturbance along a utility corridor from the Wood Trails site to the Montevallo site, although this off-site disturbance would occur within existing street right-of-way and would not affect additional habitat.

Wetlands

Extension of sanitary sewer to the Montevallo site from the west would require some temporary impacts to the wetland buffer in the western part of the site. Direct impacts to the wetland would be avoided by boring the sewer line beneath the wetland. Alterations of buffers for this purpose is generally not allowed under the Woodinville Municipal Code, except for limited, specific conditions that are not met by this

proposal. There is no alternative location for the sewer line other than through/under the wetland as proposed, however. The WMC (21.24.340) does provide discretionary authority to the Planning Director to determine that proposed buffer impacts require and may be granted an alteration from the Code.

Sewer line installation as proposed would require a temporary impact of 5,867 square feet in the wetland buffer; the specific area of impact is indicated in the Montevallo conceptual wetland mitigation plan included in Appendix N. Following construction of the sewer line, the portion of the buffer temporarily disturbed by construction would be re-graded to original contours, hydroseeded with a native grass mix and re-planted with native shrubs. Plantings of trees over the sewer line would likely be restricted to avoid long-term maintenance issues.

Since initial development of the project proposal, the regulatory buffer applied by the City to Class 2 wetlands (such as Wetland A/B on the Montevallo site) increased from 50 feet to 100 feet. Accordingly, the project now includes a proposal to reduce the Wetland A/B buffer from 100 to 50 feet, compensating for that impact through buffer enhancement as allowed by WMC 21.24.330(1)(b and c). The proposed buffer reduction and mitigation are described in greater detail in Appendix N.

Construction-related impacts to the wetland would be avoided or minimized during construction by the required implementation of a Stormwater Pollution Prevention Plan (SWPPP). Post-construction sedimentation of the wetland and its buffer would be negligible or absent, because installed lawns and other landscaping would stabilize bare soils disturbed in construction. Stormwater runoff from roads and most roofs would be routed through the proposed detention pond, which would settle any solids, such as sediment, and provide other water quality treatment prior to discharge into the wetland buffer. Additional biofiltration and treatment would occur in the wetland buffer. Roof runoff from a few of the residences would be discharged directly into the wetland buffer in a dispersal trench. Roof runoff is clean, containing no sediments or other pollutants, and would help maintain hydrology in the wetland.

Under the Proposed Action, the existing uses of the Montevallo site would be replaced and livestock grazing would no longer occur in and around the on-site wetland. The removal of livestock from the wetland and buffer would improve water quality in the wetland through removal of the effluent source, and allow the plant community to re-establish where it is currently trampled and grazed. Therefore, the Proposed Action would have a positive indirect impact on the wetland as a result of water quality improvement.

Off-Site Aquatic Habitat

Evaluation of potential indirect impacts from the proposed Montevallo development on off-site aquatic habitat involves the same types of actions and issues as discussed previously for Wood Trails. The stormwater system for Montevallo has also been designed to maintain existing flow rates and durations from the site (see Section 3.2.2). Roof drains from lots abutting the wetland buffer would discharge to the wetland buffer area to maintain hydrology through the entire on-site wetland. Accordingly, no significant changes to the hydrologic characteristics of the wetland, the drainage discharge from the wetland or Little Bear Creek, the eventual off-site receiving water body, are anticipated as a result of this development. Habitat for fish and other aquatic organisms in Little Bear Creek would not be significantly affected by water quantity changes associated with the Montevallo project.

Similarly for water quality, the Montevallo stormwater system has been designed to include a wet vault and a leaf compost filter for water quality treatment of discharge from the stormwater detention facility. These water quality features would provide the level of water quality treatment for stormwater contaminants required by City standards and recommended in State and County stormwater management manuals. The pre-approved water quality treatment measures are known to be effective in removing pollutants and are presumed to be sufficient to meet water quality standards (again, see Section 3.2.2).In

addition, horse use would no longer occur around the wetland and buffer, eliminating a direct source of pollutants to the natural drainage system. Considering all expected changes, the quality of stormwater runoff from the Montevallo site with the Proposed Action would likely have no significant impact on downstream water quality, and the project would have no significant adverse effect on aquatic habitat in Little Bear Creek.

To avoid significant adverse impacts to the wetland, a detention pond (as opposed to a wet vault) would create a more natural system. This would assure appropriate hydrological discharge to the wetland and lessen the concern that the area may not receive enough water from the roof drains to maintain its wetland status.

The Proposed Action includes extension of public sanitary sewer service to the Montevallo site. Extension of sewer service would provide properties adjacent to the sewer route with the opportunity to connect to the sewer system. If many or most of the existing residences converted over time from on-site septic systems to the public sewer system, a possible long-term effect would be to reduce the coliform load from the soil and water table, and thereby reduce coliform contamination that eventually flows to Little Bear Creek. The long-term result of providing sewer service to the area, and the high level of water quality treatment for stormwater runoff from Montevallo, could be a net improvement in water quality for flows draining to Little Bear Creek. The aquatic habitat in Little Bear Creek would benefit from any such improvement in water quality.

3.3.3 Impacts of the Alternatives

3.3.3.1 R-1 Zoning Alternative

Wood Trails

Under this alternative, a 23-lot subdivision would include the same developable area as the 66-lot Proposed Action (14 acres of developed area, versus 17 acres for the Proposed Action). Impacts to wildlife from this alternative would be somewhat less in geographic extent.

The stormwater pond located on the west side of the site would be smaller for this alternative, but would still require filling of Wetland A. (See alternative to stormwater pond 3.3.2.1 Wood Trails, Wildlife Movement.)
The smaller pond would not require a rockery system on the adjacent slope, however, which would leave somewhat more of the forested area on the west undisturbed for use by wildlife as a travel corridor. Overall, the on-site impacts to plants and animals from the R-1 Zoning Alternative would be incrementally less than those identified for the Proposed Action, which would be insignificant.

The stormwater system serving the site would be commensurately smaller, but would still maintain existing flow rates and durations from the site. Accordingly, there would be no changes to water quantity characteristics that would potentially affect aquatic habitat in Little Bear Creek. The stormwater system would include treatment measures to avoid water quality impacts to receiving waters from project runoff.

Under this alternative, the use of individual septic systems could potentially increase fecal coliform loads that eventually reach Little Bear Creek. Because fecal coliform bacteria are considered an indicator of potential human health concerns rather than degradation of fish habitat, this potential result would not represent an impact issue for aquatic habitat. Overall, while effects to off-site aquatic habitat could be negative, the small size of the project and its drainage contribution relative to the baseline condition in the Little Bear Creek basin indicates any such impact would not be significant.

According to the City of Woodinville Subdivision Code, Sewage 20.06.080 (2), Developments on lots less than one acre per unit must hook up to the municipal sewer system if the system is within 330 feet of a proposed development. Some of lots under the R-1 Proposal are less than 1 acre.

Montevallo

Under this alternative, a 14-lot subdivision would cover the same approximate area as the 66-lot Proposed Action (10 acres of developed area, versus 13 acres). This alternative would leave the most valuable habitat on the site (the wetland) undisturbed from its current condition, as there would be no sewer line developed under the wetland and through the buffer. The regulatory 100-foot buffer would be reduced with enhancement to 50 feet, however, as described above for the Proposed Action. Long-term impacts to wildlife habitat in general would be essentially the same as for the Proposed Action (with mitigation), and would be minimal. No impact to undisturbed habitat would occur under this alternative.

The removal of horse use from the wetland and buffer under this alternative (as for the Proposed Action) would improve water quality in the wetland through removal of the effluent source, and allow the plant community to re-establish where it is currently trampled and grazed.

The stormwater system would maintain existing flow rates and durations from the site, and roof drains from lots abutting the wetland buffer would discharge to the buffer to maintain hydrology in the wetland. Accordingly, there would be no significant changes to water quantity characteristics that would potentially affect aquatic habitat in downstream areas. The stormwater system would include treatment measures to avoid significant water quality impacts to receiving waters from project runoff.

Under this alternative, the use of 14 individual septic systems could potentially increase fecal coliform loads that eventually reach Little Bear Creek. On balance, however, the net effect of potential water quality changes associated with the project could be positive. Consequently, this alternative would not be likely to result in significant adverse impacts to aquatic habitat in Little Bear Creek.

According to the City of Woodinville Subdivision Code, Sewage 20.06.080 (2), Developments on lots less than one acre per unit must hook up to the municipal sewer system if the system is within 330 feet of a proposed development. Some of lots under the R-1 Proposal are less than 1 acre.

3.3.3.2 Attached Housing Alternative

This alternative would result in development of 85 townhouse units on the Wood Trails site, within approximately the same overall footprint as the Proposed Action. Because the area disturbed for construction of buildings and infrastructure (including a stormwater detention pond) would be somewhat less than for the Proposed Action (10 acres, rather than 17 acres), the on-site and off-site habitat impacts from this alternative would be reduced compared to the development of 66 single-family lots on this site; impacts would be insignificant in both cases.

Similarly, this alternative involves construction of 47 single-family homes on the Montevallo site, compared to 66 homes for the Proposed Action. The configuration of the subdivision and the habitat impacts would be essentially the same as the Proposed Action, although the area disturbed in this case would be slightly less (approximately 9 to 10 acres, compared to 13 acres). As for the Proposed Action, impacts to plants and animals on the Montevallo site and off-site would be insignificant.

3.3.3.3 No Action Alternative

Under this alternative the Wood Trails site would remain undeveloped and the five current residences would remain on the Montevallo site for the foreseeable future. Impacts to plant or animal life resulting

from development of subdivisions on these sites would not occur. Any changes to vegetative and habitat conditions on the subject properties would be limited to maturation of existing plant communities and the land use practices of the current Montevallo residences. Grazing and an existing gray-water discharge on the Montevallo site would continue to affect water quality in the on-site wetland.

3.3.4 Secondary and Cumulative Impacts

Habitat and related impacts from any of the development alternatives are unlikely to result in significant indirect impacts. Development activities on the Wood Trails and Montevallo sites would not result in any current or future losses of terrestrial or wetland habitat on adjacent sites. Some of the wildlife currently using the Wood Trails site could be displaced onto wooded areas to the north of the site. As discussed previously, impacts to off-site aquatic habitat would be either neutral or positive for the Proposed Action or Attached Housing Alternative, and for the R-1 Zoning Alternative with respect to the Montevallo site; use of septic systems on the Wood Trails site under the R-1 Zoning Alternative could contribute to fecal coliform loads in downstream areas.

Past and current development activity in the vicinity of the project sites has created substantial modifications to local habitat conditions over a period of several decades. The surrounding area is now almost completely urbanized, and the habitat that remains generally exists in small, scattered patches that provide little effective habitat value. Future development activity in this part of Woodinville and in Snohomish County to the north could continue this trend. The undeveloped parcel adjacent to the Wood Trails site to the north is zoned for residential use and conceivably could be developed in the future. Available information about this property indicates it has terrain and habitat characteristics similar to those on the Wood Trails site, with the addition of a small stream. Any plans for future development on the site would have to account for and protect critical areas present on the site, which are likely to include wetlands, stream corridors, and geologic hazards in some areas. Based on the size of the site and the likely need to protect critical areas, higher-quality habitat on the site would likely remain even with development and overall habitat impacts would not likely be significant.

As noted in the preceding discussion, existing habitat values are minimal on the Montevallo site and limited on the Wood Trails site; most of the habitat value on the latter site would be maintained as undisturbed NGPE. Viewed within the context of other past, present and potential future activities in the area, the minor plant and animal impacts of Proposed Action or the other development alternatives would not be likely to represent significant cumulative impacts.

3.3.5 Mitigation Measures

3.3.5.1 Wood Trails

Suitable mitigation for impacts to wildlife movement from the Proposed Action or Attached Housing Alternative would be to maintain an unrestricted, vegetated corridor through the west side of the Wood Trails site near the proposed stormwater pond. Fences would not be installed in this area other than as needed to satisfy a potential City requirement to fence the perimeter of the pond.

Mitigation proposed by the applicant includes native tree and shrub plantings per the City of Woodinville Mitigation Guidelines, between and around the rockeries above the detention pond. To restore existing degraded habitat on the extreme west side of the site north of the proposed stormwater pond, localized removal of blackberry vines and installation of native conifers will be conducted through the area of the corridor. This would restore a conifer component in this area and provide greater cover for wildlife using the area. Plantings would be installed in the dormant season and would be irrigated during the first two years of installation to improve the survival rate of the plantings. Monitoring would be conducted for 5

years to ensure success of the habitat enhancement. The 5-year performance standards for the planting areas would be a minimum 80-percent survival rate and a maximum of 10 percent non-native plant cover.

There would be some loss of wildlife foraging area from the proposed project. Several measures would be used to offset losses of forage trees and improve the remaining habitat for pileated woodpeckers. These include selective snag creation on the 21 acres of remaining open space, through girdling of specific trees that would provide good potential snags. Transfer of large woody debris, such as logs and stumps, from clearing operations to the western portion of the site would also provide foraging materials for pileated woodpeckers and other wildlife.
The applicant proposes to enhance riparian wetlands along the stream in Tract A to compensate for the fill of Wetland A for construction of the stormwater pond. The entire area surrounding the creek on Tract A is stump-sprout origin, big leaf maple forest with a sparse understory. Historically, this area was undoubtedly a conifer forest. Wetland A would have a rating of Category III according to the Washington Department of Ecology's (DOE) wetland rating form.

The current Woodinville Municipal Code and the latest Ecology mitigation guidance document (*Guidance on Wetland Mitigation In Washington State Part 1: Laws, Rules, Policies and Guidance Related to Mitigation*, April 2004), which is referenced in the WMC, guided development of the mitigation strategy for impacts to Wetland A on the Wood Trails site. A key principle of the WMC and the Ecology guidance is the emphasis on replacing lost wetland functions, with lesser importance placed on replacing wetland acreage. For example, WMC 21.24.350(2) states that "Mitigation for alterations to wetlands shall achieve equivalent or greater biologic functions." WMC 21.24.350(3) states that "Mitigation actions shall address functions affected by the alteration to achieve functional equivalency or improvement, and shall provide similar wetland functions as those lost." The Ecology guidance states that "The goal is to replace lost wetland functions at a 1:1 ratio…" The WMC does not state that wetland creation is the preferred method of compensation for wetland loss. Instead, WMC 21.24.350(4) states that restoring wetland characteristics to an area that was once a wetland is the first preference, followed by "enhancing significantly degraded wetlands."

Enhancement of existing degraded wetlands is an appropriate mitigation strategy when compensating for impacts to small, low-quality wetlands; when wetland creation does not have a high probability of success or construction of a created wetland could have adverse affects on biological function; when there is no suitable location for wetland creation; and when degraded wetlands are located in the area. The proposed impact and mitigation areas are both in the Little Bear Creek Basin, and the wetland proposed for enhancement is a fringe along an unnamed tributary of Little Bear Creek on the adjacent forested property to the north. The proposed mitigation would not only provide enhancement of the existing wetland through increasing species diversity and revegetating disturbed areas, but would also benefit the stream and the basin as a whole by increasing stream shading (which reduces water temperature), inputs of organic matter, and future large woody debris recruitment. The low level of function provided by the existing Wetland A would be more than replaced by enhancing a low-diversity, degraded wetland fringing the off-site stream at Ecology's 8:1 mitigation ratio for wetland impacts compensated by wetland enhancement.

Accordingly, mitigation for Wetland A would consist of 11,200 square feet of enhancement (see Appendix N). This enhancement would be focused in the small wetlands along the creek, to provide shade and a conifer component to this area that is currently lacking. The habitat function of this area would be improved by under-planting the existing deciduous forest and small riparian wetlands along this creek with native conifers, including western red cedar, western hemlock and Sitka spruce. An old roadbed excavation along the stream that has evolved into a wetland with little cover would also be enhanced through native plantings.

The final enhancement plan would restore a conifer component to this area, thereby increasing the diversity of plant material and shading of the stream. This would help to keep water cooler in this small tributary that eventually drains to Little Bear Creek. It would also provide some cover and future nesting and browsing material for many species using the stream corridor.

Flow control and water quality treatment measures incorporated in the drainage system for the project would mitigate for potential adverse impacts to off-site aquatic habitat in Little Bear Creek.

3.3.5.2 Montevallo

Following construction of the sewer line beneath the wetland, the portion of the buffer temporarily disturbed by construction would be re-graded to original contours, hydroseeded with a native grass mix and re-planted with a mix of native shrubs. In addition, the proposed wetland buffer reduction from 100 feet to 50 feet would be accompanied by enhancement of the reduced 50-foot buffer (an area of 34,906 square feet). Proposed enhancement actions include selective tilling to break up the compacted soil and provide better soil conditions for plant growth; seeding the entire area with a native grass mix; planting a dense mix of native trees and shrubs (except directly over the sewer line); and pacing downed logs, snags and brush piles to function as habitat features. The existing 100-foot buffer in the proposed impact area is low-functioning and grazed, so buffer reduction to 50 feet with enhancement of the remaining buffer area would provide a net improvement in buffer function. Following approval of this concept, the applicant will prepare a Final Detailed Mitigation Plan for review and approval by the City. The final plans will include details on the sewer line construction as well as the stockpiling of soil, revegetation, plant placement, specifications, performance standards, monitoring methods, and contingency measures. This area will be monitored for 5 years, as required by Code, to ensure successful restoration of the buffer.

3.3.6 Significant Unavoidable Adverse Impacts

All of the development alternatives would leave a large portion of the Wood Trails site undeveloped as an NGPA. This contiguous area of at least 21 acres (approximately 57 percent of the site) on the western side of the property would retain the most valuable habitat on the site, particularly for pileated woodpeckers. While removal of the forest on the eastern portion of the site would result in some minor habitat loss (up to 17 acres), these impacts would be minor and pileated woodpecker habitat on the site would remain viable.

Nevertheless, some wildlife would unavoidably be displaced by any development on the Wood Trails site. Generally, the species found on the site that would be displaced are common, human-tolerant species that are able to move and adapt to changed conditions; these species would likely move to forested areas to the west and north of the development area. Based on the extent and context, this displacement impact would be insignificant.

The Proposed Action would result in the loss of Wetland A on the Wood Trails site, due to the proposed stormwater pond that would be placed there. Wetland A is in the only feasible location for the proposed stormwater facility, and represents an unavoidable impact. The applicant would provide mitigation for these impacts by establishing native vegetation on the benches between the rockeries above the stormwater pond, and by enhancing riparian vegetation along a stream north of the development area. The loss of this low-function wetland would be mitigated by the proposed enhancement and the residual impact would not be significant.

The habitat on the Montevallo site has already been significantly degraded. Wildlife habitat and displacement impacts would be minimal under any of the development alternatives for Montevallo. The only significant habitat on the site is the wetland on the west. The Proposed Action and the Attached Housing Alternative would result in temporary impacts to the buffer of Wetland A/B from placement of a

sewer line under the wetland and through the buffer, and from reduction of the regulatory buffer width from 100 to 50 feet. The sewer line buffer impact areas would be restored post-construction, and the buffer reduction would be accompanied by enhancement of the remaining 50-foot buffer. The proposed project would result in extensive enhancement of the wetland buffer on the Montevallo site, which would improve the quality of the wetland habitat. Therefore, impacts to plants and animals on the Montevallo site would not be significant under any of the alternatives.

Plans, Polices and Regulations

For plans, polices and regulations see Land Use Section 3.4.2, Environmental Element and Section 3.4.2.2 Zoning and Critical Areas and other Development Regulations.

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