



BIOLOGICAL RESOURCES REPORT

Fort Lawton Army Reserve Center  
Redevelopment

**CITY OF SEATTLE**

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# 1. Introduction

This report describes the biological resources, and potential affects to those resources, by the *Fort Lawton Army Reserve Center Redevelopment Project* (hereafter “Fort Lawton Project”) EIS alternatives to support the preparation of a Supplemental Environmental Impact Statement (SEIS) being prepared by EA Engineering, Science, and Technology. This report is based upon the description of the proposed action(s) and alternatives provided in by the Seattle Office of Housing.

# 2. Methods

Existing natural resource inventories and databases, accessed as of the date of this report, were reviewed for wetlands and streams, vegetation, and wildlife habitat that may be present on or near the study area. Online sources used for review of wetlands and streams include the following:

- USDA Natural Resource Conservation Service – Web Soil Survey application
- National Wetland Inventory (NWI) maps
- Washington Department of Natural Resources (WA DNR) – Forest Practices Application Mapping Tool
- BLM Land Status and Cadastral Survey Records
- WA DNR – Wetlands of High Conservation Value Map Viewer
- Google Earth aerial images
- King County’s GIS mapping website (iMap)
- City of Seattle’s GIS mapping website (SDCI GIS).
- Washington Department of Fish and Wildlife (WDFW) and Northwest Indian Fisheries Commission (NWIFC) Statewide Washington Integrated Fish Distribution (SWIFD)
- WDFW SalmonScape
- WDFW Priority Habitats and Species on the Web
- NatureServe’s LandScape Washington mapping application

In addition to the online resources listed above, reports on previous studies conducted at Fort Lawton were reviewed; applicable reports are cited in-text.

The property was visited by staff ecologists to review site conditions on June 28, 2017, specifically to verify the previously reported lack of potential wetland and stream critical areas, assess existing vegetation, and note wildlife observations. The site was revisited on November 7, 2024, to document potential changes in site conditions.

The study areas for the assessments made in this report are limited to the project area boundaries on the Fort Lawton site (i.e., areas of potential direct impacts) as well as the areas immediately adjacent, or within approximately 300 feet of the respective project area boundaries. For the purpose of this report the “Fort Lawton Site” refers to the area of the proposed action and does not include other locations which were historically a part of Fort Lawton, such as what is now Discovery Park.

## 3. Affected Environment

The Fort Lawton site is located in the City of Seattle’s Magnolia neighborhood, adjacent to the eastern side of Discovery Park. The surrounding land use is predominantly residential to the east and north with open space and administrative facilities to the south and east, respectively. Also nearby, are Kiwanis Memorial Preserve Park, Kiwanis Ravine Overlook (east) and Commodore Park (northeast). Separated by the Ballard Locks, the marine and freshwater portions of Salmon Bay are located to the north and northeast, respectively. The study area and vicinity can be generally described as *urban and mixed environs medium-density zone*, a land cover characterized as containing light industry and residential areas with the potential for isolated wetlands, streams, open spaces, and greenbelts to occur within the matrix (Johnson and O’Neil 2001).

Lands in the Fort Lawton site are characterized by a high cover of buildings, paved parking lots and associated infrastructure including paved driveways and roads. Most of the buildings and parking areas are no longer occupied or used, except for a park maintenance facility. The site also includes open spaces and landscaping including mowed fields and patches of forest.

### 3.1 Wetlands and Streams

A review of online mapping resources does not indicate the presence of wetland or stream critical areas on or immediately adjacent to Fort Lawton. Wetlands, streams and associated riparian corridors mapped by the City of Seattle are located in the vicinity of both Discovery Park and Kiwanis Memorial Preserve Park. The reviewed topographic contour data of the north end of the property indicates the presence of concave landforms, which are geographic features in which wetlands and streams may be found.

The *Fort Lawton Redevelopment Plan* prepared in 2008 by the City of Seattle Office of Housing reports that in 2006, a wetland was identified on the north slope of the property during a wildlife corridor study. During the June 2017 site visit, a wetland biologist from Facet identified skunk cabbage (*Lysichiton americanus*), an obligate<sup>1</sup> wetland plant, growing in a topographically low area south of W Lawton Street, generally consistent with the 2006 description of the wetland location. This potential

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<sup>1</sup> Obligate wetland (OBL), Almost always occurs in wetlands under natural conditions (estimated probability > 99%).

wetland was not noted in the 2012 Corps Final Environmental Assessment cited previously. No other areas are suspected of containing wetlands or streams.

## 3.2 Vegetation

Consistent with reviewed reports of natural resources on the property, the remaining unmaintained natural vegetation present at Fort Lawton is concentrated in two areas located at the northern/northwestern and southern extent of the property (City of Seattle 2008; U.S. Army Corps of Engineers 2012). These patches are the only native-growth areas of the site which contain intact or partially intact functioning ecosystems. Fort Lawton also abuts forests located in Discovery Park on the west side of the property and includes a narrow strip of established trees on the east side of the property. Plant species on the Fort Lawton site were recorded in a 2004 Floristic Survey by the U.S. Army Reserve and are available in Appendix C of the Final Environmental Assessment for BRAC 05 Recommendations for Closure, Disposal, and Reuse of Fort Lawton (U.S. Army Corps of Engineers 2012). Overall, plant species are typical of urban forests in the region. No sensitive or rare plants are known to occur in the project area or immediate vicinity.

### 3.2.1 North Forest

The north bluff of Fort Lawton is vegetated with primarily broadleaf deciduous forest. Red alder (*Alnus rubra*) and bigleaf maple (*Acer macrophyllum*) are most abundant, with minor constituents of western red cedar (*Thuja plicata*), sweet cherry (*Prunus avium*), bitter cherry (*Prunus emarginata*), black poplar (*Populus nigra*), black hawthorn (*Crataegus douglasii*), Pacific willow (*Salix lasiandra*), European mountain ash (*Sorbus aucuparia*), and Oregon ash (*Fraxinus latifolia*). Perimeter trees visible during the site visit generally consist of small, 10-14 inches diameter at breast height (DBH), and medium, 15-19 inches DBH, sized trees. The tree canopy is a single layer and is estimated as moderately closed canopy (40-69%) overall.

The understory is vegetated with primarily shade tolerant non-native invasive plant species including English ivy (*Hedera helix*), hedge bindweed (*Calystegia sepium*), Himalayan blackberry (*Rubus armeniacus*), herb-Robert geranium (*Geranium robertianum*), Scotch broom (*Cytisus scoparius*), and knotweed (*Polygonum* sp.), consistent with previous reports by Seattle (2008) and U.S. Army Corps of Engineers (2012). Some native understory shrubs and groundcover plants are present, but suppressed by the prevalence of invasive species. Special habitat features present in the north forest include, but are not limited to, dead downed wood (trunks and branches), and leaf litter (City of Seattle 2008).

The north forest is a designated biodiversity area and corridor and great blue heron breeding area by the WDFW PHS program.

### 3.2.2 South Forest

The south forest is located at the southern end of the project area, west of Texas Way W and north of Discovery Park Boulevard. It connects and extends into forested areas of Discovery Park off-site to the west. The south forest consists of a mix of native broadleaf and conifer tree species including Douglas-fir (*Pseudotsuga menziesii*), bigleaf maple, red alder, Pacific madrone (*Arbutus menziesii*), and western

red cedar. The canopy dominant trees are primarily 20-30 inch DBH Douglas-firs, with some individuals exceeding 30 inches DBH that extend above the co-dominant canopy layer. Other canopy trees are generally medium in size. The canopy is characterized as multi-story due to stratification of co-dominant and dominant canopy trees, and variation in age class. The forest has a closed canopy, with cover estimated between 70-100%.

Shade-tolerant invasive non-native plants are also present in this forested patch, though there is a higher proportion of native species than the north forest. Common invasive species include English ivy, English holly (*Ilex aquifolium*), cherry laurel (*Prunus laurocerasus*), and Himalayan blackberry. Observed native understory plants include osoberry (*Oemelaria cerasiformis*), red elderberry (*Sambucus racemosa*), beaked hazelnut (*Corylus cornuta*), native woodland roses (*Rosa* sp.), trailing blackberry (*Rubus ursinus*), and sword fern (*Polystichum munitum*), consistent with previous reports by Seattle (2008) and U.S. Army Corps of Engineers (2012).

The south forest is also part of a designated biodiversity area and corridor by the WDFW PHS program.

### 3.2.3 Other Vegetated Areas

Other vegetated areas in Fort Lawton are maintained or managed landscapes that are generally vegetated by non-native species. These patches included mowed fields, landscaping beds, strips of trees, and other types of landscaped vegetation. These areas offer relatively little habitat value when compared to the forested patches in the project area and vicinity.

Two narrow strips of native conifer trees are present on the eastern perimeter of the project area, west of 36<sup>th</sup> Avenue W, and between Texas Way W and the Veterans Administration building parking lot. These areas are composed of primarily native trees, some snags and logs, and a managed understory. Although some habitat value is provided, this is limited by the small area, linearity, frequent disturbance, and edge effects.

### 3.2.4 Off-site

Vegetation and habitat within approximately 300 feet of the project area were also evaluated to review habitat connectivity and the off-site effects of potential project impacts. Two notable areas were identified, Discovery Park and Kiwanis Ravine Overlook / Kiwanis Memorial Park, (hereafter collectively referred to as "Kiwanis Park").

In general, these city-owned parks are relatively contiguous forested areas, except as divided and fragmented by roads and trails. Both Kiwanis Park and Discovery Park are characterized as mixed broadleaf-coniferous forests, although the composition differs between the sites. Kiwanis Park is nearly entirely broadleaf deciduous, with some conifers mixed in. Although Discovery Park is also primarily broadleaf dominant, it is a larger forest with more heterogeneity. There are also stands dominated by conifers, and varying levels of mixture.

Both parks are subject to common urban forest health issues, such as the presence of invasive species, pedestrian/passive use and shifts in composition and structure departing from the historic range of variability. Both parks contain relatively mature second growth forest, with trees of variable age

classification, size, and structure. These forests provide habitat that may be used by a wide variety of native wildlife species, and include special habitat features such as standing and down dead wood, and tree cavities.

Discovery Park and Kiwanis Park are both designated as biodiversity areas and corridors by the WDFW PHS program. Kiwanis Park is also mapped as a great blue heron breeding area by WDFW and the City of Seattle. According to Seattle's SDCI database, both Discovery and Kiwanis Parks also contain streams with associated riparian corridors and wetland environmentally critical areas.

### **3.3 Fish and Wildlife**

The remaining forested habitat patches in the Fort Lawton site serve as valuable wildlife refuges in an otherwise urban landscape. The proximity and connectivity to nearby forested city parks also likely allow for increased diversity of occupying wildlife, compared to otherwise isolated patches. However, when viewed at a larger scale, these forested areas are highly fragmented and isolated, lacking habitat connectivity to other local or regional terrestrial habitat areas.

Habitat patches on the Fort Lawton site are expected to be used by a variety of wildlife species. Wildlife use of the Fort Lawton project area and vicinity is well documented in prior surveys. A total of 43 bird species were observed during the winter of 2004, and breeding point count surveys on the Fort Lawton site recorded by the U.S. Army Reserve are available in Appendix C of the *Final Environmental Assessment for BRAC 05 Recommendations for Closure, Disposal, and Reuse of Fort Lawton* (U.S. Army Corps of Engineers 2012). These species consist of a mix of common urban-adapted bird species (e.g., American crows, European starlings, house sparrows) as well as species less tolerant to urbanization. Note that, while great blue herons and bald eagles were observed in flight during these surveys, no breeding areas or nests are known to be present, currently. The availability of connected habitat areas in Discovery Park in part contribute to the observed biodiversity at Fort Lawton.

As stated previously, the north forest patch and Kiwanis Park are mapped as great blue heron breeding areas by WDFW. They are also mapped as heron management areas and wildlife environmentally critical areas (ECAs) by the City of Seattle. In addition, bald eagle breeding areas are identified in Discovery Park, outside the study area by Seattle SDCI.

Fish are not present on the Fort Lawton site or immediate vicinity due to a total lack of surface waterbodies that could contain fish habitat. Amphibians and reptiles are expected to be uncommon due to the surrounding roads and residences which disconnect on-site habitat from nearby vegetated areas and generally create movement barriers for these types of wildlife species. Terrestrial mammals that are expected to commonly use habitat in the Fort Lawton study area include, but are not limited to mice, moles, voles, rats, squirrels, chipmunks, rabbits, raccoons, opossums, coyotes, deer, and bats. On occasion, more cryptic mammals have been documented in nearby Discovery Park, including a cougar in 2009 that was subsequently relocated (Clarridge and Turnbull 2009).

Great blue herons are the only species of local importance which have been documented in the vicinity of the site. Great blue herons are regulated by the City of Seattle as a species of local importance and by WDFW as a priority species. A nearby great blue heron rookery was documented in Kiwanis

Memorial Reserve Park in the past (U.S. Army Corps of Engineers 2012). Forests in Kiwanis Memorial Reserve Park and the north forest on-site are mapped as breeding areas by WDFW and SDCI-GIS. According to WDFW's website (WDFW n.d.), as of April 2014, the Kiwanis heron colony abandoned the Kiwanis site due to repeated bald eagle attacks and is not expected to return. This is consistent with June 2017 and November 2024 site visit observations, as no heron activity, colonies or nests were identified during field investigation. Currently, the nearest known heron rookery is in Commodore Park, approximately 1,000 feet from the Fort Lawton site.

Great blue herons typically nest in the tops of trees near foraging habitat such as streams, lakes, ponds, wetlands, saltwater shorelines, and upland fields. Since Fort Lawton site contains forests, it may provide potential nesting habitat to great blue herons, although no nests have been documented on-site presently or historically.

There are only two priority species expected to occupy the site, including Columbia black-tailed deer and western bumble bee. Columbia black-tailed deer are designated for recreational, commercial, and/or tribal importance rather than conservation and the project would have no effect on populations. Western bumblebee was once common to the region and has declining populations due to a variety of anthropogenic impacts. Western bumble bees are habitat generalists and can live in most ecosystem types that provide adequate floral nectar. Fort Lawton is regularly mowed and does not provide abundant nectar opportunities, although some level of western bumble bee presence cannot be ruled out. There are several other uncommon species which occupy forest ecosystems and have a potential presence in the vicinity. These include American goshawk, Vaux's swift, western toad, roosting concentrations of bats, and Townsends big-eared bat. Due to proximity, the site may also be used by shorebirds, although these are not considered because on-site habitats are not a primary association. No designated state or federally listed species are known to occur on or immediately adjacent to the Fort Lawton site, although certain aforementioned priority species are also state candidate species.

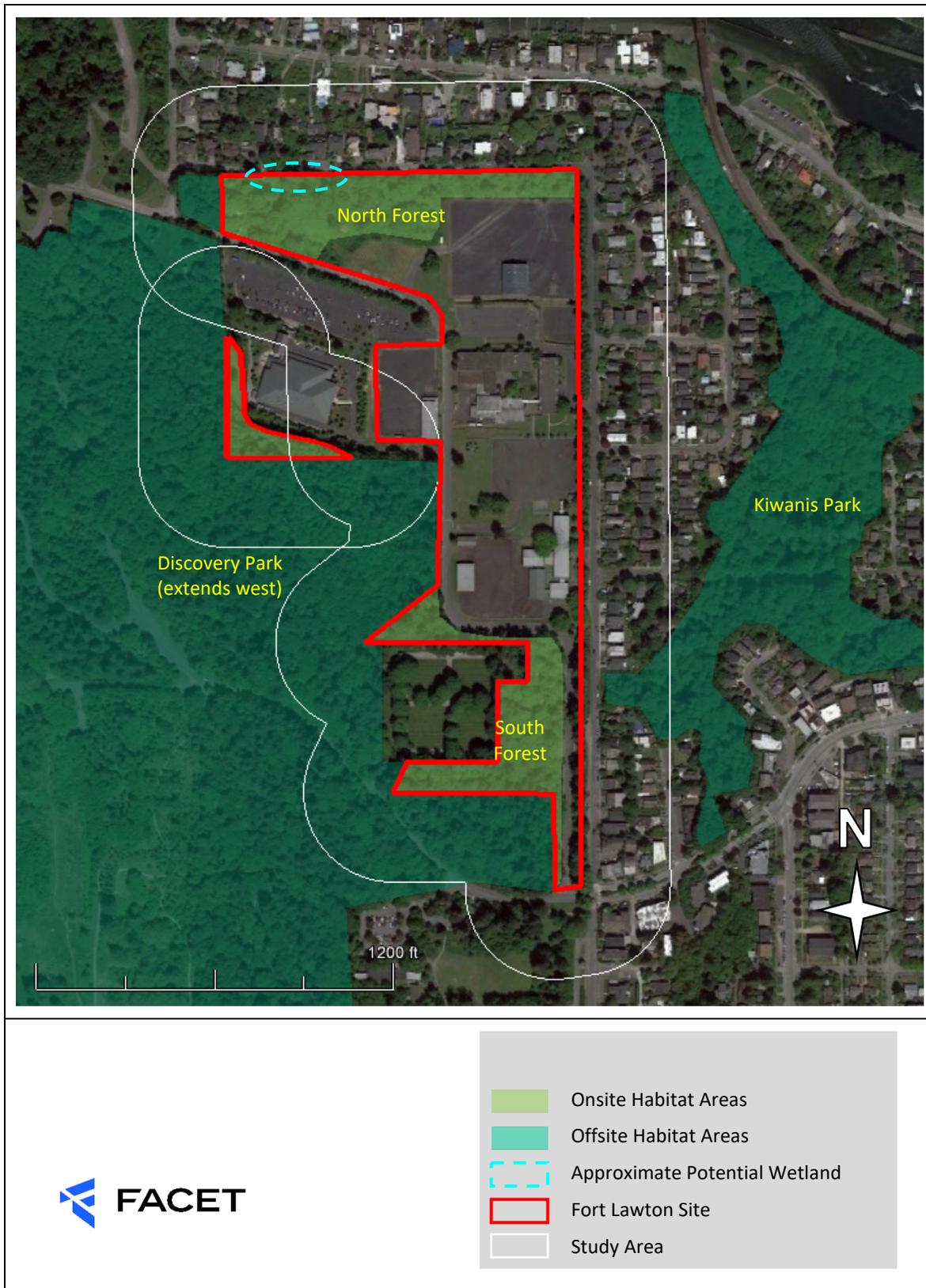


Figure 1. Fort Lawton biological resources map and study area (imagery source: Google Earth).

## 4. Impacts of the Alternatives

Two alternatives are being considered in the SEIS for the Fort Lawton Project. Each alternative is described in this section as it relates to potential impacts on biological resources. A summary of development proposed under each alternative is provided in Table 1. The areas defined by each of these land cover types is shown graphically in Figure 2.

**Table 1.** Built and open space area on the Fort Lawton site per SEIS alternatives.

<b>Land Cover Type</b>	<b>Alt. 1 (acres)</b>	<b>Alt. 2 No-Action (acres)</b>
Buildings/Structure Footprints <sup>1</sup>	5.20	2.25
Roadways/Sidewalks <sup>2</sup>	4.00	3.40
Surface Parking	2.28	8.16
<b>Subtotal</b>	<b>11.49</b>	<b>13.81</b>
Natural Wooded Area <sup>3</sup>	2.92	2.92
Grass Area	4.51	6.06
Other Landscaping <sup>4</sup>	10.89	11.18
Grass/Unlit Multi-Purpose Fields	4.17	0.00
<b>Subtotal</b>	<b>22.49</b>	<b>20.17</b>
<b>TOTAL</b>	<b>33.98</b>	<b>33.98</b>

**Data Source:** Fort Lawton Update Proposed Action Summary by the Seattle Office of Housing.

<sup>1</sup> Includes both *retained buildings footprint* and *housing area*.

<sup>2</sup> Includes paved area along the Texas Way W and 36<sup>th</sup> Avenue W rights of way.

<sup>3</sup> Forested areas are also included in the category of *other landscaping*.

<sup>4</sup> Much of the other landscaping areas are forested, including the entire North Forest.



Figure 2. Landcover areas as summarized in Table 1.

## 4.1 **Alternative 1 – Proposed Action**

### **Description**

The development of the Fort Lawton site under Alternative 1 includes 500 housing units in residential buildings up to four stories tall, concentrated in the center of the site. This alternative also includes passive recreation areas, roadways, driveways, sidewalks, parking, landscaping, and other associated infrastructure and utilities.

Under Alternative 1, 66% of the Fort Lawton site would be in open space including natural wooded areas, grass areas, other landscaping, and unlit multi-purpose fields; the remaining 34% would be structures and impervious areas such as roadways, sidewalks, and parking. By comparison, Fort Lawton currently has 59% pervious open space and 41% is structures and impervious surfaces. This alternative results in a net reduction of impervious surface area and an increase in open space. All the northern and southern forest areas are proposed to be retained.

### **Effects on Biological Resources**

Alternative 1 will develop only in areas of prior ecological disturbance and will not result in any additional loss of native habitats. Similarly, there are no direct impacts to critical areas (i.e., the potential wetland in the north forest area), native forests, or sensitive wildlife. Open space at the site, including passive open space areas, landscaping, and grassy multi-purpose spaces will increase in area by 2.32 acres. Although such managed landscapes and open spaces are of relatively low ecological value, the vegetated area provides green infrastructure benefits. No actions are proposed which would compromise the movement of wildlife to and from the property; the project will not result in reduced connectivity or worsen fragmentation. Up to 4.7 acres of forest land owned by the U.S. Army in the west portion of the site would be dedicated to Discovery Park and would also be preserved as natural area.

Biological resources can also be affected indirectly by developments even when habitat loss does not occur. For instance, an increase in human activity from residents and their vehicles could affect patterns of wildlife use in nearby habitats. Wildlife species vary in sensitivity to human disturbance, and many avoid areas where human activities are present. The addition of 500 new residences will increase human activity, which could affect surrounding habitats within an audible and visible range of the site. Alternative 1 also proposes an increase in building height, but a reduction in impervious land area, counteracting negative and positive factors of visual disturbance. Considering the location of the project in a highly urbanized environment, the presence of existing development, and lack of documented sensitive wildlife species, the potential effects of Alternative 1 are anticipated to be relatively minor. This is because the proposed development is comparable in development intensity and sensitive wildlife species, such as urban avoiders, are unlikely to be present. The wildlife species that do use the site are habituated to the urban environment of a major city.

Other indirect effects of the project include the effects of bird collisions from windows, and domestic pets such as cats and dogs which predate on wildlife, and particularly birds and small mammals. Depending on how the new development is maintained, the use of pesticides and fertilizers could also

indirectly affect wildlife, including insects. Artificial light is also considered an impact to wildlife, although the site is currently well lit and is not expected to significantly intensify as a result of the project.

In addition to long term impacts, Alternative 1 will also result in temporary construction activities that could impact wildlife within the immediate site area. The primary drivers of construction impacts to wildlife include the removal of trees and other landscaped area, and indirect impacts of construction equipment such as noise, dust, and visual disturbance. Although the construction site is not thought to contain quality native habitat, the site is used by urban adapted and synanthropic species. The construction project is expected to cause displacement to any wildlife using the site, and have the potential for incidental mortality. Species occupying the site are not known to be of conservation concern, and the scale of the action is not believed to have any effect on species conservation at the population or species levels. However, all wildlife impacts do warrant consideration. The proposed built and landscaped environment will eventually provide equal or greater urban habitat opportunities than the existing site, considering the greater amounts of open space. However, as noted previously, neither the current nor proposed site development area contain native habitats and neither are considered well suited for habitat conservation.

With implementation of the proposed temporary and permanent stormwater control systems on the Fort Lawton site, and net reduction in impervious surface, Alternative 1 is anticipated in a net benefit to downstream biological resources.

## **4.2 Alternative 2 – No Action Alternative**

Under a no-action alternative, Seattle would terminate its lease of the property. The property is federally owned, and may continue to exist in a vacant state, or be subject to other potential activity or redevelopment, the nature of which is unknown. The use of the park maintenance facility will continue at the discretion of the operators and owners.

If the property is not redeveloped, then it will continue in its current state and the baseline environmental character will be maintained. This includes the continuation of existing environmental impacts such as lights, noise, and traffic.

## 5. Mitigation Measures

Mitigation measures discussed in this section are driven by local, state, and federal regulations (as applicable) and best management practices. For example, the City of Seattle requires certain mitigation measures when working near environmentally critical areas, including wetlands and Fish and Wildlife Habitat Conservation Areas (FWHCAs), as well as significant trees in order to avoid adverse impacts to these biological resources. These requirements are discussed in this section.

## 5.1 Wetlands and Fish and Wildlife Habitat Conservation Areas

Wetlands and Fish and Wildlife Habitat Conservation Areas (FWHCAs) are regulated as critical areas under Seattle Municipal Code (SMC) Chapter 25.09 – *Regulations for Environmentally Critical Areas* (ECAs). There are also several director’s rules which provide additional regulations on development standards for certain critical areas. Any proposed project will need to comply with local regulations, including the ECA code. In general, projects located near wetland and/or FWHCAs must demonstrate that impacts have been avoided to the extent feasible through mitigation sequencing outlined in SMC 25.09.065.B.

When development is proposed on a parcel that contains a FWHCA, consultation with WDFW is required in addition to the codified mitigation measures. The property contains mapped FWHCAs including a biodiversity area and heron management area, which will need to comply with these regulations. For sites located near great blue heron colonies, a great blue heron habitat management plan is required through the City of Seattle in coordination with WDFW.

## 5.2 Significant Trees

Trees located outside of critical areas are regulated in the SMC Chapter 25.11 – *Tree Protection* and in several director’s rules. This chapter regulates trees that are categorized as meeting the requirements of Tiers 1-4. To protect trees planned for retention, tree protection must be identified on site plans and implemented during construction. If retention is not feasible, replacement trees may be required for trees planned for removal.

## 5.3 Proposed Minimization and Mitigation Measures

The following measures are proposed to address the potential biological resource impacts from construction and operation of Alternative 1.

### **Prior to Construction**

- Delineate, survey, and rate wetlands to determine required buffers per SMC 25.09.160, and ensure compliance with applicable regulations.
- If required by the City of Seattle, develop a great blue heron management plan for Fort Lawton site per DPD Directors Rule 5-2007 and 13-2018, including: that any clearing, grading or outside construction would be done outside of the nesting season.
- Identify Tier 1-4 trees in the development areas of the sites per SMC Chapter 25.11 and implement tree protection and replacement measures, as applicable.
- Consider integrating wildlife habitat features in the project design including but not limited to bird boxes, bat boxes, bird-safe window designs, raptor nest platforms, utilizing native plant species in open space and landscaping design, and leaving open spaces unmowed where feasible, etc.

## **During Construction**

- Install temporary and permanent stormwater control systems to limit water quality impacts on downstream resources.
- Install temporary fencing at any tree retention areas, ECA buffers, or habitat preservation areas to limit disturbance.
- Comply with any Migratory Bird Treaty Act requirements, and/or avoid or limit vegetation removal and construction activities during the breeding season.
- Coordinate with WDFW when working near nesting habitat associated with known great blue heron breeding areas, as applicable.

## **During Operation**

- Construct permanent fencing at the edge of potential wetland buffer and at edges of habitat areas to discourage intrusions by people and pets.
- Direct lighting away from natural areas, use downcast lighting, and limit or exclude night lighting, where feasible.
- Maintain and monitor mitigation sites and retained/installed trees, as applicable.
- Limit use of fertilizers, pesticides and herbicides in developed areas.
- Consider installation of interpretive signs or distribution of information on biological resources for public education.

# 6. Determination of Impacts

As identified in this report, Alternative 1 is anticipated to result in minor permanent and temporary impacts to wildlife including the displacement of any animals which occupy the site during construction, and indirect impacts associated with the proposed development. Since the area of open space will increase after construction is complete, the total area of urban wildlife habitat is proposed to improve slightly, and no loss of native habitats will occur. Both Alternative 1 and the No-Action Alternative will result in indirect impacts to wildlife due to the proposed use or perpetuation of the current site use. No significant unavoidable adverse biological resources impacts are anticipated under either alternative.

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