

ENVIRONMENTAL OVERLAY ZONE MAP CORRECTION PROJECT



VOLUME 3, PART E: East Buttes & Terraces, Natural Resources Inventory and ESEE Decisions



Discussion Draft
November 2019



How to Comment

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Attention: Ezone Map Correction Project

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COMMENTS DUE: January 31, 2020

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Acknowledgements

This plan is the culmination of three years of work across the City of Portland. Many thanks to the thousands of stakeholders, property owners, renters, business owners and interested people who attended dozens of neighborhood and community meetings and invited staff to their homes and businesses to perform site visits.

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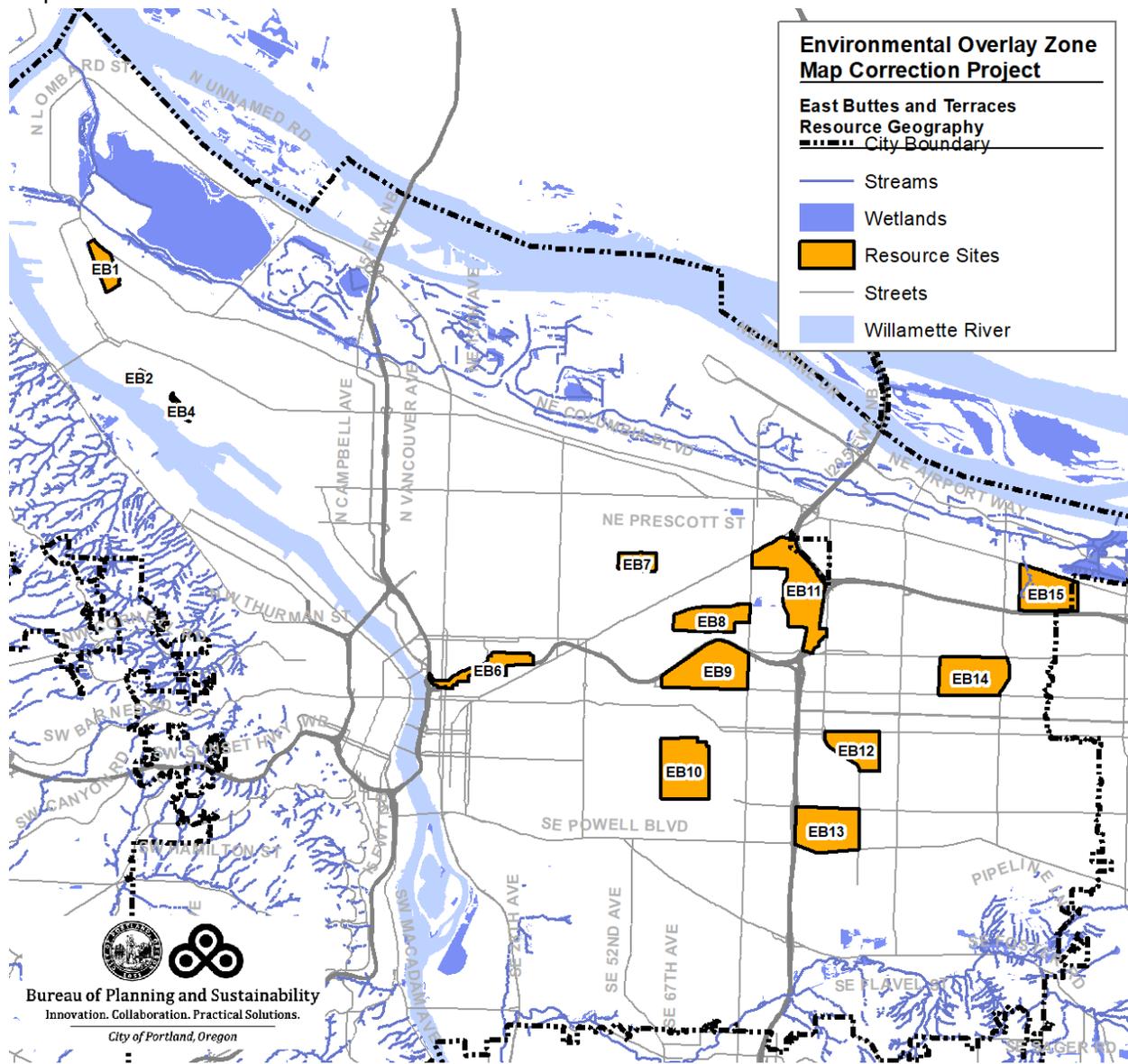
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A. Introduction

Volume 3, Part E, includes the results for resource sites in the East Buttes and Terraces (see Map 1). For each resource site the following is presented:

1. Natural resources inventory of riparian corridors and wildlife habitat pursuant to OAR 660-023-0030, 660-023-0090 and 660-023-0110.
2. Economic, Social, Environmental and Energy analysis pursuant to OAR 660-023-0040.
3. Economic, Social, Environmental and Energy decisions pursuant to OAR 660-023-0040.
4. Program implementation recommendations pursuant to OAR 660-023-0050.

The program to implement the inventory, ESEE decisions and recommendations are the updated zoning maps and codes found in Volume 1.



Map 1: East Buttes and Terraces Resource Geography

B. How to Use this Document

Below is a description of how to use the information found in this volume during quasi-judicial reviews.

Significant Natural Resource Feature and Functions Descriptions and Maps

Natural resource features include rivers, streams, , wetlands, flood area, vegetation (forest, woodland, shrubland and herbaceous), steep slopes and Special Habitat areas. These features are factual data that are mapped following the in the natural resources inventory. The descriptions are based on supplemental inventories, reports and site visits. Natural resource functions are the riparian corridor and wildlife habitat benefits provided by the features. The methodology uses to map and identify the natural resource features and function is documented in the Natural Resources Inventory (Appendix B) and Wetland Inventory Project (Appendix C) .

The natural resource features maps can be updated at any time based on more current and accurate data, such as a wetland delineation. The environmental overlay zone boundaries may be corrected based on new topographic feature data through 33.885.070, Correction to the Official Zoning Maps, or through 33.430.250.D, Modification of Zone Boundaries.

Economic, Social, Environmental and Energy Analysis

The general ESEE analysis and recommendations are found in Volume 2. For each resource site, the general ESEE analysis and recommendations are affirmed, clarified or modified based on resource site-specific information. An ESEE decisions is made for each resource site. The ESEE decision describes which significant natural resource features and functions should be protected from the impacts of conflicting uses.

Implementation

The results of the inventory and ESEE decision for each resource site are implement by updates to the zoning code and maps found in Volume 1.

C. Natural Resources Definitions

Additional details can be found in Volume 4, Appendix B: Natural Resources Inventory, and Appendix C: Updated Wetland Mapping Protocol.

Waterbodies

Stream: A stream is a channel that has a defined bed and bank and carries water continuously for a week or more during at least the wet season (October through April). Streams may be naturally occurring or may be a relocated, altered or created channel. Streams may contribute water into another waterbody or the water may flow into a pipe or culvert. Streams may flow for some distance underground. Streams are also referred to as *drainageways*, *ditches*, or *drainages* in other City of Portland reports, codes and rules or by other agencies including but not limited to Oregon Department of State Land or US Army Corps of Engineers. Streams include:

- the water itself, including any vegetation, aquatic life or habitat;
- the channel, bed and banks located between the top-of-bank; the channel may contain water, whether or not water is actually present;
- intermittent streams, which flow continuously for weeks or months during the wet season and normally cease flowing for weeks or months during dry season;
- sloughs, which are slow-moving, canal-like channels that are primarily formed by tidal influences, backwater from a larger river system, or groundwater;
- oxbows and side channels connected by surface flow to the stream during a portion of the year; and
- drainage from wetlands, ponds, lakes, seeps or springs, which may or may not form a defined bed and bank.

Drainage: A drainage is an area on the land that conveys flowing water for only hours or days following a rainfall. If a drainage drains water from a wetland, pond, lake, seep, or spring even if it does not have a defined bed and bank, then it is classified as a stream.

Roadside Ditch: A roadside ditch is a constructed channel typically parallel and directly adjacent to a public or private road. A roadside ditch is designed to capture and convey stormwater runoff from the road and is routinely cleaned (i.e., mechanically scoured or scraped of vegetation and debris) to maintain water conveyance capacity. Naturally occurring streams and drainages that have been relocated due to the construction of a road are not considered a *roadside ditch*.

Wetlands: Areas where shallow water is present long enough to create hydric soils and could support hydrophilic vegetation, although due to landscaping, seeding, mowing or grazing hydrophilic vegetation may not be present.

Floodplain: Areas with a 1% or greater chance of flooding in any given year and areas that were inundated with water during the 1996 floods.

Vegetation

Vegetation Patch: An area of contiguous vegetation greater than ½ acre in size containing a distinct pattern, distribution, and composition of vegetation relative to surrounding vegetated and non-vegetated areas.

Forest: Trees with their crowns overlapping, generally forming 60-100% of cover.

Woodland: Open stands of trees with crowns not usually touching, generally forming 25-60% of cover. Tree cover may be less than 25% in cases where it exceeds shrubland and herbaceous vegetation.

Shrubland: Shrubs generally greater than 0.5 m tall with individuals or clumps overlapping to not touching, generally forming more than 25% of cover with trees generally less than 25% of cover. Shrub cover may be less than 25% where it exceeds forest, woodland, and herbaceous vegetation. Vegetation dominated by woody vines (i.e., blackberry) is generally included in this class.

Herbaceous: Herbs (graminoids, forbs, ferns and shrubs less than 0.5m tall) dominant, generally forming at least 25% of cover. Herbaceous cover may be less than 25% where it exceeds forest, woodland and shrubland vegetation. This includes shrubs less than 0.5 m tall.

Steep slopes: Land with a 25% or greater slope.

Riparian Corridors: Rivers, streams, wetlands and floodplains plus the areas bordering the waterbodies; the width of the riparian corridor varies by waterbody as well as the vegetation and slopes surrounding the waterbody.

Wildlife Habitat: Waterbodies, floodplain, land, vegetation and other features that support fish and wildlife during one or more life cycle phase; manmade features may provide wildlife habitat.

Special Habitat Areas: Designated by the City of Portland in accordance with Metro's Urban Growth Management Functional Plan Title 13, Nature in Neighborhoods, areas that contain or support special status species, sensitive/unique plant populations, or other unique natural or manmade habitat features.

D. Resource Site Boundaries

Statewide Land Use Planning Goal 5 requires local jurisdictions to establish resource sites within which the natural resources are inventoried and the ESEE analysis is performed. OAR 660-023-0010 defines resource site, or site, as “a particular area where resources are located. A site may consist of a parcel or lot or portion thereof or may include an area consisting of two or more contiguous lots or parcels.”

Portland established resource sites through the previously adopted conservation and protection plans. This project is remapping resource site boundaries to be more consistent and easier to implement.

The resource sites were remapped in the following way:

1. The previous resource site boundaries were used to the maximum extent practicable. The intent is to maintain consistency between the past plans and this project.
2. Resource site boundaries were expanded to capture contiguous or similar and adjacent natural resource features.
3. Resource site boundaries were expanded to eliminate unnecessary gaps between resource sites.
4. Very small resource sites, with similar natural resource features and functions, were consolidated into one single larger resource site.
5. Resource site boundaries were adjusted to include entire properties within a single resource site. In some cases, adjacent lots under the same ownership may be in different resource sites; however, in these situations the resource site boundary follows lot lines.
6. Centerlines of streets, bridges, railroad tracks or other transportation facilities are often used to delineate resource site boundaries.
7. The City Boundary or Urban Service Boundary is used along the edges of Portland to provide the outer edge of resource sites.

E. Results

The results begin with a description of the Johnson Creek natural resources generally. The general description is applicable to each resource site. Following the general description are results for the resource sites. For each resource site the following information is provided:

1. Inventory of Natural Resources – The quantity and quality of natural resource features, such as streams miles or acres of forest, based on the Natural Resources Inventory methodology (Appendix B), Wetland Inventory Project (Appendix C) and site visits is presented. A description of the natural resources is also provided.
2. Determination of Significance – Statement of which natural resources are significant for purposes of State Land Use Planning Goal 5.
3. Resource Site-Specific ESEE – Additional analysis addressing site-specific conditions resulting in a decision for the resource site. The decision may confirm, clarify or modify the general ESEE recommendation found in Volume 2.
4. Maps
 - A. Zoning – base zones
 - B. Water Features – rivers, streams, wetlands and flood areas
 - C. Land Features – forest, woodland, shrubland and herbaceous vegetation, steep slopes, Special Habitat Areas
 - D. Riparian Corridors – natural resource features providing one or more riparian corridor functions
 - E. Wildlife Habitat – natural resource features providing one or more wildlife habitat functions
 - F. Determination of Significance – Goal 5 significant natural resources
 - G. ESEE Decision – where to strictly limit, limit and allow conflicting uses in areas of significant natural resources

East Buttes and Terraces Natural Resources

The East Buttes and Terraces are geologically and biologically significant elements of the Portland landscape. Together with the Columbia Corridor and the Johnson Creek Basin, they comprise the major natural and scenic resources of East Portland.

Geologic formations, soils, ground and surface waters, vegetation and wildlife are interdependent elements of the natural community. The ability of these elements to function properly is an important measure of the general health and vitality of the local environment. A healthy environment preserves a neighborhood's scenic, recreational and educational values, and contributes to Portland's high quality of life.

Geology

The primary geologic formation underlying the East Buttes and Terraces area is Columbia River basalt. This formation is composed of lavas which erupted from volcanic vents east of the Cascades 17.6 million years ago, and which flooded much of the Columbia River basin in one of the largest lava floods on earth.

The Columbia River basalt is locally overlain by up to 1,500 feet of sandstone and gravel deposits known as the Troutdale Formation. This formation has two distinct compositions: the lower fades consists of gravels containing quartzite, schists and granites which tie it to the ancestral Columbia River, the upper fades is primarily sandstone of basaltic origin presumably eroded from the Cascades. The deposition of these sands and gravels began ten million years ago and ceased nearly two million years ago (Price 1987).

Near the end of the Troutdale deposition until only a few hundred thousand years ago, a group of shield and cinder cone volcanoes erupted across the lower Willamette Valley. The Boring Volcanoes, as they are collectively known, are comprised mainly of high-alumina basalts, but locally contain ash, cinders and other materials. These basalts are similar to those of Mt. Hood and other Cascade mountains and the Boring volcanism is believed to be tied to the uplift of the High Cascades. The Boring lavas¹ were viscous and did not flow far from their source vents with explosive eruptions being rare. Three of the cinder cone volcanoes are local landmarks located within the area: Rocky Butte, Kelly Butte and Mount Tabor. At Rocky Butte, an intrusive body of Boring lava has been exposed by erosion and uplift. Thickness of the lava ranges from over 600 ft. at a vent to less than 50 ft. for individual flows away from the vent. Age of the lava is reported to be 1.33 million years (Swanson 1986).

During the early part of the Pleistocene period (beginning 1.6 million years ago), extensive erosion occurred in the lower Willamette Valley lowlands, scouring the lowlands and leaving the prominent volcanoes. Treasher (1942) notes that the Clackamas River once had a course east and north of Mt. Scott and nearby hills. He surmises that the Clackamas and Columbia Rivers "shifted back and forth in various channels as they cut down to their present level and must have swept past the sides of these three buttes [Mt. Tabor, Rocky and Kelly]." The rocky masses of Rocky and Kelly Buttes were resistant to the erosive forces of the rivers, but evidence of deep cuts in the sides of the buttes can be found. Unlike these two buttes, Mt. Tabor is composed mostly of sand and gravel. Treasher speculates that a

combination of factors, including deflection of the rivers by Mt. Scott and Kelly Butte and the presence of erosion-resistant lava on the lower slopes, enabled Tabor to withstand the erosive forces.

The most spectacular geologic event of recent times, the series of catastrophic floods known as the Missoula Floods, is most directly responsible for the creation of the East Portland terraces. Advancing glacial ice had blocked the Clark Fork River valley in western Montana forming Lake Missoula—a lake 250 miles long and 2,000 feet deep. Repeatedly, between 16,000 and 12,000 years ago, the glacial dam failed causing some of the largest floods known on earth. The flood waters spilled across Idaho and eastern Washington, surged down the Columbia River and through the Gorge, and met head-on with the Boring volcanoes. Rocky Butte in particular stood in the immediate path of the flood waters and its facing slope was cut into a nearly vertical bluff. With the exception of the Boring volcanoes, the entire east side of Portland was submerged under up to 400 ft. of water. The East Portland terraces were formed primarily through deposition of unconsolidated sand and gravel from the flood waters and the short-lived lake in the Portland Basin.

As many as five distinct terraces are now evident in east Portland. Perhaps the best example of the first terrace (at 150 ft. mean sea level) is the Overlook Bluff. Other terrace levels can be observed along NE Glisan Street and other east-west streets in the area. Evidence of erosion during and after the time of the Missoula Floods can be seen in several deep swaths cut into the depositional surfaces and bedrock. One such swath passes from Rocky Butte and Mt. Tabor to the southwest toward Lake Oswego. The most easily recognized example of this erosion is Sullivan's Gulch, a resource site covered later in this report.

Mt. Tabor, Rocky Butte and Kelly Butte, the most prominent resource sites in the planning area, are formerly active cinder cone volcanoes, part of a group known as the Boring Volcanoes. Portland is one of very few cities in the United States with a volcano within its limits. Another unique characteristic is that within Mt. Tabor Park is the best and most accessible example of the exposed volcanic vent of a Boring Volcano. Though the scenic and natural qualities of the buttes are better known, their volcanic origins are important resources in themselves, with significant geologic and educational values.

Another distinguishing feature of the East Buttes is that they are major Portland landmarks. At elevations of 600 ft. or more, rising 300 ft. to 400 ft. above the relatively flat East Portland landscape, the buttes can be seen from miles away in all directions. The buttes provide a backdrop to the local community, adding visual relief to urbanized areas of the city with limited open space. The buttes are important reference points that help to define neighborhoods and contribute to their unique identity.

Vegetation

The forest, an element of virtually every site in this study, provides important neighborhood resource values. Forest vegetation moderates the effects of winds and storms, stabilizes and enriches the soil, and slows runoff from precipitation. These functions control erosion and enable the forest floor to filter out sediments and pollutants as the water soaks down into groundwater reserves or passes into surface drainages. By filtering water, the forest maintains good quality drinking water for residents who use wells. By stabilizing soil, increasing groundwater infiltration and reducing runoff and erosion, the forest protects the local community from landslides and other hazards such as flooding.

The forest also provides habitat for local birds, mammals, herptiles and insects. The structural components of the forest, the tree canopies, branches, trunks, snags, downed logs, shrubs and herbaceous plants on the forest floor, all provide breeding, feeding and refuge areas for many species of wildlife. The planning area contains a diverse bird population with some sites exceeding 70 species. Of special interest is the endangered peregrine falcon, bald eagle, osprey, band-tailed pigeon, black-crowned night heron, yellow-headed blackbird, and the only known tri-colored blackbird colony in the Willamette River Valley. Also within the planning area is the northernmost nesting site of the Anna's hummingbird. Other wildlife species include the pacific tree frog, beaver, muskrat, nutria, coyote, rabbits and 17 species of fish. Urban wildlife have many beneficial values ranging from vector control and plant pollination to the enjoyment and education they provide for local residents, school children and nature enthusiasts.

The forest provides additional values which accrue to local landowners and broader segments of society. The mixed coniferous and deciduous forest acts as a buffer from the sights and sounds of the urban metropolis. The forest mutes the noise of highways and nearby industrial activities and helps absorb air pollutants caused by auto and industrial emissions. The forest also moderates climate extremes. The microclimate of the forest, created in part by the shade of the vegetation and the transpiration of water from the leaves, keeps surrounding air at an even temperature. The forest thus acts as a natural air conditioner for adjacent residential areas, cooling the air during the day and warming it at night.

The vegetation at Kelly and Rocky Buttes provides additional educational values. The south slope of Kelly Butte is home to the trout lily (*Erythronium oregonum*). This is the only known population of wild trout lilies in the city and is perhaps the largest population in the region. The hairy manzanita (*Arctostaphylos columbiana*) is another Kelly Butte species not found elsewhere in the city. Another locally rare plant, branching montia (*Montia diffusa*), was recorded at Rocky Butte. This plant is limited in abundance throughout its range and is listed on the Oregon Natural Heritage Data Base (1991) watch list. Both Kelly and Rocky Buttes are also home to the pacific yew (*Taxus brevifolia*), uncommon in the Portland area and significant for its "taxol," a cancer-fighting substance found in its bark. Kelly and Rocky Buttes are the only remaining examples of the Pacific Northwest's western hemlock forest community within the planning area. This community is unique among all temperate forests in the world (see Kelly Butte discussion below).

Soil and Water

Soil and water resources have values similar to forests, but which are not always fully appreciated. Soil provides habitat for complex plant and animal communities. Soil is a living organism without which the forest values discussed above would not exist. Soil microorganisms, seeds and root stocks, nutrients, oxygen and moisture play essential roles in supporting life above the ground. Soil also provides water management functions, effecting water recharge, discharge and storage. Water resources such as wetlands, surface drainages, groundwater reservoirs and precipitation are contributing features of the hydrological (water) cycle. Water is essential to plant and animal survival and, like soil, is an irreplaceable resource.

Several wetlands, both large and small, are located within the planning area. Two wetlands in particular are among the most significant habitat areas in the metropolitan region: Smith and Bybee Lakes and Beggars Tick Marsh. Just as with the East Buttes forest ecosystem, wetlands provide multiple values-left undisturbed, wetlands filter and purify water, recharge groundwater, control erosion and provide flood storage functions. Situated at the water-land interface, wetlands also provide incredibly rich habitats for aquatic birds, mammals, reptiles, amphibians and fish.

Resource Site No.: EB1 Resource Site Name: Pier & Chimney Parks
Previous Plan: East Butte, Terraces & Wetlands Plan Previous Resource Site No.: 141



Natural Resources Inventory

Table A: Quantity of Natural Resource Features in Resource Site	EB1
Stream (Miles)	0.0
Wetlands (acres)	0.0
Vegetated Areas >= 1/2 acre (acres)	56.8
Forest (acres)	54.0
Woodland (acres)	2.9
Shrubland (acres)	0.0
Herbaceous (acres)	0.0
Flood Area*	0.0
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Steep Slopes (acres)**	11.8
Impervious Surface (acres)	8.8
* The flood area includes the FEMA 100-year flood plain plus the adjusted 1996 flood inundation area.	
**Slopes are derived from LiDAR. Steep slopes are area with a slope greater than 25%.	

The Pier Park Area resource site includes Pier and Chimney Parks, and a small wooded area adjacent to Chimney Park. The site is located approximately two miles from the tip of a peninsula separating the Columbia and Willamette Rivers. The site is bordered by residential and industrial areas and serves as a buffer between these two.

The parks are incorporated into the 40-Mile Loop Trail which encircles the city. Pier Park is an active use area with paved trails, tennis courts, playgrounds, an outdoor swimming pool, a baseball diamond and a soccer field. Most of the park is comprised of manicured lawns, with Douglas firs and occasionally cedars towering above. Rhododendrons and other shrubs are infrequently interspersed within the park.

Chimney Park and the adjacent woodland are distinguished primarily by their secluded setting and the presence of a forest understory. The park's only lawns are located in the vicinity of the Archives building. The primary use of the area is passive recreation, though evidence of bicycle and all terrain vehicle use is present. Railroad tracks and industrial development border the site to the north and west, while Pier Park is located to the south.

Pier Park provides important scenic, recreational and open space values to the city. Habitat values are very limited due to the absence of a forest understory and the park's high human use. The park provides little cover resources and food production.

Douglas fir, western red cedar, bigleaf maple, dogwood, European hawthorn, birch and oak trees are present. The Douglas fir are dominant, between 40 to 70 years of age, and thinned to a regular spacing. Under this tall tree canopy, very few plants can be found; this area is predominantly lawn with occasional vine maple, Oregon grape, rhododendron, laurel, snowberry and holly.

Chimney Park and the adjacent woodland offer more diverse and abundant vegetation and habitat. This area contains greater variety of trees and includes pacific madrone, cherry, cottonwood and willow.

The forest understory sets this area apart from Pier Park: the shrub and herb layers are well-established with red huckleberry, western hazel, snowberry, thimbleberry, vine maple, Oregon grape, oceanspray, wild rose, salal, Indian plum and a complete complement of herbaceous flora. Himalayan blackberry and English ivy are beginning to become problems in the understory.

This multi-layered forest provides significantly greater habitat values than those of Pier Park. Food sources are plentiful and cover for nesting and shelter is much more accessible. Small mammals, passerines and red-tailed hawks frequent the area.

Table B: Quality of Natural Resource Functions in Resource Site EB1				
Resource Site (acres) = 85.321617				
	High	Medium	Low	Total
Riparian Corridors*				
acres	0.4	0.2	3.7	4.3
percent total inventory site area	0.4%	0.2%	4.4%	5.0%
Wildlife Habitat*				
acres	0.0	52.6	4.3	56.8
percent total inventory site area	0.0%	61.6%	5.0%	66.6%
Special Habitat Areas**				
acres				0.0
percent total inventory site area				0.0
Combined Total[†]				
acres	0.4	52.7	3.7	56.8
percent total inventory site area	0.4%	61.8%	4.4%	66.6%
* High-ranked riparian resources, Special Habitat Areas, and wildlife habitat include open water. ** Special Habitat Areas rank high for wildlife habitat. †Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.				

Determination of Significance

Natural resource features mapped in the resource site that provide functions identified in the Natural Resources Inventory are determined to be significant (Map F). Within resource site EB1 the following significant features and functions are present:

Significant Natural Resource Features: forest vegetation within 300 feet of waterbodies; woodland, shrubland and herbaceous vegetation within 300 feet of waterbodies; forest patches and associated and contiguous woodland patches two acres in size or larger; steep slopes and Special Habitat Areas.

Significant Riparian Corridor Functions: microclimate and shade; stream flow moderation and water storage; bank function and sediment, pollution and nutrient control; large wood and channel dynamics; organic inputs, food web and nutrient cycling; and riparian wildlife movement corridor.

Significant Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; and reduction of noise, light and vibration.

Resource Site-specific ESEE

The General ESEE analysis, Volume 2, describes the conflicting uses and provides an overarching analysis of the economic, social, environmental and energy consequences of prohibiting, limiting or allowing the conflicting uses within areas of significant natural resources. In addition to the General ESEE analysis, the following resource site-specific consequences are considered.

Conflicting Uses

The common impact of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; add impervious surface; modifying streams and floodplains; generating pollution; landscaping with non-native or invasive vegetation; building fences or other wildlife barriers; and other impacts such as noise, light, litter and pets.

Within the resource site open space uses are allowed in the OS base zone. Development of new uses may involve vegetation clearing, grading, filing, and soil compaction, as well as the addition of impervious surfaces and landscaping with non-native plants, with associated impacts on the natural resources. Basic utilities and other infrastructure are allowed in all base zones. New or upgraded utility corridors may be cleared of vegetation and may fragment wildlife habitat.

ESEE Analysis

The analysis of economic, social, environmental and energy consequences provided in Volume 2 is confirmed for resource site EB1, with the following additional information that clarifies the analysis.

Steep slopes are susceptible to erosion and landslides. Development should be clustered away from steep slopes and trees and vegetation should be maintained to reduce the landslide risks. New or expanded development on steep slopes should be *limited*.

ESEE Decisions

Based on the ESEE general recommendations (Volume 2) and resource site-specific ESEE, the ESEE decisions for Resources Site EB1 are:

1. *Limit* conflicting uses within areas of forest or woodland vegetation on steep and non-steep slopes contiguous to wetlands.
2. *Allow* conflicting uses within all other areas containing significant natural resources.

The wetland is located outside of resource site EB1; however, the forest vegetation in resource site EB1 is contiguous to the wetland and is providing riparian corridor functions to the wetlands.

ESEE Decision	Acres
Strictly Limit	0.0
Limit	4.3
Allow	81.0

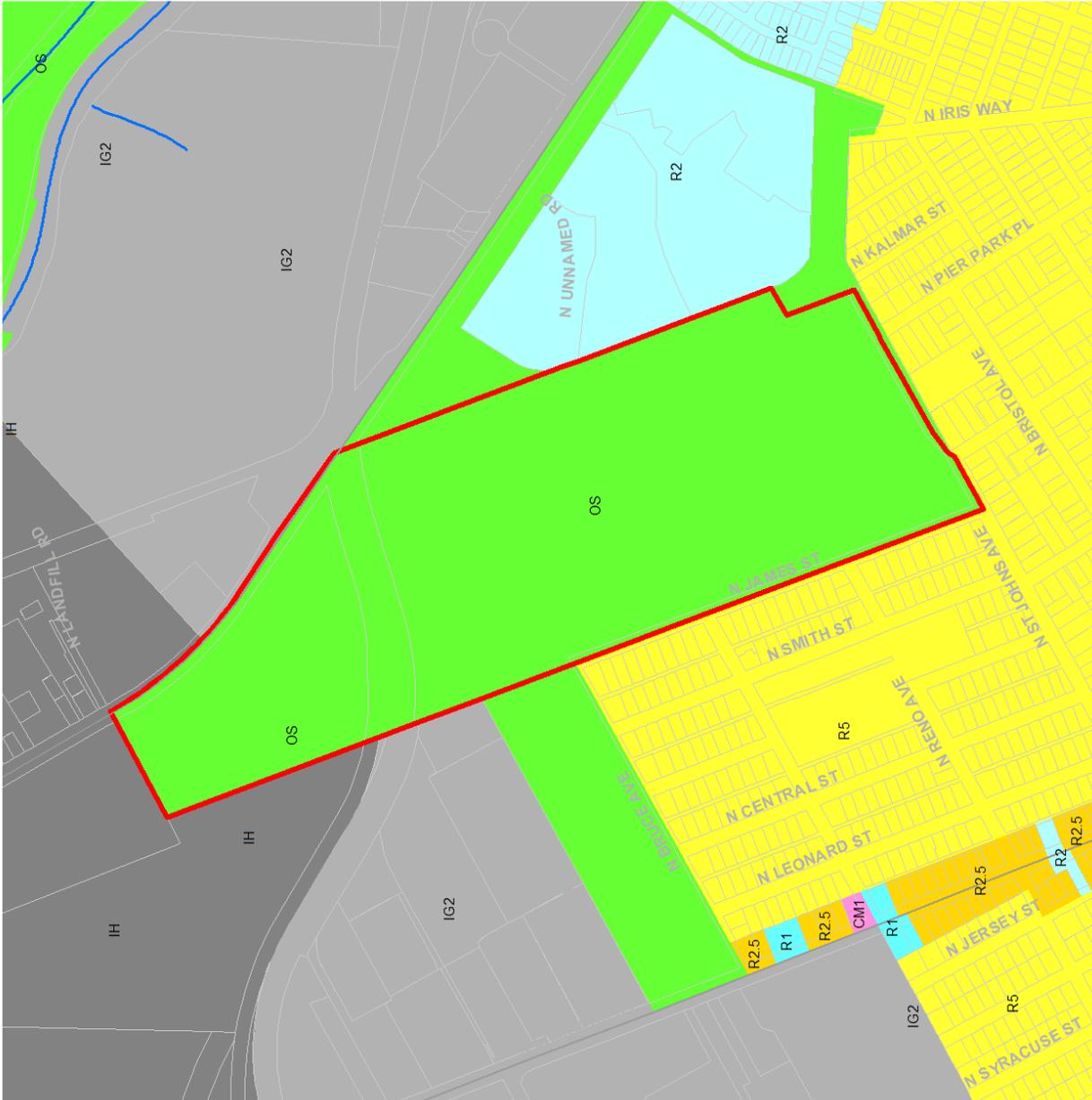


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**Resource Site: EB1
Chimney & Pier Park**

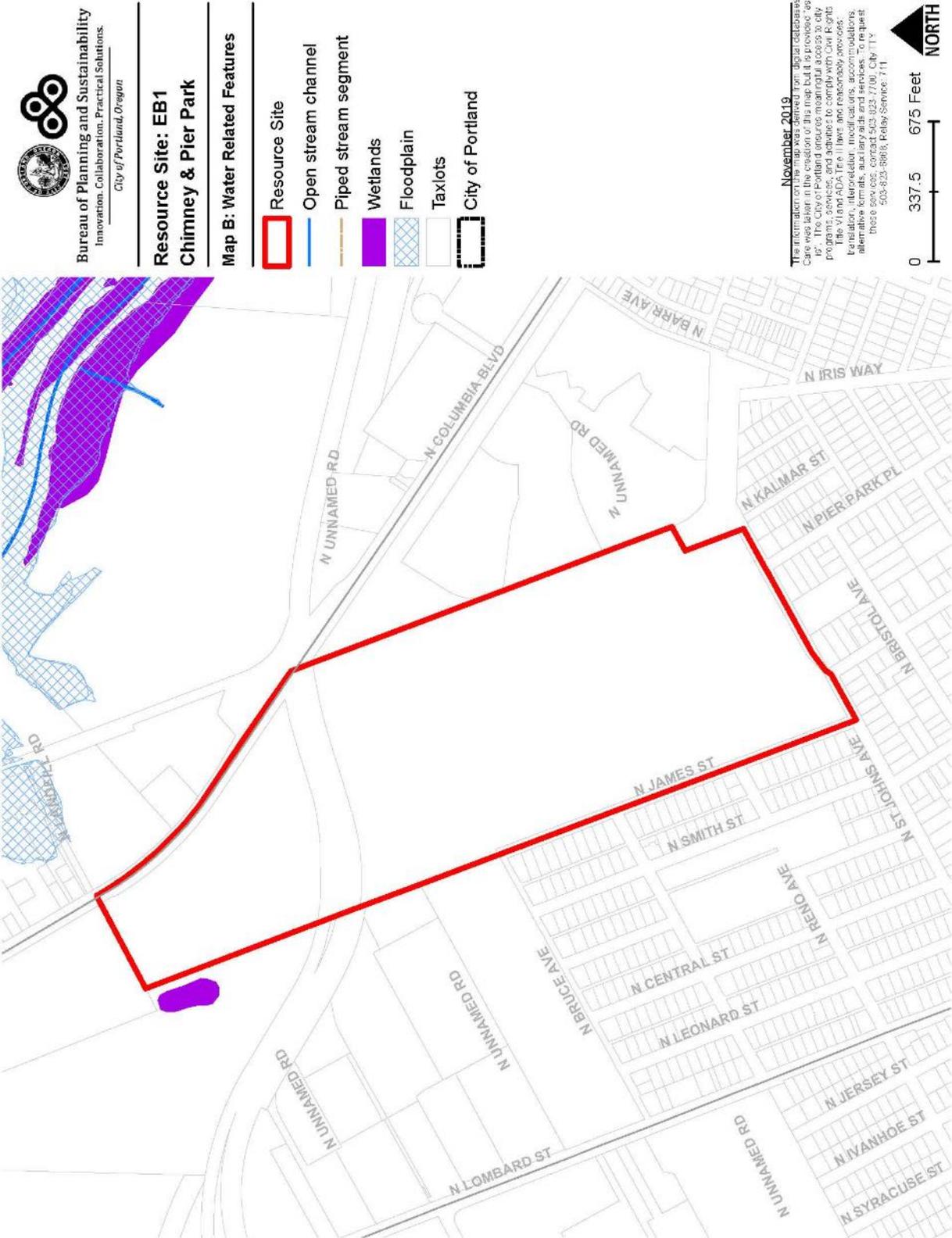
Map A: Base Zones

- Resource Site
- Streams
- Taxlots
- City of Portland



November 2019.
The information on this map was derived from digital databases. Care was taken in the creation of this map but it is provided "as is". The City of Portland ensures meaningful access to city programs, services, and activities to comply with Civil Rights Title VI and ADA, Title II laws and reasonably provides translation, interpretation, modifications, accommodations, alternative formats, auxiliary aids, and other services. To request these services, email 303-823-7700, City TTY: 303-823-6888, Relay Service: 711.



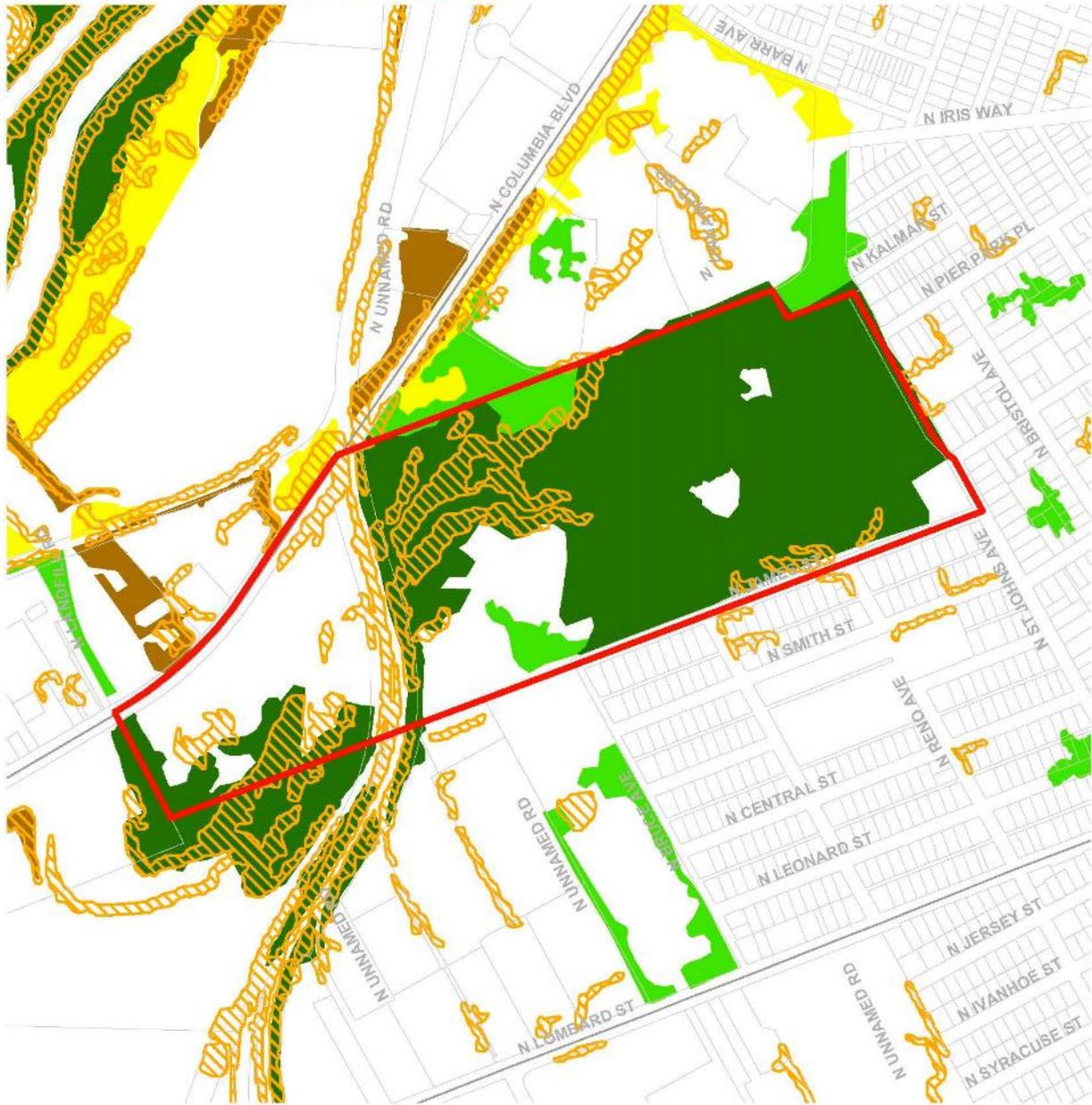




**Resource Site: EB1
Chimney & Pier Park**

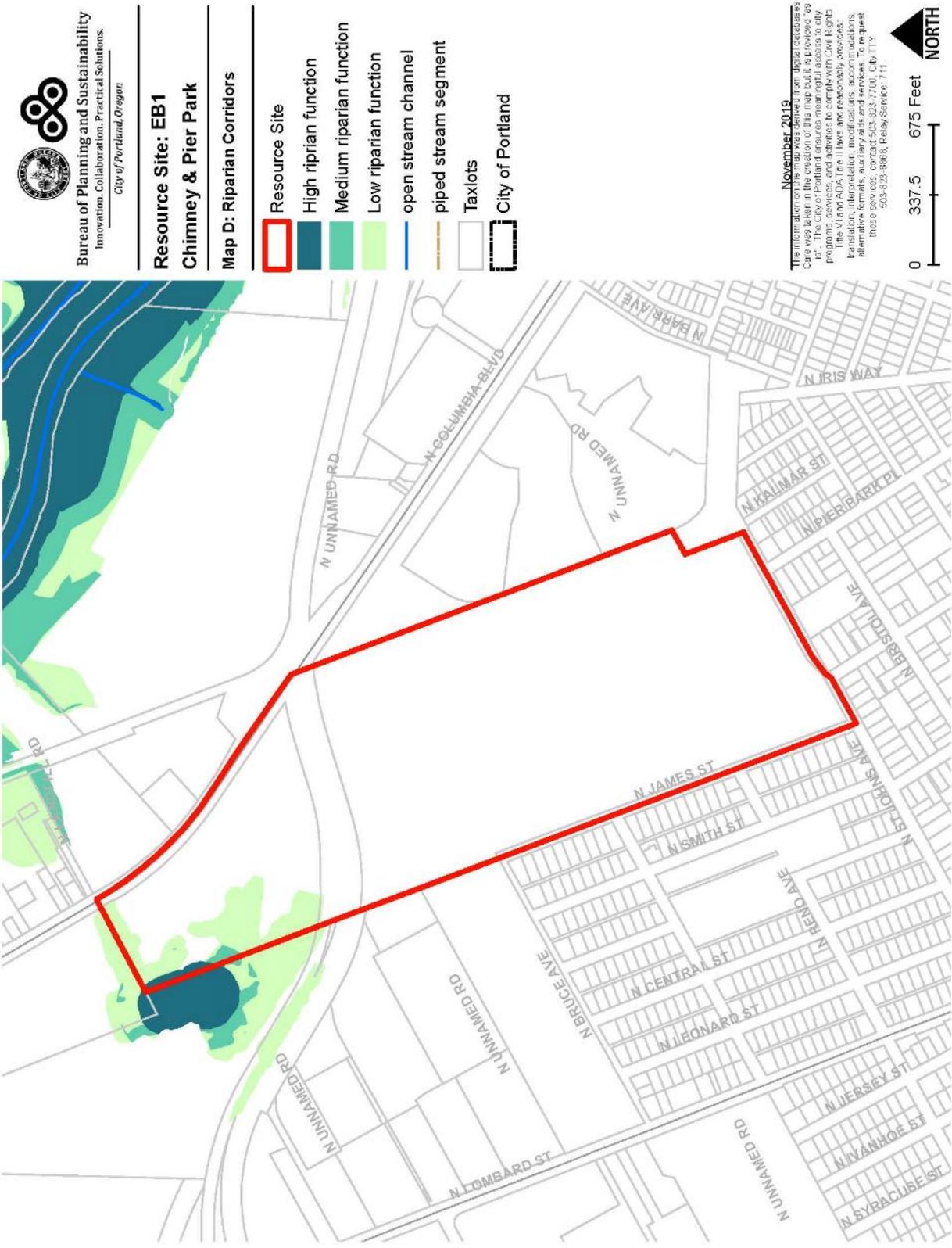
Map C: Land Features

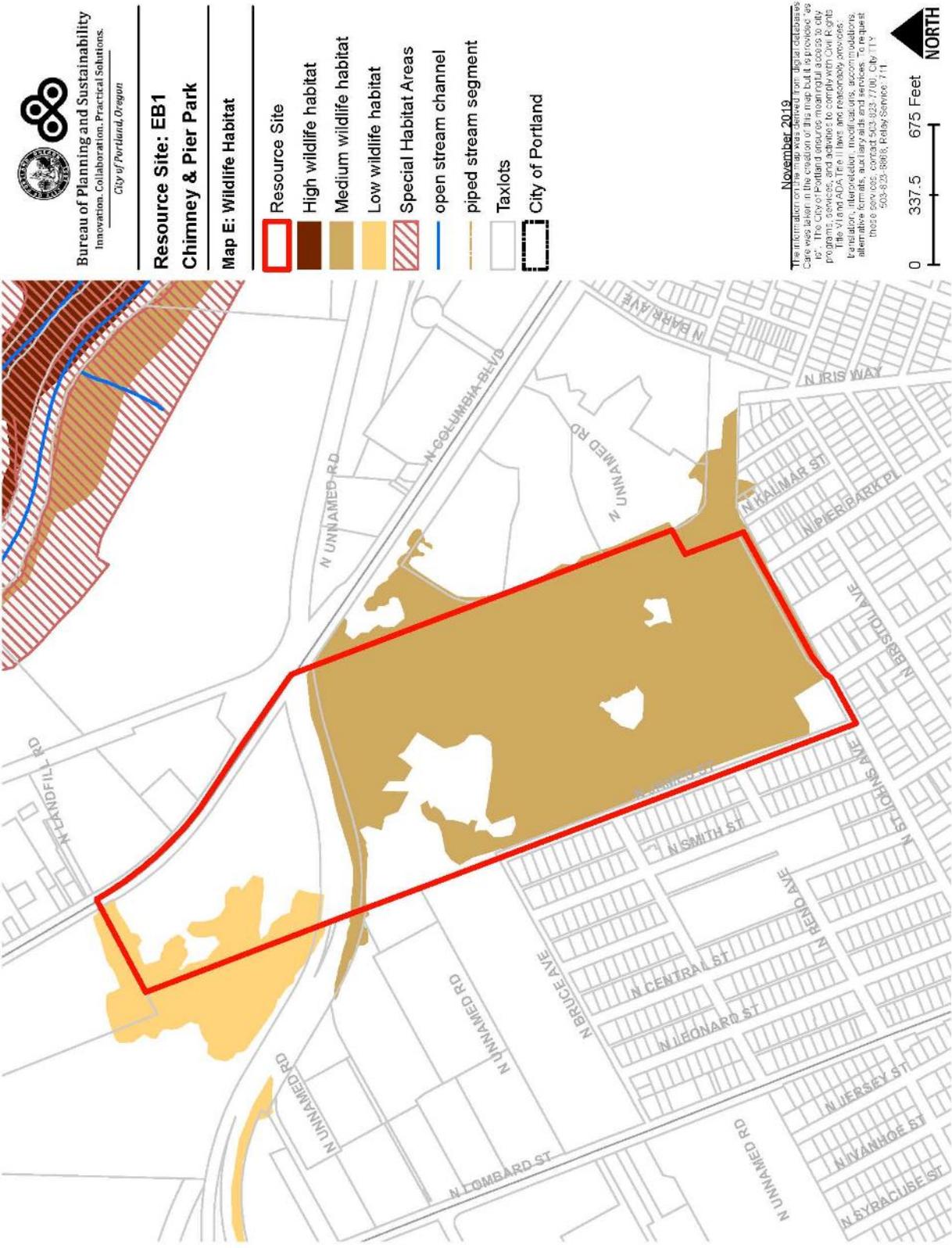
- Resource Site
- Steep Slopes (>25%)
- Forest
- Woodland
- Shrubland
- Herbaceous
- Taxlots
- City of Portland



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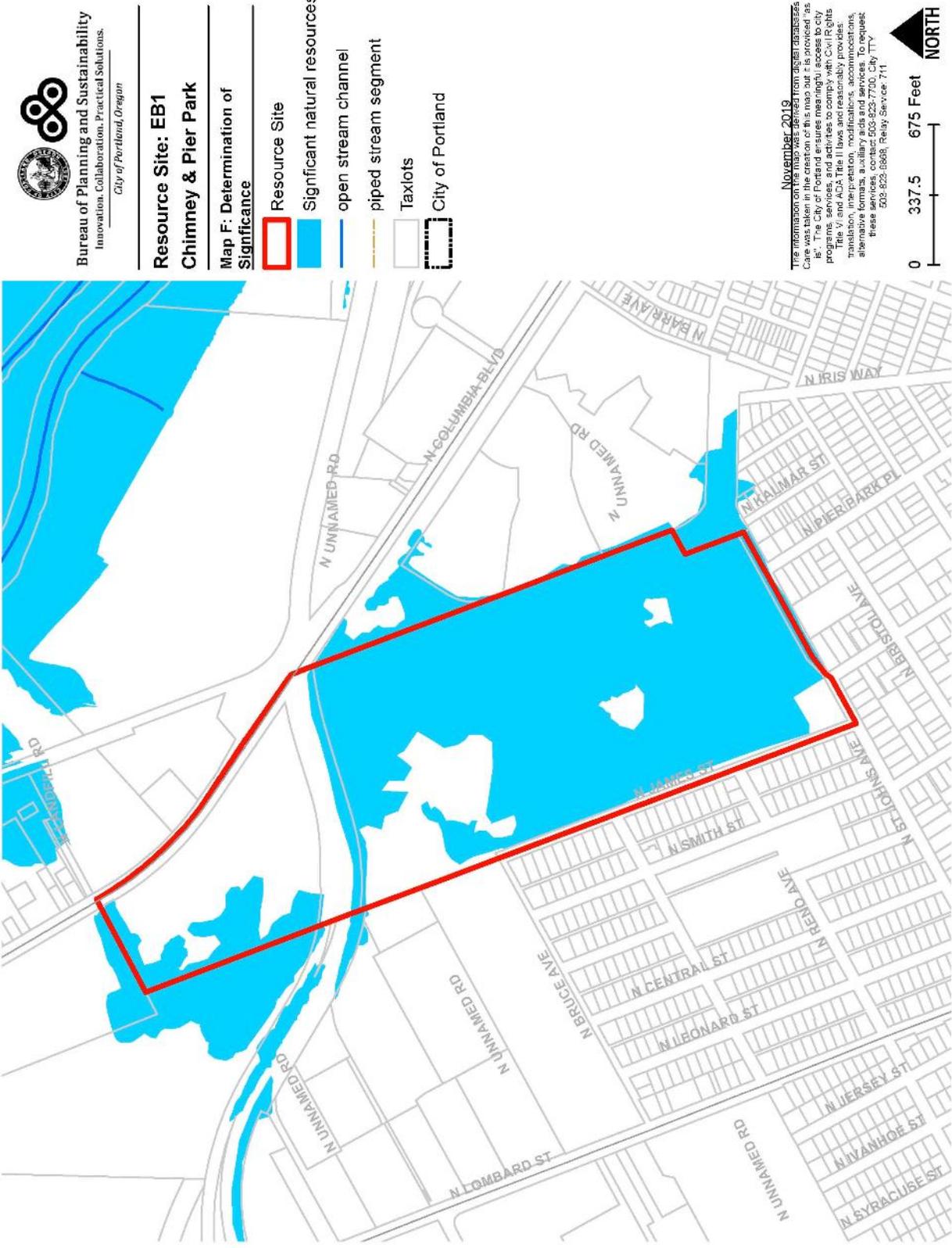
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Resource Site: EB1
Chimney & Pier Park
Map E: Wildlife Habitat

-  Resource Site
-  High wildlife habitat
-  Medium wildlife habitat
-  Low wildlife habitat
-  Special Habitat Areas
-  open stream channel
-  piped stream segment
-  Taxlots
-  City of Portland

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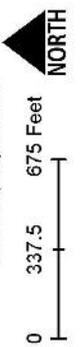




**Resource Site: EB1
Chimney & Pier Park**
Map F: Determination of
Significance

- Resource Site
- Significant natural resources
- open stream channel
- pipied stream segment
- Taxlots
- City of Portland

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Resource Site No.: EB2 Resource Site Name: Willamette Cove Bluff
Previous Plan: East Butte, Terraces & Wetlands Plan Previous Resource Site No.: 140



Natural Resources Inventory

Table 4: Quantity of Natural Resource Features in Resource Site EB2	
	Study Area
Streams (miles)	0.0
Wetlands (acres)	0.0
Flood Area (acres)*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Vegetated Areas >= ½ acre (acres)	
Forest (acres)	6.0
Woodland (acres)	0.0
Shrubland (acres)	0.1
Herbaceous (acres)	0.2
Steep Slopes (acres) +	8.7
Impervious Surfaces (acres)	4.1
* The flood area includes the FEMA 100-year flood plain plus the adjusted 1996 flood inundation area.	
+ Slopes are derived from LiDAR. Steep slopes are area with a slope greater than 25%.	

The Olmsted report of 1903 (see Chapter 3) noted that the bluff presented an "opportunity for a picturesque pleasure drive and walks for the especial benefit of the residents of the large portion of the city east of the river." Though the Olmsteds could not have foreseen the traffic congestion that today can take some of the "pleasure" out of the drive, the Willamette Boulevard was designed to serve as a scenic drive in keeping with the Olmsted vision. More recently, the Olmsted proposals have resurfaced as part of the Metropolitan Greenspaces Master Plan which identifies the Overlook Bluff area as the location of a "proposed trail of regional significance."

Table B: Quality of Natural Resource Functions in Resource Site EB2				
Resource Site (acres) = 13.46341				
	High	Medium	Low	Total
Riparian Corridors*				
acres	0.0	0.0	4.0	4.0
percent total inventory site area	0.0%	0.0%	29.9%	29.9%
Wildlife Habitat*				
acres	0.0	0.0	6.0	6.0
percent total inventory site area	0.0%	0.0%	44.5%	44.5%
Special Habitat Areas**				
acres				6.9
percent total inventory site area				51.0%
Combined Total⁺				
acres	6.9	0.0	0.7	7.6
percent total inventory site area	51.0%	0.0%	5.1%	56.1%
<p>* High-ranked riparian resources, Special Habitat Areas, and wildlife habitat include open water. ** Special Habitat Areas rank high for wildlife habitat. +Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.</p>				

Determination of Significance

Natural resource features mapped in the resource site that provide functions identified in the Natural Resources Inventory are determined to be significant (Map F). Within resource site EB2 the following significant features and functions are present:

Significant Natural Resource Features: forest vegetation within 300 feet of waterbodies; forest patches and associated and contiguous woodland patches two acres in size or larger; steep slopes; and Special Habitat Areas.

Significant Riparian Corridor Functions: microclimate and shade; stream flow moderation and water storage; bank function and sediment, pollution and nutrient control; large wood and channel dynamics; organic inputs, food web and nutrient cycling; and riparian wildlife movement corridor.

Significant Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; and reduction of noise, light and vibration.

Resource Site-specific ESEE

The General ESEE analysis, Volume 2, describes the conflicting uses and provides an overarching analysis of the economic, social, environmental and energy consequences of prohibiting, limiting or allowing the conflicting uses within areas of significant natural resources. In addition to the General ESEE analysis, the following resource site-specific consequences are considered.

Conflicting Uses

The common impact of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; add impervious surface; modifying streams and floodplains; generating pollution; landscaping with non-native or invasive vegetation; building fences or other wildlife barriers; and other impacts such as noise, light, litter and pets.

Within the resource site residential uses are allowed outright or conditionally in the R5 base zones. Open spaces are allowed in the OS base zone. Development of new uses may involve vegetation clearing, grading, filing, and soil compaction, as well as the addition of impervious surfaces and landscaping with non-native plants, with associated impacts on the natural resources. Basic utilities and other infrastructure are allowed in all base zones. New or upgraded utility corridors may be cleared of vegetation and may fragment wildlife habitat.

ESEE Analysis

The analysis of economic, social, environmental and energy consequences provided in Volume 2 is confirmed for resource site EB2, with the following additional information that clarifies the analysis.

Steep slopes are susceptible to erosion and landslides. Development should be clustered away from steep slopes and trees and vegetation should be maintained to reduce the landslide risks. New or expanded development on steep slopes should be *limited*.

ESEE Decisions

Based on the ESEE general recommendations (Volume 2) and resource site-specific ESEE, the ESEE decisions for Resources Site EB2 are:

1. *Limit* conflicting uses within areas of forest and woodland vegetation on steep and non-steep slopes and within Special Habitat Area W3.F, Willamette Bluff Complex.
2. *Allow* conflicting uses within all other areas containing significant natural resources.

Table X: ESEE Decision for Resource Site EB2	
ESEE Decisions	Acres
Strictly Limit	0.0
Limit	7.6
Allow	5.9

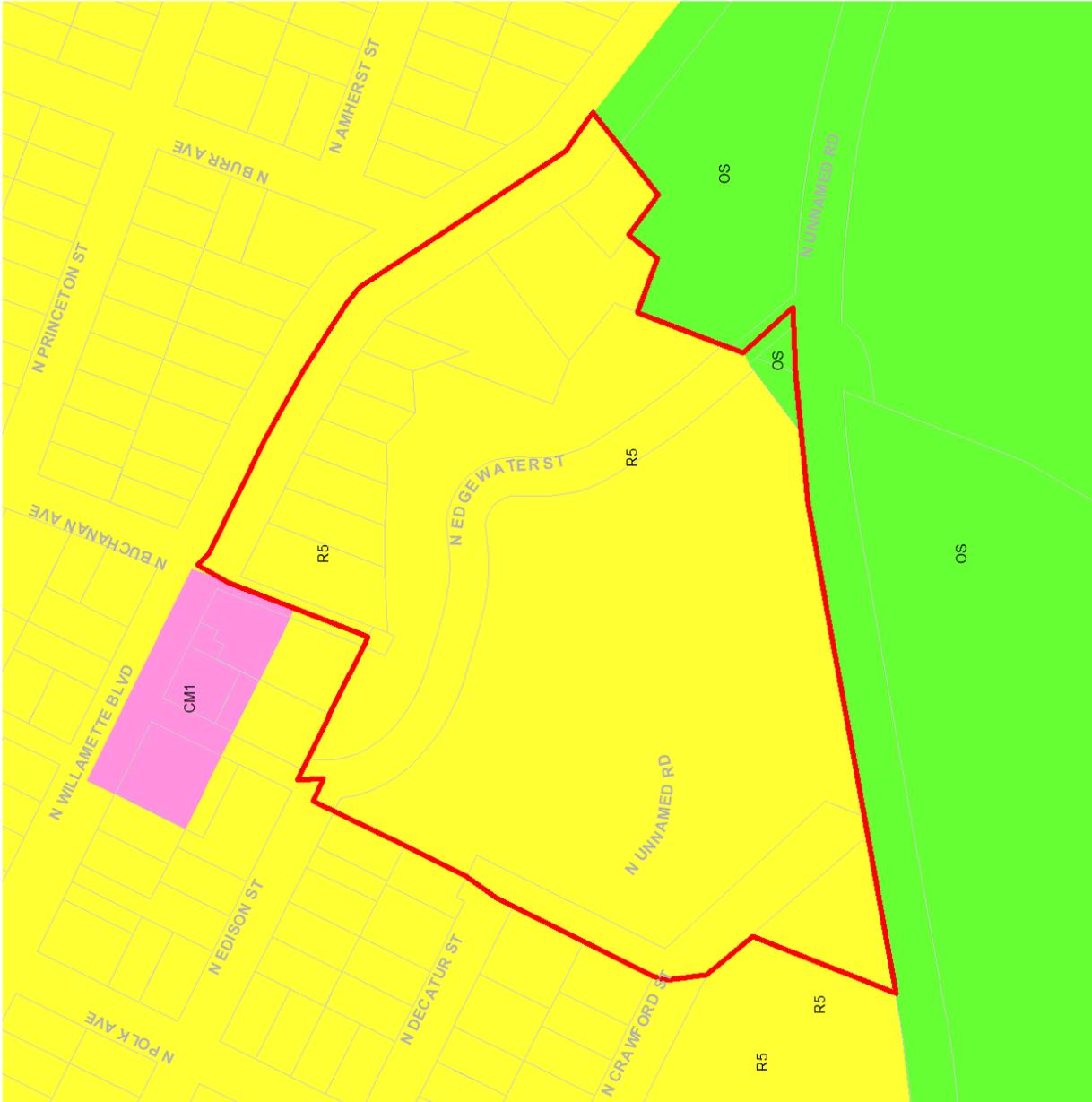


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**Resource Site: EB2
Willamette Cove Bluff**

Map A: Base Zones

-  Resource Site
-  Streams
-  Taxlots
-  City of Portland



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**Resource Site: EB2
Willamette Cove Bluff**

Map B: Water Related Features

-  Resource Site
-  Open stream channel
-  Piped stream segment
-  Wetlands
-  Floodplain
-  Taxlots
-  City of Portland



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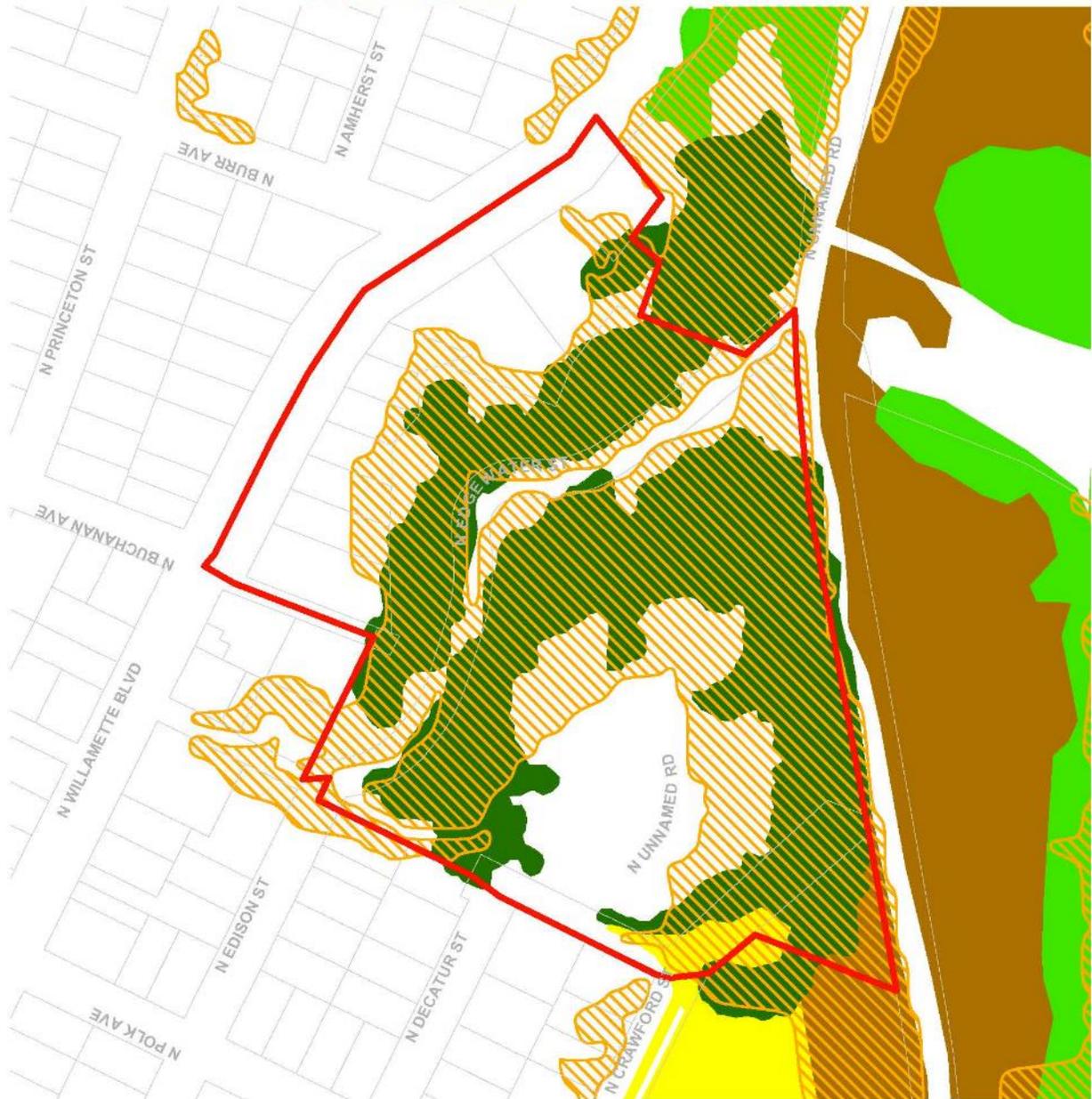




**Resource Site: EB2
Willamette Cove Bluff**

Map C: Land Features

-  Resource Site
-  Steep Slopes (>25%)
-  Forest
-  Woodland
-  Shrubland
-  Herbaceous
-  Taxlots
-  City of Portland



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Resource Site: EB2
Willamette Cove Bluff
Map D: Riparian Corridors

-  Resource Site
-  High riparian function
-  Medium riparian function
-  Low riparian function
-  open stream channel
-  piped stream segment
-  Taxlots
-  City of Portland



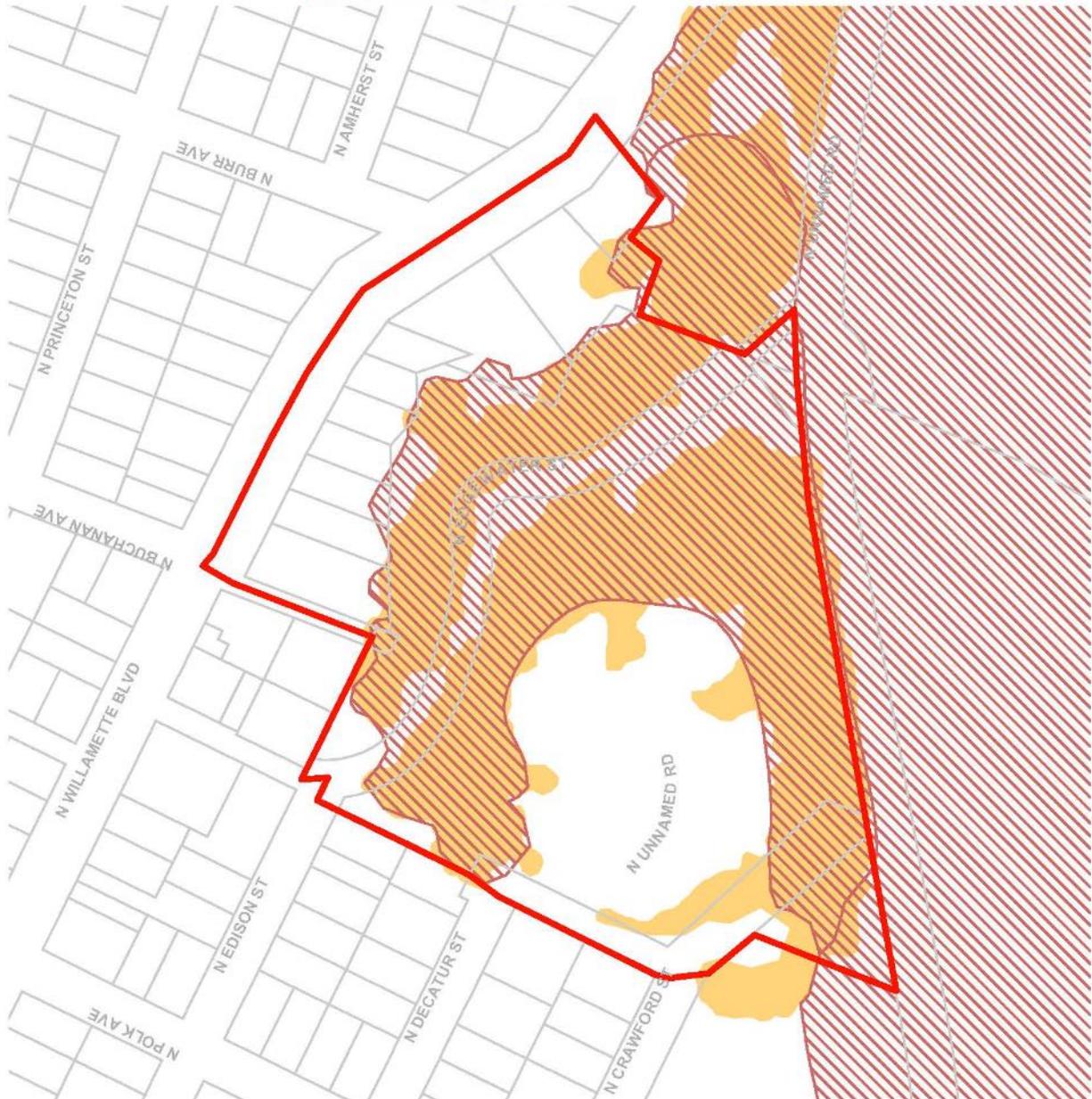
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Resource Site: EB2
Willamette Cove Bluff
Map E: Wildlife Habitat

- Resource Site
- High wildlife habitat
- Medium wildlife habitat
- Low wildlife habitat
- Special Habitat Areas
- open stream channel
- piped stream segment
- Taxlots
- City of Portland



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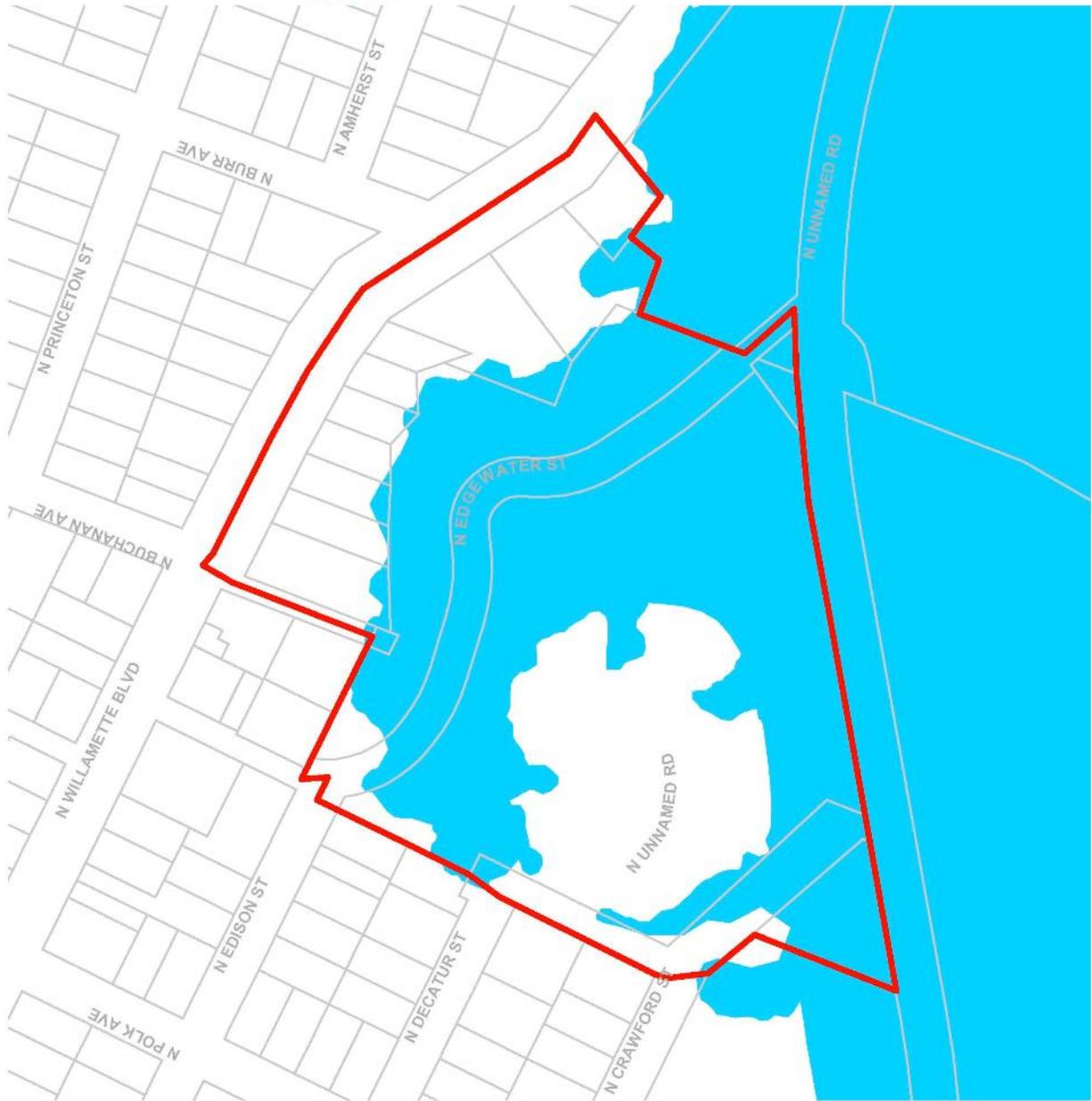




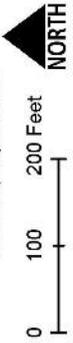
**Resource Site: EB2
Willamette Cove Bluff**

**Map F: Determination of
Significance**

-  Resource Site
-  Significant natural resources
-  open stream channel
-  piped stream segment
-  Taxlots
-  City of Portland



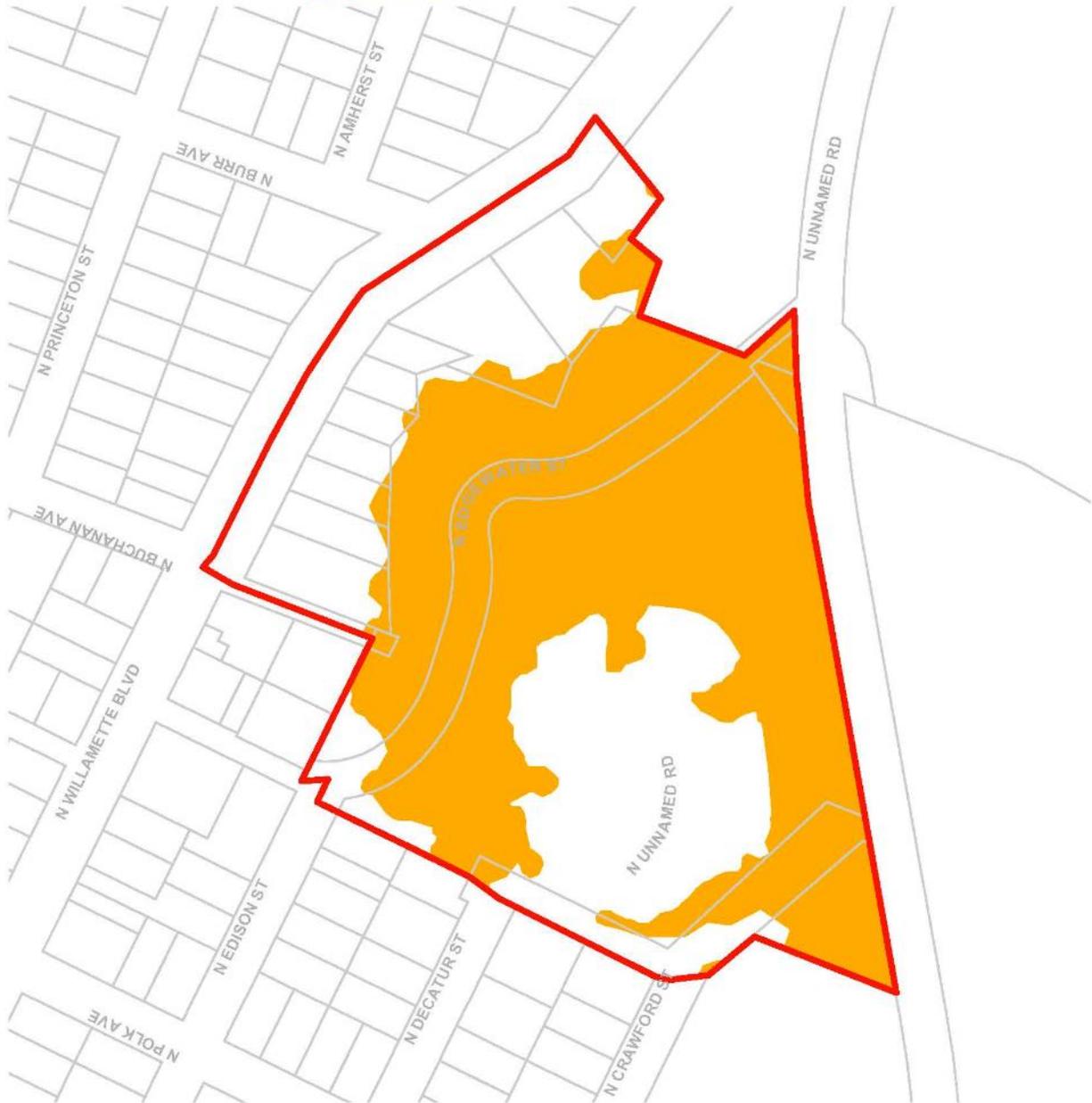
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Resource Site: EB2
Willamette Cove Bluff
Map G: ESEE Decision

-  Resource Site
-  Limit conflicting uses
-  Strictly limit conflicting uses
-  open stream channel
-  piped stream segment
-  Taxlots
-  City of Portland



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Resource Site No.: EB3/140 Resource Site Name: Railroad Gulch

Existing Plan: East Butte, Terraces & Wetlands Plan

Resource Site 140 (Railroad Gulch) is included in the East Buttes, Terraces & Wetlands Conservation Plan and is not being updated by this Environmental Overlay Zone Map Correction Project. The inventory, ESEE Analysis and ESEE Decisions for Resource Site 140 (Railroad Gulch) are found in the East Buttes, Terraces & Wetlands Conservation Plan until updated by a future project.

Resource Site No.: EB4 Resource Site Name: University of Portland Bluff
Previous Plan: East Butte, Terraces & Wetlands Plan Previous Resource Site No.: 140



Natural Resources Inventory

Table X: Quantity of Natural Resource Features in Resource Site EB4	
	Study Area
Streams (miles)	0.0
Wetlands (acres)	0.0
Flood Area (acres)*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Vegetated Areas >= ½ acre (acres)	
Forest (acres)	1.0
Woodland (acres)	3.9
Shrubland (acres)	2.5
Herbaceous (acres)	0.1
Steep Slopes (acres) +	8.9
Impervious Surfaces (acres)	4.4
* The flood area includes the FEMA 100-year flood plain plus the adjusted 1996 flood inundation area.	
+ Slopes are derived from LiDAR. Steep slopes are area with a slope greater than 25%.	

Table B: Quality of Natural Resource Functions in Resource Site EB4				
Resource Site (acres) = 13.95445				
	High	Medium	Low	Total
Riparian Corridors*				
acres	0.0	0.0	0.0	0.0
percent total inventory site area	0.0%	0.0%	0.0%	0.0%
Wildlife Habitat*				
acres	0.0	0.0	1.0	1.0
percent total inventory site area	0.0%	0.0%	7.1%	7.1%
Special Habitat Areas**				
acres				8.1
percent total inventory site area				57.8%
Combined Total⁺				
acres	8.1	0.0	0.0	8.1
percent total inventory site area	57.8%	0.0%	0.1%	58.0%
<p>* High-ranked riparian resources, Special Habitat Areas, and wildlife habitat include open water. ** Special Habitat Areas rank high for wildlife habitat. +Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.</p>				

Determination of Significance

Natural resource features mapped in the resource site that provide functions identified in the Natural Resources Inventory are determined to be significant (Map F). Within resource site EB4 the following significant features and functions are present:

Significant Natural Resource Features: forest patches and associated and contiguous woodland patches two acres in size or larger; steep slopes; and Special Habitat Areas.

Significant Riparian Corridor Functions: none

Significant Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; and reduction of noise, light and vibration.

Resource Site-specific ESEE

The General ESEE analysis, Volume 2, describes the conflicting uses and provides an overarching analysis of the economic, social, environmental and energy consequences of prohibiting, limiting or allowing the conflicting uses within areas of significant natural resources. In addition to the General ESEE analysis, the following resource site-specific consequences are considered.

Conflicting Uses

The common impact of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; add impervious surface; modifying streams and floodplains; generating pollution; landscaping with non-native or invasive vegetation; building fences or other wildlife barriers; and other impacts such as noise, light, litter and pets.

Within the resource site residential uses are allowed outright or conditionally in the R5 base zones. Commercial uses are allowed in the C11 base zones. Open spaces are allowed in the OS base zone. Development of new uses may involve vegetation clearing, grading, filing, and soil compaction, as well as the addition of impervious surfaces and landscaping with non-native plants, with associated impacts on the natural resources. Basic utilities and other infrastructure are allowed in all base zones. New or upgraded utility corridors may be cleared of vegetation and may fragment wildlife habitat.

ESEE Analysis

The analysis of economic, social, environmental and energy consequences provided in Volume 2 is confirmed for resource site EB4, with the following additional information that clarifies the analysis.

Steep slopes are susceptible to erosion and landslides. Development should be clustered away from steep slopes and trees and vegetation should be maintained to reduce the landslide risks. New or expanded development on steep slopes should be *limited*.

The Willamette Bluff Complex is susceptible to fire, particularly due to the steep slopes and invasive vegetation. Additional removal of native vegetation should be *limited*, while removal of non-native vegetation with replacement with native species, particularly native trees, should be encouraged.

ESEE Decisions

Based on the ESEE general recommendations (Volume 2) and resource site-specific ESEE, the ESEE decisions for Resources Site EB4 are:

1. *Limit* conflicting uses within areas of forest, woodland, shrubland and herbaceous vegetation located on steep and non-steep slopes and within Special Habitat Areas W3.E and W3.F, Willamette Bluff Complex.
2. *Allow* conflicting uses within all other areas containing significant natural resources.

Table X: ESEE Decision for Resource Site EB4	
ESEE Decisions	Acres
Strictly Limit	0.0
Limit	8.3
Allow	5.7

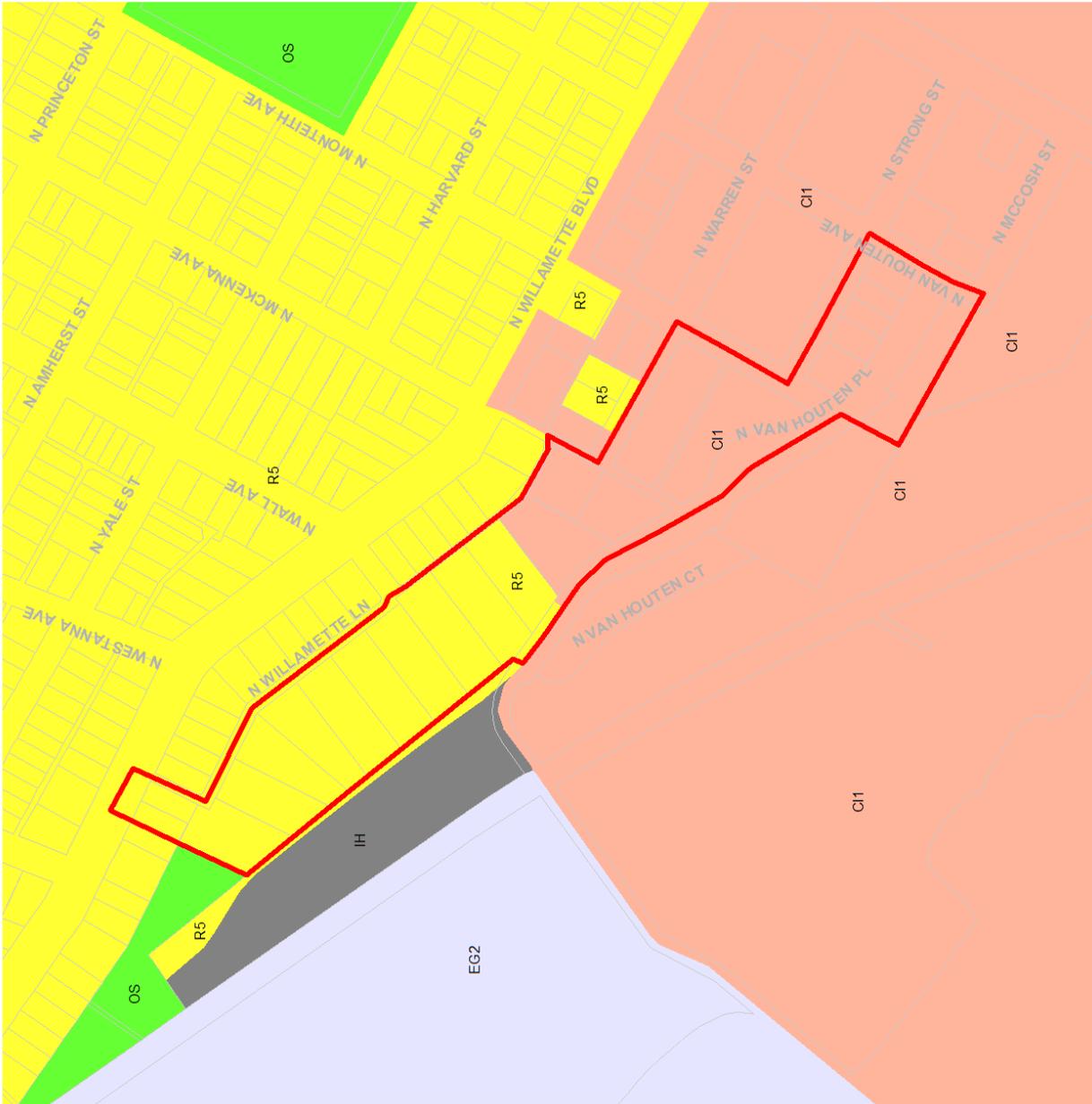


**Resource Site: EB4
North UP Bluff**

Map A: Base Zones

- Resource Site
- Streams
- Taxlots
- City of Portland

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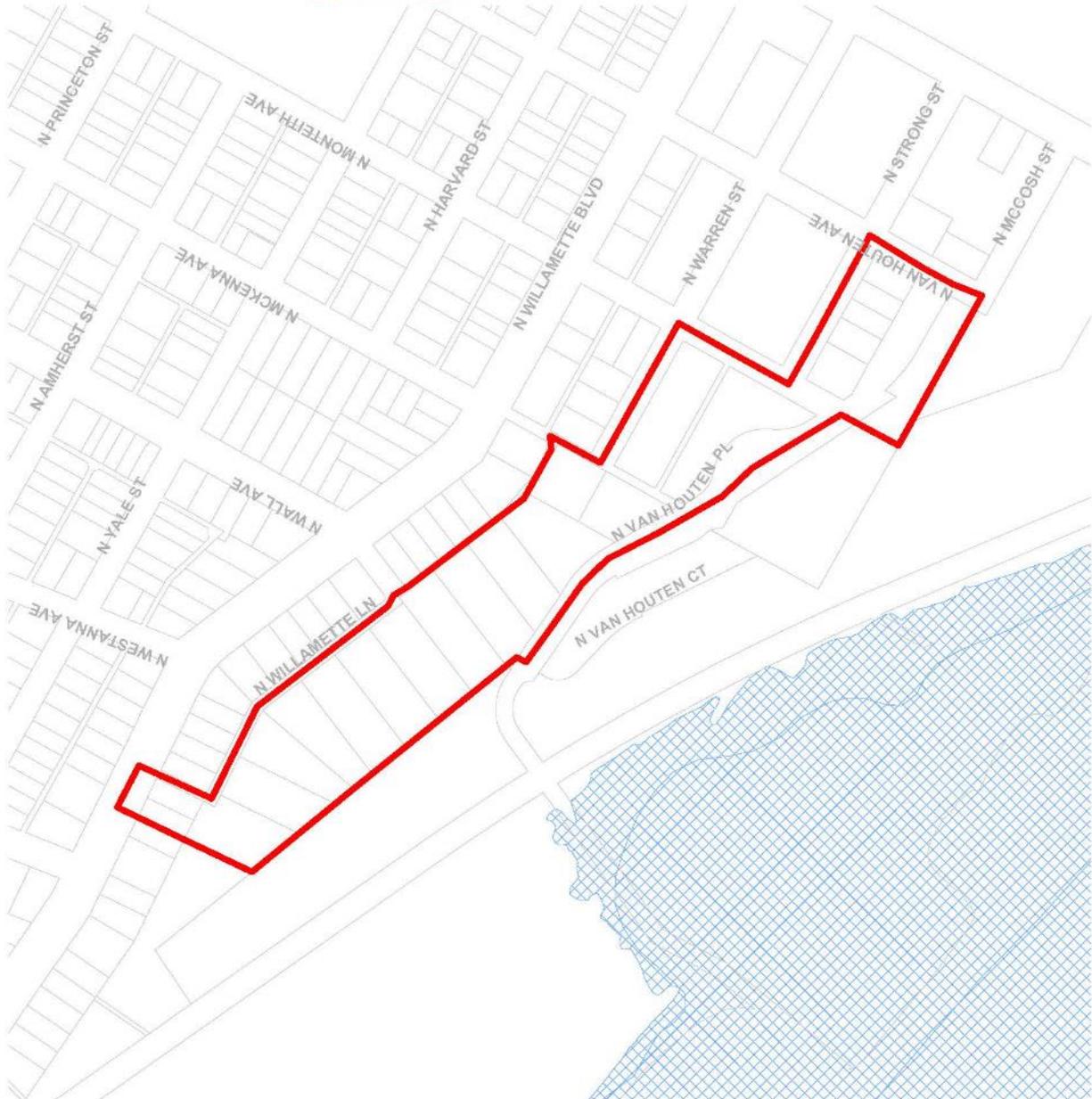
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**Resource Site: EB4
North UP Bluff**

Map B: Water Related Features

-  Resource Site
-  Open stream channel
-  Piped stream segment
-  Wetlands
-  Floodplain
-  Taxlots
-  City of Portland

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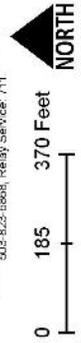


**Resource Site: EB4
North UP Bluff**

**Map F: Determination of
Significance**

- Resource Site
- Significant natural resources
- open stream channel
- piped stream segment
- Taxlots
- City of Portland

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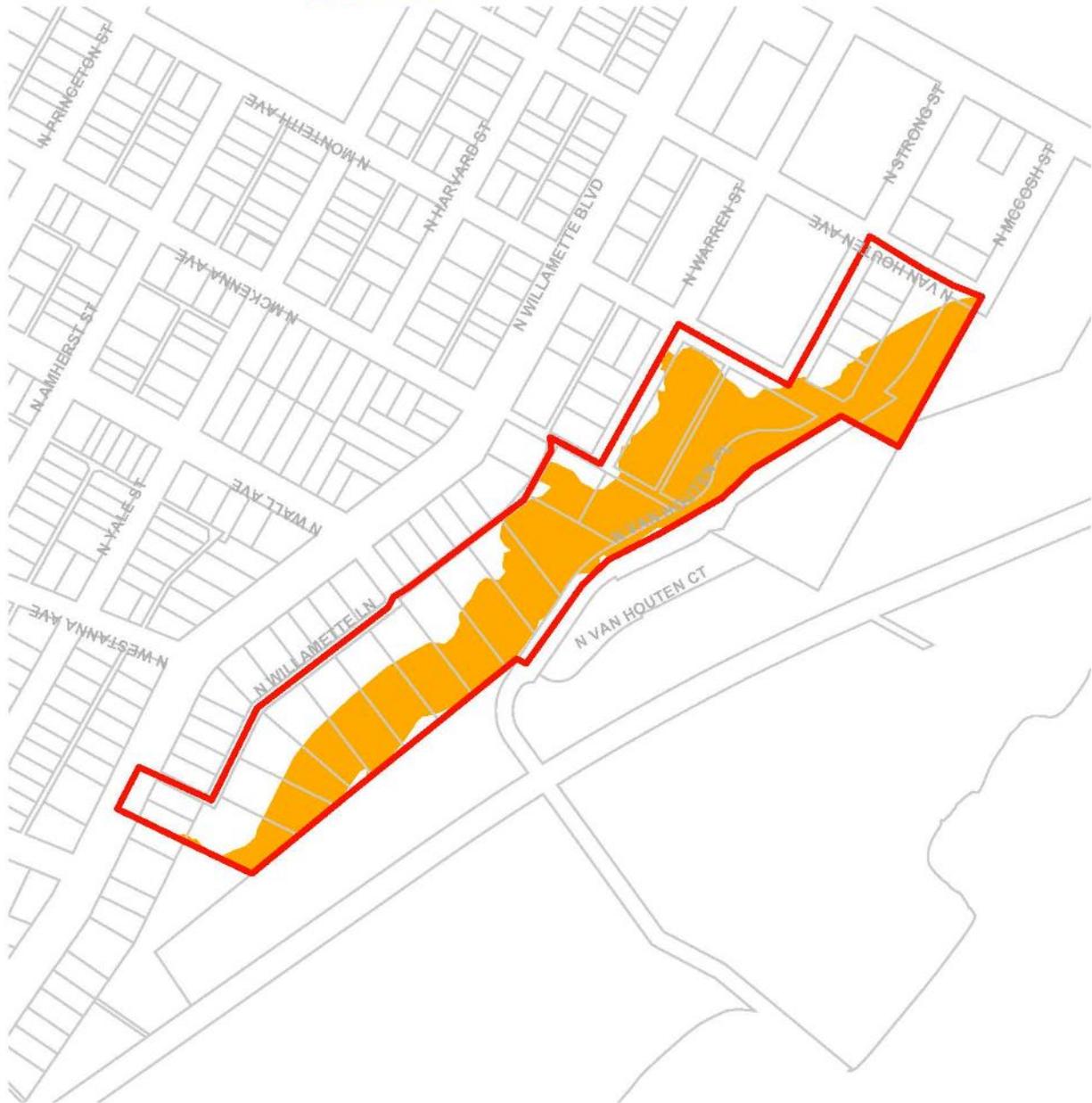


**Resource Site: EB4
North UP Bluff**

Map G: ESEE Decision

- Resource Site
- Limit conflicting uses
- Strictly limit conflicting uses
- open stream channel
- piped stream segment
- Taxlots
- City of Portland

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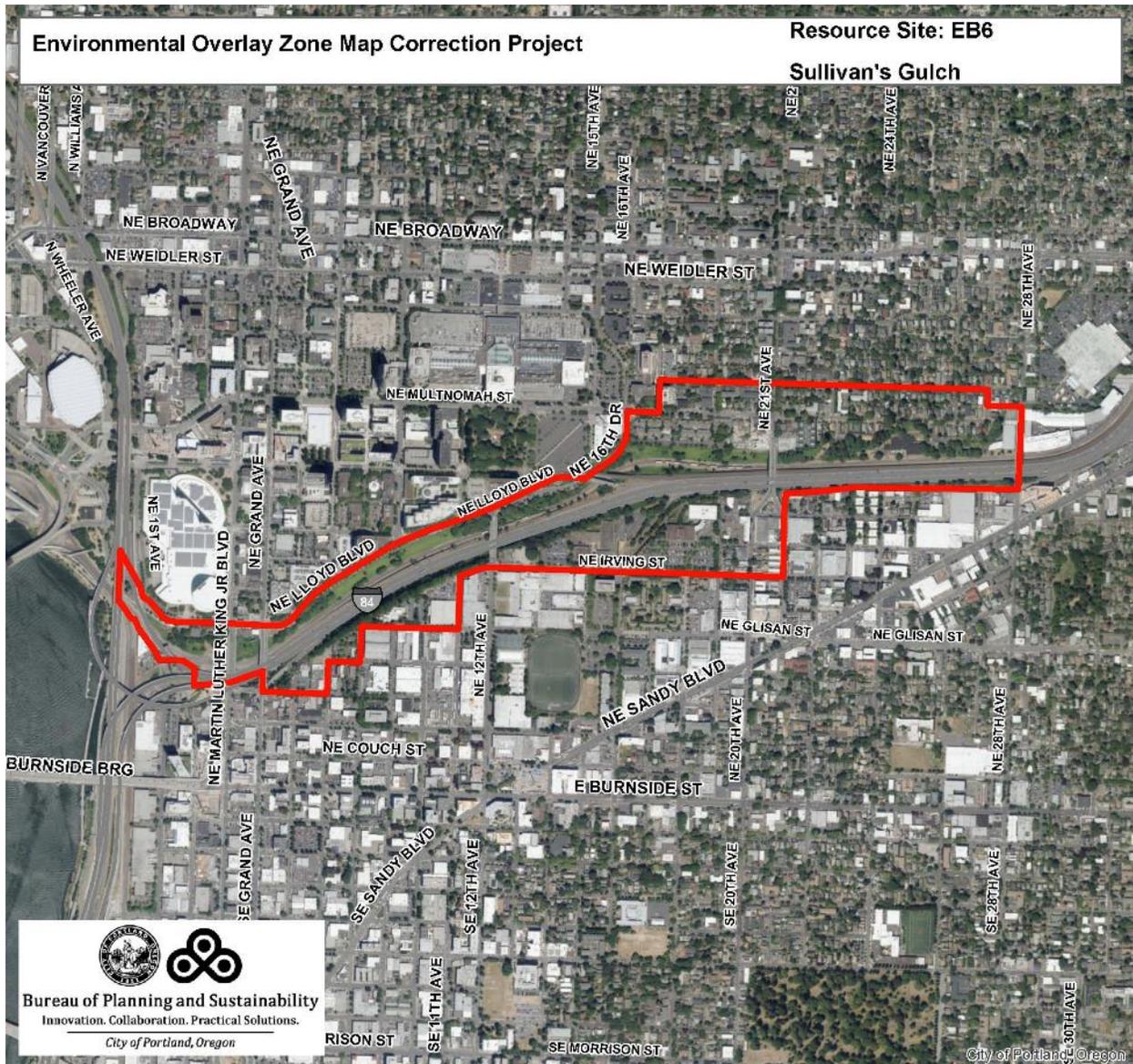
Resource Site No.: EB5/140 Resource Site Name: Overlook Bluff

Existing Plan: East Butte, Terraces & Wetlands Plan

Resource Site 140 (Overlook Bluff) is included in the East Buttes, Terraces & Wetlands Conservation Plan and is not being updated by this Environmental Overlay Zone Map Correction Project. The inventory, ESEE Analysis and ESEE Decisions for Resource Site 140 (Overlook Bluff) are found in the East Buttes, Terraces & Wetlands Conservation Plan until updated by a future project.

Resource Site No.: EB6 Resource Site Name: Sullivan's Gulch

Previous Plan: East Butte, Terraces & Wetlands Plan Previous Resource Site No.: 139



Natural Resources Inventory

Table X: Quantity of Natural Resource Features in Resource Site EB6	
	Study Area
Streams (miles)	0.0
Wetlands (acres)	0.0
Flood Area (acres)*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Vegetated Areas >= ½ acre (acres)	
Forest (acres)	2.7
Woodland (acres)	20.2
Shrubland (acres)	7.6
Herbaceous (acres)	0.0
Steep Slopes (acres) +	45.1
Impervious Surfaces (acres)	103.9
* The flood area includes the FEMA 100-year flood plain plus the adjusted 1996 flood inundation area.	
+ Slopes are derived from LiDAR. Steep slopes are area with a slope greater than 25%.	

Along I-84 is a steeply-sloped, largely vegetated corridor, known as Sullivan’s Gulch. Sullivan’s Gulch begins outside of the inventory site, near NE 21st Avenue, and continues west to the Willamette River.

The history of the gulch suggests that it had predominantly woody shrub growth at one time and drained the area south of Alameda Ridge and north of the present location of Glisan Street. In Portland's early years, the Willamette River would occasionally flood the gulch as far up as NE 16th Avenue. The Union Pacific Railroad line was built along the bottom of the gulch in the late 1800s, and the lower end of the gulch was filled to prevent flooding. The railroad had a great impact on the growth of Portland's eastern metropolitan region, and led to the construction of the Banfield freeway which became the western terminus of Interstate 5. Following the Great Depression, a "Hooverville" settlement emerged in the gulch, with numerous shack homes bordering the railroad between NE Grand Avenue and NE 21st Avenue. The gulch was later used as a golf course, with a clubhouse located at NE 15th Avenue. More recently, the MAX light rail line was added to the corridor and improvements were made to the Banfield Freeway. Today, an eight-lane freeway, a freight rail line and service road, and a light rail passenger line all share the Sullivan's corridor.

Between the Lloyd Blvd/I-84 on-ramp and NE 12th Avenue, vegetation is comprised of black cottonwoods to the east, indicating the presence of surface or subsurface water, and big leaf maple to the west. The understory is a mix of hawthorn, English holly, Pacific dogwood, ivy, clematis, Himalayan blackberry and some Scott’s broom. Between NE 12th Avenue and NE Grand Avenue the vegetation includes big leaf maple, cherry, one Oregon white oak, hawthorn, butterfly bush, English holly and English ivy. The middle of this stretch of the gulch is void of large trees and dominated by Himalayan blackberry. Between NE Grand Ave and the river, the vegetation includes some large trees, including

one Oregon white oak, and an understory of Himalayan blackberry or turf grass. There is standing water under the I-84/I-5 on-ramp.

During a spring 2011 site visit, birds observed using Sullivan’s Gulch included: song sparrow, Western scrub jay, American robin, bushtit, crow, Anna’s hummingbird, white-crowned sparrow and yellow-rumped warbler. In the standing water under the I-84/I-5 onramp, two mallards were observed.

Steep slopes in Portland are relatively prone to wildfire and landslides. Although Sullivan’s Gulch has not burned recently, north of the inventory site is Waud Bluff which experienced fires in 2001 and 2003. The primary sources of fuel were non-native plant species such Himalayan blackberry. Native species, including Oregon oak, Douglas fir, Oregon grape, snowberry, *Gilia capitata* (globe gilia) and *Penstemon ovatus* (broad leaved penstemon), are more fire-resistant plants.

Table B: Quality of Natural Resource Functions in Resource Site EB6				
Resource Site (acres) = 134.973482				
	High	Medium	Low	Total
Riparian Corridors*				
acres	0.0	0.0	0.0	0.0
percent total inventory site area	0.0%	0.0%	0.0%	0.0%
Wildlife Habitat*				
acres	0.0	0.0	0.0	0.0
percent total inventory site area	0.0%	0.0%	0.0%	0.0%
Special Habitat Areas**				
acres				36.5
percent total inventory site area				27.0%
Combined Total⁺				
acres	36.5	0.0	0.0	36.5
percent total inventory site area	27.0%	0.0%	0.0%	27.0%
* High-ranked riparian resources, Special Habitat Areas, and wildlife habitat include open water. ** Special Habitat Areas rank high for wildlife habitat. +Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.				

Determination of Significance

Natural resource features mapped in the resource site that provide functions identified in the Natural Resources Inventory are determined to be significant (Map F). Within resource site EB6 the following significant features and functions are present:

Significant Natural Resource Features: forest patches and associated and contiguous woodland patches two acres in size or larger; steep slopes; and Special Habitat Areas.

Significant Riparian Corridor Functions: none

Significant Wildlife Habitat Functions: food and water; resting, denning, nesting and rearing; movement and migration; and reduction of noise, light and vibration.

Resource Site-specific ESEE

The General ESEE analysis, Volume 2, describes the conflicting uses and provides an overarching analysis of the economic, social, environmental and energy consequences of prohibiting, limiting or allowing the conflicting uses within areas of significant natural resources. In addition to the General ESEE analysis, the following resource site-specific consequences are considered.

Conflicting Uses

The common impact of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; add impervious surface; modifying streams and floodplains; generating pollution; landscaping with non-native or invasive vegetation; building fences or other wildlife barriers; and other impacts such as noise, light, litter and pets.

Within the resource site residential uses are allowed outright or conditionally in the R2.5, R2, R1 and RH base zones. Industrial uses area allowed in the IH, IG2 and IG1 base zones. Employment uses area allowed in the EX base zone. Commercial uses are allowed in the CS, CM3 and CM2 base zones. Open space uses are allowed in the OS base zone. Development of new uses may involve vegetation clearing, grading, filing, and soil compaction, as well as the addition of impervious surfaces and landscaping with non-native plants, with associated impacts on the natural resources. Basic utilities and other infrastructure are allowed in all base zones. New or upgraded utility corridors may be cleared of vegetation and may fragment wildlife habitat.

ESEE Analysis

The analysis of economic, social, environmental and energy consequences provided in Volume 2 is confirmed for resource site EB6, with the following additional information that clarifies the analysis.

Steep slopes are susceptible to erosion and landslides. Development should be clustered away from steep slopes and trees and vegetation should be maintained to reduce the landslide risks. New or expanded development on steep slopes should be *limited*.

The Sullivan’s Gulch is susceptible to fire, particularly due to the steep slopes and invasive vegetation. Additional removal of native vegetation should be *limited*, while removal of non-native vegetation with replacement with native species, particularly native trees, should be encouraged.

ESEE Decisions

Based on the ESEE general recommendations (Volume 2) and resource site-specific ESEE, the ESEE decisions for Resources Site EB6 are:

1. *Limit* conflicting uses within Special Habitat Area W20, Sullivan’s Gulch and on forest and woodland vegetation within Special Habitat Area W20 located on steep and non-steep slopes.
2. *Allow* conflicting uses within all other areas containing significant natural resources.

Table X: ESEE Decision for Resource Site EB6	
ESEE Decisions	Acres
Strictly Limit	0.0
Limit	36.5
Allow	98.5



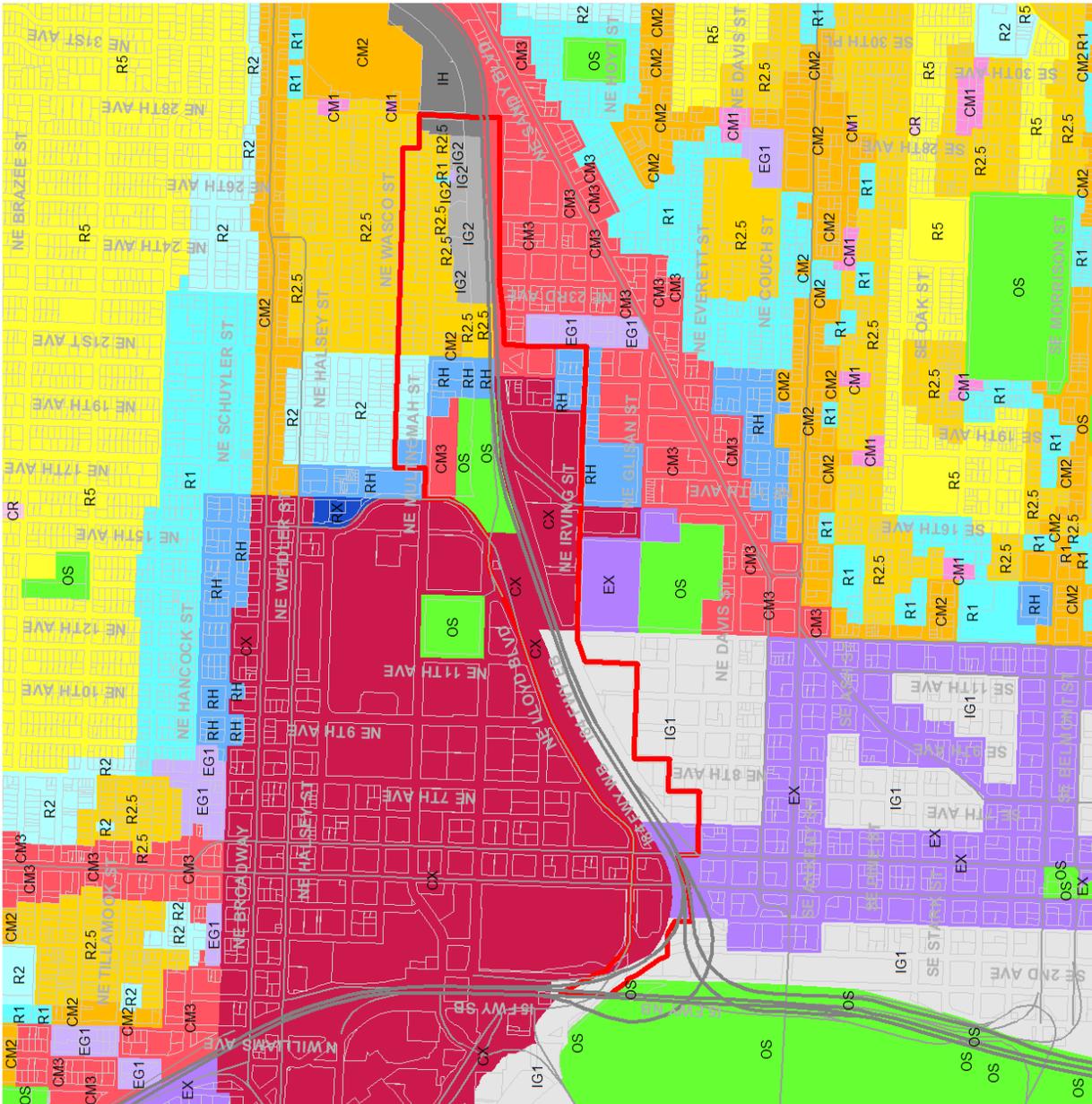
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**Resource Site: EB6
Sullivan's Gulch**

Map A: Base Zones

- Resource Site
- Streams
- Taxlots
- City of Portland

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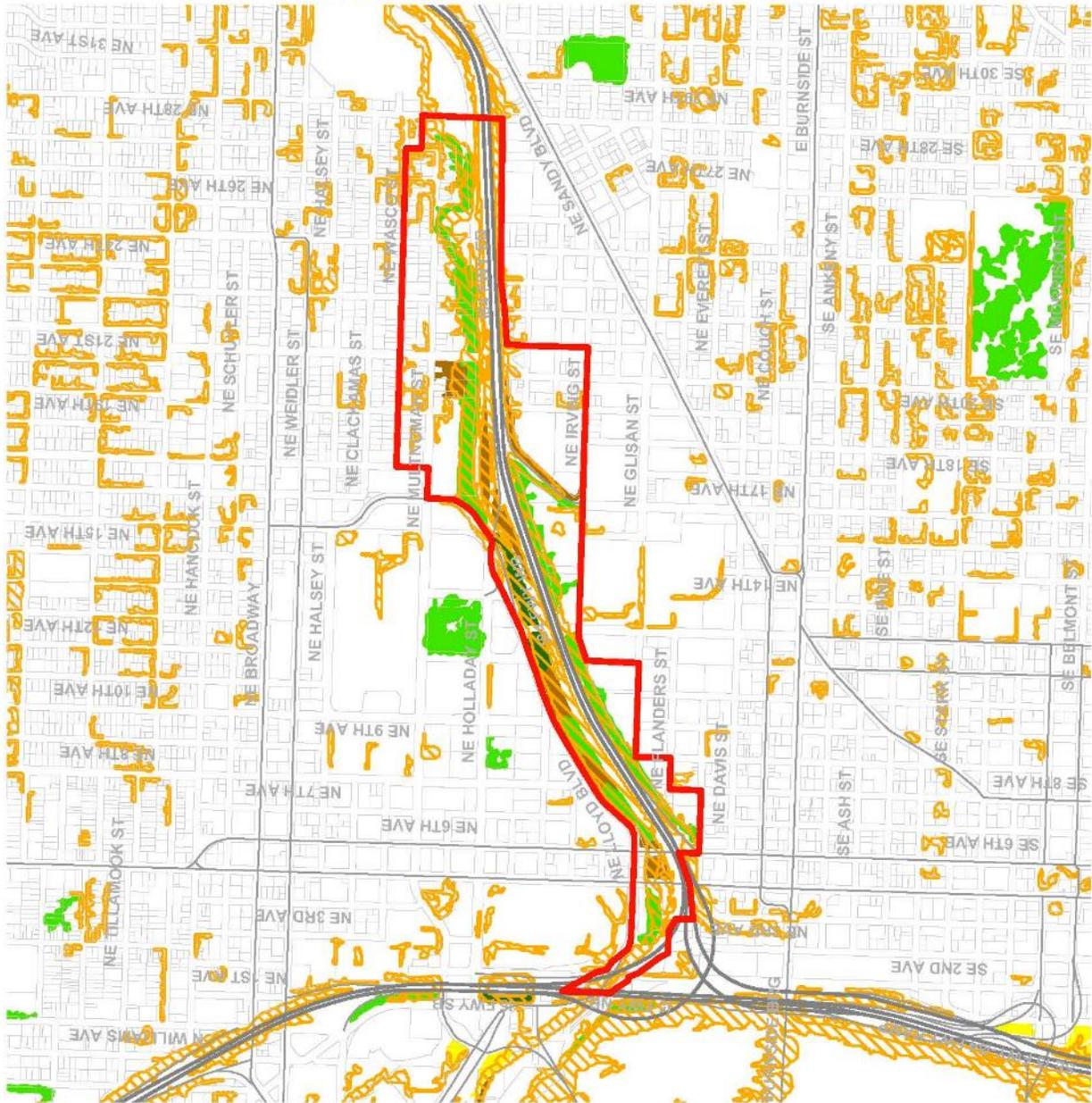




**Resource Site: EB6
Sullivan's Gulch**

Map C: Land Features

-  Resource Site
-  Steep Slopes (>25%)
-  Forest
-  Woodland
-  Shrubland
-  Herbaceous
-  Taxlots
-  City of Portland



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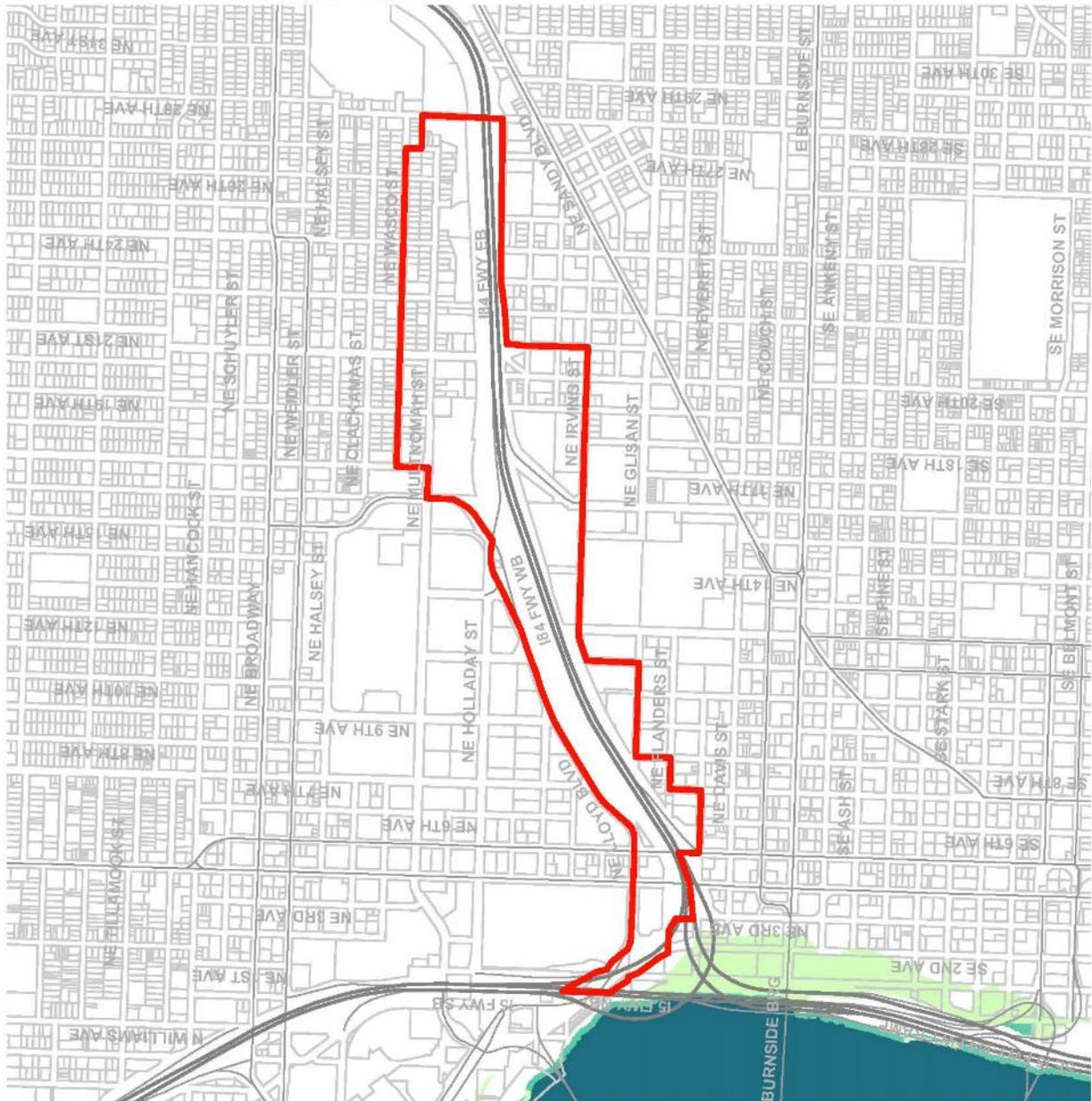




**Resource Site: EB6
Sullivan's Gulch**

Map D: Riparian Corridors

- Resource Site
- High riparian function
- Medium riparian function
- Low riparian function
- open stream channel
- piped stream segment
- Taxlots
- City of Portland



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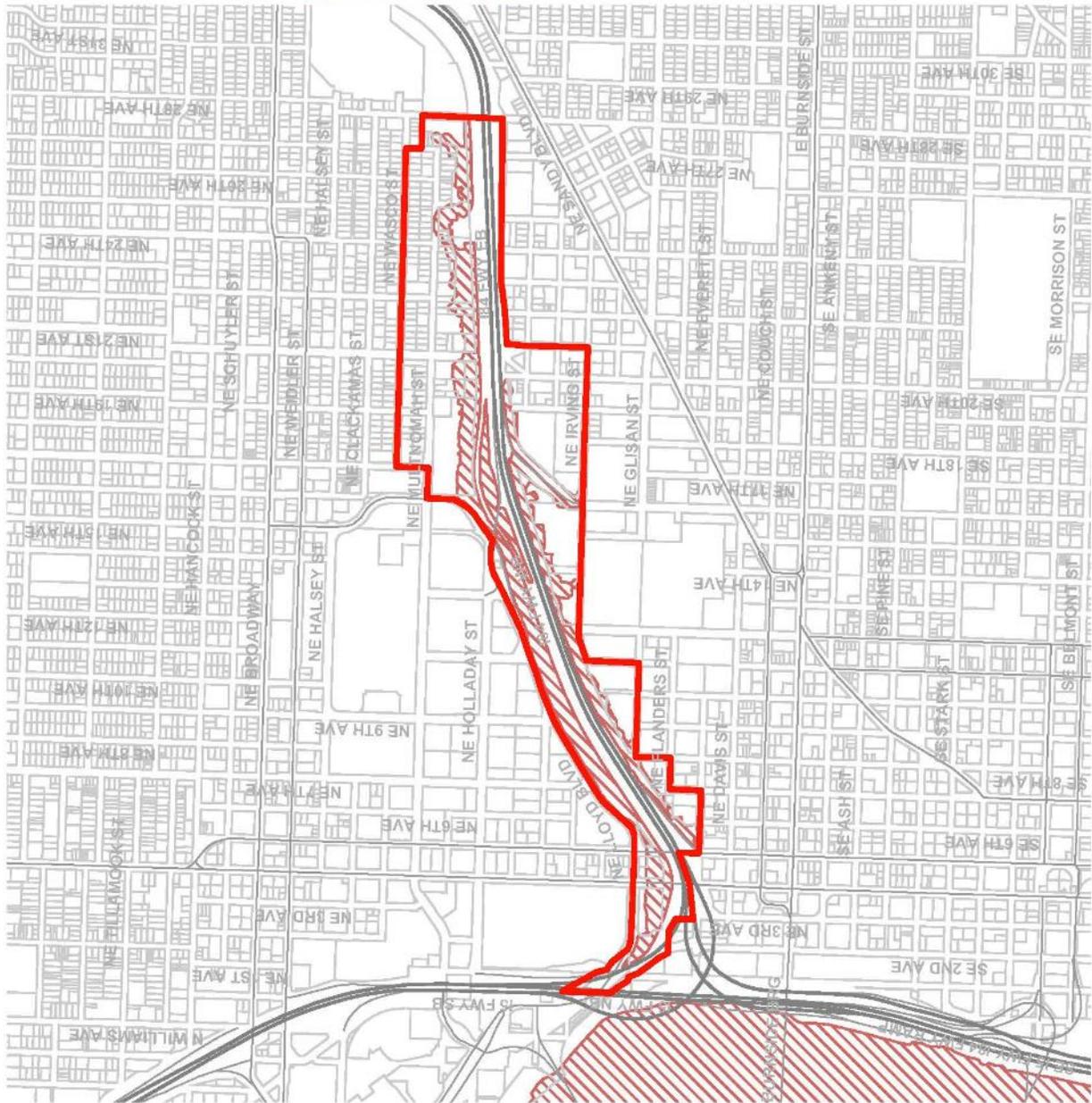




**Resource Site: EB6
Sullivan's Gulch**

Map E: Wildlife Habitat

- Resource Site
- High wildlife habitat
- Medium wildlife habitat
- Low wildlife habitat
- Special Habitat Areas
- open stream channel
- piped stream segment
- Taxlots
- City of Portland

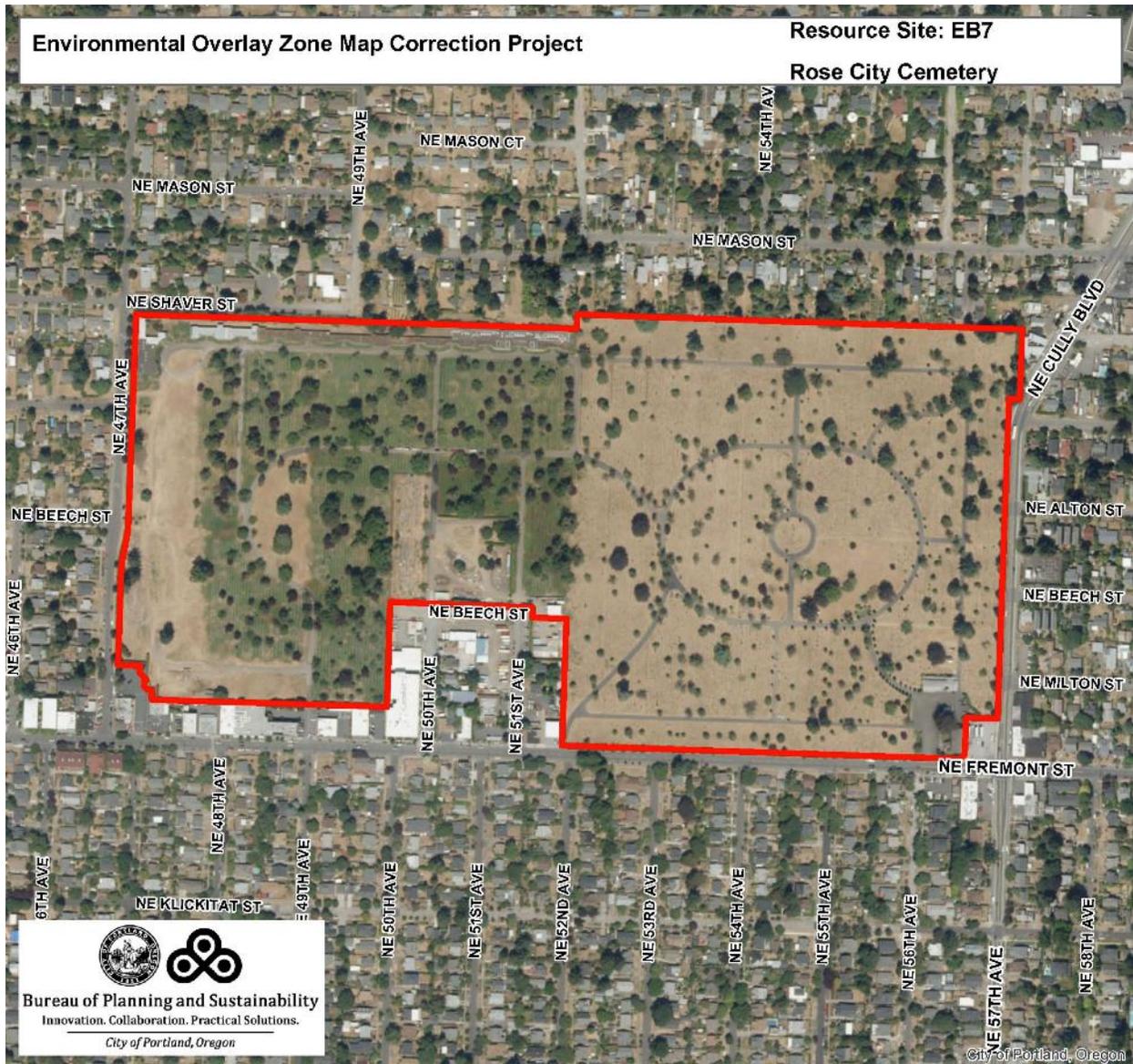


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Resource Site No.: EB7 Resource Site Name: Rose City Cemetery

Previous Plan: East Butte, Terraces & Wetlands Plan Previous Resource Site No.: 138



Natural Resources Inventory

There are no natural resource features mapped within resource site EB7.

Determination of Significance

There are no significant natural resources mapped with in resource site EB7.

Resource Site No.: EB8 Resource Site Name: Rose City Golf Course
Previous Plan: East Butte, Terraces & Wetlands Plan Previous Resource Site No.: 137



Natural Resources Inventory

Table X: Quantity of Natural Resource Features in Resource Site EB8	
	Study Area
Streams (miles)	0.0
Wetlands (acres)	0.0
Flood Area (acres)*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Vegetated Areas >= ½ acre (acres)	
Forest (acres)	8.2
Woodland (acres)	13.2
Shrubland (acres)	0.0
Herbaceous (acres)	0.0
Steep Slopes (acres) +	22.9
Impervious Surfaces (acres)	18.1
* The flood area includes the FEMA 100-year flood plain plus the adjusted 1996 flood inundation area.	
+ Slopes are derived from LiDAR. Steep slopes are area with a slope greater than 25%.	

This site is located in northeast Portland, between NE 62nd and NE 80th Avenues. The golf course is situated in a natural depression that extends from the base of Rocky Butte toward the Willamette River. Geographical evidence suggests that this U-shaped depression is a Columbia River outwash channel. Along the northern boundary of the channel is a forested bluff that rises toward the Alameda Ridge area. The golf course is bordered by residential areas on three sides, with Rose City Park at its western end. Madison High School is located at the northeastern corner of the site.

The site is developed primarily for recreational use, with manicured fairways, trails and paved roads. Three wetlands (ponds) are present: two are located at the northeastern end of the site near Madison High School, the other is on the southeastern side of the site, near the third hole.

The resource site is 150 acres in area. The golf course encompasses about 80 percent of this area, with fairways, trails and paved paths, and a club house. The city's Scenic Resource Inventory identifies a scenic viewpoint along the top of the bluff at the northern boundary of the site.

The site's vegetation is cultivated extensively for recreational use, although some non-cultivated areas are present on the northern slopes. The dominant tree species are Douglas fir and bigleaf maple. Other trees include western red cedar, black cottonwood, giant sequoia, European hawthorn, plum, pine, oak, and empress tree. Most of these trees, particularly the exotic species, are scattered in groves or rows between fairways. The shrub layer (located primarily along the northern bluff) consists of Oregon grape, western hazel, serviceberry, mock orange, oceanspray, Himalayan blackberry and Scot's broom. Herbaceous flora include poison oak, dewberry, Queen Anne's lace, bracken fern, fennel, St. John's wort, nightshade and morning glory.

Because a large percentage of the site is cultivated, wildlife habitat values are limited. Vegetation on the northern slope provides food and cover resources, however, while the three wetlands provide a source of food and water (with limited cover). The forest cover also helps to stabilize the steep slope and control erosion.

Table B: Quality of Natural Resource Functions in Resource Site EB8				
Resource Site (acres) = 186.914508				
	High	Medium	Low	Total
Riparian Corridors*				
acres	0.0	0.0	0.0	0.0
percent total inventory site area	0.0%	0.0%	0.0%	0.0%
Wildlife Habitat*				
acres	0.0	0.0	8.2	8.2
percent total inventory site area	0.0%	0.0%	4.4%	4.4%
Special Habitat Areas**				
acres				0.0
percent total inventory site area				0.0%
Combined Total⁺				
acres	0.0	0.0	8.2	8.2
percent total inventory site area	0.0%	0.0%	4.4%	4.4%
* High-ranked riparian resources, Special Habitat Areas, and wildlife habitat include open water. ** Special Habitat Areas rank high for wildlife habitat. +Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.				

Determination of Significance

Natural resource features mapped in the resource site that provide functions identified in the Natural Resources Inventory are determined to be significant (Map F). Within resource site EB8 the following significant features and functions are present:

Significant Natural Resource Features: wetlands; forest vegetation within 300 feet of waterbodies; woodland, shrubland and herbaceous vegetation within 300 feet of waterbodies; and forest patches and associated and contiguous woodland patches two acres in size or larger.

Significant Riparian Corridor Functions: microclimate and shade; stream flow moderation and water storage; bank function and sediment, pollution and nutrient control; large wood and channel dynamics; organic inputs, food web and nutrient cycling; and riparian wildlife movement corridor.

Significant Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; and reduction of noise, light and vibration.

Resource Site-specific ESEE

The General ESEE analysis, Volume 2, describes the conflicting uses and provides an overarching analysis of the economic, social, environmental and energy consequences of prohibiting, limiting or allowing the conflicting uses within areas of significant natural resources. In addition to the General ESEE analysis, the following resource site-specific consequences are considered.

Conflicting Uses

The common impact of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; add impervious surface; modifying streams and floodplains; generating pollution; landscaping with non-native or invasive vegetation; building fences or other wildlife barriers; and other impacts such as noise, light, litter and pets.

Within the resource site residential uses are allowed outright or conditionally in the R5 base zones. Open space uses are allowed in the OS base zone. Development of new uses may involve vegetation clearing, grading, filing, and soil compaction, as well as the addition of impervious surfaces and landscaping with non-native plants, with associated impacts on the natural resources. Basic utilities and other infrastructure are allowed in all base zones. New or upgraded utility corridors may be cleared of vegetation and may fragment wildlife habitat.

ESEE Analysis

The analysis of economic, social, environmental and energy consequences provided in Volume 2 is confirmed for resource site EB8, with the following additional information that clarifies the analysis.

Strictly limiting or limiting conflicting uses generally would retain the riparian corridor and wildlife habitat functions of the significant natural resource features including maintaining habitat for at risk species, maintaining the flow moderation, water quality and flood control functions of streams and wetlands, maintaining vegetation on steep slopes, and maintaining the stormwater management and air-cooling functions of the tree canopy. Mitigation for negative consequences of additional

development in areas of high or medium ranked natural resources should be required. New or expanded development should be setback from a minimum distance streams and wetlands.

ESEE Decisions

Based on the ESEE general recommendations (Volume 2) and resource site-specific ESEE, the ESEE decisions for Resource Site EB8 are:

1. *Strictly limit* conflicting uses within wetlands and land within 25 feet of wetlands.
2. *Limit* conflicting uses between 25 and 50 feet of wetlands and areas of forest or woodland vegetation on steep and non-steep slopes.
3. *Limit* conflicting uses within areas of forest or woodland vegetation located along the northern boundary of the Rose City Golf Course.
4. *Allow* conflicting uses within all other areas containing significant natural resources.

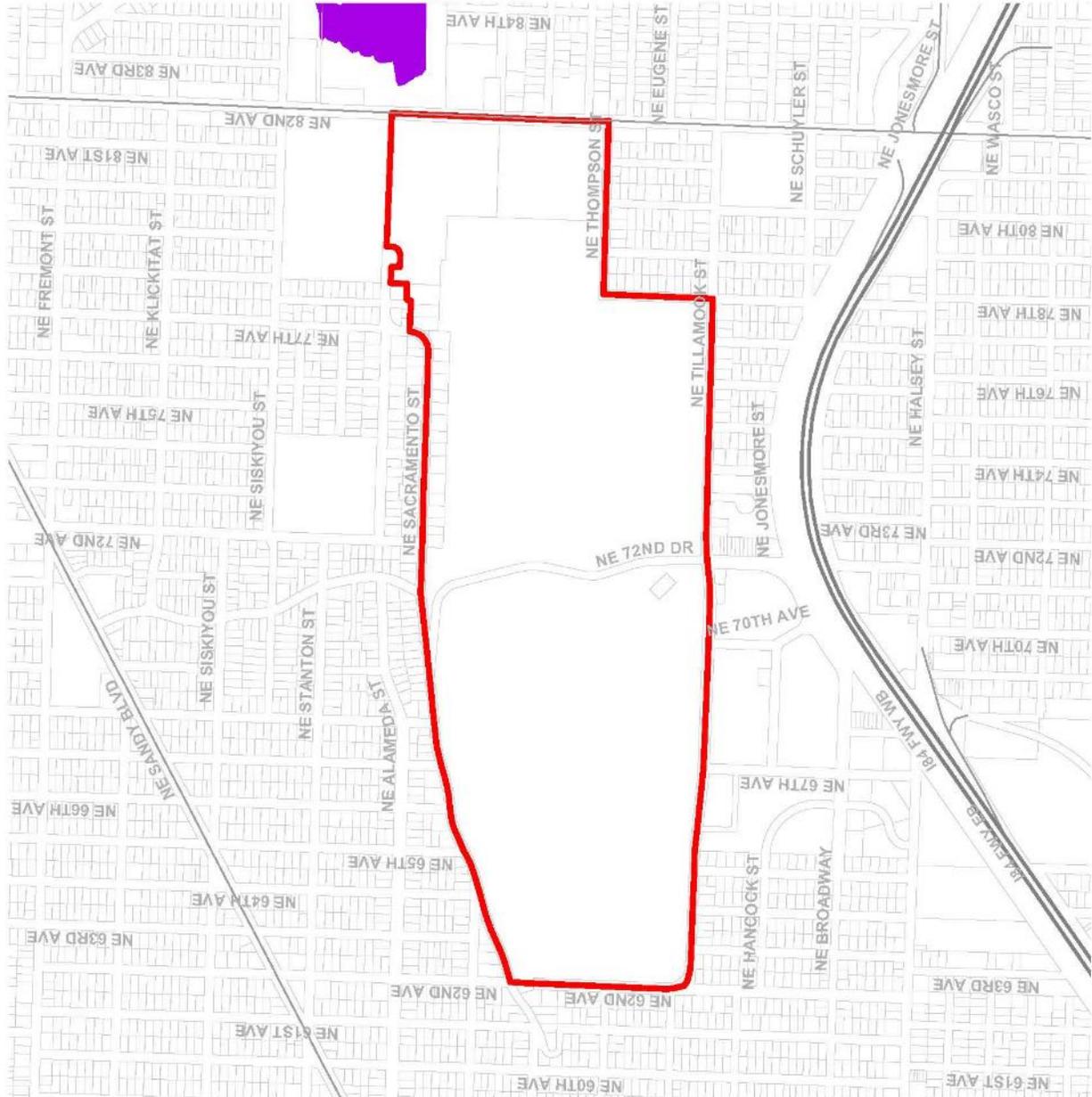
Table C: ESEE Decision for Resource Site EB8	
ESEE Decision	Acres
Strictly Limit	0.0
Limit	15.8
Allow	171.1



**Resource Site: EB8
Rose City Golf Course**

Map B: Water Related Features

-  Resource Site
-  Open stream channel
-  Piped stream segment
-  Wetlands
-  Floodplain
-  Taxlots
-  City of Portland



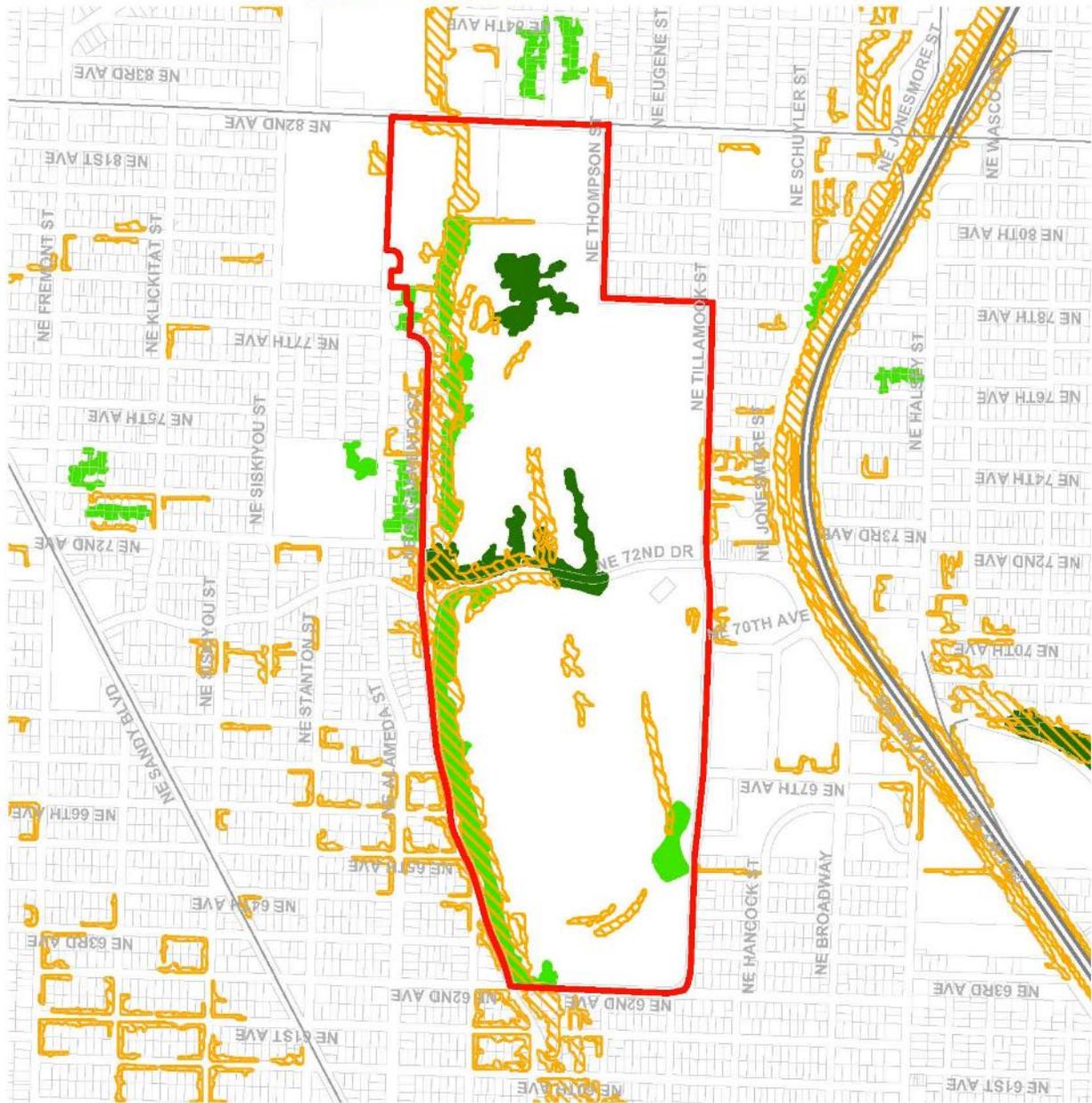
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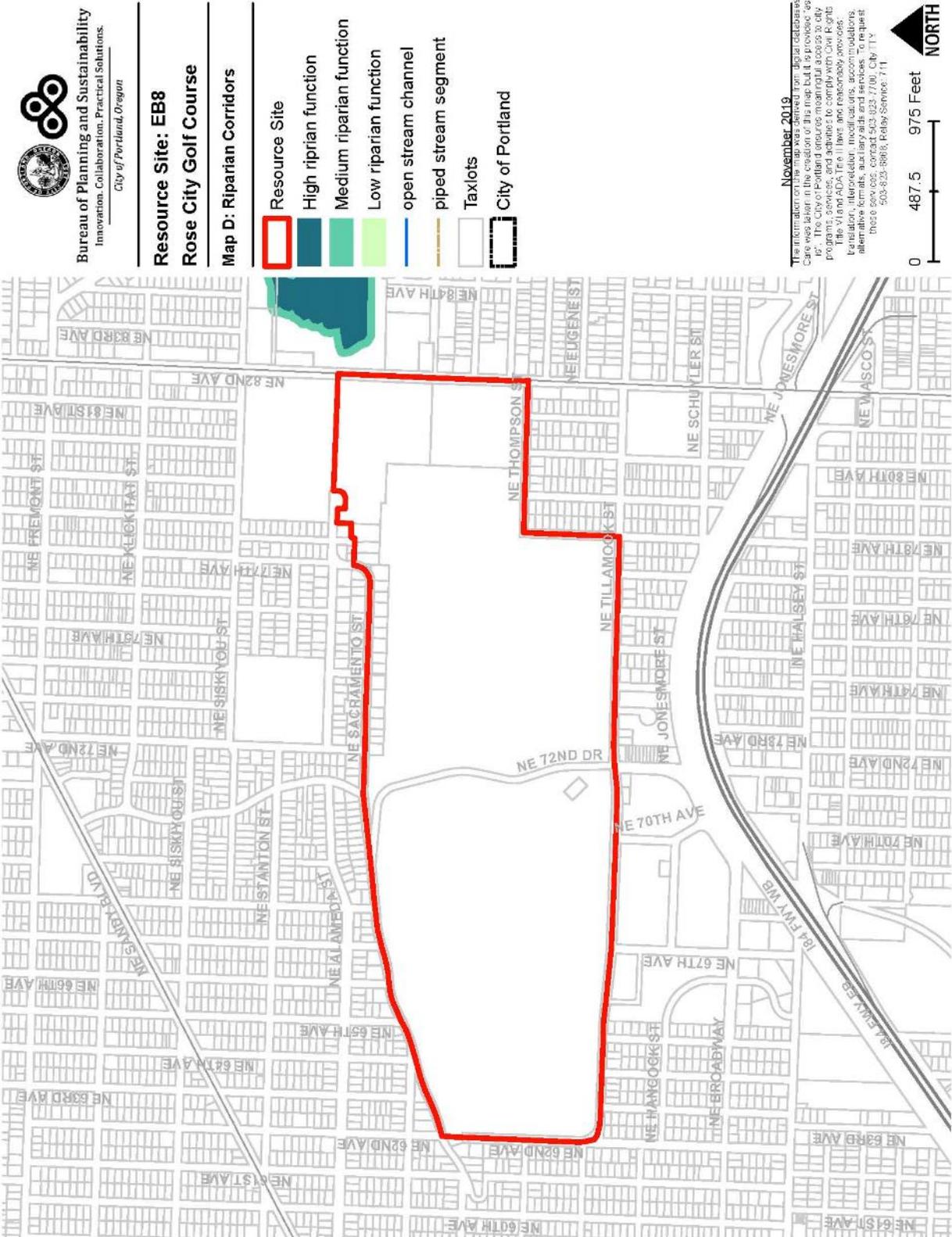
Resource Site: EB8
Rose City Golf Course
Map C: Land Features

- Resource Site
- Steep Slopes (>25%)
- Forest
- Woodland
- Shrubland
- Herbaceous
- Taxlots
- City of Portland



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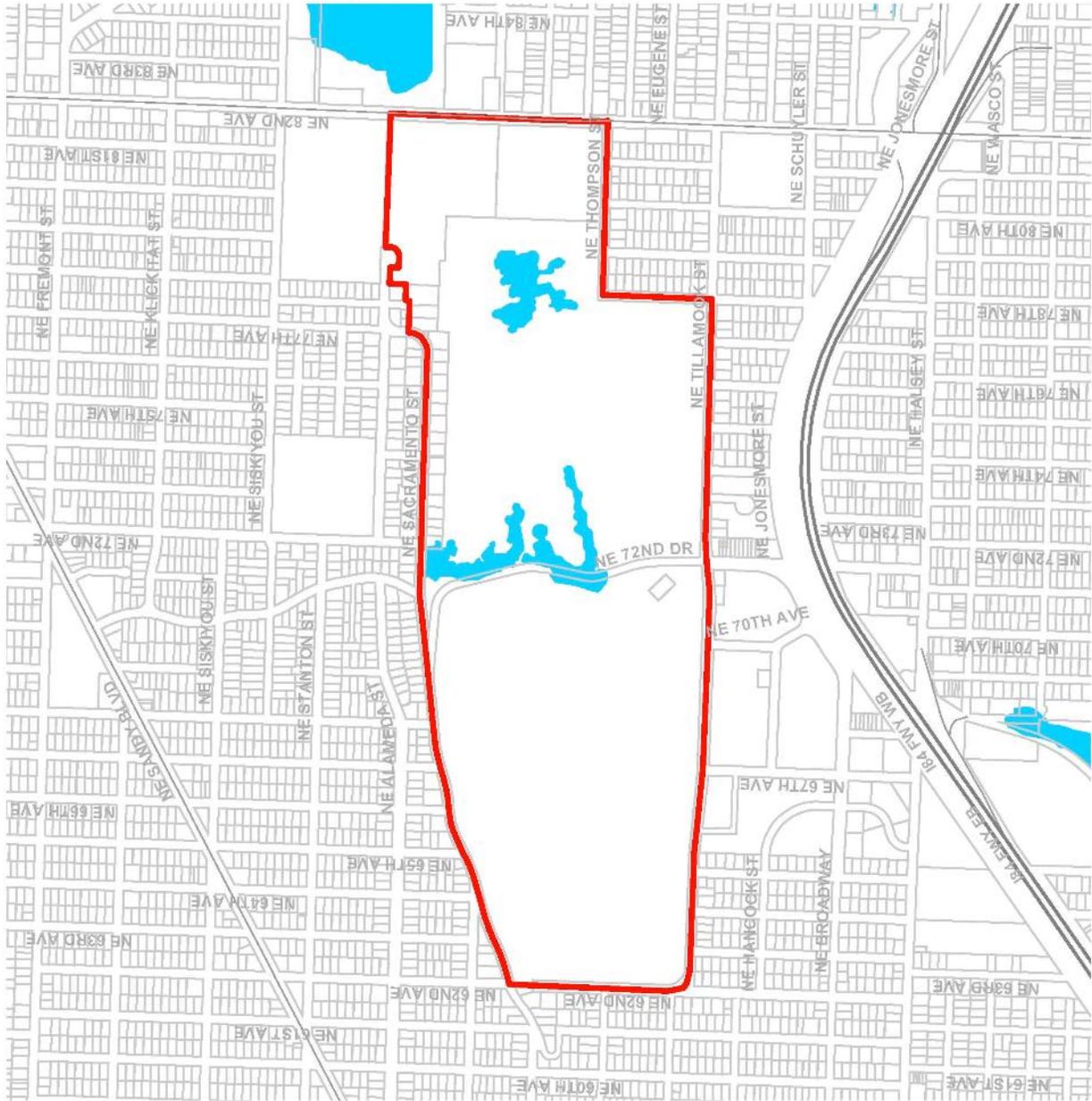
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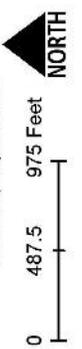
**Resource Site: EB8
Rose City Golf Course**

**Map F: Determination of
Significance**

-  Resource Site
-  Significant natural resources
-  open stream channel
-  piped stream segment
-  Taxlots
-  City of Portland



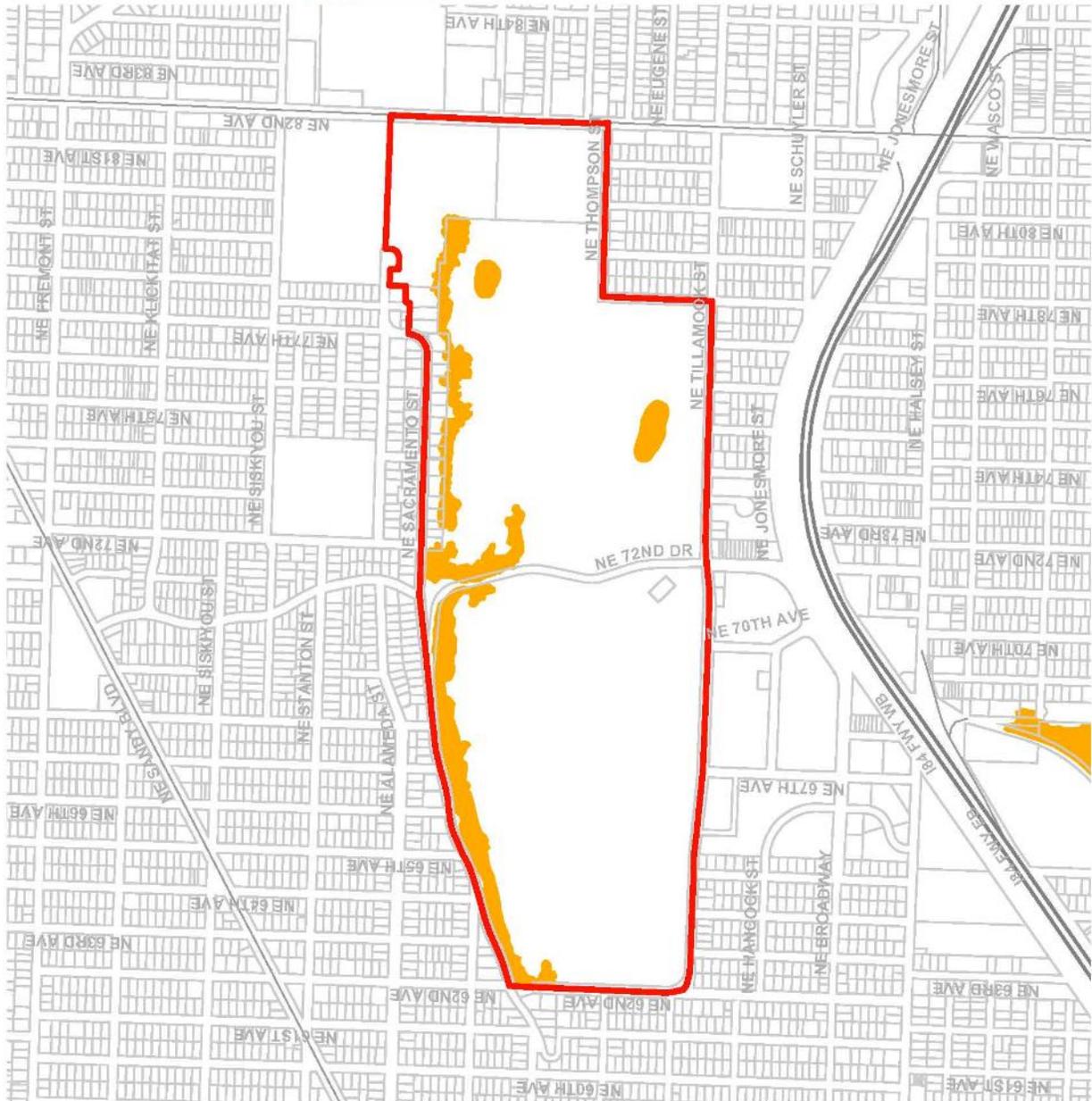
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Resource Site: EB8
Rose City Golf Course
Map G: ESEE Decision

- Resource Site
- Limit conflicting uses
- Strictly limit conflicting uses
- open stream channel
- piped stream segment
- Taxlots
- City of Portland

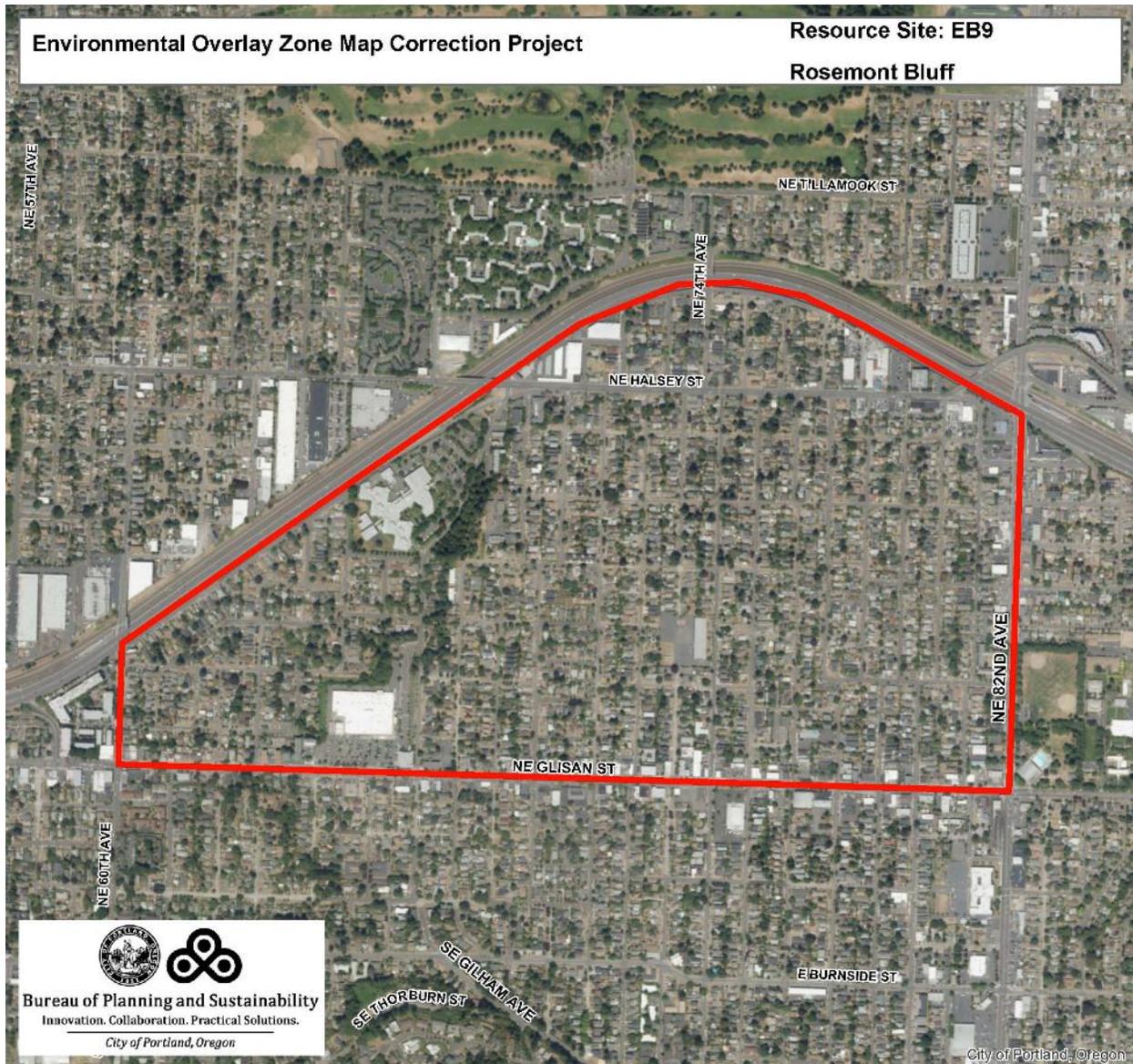


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Resource Site No.: EB9 Resource Site Name: Rosemont Bluff

Previous Plan: East Butte, Terraces & Wetlands Plan Previous Resource Site No.: 133



Natural Resources Inventory

Table X: Quantity of Natural Resource Features in Resource Site EB9	
	Study Area
Streams (miles)	0.0
Wetlands (acres)	0.0
Flood Area (acres)*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Vegetated Areas >= ½ acre (acres)	
Forest (acres)	3.5
Woodland (acres)	0.6
Shrubland (acres)	0.0
Herbaceous (acres)	0.0
Steep Slopes (acres) +	17.4
Impervious Surfaces (acres)	200.9
* The flood area includes the FEMA 100-year flood plain plus the adjusted 1996 flood inundation area.	
+ Slopes are derived from LiDAR. Steep slopes are area with a slope greater than 25%.	

Table B: Quality of Natural Resource Functions in Resource Site EB9				
Resource Site (acres) = 341.011897				
	High	Medium	Low	Total
Riparian Corridors*				
acres	0.0	0.0	0.0	0.0
percent total inventory site area	0.0%	0.0%	0.0%	0.0%
Wildlife Habitat*				
acres	0.0	0.0	3.5	3.5
percent total inventory site area	0.0%	0.0%	1.0%	1.0%
Special Habitat Areas**				
acres				0.0
percent total inventory site area				0.0%
Combined Total⁺				
acres	0.0	0.0	3.5	3.5
percent total inventory site area	0.0%	0.0%	1.0%	1.0%
<p>* High-ranked riparian resources, Special Habitat Areas, and wildlife habitat include open water. ** Special Habitat Areas rank high for wildlife habitat. +Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.</p>				

Determination of Significance

Natural resource features mapped in the resource site that provide functions identified in the Natural Resources Inventory are determined to be significant (Map F). Within resource site EB9 the following significant features and functions are present:

Significant Natural Resource Features: forest patches and associated and contiguous woodland patches two acres in size or larger; steep slopes; rare plant species; and Special Habitat Areas.

Significant Riparian Corridor Functions: none

Significant Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; and reduction of noise, light and vibration.

Resource Site-specific ESEE

The General ESEE analysis, Volume 2, describes the conflicting uses and provides an overarching analysis of the economic, social, environmental and energy consequences of prohibiting, limiting or allowing the conflicting uses within areas of significant natural resources. In addition to the General ESEE analysis, the following resource site-specific consequences are considered.

Conflicting Uses

The common impact of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; add impervious surface; modifying streams and floodplains; generating pollution; landscaping with non-native or invasive vegetation; building fences or other wildlife barriers; and other impacts such as noise, light, litter and pets.

Within the resource site residential uses are allowed outright or conditionally in the R5, R2.5, R2 and R1 base zones. Employment uses area allowed in the EG1 and EG2 base zones. Commercial uses are allowed in the CD, CI1, CM1 and CM2 base zones. Open Space uses are allowed in the OS base zone. Development of new uses may involve vegetation clearing, grading, filing, and soil compaction, as well as the addition of impervious surfaces and landscaping with non-native plants, with associated impacts on the natural resources. Basic utilities and other infrastructure are allowed in all base zones. New or upgraded utility corridors may be cleared of vegetation and may fragment wildlife habitat.

ESEE Analysis

The analysis of economic, social, environmental and energy consequences provided in Volume 2 is confirmed for resource site EB9, with the following additional information that clarifies the analysis.

Steep slopes are susceptible to erosion and landslides. Development should be clustered away from steep slopes and trees and vegetation should be maintained to reduce the landslide risks. New or expanded development on steep slopes should be *limited*.

ESEE Decisions

Based on the ESEE general recommendations (Volume 2) and resource site-specific ESEE, the ESEE decisions for Resources Site EB9 are:

1. *Limit* conflicting uses within areas of forest vegetation on steep slopes.
2. *Allow* conflicting uses within all other areas containing significant natural resources.

Table X: ESEE Decision for Resource Site EB9	
ESEE Decisions	Acres
Strictly Limit	0.0
Limit	3.7
Allow	337.3

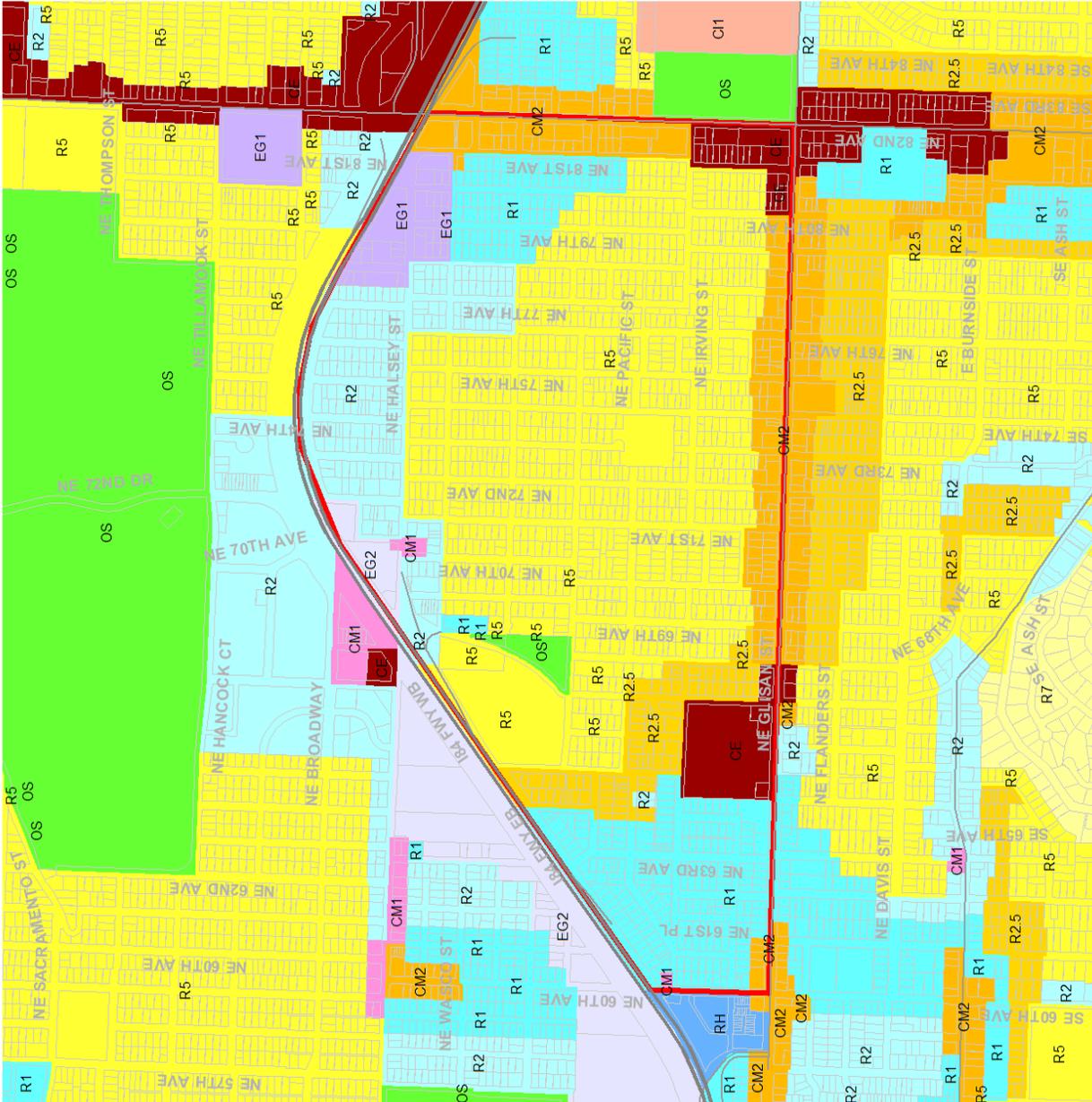


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**Resource Site: EB9
Rosemont Bluff**

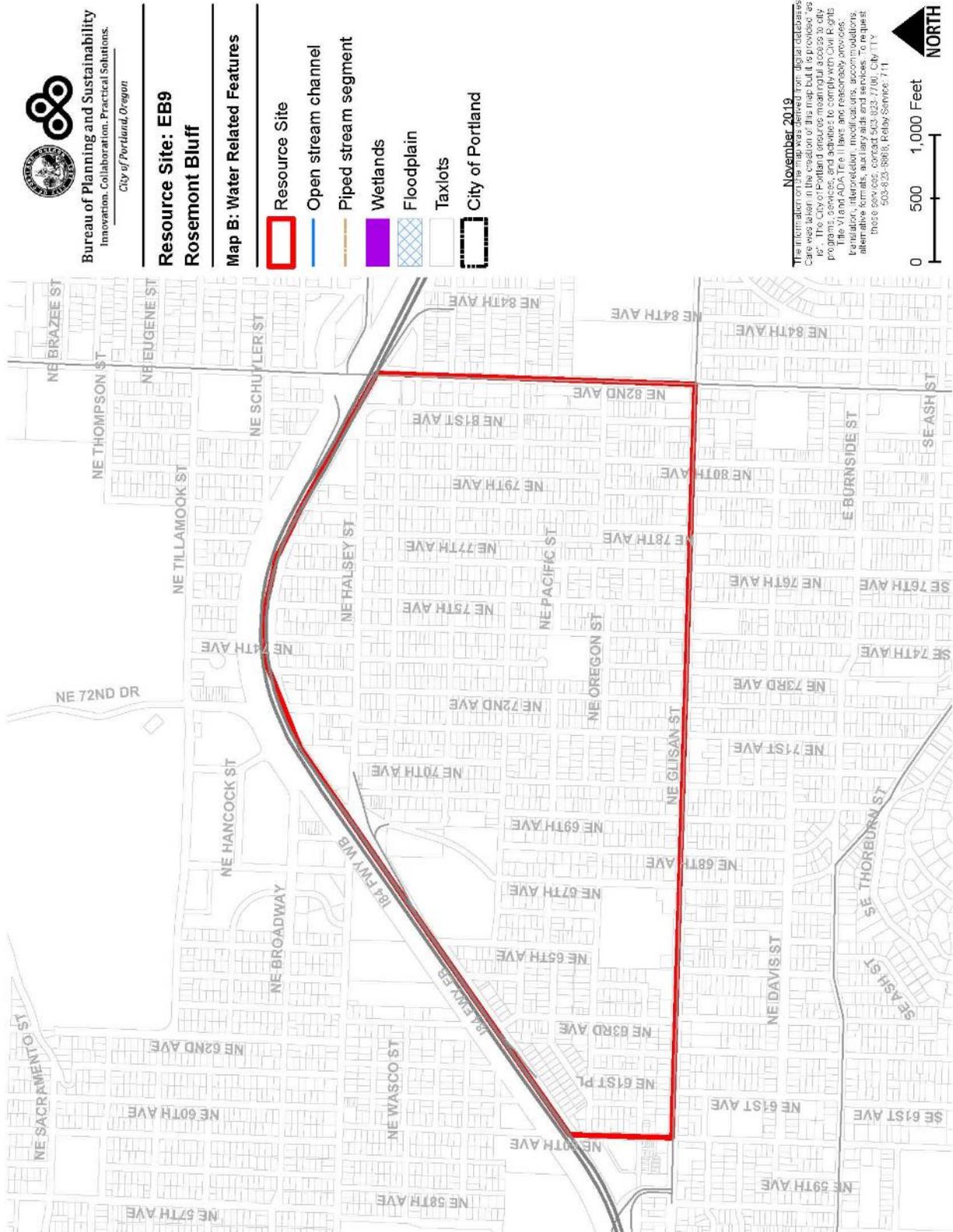
Map A: Base Zones

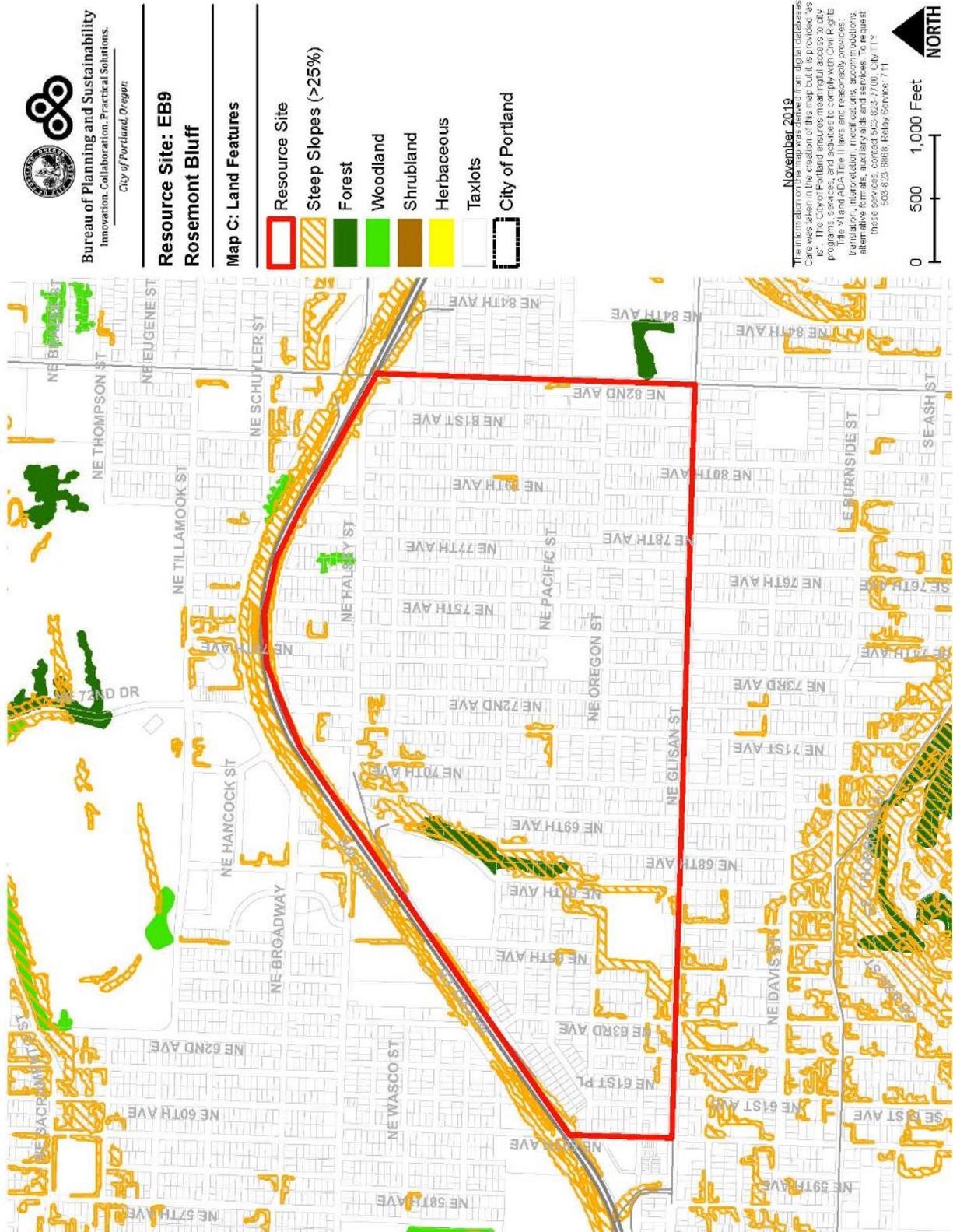
- Resource Site
- Streams
- Taxlots
- City of Portland

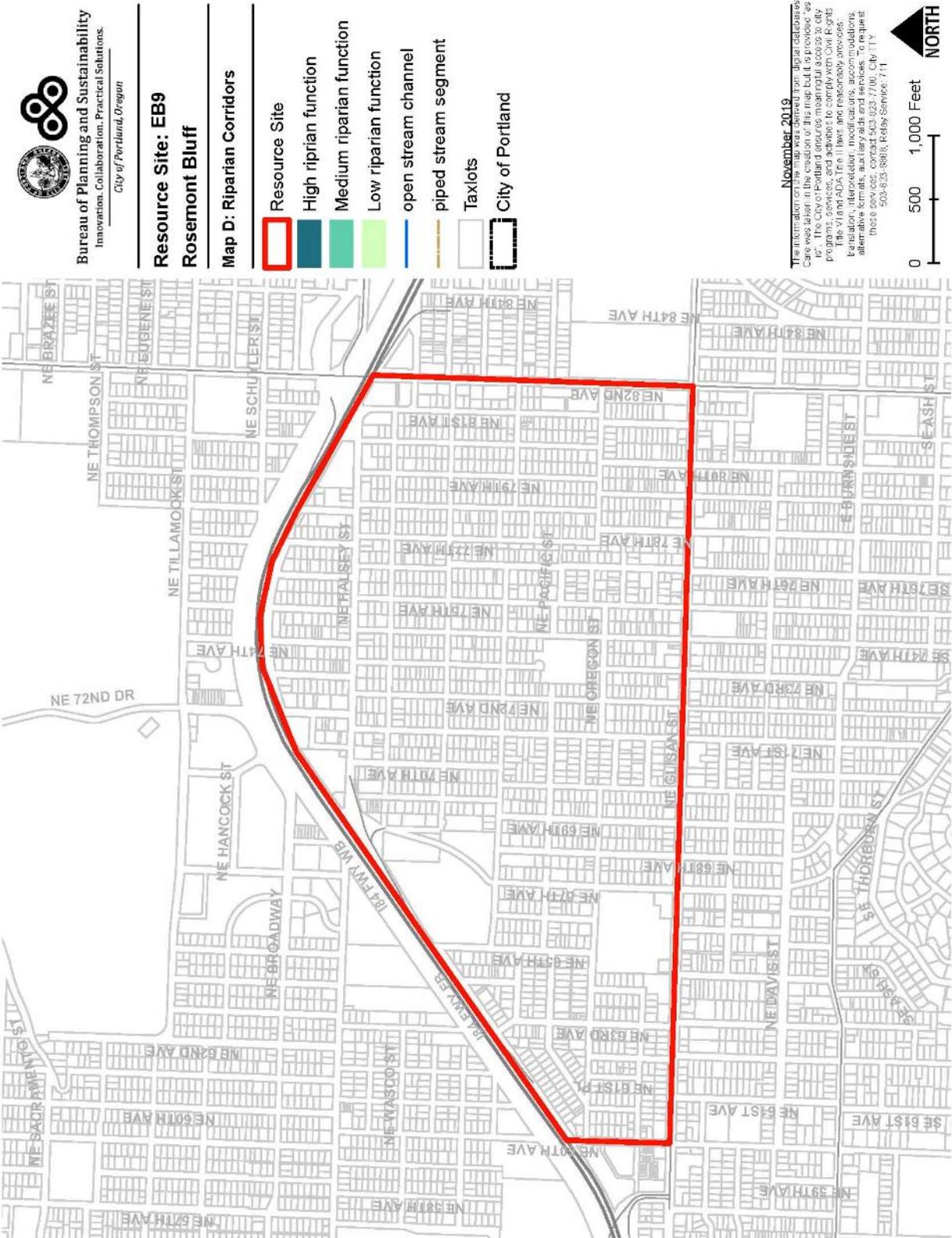


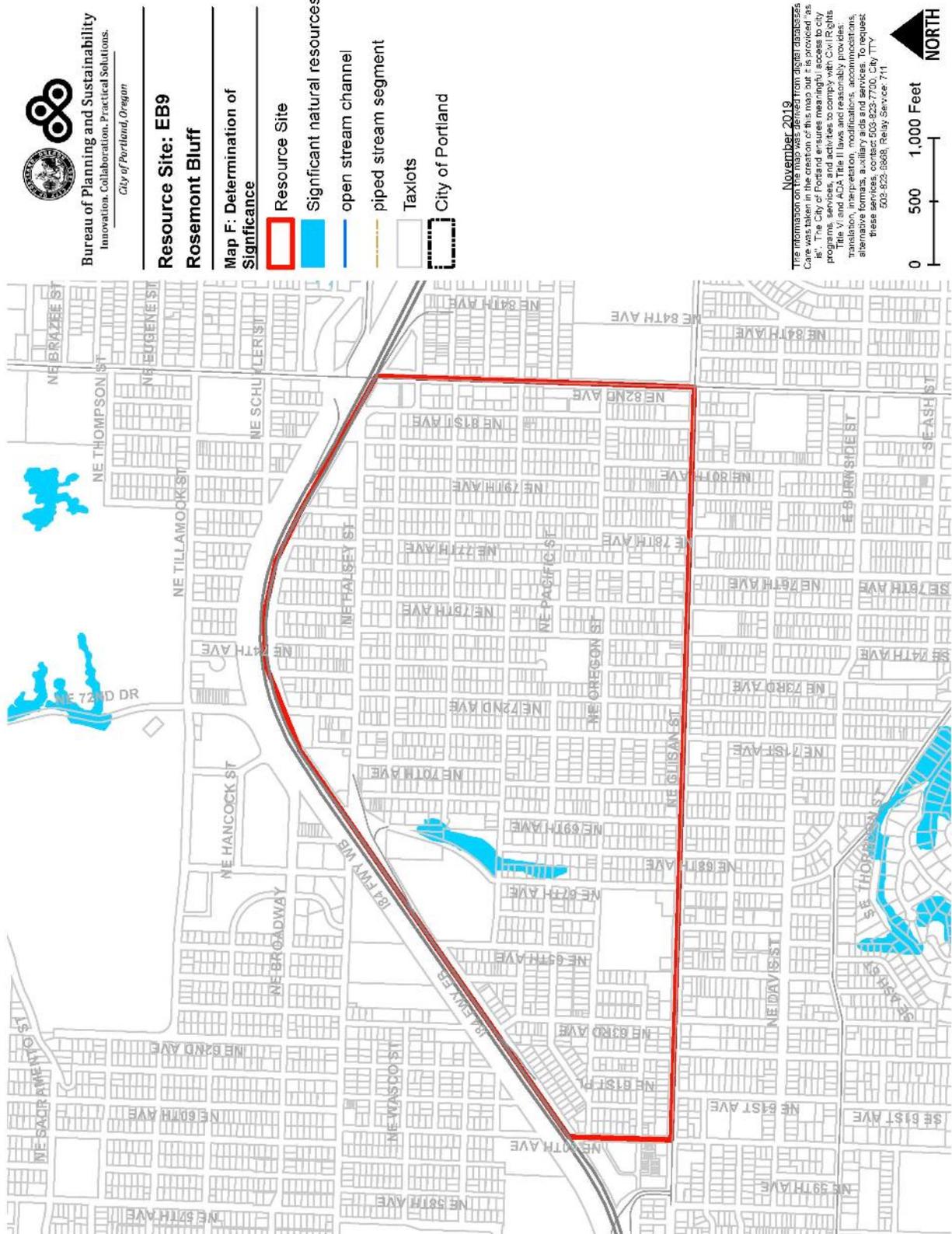
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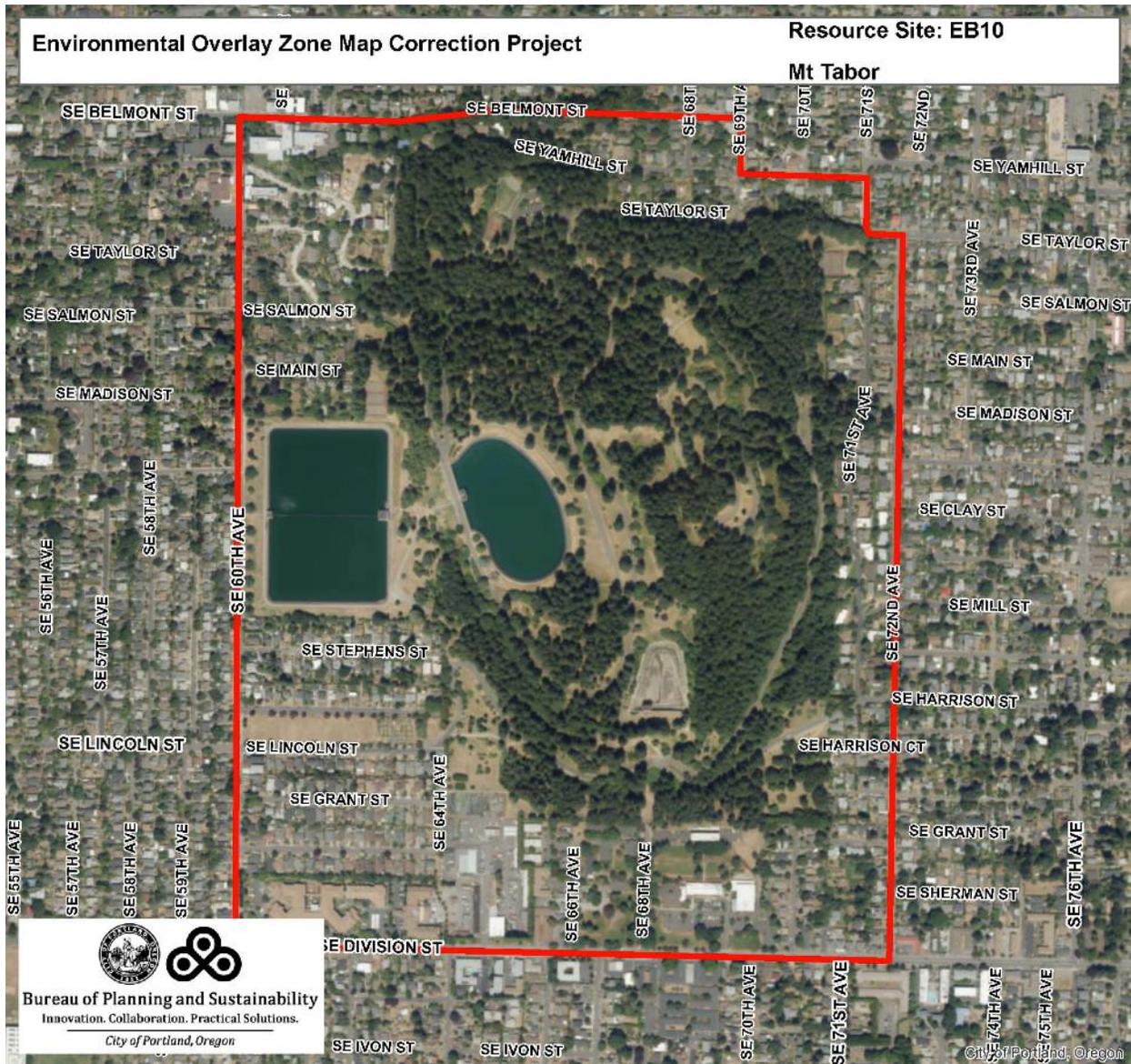






Resource Site No.: EB10 Resource Site Name: Mount Tabor

Previous Plan: East Butte, Terraces & Wetlands Plan Previous Resource Site No.: 133



Natural Resources Inventory

Table A: Quantity of Natural Resource Features in Resource Site		EB10
		Study Area
Stream (Miles)		3.1
Wetlands (acres)		0.0
Vegetated Areas >= 1/2 acre (acres)		131.3
	Forest (acres)	110.6
	Woodland (acres)	20.8
	Shrubland (acres)	0.0
	Herbaceous (acres)	0.0
Flood Area*		0.0
	Vegetated (acres)	0.0
	Non-vegetated (acres)	0.0
Steep Slopes (acres)**		160.1
Impervious Surface (acres)		73.2
* The flood area includes the FEMA 100-year flood plain plus the adjusted 1996 flood inundation area.		
**Slopes are derived from LiDAR. Steep slopes are area with a slope greater than 25%.		

Mount Tabor is located approximately three miles from the Willamette River in central east Portland. Tabor is one of three cinder cone volcanoes located within the planning area. Mt. Tabor is the best and most accessible example of the volcanic character of the Boring Volcanoes: a small vent near the top is excavated revealing the core and throat of the cinder cone.⁵ According to a Geological Society of Oregon Country sign on Mt. Tabor, Portland is the only city in the United States with a volcano within its limits.

Mt. Tabor rises abruptly from the otherwise gently sloping east Portland landscape, from approximately 300 ft. mean sea level (mssl) at its base to 640 ft. msl at its summit. The volcano is over a mile long (from north to south) and three-quarters of a mile wide. Portland's largest east side park occupies one-half of the site, while most of the north half is developed with single-dwelling residential homes and local service streets. Though small pockets of forest and undeveloped open space occur within these residential areas, the primary resource areas are located within Mt. Tabor Park.

Mt. Tabor Park is a key element of the Olmsted Brothers' 1903 park system proposal. The park totals approximately 175 acres. About 70 percent of the park is developed for active recreational uses, with manicured lawns, flower and shrub beds, trails, tennis and basketball courts. Paved roads spiral around the park with several parking lots interspersed. There are also several reservoirs owned and operated by the city, a soap box derby track, a picnic area and a playground.

The remaining portion of the site is undeveloped with moderately steep terrain. These areas are of higher habitat value for wildlife, primarily due to the presence of a forest understory. Recreational activity in this area is limited to the use of several trails passing through the forest.

Surface water resources include an intermittent drainage and small wetland on the west slope of the park and south of the exposed cinder cone. Groundwater resources are located in the Troutdale Formation which underlies most of Mt. Tabor. Small areas of Boring lava are located near the exposed cinder cone. Soils at Mt. Tabor and Rosemont Bluff are steep, gravelly silt loams with moderate to severe limitations for building site development (Mult. Co. Soil Survey 1983).

The Rosemont Bluff sub-area is located several blocks north of the Mt. Tabor volcano between NE 67th and NE 69th Avenues, terminating just before the Banfield Freeway. The bluff is mostly forested, with some residential development located north and south of the forest between NE Multnomah and NE Hassalo. The forest area includes an portion of the Donald E. Long Juvenile Home property, owned by Multnomah County.

The entire volcano is of geologic significance and the exposed volcanic vent is a geologic feature unique to the region. Mt. Tabor Park occupies 175 acres within the site. The entire park provides important recreational, scenic and open space values. The several reservoirs (three uncovered, others covered) supply drinking water to Portland area residents. Other surface water resources include a 1,000 ft. long intermittent drainage and small, 500 sq. ft. wetland south of the exposed cinder cone.

This site's vegetation is cultivated extensively for urban park use, though some non-cultivated areas on the steeper slopes are present. The dominant species is Douglas fir, between 30 and 70 years in age, and thinned to a regular spacing. Trees are limbed (lower branches removed) and sub-canopy is open.

Occasional deciduous trees include choke cherry, vine maple, bigleaf maple, red alder, dogwood, oak, birch and hawthorn. Shrubs include western hazel, red huckleberry, willow, rhododendron, juniper, forsythia, azalea, cedar and spiraea. The herb layer is comprised of about 80 percent mowed lawn, yet in the less cultivated areas, sword fern, bracken fern, orchard grass, Oregon grape, salal, twisted stalk, fringe cup and poison ivy are common. The non-cultivated areas include a native shrub layer absent in other parts of the park; shrubs include wild rose, snowberry, oceanspray, serviceberry and thimbleberry. Certain areas of the park are threatened by the invasion of Himalayan blackberry, English ivy, Scot's broom and English holly.

The vegetative cover within the park provides limited habitat for wildlife. The trees provide some roosting and perching habitat for avians. In the cultivated areas, cover is limited and food production is low. In the non-cultivated areas, covering about 40 acres, the greater diversity of native understory vegetation provides more food and cover for wildlife. Wildlife observed in the park include hairy woodpecker, red-tailed hawk, owls, juncos, wrens, chickadees, pheasants, crows and squirrels.

The City of Portland's Scenic Resource Inventory identifies two panoramic views from Mt. Tabor, one from above the reservoir and the other from the summit. These two views were rated among the top seven in the city. The ESEE analysis for the Scenic Resource Protection Plan (1991) concludes that these views are fully protected through the park's Open Space zoning, and hence, no specific view regulations are needed.

Rosemont Bluff is a small neighborhood greenspace, well-used by humans yet still large enough to provide a variety of resource values. The local neighborhood association (Center) and the juvenile home which owns most of the forested slope have expressed interest in turning this site into a neighborhood park. The neighborhood has no parks, and this is its only significant greenspace. Rosemont Bluff has a mixed conifer and deciduous forest with unusual numbers of large, healthy dogwoods and an occasional pacific yew.⁷ The dominant plant species are Douglas fir and bigleaf maple, both approximately 40 to 50 years of age. Other tree species include black walnut, mountain ash and European hawthorn. The shrub layer includes Oregon grape, vine maple, choke cherry, western hazel, serviceberry, thimbleberry, Himalayan blackberry, English laurel and English holly. Ivy, trillium, violet, nightshade, sword fern, western dock, cleavers, clematis, phlox and scilla make up the herb layer. Some of the escaped exotic plants (e.g., ivy, blackberry and holly) are aggressive nuisances threatening the natural community. The vegetation provides slope stabilization functions, food and cover for wildlife (primarily avians), and scenic values.

Groundwater resources within the Mt. Tabor resource site yield up to 500 gallons per minute. The Boring lava near the exposed cinder cone contains only small amounts of perched water and yields are only 10 gpm (Trimble 1963; Redfern 1976). Groundwater recharge occurs principally through infiltration, but also, through migration from overlying formations and adjacent recharge areas.

Table B: Quality of Natural Resource Functions in Resource Site EB10				
Resource Site (acres) = 313.020654				
	High	Medium	Low	Total
Riparian Corridors*				
acres	0.0	0.0	0.0	0.0
percent total inventory site area	0.0%	0.0%	0.0%	0.0%
Wildlife Habitat*				
acres	0.0	110.5	14.2	124.7
percent total inventory site area	0.0%	35.3%	4.6%	39.8%
Special Habitat Areas**				
acres				163.0
percent total inventory site area				52.1%
Combined Total⁺				
acres	163.0	10.8	0.5	174.3
percent total inventory site area	52.1%	3.4%	0.1%	55.7%
<p>* High-ranked riparian resources, Special Habitat Areas, and wildlife habitat include open water. ** Special Habitat Areas rank high for wildlife habitat. +Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.</p>				

Determination of Significance

Natural resource features mapped in the resource site that provide functions identified in the Natural Resources Inventory are determined to be significant (Map F). Within resource site EB10 the following significant features and functions are present:

Significant Natural Resource Features: forest patches and associated and contiguous woodland patches two acres in size or larger; steep slopes; rare plant species; and Special Habitat Areas.

Significant Riparian Corridor Functions: none

Significant Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; and reduction of noise, light and vibration.

Resource Site-specific ESEE

The General ESEE analysis, Volume 2, describes the conflicting uses and provides an overarching analysis of the economic, social, environmental and energy consequences of prohibiting, limiting or allowing the conflicting uses within areas of significant natural resources. In addition to the General ESEE analysis, the following resource site-specific consequences are considered.

Conflicting Uses

The common impact of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; add impervious surface; modifying streams and floodplains; generating pollution; landscaping with non-native or invasive vegetation; building fences or other wildlife barriers; and other impacts such as noise, light, litter and pets.

Within the resource site residential uses are allowed outright or conditionally in the R5, R2.5, R2 and R1 base zones. Employment uses area allowed in the EG1 and EG2 base zones. Commercial uses are allowed in the CD, CI1, CM1 and CM2 base zones. Open Space uses are allowed in the OS base zone. Development of new uses may involve vegetation clearing, grading, filing, and soil compaction, as well as the addition of impervious surfaces and landscaping with non-native plants, with associated impacts on the natural resources. Basic utilities and other infrastructure are allowed in all base zones. New or upgraded utility corridors may be cleared of vegetation and may fragment wildlife habitat.

ESEE Analysis

The analysis of economic, social, environmental and energy consequences provided in Volume 2 is confirmed for resource site EB10, with the following additional information that clarifies the analysis.

ESEE Decisions

Based on the ESEE general recommendations (Volume 2) and resource site-specific ESEE, the ESEE decisions for Resource Site EB10 are:

1. *Limit* conflicting uses within areas of forest vegetation on steep slopes, except in areas of Mt Tabor Park that are managed for active park uses.
2. *Allow* conflicting uses within all other areas containing significant natural resources.

Mt Tabor contains a mixture of mowed lawns, managed forested areas with manicured understory, and forested areas with more diverse understory vegetation. Conflicting uses are only limited in the areas where the forest understory is not primarily mowed lawn or paved impervious surface.

ESEE Decision	Acres
Strictly Limit	0.0
Limit	65.0
Allow	248.0

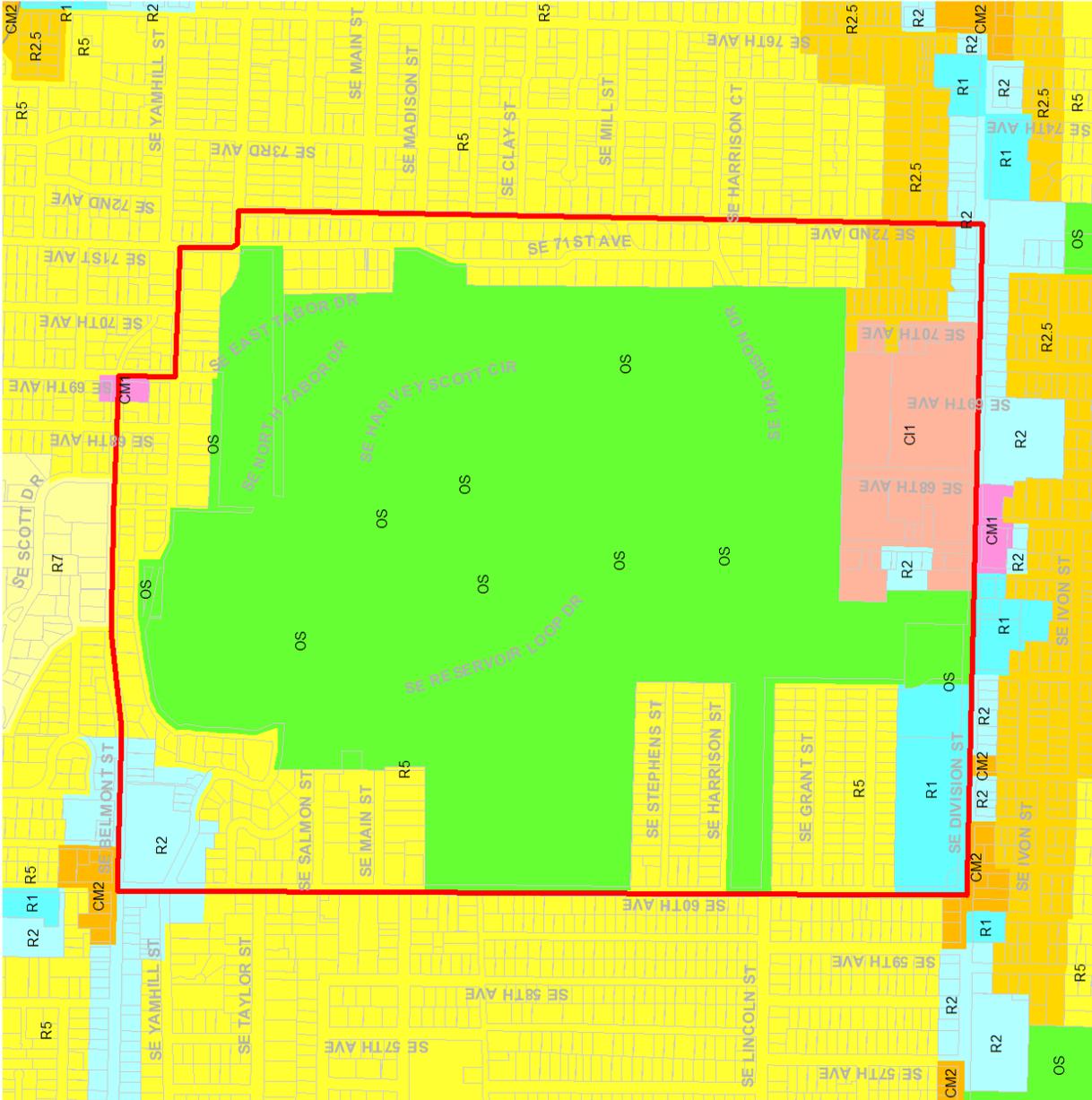


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Resource Site: EB10
Mt Tabor

Map A: Base Zones

- Resource Site
- Streams
- Taxlots
- City of Portland



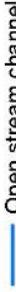
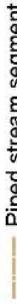
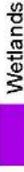
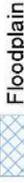
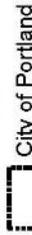
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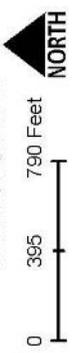


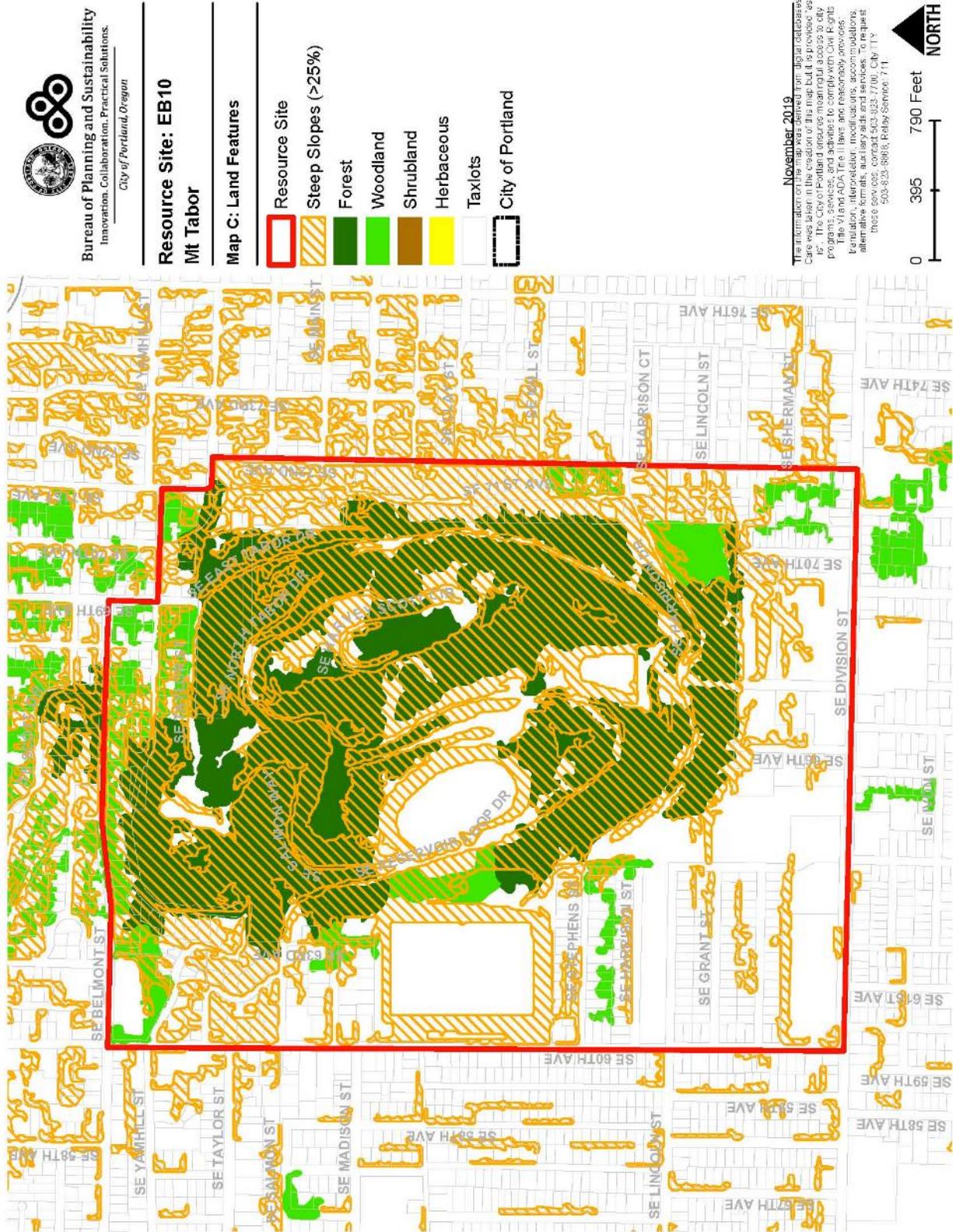
**Resource Site: EB10
Mt Tabor**

Map B: Water Related Features

-  Resource Site
-  Open stream channel
-  Piped stream segment
-  Wetlands
-  Floodplain
-  Taxlots
-  City of Portland

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**Resource Site: EB10
Mt Tabor**

Map D: Riparian Corridors

- Resource Site
- High riparian function
- Medium riparian function
- Low riparian function
- open stream channel
- piped stream segment
- Taxlots
- City of Portland

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Resource Site No.: EB11 Resource Site Name: Rocky Butte

Previous Plan: East Butte, Terraces & Wetlands Plan Pervious Resource Site No.: 134



Natural Resources Inventory

Table A: Quantity of Natural Resource Features in Resource Site		EB11
		Study Area
Stream (Miles)		0.0
Wetlands (acres)		0.0
Vegetated Areas >= 1/2 acre (acres)		203.3
	Forest (acres)	190.7
	Woodland (acres)	12.6
	Shrubland (acres)	0.0
	Herbaceous (acres)	0.0
Flood Area*		0.0
	Vegetated (acres)	0.0
	Non-vegetated (acres)	0.0
Steep Slopes (acres)**		199.9
Impervious Surface (acres)		174.4
* The flood area includes the FEMA 100-year flood plain plus the adjusted 1996 flood inundation area.		
**Slopes are derived from LiDAR. Steep slopes are area with a slope greater than 25%.		

This once active volcano is located in northeast Portland two miles south of the Columbia River and immediately west of the interchange of Interstates 84 and 205. Rocky Butte is a prominent landmark rising over 400 ft. above the surrounding East Portland landscape to its summit at 610 ft. Slopes on the sides of the butte exceed 45 degrees and are vertical cliffs in some areas. The volcano is nearly a mile long (from north to south) but unusually narrow at only 1,500 ft. (east-west). The butte stood directly in the path of the massive Missoula Flood waters which scoured the east face of the butte and caused substantial erosion on the west side when the waters whirled around the obstruction.

Joseph Wood Hill Park, located at the summit of Rocky Butte, contains a large stone fortress built between 1934 and 1939 by the Works Progress Administration (WP A). An aircraft navigational beacon was built on the summit in 1929 and is one of the last remaining beacons still functioning. The butte is also known for other unique features, such as the scenic drive which passes through a 375-foot long tunnel which was hand dug through solid lava. The 2.38-acre park and the 19-acre scenic drive were listed on the National Register of Historic Places in November 1991.

Single dwelling residential areas abut the base of the butte and follow the winding scenic drive to the summit. The 1-205 and 1-84 interchange borders the butte to the east. The Grotto is located on the butte's northwest side, with an elevator that rises about 100 ft. to a plateau on the north side. Also located on this plateau is the Bible Temple. Two quarries are located at the base of the butte. One of these, the old stone quarry at the end of (former) Mason Street, provided much of the stone for the WP A work on Rocky Butte as well for the Portland Hotel and other early buildings. Natural and quarried wetlands are located near the base of the butte. To the southeast are some woods bordering both sides of 1-84 at its intersection with 1-205. The woods are a sub-area of the resource site and are referred to as the Banfield Grove.

Rocky Butte's silt loam soils are extremely steep, weak and have shallow depth to bedrock. These soils have severe limitations for building site development meaning that "one or more soil properties or site features are so unfavorable or difficult to overcome that [development] may not be feasible" (Mult. Co. Soil Survey 1983). Limited groundwater reserves are contained in the Boring lava which underlies Rocky Butte. The surrounding lowlands including The Grotto and the Banfield Grove are of significantly greater groundwater resource value.

Since the arrival of the first settlers to the Portland area in the 1800s, Rocky Butte has been recognized as an important scenic resource with commanding panoramic views of the region. First formal recognition of the scenic and open space values of Rocky Butte was the Olmsted Park Plan of 1903 (see Chapter 3). In 1921, the Portland Planning Commission under Charles Cheney produced a boulevard plan for Portland in which Rocky Butte served as a regional hub. Rocky Butte soon became known as "one of the scenic wonders of the Columbia Highway."⁸ In the 1930s, the Multnomah County Commissioners took measures to protect the scenic views from the butte; height covenants, for example, were attached to the deed of the surrounding lands. Later, in the 1970s, Significant Environmental Concern zoning was placed over a portion of the butte to further protect the scenic and natural qualities of the area. In the mid-1980s, 70 acres of Oregon Dept. of Transportation land on Rocky Butte were designated Open Space.⁹

More recently, as part of the city's Scenic Resources Protection Plan, adopted in 1991, the Rocky Butte summit was formally recognized as the second most significant viewpoint in Portland, after SW Terwilliger Boulevard. The Rocky Butte Plan District was specially designed as part of the Scenic Plan to provide additional protection for Rocky Butte's panoramic views, historical architectural elements and its natural scenic qualities. Other identified scenic resources at Rocky Butte include The Grotto (scenic site and panoramas) and Shriner's Hospital (scenic site).

Rocky Butte is the object of a view corridor from the Glenn Jackson Bridge. The view corridor recognizes the importance of Rocky Butte as the northernmost butte in East Portland. The Glenn Jackson Bridge marks a major entryway into the city and state. The north face of Rocky Butte is prominent from the bridge. The Planning Commission recommends the adoption of this view corridor as part of the Development Standards project for the Columbia South Shore.

In July of 1992, Rocky Butte was identified as a "regionally significant natural area site" in the adopted Metro Greenspaces Master Plan. As such, the butte is envisioned as a major anchor in the overall Greenspace System for the region. The Master Plan echoes earlier statements concerning the significance of the butte; according to the plan, Rocky Butte is "important for its historic prominence as a Portland landmark."

The Environmental Impact Statement (EIS) for Interstate 205 describes the forest covering Rocky Butte as a remnant of the northwestern coniferous forest ecosystem, noting that, "The forest occurs on a principle focal point of Portland, Rocky Butte, and enhances the area as a scenic viewpoint." The EIS also states, "The mixed coniferous forest surrounding the Butte is unique to East Portland as it is the only

major stand of forest in an otherwise suburbanized area." A locally rare plant, branching montia (*Montia diffusa*), was recorded at The Grotto site at the base of the butte. This plant is limited in abundance throughout its range and is listed on the Oregon Natural Heritage Data Base (1991) watch list.

The forest composition includes a wide variety of trees: Douglas fir (up to 4 ft. in diameter), grand fir, western red cedar, western hemlock, bigleaf maple, red alder, pacific madrone, Oregon white oak, Oregon ash, black cottonwood, cascara and bitter cherry. The diverse shrub population includes Indian plum, western hazel, salal, snowberry, vine maple, oceanspray, mockorange, servkeberry, red elderberry, salmonberry, thimbleberry, blackcap, wild rose, Oregon grape and willows. Non-native shrubs include blackberry, holly, laurel and camelias. The herb layer is composed of licorice-, sword- and bracken-fem, trillium, inside-out flower, western dock and fringecup. Erodium (crane's bill) and English ivy are invasive non-natives. Several snags are also present within the forest.

With its unique cliffs, rocky soils, wetlands and diverse forest vegetation, Rocky Butte provides the highest valued habitat within the planning area. Species which inhabit the area include red tailed hawk, song sparrows, warblers, hummingbirds, as well as other passerines and small mammals.

Once an active volcano, the basalt cliffs and rugged terrain have become a popular recreation area for rock climbers, hikers and bicyclists. The Audubon Society has identified the forest and its native plants as an excellent wildlife shelter and habitat as it serves as a haven for various species of migrating and nesting birds such as the red-tailed hawk.

Groundwater resources are limited by the Boring lava formation which underlies Rocky Butte (yields are about 10 gal/min). The Grotto and Banfield Grove areas have greater groundwater resource value (yields as high as 2,000 gpm). Recharge is primarily through infiltration and is directly affected by impervious surfaces.

The Banfield Grove sub-area is divided by the Banfield Freeway. To the east of the freeway is a three-acre triangular-shaped ravine containing a grove of trees and bordered by residential housing. Though subject to considerable traffic noise, this eastern portion retains medium quality habitat (score: 34) and is a refuge for local wildlife. The woods west of the freeway are larger and offer higher habitat values (score: 49). Snags and greater vegetative diversity are partly responsible for the higher score. A seasonal water source is available in both areas. The sub-area provides groundwater recharge values.

Table B: Quality of Natural Resource Functions in Resource Site EB11				
Resource Site (acres) = 420.11956				
	High	Medium	Low	Total
Riparian Corridors*				
acres	0.0	0.0	0.0	0.0
percent total inventory site area	0.0%	0.0%	0.0%	0.0%
Wildlife Habitat*				
acres	0.0	179.8	13.2	193.1
percent total inventory site area	0.0%	42.8%	3.1%	46.0%
Special Habitat Areas**				
acres				191.5
percent total inventory site area				45.6%
Combined Total⁺				
acres	191.5	10.5	13.2	215.3
percent total inventory site area	45.6%	2.5%	3.1%	51.2%
<p>* High-ranked riparian resources, Special Habitat Areas, and wildlife habitat include open water. ** Special Habitat Areas rank high for wildlife habitat. +Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.</p>				

Determination of Significance

Natural resource features mapped in the resource site that provide functions identified in the Natural Resources Inventory are determined to be significant (Map F). Within resource site EB11 the following significant features and functions are present:

Significant Natural Resource Features: forest patches and associated and contiguous woodland patches two acres in size or larger; steep slopes; rare plant species; and Special Habitat Areas.

Significant Riparian Corridor Functions: none

Significant Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; reduction of noise, light and vibration; and special status plant species.

Resource Site-specific ESEE

The General ESEE analysis, Volume 2, describes the conflicting uses and provides an overarching analysis of the economic, social, environmental and energy consequences of prohibiting, limiting or allowing the conflicting uses within areas of significant natural resources. In addition to the General ESEE analysis, the following resource site-specific consequences are considered.

Conflicting Uses

The common impact of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; add impervious surface; modifying streams and floodplains; generating pollution; landscaping with non-native or invasive vegetation; building fences or other wildlife barriers; and other impacts such as noise, light, litter and pets.

Within the resource site residential uses are allowed outright or conditionally in the R7, R5, R2 and R1 base zones. Commercial uses are allowed in the CE and CM2 base zones. Open space uses are allowed in the OS base zone. Development of new uses may involve vegetation clearing, grading, filing, and soil compaction, as well as the addition of impervious surfaces and landscaping with non-native plants, with associated impacts on the natural resources. Basic utilities and other infrastructure are allowed in all base zones. New or upgraded utility corridors may be cleared of vegetation and may fragment wildlife habitat.

ESEE Analysis

The analysis of economic, social, environmental and energy consequences provided in Volume 2 is confirmed for resource site EB11, with the following additional information that clarifies the analysis.

Steep slopes are susceptible to erosion and landslides. Development should be clustered away from steep slopes and trees and vegetation should be maintained to reduce the landslide risks. New or expanded development on steep slopes should be *limited*.

ESEE Decisions

Based on the ESEE general recommendations (Volume 2) and resource site-specific ESEE, the ESEE decisions for Resources Site EB11 are:

1. *Strictly limit* conflicting uses within areas of forest vegetation on steep slopes.
2. *Limit* conflicting uses within areas of forest vegetation on not steep slopes.
3. *Allow* conflicting uses within all other areas containing significant natural resources.

Table C: ESEE Decision for Resource Site EB11	
ESEE Decision	Acres
Strictly Limit	124.1
Limit	66.7
Allow	229.3

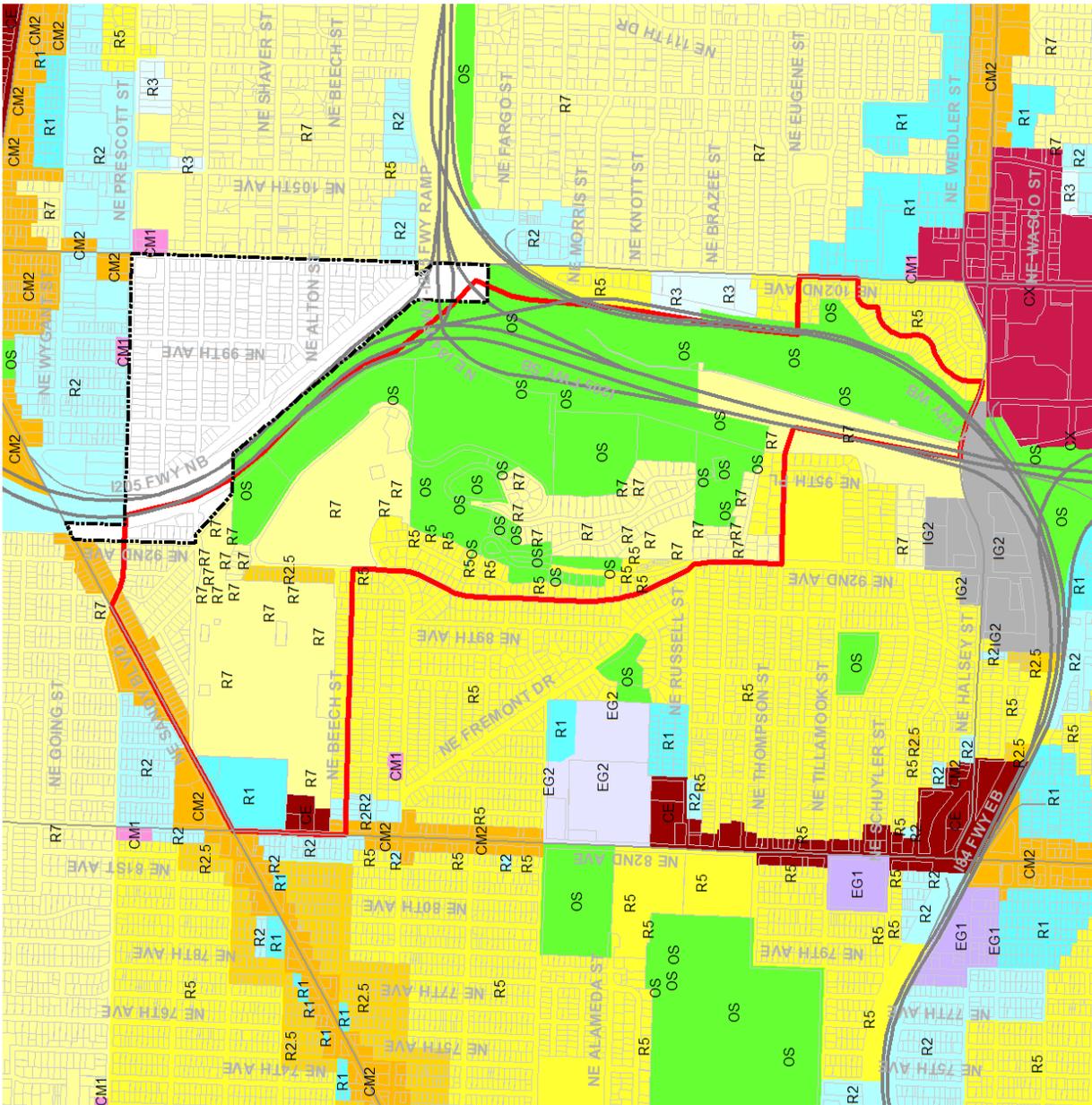


**Resource Site: EB11
Rocky Butte**

Map A: Base Zones

- Resource Site
- Streams
- Taxlots
- City of Portland

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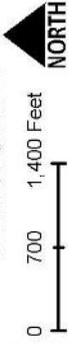


**Resource Site: EB11
Rocky Butte**

Map D: Riparian Corridors

- Resource Site
- High riparian function
- Medium riparian function
- Low riparian function
- open stream channel
- piped stream segment
- Taxilots
- City of Portland

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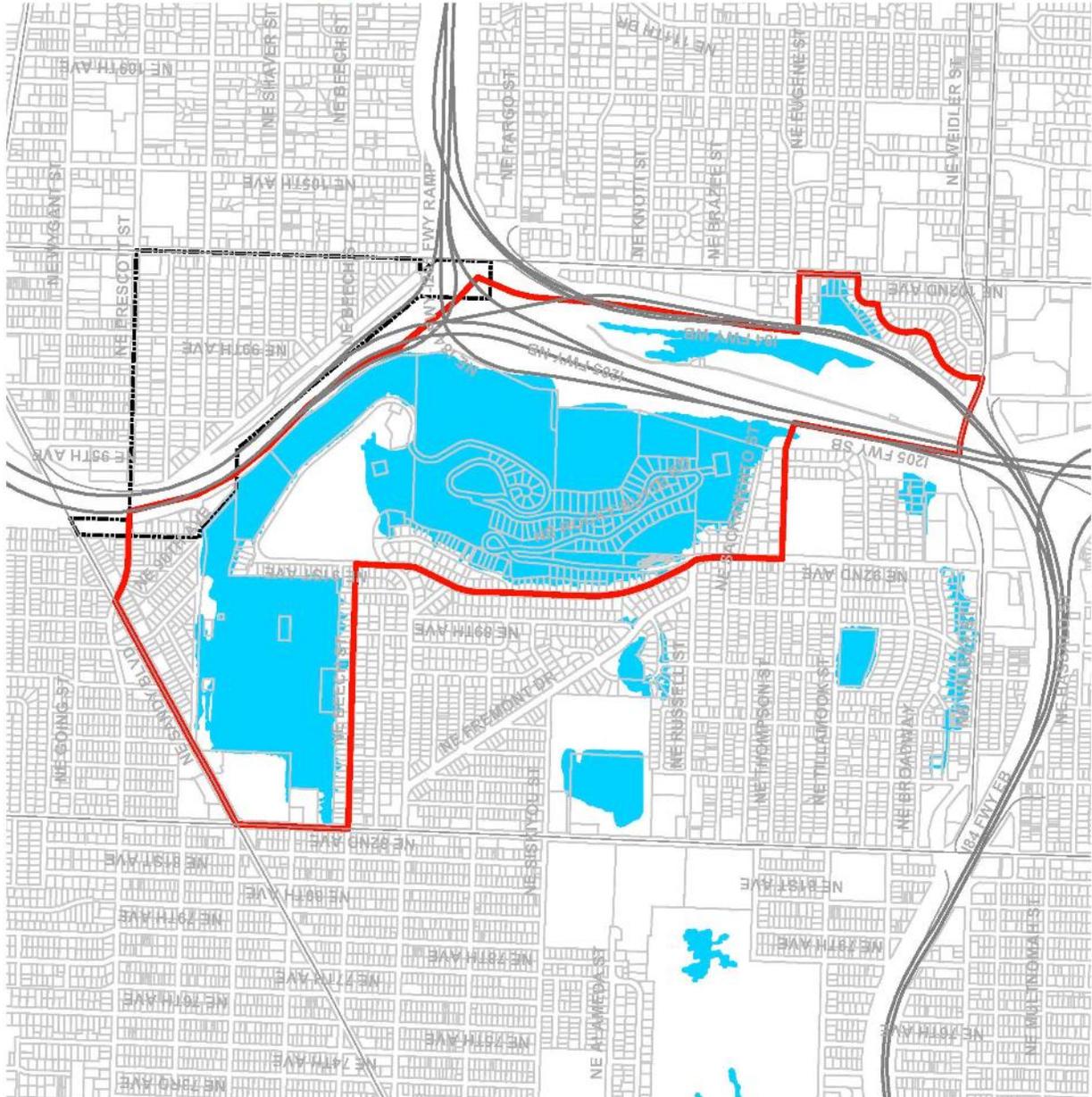




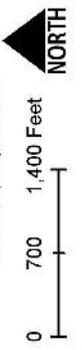
**Resource Site: EB11
Rocky Butte**

**Map F: Determination of
Significance**

-  Resource Site
-  Significant natural resources
-  open stream channel
-  piped stream segment
-  Taxlots
-  City of Portland



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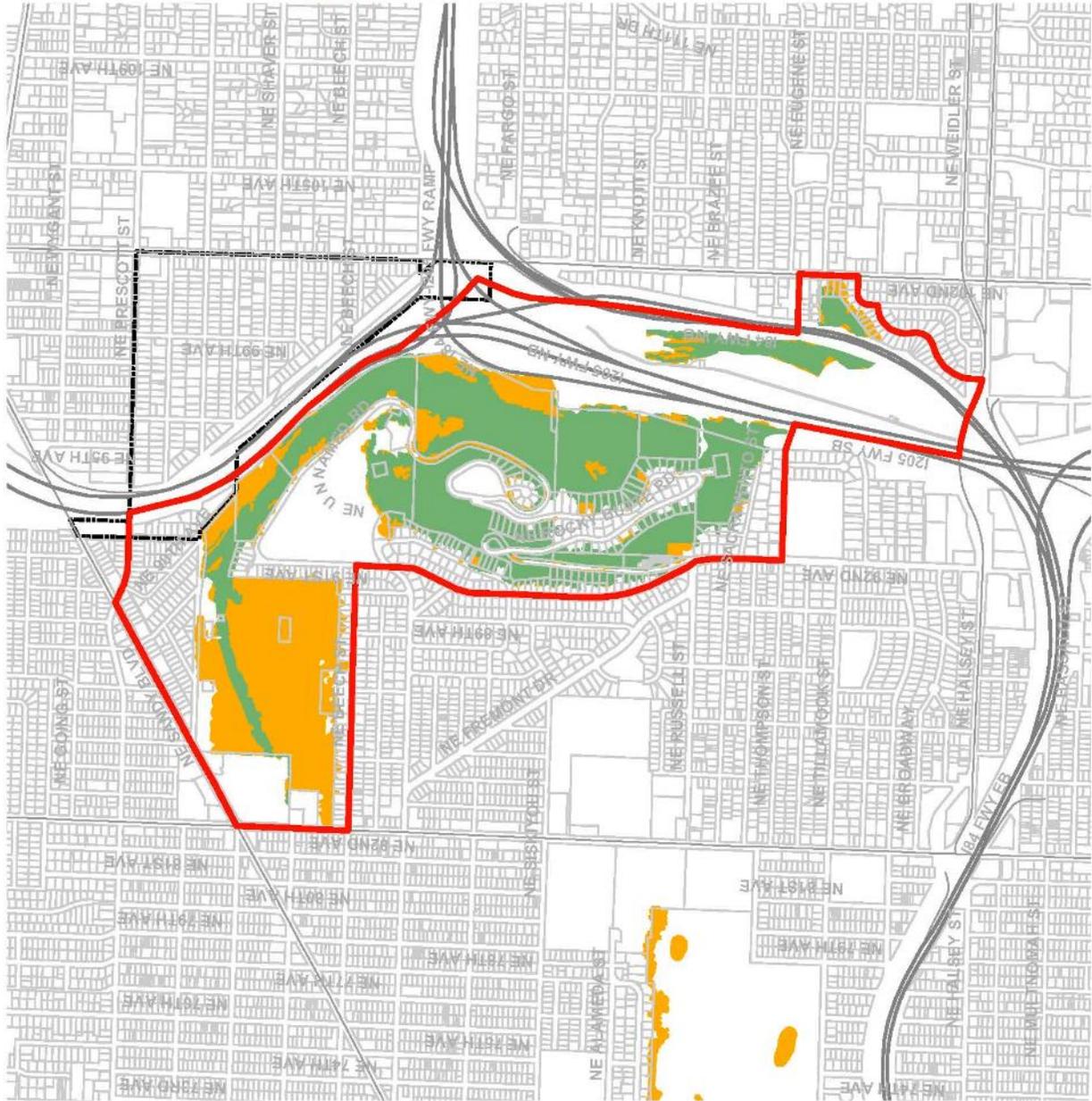


**Resource Site: EB11
Rocky Butte**

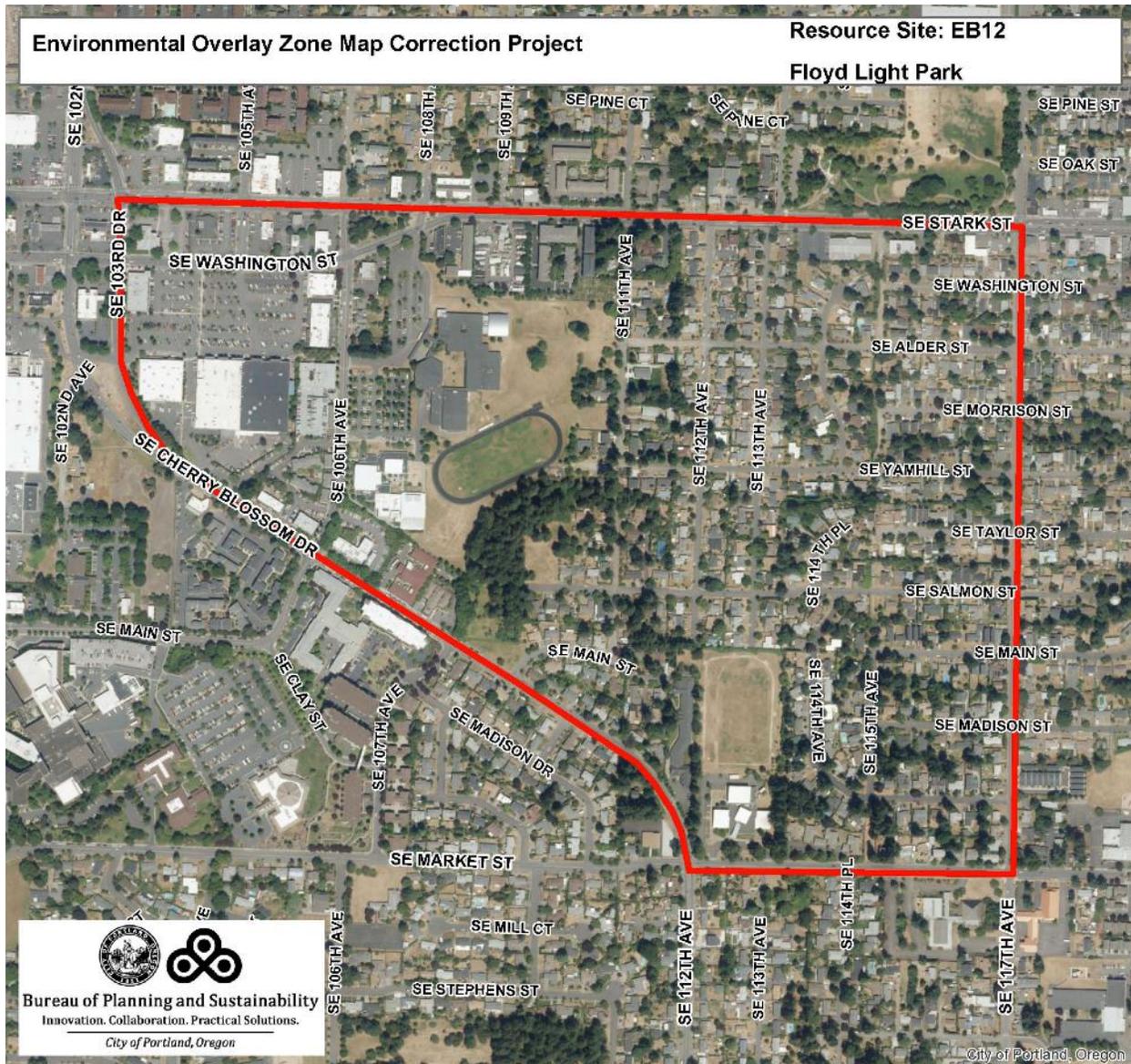
Map G: ESEE Decision

- Resource Site
- Limit conflicting uses
- Strictly limit conflicting uses
- open stream channel
- piped stream segment
- Taxlots
- City of Portland

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Resource Site No.: EB12 Resource Site Name: Floyd Right Forest
Previous Plan: East Butte, Terraces & Wetlands Plan Previous Resource Site No.: 132



Natural Resources Inventory

Table A: Quantity of Natural Resource Features in Resource Site		EB12
		Study Area
Stream (Miles)		0.0
Wetlands (acres)		0.0
Vegetated Areas >= 1/2 acre (acres)		8.0
	Forest (acres)	5.5
	Woodland (acres)	2.5
	Shrubland (acres)	0.0
	Herbaceous (acres)	0.0
Flood Area*		0.0
	Vegetated (acres)	0.0
	Non-vegetated (acres)	0.0
Steep Slopes (acres)**		11.7
Impervious Surface (acres)		74.2
* The flood area includes the FEMA 100-year flood plain plus the adjusted 1996 flood inundation area.		
**Slopes are derived from LiDAR. Steep slopes are area with a slope greater than 25%.		

Table B: Quality of Natural Resource Functions in Resource Site EB12				
Resource Site (acres) = 178.464336				
	High	Medium	Low	Total
Riparian Corridors*				
acres	0.0	0.0	0.0	0.0
percent total inventory site area	0.0%	0.0%	0.0%	0.0%
Wildlife Habitat*				
acres	0.0	0.0	5.5	5.5
percent total inventory site area	0.0%	0.0%	3.1%	3.1%
Special Habitat Areas**				
acres				0.0
percent total inventory site area				0.0%
Combined Total⁺				
acres	0.0	0.0	5.5	5.5
percent total inventory site area	0.0%	0.0%	3.1%	3.1%
<p>* High-ranked riparian resources, Special Habitat Areas, and wildlife habitat include open water. ** Special Habitat Areas rank high for wildlife habitat. +Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.</p>				

Determination of Significance

Natural resource features mapped in the resource site that provide functions identified in the Natural Resources Inventory are determined to be significant (Map F). Within resource site EB12 the following significant features and functions are present:

Significant Natural Resource Features: forest patches and associated and contiguous woodland patches two acres in size or larger; steep slopes; rare plant species; and Special Habitat Areas.

Significant Riparian Corridor Functions: none

Significant Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; and reduction of noise, light and vibration.

Resource Site-specific ESEE

The General ESEE analysis, Volume 2, describes the conflicting uses and provides an overarching analysis of the economic, social, environmental and energy consequences of prohibiting, limiting or allowing the conflicting uses within areas of significant natural resources. In addition to the General ESEE analysis, the following resource site-specific consequences are considered.

Conflicting Uses

The common impact of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; add impervious surface; modifying streams and floodplains; generating pollution; landscaping with non-native or invasive vegetation; building fences or other wildlife barriers; and other impacts such as noise, light, litter and pets.

Within the resource site residential uses are allowed outright or conditionally in the R10, R7, R5, R3, R2, R1 and RMP base zones. Employment uses area allowed in the EG2 base zone. Industrial use are allowed in the IG2 base zone. Commercial uses are allowed in the CX, CE, CM2 and CM1 base zones. Open space uses area allowed in the OS base zone. Development of new uses may involve vegetation clearing, grading, filing, and soil compaction, as well as the addition of impervious surfaces and landscaping with non-native plants, with associated impacts on the natural resources. Basic utilities and other infrastructure are allowed in all base zones. New or upgraded utility corridors may be cleared of vegetation and may fragment wildlife habitat.

ESEE Analysis

The analysis of economic, social, environmental and energy consequences provided in Volume 2 is confirmed for resource site EB12, with the following additional information that clarifies the analysis.

Steep slopes are susceptible to erosion and landslides. Development should be clustered away from steep slopes and trees and vegetation should be maintained to reduce the landslide risks. New or expanded development on steep slopes should be *limited*.

ESEE Decisions

Based on the ESEE general recommendations (Volume 2) and resource site-specific ESEE, the ESEE decisions for Resources Site EB12 are:

1. *Strictly limit* conflicting uses within areas of forest or woodland vegetation on steep slopes.
2. *Limit* conflicting uses within areas of forest or woodland vegetation on not steep slopes.
3. *Allow* conflicting uses within all other areas containing significant natural resources.

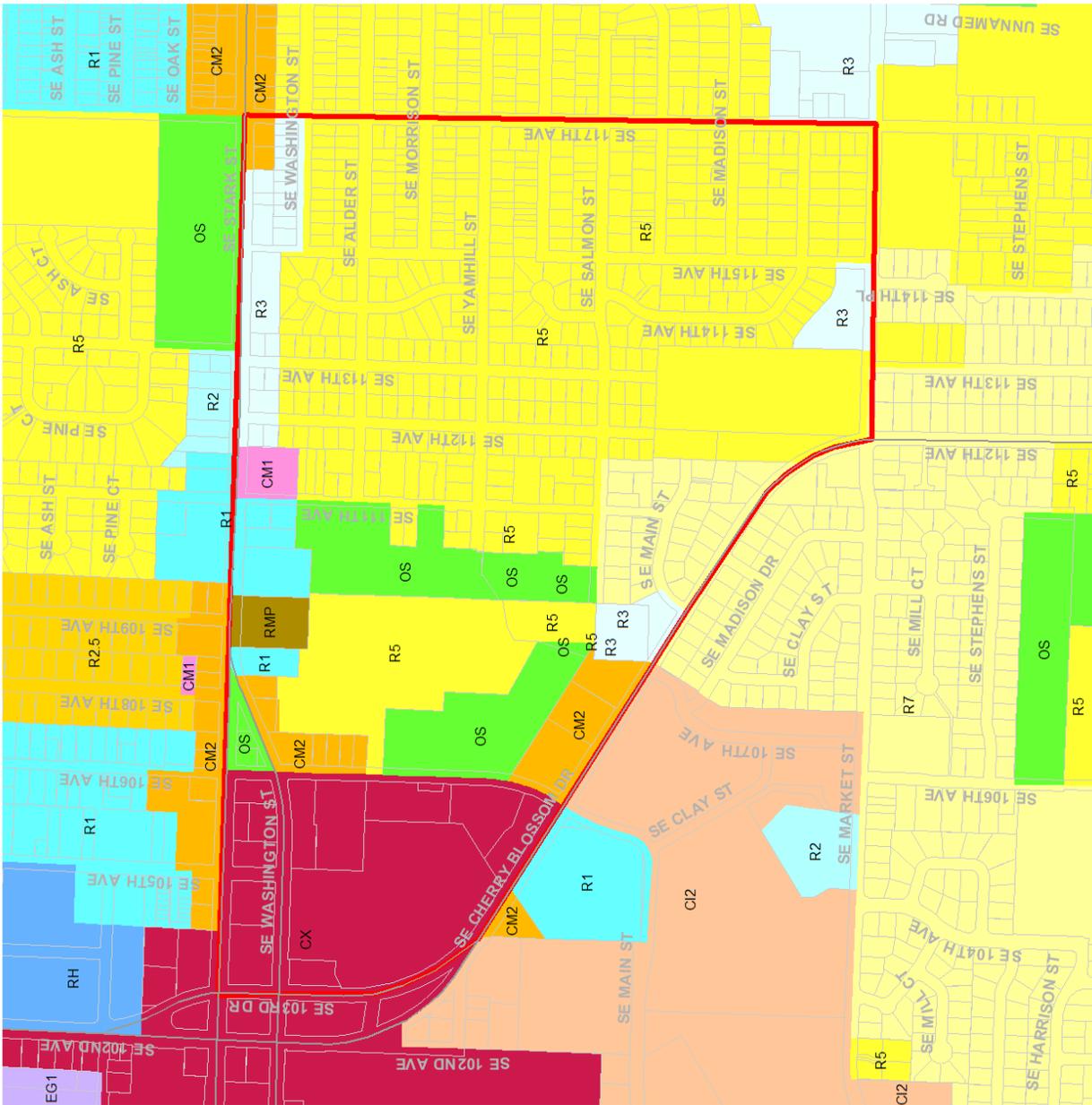
Table C: ESEE Decision for Resource Site EB12	
ESEE Decision	Acres
Strictly Limit	0.0
Limit	8.0
Allow	170.4



**Resource Site: EB12
Floyd Light Park**

Map A: Base Zones

- Resource Site
- Streams
- Taxlots
- City of Portland



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**Resource Site: EB12
Floyd Light Park**

Map C: Land Features

- Resource Site
- Steep Slopes (>25%)
- Forest
- Woodland
- Shrubland
- Herbaceous
- Taxlots
- City of Portland



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0 345 690 Feet
NORTH



**Resource Site: EB12
Floyd Light Park**

Map D: Riparian Corridors

- Resource Site
- High riparian function
- Medium riparian function
- Low riparian function
- open stream channel
- piped stream segment
- Taxlots
- City of Portland



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**Resource Site: EB12
Floyd Light Park**

Map E: Wildlife Habitat

-  Resource Site
-  High wildlife habitat
-  Medium wildlife habitat
-  Low wildlife habitat
-  Special Habitat Areas
-  open stream channel
-  piped stream segment
-  Taxlots
-  City of Portland



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**Resource Site: EB12
Floyd Light Park**

Map G: ESEE Decision

-  Resource Site
-  Limit conflicting uses
-  Strictly limit conflicting uses
-  open stream channel
-  piped stream segment
-  Taxlots
-  City of Portland

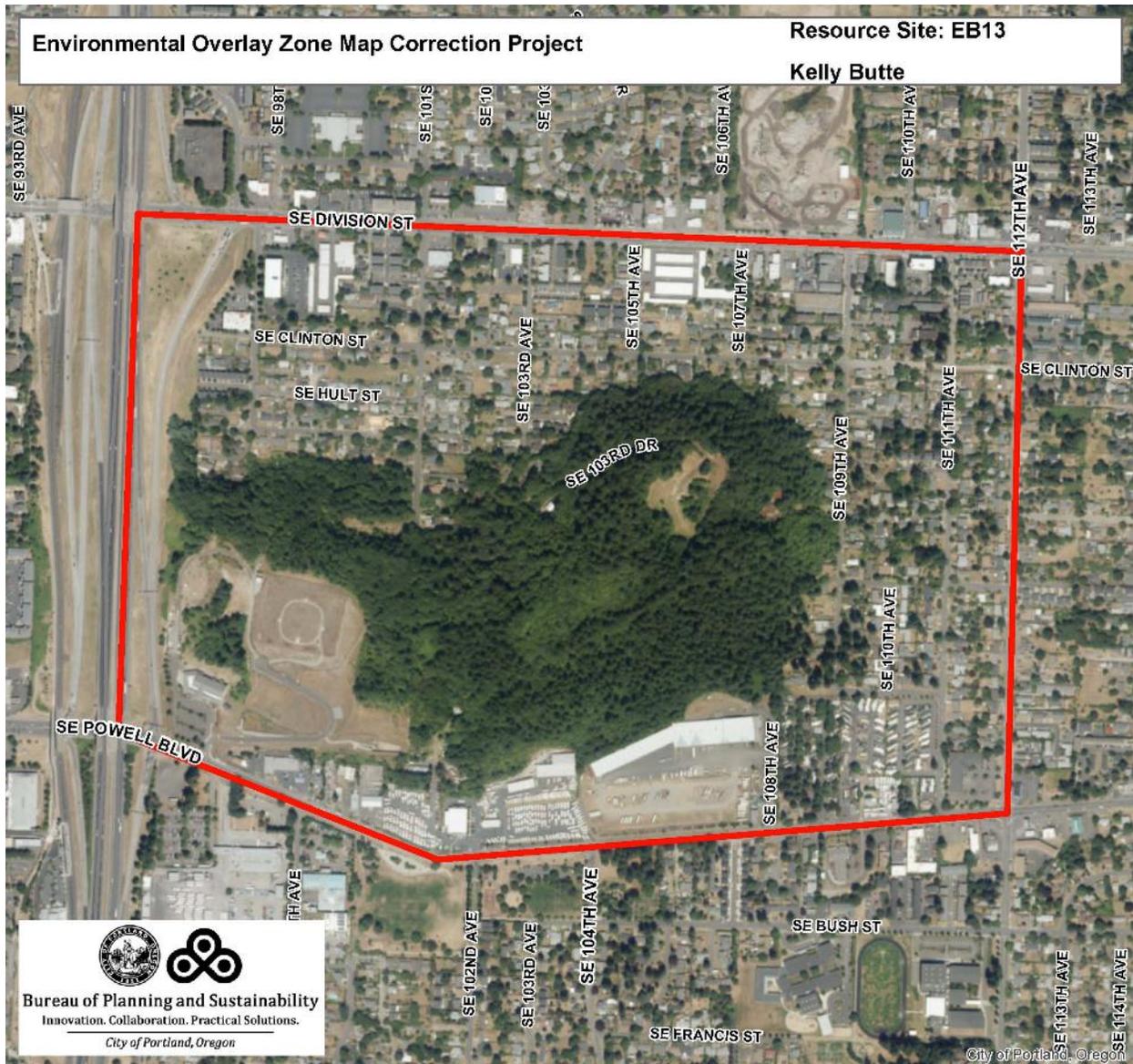


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Resource Site No.: EB13 Resource Site Name: Kelly Butte

Previous Plan: East Butte, Terraces & Wetlands Plan Previous Resource Site No.: 132



Natural Resources Inventory

Table A: Quantity of Natural Resource Features in Resource Site		EB13
		Study Area
Stream (Miles)		0.0
Wetlands (acres)		0.0
Vegetated Areas >= 1/2 acre (acres)		95.5
	Forest (acres)	89.4
	Woodland (acres)	6.1
	Shrubland (acres)	0.0
	Herbaceous (acres)	0.0
Flood Area*		0.0
	Vegetated (acres)	0.0
	Non-vegetated (acres)	0.0
Steep Slopes (acres)**		105.7
Impervious Surface (acres)		88.1
* The flood area includes the FEMA 100-year flood plain plus the adjusted 1996 flood inundation area.		
**Slopes are derived from LiDAR. Steep slopes are area with a slope greater than 25%.		

Kelly Butte is one of three cinder cone volcanoes located within the East Buttes, Terraces and Wetlands planning area. The butte is located approximately five miles east of the Willamette River, directly east of Interstate 205 and between SE Powell Boulevard and SE Division Street.

Kelly Butte is a prominent local landmark, located between nearby Mt. Tabor and Powell Butte. At 596 ft. in elevation, the butte towers 300 ft. above the surrounding neighborhood. The butte is forested and steep, with side slopes approaching 45 degrees. The site is bordered by developed residential areas to the north and east, commercial and light industrial uses to the south, and by the I-205 corridor to the west. Large undeveloped residential lots are located on the central south slope of the butte. Extensive recreational uses, such as hiking, biking and horse riding, occur along the butte's various trails and paved roads. A communication facility (for Portland's 911 emergency line), with a radio tower, and two parking lots are located on the northeast side of the butte. A large city water tank is located on the west slope, and smaller Powell Valley Rd. Water District tanks are found on the east and south slopes.

Approximately 75 percent of the site is undeveloped and forested, containing significant habitat value for wildlife. In addition to habitat, the forest provides scenic, recreational, slope stabilization and erosion control values. A small palustrine wetland is located on the north side of the butte. Approximately half of this area is zoned Open Space and owned by the city; the remaining land is zoned for single-dwelling residential development.

Soils on Kelly Butte are gravelly, of low strength and extremely steep. These soils have severe limitations for building site development meaning that "one or more soil properties or site features are so unfavorable or difficult to overcome that [development] may not be feasible" (Mult. Co. Soil Survey 1983). The gravelly silt loams provide habitat for a rare Erythronium population (see below).

Groundwater resources at Kelly Butte are located primarily within the underlying Troutdale Formation that occupies the entire site except a small area of Boring lava to the west, now partly covered by the I-205 highway.

A sub-area of the Kelly Butte, "Floyd Light Forest," is located near Floyd Light Middle School at approximately SE Salmon Street and SE 110th Avenue. The forest is situated on a small bluff overlooking the school.

The Kelly Butte volcano is of geologic significance, in part because few other cities in the nation have volcanoes within their borders. Recent local and regional planning efforts have formally recognized the significance of Kelly Butte as a natural, scenic and open space resource. In 1991, the Scenic Resources Protection Plan named Kelly Butte as an official scenic viewpoint, noting the "striking view of Mt. Hood which is framed by towering evergreen trees." In 1992, Kelly Butte was identified as a "regionally significant natural area site" in the Metro Greenspaces Master Plan. As such, the butte is envisioned as a major anchor in the overall Greenspace System for the region. According to the Master Plan, Kelly Butte's "forested peak and steep walls provide drama to [the] urban landscape and natural visual and recreation experiences for nearby residents." Arguably no other resource site within the planning area offers the same sense of urban refuge as Kelly Butte.

The Kelly Butte forest is one of the last remaining examples of the Pacific Northwest's western hemlock forest community within the planning area. The forest community is unique among all temperate forests in the world (Waring and Franklin 1979).⁴ A slow growing tree species found at Kelly Butte is the pacific yew (*Taxus brevifolia*), commonly associated with ancient forests of the Pacific Northwest. In recent years, a cancer-fighting substance known as "taxol" was discovered in the bark of the yew. Taxol has proven effective in fighting leukemia and several types of cancer. A significant feature of the vegetation at Kelly Butte is the population of trout or fawn lilies (*Erythronium oregonum*) on the butte's south slope. This is the only known population of wild trout lilies in the city; the special site conditions, including the stony soils and southern exposure, make this site a uniquely suited habitat for the lily. Also unique to the city is the hairy manzanita (*Arctostaphylos columbiana*) which grows on the slopes of the butte.

Kelly Butte's vegetation spans a range of successional stages from scrub/shrub to conifer topping hardwood. The forest is a mix of conifer and broadleaf deciduous trees with Douglas fir being the dominant species. Intermixed with the fir are other, predominantly deciduous trees: bigleaf maple, willow, pacific dogwood, red alder, bitter cherry, black cottonwood, Oregon ash, western red cedar, cascara, oak, birch and European hawthorn.

Shrub species at Kelly Butte include western hazel, Oregon grape, wild rose, vine maple, Indian plum, choke cherry, Douglas spiraea, thimbleberry, oceanspray, serviceberry, snowberry, red-flowering current, salal, trailing blackberry and evergreen huckleberry. The herbaceous layer is comprised of snow queen, fringecup, fairy bells, vanilla leaf, trillium, bunchberry, poison oak, inside-out flower, false Solomon's seal, wild strawberry, clematis, cleavers, sedges, grasses, and ferns: sword, licorice, bracken and wood fern.

Brushy deciduous tree and shrub growth suggest that selective logging has occurred on Kelly Butte in the past. Invasive exotic plants such as Himalayan blackberry, laurel, holly and English ivy are present, particularly near the developed areas at lower elevations. Domestic animals also are present.

The forested slopes in varying stages of succession provide some of the highest habitat values within the East Buttes and Terraces planning area. Shrub pockets provide food and cover for passerine species and small mammals. Forest trees provide food, cover, perch and nest sites for woodpeckers and other passerine species. Anna's hummingbird (*Calypte anna*) was observed and reportedly nests at the butte, making this the northernmost nesting site in the bird's range. Species observed include chickadee, song sparrow, varied thrush, Oregon junco, robins and kinglets. Mammals observed include grey squirrel and brush rabbit.

The Troutdale Formation underlying much of the butte provides an excellent aquifer. Groundwater yields are about 500 gallons per minute (gpm). The Boring lava provides low yields of only 10 gpm. Recharge occurs principally through infiltration, but also through migration from overlying formations and adjacent recharge areas (Trimble 1963; Redfern 1976).

The Floyd Light Forest sub-area is about 3.5 acres in size and is situated on a small, west sloping bluff. The forest contains Douglas fir, bigleaf maple, western red cedar, bitter cherry and a few non-native trees such as European hawthorn. Understory vegetation includes vine maple, oceanspray, western hazel, thimbleberry, mock orange, wild rose, Oregon grape, choke cherry, Himalayan blackberry and laurel. Sword and licorice ferns, cleavers and ivy make up the ground layer. Habitat values are medium (habitat score: 38) but the forest provides important nesting, forage and cover habitat for local birds.

Table B: Quality of Natural Resource Functions in Resource Site EB13				
Resource Site (acres) = 295.920076				
	High	Medium	Low	Total
Riparian Corridors*				
acres	0.0	0.0	0.0	0.0
percent total inventory site area	0.0%	0.0%	0.0%	0.0%
Wildlife Habitat*				
acres	0.0	87.1	2.4	89.4
percent total inventory site area	0.0%	29.4%	0.8%	30.2%
Special Habitat Areas**				
acres				107.1
percent total inventory site area				36.2%
Combined Total⁺				
acres	107.1	3.0	0.0	110.1
percent total inventory site area	36.2%	1.0%	0.0%	37.2%
<p>* High-ranked riparian resources, Special Habitat Areas, and wildlife habitat include open water. ** Special Habitat Areas rank high for wildlife habitat. +Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.</p>				

Determination of Significance

Natural resource features mapped in the resource site that provide functions identified in the Natural Resources Inventory are determined to be significant (Map F). Within resource site EB13 the following significant features and functions are present:

Significant Natural Resource Features: forest patches and associated and contiguous woodland patches two acres in size or larger; steep slopes; rare plant species; and Special Habitat Areas.

Significant Riparian Corridor Functions: none

Significant Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; and reduction of noise, light and vibration.

Resource Site-specific ESEE

The General ESEE analysis, Volume 2, describes the conflicting uses and provides an overarching analysis of the economic, social, environmental and energy consequences of prohibiting, limiting or allowing the conflicting uses within areas of significant natural resources. In addition to the General ESEE analysis, the following resource site-specific consequences are considered.

Conflicting Uses

The common impact of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; add impervious surface; modifying streams and floodplains; generating pollution; landscaping with non-native or invasive vegetation; building fences or other wildlife barriers; and other impacts such as noise, light, litter and pets.

Within the resource site residential uses are allowed outright or conditionally in the R10, R7, R5, R3, R2, R1 and RMP base zones. Employment uses area allowed in the EG2 base zone. Industrial usea are allowed in the IG2 base zone. Commercial uses are allowed in the CX, CE, CM2 and CM1 base zones. Open space uses area allowed in the OS base zone. Development of new uses may involve vegetation clearing, grading, filing, and soil compaction, as well as the addition of impervious surfaces and landscaping with non-native plants, with associated impacts on the natural resources. Basic utilities and other infrastructure are allowed in all base zones. New or upgraded utility corridors may be cleared of vegetation and may fragment wildlife habitat.

ESEE Analysis

The analysis of economic, social, environmental and energy consequences provided in Volume 2 is confirmed for resource site EB13, with the following additional information that clarifies the analysis.

Steep slopes are susceptible to erosion and landslides. Development should be clustered away from steep slopes and trees and vegetation should be maintained to reduce the landslide risks. New or expanded development on steep slopes should be *limited*.

ESEE Decisions

Based on the ESEE general recommendations (Volume 2) and resource site-specific ESEE, the ESEE decisions for Resources Site EB13 are:

1. *Strictly limit* conflicting uses within areas of forest vegetation on steep slopes.
2. *Limit* conflicting uses within areas of forest vegetation on not steep slopes.
3. *Allow* conflicting uses within all other areas containing significant natural resources.

Table C: ESEE Decision for Resource Site EB13	
ESEE Decision	Acres
Strictly Limit	71.4
Limit	18.5
Allow	206.0

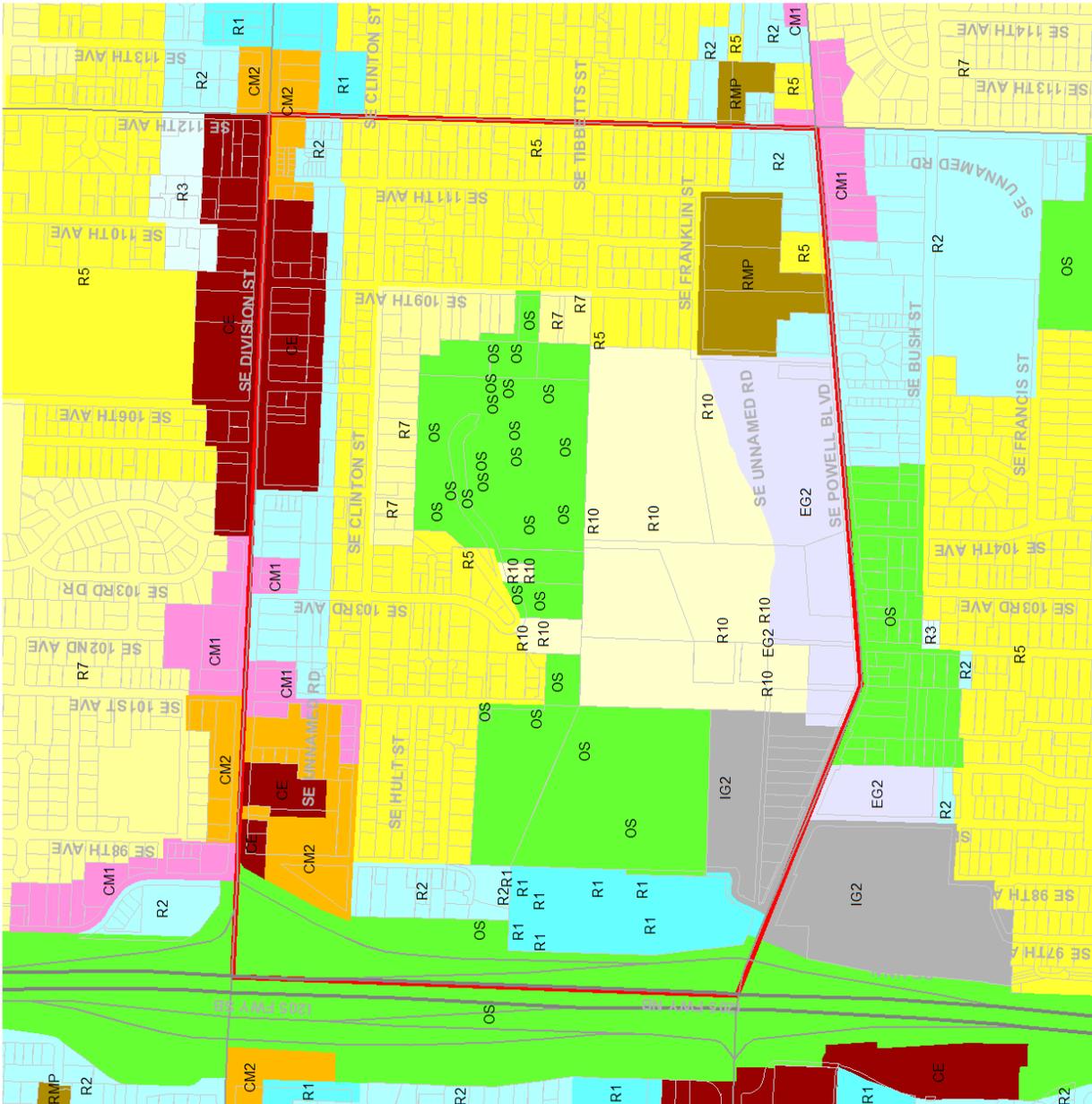


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**Resource Site: EB13
Kelly Butte**

Map A: Base Zones

- Resource Site
- Streams
- Taxlots
- City of Portland



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**Resource Site: EB13
Kelly Butte**

Map D: Riparian Corridors

- Resource Site
- High riparian function
- Medium riparian function
- Low riparian function
- open stream channel
- piped stream segment
- Taxlots
- City of Portland

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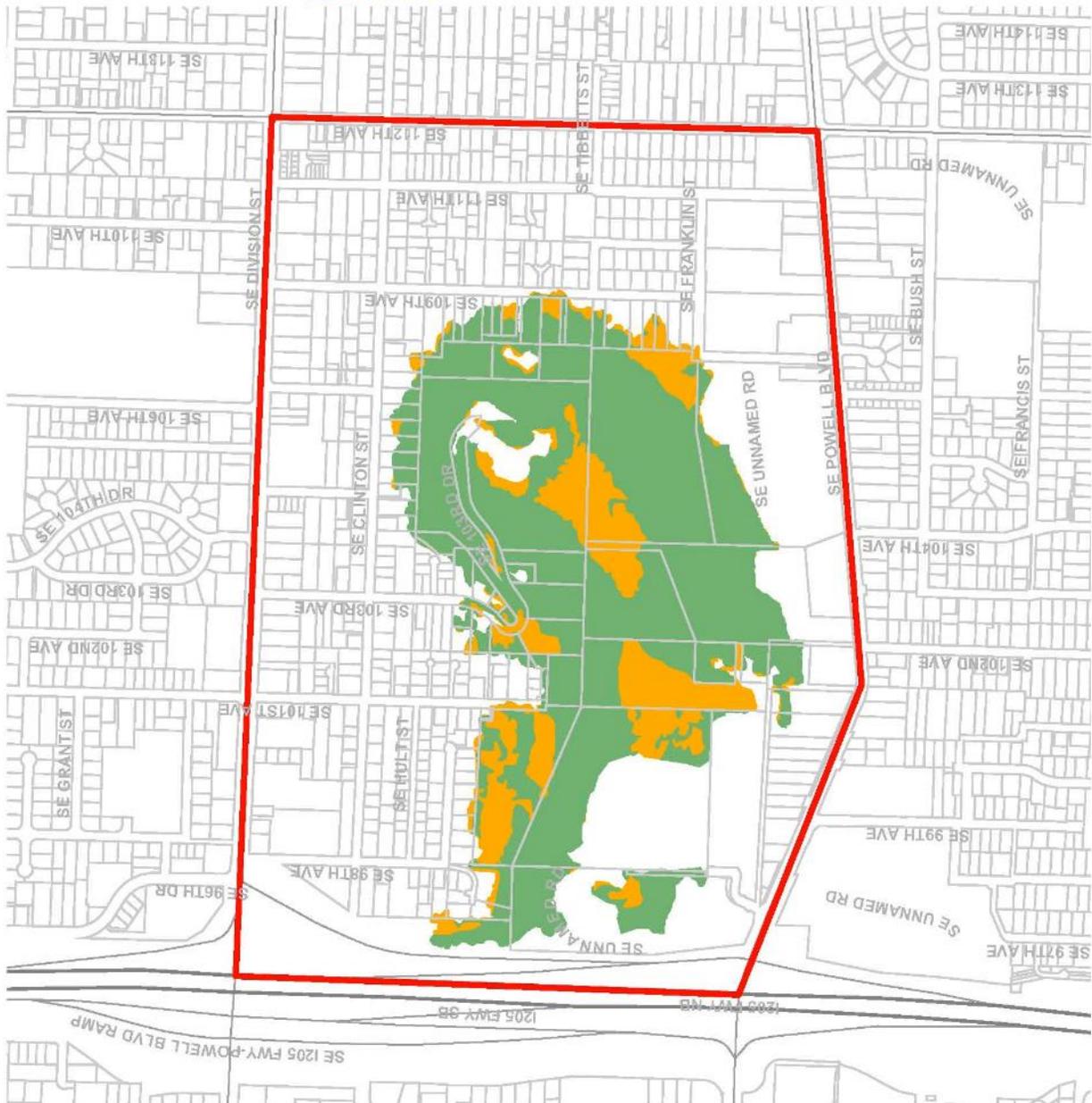


**Resource Site: EB13
Kelly Butte**

Map G: ESEE Decision

-  Resource Site
-  Limit conflicting uses
-  Strictly limit conflicting uses
-  open stream channel
-  piped stream segment
-  Taxlots
-  City of Portland

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Resource Site No.: EB14 Resource Site Name: Glendoveer Golf Course
Previous Plan: East Butte, Terraces & Wetlands Plan Previous Resource Site No.: 136



Natural Resources Inventory

Table A: Quantity of Natural Resource Features in Resource Site		EB14
		Study Area
Stream (Miles)		0.0
Wetlands (acres)		0.0
Vegetated Areas >= 1/2 acre (acres)		78.9
	Forest (acres)	61.7
	Woodland (acres)	17.2
	Shrubland (acres)	0.0
	Herbaceous (acres)	0.0
Flood Area*		0.0
	Vegetated (acres)	0.0
	Non-vegetated (acres)	0.0
Steep Slopes (acres)**		3.4
Impervious Surface (acres)		26.5
* The flood area includes the FEMA 100-year flood plain plus the adjusted 1996 flood inundation area.		
**Slopes are derived from LiDAR. Steep slopes are area with a slope greater than 25%.		

The Glendoveer Golf Course is located in outer-northeast Portland, near the eastern city limits. The site is bordered by several residential areas and functions as a neighborhood park.

This site is a heavily used recreational area, both as a golf course and as a walking and jogging area (the site contains a fitness course). The site is level and is characterized by manicured lawns (18 golf lanes) separated from one another by individual rows and less frequently groves of trees.

This site is generally too managed and too populated to be of much value to wildlife. The forest groves and native understory vegetation are used by grey squirrels, chickarees and several bird species. Because of the high human use at the ground surface, nesting habitat is limited to the tree canopies. One exception is a secluded woodland located in the far northwest corner of the golf course which has higher habitat values (score: 32) than the overall rating summarized below. This woodland is used by screech and great horned owls, winter wren, flickers, sparrows and rabbits.

Douglas fir (up to 3 ft. in diameter) and vine maple (understory) are the dominant plant species. Other native plants include bigleaf maple, red alder, red elderberry, mock orange, salal, western hazel, Oregon grape, oceanspray, wild rose, red huckleberry, Indian plum, blackcap and sword fern. English holly, ivy and blackberry are also present.

Table B: Quality of Natural Resource Functions in Resource Site EB14				
Resource Site (acres) = 281.6447				
	High	Medium	Low	Total
Riparian Corridors*				
acres	0.0	0.0	0.0	0.0
percent total inventory site area	0.0%	0.0%	0.0%	0.0%
Wildlife Habitat*				
acres	0.0	0.0	52.9	52.9
percent total inventory site area	0.0%	0.0%	18.8%	18.8%
Special Habitat Areas**				
acres				0.0
percent total inventory site area				0.0%
Combined Total⁺				
acres	0.0	0.0	52.9	52.9
percent total inventory site area	0.0%	0.0%	18.8%	18.8%
<p>* High-ranked riparian resources, Special Habitat Areas, and wildlife habitat include open water. ** Special Habitat Areas rank high for wildlife habitat. +Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.</p>				

Determination of Significance

Natural resource features mapped in the resource site that provide functions identified in the Natural Resources Inventory are determined to be significant (Map F). Within resource site EB14 the following significant features and functions are present:

Significant Natural Resource Features: forest patches and associated and contiguous woodland patches two acres in size or larger.

Significant Riparian Corridor Functions: none

Significant Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; and reduction of noise, light and vibration.

Resource Site-specific ESEE

The General ESEE analysis, Volume 2, describes the conflicting uses and provides an overarching analysis of the economic, social, environmental and energy consequences of prohibiting, limiting or allowing the conflicting uses within areas of significant natural resources. In addition to the General ESEE analysis, the following resource site-specific consequences are considered.

Conflicting Uses

The common impact of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; add impervious surface; modifying streams and floodplains; generating pollution; landscaping with non-native or invasive vegetation; building fences or other wildlife barriers; and other impacts such as noise, light, litter and pets.

Within the resource site residential uses are allowed outright or conditionally in the R7 and R2 base zones. Open space uses are allowed in the OS base zone. Development of new uses may involve vegetation clearing, grading, filing, and soil compaction, as well as the addition of impervious surfaces and landscaping with non-native plants, with associated impacts on the natural resources. Basic utilities and other infrastructure are allowed in all base zones. New or upgraded utility corridors may be cleared of vegetation and may fragment wildlife habitat.

ESEE Analysis

The analysis of economic, social, environmental and energy consequences provided in Volume 2 is confirmed for resource site EB14, with the following additional information that clarifies the analysis.

Limiting conflicting uses within the small woodland on the eastern edge of the golf course will have no significant economic impact on use of this site. Protection of this woodland will provide food, cover and nesting habitat for owls, other avian species and small mammals.

ESEE Decisions

Based on the ESEE general recommendations (Volume 2) and resource site-specific ESEE, the ESEE decisions for Resources Site EB14 are to *limit* conflicting uses within the approximately 5-acre area of forest vegetation located on the west edge of the golf course.

Table C: ESEE Decision for Resource Site EB14	
ESEE Decision	Acres
Strictly Limit	0.0
Limit	4.1
Allow	277.6

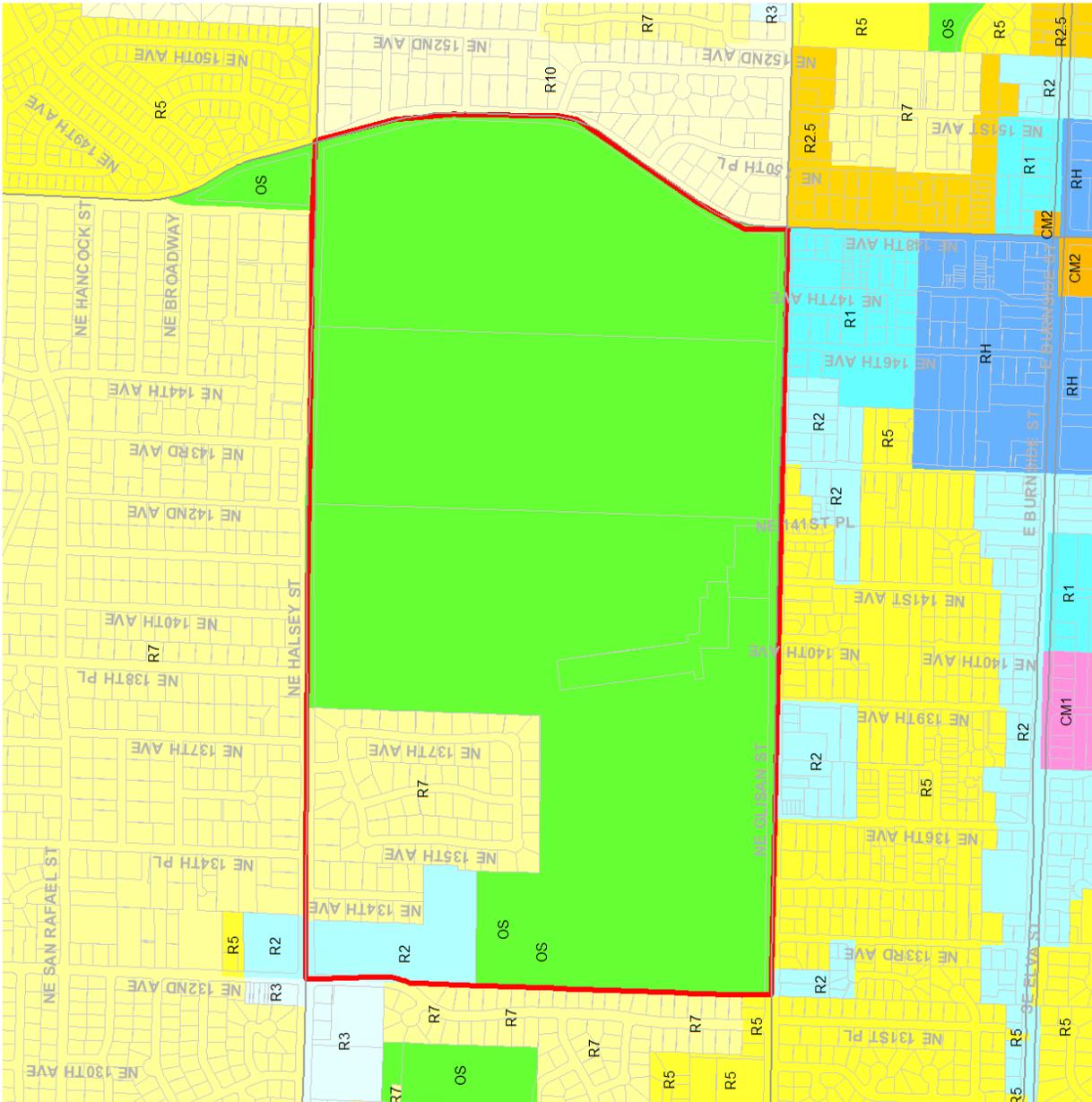


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**Resource Site: EB14
Glendoveer Golf Course**

Map A: Base Zones

- Resource Site
- Streams
- Taxlots
- City of Portland



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**Resource Site: EB14
Glendoveer Golf Course**

Map B: Water Related Features

-  Resource Site
-  Open stream channel
-  Piped stream segment
-  Wetlands
-  Floodplain
-  Taxlots
-  City of Portland



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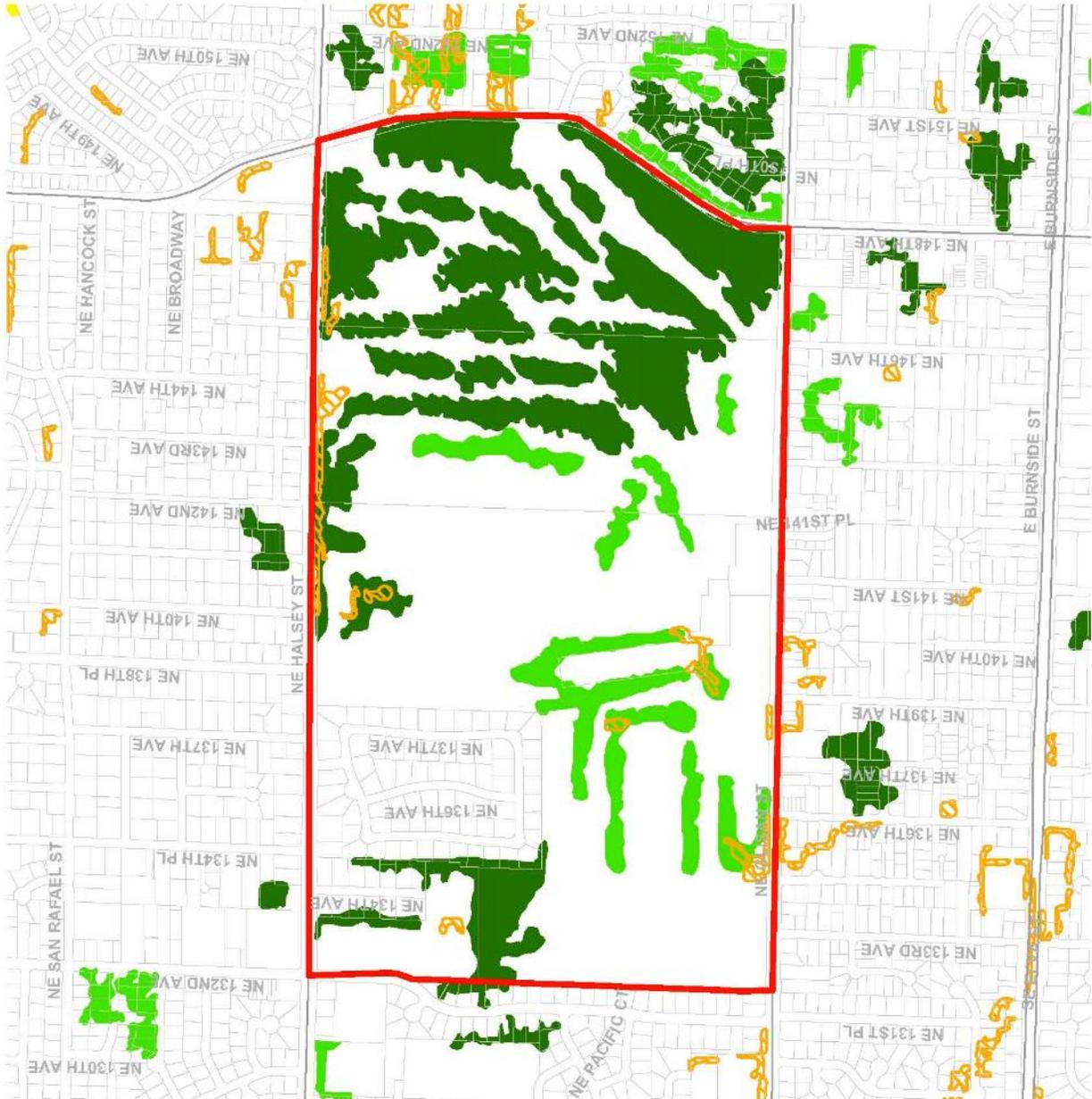


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**Resource Site: EB14
Glendoveer Golf Course**

Map C: Land Features

- Resource Site
- Steep Slopes (>25%)
- Forest
- Woodland
- Shrubland
- Herbaceous
- Taxlots
- City of Portland

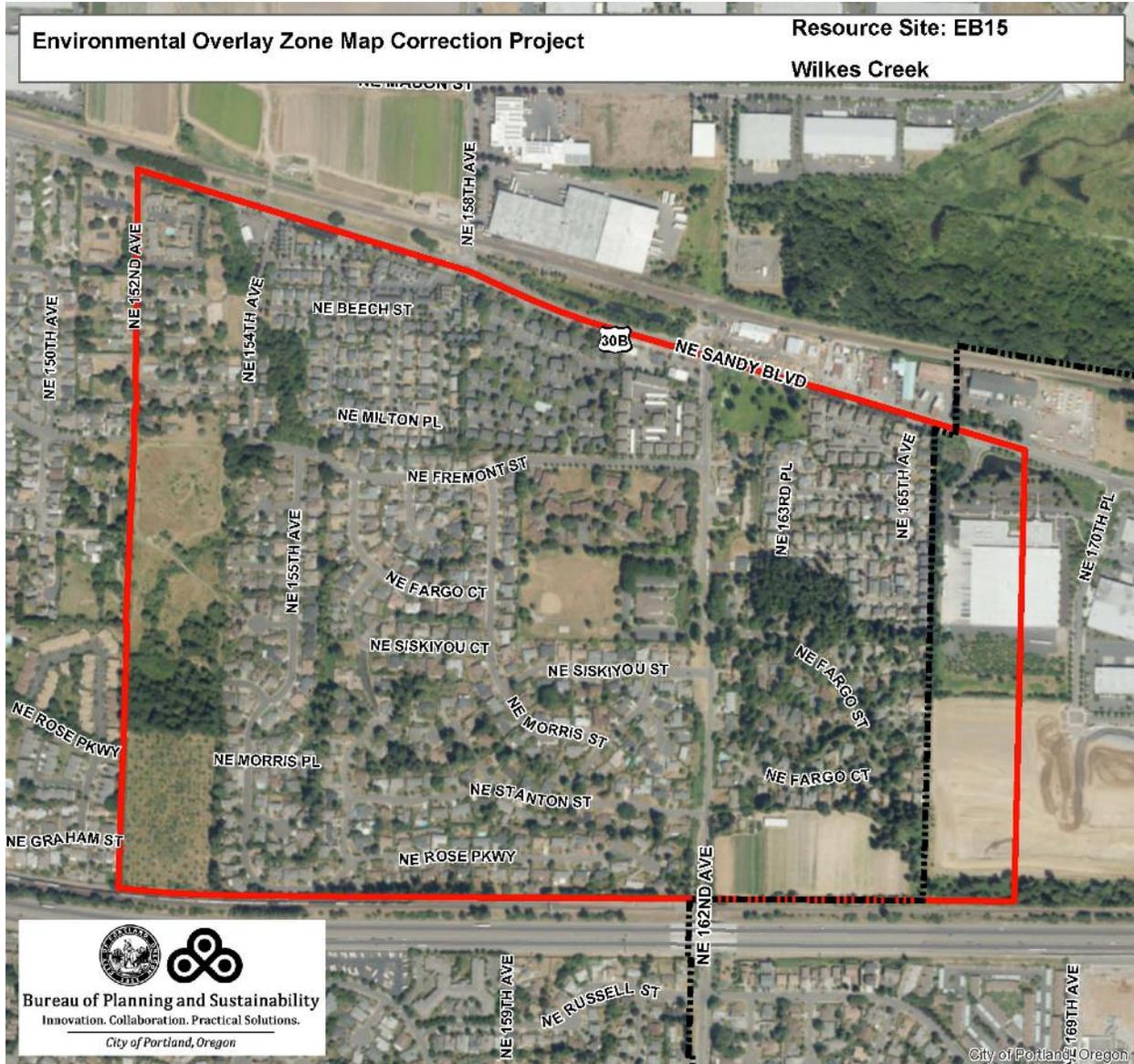


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Resource Site No.: EB15 Resource Site Name: Wilkes Creek

Previous Plan: East Butte, Terraces & Wetlands Plan Previous Resource Site No.: 135



Natural Resources Inventory

Table A: Quantity of Natural Resource Features in Resource Site		EB15
		Study Area
Stream (Miles)		4.4
Wetlands (acres)		0.5
Vegetated Areas >= 1/2 acre (acres)		98.7
	Forest (acres)	19.5
	Woodland (acres)	31.6
	Shrubland (acres)	0.0
	Herbaceous (acres)	47.6
Flood Area*		0.0
	Vegetated (acres)	0.0
	Non-vegetated (acres)	0.0
Steep Slopes (acres)**		22.8
Impervious Surface (acres)		81.8
* The flood area includes the FEMA 100-year flood plain plus the adjusted 1996 flood inundation area.		
**Slopes are derived from LiDAR. Steep slopes are area with a slope greater than 25%.		

This site is divided into two principle areas, one east of NE 152nd Avenue and the other east of NE 162nd Avenue. The easterly area is 20 acres of predominantly forest resource and extends east across the city line into Gresham. The Highwood subdivision is located in the center of this resource area. To the far north, at the intersection of 162nd Avenue and Sandy Blvd., is a small drainageway. The western area is approximately 30 acres of forest, creeks and scrub-shrub wetland. It borders I-84 (south), Holcomb subdivision (east), Riverdiff Estates Condos (west) and the Columbia slough (north).

This area has a gentle, northward trending topography with slopes between five and 25 percent. This area is developing quickly, and the two subdivisions noted above are fairly recent, with many new homes and roadways.

The eastern resource area contains a mid-seral to mature western hemlock/western red cedar/Douglas fir forest approaching 100 years in age. The forest has a high proportion of snags, exceeding most other resource sites within the planning area. The western area contains a mix of plant communities including a mid-seral Douglas fir forest, riparian hardwoods and scrub-shrub wetlands. The general quality of the plant communities and wildlife habitat of both areas is high, despite the presence of Interstate 84 and nearby residential developments.

Western hemiock, western red cedar and Douglas fir are the dominant tree species, with diameters of up to three feet. Other plant species at this site include grand fir, bigleaf maple (one at 4' in diameter), red alder, cottonwood and willows. Shrubs present include red elderberry, dull Oregon grape, snowberry, swamp rose, red-osier dogwood and Indian plum. Himalayan blackberry has invaded certain areas, particularly within the western resource area. The herbaceous layer includes coltsfoot, pacific waterleaf, ivy, nettle, spring beauty, and licorice, wood and sword ferns. Cattails and skunk cabbage

are present in the wetland areas.

The drainageway at 162nd and Sandy contains a pond and wetland area bordered by large willow, maple, alder, cherry and redwood trees. Given the site's proximity to two roadways, a remarkable number of bird species were observed using the site. From a habitat perspective, the wetlands is a significant resource. Other values include surface water drainage, flood storage and groundwater recharge.

This site contains Quafeno and Quatama loam soils, which are hydric alluvium soils that pose severe limitations to building site development due to wetness caused by a seasonal high water table. Depth to high water table is 2 to 3 feet between December and April and standing water is occasionally apparent during this period (Mult. Co. Soil Survey 1983).

Table B: Quality of Natural Resource Functions in Resource Site EB15				
Resource Site (acres) = 245.384861				
	High	Medium	Low	Total
Riparian Corridors*				
acres	9.8	10.4	21.6	41.9
percent total inventory site area	4.0%	4.3%	8.8%	17.1%
Wildlife Habitat*				
acres	0.0	0.0	17.7	17.7
percent total inventory site area	0.0%	0.0%	7.2%	7.2%
Special Habitat Areas**				
acres				10.1
percent total inventory site area				4.1%
Combined Total⁺				
acres	13.7	8.1	28.1	50.0
percent total inventory site area	5.6%	3.3%	11.4%	20.4%
* High-ranked riparian resources, Special Habitat Areas, and wildlife habitat include open water. ** Special Habitat Areas rank high for wildlife habitat. +Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.				

Determination of Significance

Natural resource features mapped in the resource site that provide functions identified in the Natural Resources Inventory are determined to be significant (Map F). Within resource site EB15 the following significant features and functions are present:

Significant Natural Resource Features: open stream; wetlands; forest vegetation within 300 feet of waterbodies; woodland, shrubland and herbaceous vegetation within 300 feet of waterbodies; forest vegetation on steep slopes (>25% slope) contiguous to and within 780 feet of waterbodies; developed land within 50 feet of waterbodies; forest patches and associated and contiguous woodland patches two acres in size or larger; rare plant species; and Special Habitat Areas.

Significant Riparian Corridor Functions: microclimate and shade; stream flow moderation and water storage; bank function and sediment, pollution and nutrient control; large wood and channel dynamics; organic inputs, food web and nutrient cycling; and riparian wildlife movement corridor.

Significant Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; and reduction of noise, light and vibration.

Resource Site-specific ESEE

The General ESEE analysis, Volume 2, describes the conflicting uses and provides an overarching analysis of the economic, social, environmental and energy consequences of prohibiting, limiting or allowing the conflicting uses within areas of significant natural resources. In addition to the General ESEE analysis, the following resource site-specific consequences are considered.

Conflicting Uses

The common impact of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; add impervious surface; modifying streams and floodplains; generating pollution; landscaping with non-native or invasive vegetation; building fences or other wildlife barriers; and other impacts such as noise, light, litter and pets.

Within the resource site residential uses are allowed outright or conditionally in the R7, R3 and R2 base zones. Commercial uses are allowed in the CM1 base zone. Open space uses are allowed in the OS base zone. Development of new uses may involve vegetation clearing, grading, filing, and soil compaction, as well as the addition of impervious surfaces and landscaping with non-native plants, with associated impacts on the natural resources. Basic utilities and other infrastructure are allowed in all base zones. New or upgraded utility corridors may be cleared of vegetation and may fragment wildlife habitat.

ESEE Analysis

The analysis of economic, social, environmental and energy consequences provided in Volume 2 is confirmed for resource site EB15, with the following additional information that clarifies the analysis.

Strictly limiting or limiting conflicting uses generally would retain the riparian corridor and wildlife habitat functions of the significant natural resource features including maintaining habitat for at risk species, maintaining the flow moderation, water quality and flood control functions of streams and

wetlands, maintaining vegetation on steep slopes, and maintaining the stormwater management and air-cooling functions of the tree canopy. Mitigation for negative consequences of additional development in areas of high or medium ranked natural resources should be required. New or expanded development should be setback from a minimum distance streams and wetlands.

Steep slopes are susceptible to erosion and landslides. Development should be clustered away from steep slopes and trees and vegetation should be maintained to reduce the landslide risks. New or expanded development on steep slopes should be *limited*.

ESEE Decisions

Based on the ESEE general recommendations (Volume 2) and resource site-specific ESEE, the ESEE decisions for Resources Site EB15 are:

1. *Strictly limit* conflicting uses within stream channels from top-of-bank to top-of-bank, wetlands, land within 25 feet of stream top-of-bank, and land within 25 feet of wetlands.
2. *Limit* conflicting uses within land between 25 and 50 feet of stream top-of-bank, 25 and 50 feet of wetland and areas of forest vegetation contiguous to but more than 50 feet from stream top-of-bank or wetlands.
3. *Limit* conflicting uses within areas of high, medium or low ranked wildlife habitat that is more than 50 feet from stream top-of-bank or wetlands.
4. *Allow* conflicting uses within all other areas containing significant natural resources.

Table C: ESEE Decision for Resource Site EB15	
ESEE Decision	Acres
Strictly Limit	12.4
Limit	15.8
Allow	217.1

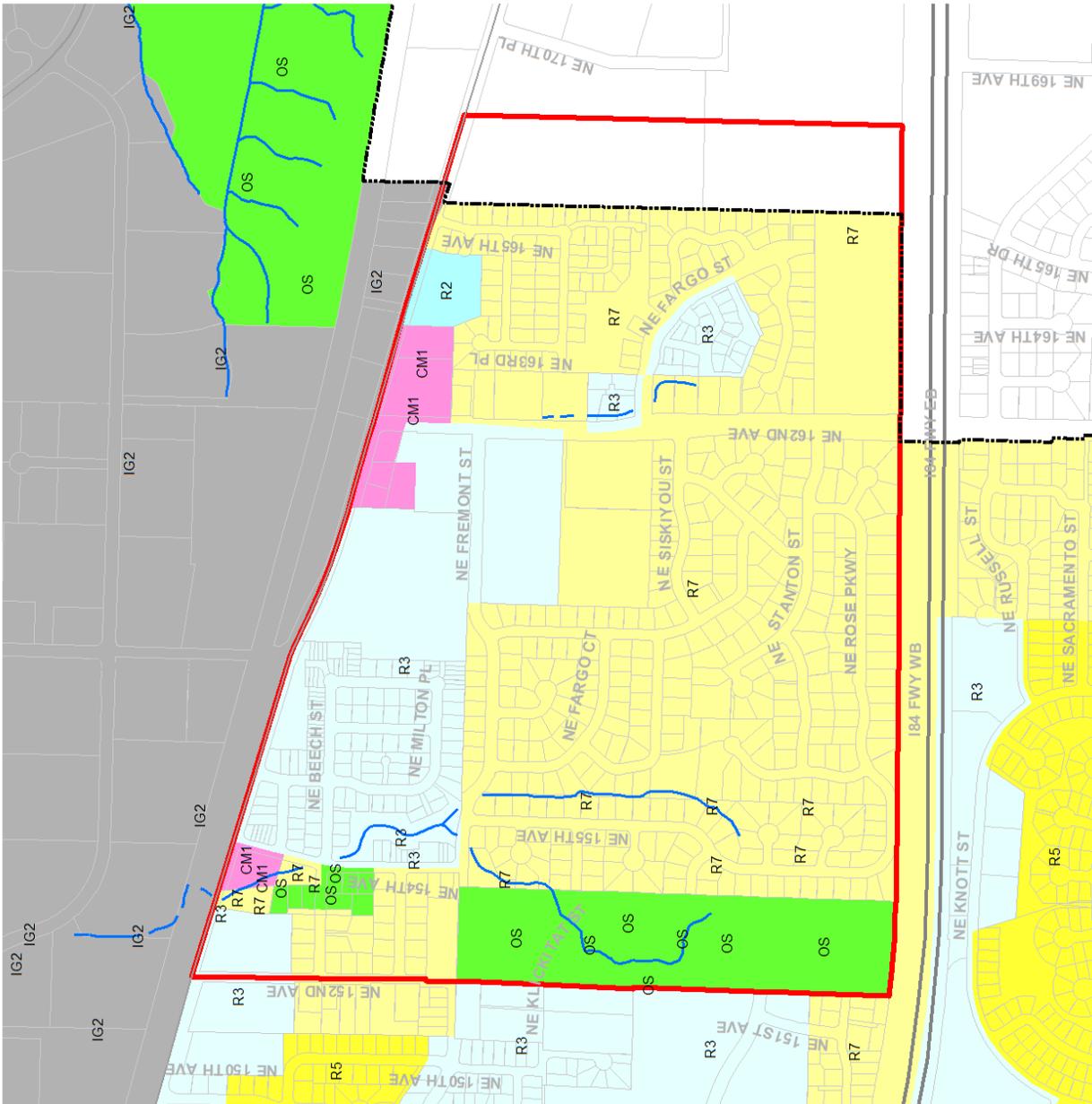


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**Resource Site: EB15
Wilkes Creek**

Map A: Base Zones

- Resource Site
- Streams
- Taxlots
- City of Portland



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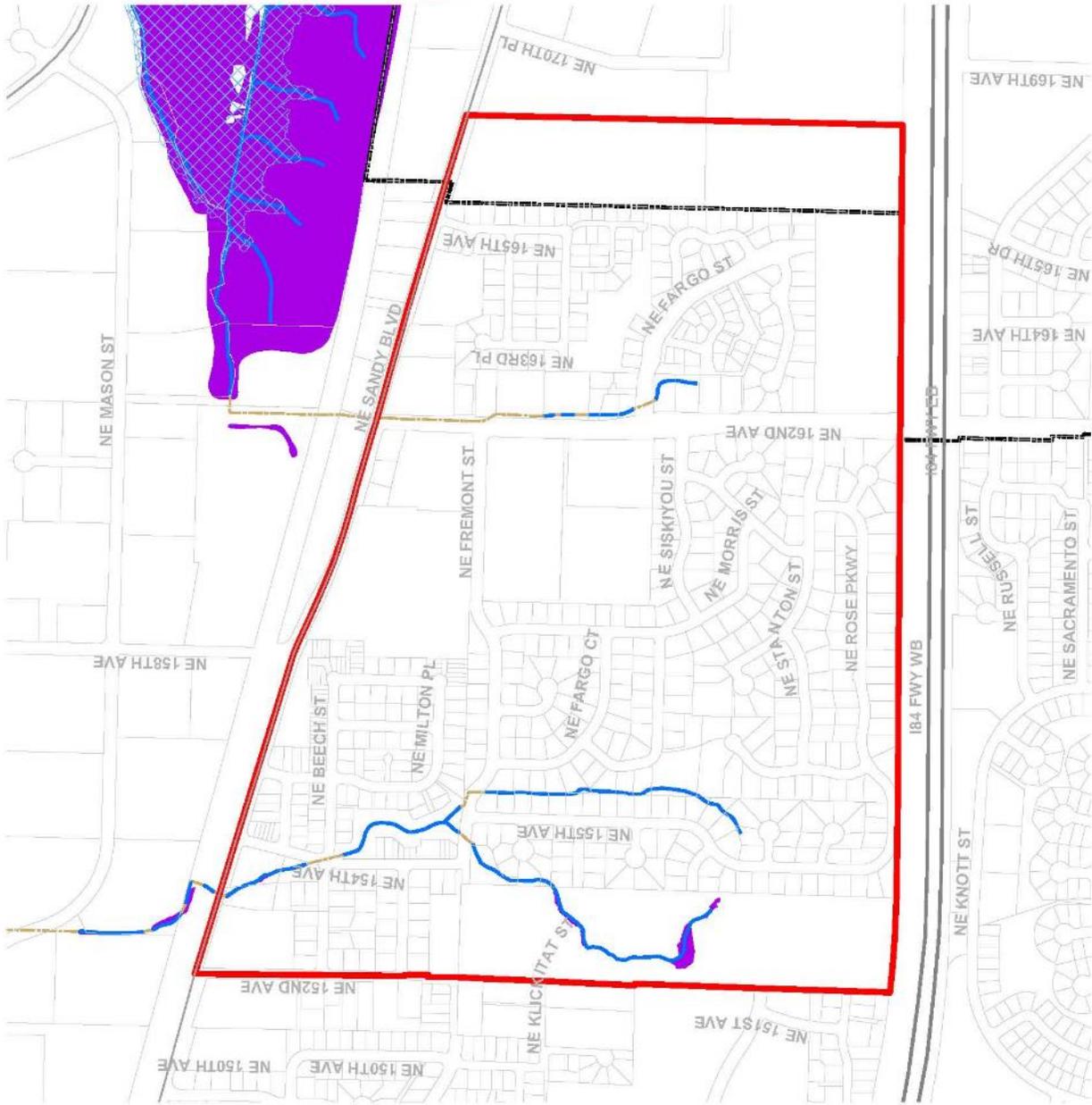


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**Resource Site: EB16
Wilkes Creek**

Map B: Water Related Features

-  Resource Site
-  Open stream channel
-  Piped stream segment
-  Wetlands
-  Floodplain
-  Taxlots
-  City of Portland



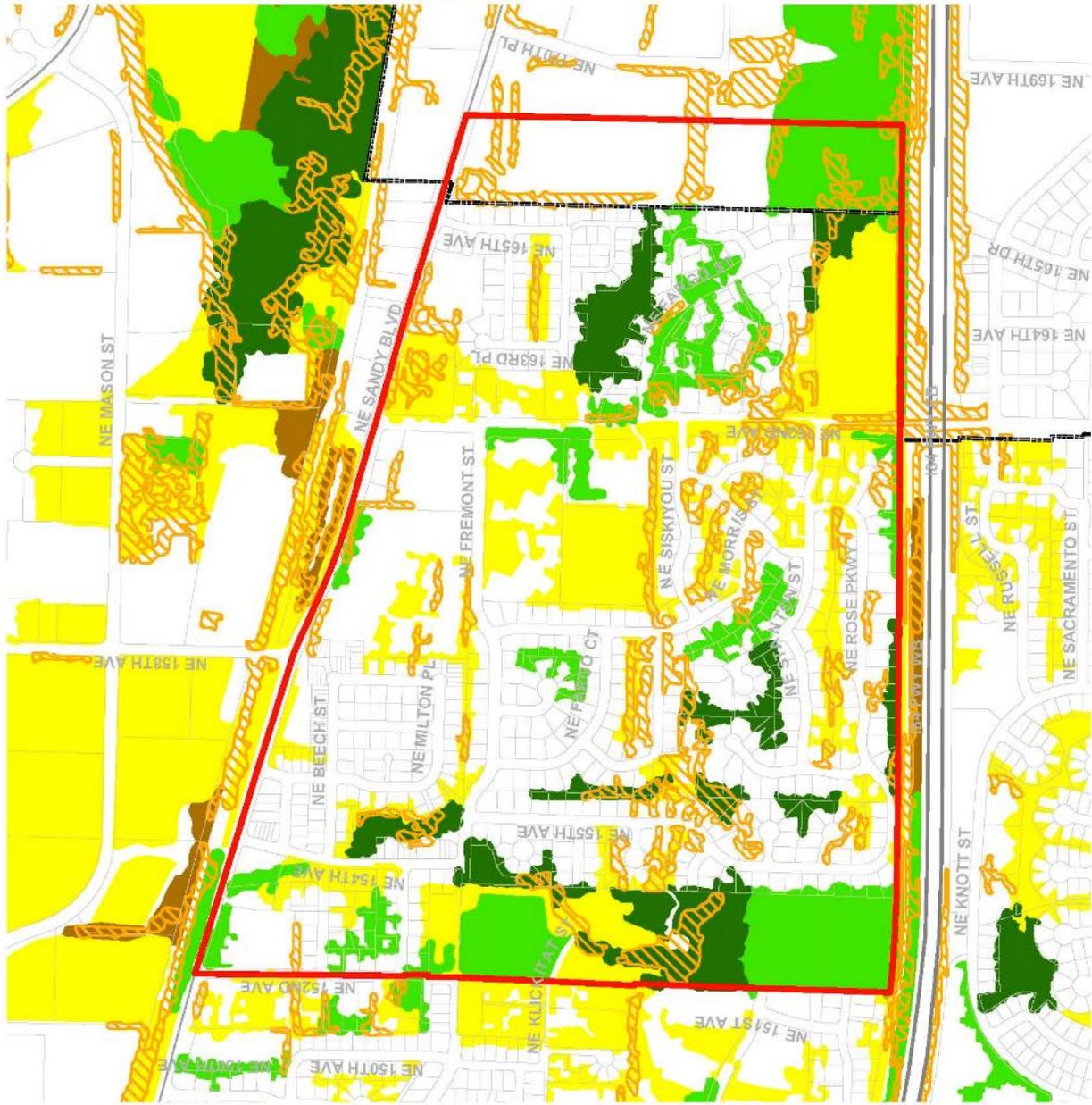
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**Resource Site: EB16
Wilkes Creek**

Map C: Land Features

-  Resource Site
-  Steep Slopes (>25%)
-  Forest
-  Woodland
-  Shrubland
-  Herbaceous
-  Taxlots
-  City of Portland



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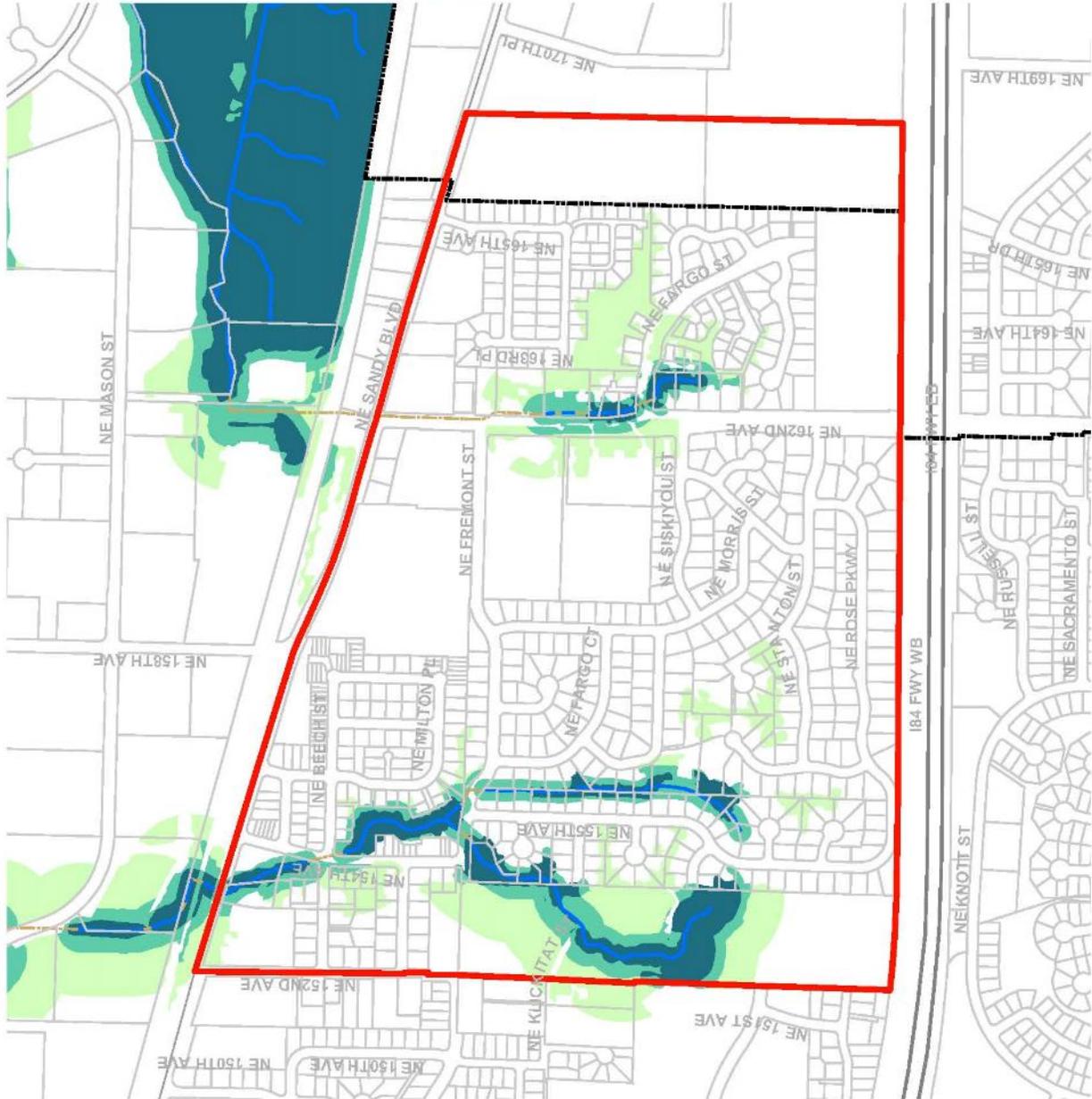




**Resource Site: EB15
Wilkes Creek**

Map D: Riparian Corridors

- Resource Site
- High riparian function
- Medium riparian function
- Low riparian function
- open stream channel
- piped stream segment
- Taxlots
- City of Portland



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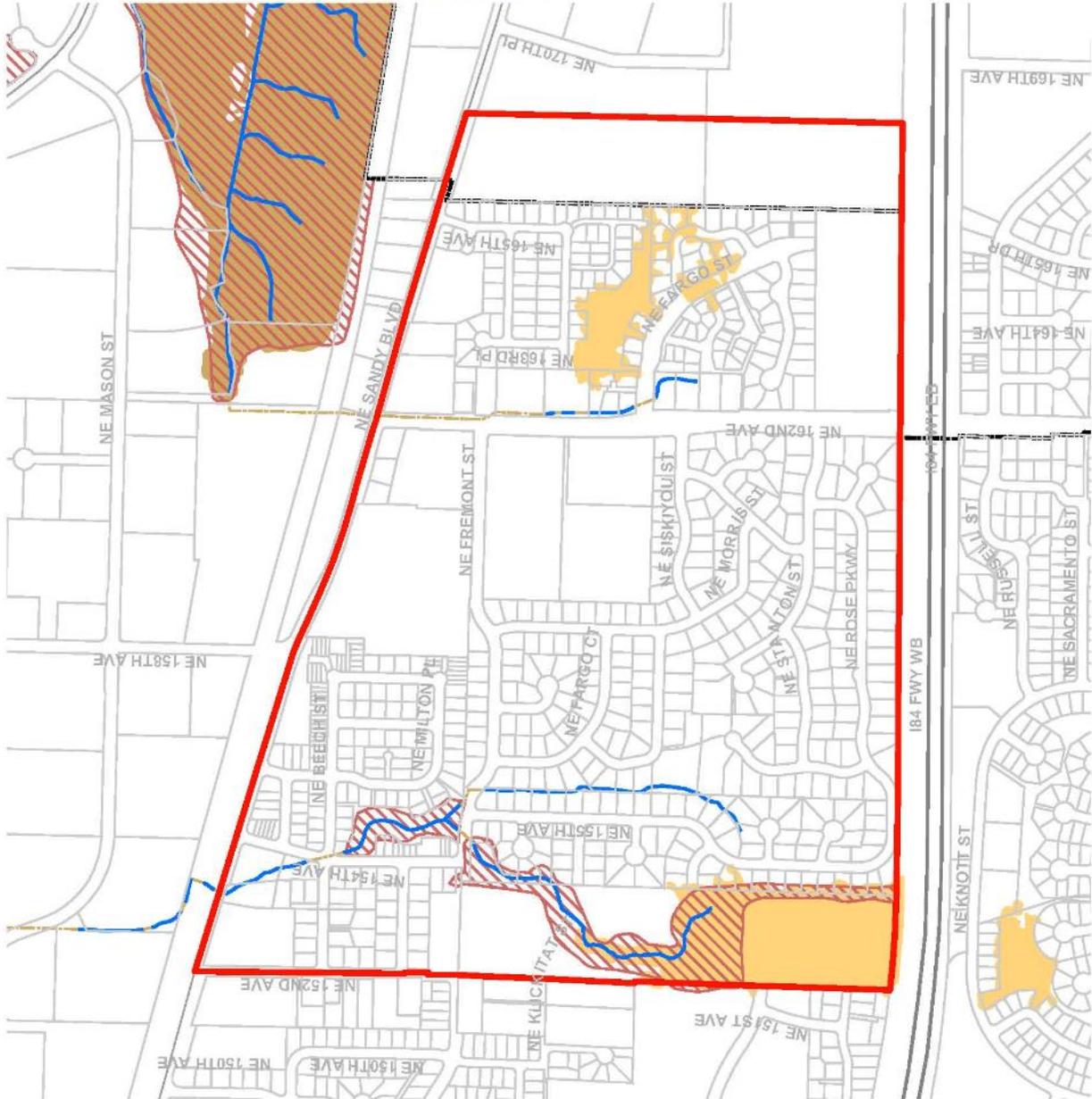




**Resource Site: EB15
Wilkes Creek**

Map E: Wildlife Habitat

- Resource Site
- High wildlife habitat
- Medium wildlife habitat
- Low wildlife habitat
- Special Habitat Areas
- open stream channel
- piped stream segment
- Taxlots
- City of Portland



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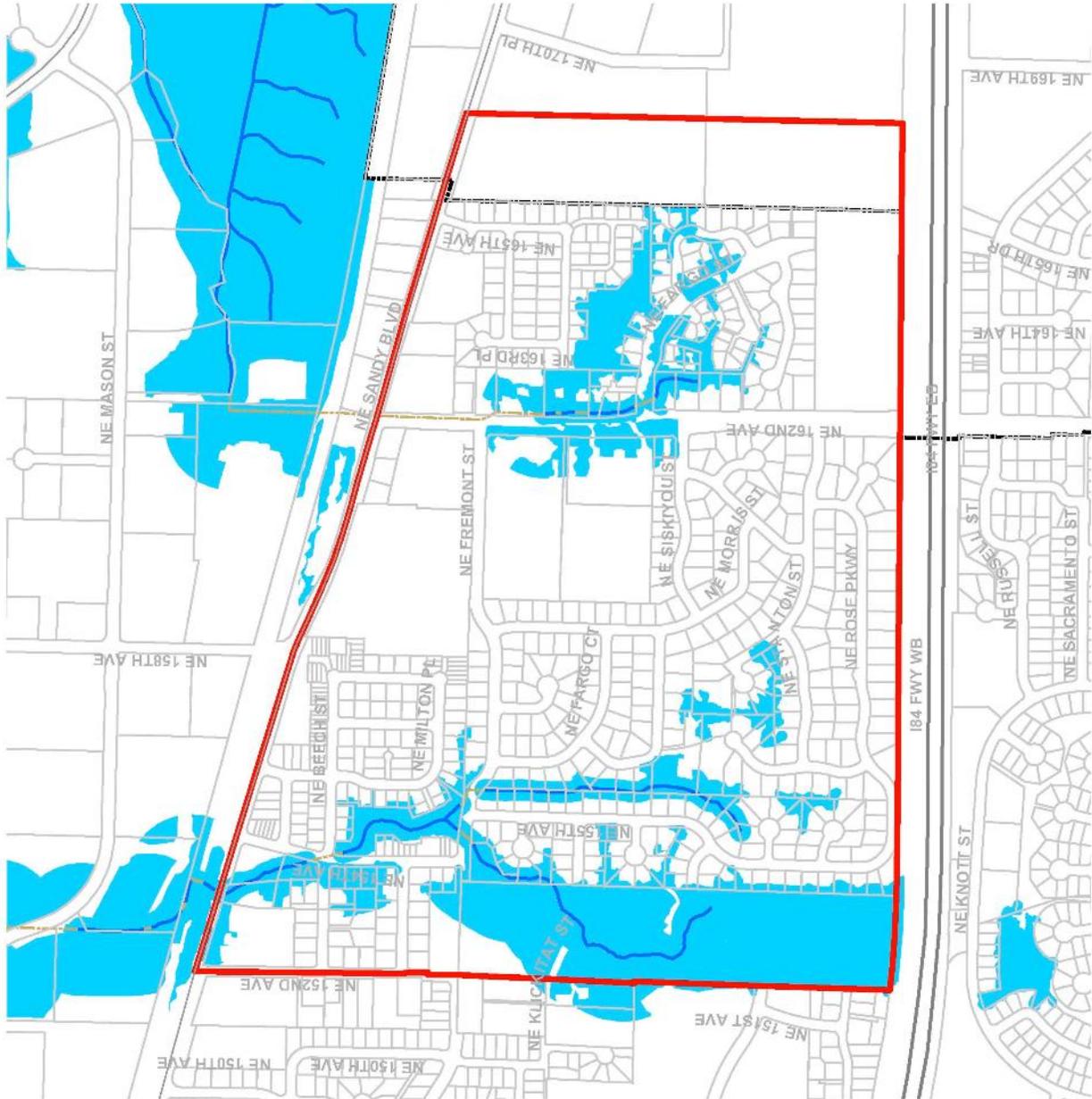




**Resource Site: EB15
Wilkes Creek**

**Map F: Determination of
Significance**

- Resource Site
- Significant natural resources
- open stream channel
- piped stream segment
- Taxlots
- City of Portland



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The *Environmental Overlay Zone Map Correction Project* plan documents:

Volume 1 – Project Report, Summary of Results and Implementation

The purpose of the Project Report is to document the overall project approach and methodology, summarize public engagement, provide an at-a-glance summary of the results by resource site, and present the updated zoning code maps and refinements to zoning code chapter 33.430, Environmental Zones.

Volume 2 – General Economic, Social, Environmental and Energy Analysis

The General ESEE evaluates the tradeoffs between protecting natural resources and other city goals for economic development, housing, public health, etc. The General ESEE provides an overall recommendation regarding which natural resource features should be protected. The General ESEE recommendations are then affirmed, clarified or modified for each resource site based on resource site-specific circumstances. The resource site-specific ESEEs are presented in Volume 3, Part A-H.

Volume 3 – Resource Site Inventory and ESEE Decisions

For each of the geographies listed below, each document presents an inventory of natural resource features and functions, a site-specific Economic, Social, Environmental and Energy Analysis (ESEE), and the ESEE decisions regarding which natural resource should be protected for each resource site.

Part A1 – Forest Park and Northwest District, Resource Sites 1 – 20

Part A2 – Forest Park and Northwest District, Resource Sites 21 – 41

Part B – Skyline West

Part C – Tryon Creek and Southwest Hills East

Part D – Fanno Creek

Part E – East Buttes and Terraces

Part F – Johnson Creek

Part G – Boring Lava Domes

Volume 4 – Appendices

Appendices include the Regulatory Context; 2012 NRI Project Report; stream, vegetation and wetland mapping protocols; and the at-risk species list.