ENVIRONMENTAL OVERLAY ZONE MAP CORRECTION PROJECT

VOLUME 2, PART B:

Skyline West, Natural Resources Inventory and Protection Decisions

Recommended Draft, As Amended

May 2022

THE BUREAU OF PLANNING & SUSTAINABILITY

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A. INTRODUCTION

Volume 2, Part B, includes the results for the Skyline West (see Map 1). For each resource site the following is presented:

1. Verification riparian corridors and wildlife habitat features, functions and classifications pursuant to Metro Rule 3.07.1320 and Table 3.07-13d, and OAR 660-023-0110.
2. Confirmation of Habitat Conservation Areas, pursuant to Metro Rule 3.07.1320 and Table 3.07.13a.
3. Economic, Social, Environmental and Energy analysis pursuant to OAR 660-023-0110 for areas that are not Habitat Conservation Areas.
4. Program implementation recommendations pursuant to Metro Rule 3.07.1330 and 3.07.1340, and OAR 660-023-0110. Program implementation is presented in Volume 1, Part B.

B. HOW TO USE THIS DOCUMENT

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

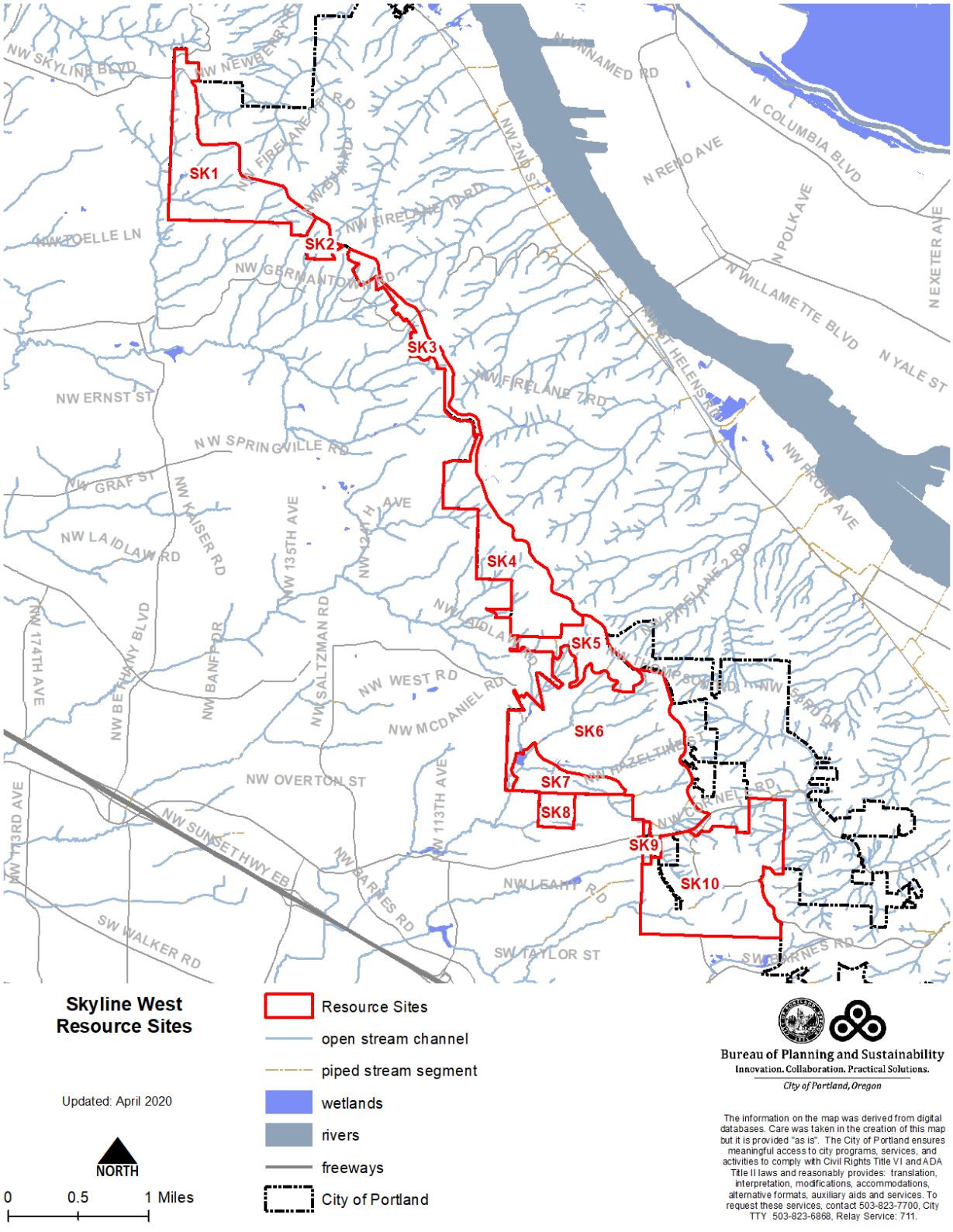
Area Descriptions

Volume 2, Part B, begins with an overview of the area's features, functions and conditions, including land use patterns. This information is provided for context but is also applicable to each resource site and should be used in conjunction with resource site-specific maps and descriptions during quasi-judicial reviews.

Natural Resource Features and Classification Maps

Metro Title 13 and Statewide Planning Goal 5, wildlife habitat, rules require verification of natural resource features and classifications. Natural resource features include rivers, streams, wetlands, flood area, vegetation (forest, woodland, shrubland and herbaceous), steep slopes and Special Habitat Areas. The methodology used to identify and map these features and the functions provided (also referred to in the zoning code as "functional values") is documented in Volume 3, Natural Resources Inventory. The methodology to verify the classifications is documented in Volume 3, Title 13 and Goal 5 Compliance.

Each Resource Site begins with maps that document the location and extent of natural resource features, functions and classifications. The decisions regarding which natural resources to protect are based on the mapped features. The natural resource features maps can be updated at any time based on current conditions and additional factual data, such as a wetland delineation performed by a qualified professional. 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.



Map 1: Skyline West Resource Geography

Habitat Conservation Area and ESEE Decision Maps

Metro Title 13 requires confirmation of Habitat Conservation Areas. The methodology used to determine Habitat Conservation Areas is documented in Volume 3, Title 13 and Goal 5 Compliance. For natural resources that are not a Habitat Conservation Area, and for which Portland intends to protect the resources, Statewide Planning Goal 5 OAR 660-023-0110 must be followed to show the ESEE decisions. The methodology used to make the ESEE decisions is documented in Volume 3, Title 13 and Goal 5 Compliance. The Habitat Conservation Area determinations and ESEE decisions are the legislative intent regarding which resources should be protected and to what level of protection. The legislative intent should be consulted during quasi-judicial review.

Natural Resource Features and Functions Descriptions

Descriptions of the natural resource features and functions are not required by Metro Title 13 or Statewide Planning Goal 5; a map of the features is sufficient. However, Portland Zoning Code Title 33 requires that impacts to natural resources be fully mitigated to address both features and functions (also referred to as "functional values" in the zoning code). The functions provided by the resources are mapped based on the city's Natural Resources Inventory methodology, see Volume 3. The area descriptions provided at the beginning of this document also provide information about functions that pertain to each resource site. Both the resource site descriptions and area description should be used to asses natural resource impacts and mitigation alternatives during quasi-judicial reviews. Additional factual information about the resource functions may also be provided by a qualified professional.

Metro Title 13 and Oregon Goal 5 Compliance

An explanation of compliance requirements for Metro Urban Growth Management Functional Plan Title 13, Nature in Neighborhoods, and Oregon Statewide Land Use Planning Goal 5, Open Spaces, Scenic and Historic Areas, and Natural Resources is found in Volume 3. The natural resource protection requirements are summarized and recommendations are made for each resource site. For natural resources that are not a Title 13 Habitat Conservation Area, the general ESEE analysis and recommendations are affirmed, clarified or modified based on resource site-specific information. An ESEE decision is made and describes the significant natural resource features and functions to be protected from the impacts of conflicting uses.

Implementation

Results of Metro Title 13 and Oregon Goal 5 requirements are explained and presented in Map I for each resource site. The results are implemented by updates to the official zoning maps and zoning code, documented in Volume 1, Part B.

C. NATURAL RESOURCE DEFINITIONS

The natural resource definitions are part of the citywide Natural Resources Inventory (see Volume 3) and used to explain how resources are mapped and classified. These are not regulatory definitions.

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 that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions; although due to landscaping, seeding, mowing or grazing wet-adopted vegetation (hydrophytes) may not be present.

Flood area: The combination of the FEMA 100-year floodplain, the Special Flood Hazard Area (those areas with a 1% or greater chance of flooding in any given year), as well as areas that were inundated with water during the February 1996 floods.

Floodway: The floodway consists of the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood (100-year flood) without cumulatively increasing the water surface elevation more than one foot.

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.

Land: The ground itself and any features associated with or located on the ground including but not limited to flood area, vegetation, rip rap, paved areas, structures, buildings, trails, etc.

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

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

Wildlife Habitat: Waterbodies, flood areas, 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: Habitats designated by the City of Portland in accordance with Metro's Urban Growth Management Functional Plan Title 13, Nature in Neighborhoods, criteria for Habitat of Concern. These are areas that contain or support special status species, sensitive/unique plant populations, or other unique natural or manmade habitat features.

D. RESOURCE SITE BOUNDARIES

Portland established resource sites through previously adopted conservation and protection plans in accordance with Statewide Planning Goal 5. 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."

Metro Title 13 does not require the designation of resource sites. However, because there is significant wildlife habitat throughout Portland that is not a Habitat Conservation Area, and therefore subject to Goal 5 OAR 660-023-0110, resource site will continue to be used.

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 plan.
2. Resource site boundaries were expanded to capture contiguous or similar and adjacent natural resource features that were not within a resource site.
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 general description of Skyline West natural resources. 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. Maps
    A. Water Features – rivers, streams, wetlands and flood areas
    B. Land Features – forest, woodland, shrubland and herbaceous vegetation, steep slopes
    C. Special Habitat Areas
    D. Riparian Corridor Classifications
    E. Wildlife Habitat Classifications
    F. Urban Development Value
    G. Metro Title 13 Habitat Conservation Areas
    H. Statewide Planning Goal 5 Areas
    I. Natural Resource Protections

2. Natural Resource Descriptions – A narrative that provides additional site-specific information about the types, quantity, quality or functionality (aka resource functions or functional values) of the natural resource features present in the resource site.

3. Metro Title 13 and Oregon Goal 5 Compliance – The compliance requirements are documented in Volume 3 and summarized here. If there are natural resources that are not a Habitat Conservation Area present in the resource site, then the general ESEE recommendation (Volume 3) will be confirmed, modified or clarified based on resource site-specific conditions.

4. Natural Resource Protection Decisions – At the end of each resource site section are the final decisions regarding which riparian corridors and wildlife habitat should be protected. These decisions are repeated in Volume 1; if there is a discrepancy between sections, the decisions in Volume 2, Part A take precedence.

E.1. Skyline West Natural Resources

The forest in the northwest hills and within the Skyline West area protects and conserves important watershed resources such as streams, wetlands, and soils. Forest vegetation moderates the effects of winds and storms, stabilizes and enriches the soil, and slows runoff from precipitation, thereby minimizing erosion and allowing the forest floor to filter out sediments and nutrients as the water soaks down into groundwater reserves or passes into streams. By decreasing runoff and increasing groundwater infiltration, the forest protects downstream neighborhoods from flooding; by stabilizing the soil and reducing runoff and erosion, the forest protects the community from landslides and other land hazards.

By protecting watershed resources in this manner, the forest enhances habitat for terrestrial and aquatic organisms. Diverse layers of treetops, branches, trunks, shrubs and plants on the forest floor provide breeding, feeding and refuge areas for many species of insects, birds, and mammals. The forest canopy helps to maintain stream flows, filter out potential pollutants, and moderate stream temperatures, thereby sustaining habitat for fish, amphibians and aquatic organisms as well as terrestrial wildlife. Also, by filtering out pollutants, the forest maintains quality drinking water for local residents who use wells. The ability of these diverse and interdependent elements of the forest community to function properly is an important measure of the general health and vitality of the local environment. A healthy forest ecosystem is crucial to the forest's value as a scenic, recreational and educational resource, and to its continued contribution to Portland's high quality of life.

The forest provides additional values to local landowners and broader segments of society. The dense, coniferous and deciduous forest acts as a buffer from the sights and sounds of the large urban metropolis. The forest mutes the noise of highways and nearby industrial activities and absorbs some air pollutants produced by auto and industrial emissions. The forest also moderates extreme heat events. The microclimate of the forest, created in part by the shade of the vegetation and the transpiration of water from the leaves, reducing extreme temperatures. The forest thus acts as a natural "air conditioner" for adjacent residential areas, cooling the air during the day and warming it at night.

E.1.a. Geology

Portland has been the site of a series of spectacular geologic events dating back 22 million years. These events have included some of the largest lava and water floods on the face of the earth (Price 1987). The major events leading to the formation of the Portland Hills (Tualatin Mountains) began sixteen million years ago during the Miocene period. Volcanic fissures far to the east of Portland began discharging hundreds of cubic miles of molten lava which flowed through an ancient Columbia River Gorge, flooding the Willamette River Basin region. The solidified lava, known today as Columbia River Basalt, covered the Scappoose Formation, a siltstone and shale deposit which had formed 22 million years ago when the Portland area was

submerged under marine waters. Today, after millions of years of weathering, the basalt measures roughly 700 feet in depth below the West Hills (Houle 1987).

Geologic disturbances continued through the late Miocene period, when the present-day Cascade and Coast Ranges were formed. At the same time, a large upheaval of Portland's basalt base created the Tualatin Mountain ridge and simultaneously formed the Portland and Tualatin valleys. The valley floors settled over the course of several million years until, in the Pliocene period, their basins breached, forming eddies in the Columbia River into which large quantities of quartzite and granite river rock were deposited. Today these deposits, known as the Troutdale Formation, cover the original basalt layer along the lower half of the West Hills and provide an excellent aquifer (Price 1987). Later in the Pliocene period, the West Hills became volcanically active. Small volcanoes along the Tualatin Mountain ridge began erupting Boring Lava, evident today in the form of a grey basalt found at several sites along the West Hills.

The last major activity affecting the soils of the Skyline West area were formed through the deposition of up to 100 feet of Portland Hills Silt at elevations above 600 feet. This silt was eroded from the Columbia River floodplain, carried down the gorge, and finally wind-deposited on the West Hills. In the more recent geological past, silt and sand (alluvium) deposits formed along the Willamette River flood plain (Price 1987).

The presence of Portland Hills Silt along the Tualatin Mountains has important implications for land use and development. The silt becomes very unstable when wet and the potential for slope failure is particularly high after winter rains have saturated the soil. Landslides, mud slides, and slumps are common on steep areas in the West Hills. These slope failures, often associated with logging and building activities, have substantially altered the face of the hillside over the last century.

E.1.b. Soils

Soils in Skyline West belong to the Goble-Wauld series as identified in the Multnomah County Soil Survey (Soil Conservation Service 1983). This soil group is comprised predominantly of silt and gravel loams high in volcanic ash weathered from the parent material, Columbia River Basalt.

Approximately 75 percent of the study area is made up of Goble soils. The soil is dark, greyish brown silt loam to a depth of about 14 inches, below which a silty clay loam mixes with silt loam forming a yellowish brown, mottled fragipan at a depth of 30 to 48 inches. This fragipan is a hard, brittle soil layer with low permeability: a hardpan that impedes percolation of groundwater causing a thin groundwater table to develop, perched above the regional water table.[1] The fragipan restricts rooting depth for plants to 30 to 48 inches. The Goble silt loams have severe limitations for building site development and sanitary facilities. According to the Soil Conservation Service (SCS), this means: “Soil properties or

[1] Perched water tables in the West Hills normally develop during the fall, winter and spring seasons.

site features are so unfavorable or difficult to overcome that a major increase in construction effort, major soil reclamation, special designs, or intensive maintenance is required" (Green 1983, 98).

The Wauld soils are made up of gravelly loams and commonly occur on steep slopes along the larger drainages in the planning area. The top six inches of the soil are dark brown, gravelly loam. Below the surface layer is a gravelly clay loam 24 inches thick, which overlies basalt bedrock at a depth of 30 inches. Soil permeability is moderate and effective rooting depth is 20 to 40 inches. The Wauld soils also have severe limitations for building site development and sanitary facilities.

The soils along the broad, rolling slopes of the Tualatin Mountain ridge are classified as Cascade silt loam, an associate of the Goble-Wauld soils. The soil's top layer is a dark brown silt loam which overlies a dark brown, mottled, silt loam fragipan at a depth of 20 to 30 inches. Permeability is slow and effective rooting depth is limited by the fragipan layer.

E.1.c. Topography and Slopes

A physiographic inventory of Portland (Redfern 1976) classified slopes in excess of 30 percent as generally having "severe landslide potential."3 Between 90 and 95 percent of the upland slopes within the study area exceed 30 percent. Slopes of only 15 percent have been known to fail in the West Hills, particularly during the saturated soil conditions in mid-winter (Redfern 1976). In determining areas with "severe landslide potential," Redfern included slopes of less than 30 percent which had a history of failures (e.g., major slumps and landslides).

The principle creeks and secondary ridges descend from the main Tualatin Mountain ridge northeast to the Willamette River lowlands, creating a marked dichotomy between northwest- and southeast-facing slopes which can reach a gradient of 50 percent or more locally.

E.1.d. Surface Water

Surface water resources within the study area were identified using USGS topographic and National Wetlands Inventory maps, aerial photos, and field reconnaissance. Stream lengths and drainage basin areas are calculated using a Geographical Information System (GIS) and LiDAR data.

The areas streams are important for a variety of reasons not least of which is their influence on downstream water quality and fish production. The Tualatin River system supports state-listed sensitive coho and fall chinook salmon, cutthroat trout, pacific lamprey and northern red-legged frog. The Tualatin River is also under a DEQ enforcement order requiring all jurisdictions within the watershed to

take actions to improve water quality, including control of erosion and reduction of sediment and nutrient loads. Though the site's intermittent and upper perennial creeks are generally not inhabited by fish, they do provide primary habitat for amphibians and reptiles.

E.1.e. Vegetation

Information on plant communities, successional patterns and general vegetation resources was compiled from several sources. Data on vegetation types, distribution and resource values was gathered through aerial photo interpretation and field visits.

While virtually all of the plants characteristic to the Western Hemlock Zone occur in the Tualatin Mountain forests, two hardwood species, bigleaf maple and red alder, have become widely established as a result of repeated disturbance to the natural vegetation caused by various land uses. Over time, these events have depleted nutrients from the soil. The depletion of nutrients, coupled with the depletion of mycorrhizal fungi which help to process nutrients for plant uptake and are particularly important to conifers, has given the hardwoods an edge over the firs, cedars and hemlocks. Pioneer species such as red alder, a species common only in riparian areas under natural conditions, have colonized these disturbed areas and are now widely established on the upland slopes. Thus, past disturbances have strongly influenced the composition of the plant communities in the Northwest Hills.

Western hemlock and western red cedar *(Thuja plicata)* are considered climax species within the Western Hemlock Zone based on their potential as dominants. The subclimax Douglas fir *(Pseudotsuga menziesii)*, however, tends to dominate large areas within this region. Historically, Douglas fir has dominated forest regeneration over much of the zone in the last 150 years (Munger 1946, 1960).

The *Tsuga heterophylla/Polystichum munitum* (western hemlock/sword fern) association generally characterizes the herb-rich community found in the Northwest Hills forests. Overstory species of this association typically include Douglas fir, western red cedar and western hemlock. The understory is
dominated by a lush growth of herb species including sword fern, wild ginger, inside-out flower, Oregon oxalis, trillium, Smith’s fairybells and deerfern. Shrubs occurring in the understory include red huckleberry, Oregon grape, trailing blackberry, Wood's rose and salmonberry (Franklin and Dyrness
1973, 58).

While factors such as soils, slope aspect, moisture and topography have an important influence on plant associations in the northwest hills forest, the composition and distribution of most forest types can most clearly be traced to past logging activities and fires.

Early observations of Portland's Tualatin Mountains point to the dynamic pattern of successional stages active within the forest community over the past two centuries. The old growth

coniferous forest that William Clark, of Lewis and Clark, recorded in 1806 has been transformed through logging and fire into a younger, mixed hardwood/coniferous forest (Munger 1960). Despite these disturbances, signs of a returning Western Hemlock climax forest community are widely apparent. A significant portion of the forest (over 60 percent) is presently composed of later seral vegetation stages, where young to mid-aged conifers rise above the maturing hardwood canopy (Houle 1982).

The Tualatin Mountain forest is home to several special or unique flora features. The pacific yew *(Taxus brevifolia)*, is an exceptionally slow growing climax tree species most abundant in 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 ovarian cancer and early results indicate that the substance may also prove effective for treating leukemia and colon, lung, mammary, prostrate and pancreatic cancers (Wood 1990, Norse 1990). In September, 1990, a petition was filed with the U. S. Fish and Wildlife Service to list the pacific yew as a threatened species under the Endangered Species Act; however, it was not warranted for listing at that time, and has yet since been re-petitioned for listing.

The forest as a whole represents a unique urban amenity. The Tualatin Mountains provide a fine example of the Pacific Northwest's western hemlock forest community, unique among all temperate forests in the world (Waring and Franklin 1979). A large forested peninsula reaches into the center of Portland providing a biological link to the natural areas of the Coast Range. Located within this peninsula is one of the country's largest city parks: Forest Park. In addition to its value as a recreational, educational and scenic resource (discussed later in this report), the forested hills help to define Portland as a place and contribute to the identity of the region.

E.1.e. Wildlife

A broad range of terrestrial vertebrates use the forested riparian and upland habitats found in the Tualatin Mountains. Salamanders use stream and riparian habitat and moist uplands, where they feed on insects and other invertebrates such as slugs, and are prey to other amphibians (frogs), reptiles (snakes), birds (hawks), and mammals (weasels, raccoons). These local salamanders are dependent on a moist, forested environment and cool, high quality water.

Terrestrial wildlife utilize different portions of the Skyline West habitat to complete different portions of their life cycle such as mating, feeding, and denning. The vegetative structure of the habitat (e.g., downed logs, snags, herb, shrub and tree layers) is a key factor in determining the distribution and abundance of wildlife (Thomas 1979). Each stage of forest succession in the Tualitin Mountains has its own specific structure. Wildlife species have known preferences for structural components found in distinct successional stages and use these vegetative types to meet all or part of their life cycle requirements (Maser and Thomas 1978; Harris 1984).

The Tualatin Mountains are used by about a hundred bird species and several small and medium sized mammals. Black bear, cougar, and Roosevelt elk were seen regularly before

development, while today the area is still home to smaller, more adaptive mammals such as bats, beaver, black-tail deer, coyotes, raccoon, opossum, spotted skunk, Douglas Squirrel, red foxes, and Townsend's Chipmunk. Smaller creatures often go unnoticed, and many live in the streams and wetlands, in the humus of the forest floor, or high up in the canopy of forested areas. The mild and damp conditions of the area are ideal for a number of amphibians and reptiles, including frogs, salamanders, snakes, toads, and turtles.

Birds are attracted to the variety of habitats found within the area's evergreen forests, deciduous woods, stream corridors, fringes of open fields, and numerous backyard birdhouses. Some of the birds found in the area include chickadees, Cooper's hawks, ducks, great horned owls, great blue herons, hummingbirds, jays, juncos, kingfishers, nuthatches, robins, sparrows, thrushes, towhees, warblers, waxwings, western screech owls, woodpeckers, and wrens (City of Portland Bureau of Environmental Services 1997; Pacific Habitat Services 1997; PSU and Metro 1995).

The piliated woodpecker (*Dryocopus pileatus*) is a species dependent on standing dead and dying trees in older forests. The bird is a cavity nester and is disappearing from rural areas because of timber harvest and the use of agricultural chemicals. The woodpecker is doing surprisingly well in some urban areas and can be observed in the west hills. Protection of older forests in urban areas is an important conservation strategy for the survival of this species.

Amphibians and reptiles, including western red-backed salamander, Pacific chorus frog and garter snakes, inhabit the site. Tree cavities serve as roosting and nesting sites for bats, voles, squirrels, weasels, raccoons and cavity-nesting birds, including pileated woodpecker. The abundant cover is essential for black-tail deer, coyote and other large mammals

E.1.g. Special Habitat Areas

Balch Creek Subwatershed is designated a Special Habitat Area because it meets the following criteria:

- Native Oak (O) – An area that contains Oregon white oaks; other tree species and vegetation may be present.
- Bottomland Hardwood Forest (B) – An area that contains remnant bottomland hardwood forest species; other tree species and vegetation may be present.
- Elk Migratory Corridor (E) – Areas that the Oregon Department of Fish and Wildlife has designated as elk migratory corridors.
- Migratory Stopover Habitat (M) – An area or feature used by migratory birds for nesting, resting, feeding or cover on more than an incidental basis.
- Habitat Corridor (C) – An area that provides a wildlife movement corridor between larger habitat patches
- Unique Feature (U) – Resource or structure that provides critical or unique habitat function in the natural or built environment – highest elevation point in Portland

E.1.h. Stormwater Management

Portland's stormwater system is a complex network of engineered and natural assets that provide conveyance, protect water quality, and provide and protect habitat and biological communities. In addition to hundreds of miles of pipes and ditches, and thousands of sumps and pollution reduction facilities; the city depends on the natural areas that intercept rainfall and the acres of wetlands and hundreds of miles of streams and drainageways that function as a critical part of the stormwater conveyance network.

Within the City of Portland there are three methods of conveying stormwater runoff from impervious areas. When soils allow infiltration, stormwater runoff may be directed to sumps or other stormwater facilities to be infiltrated into the ground, after being treated to protect groundwater. Some portions of the City direct stormwater to the combined sewer system, which sends stormwater along with sewage to the sanitary treatment plant for processing. In the remainder of the City, stormwater is directed to a natural stream system.

When natural areas are developed, the services provided by those natural areas are lost. Many of these services are critical to the healthy functioning of natural resources and are difficult or impossible to replace. For example, forest vegetation slows and takes up runoff from precipitation, thereby minimizing erosion and allowing the forest floor to filter out sediments and nutrients as the water soaks down into groundwater or passes into streams. By decreasing runoff and increasing groundwater infiltration, the forest protects downstream neighborhoods from flooding. The forest canopy helps to maintain stream flows, filter out potential pollutants, and moderate stream temperatures, thereby sustaining habitat for fish, amphibians and aquatic organisms as well terrestrial wildlife. Replacement of these functions through built stormwater management measures can only address a subset of the service provisions provided by natural systems.

Natural resources found within urban boundaries are vulnerable to negative impacts from unmanaged or inadequately managed stormwater. Pavement, roofing, and other impervious surfaces prevent infiltration of stormwater into the ground and increase the amount of runoff during storm events. This can disrupt the natural hydrologic cycle and increase pollution levels of stormwater washing into rivers, streams, wetlands and groundwater resources. Significant problems can result from urbanization and inappropriately managed stormwater:

- Stormwater collects pollutants and sediment from impervious surfaces and carries those materials to streams, rivers and groundwater. Particulates and pollutants from streets, autos, landscaping, roofs, animal waste and other sources can harm Endangered Species Act-listed salmon, other native fish and aquatic species.

- Increased in-stream erosion and decreased groundwater recharge occurs due to changes in the timing, routing and amount of runoff. As a result, streambanks can be undercut, impacting stream health and potentially damaging buildings, roads and bridges. Streams become "flashy" – rising and falling very quickly – increasing flood risks during wet weather and resulting in very low stream flows in the summer.
- Landslide risks can be exacerbated by deficient or inadequate stormwater management.
- Problems with incomplete or ineffective stormwater system could be made worse with climate change due to increases in temperature and changes in precipitation patterns. This could further impact water temperatures in rivers and streams, a serious problem in Portland streams, which exceed temperature standards in the summer. More intense storm patterns can also increase the risks of erosion, landslides and flooding.
- Reduced groundwater and aquifer recharge due to impervious surfaces also negatively impacts water availability during dry periods, which are expected to increase with climate change.

Resource Site No.: SK1 **Resource Site Name:** Rock Creek North

Previous Plan: Skyline West Conservation Plan
Previous Resource Site No.: 143

The results of the analysis found in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation, are presented in the following maps:

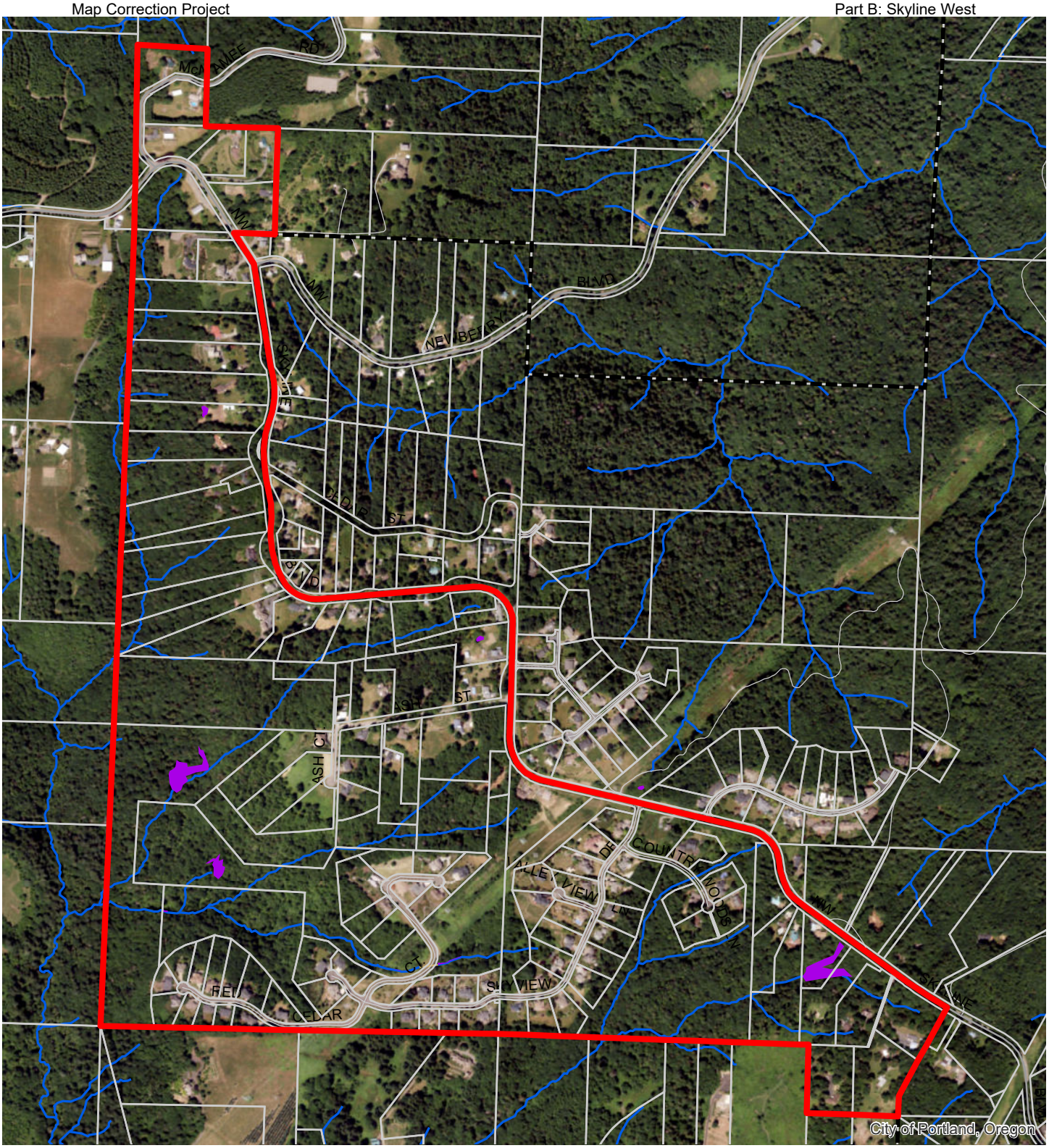
A. Water Features – rivers, streams, wetlands and flood areas
B. Land Features – forest, woodland, shrubland and herbaceous vegetation, steep slopes
C. Special Habitat Areas
D. Riparian Corridor Classifications
E. Wildlife Habitat Classifications
F. Urban Development Value
G. Metro Title 13 Habitat Conservation Areas
H. Statewide Planning Goal 5 Areas
I. Recommended Natural Resource Protections

Following the maps, additional information about existing natural resource features and functions in the resource site is presented.

Implementation of the results is found in Volume 1, Part B, updates to zoning maps and zoning code.

Resource site SK1 includes the following:

Site (acres)	330.1
Base zones (acres)	
RF	330.1



Map A: Water Features

Resource Site: SK1

Updated: May 2022

Resource Sites
Urban Service Boundary
Taxlots
Wetlands
Rivers
Open stream channel
Piped Stream Segment
Flood Area

NORTH

0 475 950 Feet

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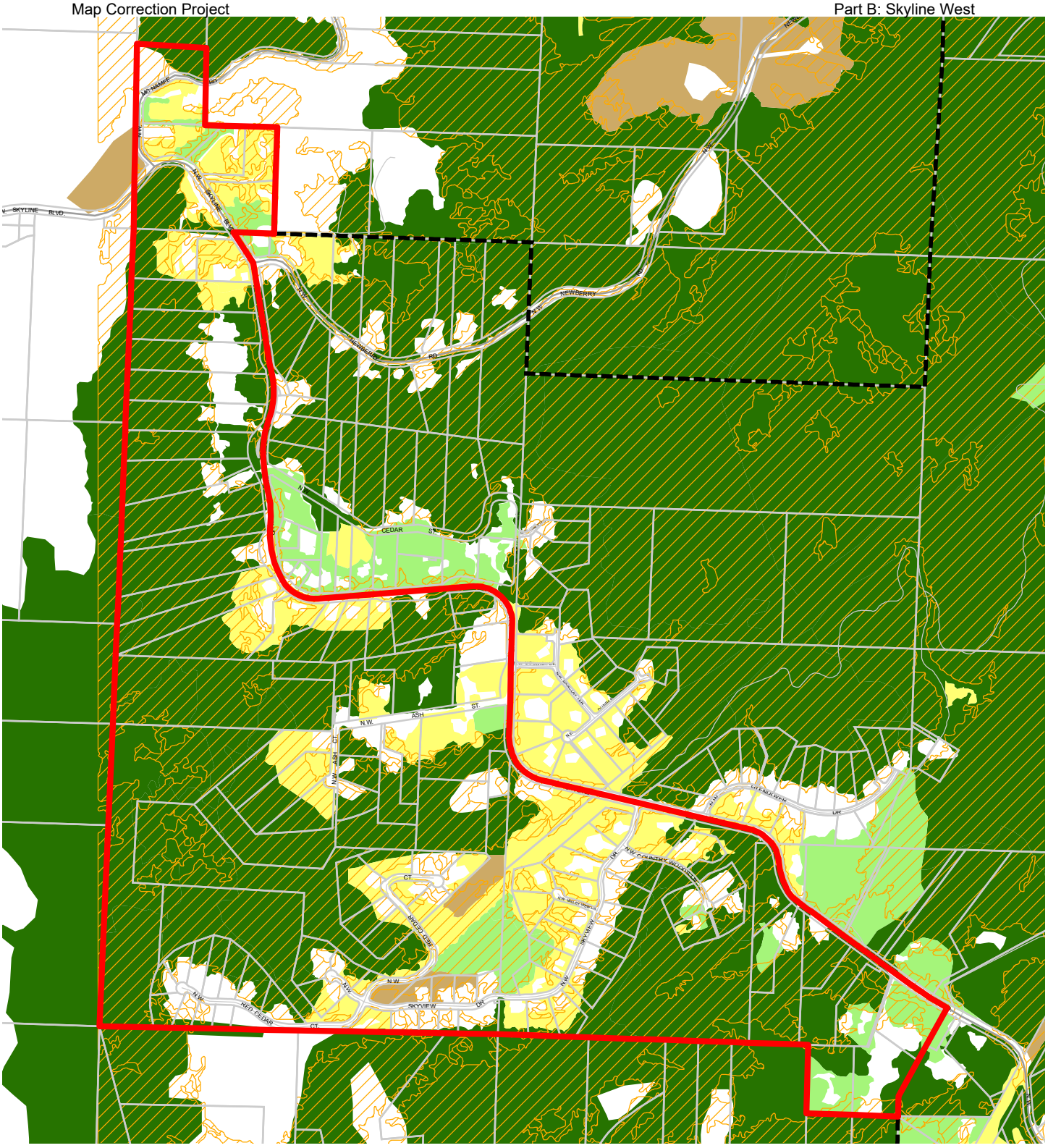
The information on the map was derived from digital databases. Care was taken in the creation of this map but it is provided "as is". The City of Portland ensures meaningful access to city programs, services, and activities to comply with Civil Rights Title VI and ADA Title II laws and reasonably provides: translation, interpretation, modifications, accommodations, alternative formats, auxiliary aids and services. To request these services, contact 503-823-7700, City TTY 503-823-6868, Relay Service: 711.



Map B: Vegetation and Steep Slopes

Resource Site: SK1

Updated: May 2022

NORTH

0 600 1,200 Feet

Resource Sites
Urban Service Boundary
Taxlots
Forest
Woodland
Shrubland
Herbaceous

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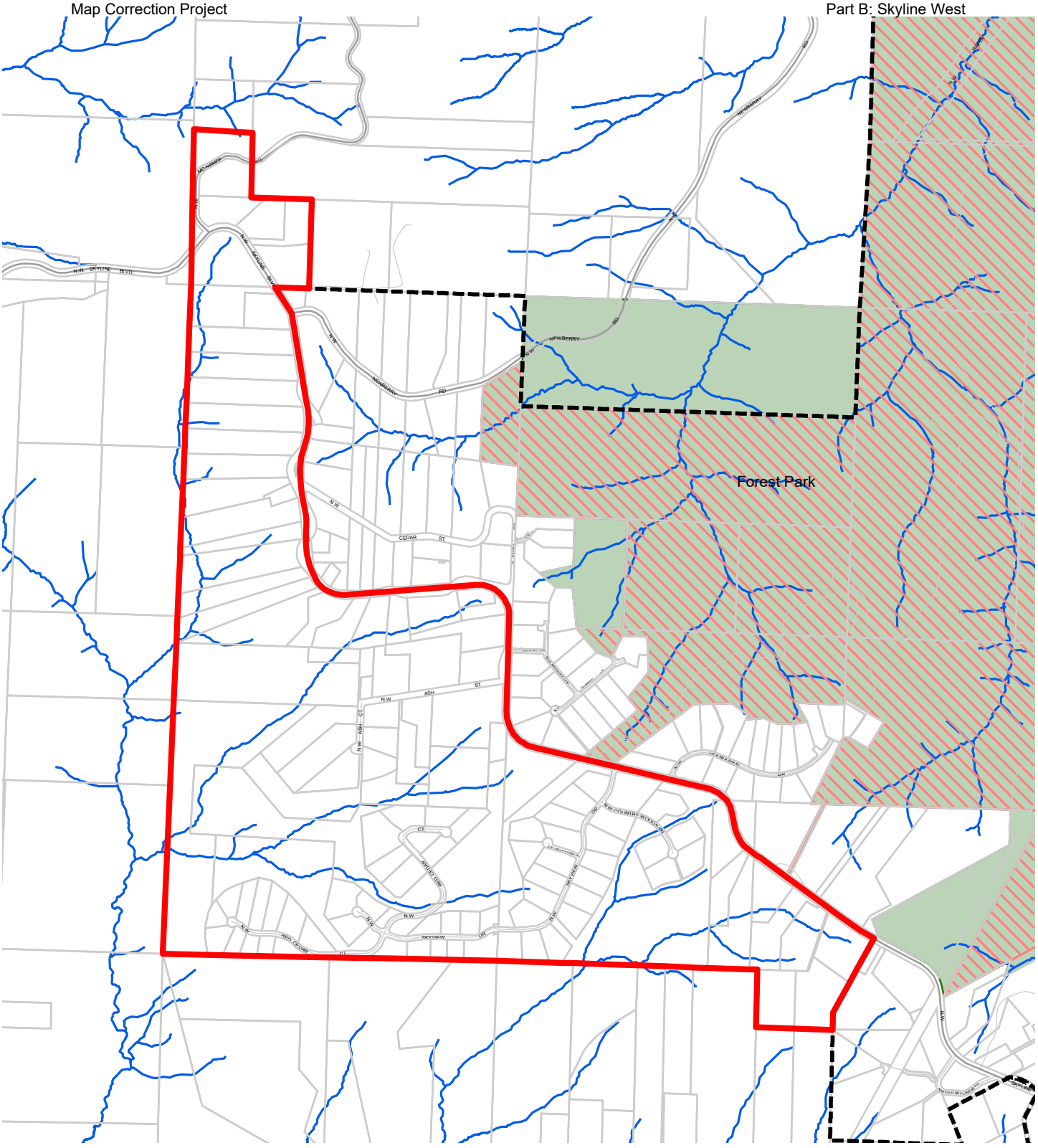


Map C: Special Habitat Areas

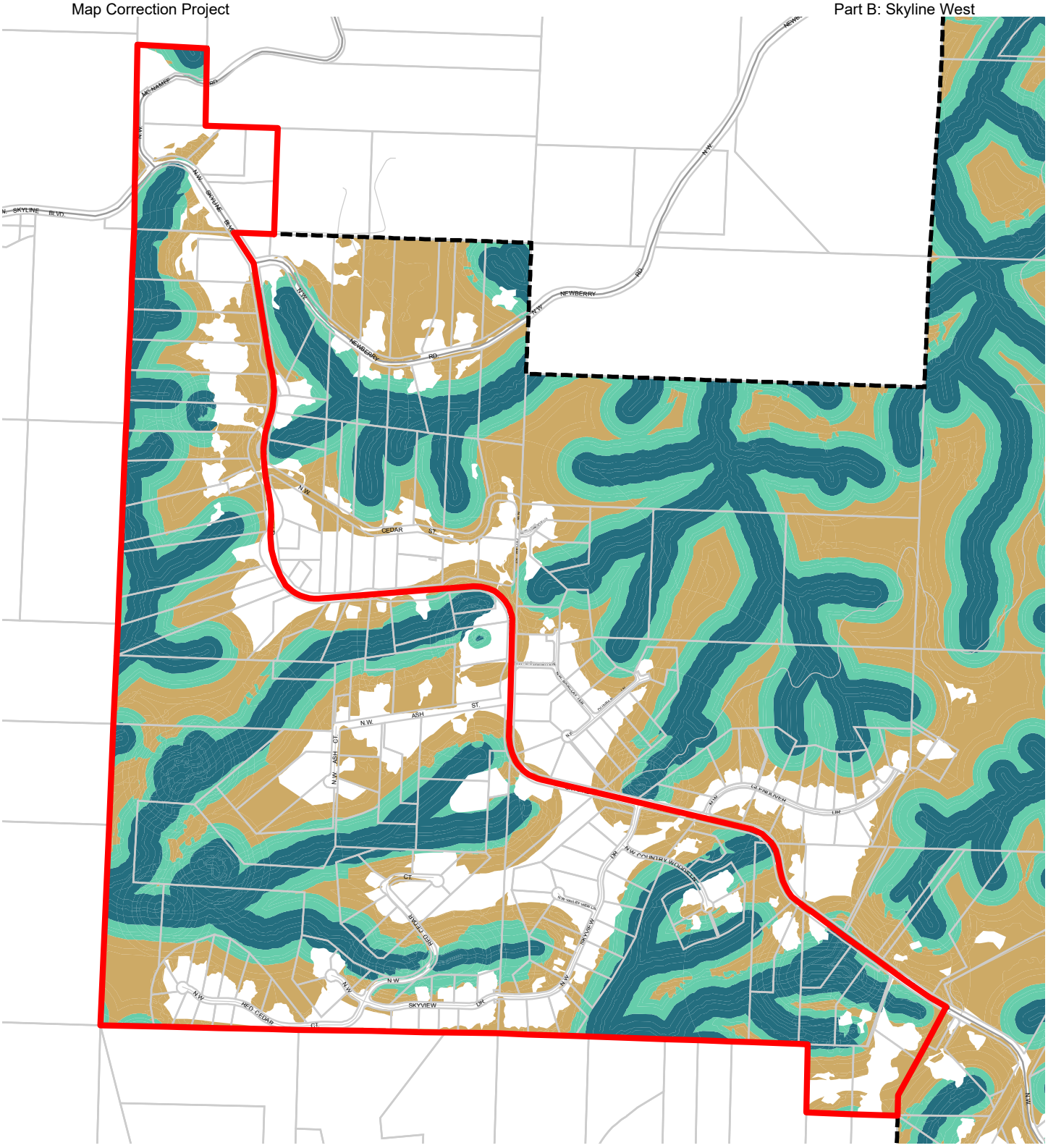
Resource Site: SK1

Updated: May 2022

NORTH

0 550 1,100 Feet

- Resource Sites
- Special Habitat Areas (SHAs)
- Open Stream Channel
- Piped Stream Segment
- Parks
- Schools
- Urban Service Boundary
- Taxlots



Map D: Riparian Corridors Habitat Classification

Resource Site: SK1

Updated: May 2022

Class I (high rank)
Class II (medium rank)
Class III (low rank)
Resource Sites
Urban Service Boundary
Taxlots

NORTH

0 475 950 Feet

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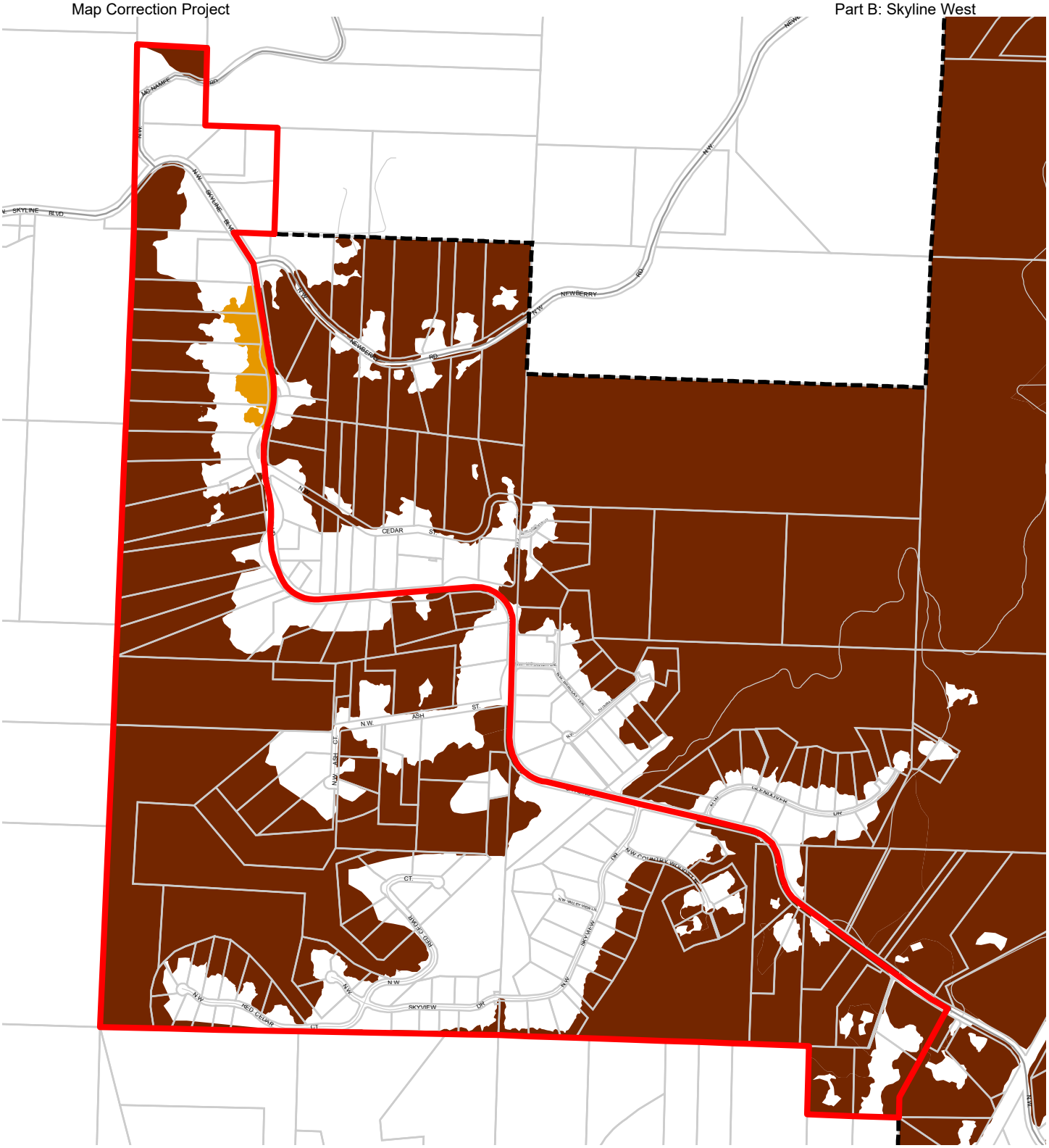

Map E: Wildlife Habitat Classification

Resource Site: SK1

Updated: May 2022

NORTH

0 385 770 Feet

- Resource Sites
- Class A (high rank)
- Class B (medium rank)
- Class C (low rank)
- Urban Service Boundary
- Taxlots

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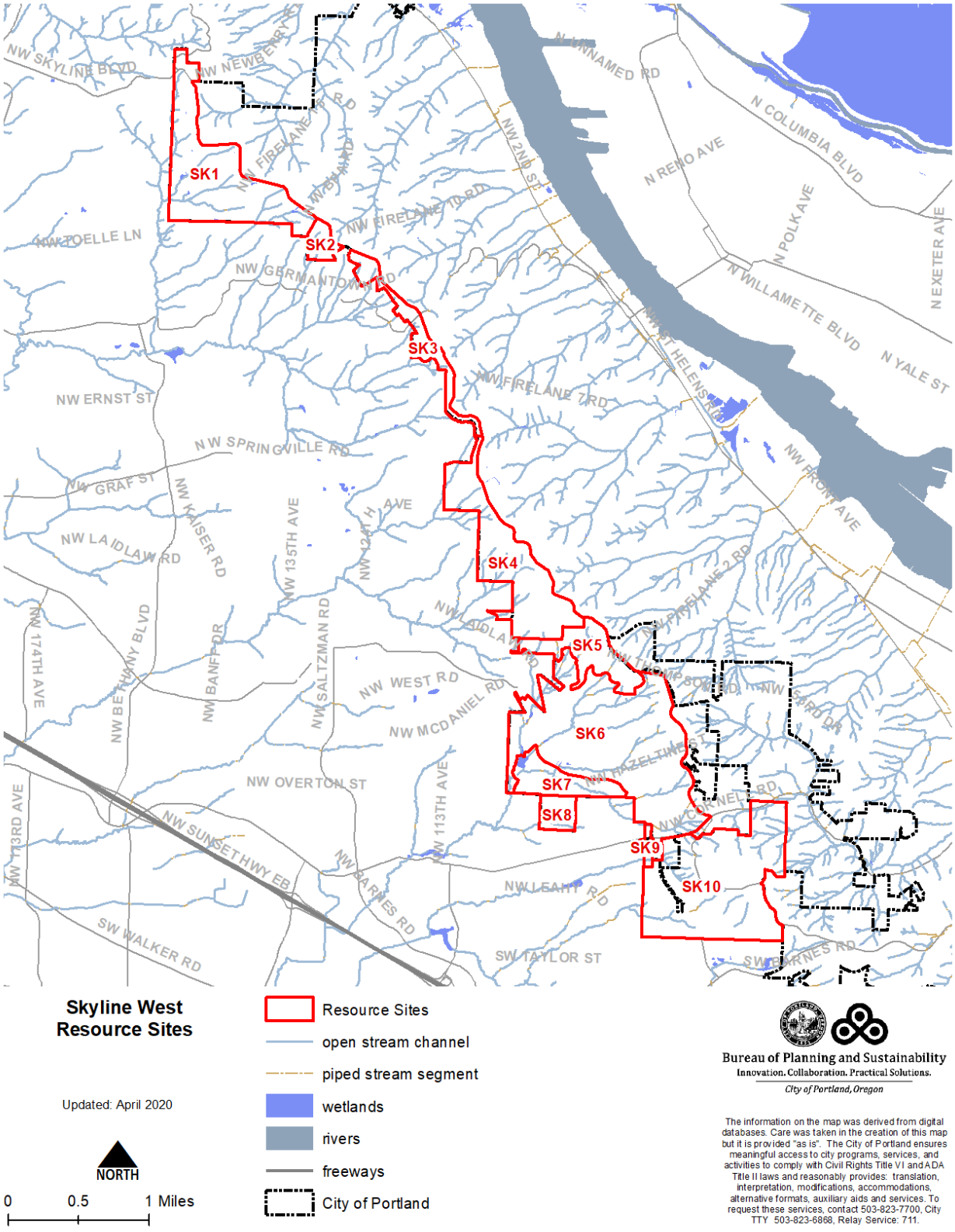
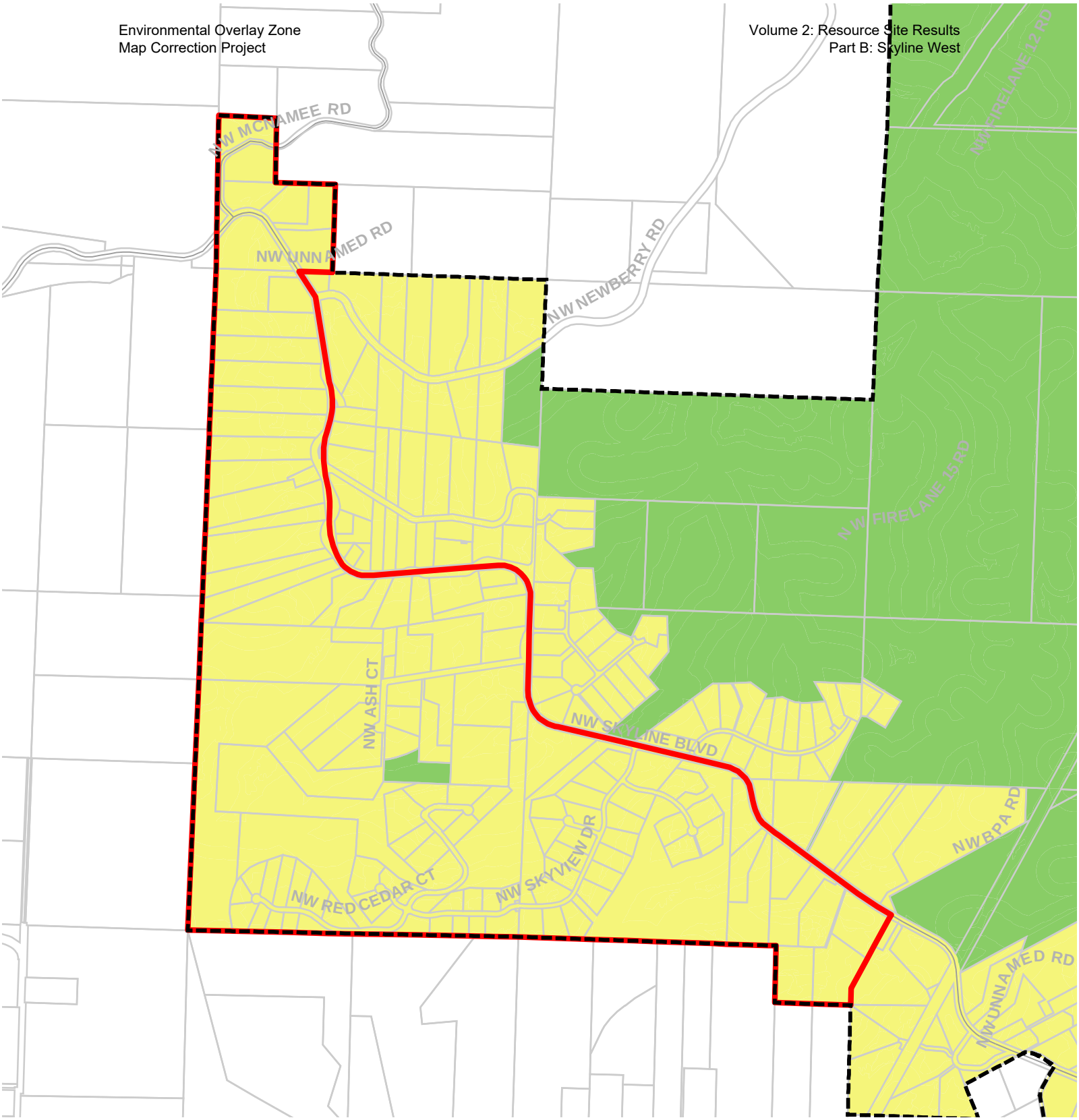
E.2. Resource Sites



Map 2: Skyline West Resource Site



Map F: Urban Development Value (Title 13)
Resource Site: SK1

- Urban Service Boundary
- Resource Sites
- High Development Value
- Medium Development Value
- Low Development Value
- Parks

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Updated: July 2021

NORTH

0 650 1,300 Feet

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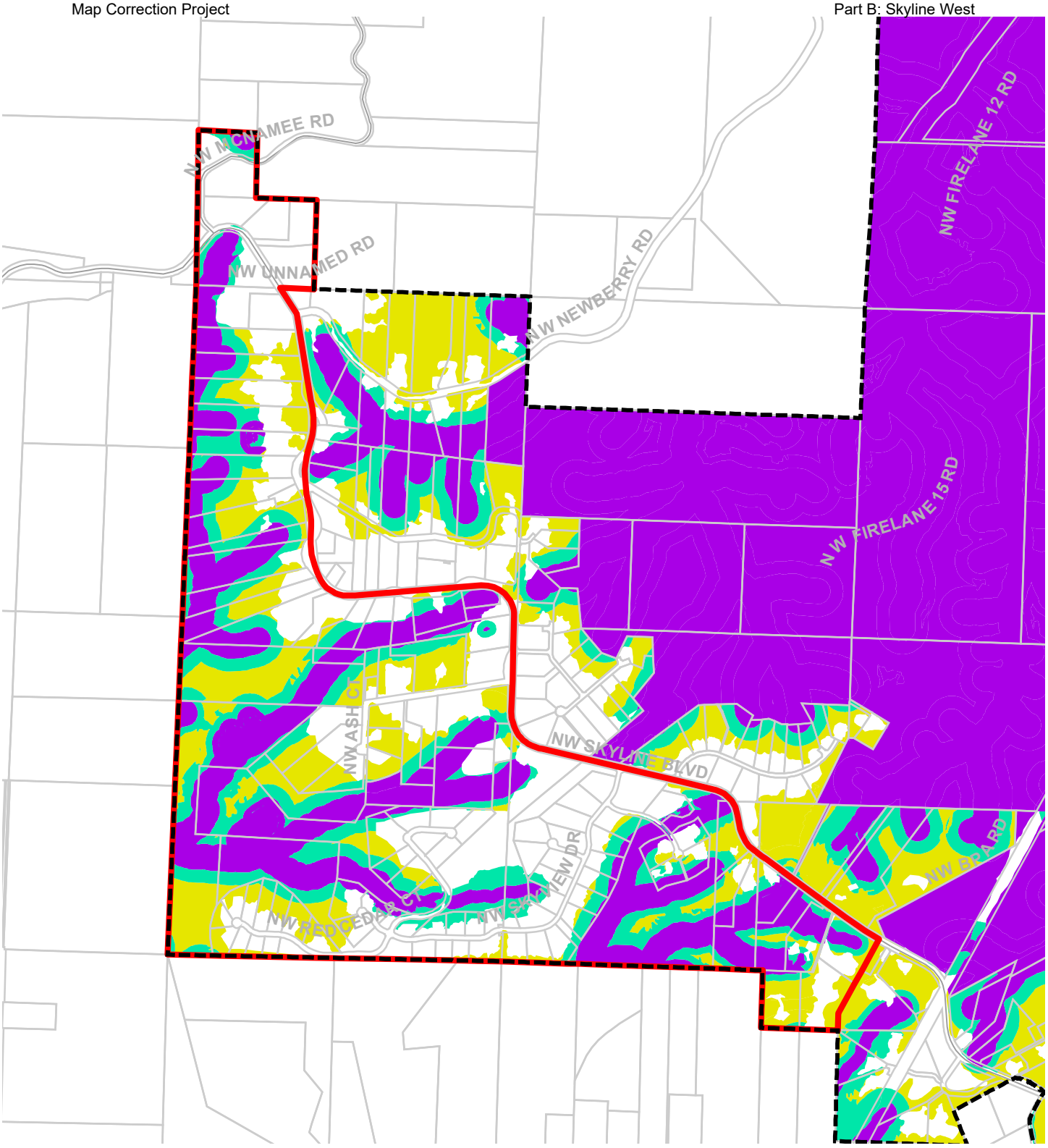

Map G: Title 13 Habitat Conservation Areas (HCA) and Goal 5 Areas

Resource Site: SK1

Updated: May 2022

NORTH

0 700 1,400 Feet

- Urban Service Boundary
- Resource Sites
- HCA High Value
- HCA Moderate Value
- HCA Low Value
- Goal 5 Significant Natural Resources

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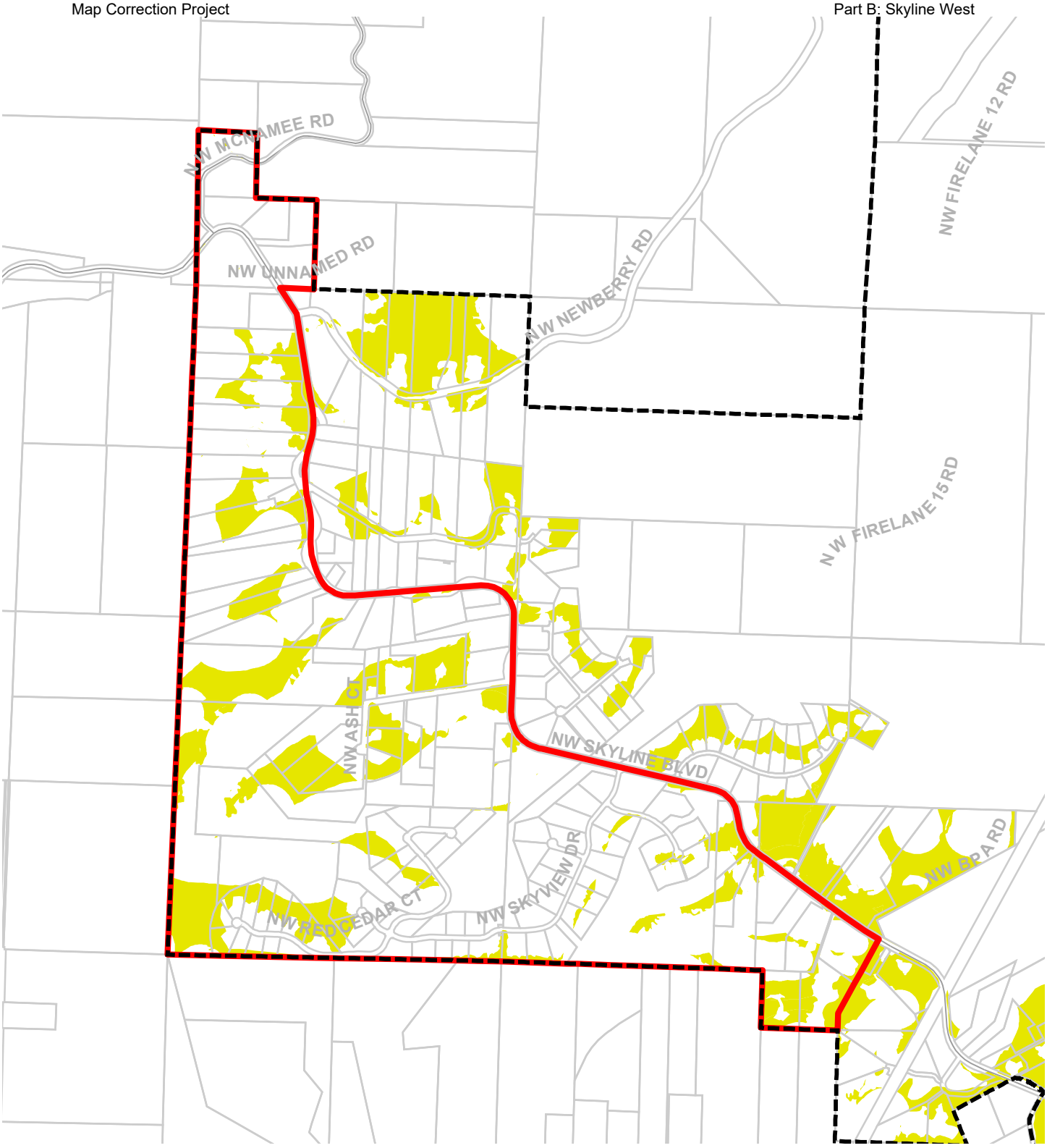
May 2022



Map H: Goal 5 Resources

Resource Site: SK1

Updated: May 2022

NORTH

0 700 1,400 Feet

Urban Service Boundary

Resource Sites

Goal 5 Significant Natural Resources

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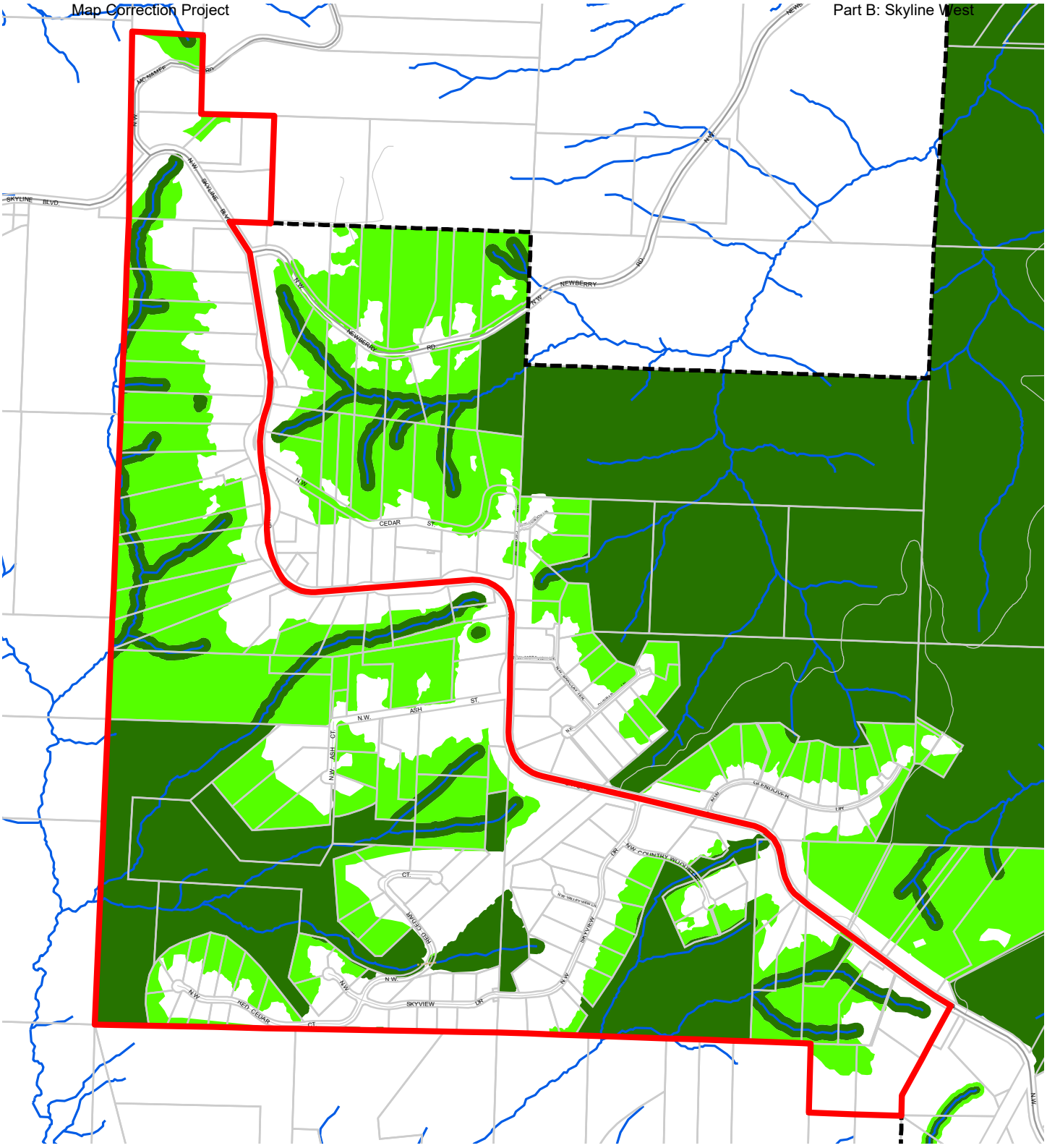
May 2022



Map I: DRAFT Proposed Environmental Overlay Zones

Resource Site:

SK1

Updated: May 2022

Resource Sites
Open Stream Channel
Piped Stream Segment
Proposed Conservation Zone
Proposed Protection Zone
Urban Service Boundary
Taxlots

NORTH

0 500 1,000 Feet

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Natural Resource Description

Within resource site SK1 the following significant natural resource features and functions are present:

Significant Riparian Corridor Features: open stream; wetland; land within 50 feet of waterbodies; forest, woodland, shrubland and herbaceous vegetation within 300 feet of waterbodies; and forest vegetation on steep slopes (>25% slope) contiguous to and within 780 feet of waterbodies.

Significant Wildlife Habitat Features: forest patches, and associated and contiguous wetlands, two acres in size or larger.

Special Habitat Areas: None

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.

Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; reduction of noise, light and vibration; and habitat patches that support special status fish and wildlife species.

Table A: Quantity of Natural Resource Features in Resource Site SK1	
	Study Area
Stream (Miles)	3.9
Wetlands (acres)	1.6
Vegetated Areas >= 1/2 acre (acres)	
Forest (acres)	204.1
Woodland (acres)	15.9
Shrubland (acres)	3.7
Herbaceous (acres)	52.0
Flood Area*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Steep Slopes (acres)**	227.4
* 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 areas with a slope greater than 25%.	

This is the rural outpost at the northwestern limits of Portland. Scattered single dwelling residences, agricultural uses, an old grange building and undeveloped woodlands border Skyline Blvd. as it meanders along the broad, rolling ridgetop. The site is long and fairly narrow, stretching between Skyline Blvd. and the western city limits, from NW Springville Rd. north to NW McNamee Rd.

This site marks the source, or headwaters, of two tributaries to Rock Creek. Rock Creek flows south and west into the Tualatin Valley until, near Beaverton, it merges with the Tualatin River. The bulk of the elevation change for the Rock Creek tributaries occurs in Portland and unincorporated Multnomah County. From a high point of 1,110 ft. at the southern boundary of the resource site, and 850 ft. at the northern boundary, the creeks drop to less than 200 ft. before entering Washington County two or three miles away. The upper basin location of this site provides a biological link to and exerts a significant influence upon downstream land and water resources. The site's location also serves as a ridgetop link between Portland's habitat areas and the natural areas to the northwest.

This site is a sensitive headwaters area and contains the source and upper reaches of two primary tributaries (Abbey Creek and an unnamed creek) to Rock Creek. The total length of the creeks and associated drainages within the site is approximately four lineal miles. In addition to the riverine creek system, three palustrine wetlands are identified in the National Wetlands Inventory. One additional emergent wetland and other wetlands directly associated with the site's creeks were identified in the field inventory. As is common elsewhere on the west slope, the older and more diverse forest generally occurs within the broad ravines.

The site's creeks and associated tributaries, wetlands and ravines provide important forage, cover and nesting habitat for a variety of bird, mammal, amphibian and reptile species. The pileated woodpecker is a state-listed sensitive species identified within the site. The pileated is an important indicator species for the retention of a complete community of hole-nesting birds and small mammals (McClelland 1979). Most of these cavity-nesters are beneficial insectivores which help to control insect populations in the area. The pileated woodpecker is an indicator of the health of the Rock Creek watershed ecosystem.

Pacific tree frog, ensatina and pacific giant salamander, and roughskin newt are sensitive amphibians that rely on the moist, wooded areas of the site with cool water of good quality. Downed logs and woody debris are common at this site and provide important cover and food sources for amphibians and other wildlife. Several non-poisonous, beneficial reptiles also use the site, including the uncommon western fence lizard (open, rocky areas and forest edges), garter snakes (forest and edge areas), and turtles (ponds).

Among the more notable mammal species observed within the site are bobcat, grey fox and Roosevelt elk. Black-tail deer use both forest and edge habitat and are occasionally observed crossing Skyline Boulevard in the vicinity of the BPA power lines. As many as 70 bird species also use the site, including bald eagle, band-tailed pigeon, black-throated gray warbler, brown creeper, bushtit, chipping sparrow, downy woodpecker, great blue heron, hermit warbler,

Hutton's vireo, olive-sided flycatcher, orange-crowned warbler, Pacific-slope flycatcher, pacific wren, pileated woodpecker, purple finch, red crossbill, rufous hummingbird, Swainson's thrush, varied thrush, Vaux's swift, white-breasted nuthatch, and Wilson's warbler. Several of these species depend on both wetland and upland habitat for survival; for example, the deer, bobcat, frogs, and forest bird species depend on either daily or seasonal shifts in habitat to forage, escape flooding or predation, and breed.

Table B: Quality of Natural Resource Functions in Resource Site SK1				
Resource Site (acres) = 330				
	Class 1/A	**Class 2/B**	**Class 3/C**	**Total**
Riparian Corridors*				
acres	91.8	63.5	87.0	242.3
percent total inventory site area	27.8%	19.2%	26.4%	73.4%
Wildlife Habitat*				
acres	204.7	3.5	0.0	208.3
percent total inventory site area	62.0%	1.1%	0.0%	63.1%
Special Habitat Areas**				
acres	0.0			
percent total inventory site area	0.0%			
Combined Total+				
acres	206.5	9.8	27.1	243.4
percent total inventory site area	62.5%	3.0%	8.2%	73.7%
* Class I riparian resources, Special Habitat Areas, and wildlife habitat include open water.				
** Metro Title 13 designated all Special Habitat Areas as Class I riparian corridors.				
+Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.				

Stormwater runs off impervious surfaces (e.g., rooftops, driveways, parking areas, streets, etc..) rapidly. Without a place to retain the water (such as wetlands or adequate stormwater facilities), stormwater runoff results in spikes in stream levels which can cause or exacerbate flooding and increase stream erosion. In addition, when water runs off quickly, it does not have a chance to infiltrate and recharge streams or aquifers to provide water during drier periods.

The type and capacity of stormwater facilities to manage the runoff from impervious surfaces varies in the city, affecting the local rate and amount of runoff, and the amount of pollutants in the water. Much of the city was developed prior to any stormwater regulations and receives limited or no management prior to discharging to pipes and surface waters.

Table C shows the total amount of impervious area within the resource site and how much of that impervious area lacks stormwater management; the percentage of total impervious area that is not managed is called "effective impervious area." The higher the percent of effective impervious area in a watershed, the greater the negative impacts of stormwater runoff to streams. Stream science indicates that when effective impervious area reaches 10% of a watershed, negative stream impacts become significant; and at 25%, these impacts on waterways can be substantial. An additional consideration is the differences in soil conditions and other factors that influence the ability of pervious areas to retain, infiltrate or filter pollutants from stormwater. For example, a mature forest is much more effective in managing stormwater than a manicured lawn; both areas would have a lower effective impervious surface percentage than a developed site, but they have different outcomes for stormwater management.

For resource site SK1, 3.0% of the total area is effectively impervious. This indicates a significant degree of stormwater management and/or existing natural resources that should be preserved. Areas with very low impervious cover and existing vegetation are more likely to be functioning properly to support biologic systems.

Table C. Impervious Area within Resource Site SK1

Total area (acres)	Total impervious Area (acres)	Total unmanaged impervious area* (acres)	Percent of resource site that is effectively impervious
330.2	16.8	9.9	3.0%

*Total unmanaged impervious area refers to the number of acres within a resource area that receives no formal stormwater management measures to regulate flow or treat pollutants before they reach surface waters, also referred to as effective impervious area.

Metro Title 13 and Oregon Goal 5 Compliance

The following information supplements evaluation of natural resource protections presented in Volume 3 and supports compliance with Metro Title 13 and Oregon Plan Goal 5.

Title 13 Habitat Conservation Areas

Map G presents the Habitat Conservation Areas (HCA) within the resource site SK1. Natural resources should be protected within HCA as follows:

1. *Strictly limit* or *limit* conflicting uses within Class I/High Rank Riparian Areas in all Urban Development Areas.

2. *Strictly limit* or *limit* conflicting uses within Class II/Medium Rank Riparian Areas within Moderate and Low Value Urban Development Area as well as parks and open spaces.
3. *Strictly limit* or *limit* conflicting uses within Class A/High or B/Medium Rank Wildlife Habitat within parks and open spaces.
4. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class III/Low Rank Riparian Areas in all Urban Development Areas.
5. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class A/High, Class B/Medium or Class C/Low Rank Wildlife Habitat in all Urban Development Area, expect parks and open space.

Strictly limiting or *limiting* conflicting uses in HCA will protect and conserve existing streams and wetlands to maintain significant natural resource functions including: 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 fish and wildlife habitat. *Strictly limiting* or *limiting* conflicting uses in HCA will allow for additional urban development that is sensitive to the natural resource features and requires mitigation for unavoidable negative impacts to features and functions. The recommendation will also contribute towards meeting other regulatory requirements including the Metro Title 3, Water Quality and Flood Management; Oregon Goal 6, Air, Water and Land Resources Quality; Oregon Goal 7, Areas Subject to Natural Hazards; the Clean Water Act; and the Endangered Species Act.

Goal 5 Significant Natural Resources

Resource site SK1 contains natural resource features that are not a Title 13 HCA and are therefore subject to Statewide Planning Goal 5 OAR 660-023-0110. The General ESEE analysis, Volume 3, 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.

The common impacts of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; adding impervious surface; modifying streams, wetlands and flood areas; 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 RF base zones. 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.

The analysis of economic, social, environmental and energy consequences provided in Volume 3 is confirmed for resource site SK1, with the following additional information that clarifies the analysis.

Strictly limiting or *limiting* conflicting uses would retain the wildlife habitat functions provided by significant natural resource features including maintaining habitat for at risk plant, fish and wildlife species, 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 Class A or Class B wildlife habitat should be required.

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*.

Natural Resource Protection Decisions

Based on the analysis presented in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation for SK1, the following decisions are applied to protect the significant riparian corridors and wildlife habitat:

1. Apply a protection overlay zone ('p' zone) to stream channels from top-of-bank to top-of-bank, wetlands and land within 50 feet of stream top-of-bank or 25 feet of wetlands.
2. Apply a protection overlay zone ('p' zone) within specific dedicated natural resource tracts that are jointly owned by the Skyview HOA or the Parkridge HOA.
3. Apply a conservation overlay zone ('c' zone) to land between 25 and 50 feet of wetlands and within areas of forest vegetation that are contiguous to but more than 50 feet from stream top-of-bank.
4. Allow conflicting uses within all other areas containing significant natural resources.

Resource Site No.: SK2 **Resource Site Name:** Rock Creek Center

Previous Plan: Skyline West Conservation Plan
Previous Resource Site No.: 143

The results of the analysis found in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation, are presented in the following maps:

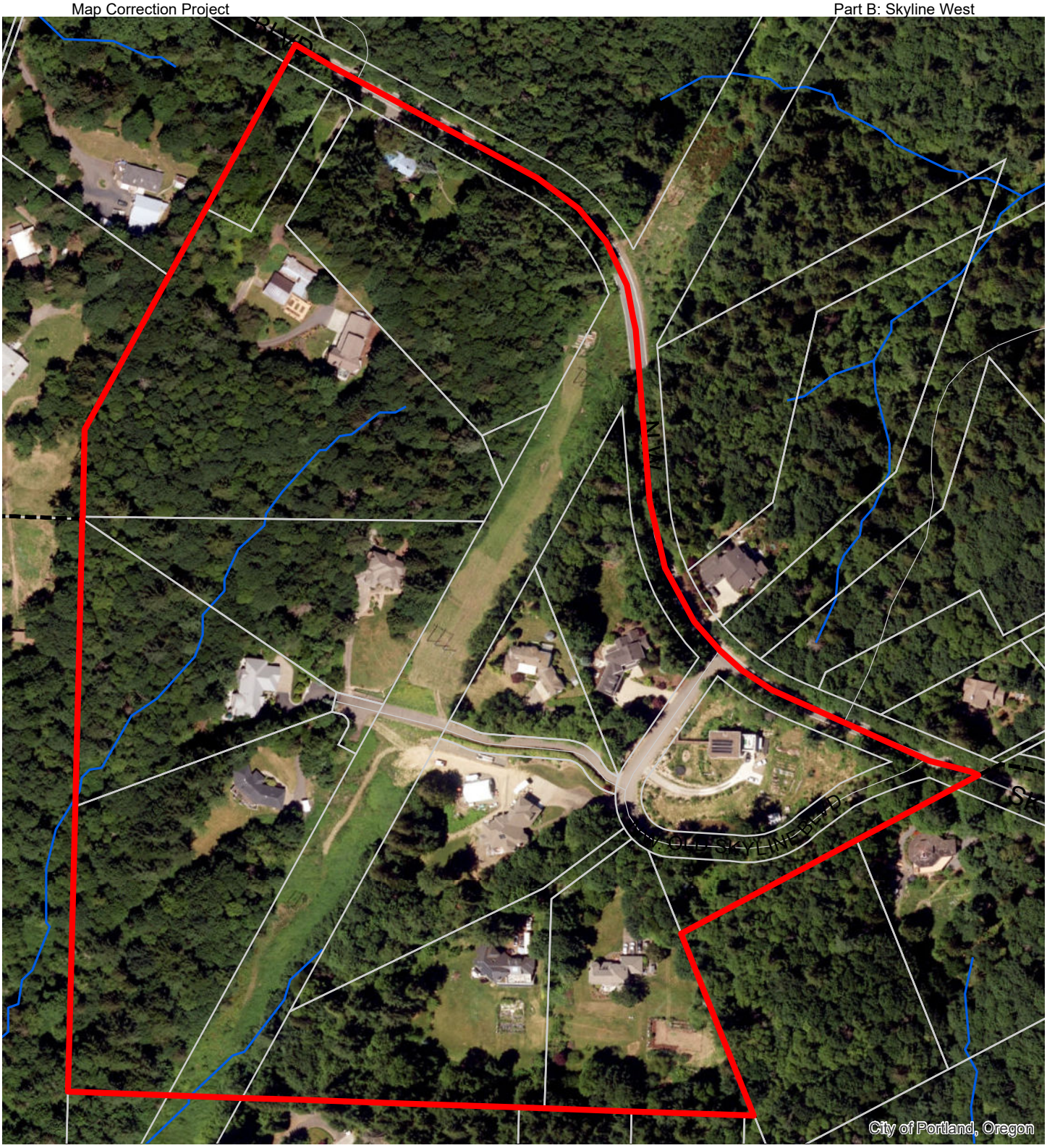
A. Water Features – rivers, streams, wetlands and flood areas
B. Land Features – forest, woodland, shrubland and herbaceous vegetation, steep slopes
C. Special Habitat Areas
D. Riparian Corridor Classifications
E. Wildlife Habitat Classifications
F. Urban Development Value
G. Metro Title 13 Habitat Conservation Areas
H. Statewide Planning Goal 5 Areas
I. Recommended Natural Resource Protections

Following the maps, additional information about existing natural resource features and functions in the resource site is presented.

Implementation of the results is found in Volume 1, Part B, updates to zoning maps and zoning code.

Resource site SK2 includes the following:

Site (acres)	30.9
Base zones (acres)	
R10	1.7
R20	0.0
RF	29.2



Map A: Water Features

Resource Site: SK2

Updated: May 2022

Resource Sites
Urban Service Boundary
Taxlots
Wetlands
Rivers
Open stream channel
Piped Stream Segment
Flood Area

NORTH

0 105 210 Feet

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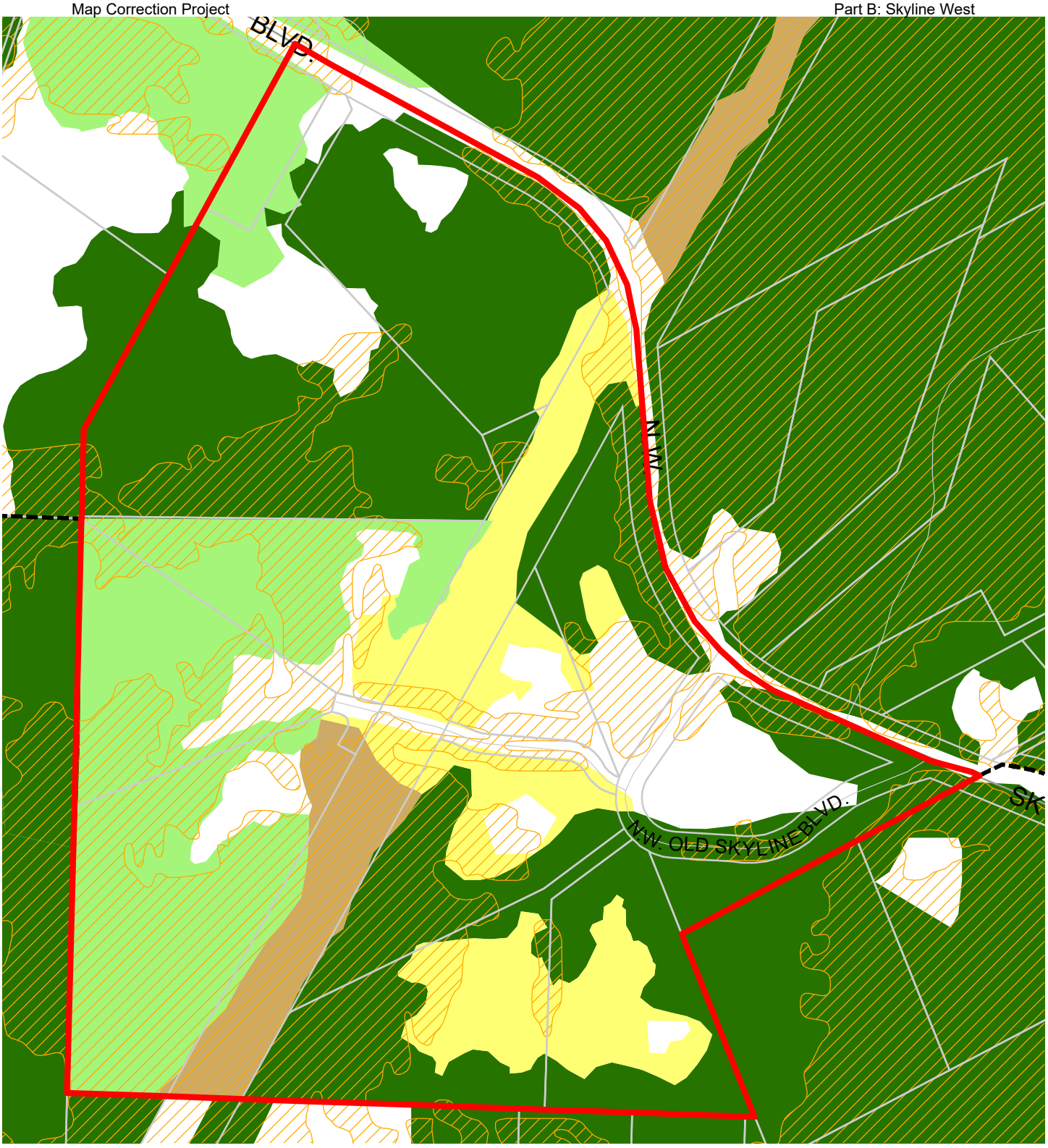

Map B: Vegetation and Steep Slopes

Resource Site: SK2

Updated: May 2022

NORTH

0 145 290 Feet

Resource Sites
Urban Service Boundary
Taxlots
Forest
Woodland
Shrubland
Herbaceous

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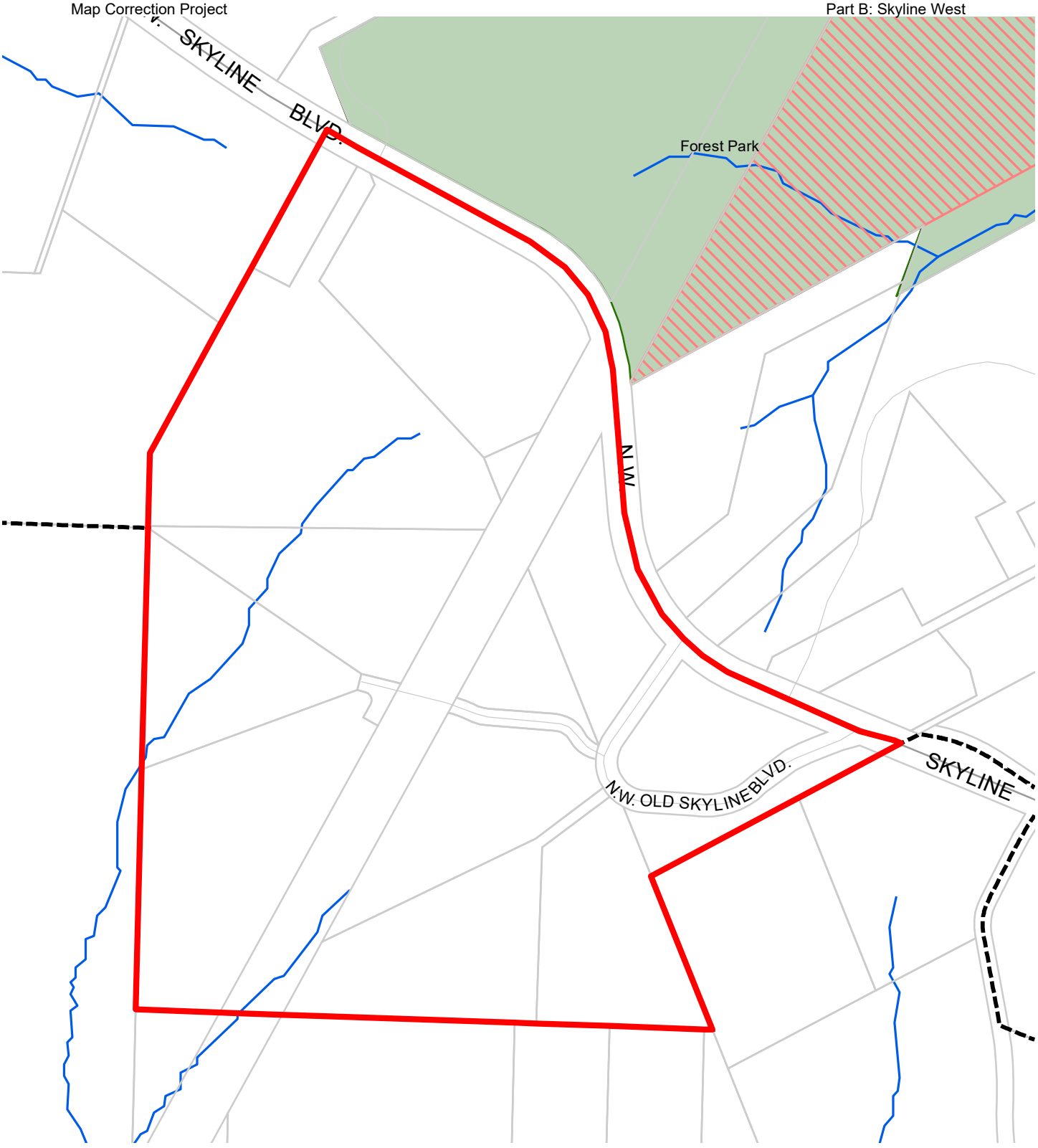

Map C: Special Habitat Areas

Resource Site: SK2

Updated: May 2022

NORTH

0 137.5 275 Feet

Resource Sites
Special Habitat Areas (SHAs)
Open Stream Channel
Piped Stream Segment
Parks
Schools
Urban Service Boundary
Taxlots

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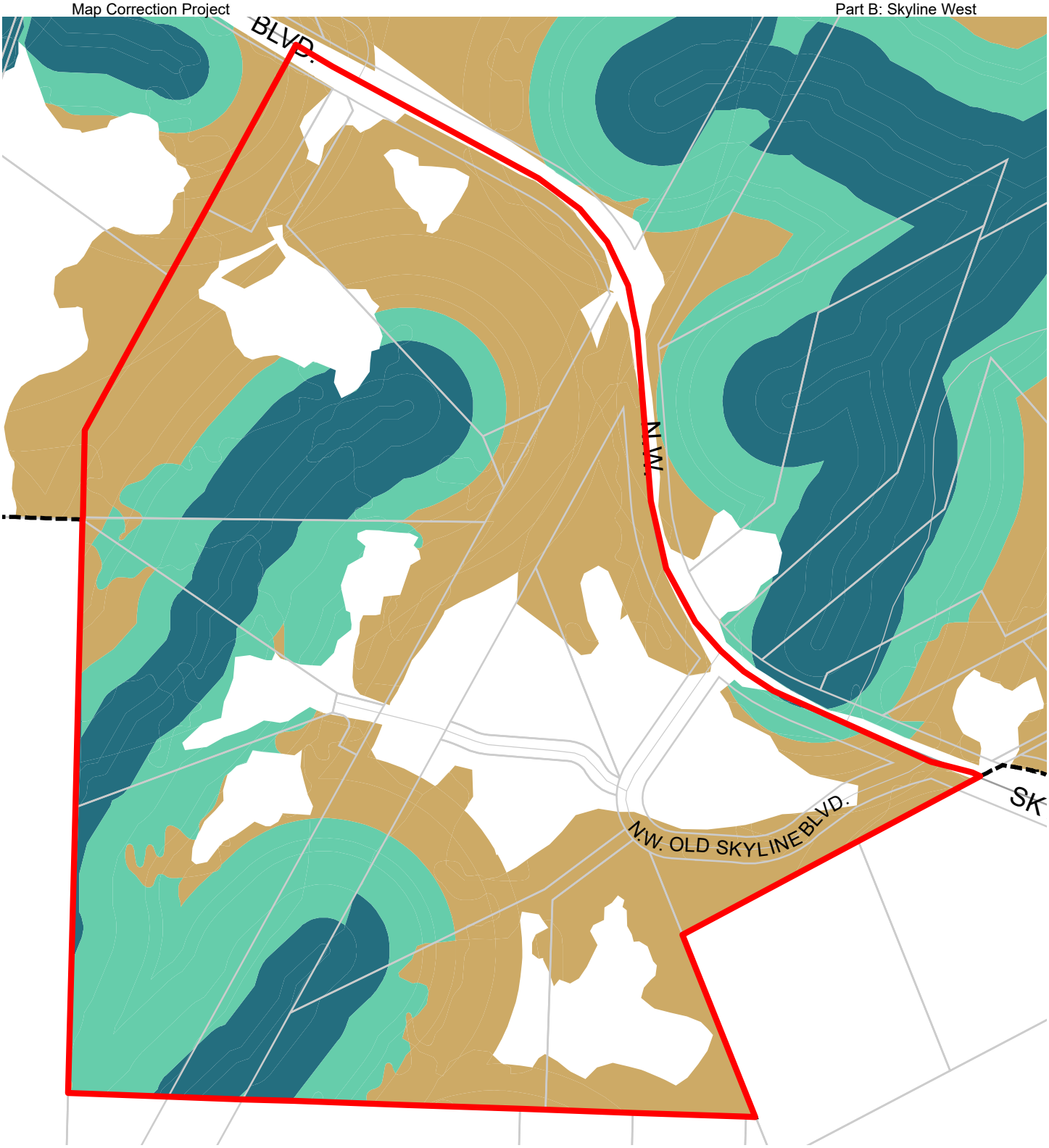

Map D: Riparian Corridors Habitat Classification

Resource Site: SK2

Updated: May 2022

Class I (high rank)
Class II (medium rank)
Class III (low rank)
Resource Sites
Urban Service Boundary
Taxlots

NORTH

0 105 210 Feet

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Map E: Wildlife Habitat Classification

Resource Site: SK2

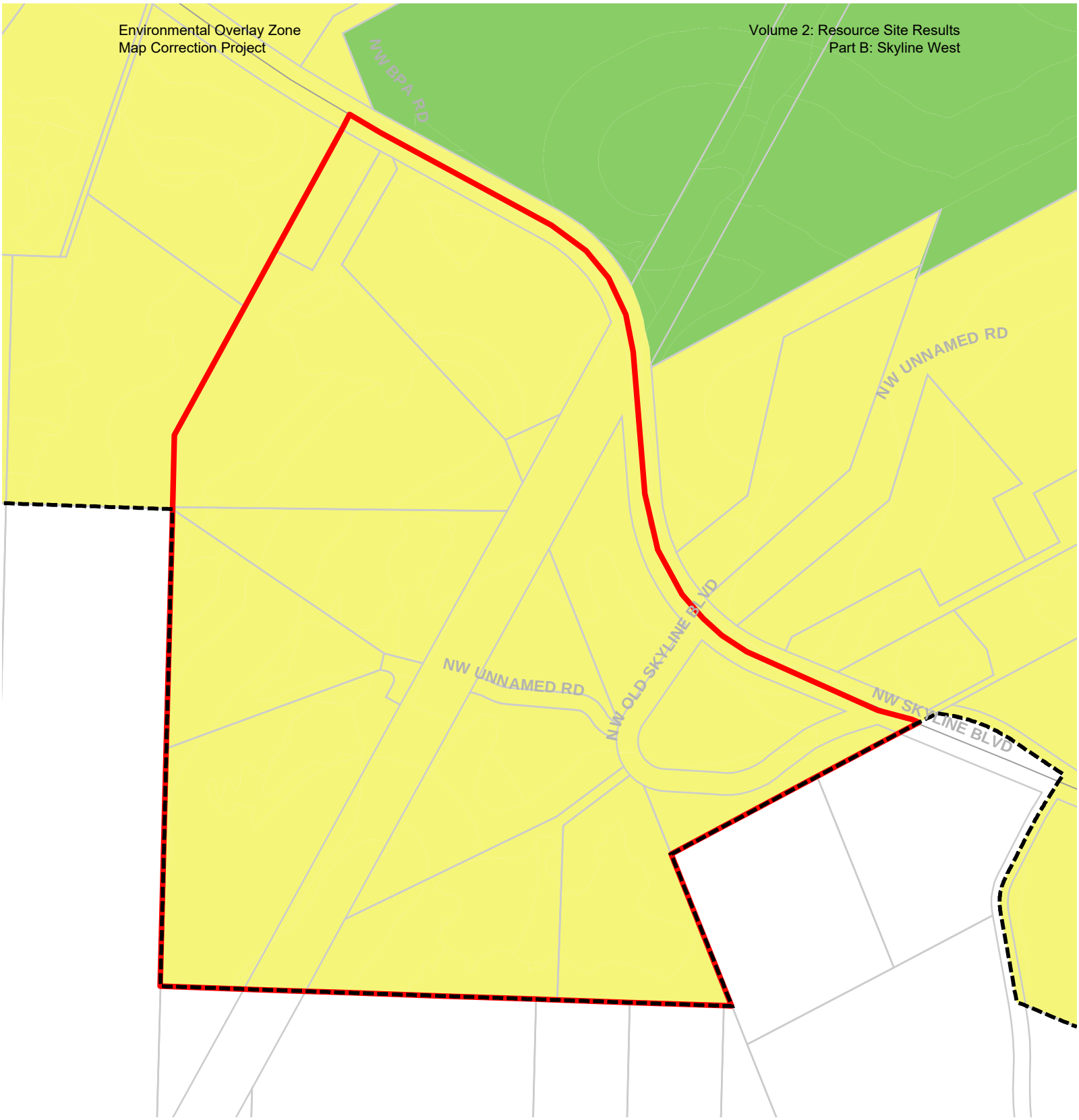
Updated: May 2022

NORTH

0 87.5 175 Feet

Resource Sites
Class A (high rank)
Class B (medium rank)
Class C (low rank)
Urban Service Boundary
Taxlots

May 2022



Map F: Urban Development Value (Title 13)
Resource Site: SK2

- Urban Service Boundary
- Resource Sites
- High Development Value
- Medium Development Value
- Low Development Value
- Parks

THE BUREAU OF PLANNING & SUSTAINABILITY

Updated: July 2021

NORTH

0 165 330 Feet

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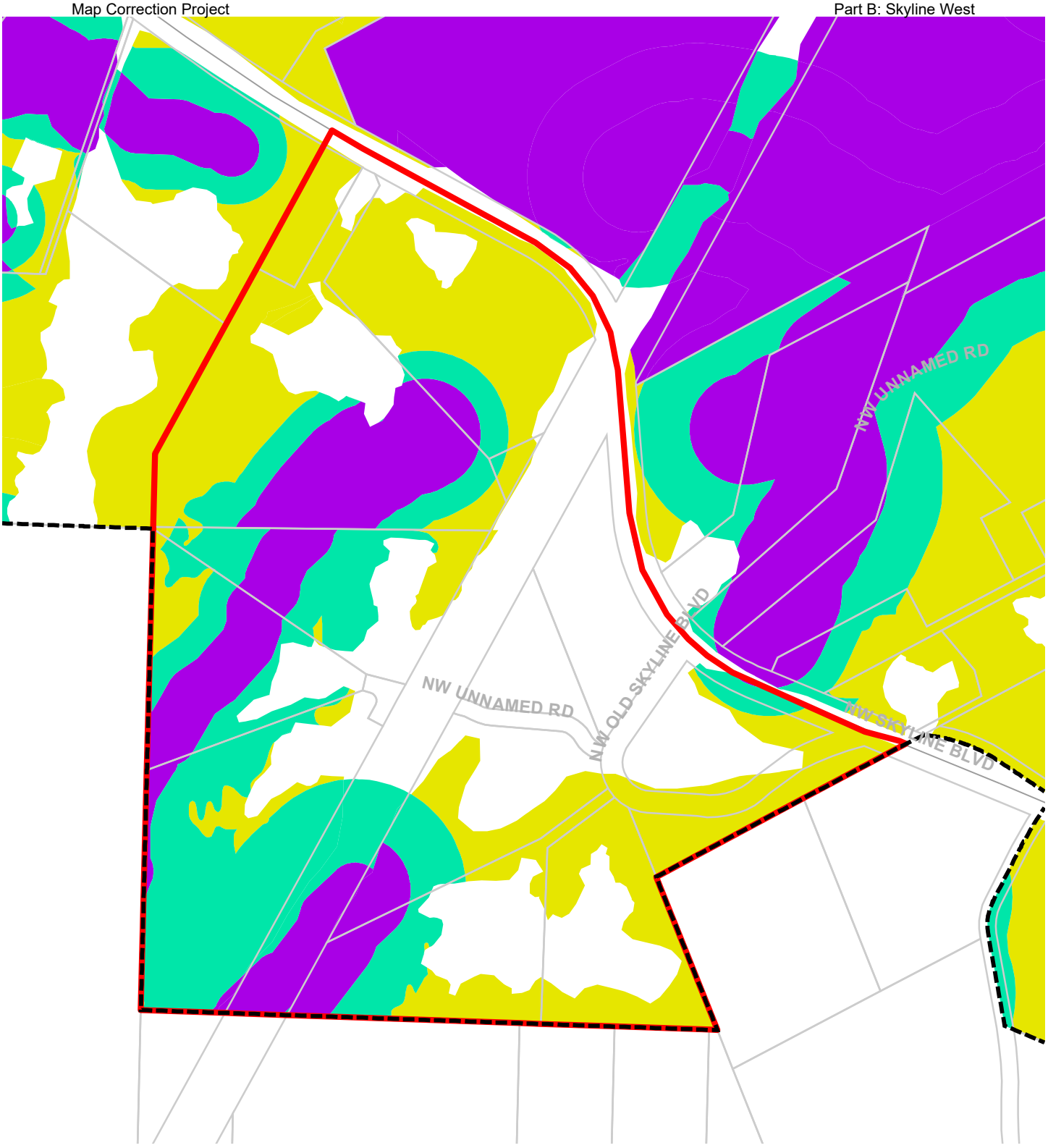

Map G: Title 13 Habitat Conservation Areas (HCA) and Goal 5 Areas

Resource Site: SK2

Updated: May 2022

NORTH

0 175 350 Feet

Recommended Draft - As Amended

- Urban Service Boundary
- Resource Sites
- HCA High Value
- HCA Moderate Value
- HCA Low Value
- Goal 5 Significant Natural Resources

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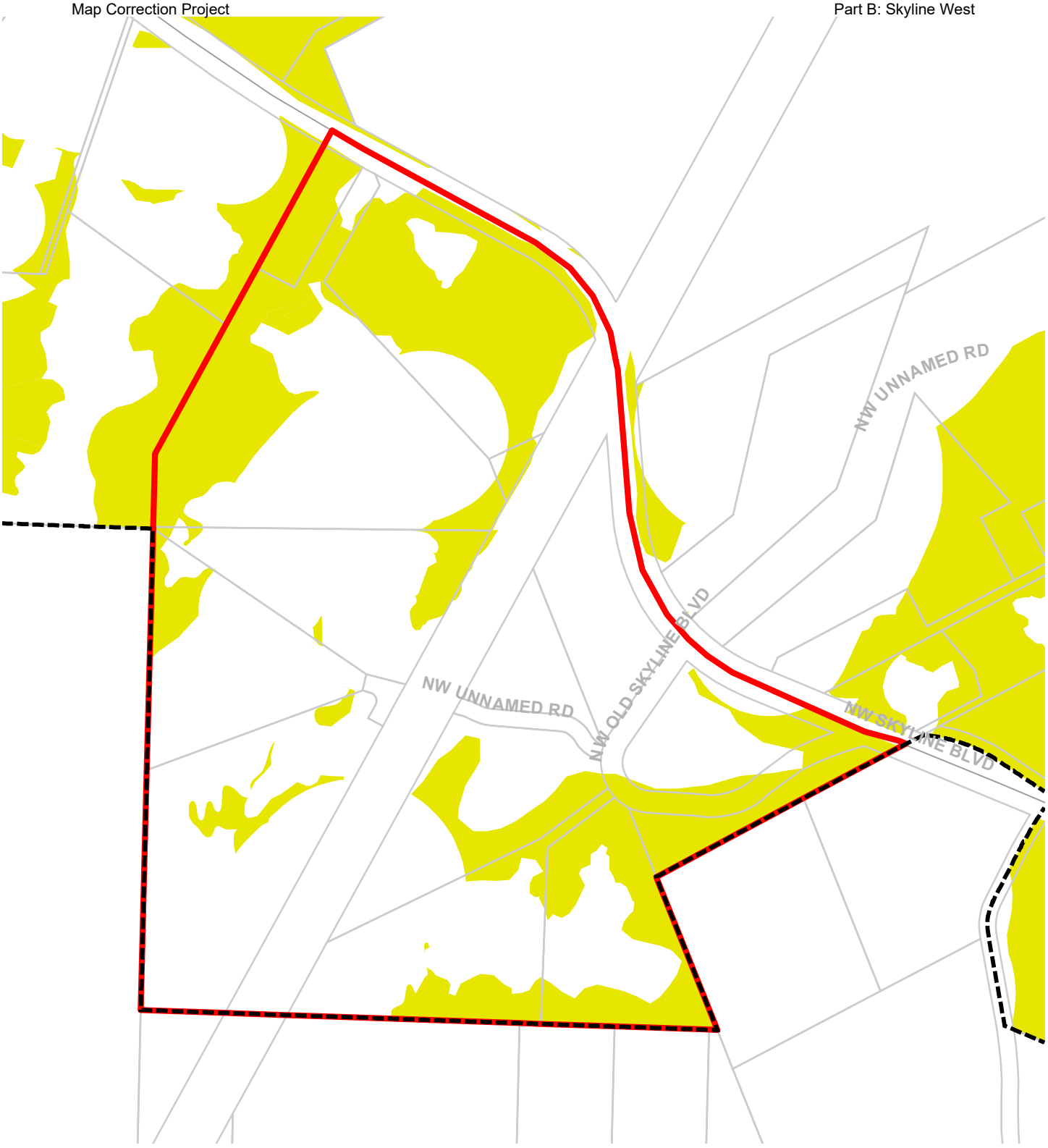
May 2022



Map H: Goal 5 Resources

Resource Site: SK2

Updated: May 2022

NORTH

0 175 350 Feet

Recommended Draft - As Amended

Urban Service Boundary

Resource Sites

Goal 5 Significant Natural Resources

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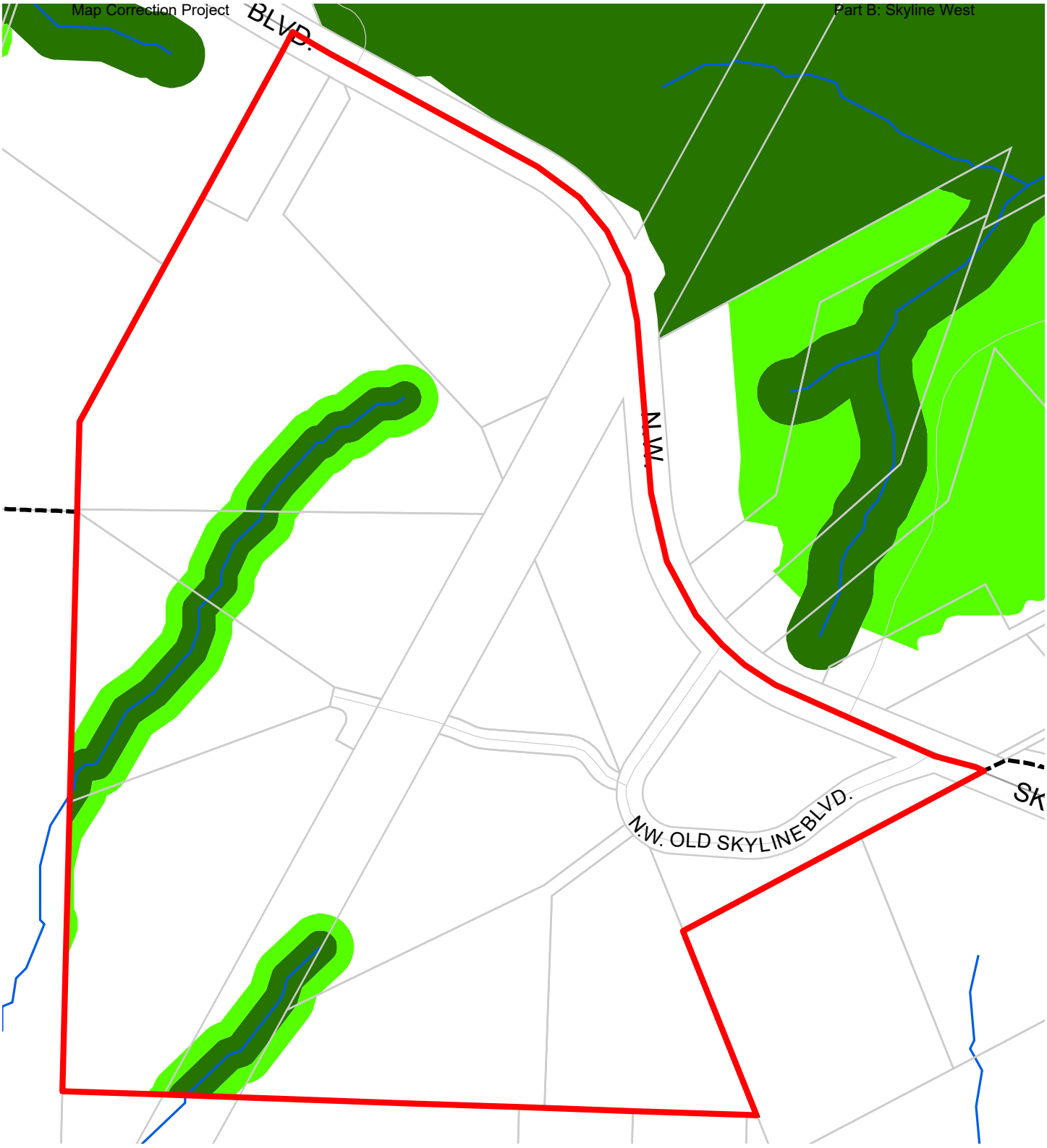
May 2022



Map I: DRAFT Proposed Environmental Overlay Zones

Resource Site:

SK2

Updated: May 2022

Resource Sites
Open Stream Channel
Piped Stream Segment
Proposed Conservation Zone
Proposed Protection Zone
Urban Service Boundary
Taxlots

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NORTH

0 115 230 Feet

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Natural Resource Description

Within resource site SK2 the following significant natural resource features and functions are present:

Significant Riparian Corridor Features: open stream; land within 50 feet of waterbodies; forest, woodland, shrubland and herbaceous vegetation within 300 feet of waterbodies; and forest vegetation on steep slopes (>25% slope) contiguous to and within 780 feet of waterbodies.

Significant Wildlife Habitat Features: forest patches, and associated and contiguous wetlands, two acres in size or larger.

Special Habitat Areas: None

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.

Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; reduction of noise, light and vibration; and habitat patches that support special status fish and wildlife species.

Table A: Quantity of Natural Resource Features in Resource Site SK2	
	Study Area
Stream (Miles)	0.2
Wetlands (acres)	0.0
Vegetated Areas >= 1/2 acre (acres)	
Forest (acres)	13.4
Woodland (acres)	6.8
Shrubland (acres)	1.4
Herbaceous (acres)	4.5
Flood Area*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Steep Slopes (acres)**	12.9
* 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 areas with a slope greater than 25%.	

This site marks the source, or headwaters, of two tributaries to Rock Creek. Rock Creek flows south and west into the Tualatin Valley until, near Beaverton, it merges with the Tualatin River. The bulk of the elevation change for the Rock Creek tributaries occurs in Portland and unincorporated Multnomah County. From a high point of 1,110 ft. at the southern boundary of the resource site, and 850 ft. at the northern boundary, the creeks drop to less than 200 ft. before entering Washington County two or three miles away. The upper basin location of this site provides a biological link to and exerts a significant influence upon downstream land and water resources. The site's location also serves as a ridgetop link between Portland's habitat areas and the natural areas to the northwest.

Among the more notable mammal species observed within the resource site are bobcat, grey fox and Roosevelt elk. Black-tail deer use both forest and edge habitat and are occasionally observed crossing Skyline Boulevard in the vicinity of the BPA power lines. As many as 70 bird species also use the site, including the pileated woodpecker, sharp shinned and red-tailed hawks, white-crowned and song sparrows, evening grosbeaks, Townsend's solitaire and Swainson's thrush. Several of these species depend on both wetland and upland habitat for survival; for example, the deer, bobcat, frogs, and forest bird species depend on either daily or seasonal shifts in habitat to forage, escape flooding or predation, and breed.

Table B: Quality of Natural Resource Functions in Resource Site SK2

Resource Site (acres) = 31

	Class 1/A	**Class 2/B**	**Class 3/C**	**Total**
Riparian Corridors*				
acres	4.1	6.4	13.0	23.5
percent total inventory site area	13.2%	20.8%	41.9%	76.0%
Wildlife Habitat*				
acres	18.8	0.0	0.0	18.8
percent total inventory site area	60.9%	0.0%	0.0%	60.9%
Special Habitat Areas**				
acres	0.0			
percent total inventory site area	0.0%			
Combined Total+				
acres	19.4	0.4	3.7	23.5
percent total inventory site area	62.8%	1.3%	12.0%	76.1%

* Class I riparian resources, Special Habitat Areas, and wildlife habitat include open water.

** Metro Title 13 designated all Special Habitat Areas as Class I riparian corridors.

+Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.

Stormwater runs off impervious surfaces (e.g., rooftops, driveways, parking areas, streets, etc..) rapidly. Without a place to retain the water (such as wetlands or adequate stormwater facilities), stormwater runoff results in spikes in stream levels which can cause or exacerbate flooding and increase stream erosion. In addition, when water runs off quickly, it does not have a chance to infiltrate and recharge streams or aquifers to provide water during drier periods.

The type and capacity of stormwater facilities to manage the runoff from impervious surfaces varies in the city, affecting the local rate and amount of runoff, and the amount of pollutants in the water. Much of the city was developed prior to any stormwater regulations and receives limited or no management prior to discharging to pipes and surface waters.

Table C shows the total amount of impervious area within the resource site and how much of that impervious area lacks stormwater management; the percentage of total impervious area that is not managed is called "effective impervious area." The higher the percent of effective impervious area in a watershed, the greater the negative impacts of stormwater runoff to streams. Stream science indicates that when effective impervious area reaches 10% of a watershed, negative stream impacts become significant; and at 25%, these impacts on waterways can be substantial. An additional consideration is the differences in soil conditions and other factors that influence the ability of pervious areas to retain, infiltrate or filter pollutants from stormwater. For example, a mature forest is much more effective in managing stormwater than a manicured lawn; both areas would have a lower effective impervious surface percentage than a developed site, but they have different outcomes for stormwater management.

For resource site SK2, 5.0% of the total area is effectively impervious. This indicates a significant degree of stormwater management and/or existing natural resources that should be preserved. Areas with very low impervious cover and existing vegetation are more likely to be functioning properly to support biologic systems.

Table C. Impervious Area within Resource Site SK2

Total area (acres)	Total impervious Area (acres)	Total unmanaged impervious area* (acres)	Percent of resource site that is effectively impervious
30.9	1.9	1.5	5.0%

*Total unmanaged impervious area refers to the number of acres within a resource area that receives no formal stormwater management measures to regulate flow or treat pollutants before they reach surface waters, also referred to as effective impervious area.

Metro Title 13 and Oregon Goal 5 Compliance

The following information supplements evaluation of natural resource protections presented in Volume 3 and supports compliance with Metro Title 13 and Oregon Plan Goal 5.

Title 13 Habitat Conservation Areas

Map G presents the Habitat Conservation Areas (HCA) within the resource site SK2. Natural resources should be protected within HCA as follows:

1. *Strictly limit* or *limit* conflicting uses within Class I/High Rank Riparian Areas in all Urban Development Areas.
2. *Strictly limit* or *limit* conflicting uses within Class II/Medium Rank Riparian Areas within Moderate and Low Value Urban Development Area as well as parks and open spaces.
3. *Strictly limit* or *limit* conflicting uses within Class A/High or B/Medium Rank Wildlife Habitat within parks and open spaces.
4. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class III/Low Rank Riparian Areas in all Urban Development Areas.
5. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class A/High, Class B/Medium or Class C/Low Rank Wildlife Habitat in all Urban Development Area, expect parks and open space.

Strictly limiting or *limiting* conflicting uses in HCA will protect and conserve existing streams and wetlands to maintain significant natural resource functions including: 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 fish and wildlife habitat. *Strictly limiting* or *limiting* conflicting uses in HCA will allow for additional urban development that is sensitive to the natural resource features and requires mitigation for unavoidable negative impacts to features and functions. The recommendation will also contribute towards meeting other regulatory requirements including the Metro Title 3, Water Quality and Flood Management; Oregon Goal 6, Air, Water and Land Resources Quality; Oregon Goal 7, Areas Subject to Natural Hazards; the Clean Water Act; and the Endangered Species Act.

Goal 5 Significant Natural Resources

Resource site SK2 contains natural resource features that are not a Title 13 HCA and are therefore subject to Statewide Planning Goal 5 OAR 660-023-0110. The General ESEE analysis, Volume 3, 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.

The common impacts of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; adding impervious surface; modifying streams, wetlands and flood areas; 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 RF and R10 base zones. Commercial uses are allowed in the CM1 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.

The analysis of economic, social, environmental and energy consequences provided in Volume 3 is confirmed for resource site SK2, with the following additional information that clarifies the analysis.

Strictly limiting or *limiting* conflicting uses would retain the wildlife habitat functions provided by significant natural resource features including maintaining habitat for at risk plant, fish and wildlife species, 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 Class A or Class B wildlife habitat should be required.

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*.

Natural Resources Protection Decisions

Based on the analysis presented in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation for SK2, the following decisions are applied to protect the significant riparian corridors and wildlife habitat:

1. Apply a protection overlay zone ('p' zone) to stream channels from top-of-bank to top-of-bank, wetlands, and land within 25 feet of stream top-of-bank or wetlands.
2. Apply a conservation overlay zone ('c' zone) to land between 25 and 50 feet of stream top-of-bank or wetlands.
3. Allow conflicting uses within all other areas containing significant natural resources.

Resource Site No.: SK3 **Resource Site Name:** Rock Creek South

Previous Plan: Skyline West Conservation Plan
Previous Resource Site No.: 143

The results of the analysis found in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation, are presented in the following maps:

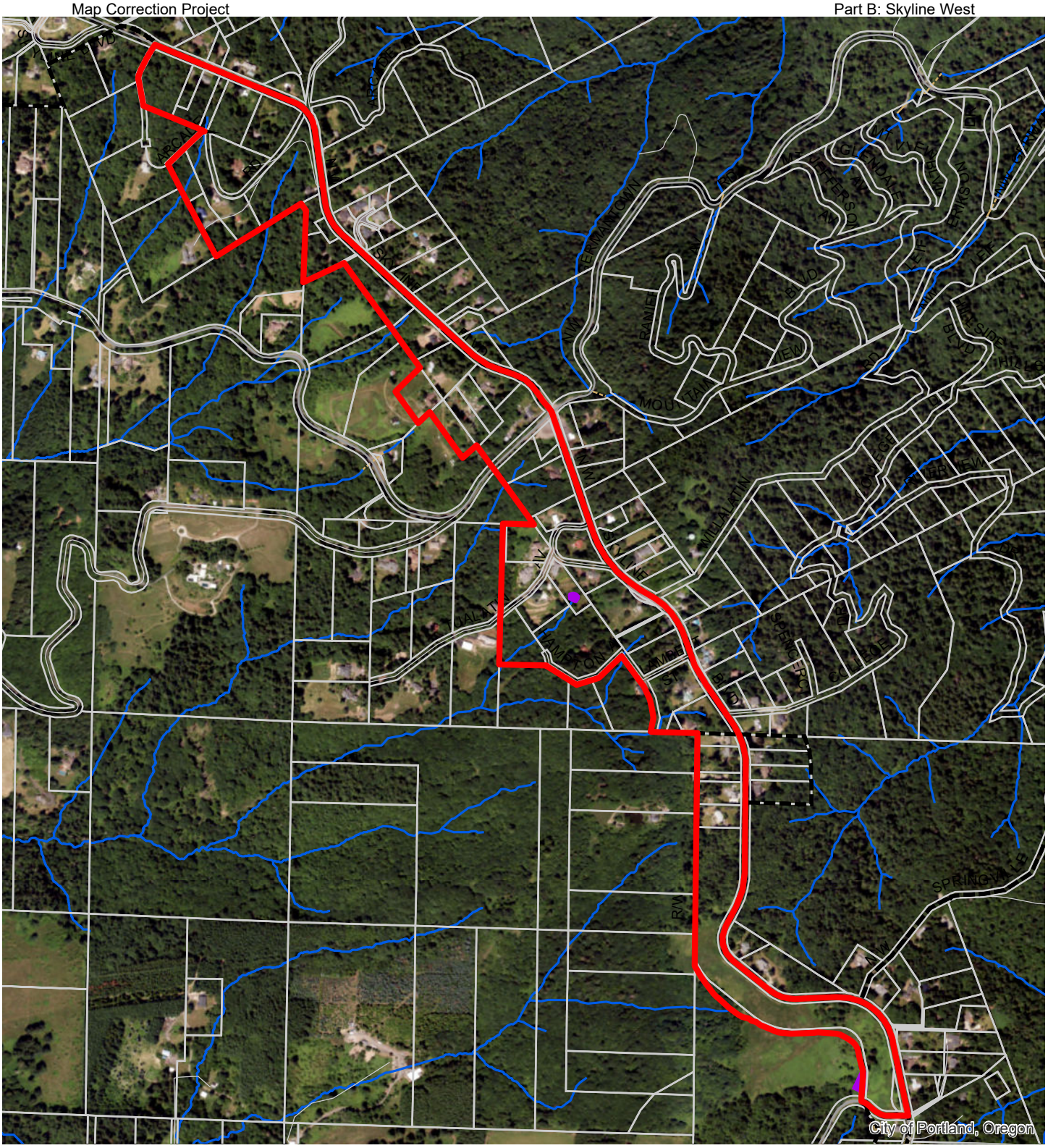
A. Water Features – rivers, streams, wetlands and flood areas
B. Land Features – forest, woodland, shrubland and herbaceous vegetation, steep slopes
C. Special Habitat Areas
D. Riparian Corridor Classifications
E. Wildlife Habitat Classifications
F. Urban Development Value
G. Metro Title 13 Habitat Conservation Areas
H. Statewide Planning Goal 5 Areas
I. Recommended Natural Resource Protections

Following the maps, additional information about existing natural resource features and functions in the resource site is presented.

Implementation of the results is found in Volume 1, Part B, updates to zoning maps and zoning code.

Resource site SK3 includes the following:

Site (acres)	87.4
Base zones (acres)	
CM1	0.8
OS	0.0
R10	1.6
R20	0.1
RF	84.9



Map A: Water Features

Resource Site: SK3

Updated: May 2022

Resource Sites
Urban Service Boundary
Taxlots
Wetlands
Rivers
Open stream channel
Piped Stream Segment
Flood Area

NORTH

0 470 940 Feet

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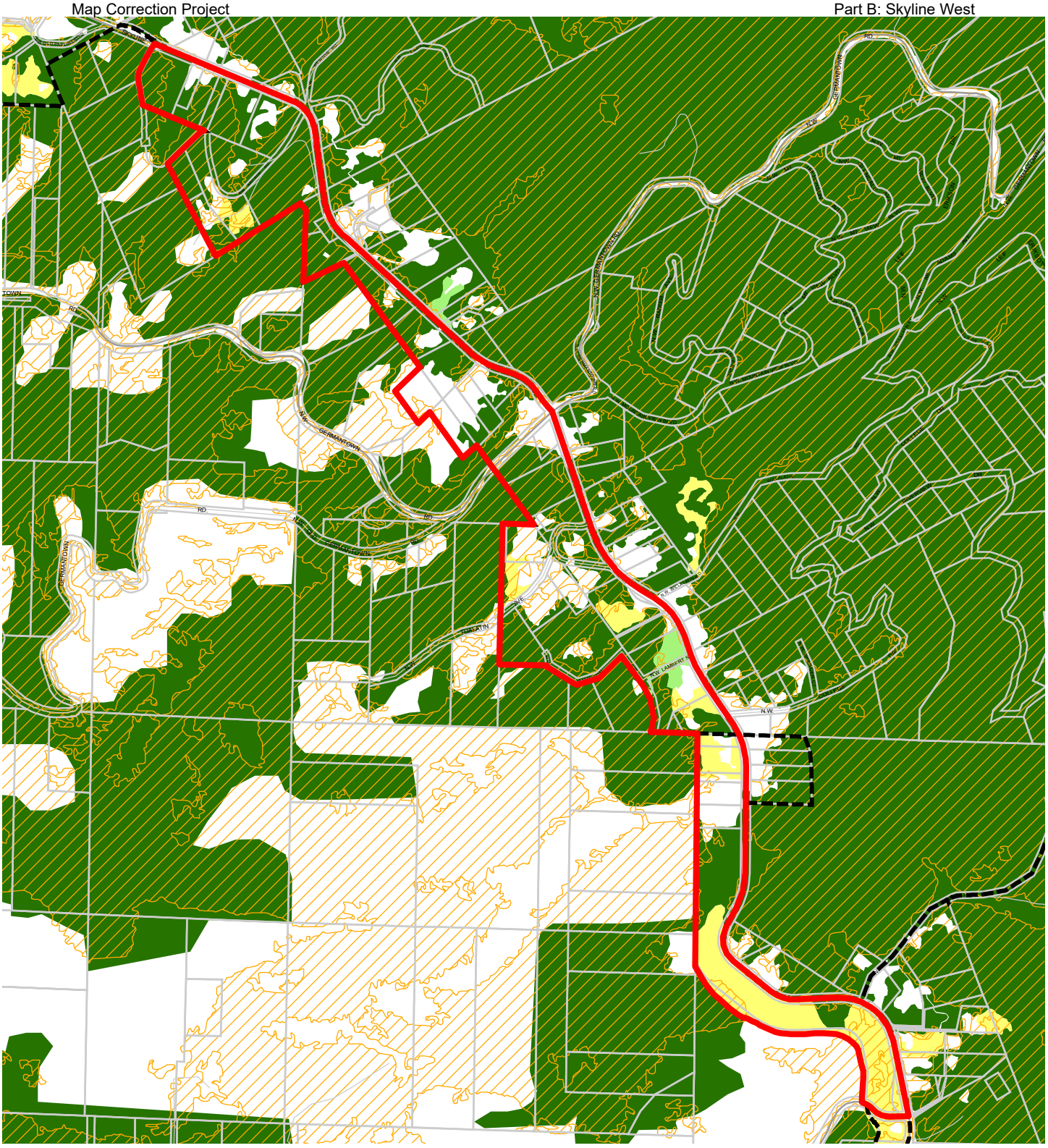


Map B: Vegetation and Steep Slopes

Resource Site: SK3

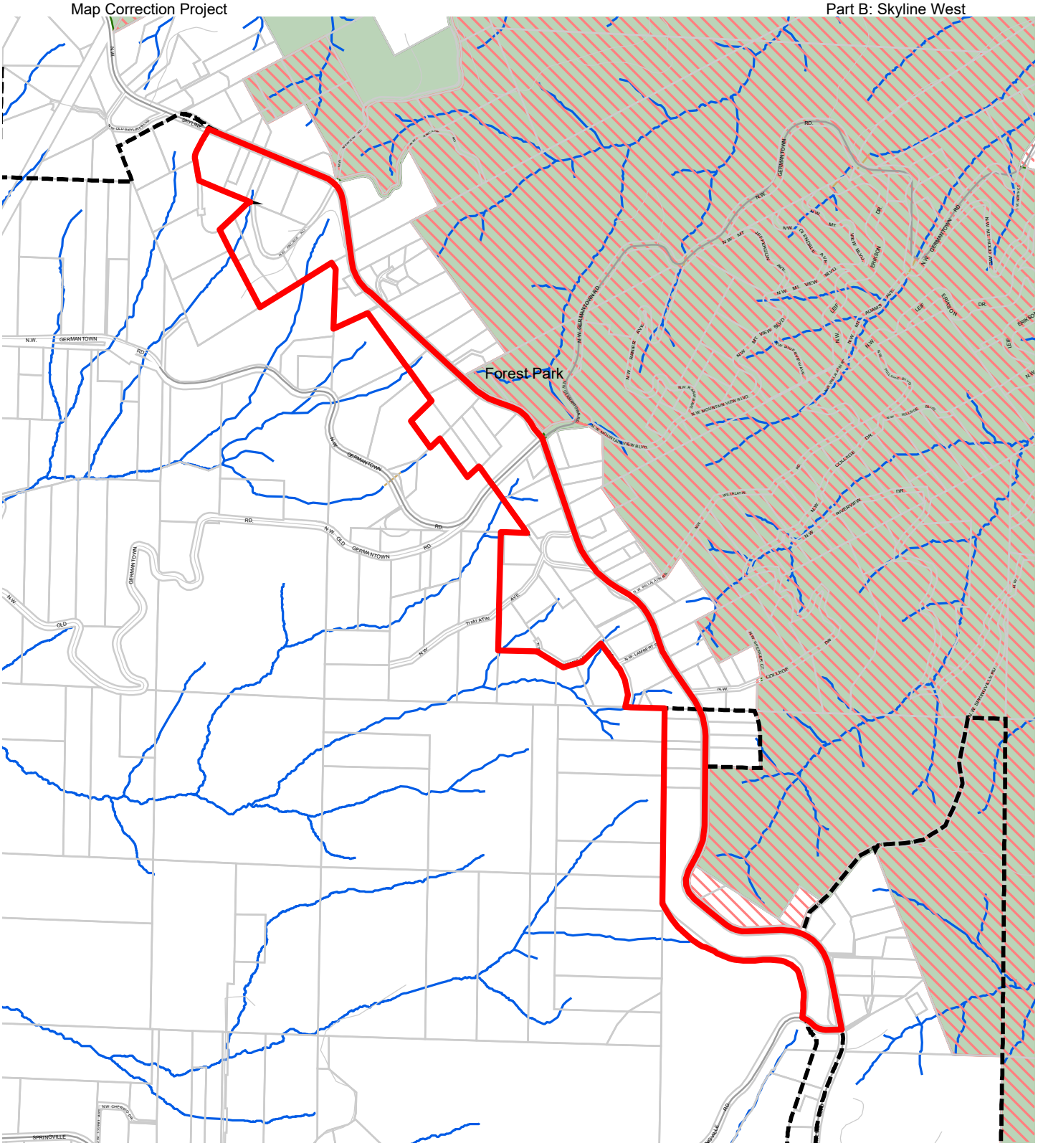
Updated: May 2022

NORTH

0 600 1,200 Feet

Resource Sites
Urban Service Boundary
Taxlots
Forest
Woodland
Shrubland
Herbaceous

[redacted]



Map C: Special Habitat Areas

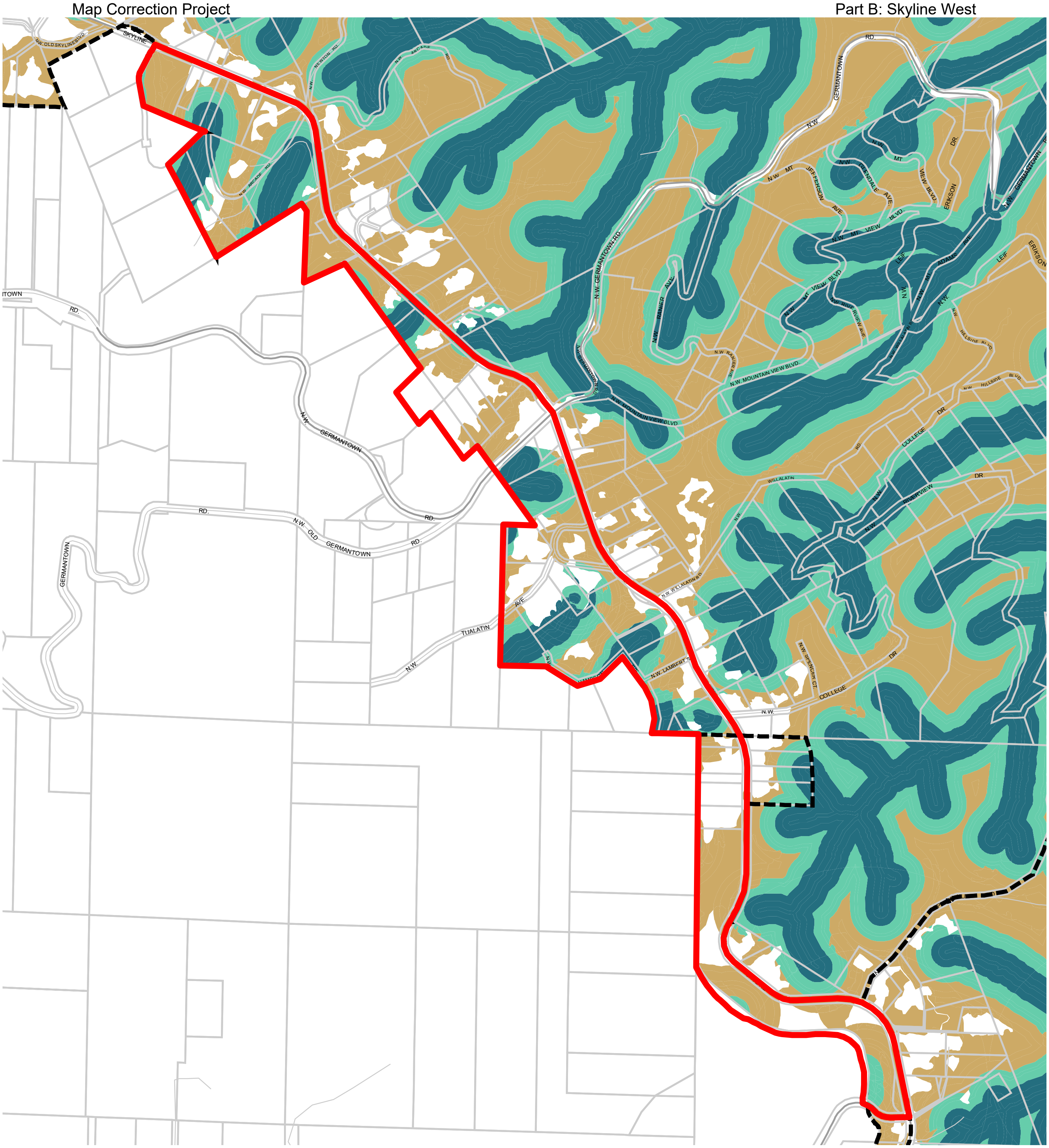
Resource Site: SK3

Updated: May 2022

NORTH

0 550 1,100 Feet

- Resource Sites
- Special Habitat Areas (SHAs)
- Open Stream Channel
- Piped Stream Segment
- Parks
- Schools
- Urban Service Boundary
- Taxlots



Map D: Riparian Corridors Habitat Classification

Resource Site: SK3

Updated: May 2022

NORTH

0 470 940 Feet

Class I (high rank)
Class II (medium rank)
Class III (low rank)
Resource Sites
Urban Service Boundary
Taxlots

[redacted]

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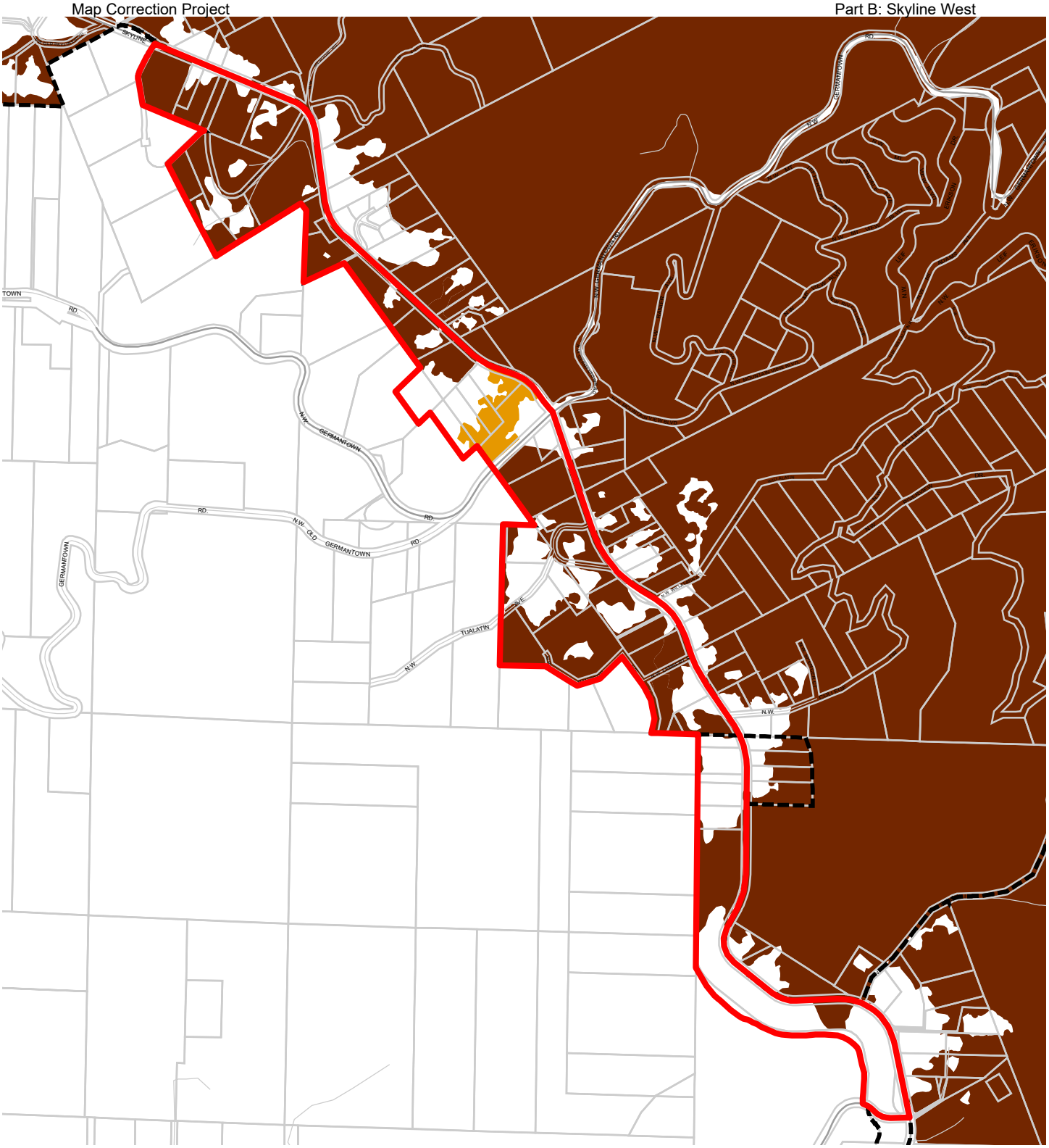


Map E: Wildlife Habitat Classification

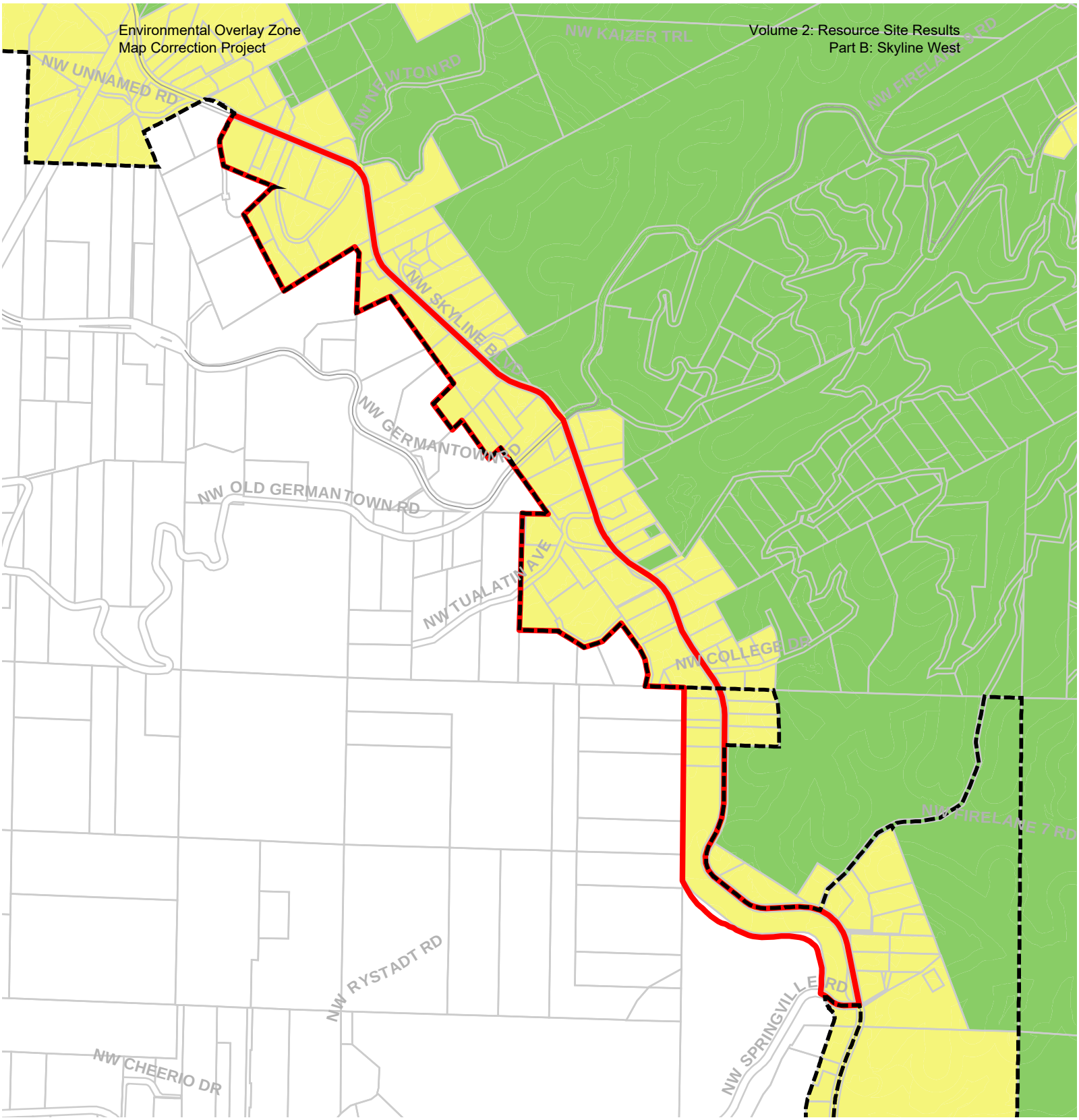
Resource Site: SK3

Updated: May 2022

NORTH

0 380 760 Feet

- Resource Sites
- Class A (high rank)
- Class B (medium rank)
- Class C (low rank)
- Urban Service Boundary
- Taxlots



Map F: Urban Development Value (Title 13)
Resource Site: SK3

- Urban Service Boundary
- Resource Sites
- High Development Value
- Medium Development Value
- Low Development Value
- Parks

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Updated: July 2021

NORTH

0 650 1,300 Feet

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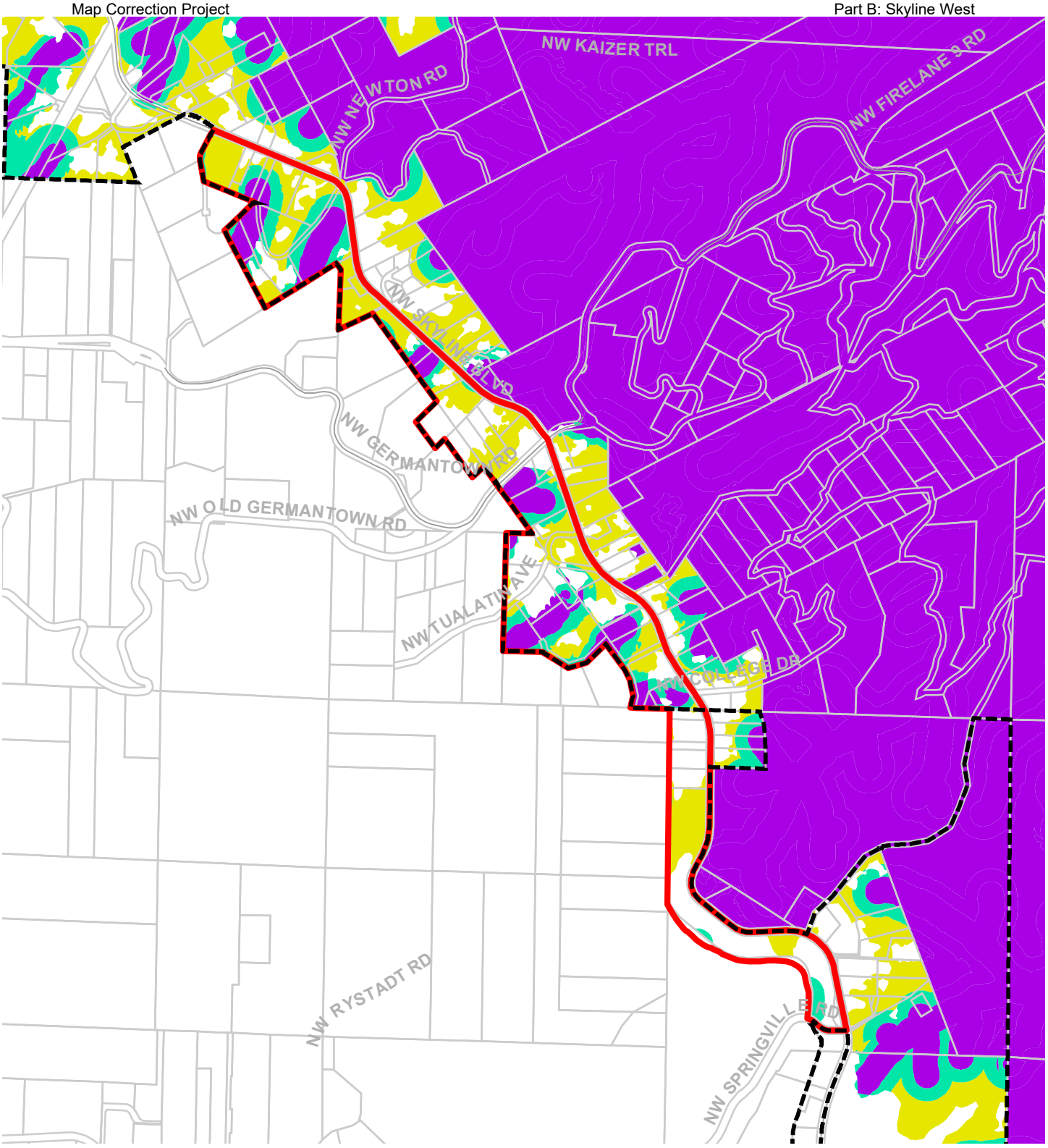

Map G: Title 13 Habitat Conservation Areas (HCA) and Goal 5 Areas

Resource Site: SK3

Updated: May 2022

NORTH

0 700 1,400 Feet

- Urban Service Boundary
- Resource Sites
- HCA High Value
- HCA Moderate Value
- HCA Low Value
- Goal 5 Significant Natural Resources

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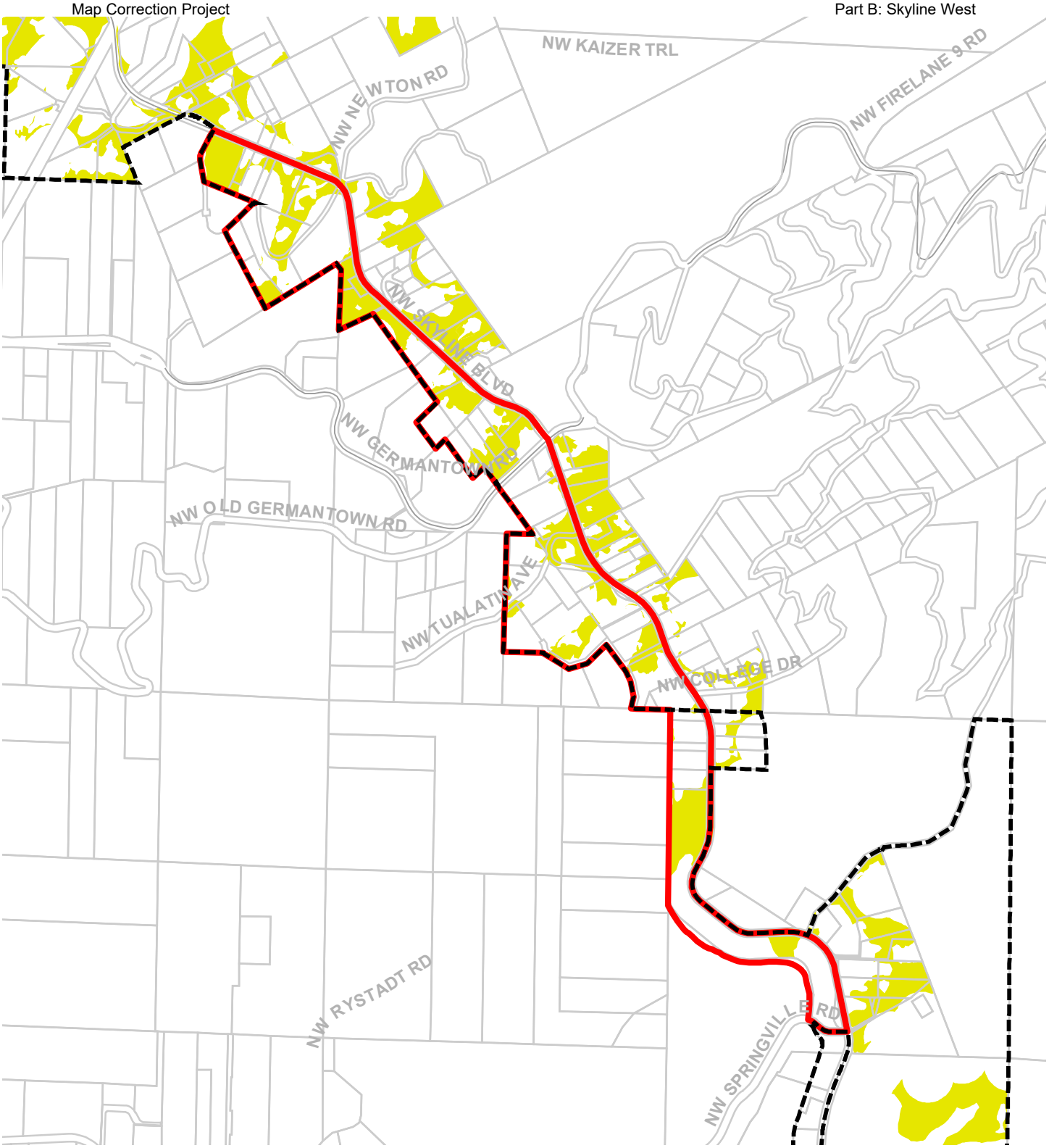

Map H: Goal 5 Resources

Resource Site: SK3

Updated: May 2022

NORTH

0 700 1,400 Feet

Recommended Draft - As Amended

- Urban Service Boundary
- Resource Sites
- Goal 5 Significant Natural Resources

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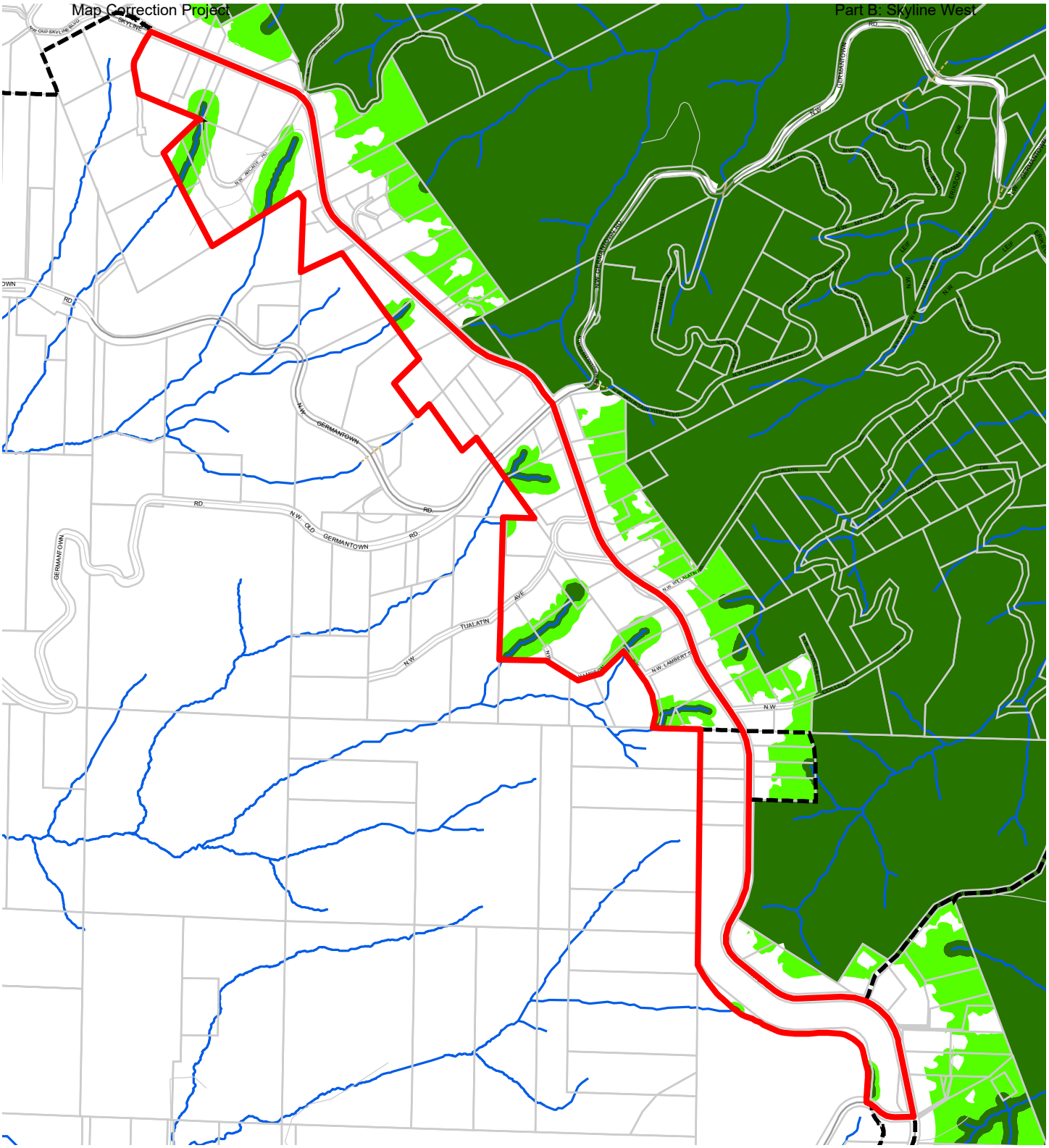
May 2022



Map I: DRAFT Proposed Environmental Overlay Zones

Resource Site:

SK3

Updated: May 2022

Resource Sites
Open Stream Channel
Piped Stream Segment
Proposed Conservation Zone
Proposed Protection Zone
Urban Service Boundary
Taxlots

NORTH
0 500 1,000 Feet

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Natural Resource Description

Within resource site SK3 the following significant natural resource features and functions are present:

Significant Riparian Corridor Features: open stream; land within 50 feet of waterbodies; forest, woodland, shrubland and herbaceous vegetation within 300 feet of waterbodies; and forest vegetation on steep slopes (>25% slope) contiguous to and within 780 feet of waterbodies.

Significant Wildlife Habitat Features: forest patches, and associated and contiguous wetlands, two acres in size or larger.

Special Habitat Areas: None

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.

Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; reduction of noise, light and vibration; and habitat patches that support special status fish and wildlife species.

Table A: Quantity of Natural Resource Features in Resource Site SK3	
	Study Area
Stream (Miles)	0.6
Wetlands (acres)	0.1
Vegetated Areas >= 1/2 acre (acres)	
Forest (acres)	52.0
Woodland (acres)	1.4
Shrubland (acres)	0.0
Herbaceous (acres)	12.4
Flood Area*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Steep Slopes (acres)**	46.4
* 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 areas with a slope greater than 25%.	

Note – This resource site contains no site-specific resource description. Please refer to the section E.1 natural resource description.

Table B: Quality of Natural Resource Functions in Resource Site SK3				
Resource Site (acres) = 87				
	Class 1/A	**Class 2/B**	**Class 3/C**	**Total**
Riparian Corridors*				
acres	14.7	13.9	34.1	62.7
percent total inventory site area	16.8%	15.9%	39.0%	71.7%
Wildlife Habitat*				
acres	50.2	3.4	0.0	53.6
percent total inventory site area	57.4%	3.9%	0.0%	61.3%
Special Habitat Areas**				
acres	0.0			
percent total inventory site area	0.0%			
Combined Total+				
acres	50.2	5.2	7.4	62.8
percent total inventory site area	57.4%	6.0%	8.4%	71.8%
* Class I riparian resources, Special Habitat Areas, and wildlife habitat include open water.				
** Metro Title 13 designated all Special Habitat Areas as Class I riparian corridors.				
+Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.				

Stormwater runs off impervious surfaces (e.g., rooftops, driveways, parking areas, streets, etc..) rapidly. Without a place to retain the water (such as wetlands or adequate stormwater facilities), stormwater runoff results in spikes in stream levels which can cause or exacerbate flooding and increase stream erosion. In addition, when water runs off quickly, it does not have a chance to infiltrate and recharge streams or aquifers to provide water during drier periods.

The type and capacity of stormwater facilities to manage the runoff from impervious surfaces varies in the city, affecting the local rate and amount of runoff, and the amount of pollutants in the water. Much of the city was developed prior to any stormwater regulations and receives limited or no management prior to discharging to pipes and surface waters.

Table C shows the total amount of impervious area within the resource site and how much of that impervious area lacks stormwater management; the percentage of total impervious area that is not managed is called "effective impervious area." The higher the percent of effective impervious area in a watershed, the greater the negative impacts of stormwater runoff to

streams. Stream science indicates that when effective impervious area reaches 10% of a watershed, negative stream impacts become significant; and at 25%, these impacts on waterways can be substantial. An additional consideration is the differences in soil conditions and other factors that influence the ability of pervious areas to retain, infiltrate or filter pollutants from stormwater. For example, a mature forest is much more effective in managing stormwater than a manicured lawn; both areas would have a lower effective impervious surface percentage than a developed site, but they have different outcomes for stormwater management.

For resource site SK3, 4.1% of the total area is effectively impervious. This indicates a significant degree of stormwater management and/or existing natural resources that should be preserved. Areas with very low impervious cover and existing vegetation are more likely to be functioning properly to support biologic systems.

Table C. Impervious Area within Resource Site SK3

Total area (acres)	Total impervious Area (acres)	Total unmanaged impervious area* (acres)	Percent of resource site that is effectively impervious
88.8	5.1	3.6	4.1%

*Total unmanaged impervious area refers to the number of acres within a resource area that receives no formal stormwater management measures to regulate flow or treat pollutants before they reach surface waters, also referred to as effective impervious area.

Metro Title 13 and Oregon Goal 5 Compliance

The following information supplements evaluation of natural resource protections presented in Volume 3 and supports compliance with Metro Title 13 and Oregon Plan Goal 5.

Title 13 Habitat Conservation Areas

Map G presents the Habitat Conservation Areas (HCA) within the resource site SK3. Natural resources should be protected within HCA as follows:

1. *Strictly limit* or *limit* conflicting uses within Class I/High Rank Riparian Areas in all Urban Development Areas.
2. *Strictly limit* or *limit* conflicting uses within Class II/Medium Rank Riparian Areas within Moderate and Low Value Urban Development Area as well as parks and open spaces.
3. *Strictly limit* or *limit* conflicting uses within Class A/High or B/Medium Rank Wildlife Habitat within parks and open spaces.

4. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class III/Low Rank Riparian Areas in all Urban Development Areas.
5. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class A/High, Class B/Medium or Class C/Low Rank Wildlife Habitat in all Urban Development Area, expect parks and open space.

Strictly limiting or *limiting* conflicting uses in HCA will protect and conserve existing streams and wetlands to maintain significant natural resource functions including: 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 fish and wildlife habitat. *Strictly limiting* or *limiting* conflicting uses in HCA will allow for additional urban development that is sensitive to the natural resource features and requires mitigation for unavoidable negative impacts to features and functions. The recommendation will also contribute towards meeting other regulatory requirements including the Metro Title 3, Water Quality and Flood Management; Oregon Goal 6, Air, Water and Land Resources Quality; Oregon Goal 7, Areas Subject to Natural Hazards; the Clean Water Act; and the Endangered Species Act.

Goal 5 Significant Natural Resources

Resource site SK3 contains natural resource features that are not a Title 13 HCA and are therefore subject to Statewide Planning Goal 5 OAR 660-023-0110. The General ESEE analysis, Volume 3, 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.

The common impacts of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; adding impervious surface; modifying streams, wetlands and flood areas; 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 RF and R10 base zones. Commercial uses are allowed in the CM1 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.

The analysis of economic, social, environmental and energy consequences provided in Volume 3 is confirmed for resource site SK3, with the following additional information that clarifies the analysis.

Strictly limiting or *limiting* conflicting uses would retain the wildlife habitat functions provided by significant natural resource features including maintaining habitat for at risk plant, fish and wildlife species, 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 Class A or Class B wildlife habitat should be required.

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*.

Natural Resources Protection Decisions

Based on the analysis presented in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation for SK3, the following decisions are applied to protect the significant riparian corridors and wildlife habitat:

1. Apply a protection overlay zone ('p' zone) to stream channels from top-of-bank to top-of-bank, wetlands, and land within 25 feet of stream top-of-bank or wetlands.
2. Apply a conservation overlay zone ('c' zone) to land between 25 and 50 feet of stream top-of-bank or wetlands.
3. Apply a conservation overlay zone ('c' zone) to areas of forest vegetation between 50 and 100 feet of stream top-of-bank.
4. Allow conflicting uses within all other areas containing significant natural resources.

Resource Site No.: SK4 **Resource Site Name:** Bronson Creek

Previous Plan: Skyline West Conservation Plan
Previous Resource Site No.: 144

The results of the analysis found in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation, are presented in the following maps:

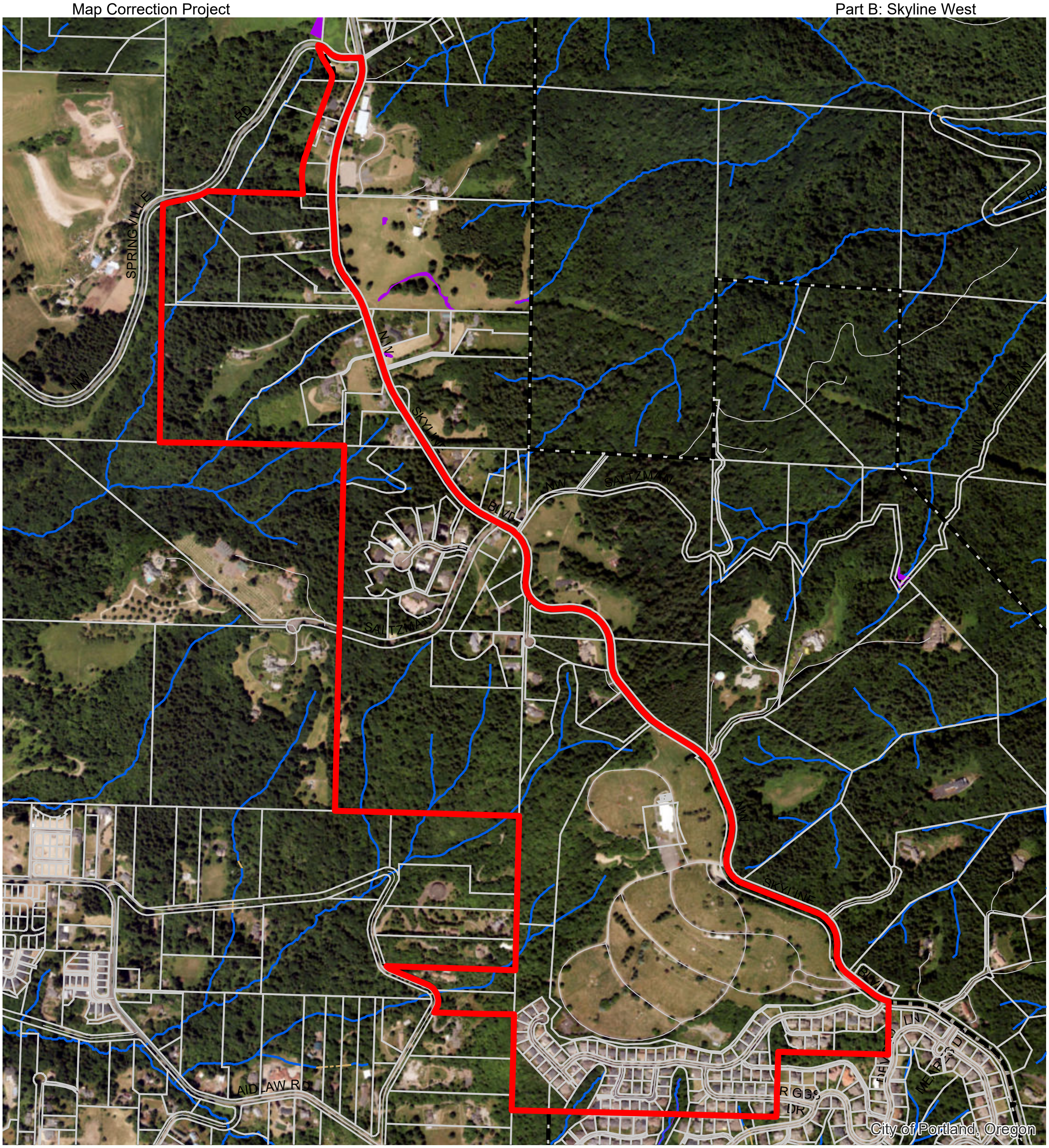
A. Water Features – rivers, streams, wetlands and flood areas
B. Land Features – forest, woodland, shrubland and herbaceous vegetation, steep slopes
C. Special Habitat Areas
D. Riparian Corridor Classifications
E. Wildlife Habitat Classifications
F. Urban Development Value
G. Metro Title 13 Habitat Conservation Areas
H. Statewide Planning Goal 5 Areas
I. Recommended Natural Resource Protections

Following the maps, additional information about existing natural resource features and functions in the resource site is presented.

Implementation of the results is found in Volume 1, Part B, updates to zoning maps and zoning code.

Resource site SK4 includes the following:

Site (acres)	279.9
Base zones (acres)	
OS	80.9
R10	32.5
RF	166.5



Map A: Water Features

Resource Site: SK4

Updated: May 2022

NORTH

0 500 1,000 Feet

Resource Sites
Urban Service Boundary
Taxlots
Wetlands
Rivers
Open stream channel
Piped Stream Segment
Flood Area

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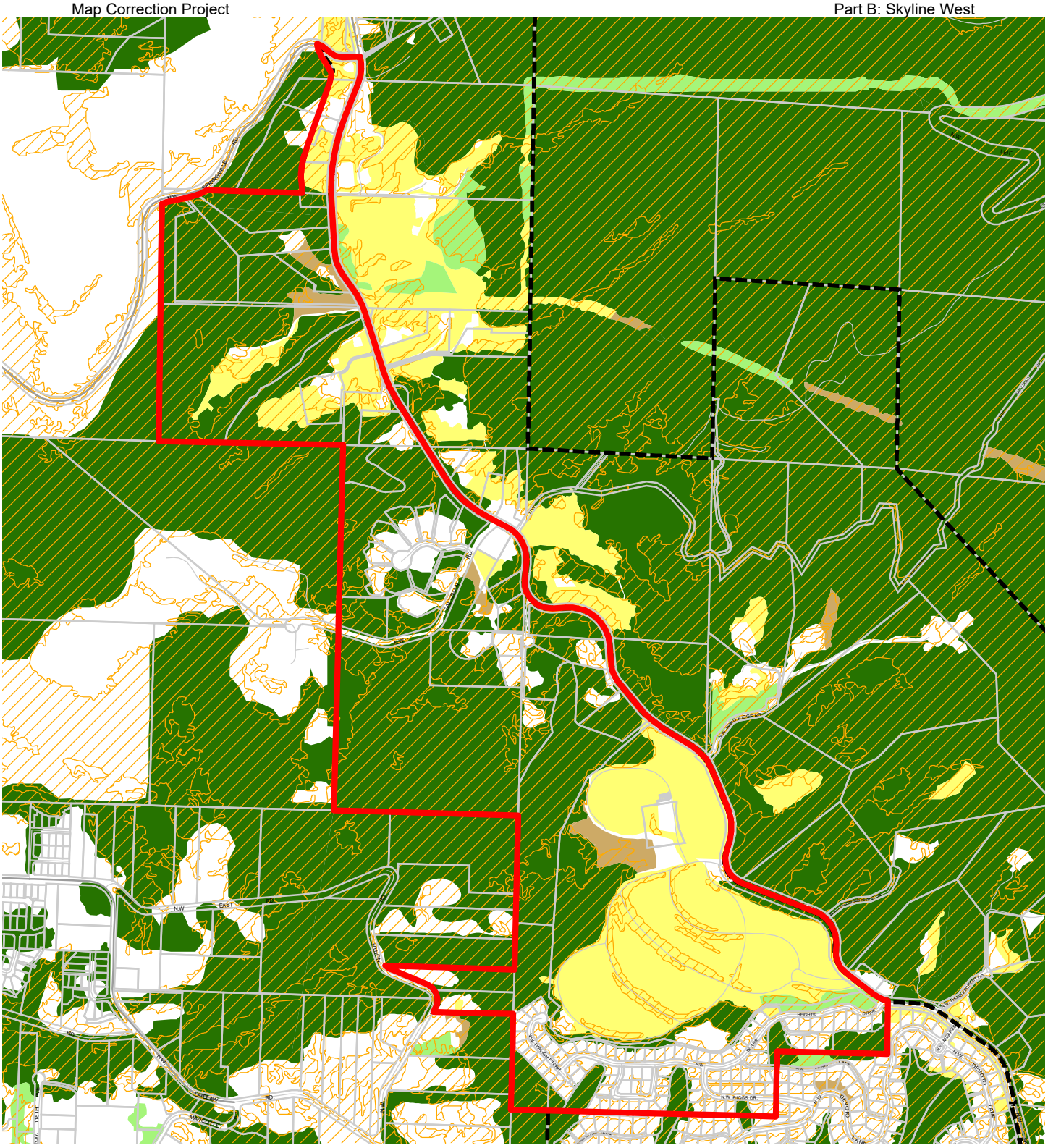
The information on the map was derived from digital databases. Care was taken in the creation of this map but it is provided "as is". The City of Portland ensures meaningful access to city programs, services, and activities to comply with Civil Rights Title VI and ADA Title II laws and reasonably provides: translation, interpretation, modifications, accommodations, alternative formats, auxiliary aids and services. To request these services, contact 503-823-7700, City TTY 503-823-6868, Relay Service: 711.



Map B: Vegetation and Steep Slopes

Resource Site: SK4

Updated: May 2022

NORTH

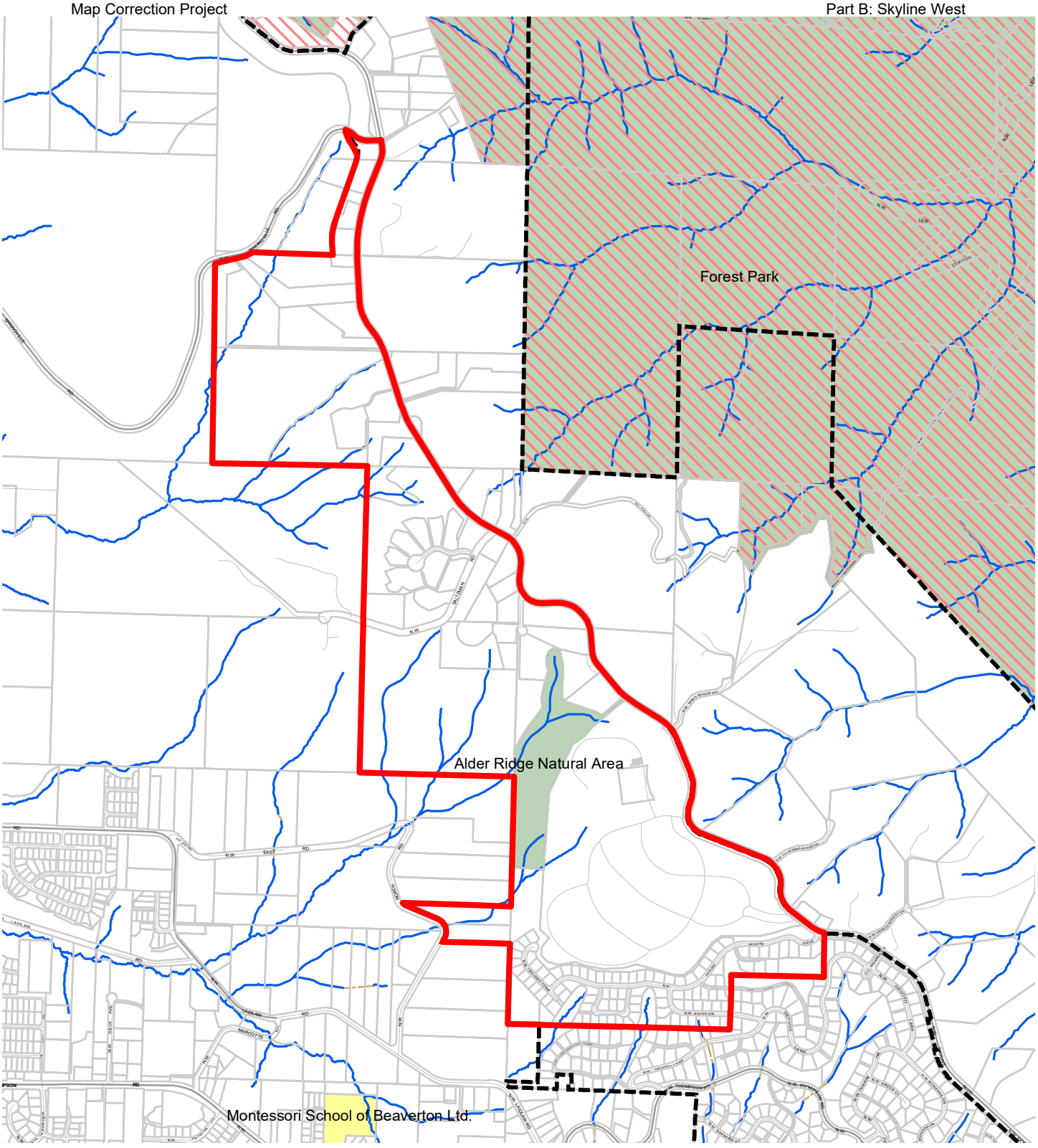
0 650 1,300 Feet

Resource Sites
Urban Service Boundary
Taxlots
Forest
Woodland
Shrubland
Herbaceous

[redacted]

The information on the 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 services. To request these services, contact 503-823-7700, City TTY 503-823-6868, Relay Service: 711.

May 2022



Map C: Special Habitat Areas

Resource Site: SK4

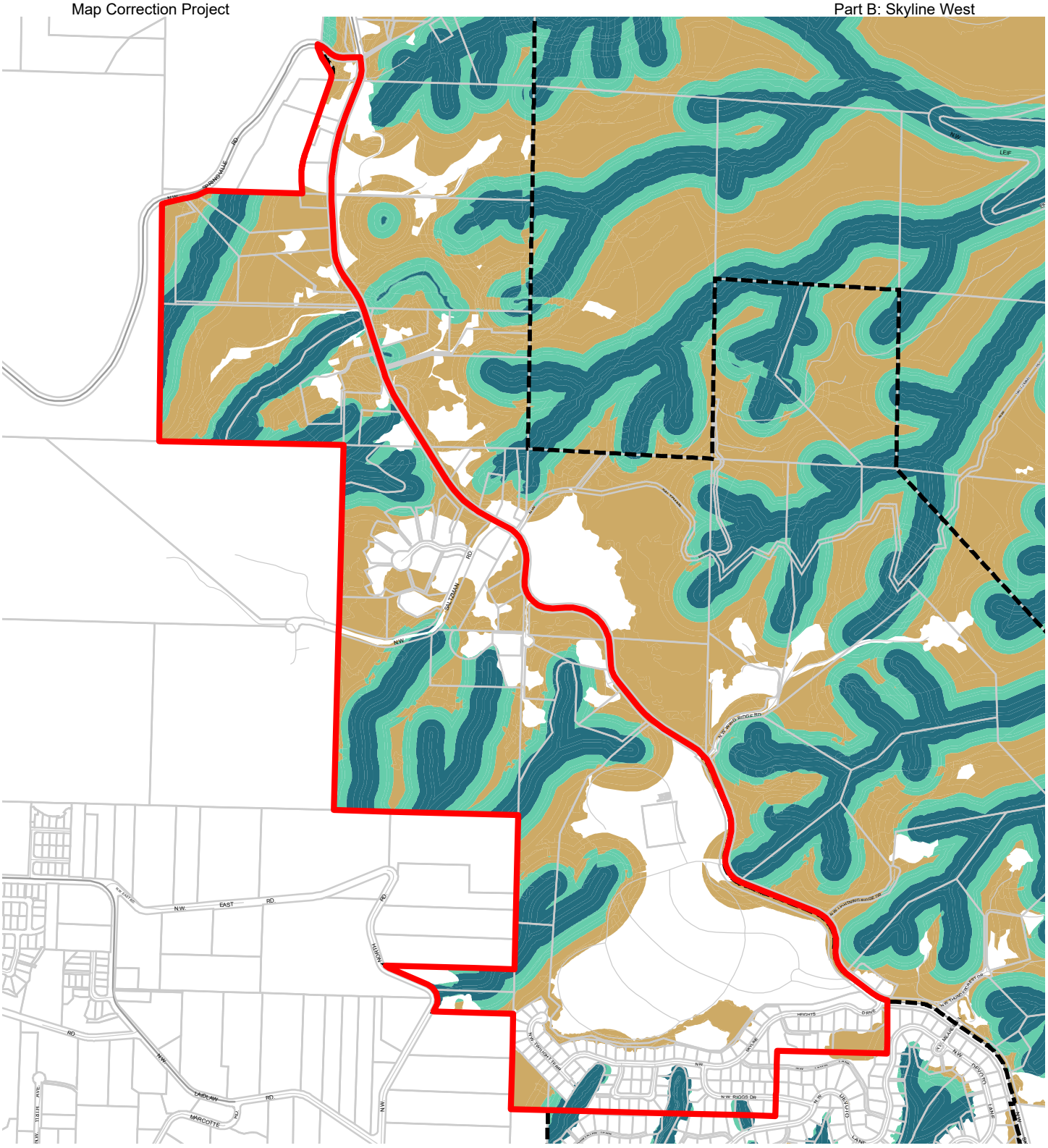
Updated: May 2022

NORTH

0 625 1,250 Feet

Resource Sites
Special Habitat Areas (SHAs)
Open Stream Channel
Piped Stream Segment
Parks
Schools
Urban Service Boundary
Taxlots

The information on the 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 services. To request these services, contact 503-823-7700, City TTY 503-823-6868, Relay Service: 711.



Map D: Riparian Corridors Habitat Classification

Resource Site: SK4

Updated: May 2022

Class I (high rank)

Class II (medium rank)

Class III (low rank)

Resource Sites

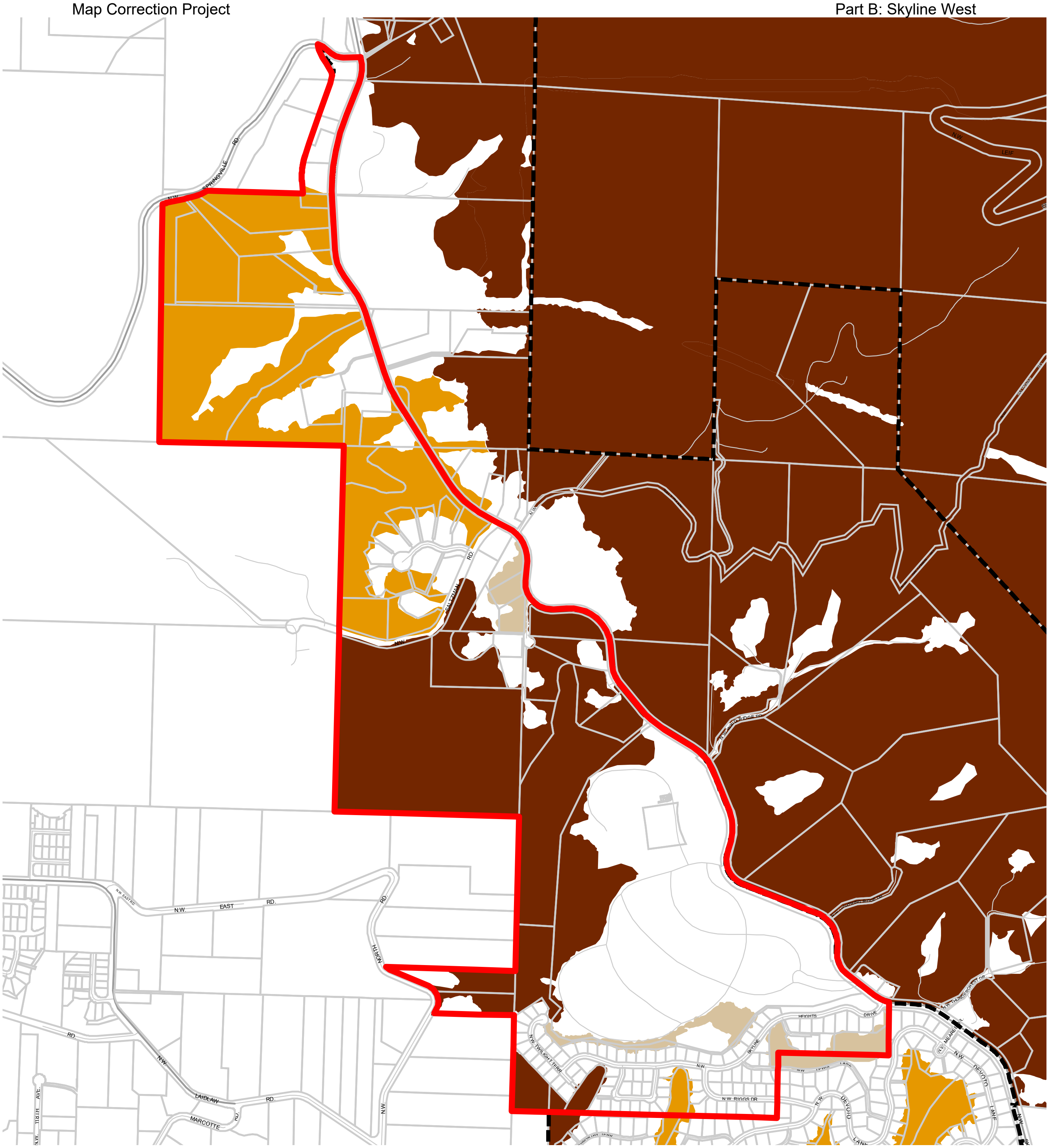
Urban Service Boundary

Taxlots

NORTH

0 500 1,000 Feet

The information on the 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 services. To request these services, contact 503-823-7700, City TTY 503-823-6868, Relay Service: 711.



Map E: Wildlife Habitat Classification

Resource Site: SK4

Updated: May 2022

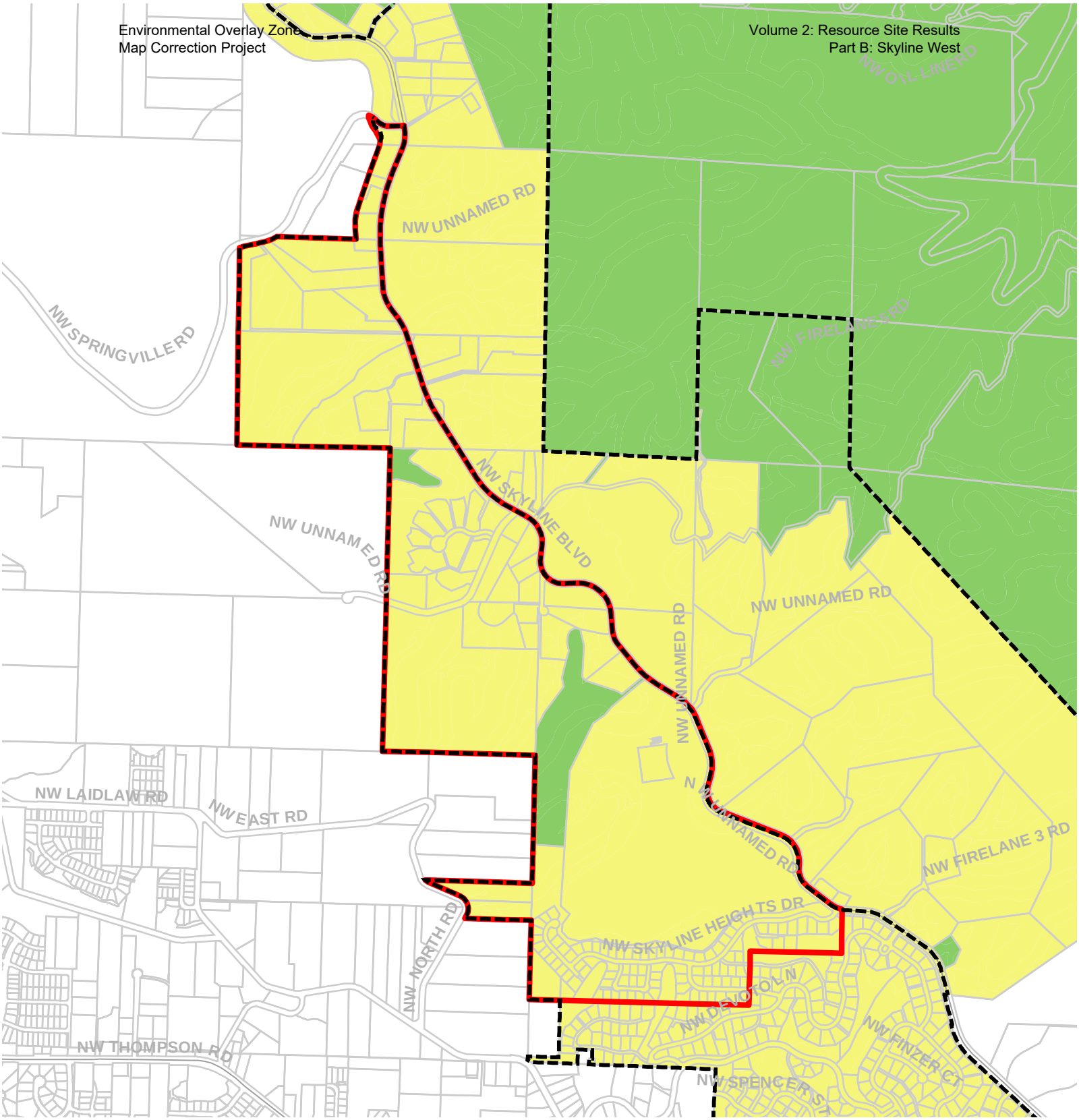
NORTH

0 420 840 Feet

Resource Sites
Class A (high rank)
Class B (medium rank)
Class C (low rank)
Urban Service Boundary
Taxlots

[redacted]

The information on the 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 services. To request these services, contact 503-823-7700, City TTY 503-823-6868, Relay Service: 711.



Map F: Urban Development Value (Title 13)
Resource Site: SK4

- Urban Service Boundary
- Resource Sites
- High Development Value
- Medium Development Value
- Low Development Value
- Parks

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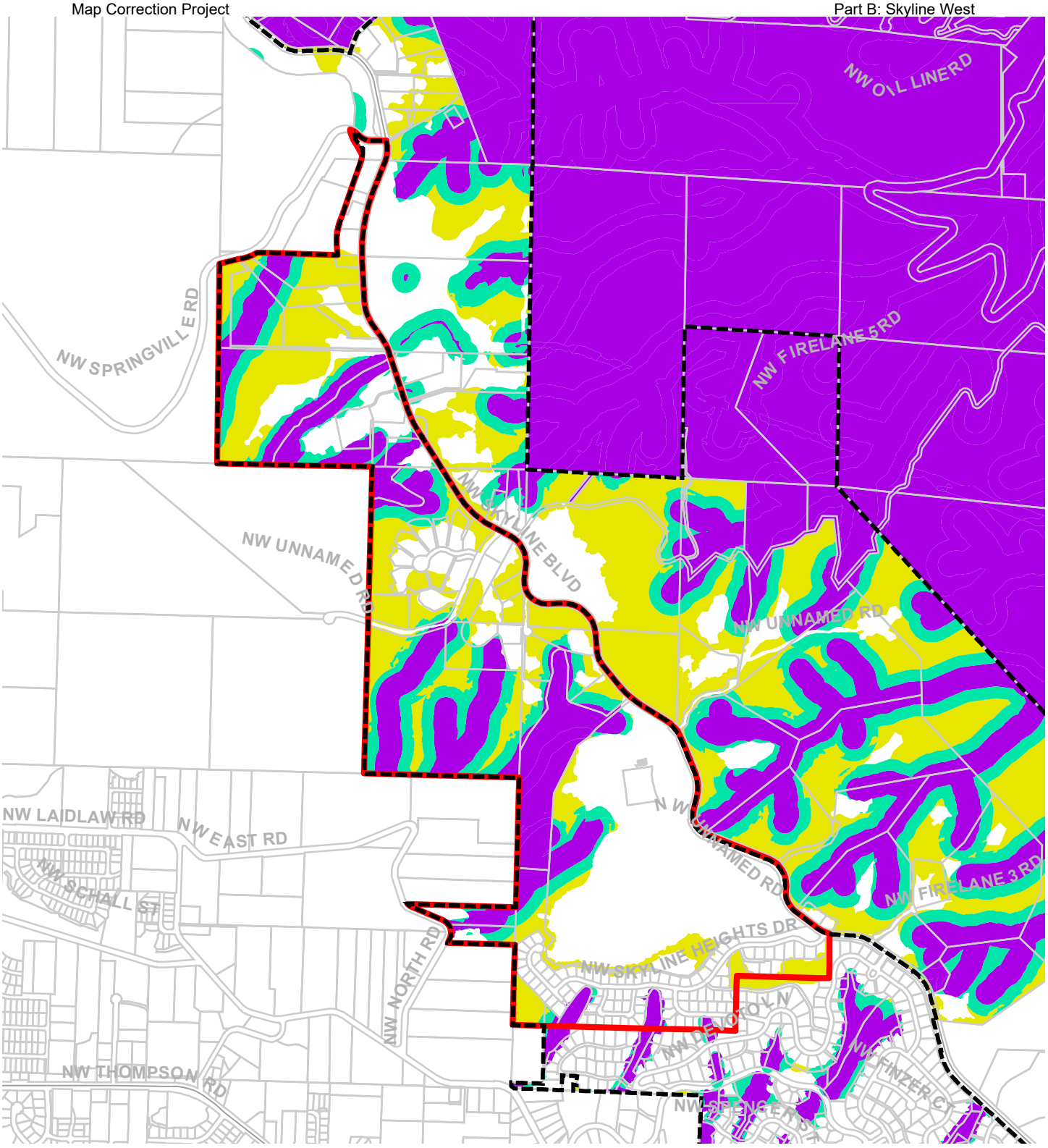
Updated: July 2021

NORTH

0 750 1,500 Feet



Map G: Title 13 Habitat Conservation Areas (HCA) and Goal 5 Areas

Resource Site: SK4

Updated: May 2022

NORTH

0 800 1,600 Feet

- Urban Service Boundary
- Resource Sites
- HCA High Value
- HCA Moderate Value
- HCA Low Value
- Goal 5 Significant Natural Resources

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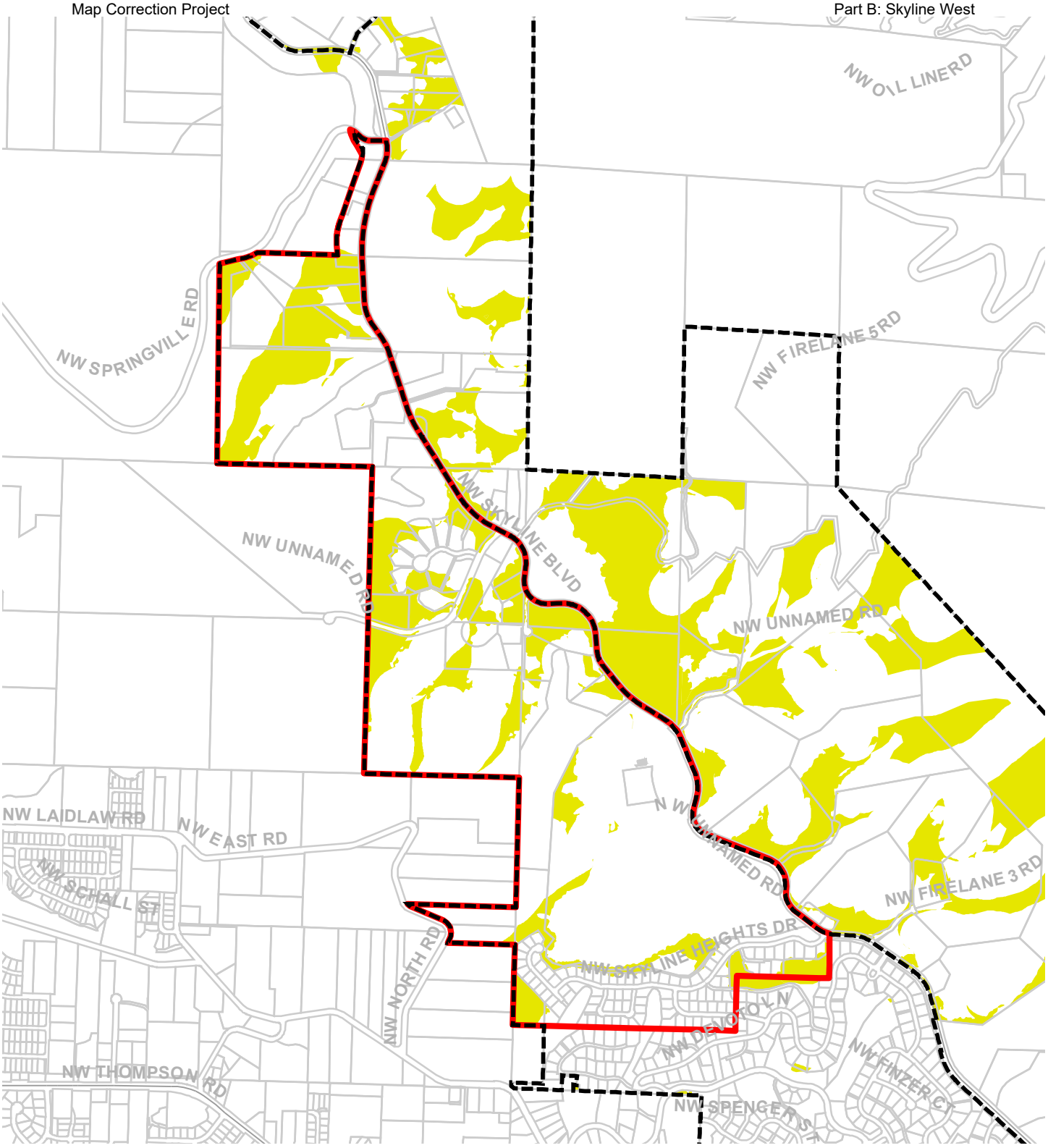

Map H: Goal 5 Resources

Resource Site: SK4

Updated: May 2022

NORTH

0 800 1,600 Feet

Recommended Draft - As Amended

- Urban Service Boundary
- Resource Sites
- Goal 5 Significant Natural Resources

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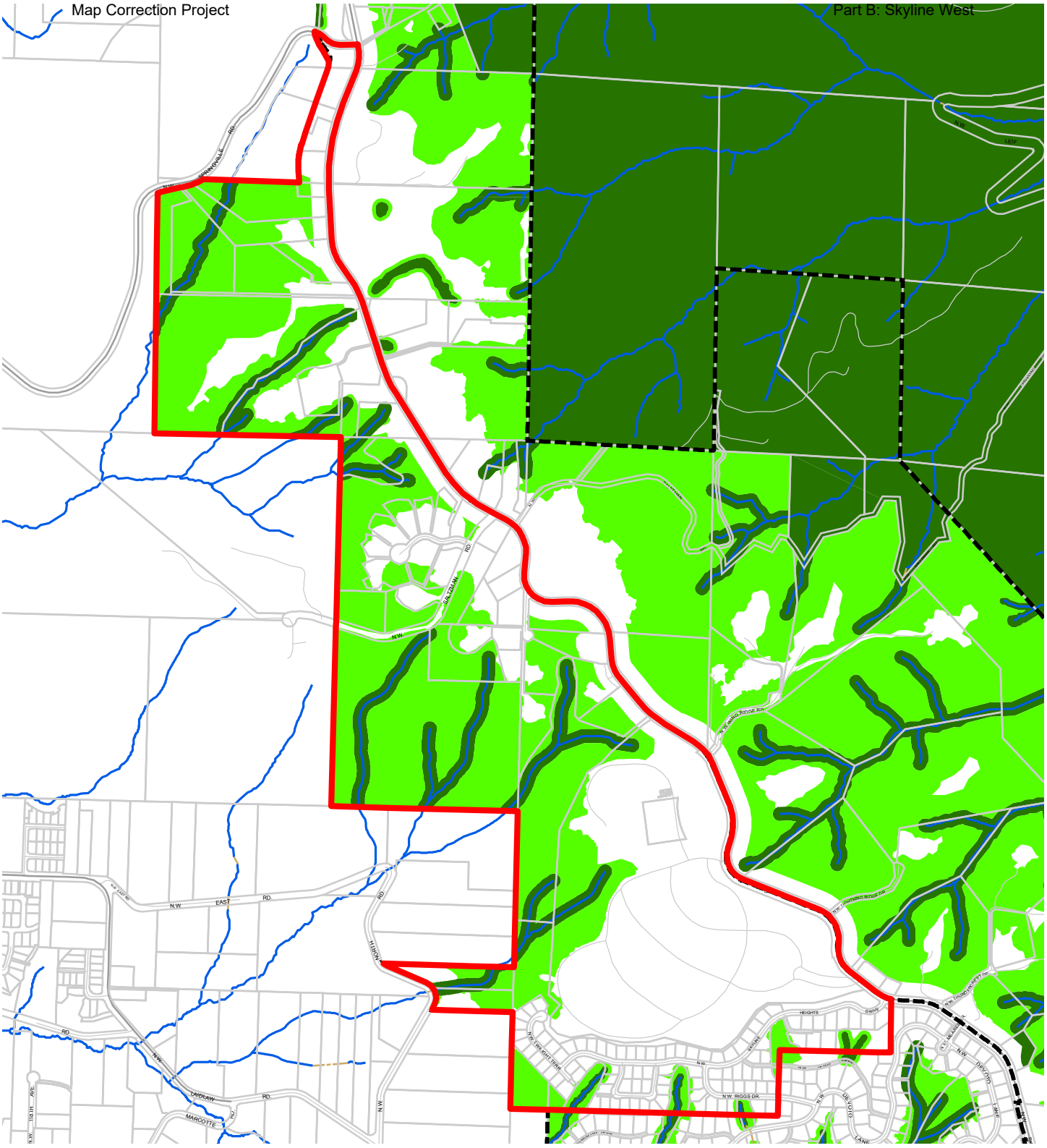

Map I: DRAFT Proposed Environmental Overlay Zones

Resource Site:

SK4

Updated: May 2022

Resource Sites
Open Stream Channel
Piped Stream Segment
Proposed Conservation Zone
Proposed Protection Zone
Urban Service Boundary
Taxlots

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NORTH
0 500 1,000 Feet

Natural Resource Description

Within resource site SK4 the following significant natural resource features and functions are present:

Significant Riparian Corridor Features: open stream; land within 50 feet of waterbodies; forest, woodland, shrubland and herbaceous vegetation within 300 feet of waterbodies; and forest vegetation on steep slopes (>25% slope) contiguous to and within 780 feet of waterbodies.

Significant Wildlife Habitat Features: forest patches, and associated and contiguous wetlands, two acres in size or larger.

Special Habitat Areas: None

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.

Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; reduction of noise, light and vibration; and habitat patches that support special status fish and wildlife species.

Table A: Quantity of Natural Resource Features in Resource Site SK4	
	Study Area
Stream (Miles)	2.3
Wetlands (acres)	<0.0
Vegetated Areas >= 1/2 acre (acres)	
Forest (acres)	158.4
Woodland (acres)	2.0
Shrubland (acres)	5.8
Herbaceous (acres)	63.8
Flood Area*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Steep Slopes (acres)**	175.0
* 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 areas with a slope greater than 25%.	

This site is the headwaters area for Bronson Creek which eventually merges with Rock Creek near NW 185th Avenue and Germantown Road. The creek basin is southwest sloping and predominantly forested and remains so as it leaves the city into unincorporated Multnomah County; it then meanders through rural farmland and scattered housing in Washington County. About a dozen single dwelling residences are distributed along Skyline Blvd. intermixed with wooded areas and agricultural uses. The site is situated between Skyline Blvd. and the western city limits, from NW Springville Rd. south to Skyline Memorial Gardens. The site's steep, upper basin location provides an important biological link to downstream land and water resources. The site also serves as a migratory link for mammals, birds and herptiles along and across the ridgetop.

This site contains two headwaters tributaries to Bronson Creek. The total length of the tributaries and associated drainages within the site is approximately two lineal miles. In addition to the riverine creek system, one pond and several emergent wetlands associated with creeks are located in the site. The forest ranges from early to mid-successional stages, approximately 20 to 120 years in age. Slopes across the site range from level on the ridgetop at Skyline Memorial Gardens to as much as 100 percent in the ravines.

The site's headwater tributaries, wetlands, ravines and forest provide important forage, cover and nesting habitat for a variety of bird, mammal, amphibian and reptile species. Two state-listed sensitive species occur within the site. The northern red-legged frog (also a Federal candidate species) breeds in a downstream pond and migrates up through the northern tributary (its presence in the southern tributary is expected but not known). One frog was identified in 1994 near the intersection of Skyline and Springville Road (Hayes 1994). The sensitive pileated woodpecker is also present in the ravines where older conifers and snags are common. The woodpecker and frog both serve as indicators of the health of the Bronson Creek watershed ecosystem.

Though not inhabited by fish, the sites' creeks do exert a significant influence on downstream water quality and fish production. Bronson Creek feeds into the Tualatin River system which supports a variety of fish including several sensitive species such as coho and fall chinook salmon, cutthroat trout, pacific lamprey.

The watercourses are in forest cover and contain dispersed large woody debris. These features help to retain moisture and provide important sources of food and cover for amphibian species such as the ensatina and pacific giant salamanders, roughskin newt and red-legged frog. Reptiles include northwestern and common garter snakes, and the northern alligator lizard. The creek and creek tributaries also provide a seasonal water source for terrestrial vertebrates such as bobcat, black-tailed deer, coyote, vagrant shrew, shrew-mole, deer mouse and Townsend's vole which use the site. Bird species identified at this site include bald eagle, band-tailed pigeon, black-throated gray warbler, brown creeper, bushtit, chipping sparrow, downy woodpecker, great blue heron, hermit warbler, Hutton's vireo, olive-sided flycatcher, orange-crowned warbler, pacific-slope flycatcher, pacific wren, pileated woodpecker, purple finch, red crossbill, rufous hummingbird, Swainson's thrush, varied thrush, Vaux's swift, white-breasted nuthatch, Wilson's

warbler and numerous other forest bird species. The site's interspersion with downstream and adjacent forest allows for free migration of wildlife and increases its value as habitat.

In addition to providing habitat for wildlife, the forest protects soil and watershed resources, and contribute to the rural character of the site. Some of the resource values include slope stabilization, dissipation of erosive forces, and sediment and nutrient removal. The forest helps to purify the air as well as the water, and provides shelter from storms and cold winds. The forest also adds to the scenic qualities of the area, giving it a semi-rural character.

The site's forest provides a good example of the Pacific Northwest's western hemlock forest community. This community is unique among all temperate forests in the world. Some of the site's ravines contain significant stands of western red cedar (*Thuja plicata*) and western hemlock (*Tsuga heterophylla*), two later successional associates of the western hemlock community.

With one exception, the entire site is composed of Cascade silt loam soils. This silt loam is formed in silty materials and has a seasonally high water table, slow permeability, and a fragipan at 20 to 30 inches. Except in relatively level areas along the ridgetop, this soil has severe limitations for building site development and sanitary facilities, particularly during the wet winter months (Mult. Co. Soil Survey, 1983). A small Delena silt loam inclusion borders Skyline Blvd. approximately 2000 ft. south of Springville Rd. This soil also has severe limitations for building site development and sanitary facilities due primarily to wetness.

Table B: Quality of Natural Resource Functions in Resource Site SK4

Resource Site (acres) = 280

	Class 1/A	**Class 2/B**	**Class 3/C**	**Total**
Riparian Corridors*				
acres	53.9	37.1	86.7	177.7
percent total inventory site area	19.3%	13.3%	31.0%	63.5%
Wildlife Habitat*				
acres	82.1	65.3	8.7	156.2
percent total inventory site area	29.3%	23.3%	3.1%	55.8%
Special Habitat Areas**				
acres	0.0			
percent total inventory site area	0.0%			
Combined Total+				
acres	103.5	45.8	29.3	178.6
percent total inventory site area	37.0%	16.4%	10.5%	63.8%

* Class I riparian resources, Special Habitat Areas, and wildlife habitat include open water.

** Metro Title 13 designated all Special Habitat Areas as Class I riparian corridors.

+Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.

Stormwater runs off impervious surfaces (e.g., rooftops, driveways, parking areas, streets, etc..) rapidly. Without a place to retain the water (such as wetlands or adequate stormwater facilities), stormwater runoff results in spikes in stream levels which can cause or exacerbate flooding and increase stream erosion. In addition, when water runs off quickly, it does not have a chance to infiltrate and recharge streams or aquifers to provide water during drier periods.

The type and capacity of stormwater facilities to manage the runoff from impervious surfaces varies in the city, affecting the local rate and amount of runoff, and the amount of pollutants in the water. Much of the city was developed prior to any stormwater regulations and receives limited or no management prior to discharging to pipes and surface waters.

Table C shows the total amount of impervious area within the resource site and how much of that impervious area lacks stormwater management; the percentage of total impervious area that is not managed is called "effective impervious area." The higher the percent of effective impervious area in a watershed, the greater the negative impacts of stormwater runoff to streams. Stream science indicates that when effective impervious area reaches 10% of a watershed, negative stream impacts become significant; and at 25%, these impacts on waterways can be substantial. An additional consideration is the differences in soil conditions and other factors that influence the ability of pervious areas to retain, infiltrate or filter pollutants from stormwater. For example, a mature forest is much more effective in managing stormwater than a manicured lawn; both areas would have a lower effective impervious surface percentage than a developed site, but they have different outcomes for stormwater management.

For resource site SK4, 2.4% of the total area is effectively impervious. This indicates a significant degree of stormwater management and/or existing natural resources that should be preserved. Areas with very low impervious cover and existing vegetation are more likely to be functioning properly to support biologic systems.

Table C. Impervious Area within Resource Site SK4

Total area (acres)	Total impervious Area (acres)	Total unmanaged impervious area* (acres)	Percent of resource site that is effectively impervious
280.1	22.6	6.6	2.4%

*Total unmanaged impervious area refers to the number of acres within a resource area that receives no formal stormwater management measures to regulate flow or treat pollutants before they reach surface waters, also referred to as effective impervious area.

Metro Title 13 and Oregon Goal 5 Compliance

The following information supplements evaluation of natural resource protections presented in Volume 3 and supports compliance with Metro Title 13 and Oregon Plan Goal 5.

Title 13 Habitat Conservation Areas

Map G presents the Habitat Conservation Areas (HCA) within the resource site SK4. Natural resources should be protected within HCA as follows:

1. *Strictly limit* or *limit* conflicting uses within Class I/High Rank Riparian Areas in all Urban Development Areas.
2. *Strictly limit* or *limit* conflicting uses within Class II/Medium Rank Riparian Areas within Moderate and Low Value Urban Development Area as well as parks and open spaces.
3. *Strictly limit* or *limit* conflicting uses within Class A/High or B/Medium Rank Wildlife Habitat within parks and open spaces.
4. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class III/Low Rank Riparian Areas in all Urban Development Areas.
5. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class A/High, Class B/Medium or Class C/Low Rank Wildlife Habitat in all Urban Development Area, expect parks and open space.

Strictly limiting or *limiting* conflicting uses in HCA will protect and conserve existing streams and wetlands to maintain significant natural resource functions including: 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 fish and wildlife habitat. *Strictly limiting* or *limiting* conflicting uses in HCA will allow for additional urban development that is sensitive to the natural resource features and requires mitigation for unavoidable negative impacts to features and functions. The recommendation will also contribute towards meeting other regulatory requirements including the Metro Title 3, Water Quality and Flood Management; Oregon Goal 6, Air, Water and Land Resources Quality; Oregon Goal 7, Areas Subject to Natural Hazards; the Clean Water Act; and the Endangered Species Act.

Goal 5 Significant Natural Resources

Resource site SK4 contains natural resource features that are not a Title 13 HCA and are therefore subject to Statewide Planning Goal 5 OAR 660-023-0110. The General ESEE analysis, Volume 3, 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.

The common impacts of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; adding impervious surface; modifying streams, wetlands and flood areas; 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 RF and R10 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.

The analysis of economic, social, environmental and energy consequences provided in Volume 3 is confirmed for resource site SK4, with the following additional information that clarifies the analysis.

Strictly limiting or *limiting* conflicting uses would retain the wildlife habitat functions provided by significant natural resource features including maintaining habitat for at risk plant, fish and wildlife species, 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 Class A or Class B wildlife habitat should be required.

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*.

Natural Resources Protection Decisions

Based on the analysis presented in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation for SK4, the following decisions are applied to protect the significant riparian corridors and wildlife habitat:

1. Apply a protection overlay zone ('p' zone) to stream channels from top-of-bank to top-of-bank, wetlands and land within 25 feet of stream top-of-bank or wetlands.
2. In RF or OS base zones, apply a protection overlay zone ('p' zone) to land within 25 and 50 feet of stream top-of-bank.
3. In all other base zones, apply a conservation overlay zone ('c' zone) to land between 25 and 50 feet of stream top-of-bank.
4. Apply a conservation overlay zone ('c' zone) to land between 25 and 50 feet of wetlands and within areas of forest vegetation that are contiguous to but more than 50 feet from stream top-of-bank.
5. Apply a conservation overlay zone ('c' zone) the forest vegetation located within and contiguous to the Alder Ridge HOA conservation tract (located between NW Lewis Ln, NW Skyline Heights Dr and NW Sunrise Ln.)
6. Allow conflicting uses within all other areas containing significant natural resources.

Resource Site No.: SK5 **Resource Site Name:** Forest Heights North

Previous Plan: Skyline West Conservation Plan
Previous Resource Site No.: 145

The results of the analysis found in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation, are presented in the following maps:

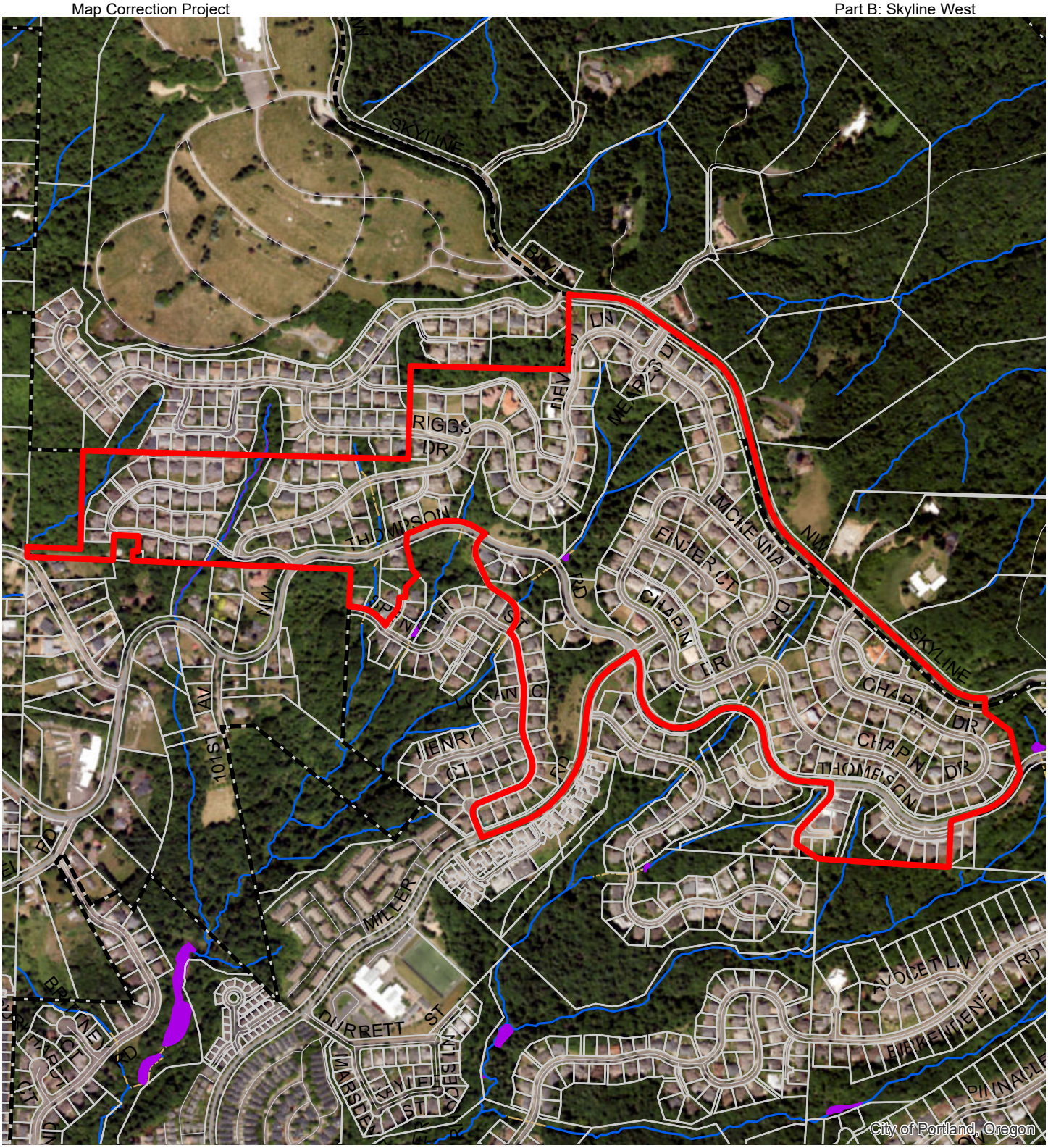
A. Water Features – rivers, streams, wetlands and flood areas
B. Land Features – forest, woodland, shrubland and herbaceous vegetation, steep slopes
C. Special Habitat Areas
D. Riparian Corridor Classifications
E. Wildlife Habitat Classifications
F. Urban Development Value
G. Metro Title 13 Habitat Conservation Areas
H. Statewide Planning Goal 5 Areas
I. Recommended Natural Resource Protections

Following the maps, additional information about existing natural resource features and functions in the resource site is presented.

Implementation of the results is found in Volume 1, Part B, updates to zoning maps and zoning code.

Resource site SK5 includes the following:

Site (acres)	116.8
Base zones (acres)	
R10	114.2
R20	2.6
RF	0.0
RM1	0.0



Map A: Water Features

Resource Site: SK5

Updated: May 2022

NORTH

0 360 720 Feet

Resource Sites
Urban Service Boundary
Taxlots
Wetlands
Rivers
Open stream channel
Piped Stream Segment
Flood Area

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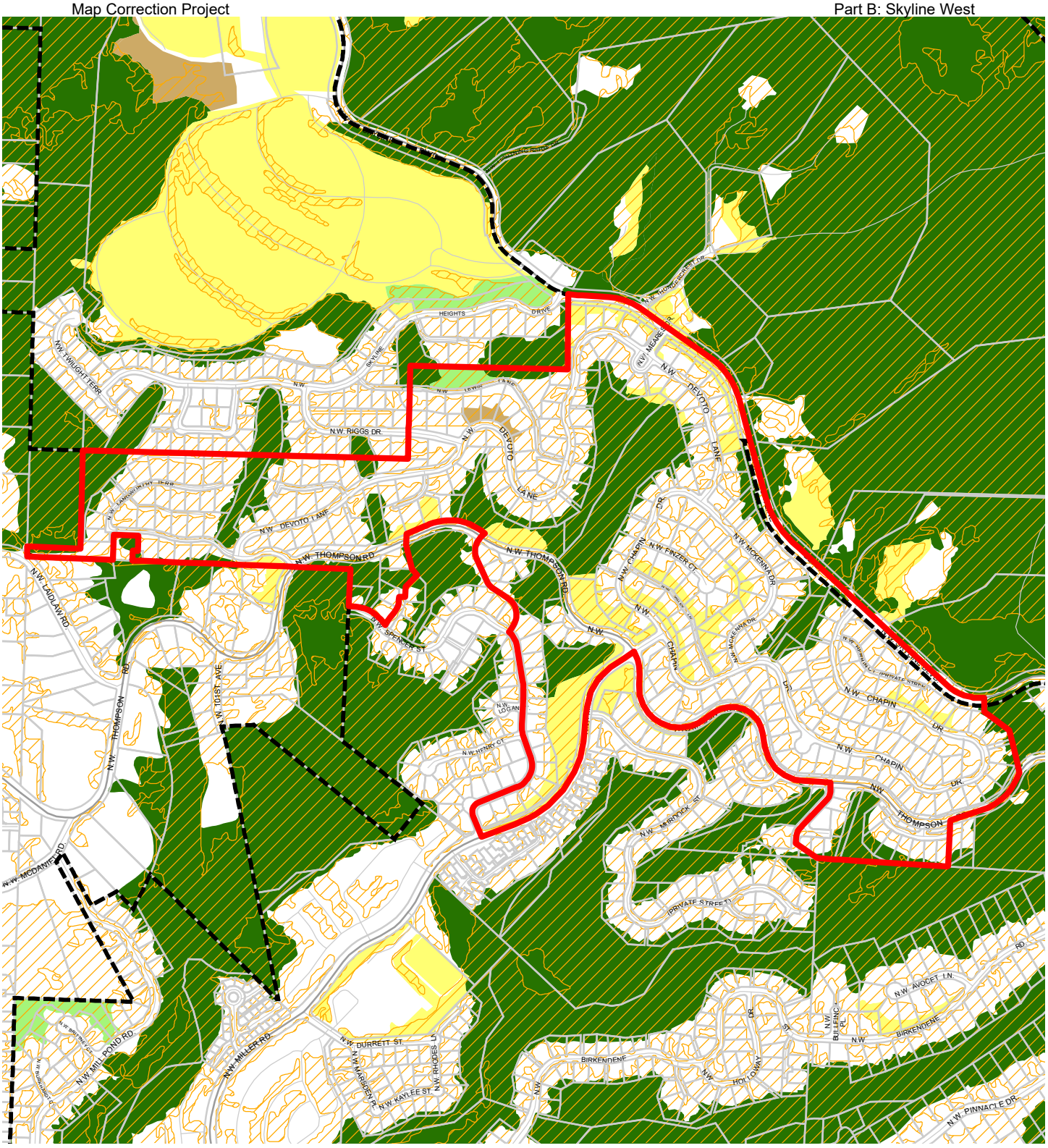


Map B: Vegetation and Steep Slopes

Resource Site: SK5

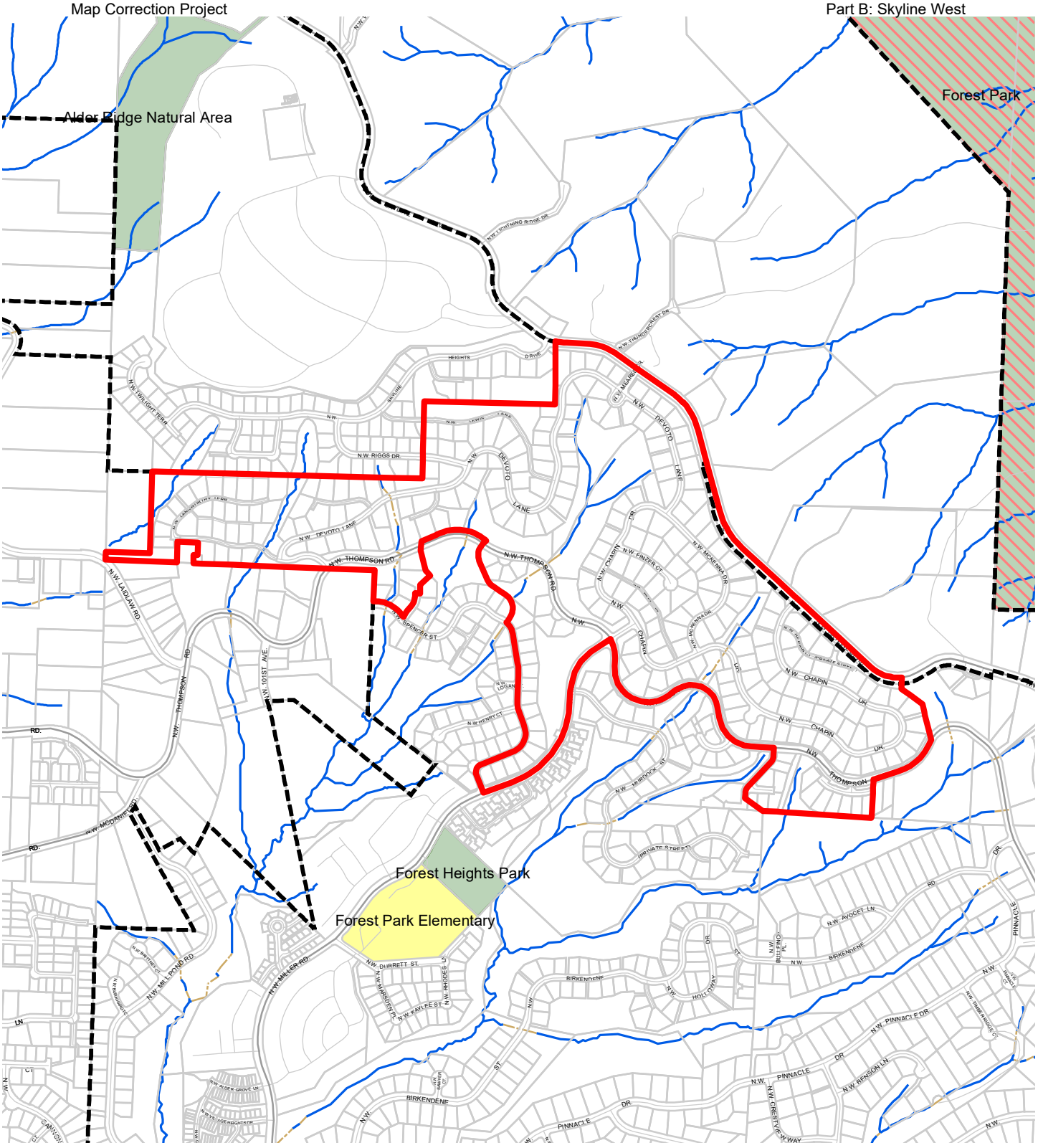
Updated: May 2022

NORTH

0 495 990 Feet

- Resource Sites
- Urban Service Boundary
- Taxlots
- Forest
- Woodland
- Shrubland
- Herbaceous

[redacted]



Map C: Special Habitat Areas

Resource Site: SK5

Updated: May 2022

Resource Sites
Special Habitat Areas (SHAs)
Open Stream Channel
Piped Stream Segment
Parks
Schools
Urban Service Boundary
Taxlots

NORTH

0 470 940 Feet

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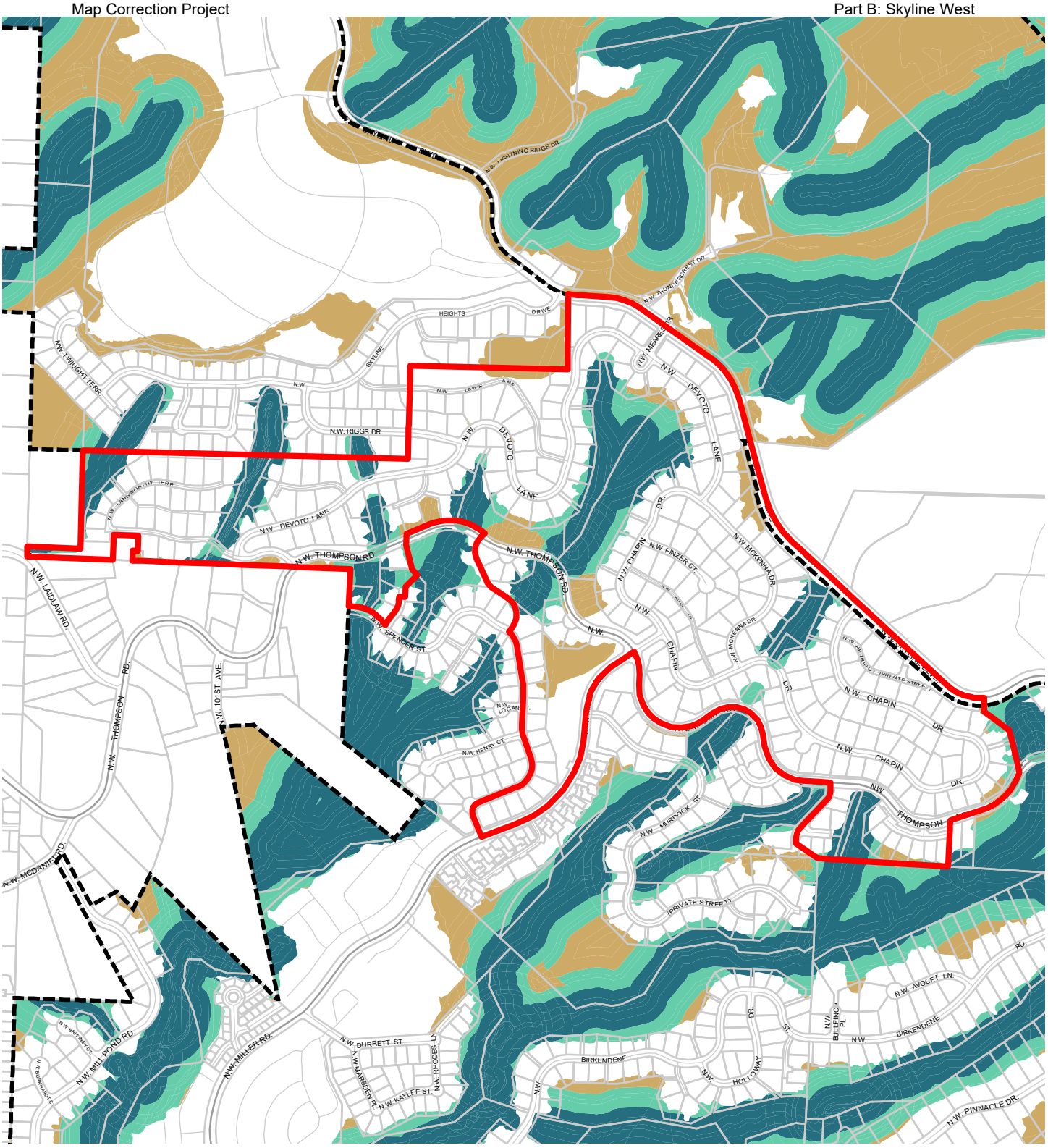

Map D: Riparian Corridors Habitat Classification

Resource Site: SK5

Updated: May 2022

Class I (high rank)
Class II (medium rank)
Class III (low rank)
Resource Sites
Urban Service Boundary
Taxlots

NORTH

0 360 720 Feet

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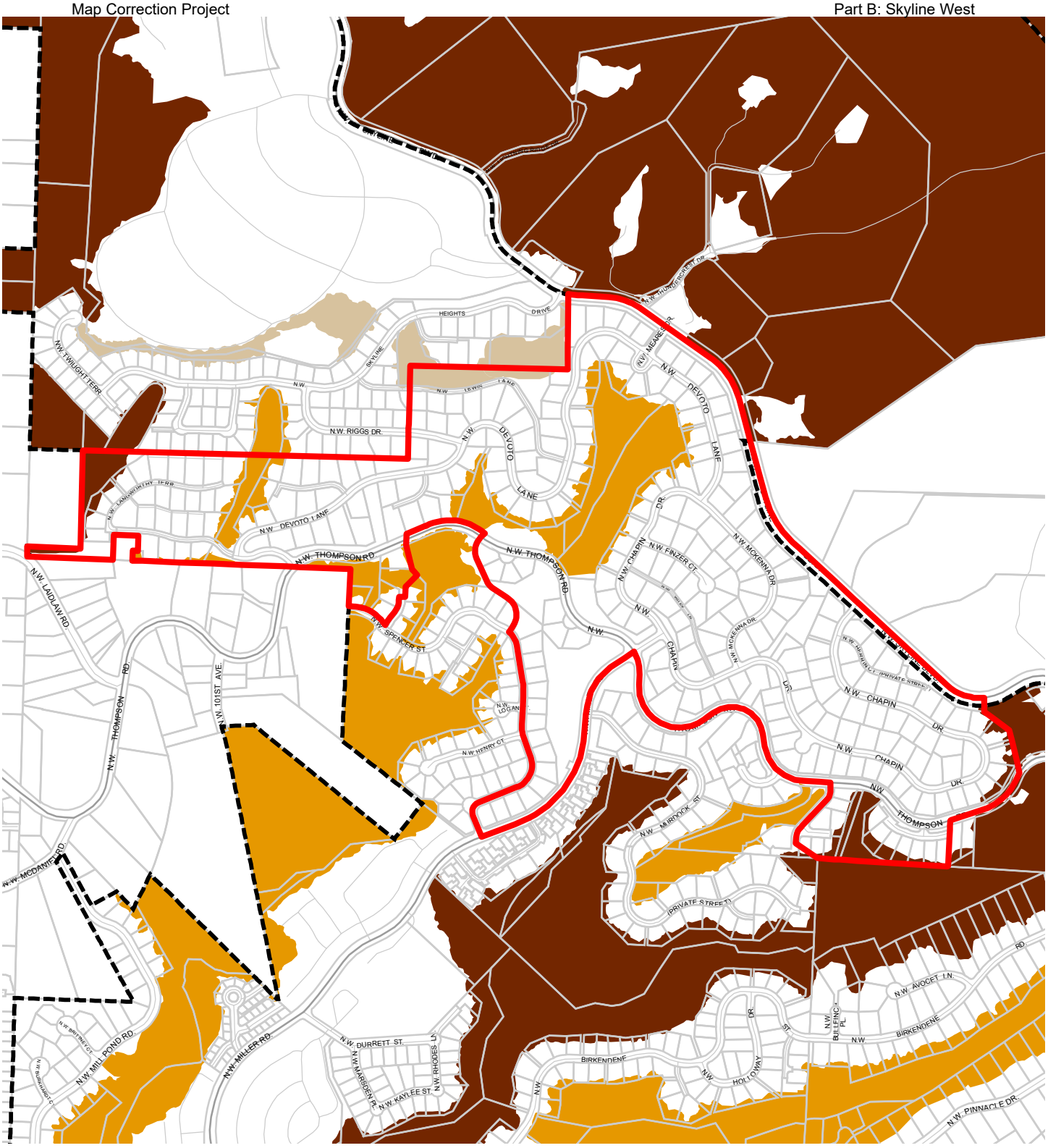


Map E: Wildlife Habitat Classification

Resource Site: SK5

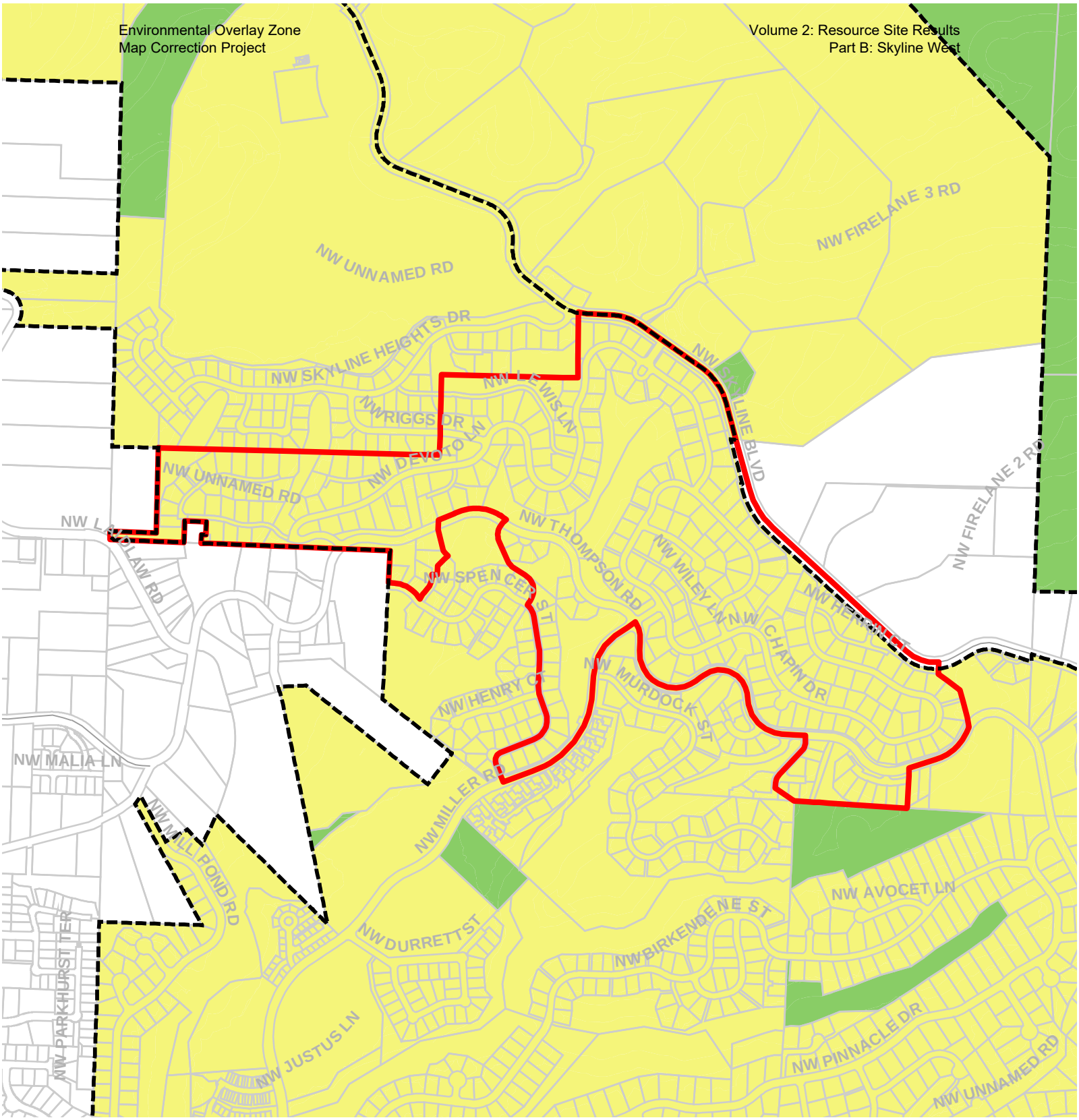
Updated: May 2022

NORTH

0 295 590 Feet

- Resource Sites
- Class A (high rank)
- Class B (medium rank)
- Class C (low rank)
- Urban Service Boundary
- Taxlots

[redacted]



Map F: Urban Development Value (Title 13)
Resource Site: SK5

- Urban Service Boundary
- Resource Sites
- High Development Value
- Medium Development Value
- Low Development Value
- Parks

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Updated: July 2021

NORTH

0 500 1,000 Feet

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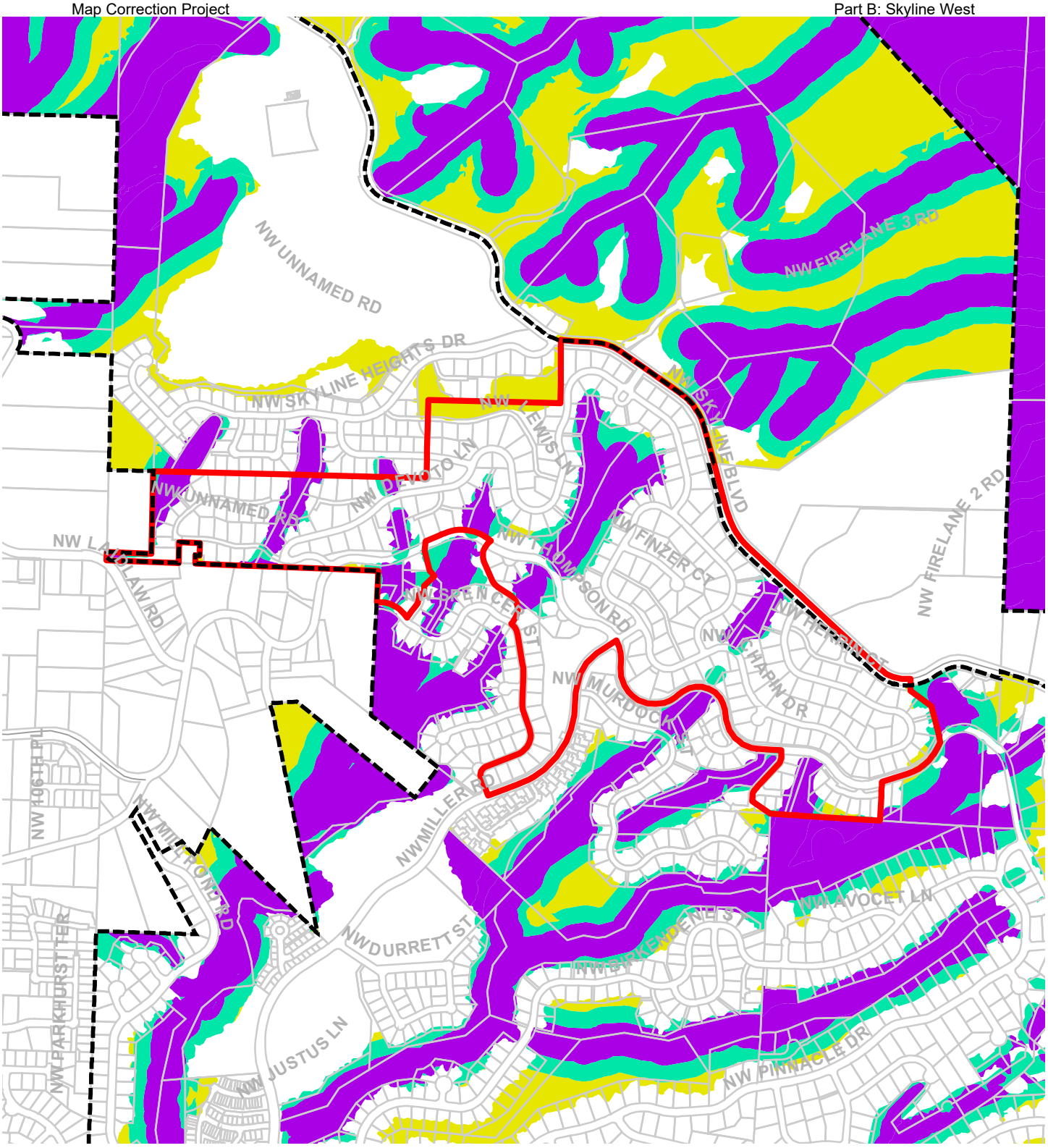


Map G: Title 13 Habitat Conservation Areas (HCA) and Goal 5 Areas

Resource Site: SK5

Updated: May 2022

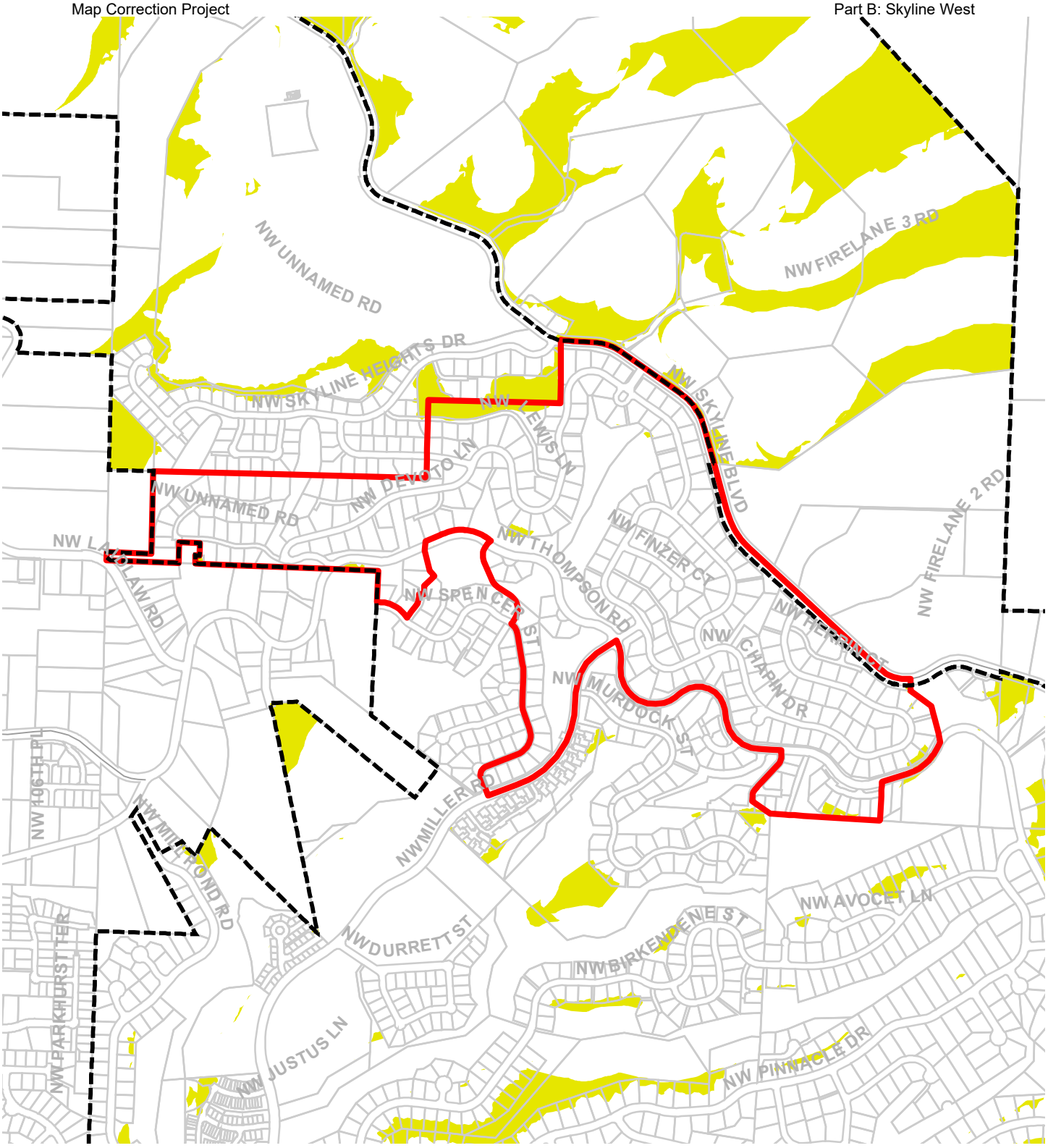
NORTH

0 550 1,100 Feet

- Urban Service Boundary
- Resource Sites
- HCA High Value
- HCA Moderate Value
- HCA Low Value
- Goal 5 Significant Natural Resources

THE BUREAU OF PLANNING & SUSTAINABILITY

May 2022



Map H: Goal 5 Resources

Resource Site: SK5

Updated: May 2022

NORTH

0 550 1,100 Feet

Urban Service Boundary

Resource Sites

Goal 5 Significant Natural Resources

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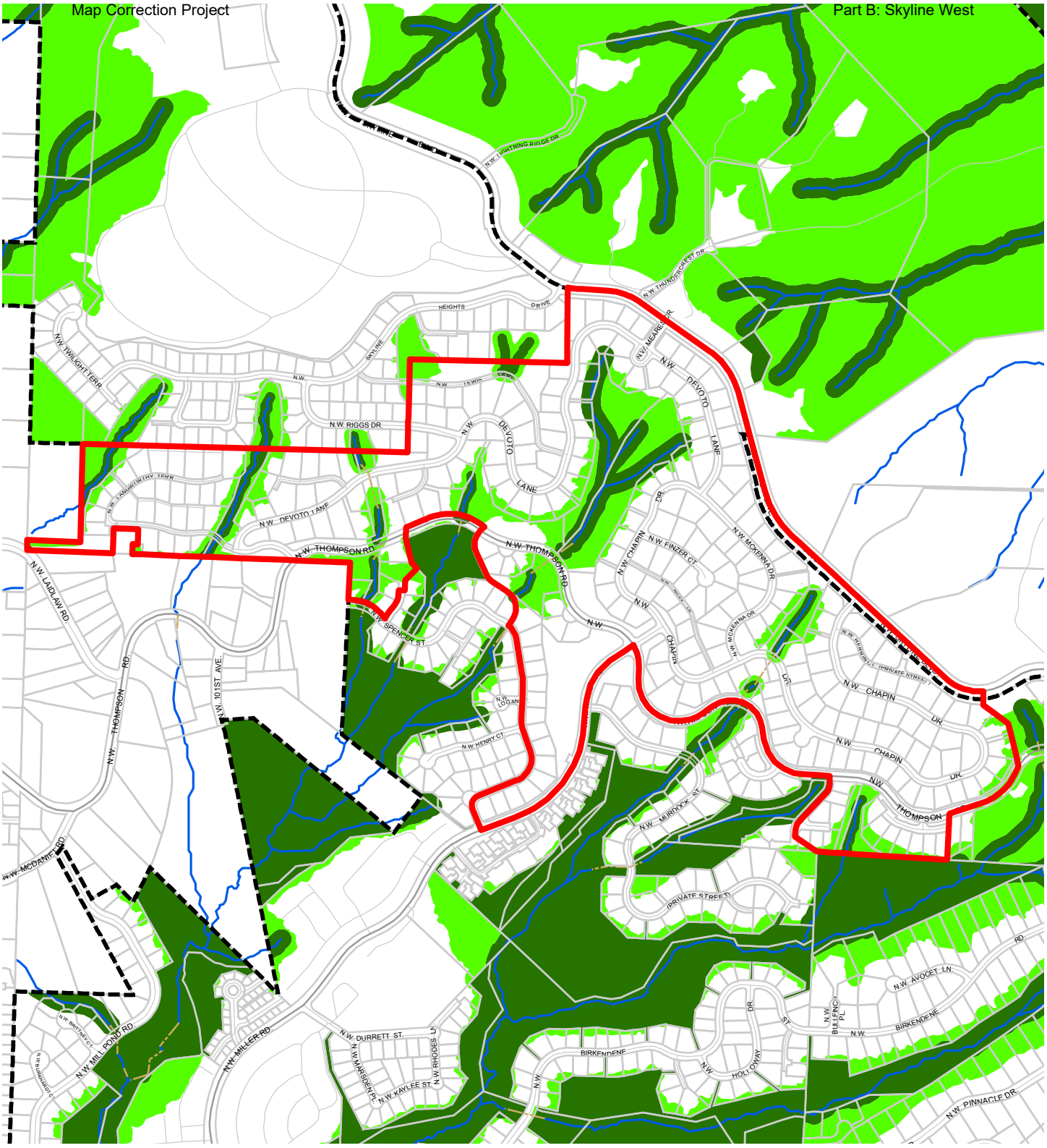


Map I: DRAFT Proposed Environmental Overlay Zones

Resource Site:

SK5

Updated: May 2022

Resource Sites
Open Stream Channel
Piped Stream Segment
Proposed Conservation Zone
Proposed Protection Zone
Urban Service Boundary
Taxlots

NORTH

0 395 790 Feet

THE BUREAU OF PLANNING & SUSTAINABILITY

Natural Resource Description

Within resource site SK5 the following significant natural resource features and functions are present:

Significant Riparian Corridor Features: open stream; wetland; land within 50 feet of waterbodies; forest, woodland, shrubland and herbaceous vegetation within 300 feet of waterbodies; and forest vegetation on steep slopes (>25% slope) contiguous to and within 780 feet of waterbodies.

Significant Wildlife Habitat Features: forest patches, and associated and contiguous wetlands, two acres in size or larger.

Special Habitat Areas: None

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.

Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; reduction of noise, light and vibration; and habitat patches that support special status fish and wildlife species.

Table A: Quantity of Natural Resource Features in Resource Site SK5	
	Study Area
Stream (Miles)	0.8
Wetlands (acres)	0.1
Vegetated Areas >= 1/2 acre (acres)	
Forest (acres)	24.3
Woodland (acres)	0.6
Shrubland (acres)	0.5
Herbaceous (acres)	10.8
Flood Area*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Steep Slopes (acres)**	88.5
* 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 areas with a slope greater than 25%.	

Although this site is largely covered in residential development, this site contains various headwater streams for the forested Cedar Mill Creek. Cedar Mill Creek flows into designated critical habitat for Endangered Species Act-listed upper Willamette River steelhead trout. In addition, the remaining forested areas provide cover and habitat for the coastal giant salamander.

Numerous bird species have been known to use this resource site in all of their life stages. These species include: bald eagle, band-tailed pigeon, black-throated gray warbler, brown creeper, bushtit, downy woodpecker, great blue heron, olive-sided flycatcher, orange-crowned warbler, pacific-slope flycatcher, pacific wren, pileated woodpecker, purple finch, rufous hummingbird, Swainson's thrush, varied thrush, Vaux's swift, western wood-pewee, white-breasted nuthatch, willow flycatcher, and Wilson's warbler.

Table B: Quality of Natural Resource Functions in Resource Site SK5

Resource Site (acres) = 117

	Class 1/A	**Class 2/B**	**Class 3/C**	**Total**
Riparian Corridors*				
acres	16.2	5.9	5.7	27.8
percent total inventory site area	13.9%	5.1%	4.9%	23.8%
Wildlife Habitat*				
acres	3.8	13.7	1.3	18.8
percent total inventory site area	3.3%	11.7%	1.2%	16.1%
Special Habitat Areas**				
acres	0.0			
percent total inventory site area	0.0%			
Combined Total+				
acres	17.5	5.6	5.8	28.8
percent total inventory site area	15.0%	4.8%	4.9%	24.7%

* Class I riparian resources, Special Habitat Areas, and wildlife habitat include open water.

** Metro Title 13 designated all Special Habitat Areas as Class I riparian corridors.

+Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.

Stormwater runs off impervious surfaces (e.g., rooftops, driveways, parking areas, streets, etc..) rapidly. Without a place to retain the water (such as wetlands or adequate stormwater facilities), stormwater runoff results in spikes in stream levels which can cause or exacerbate flooding and increase stream erosion. In addition, when water runs off quickly, it does not have a chance to infiltrate and recharge streams or aquifers to provide water during drier periods.

The type and capacity of stormwater facilities to manage the runoff from impervious surfaces varies in the city, affecting the local rate and amount of runoff, and the amount of pollutants in the water. Much of the city was developed prior to any stormwater regulations and receives limited or no management prior to discharging to pipes and surface waters.

Table C shows the total amount of impervious area within the resource site and how much of that impervious area lacks stormwater management; the percentage of total impervious area that is not managed is called "effective impervious area." The higher the percent of effective impervious area in a watershed, the greater the negative impacts of stormwater runoff to streams. Stream science indicates that when effective impervious area reaches 10% of a watershed, negative stream impacts become significant; and at 25%, these impacts on waterways can be substantial. An additional consideration is the differences in soil conditions and other factors that influence the ability of pervious areas to retain, infiltrate or filter pollutants from stormwater. For example, a mature forest is much more effective in managing stormwater than a manicured lawn; both areas would have a lower effective impervious surface percentage than a developed site, but they have different outcomes for stormwater management.

For Resource Area SK5, 14.1% of the total area is effectively impervious, indicating a critical level of vulnerability, with negative impacts beginning to impact natural functions, but natural processes are still in place and providing support to biologic systems.

Table C. Impervious Area within Resource Site SK5

Total area (acres)	Total impervious Area (acres)	Total unmanaged impervious area* (acres)	Percent of resource site that is effectively impervious
118.4	29.9	16.7	14.1%

*Total unmanaged impervious area refers to the number of acres within a resource area that receives no formal stormwater management measures to regulate flow or treat pollutants before they reach surface waters, also referred to as effective impervious area.

Metro Title 13 and Oregon Goal 5 Compliance

The following information supplements evaluation of natural resource protections presented in Volume 3 and supports compliance with Metro Title 13 and Oregon Plan Goal 5.

Title 13 Habitat Conservation Areas

Map G presents the Habitat Conservation Areas (HCA) within the resource site SK5. Natural resources should be protected within HCA as follows:

1. *Strictly limit* or *limit* conflicting uses within Class I/High Rank Riparian Areas in all Urban Development Areas.
2. *Strictly limit* or *limit* conflicting uses within Class II/Medium Rank Riparian Areas within Moderate and Low Value Urban Development Area as well as parks and open spaces.
3. *Strictly limit* or *limit* conflicting uses within Class A/High or B/Medium Rank Wildlife Habitat within parks and open spaces.
4. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class III/Low Rank Riparian Areas in all Urban Development Areas.
5. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class A/High, Class B/Medium or Class C/Low Rank Wildlife Habitat in all Urban Development Area, expect parks and open space.

Strictly limiting or *limiting* conflicting uses in HCA will protect and conserve existing streams and wetlands to maintain significant natural resource functions including: 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 fish and wildlife habitat. *Strictly limiting* or *limiting* conflicting uses in HCA will allow for additional urban development that is sensitive to the natural resource features and requires mitigation for unavoidable negative impacts to features and functions. The recommendation will also contribute towards meeting other regulatory requirements including the Metro Title 3, Water Quality and Flood Management; Oregon Goal 6, Air, Water and Land Resources Quality; Oregon Goal 7, Areas Subject to Natural Hazards; the Clean Water Act; and the Endangered Species Act.

Goal 5 Significant Natural Resources

Resource site SK5 contains natural resource features that are not a Title 13 HCA and are therefore subject to Statewide Planning Goal 5 OAR 660-023-0110. The General ESEE analysis, Volume 3, 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.

The common impacts of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; adding impervious surface; modifying streams, wetlands and flood areas; 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 R20 and R10 base zones. 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.

The analysis of economic, social, environmental and energy consequences provided in Volume 3 is confirmed for resource site SK5, with the following additional information that clarifies the analysis.

Strictly limiting or *limiting* conflicting uses would retain the wildlife habitat functions provided by significant natural resource features including maintaining habitat for at risk plant, fish and wildlife species, 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 Class A or Class B wildlife habitat should be required.

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*.

Natural Resources Protection Decisions

Based on the analysis presented in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation for SK5, the following decisions are applied to protect the significant riparian corridors and wildlife habitat:

1. Apply a protection overlay zone ('p' zone) to stream channels from top-of-bank to top-of-bank, wetlands, and land within 25 feet of stream top-of-bank or wetlands.
2. Apply a protection overlay zone ('p' zone) to land between 25 and 50 feet of top-of-bank streams that are located on natural resource tracts to the northwest of NW Chapin Ln.
3. Apply a conservation overlay zone ('c' zone) to land between 25 and 50 feet of stream top-of-bank or wetlands; and within areas of forest vegetation that are contiguous to but more than 50 feet from stream top-of-bank.
4. Allow conflicting uses within all other areas containing significant natural resources.

Resource Site No.: SK6 **Resource Site Name:** Forest Heights

Previous Plan: Skyline West Conservation Plan
Previous Resource Site No.: 145

The results of the analysis found in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation, are presented in the following maps:

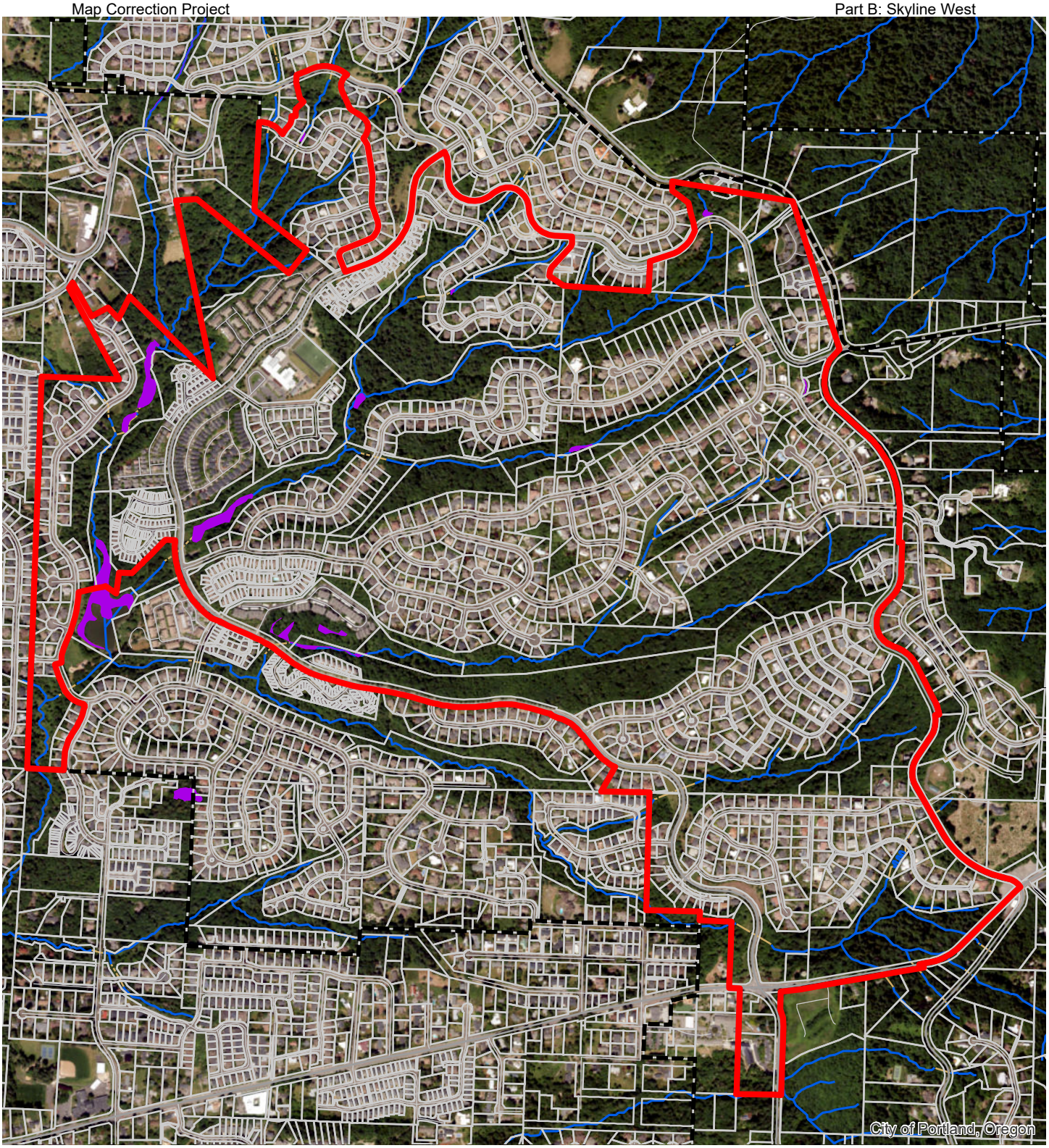
A. Water Features – rivers, streams, wetlands and flood areas
B. Land Features – forest, woodland, shrubland and herbaceous vegetation, steep slopes
C. Special Habitat Areas
D. Riparian Corridor Classifications
E. Wildlife Habitat Classifications
F. Urban Development Value
G. Metro Title 13 Habitat Conservation Areas
H. Statewide Planning Goal 5 Areas
I. Recommended Natural Resource Protections

Following the maps, additional information about existing natural resource features and functions in the resource site is presented.

Implementation of the results is found in Volume 1, Part B, updates to zoning maps and zoning code.

Resource site SK6 includes the following:

Site (acres)	629.1
Base zones (acres)	
CM1	0.9
OS	3.1
R10	564.1
R20	0.0
RF	14.5
RM1	46.5



Map A: Water Features

Resource Site: SK6

Updated: May 2022

Resource Sites
Urban Service Boundary
Taxlots
Wetlands
Rivers
Open stream channel
Piped Stream Segment
Flood Area

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NORTH

0 500 1,000 Feet

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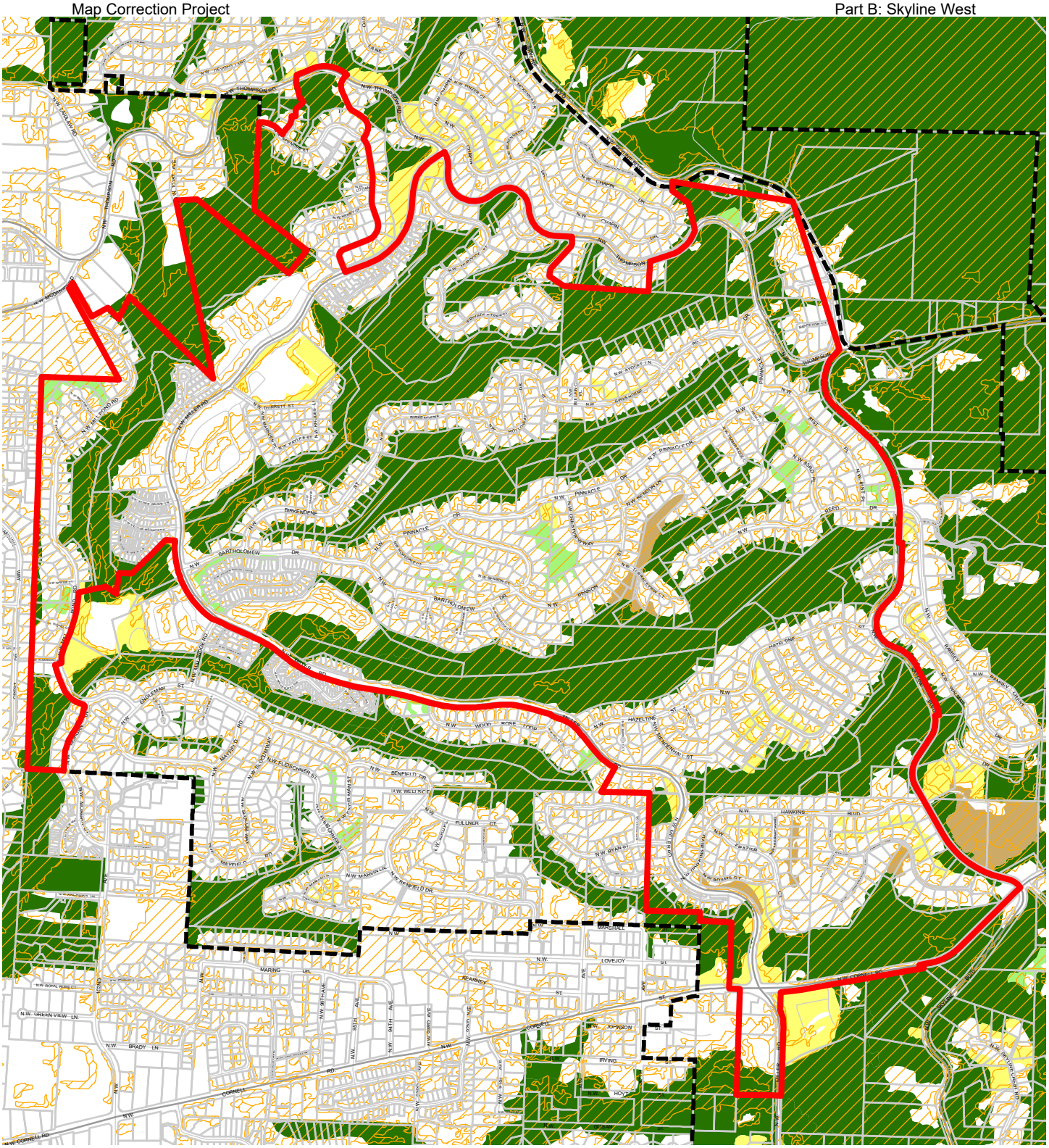


Map B: Vegetation and Steep Slopes

Resource Site: SK6

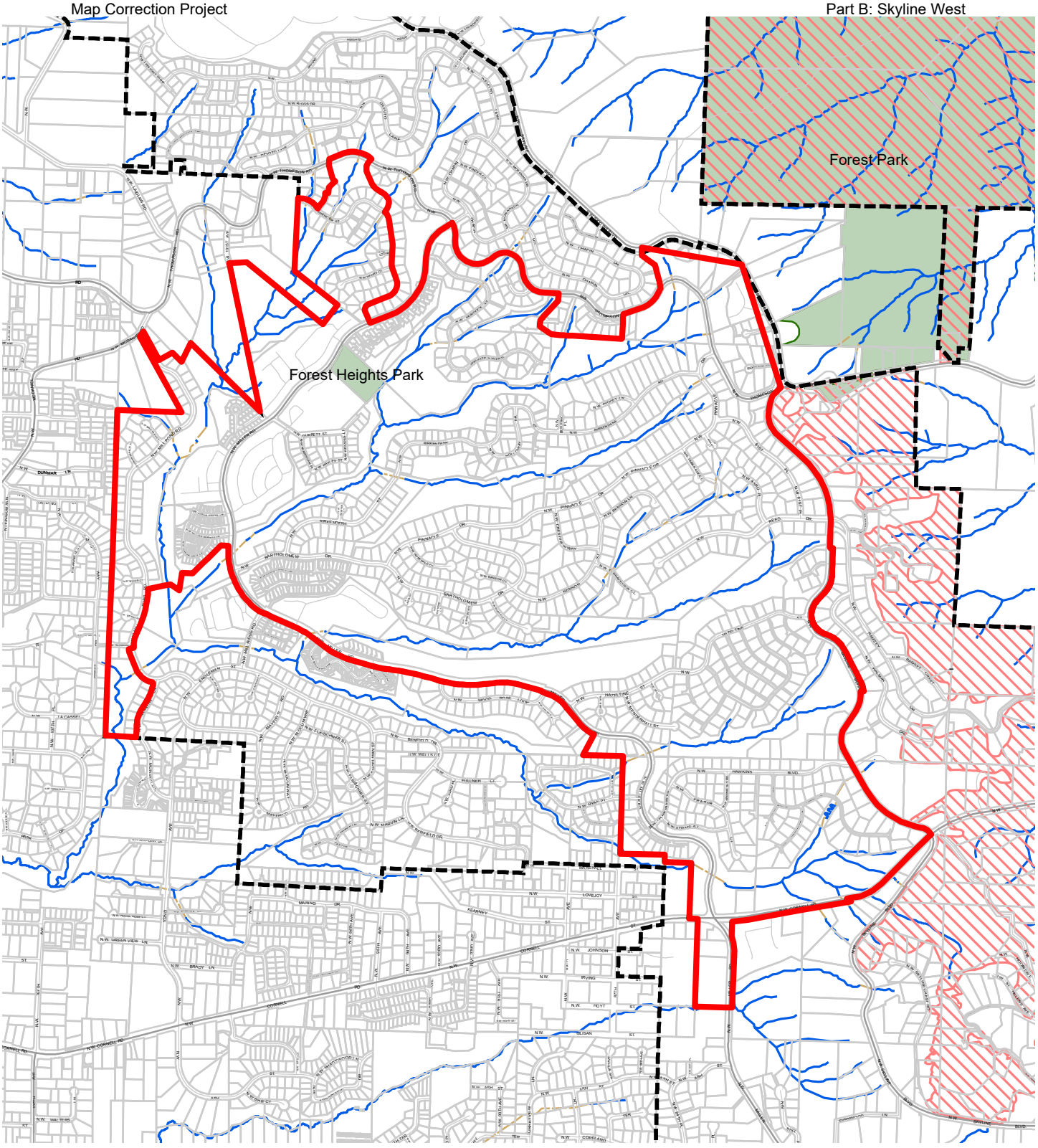
Updated: May 2022

NORTH

0 700 1,400 Feet

Resource Sites
Urban Service Boundary
Taxlots
Forest
Woodland
Shrubland
Herbaceous

[redacted]



Map C: Special Habitat Areas

Resource Site: SK6

Updated: May 2022

NORTH

0 650 1,300 Feet

Resource Sites
Special Habitat Areas (SHAs)
Open Stream Channel
Piped Stream Segment
Parks
Urban Service Boundary
Taxlots

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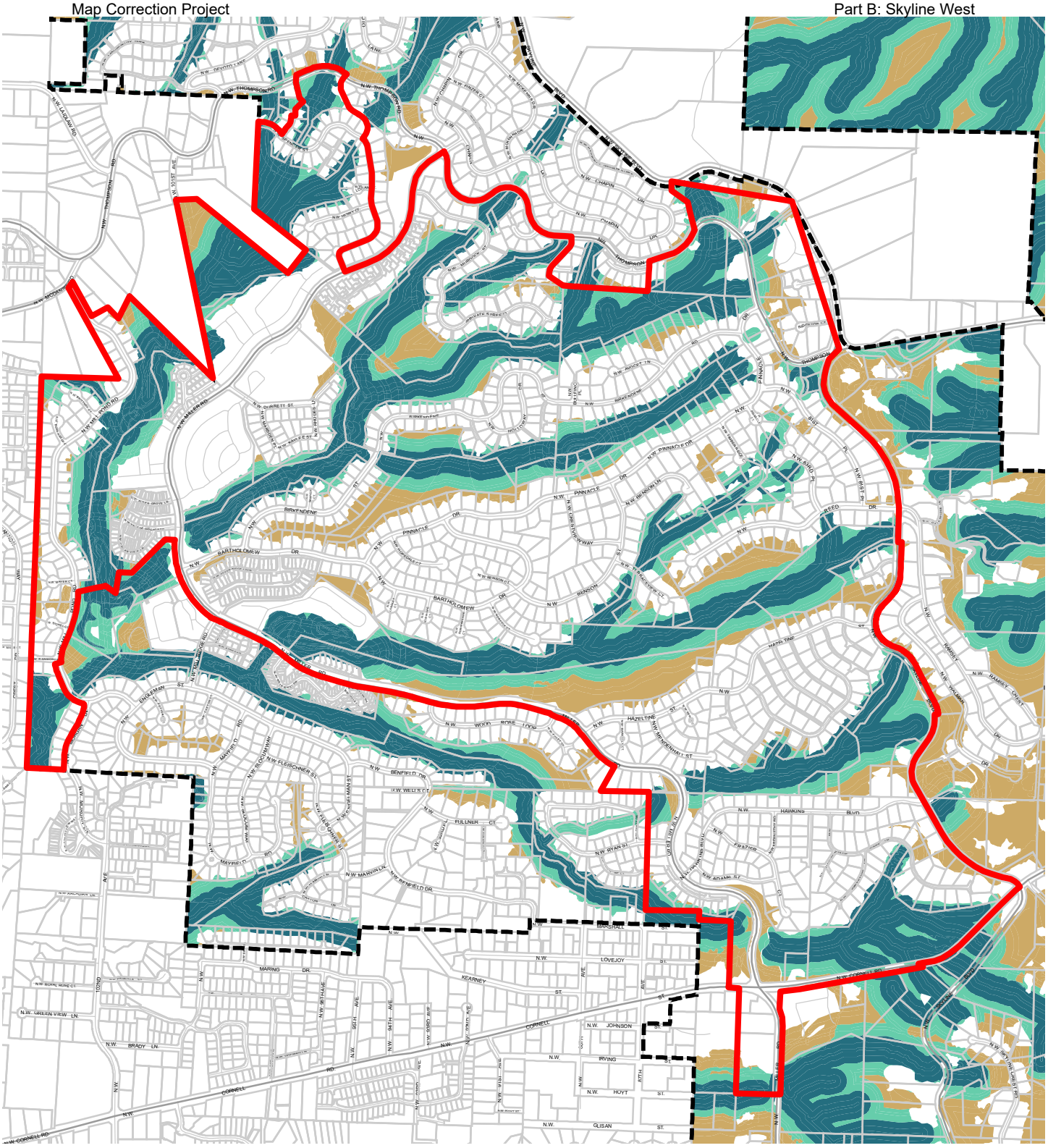

Map D: Riparian Corridors Habitat Classification

Resource Site: SK6

Updated: May 2022

Class I (high rank)
Class II (medium rank)
Class III (low rank)
Resource Sites
Urban Service Boundary
Taxlots

NORTH
0 500 1,000 Feet

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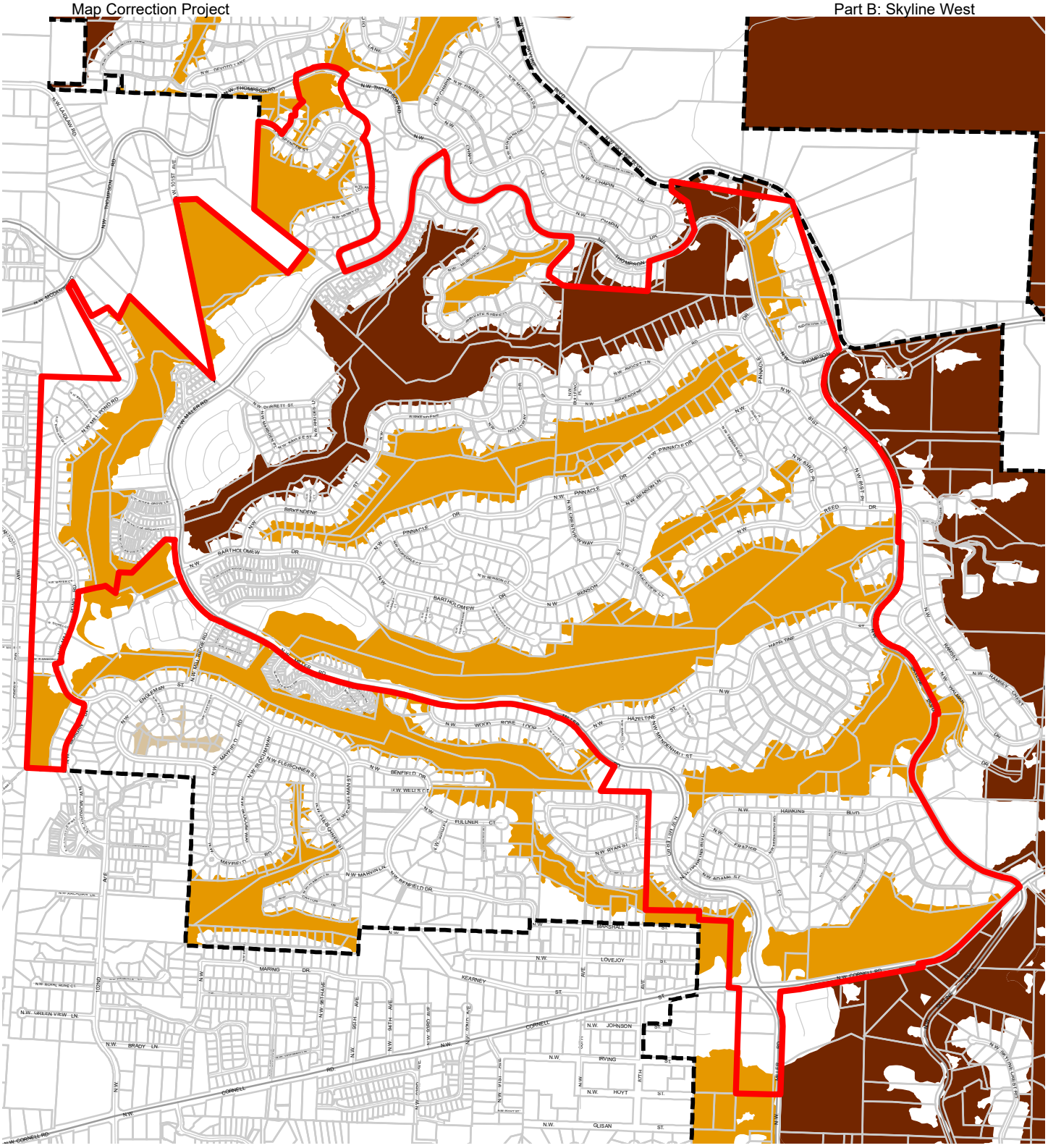

Map E: Wildlife Habitat Classification

Resource Site: SK6

Updated: May 2022

NORTH

0 450 900 Feet

- Resource Sites
- Class A (high rank)
- Class B (medium rank)
- Class C (low rank)
- Urban Service Boundary
- Taxlots

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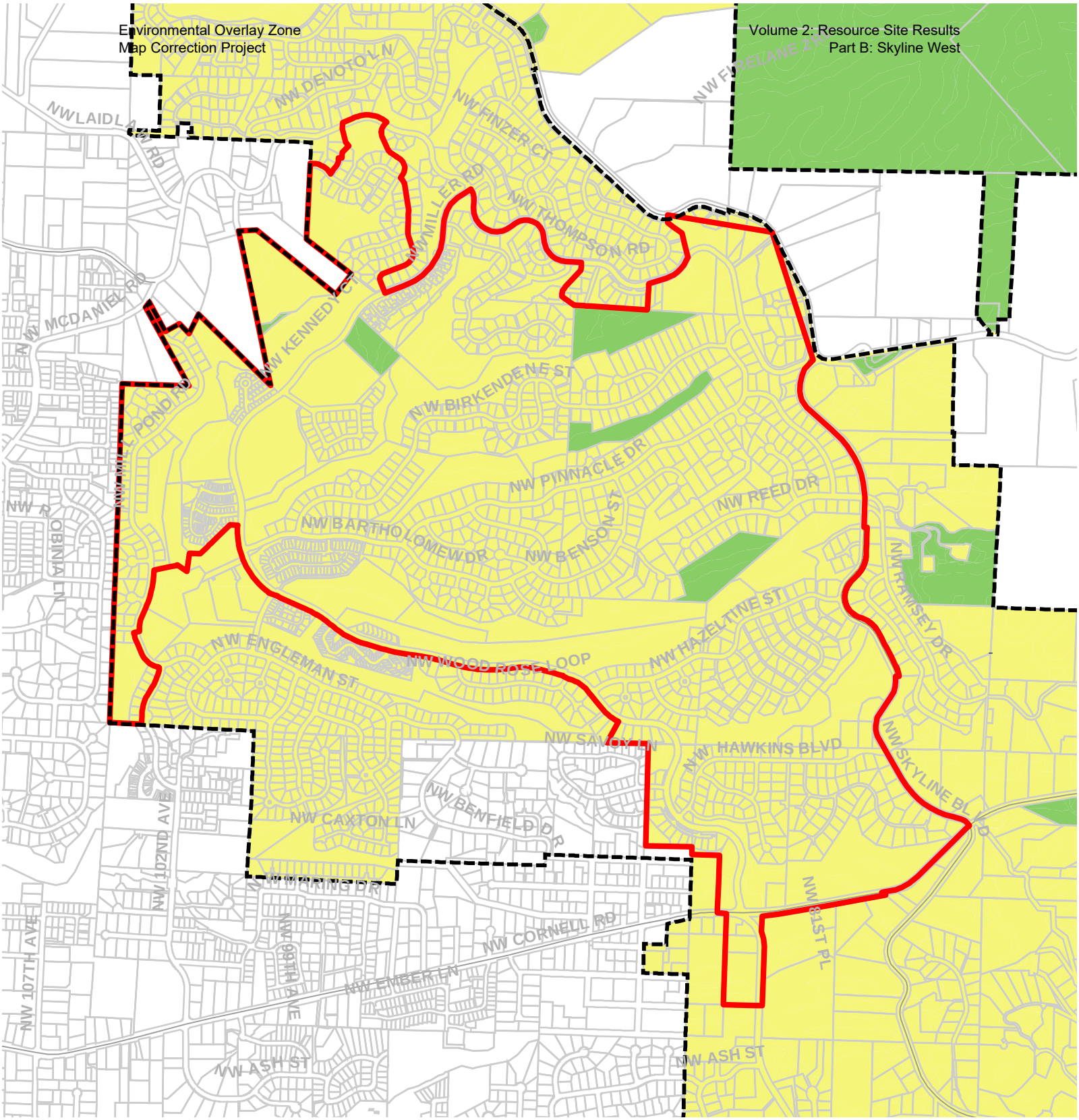
May 2022



Map F: Urban Development Value (Title 13)
Resource Site: SK6

- Urban Service Boundary
- Resource Sites
- High Development Value
- Medium Development Value
- Low Development Value
- Parks

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Updated: July 2021

NORTH

0 750 1,500 Feet

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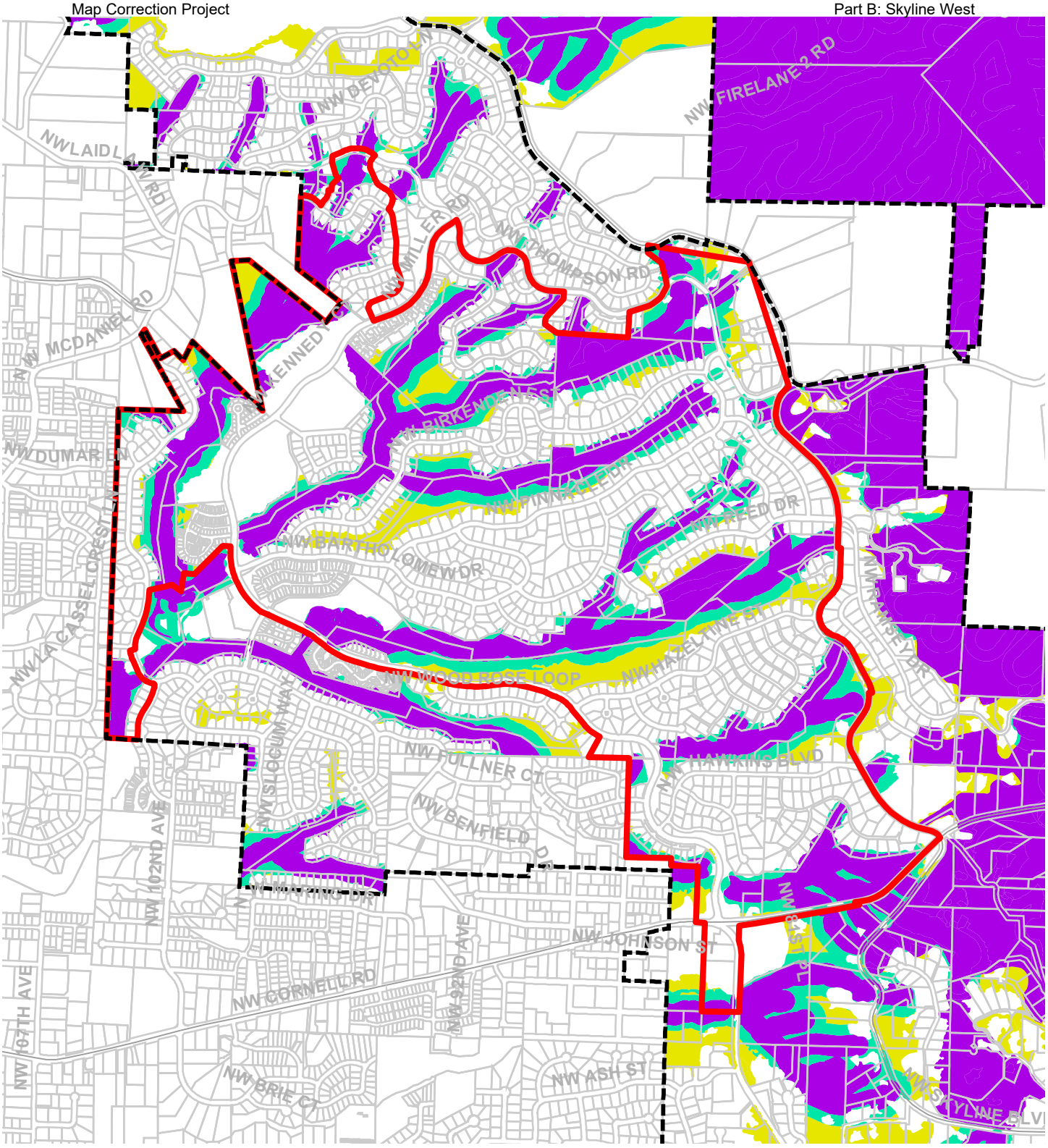

Map G: Title 13 Habitat Conservation Areas (HCA) and Goal 5 Areas

Resource Site: SK6

Updated: May 2022

NORTH

0 850 1,700 Feet

Recommended Draft - As Amended

- Urban Service Boundary
- Resource Sites
- HCA High Value
- HCA Moderate Value
- HCA Low Value
- Goal 5 Significant Natural Resources

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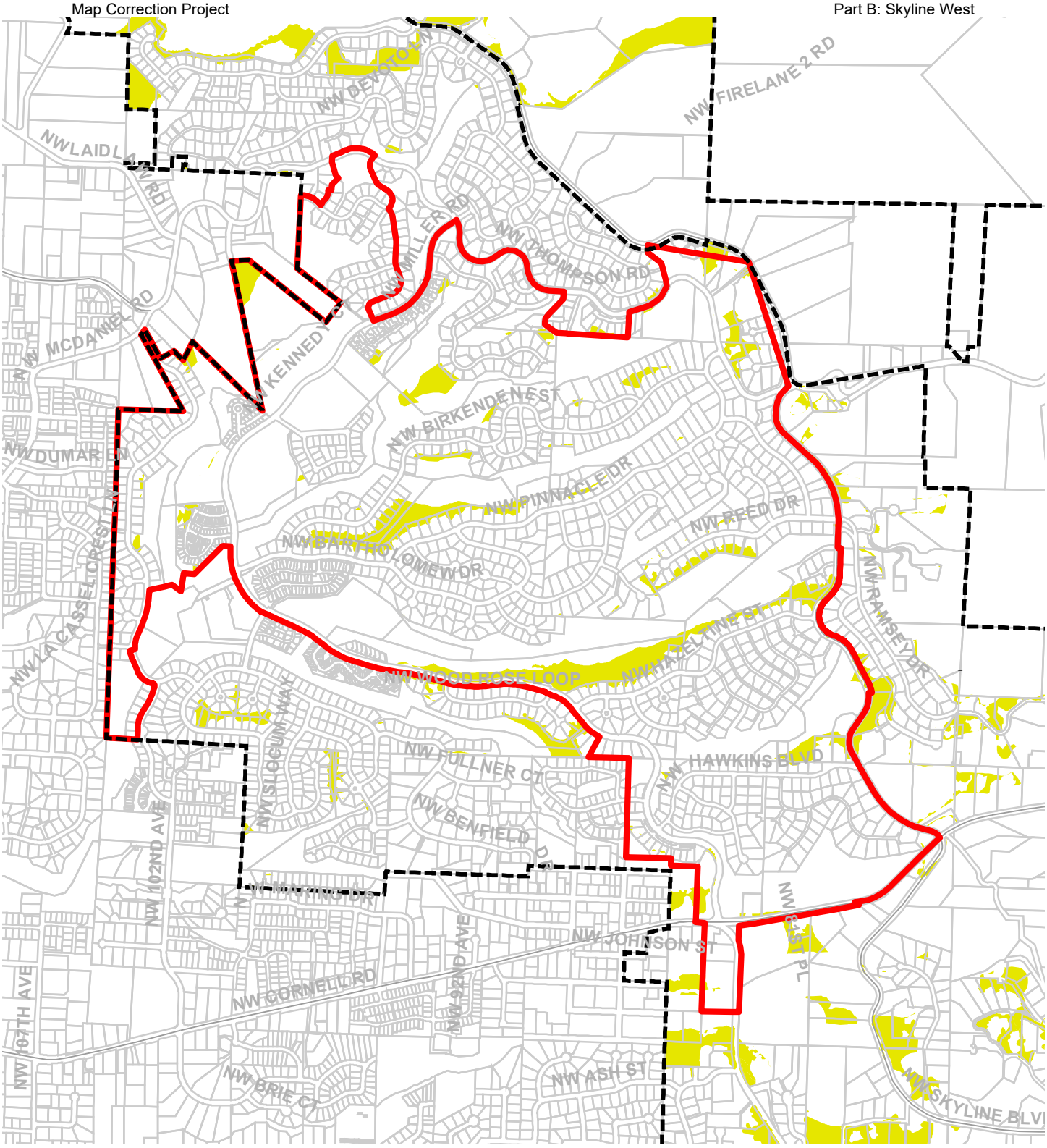
May 2022



Map H: Goal 5 Resources

Resource Site: SK6

Updated: May 2022

NORTH

0 850 1,700 Feet

Urban Service Boundary

Resource Sites

Goal 5 Significant Natural Resources

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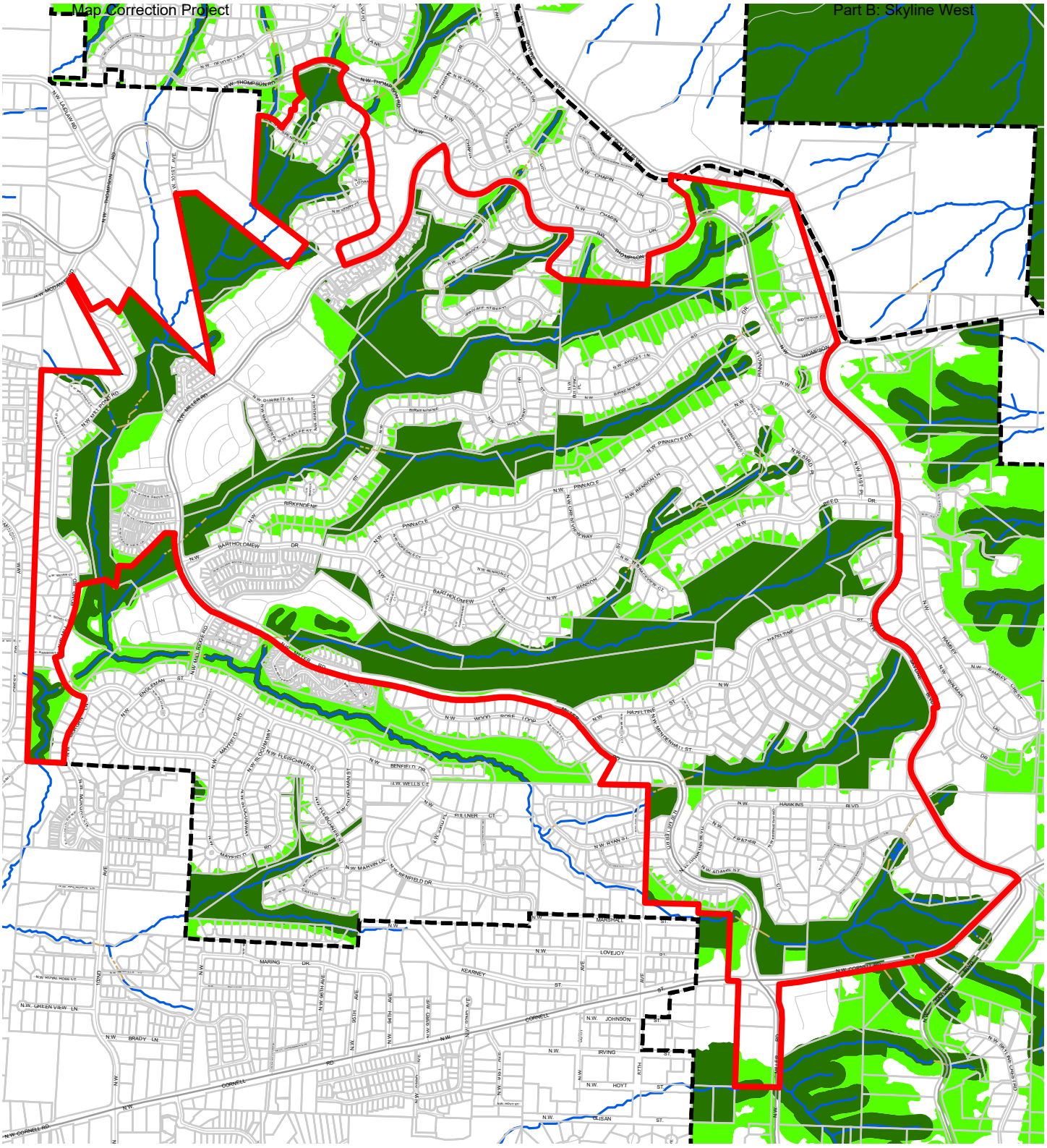
May 2022



Map I: DRAFT Proposed Environmental Overlay Zones

Resource Site:

SK6

Updated: May 2022

Resource Sites
Open Stream Channel
Piped Stream Segment
Proposed Conservation Zone
Proposed Protection Zone
Urban Service Boundary
Taxlots

NORTH

0 550 1,100 Feet

THE BUREAU OF PLANNING & SUSTAINABILITY

Natural Resource Description

Within resource site SK6 the following significant natural resource features and functions are present:

Significant Riparian Corridor Features: open stream; wetland; land within 50 feet of waterbodies; forest, woodland, shrubland and herbaceous vegetation within 300 feet of waterbodies; and forest vegetation on steep slopes (>25% slope) contiguous to and within 780 feet of waterbodies.

Significant Wildlife Habitat Features: forest patches, and associated and contiguous wetlands, two acres in size or larger.

Special Habitat Areas: None

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.

Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; reduction of noise, light and vibration; and habitat patches that support special status fish and wildlife species.

Table A: Quantity of Natural Resource Features in Resource Site SK6	
	Study Area
Stream (Miles)	7.3
Wetlands (acres)	3.6
Vegetated Areas >= 1/2 acre (acres)	
Forest (acres)	263.8
Woodland (acres)	10.0
Shrubland (acres)	4.8
Herbaceous (acres)	14.5
Flood Area*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Steep Slopes (acres)**	470.0
* 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 areas with a slope greater than 25%.	

Although this site is also largely covered in the residential development that is known as Forest Heights and was one of the largest development projects in Oregon, it contains substantial lengths of headwater and tributary streams to Cedar Mill Creek. Cedar Mill Creek flows into designated critical habitat for Endangered Species Act-listed upper Willamette River steelhead trout. The reticulate sculpin has been documented in the resource site. In addition, the remaining forested areas provide cover and habitat for the coastal giant salamander. This resource site also contains a portion of the wetlands associate with the Cedar Mill Creek pond at the southwestern edge of the site that is included in the privately run, Mill Pond Park.

Numerous bird species have been known to use this resource site in all of their life stages. These species include: bald eagle, band-tailed pigeon, black-throated gray warbler, brown creeper, bufflehead, bushtit, common yellowthroat, downy woodpecker, great blue heron, green heron, hooded merganser, olive-sided flycatcher, orange-crowned warbler, pacific-slope flycatcher, pacific wren, pileated woodpecker, purple finch, red crossbill, rufous hummingbird, Swainson's thrush, varied thrush, Vaux's swift, western wood-pewee, white-breasted nuthatch, willow flycatcher, Wilson's warbler, and wood duck.

Table B: Quality of Natural Resource Functions in Resource Site SK6

Resource Site (acres) = 629

	Class 1/A	**Class 2/B**	**Class 3/C**	**Total**
Riparian Corridors*				
acres	158.4	72.2	52.3	282.9
percent total inventory site area	25.2%	11.5%	8.3%	45.0%
Wildlife Habitat*				
acres	62.8	190.8	0.0	253.6
percent total inventory site area	10.0%	30.3%	0.0%	40.3%
Special Habitat Areas**				
acres	0.0			
percent total inventory site area	0.0%			
Combined Total+				
acres	181.1	89.1	12.8	282.9
percent total inventory site area	28.8%	14.2%	2.0%	45.0%

* Class I riparian resources, Special Habitat Areas, and wildlife habitat include open water.

** Metro Title 13 designated all Special Habitat Areas as Class I riparian corridors.

+Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.

Stormwater runs off impervious surfaces (e.g., rooftops, driveways, parking areas, streets, etc..) rapidly. Without a place to retain the water (such as wetlands or adequate stormwater facilities), stormwater runoff results in spikes in stream levels which can cause or exacerbate flooding and increase stream erosion. In addition, when water runs off quickly, it does not have a chance to infiltrate and recharge streams or aquifers to provide water during drier periods.

The type and capacity of stormwater facilities to manage the runoff from impervious surfaces varies in the city, affecting the local rate and amount of runoff, and the amount of pollutants in the water. Much of the city was developed prior to any stormwater regulations and receives limited or no management prior to discharging to pipes and surface waters.

Table C shows the total amount of impervious area within the resource site and how much of that impervious area lacks stormwater management; the percentage of total impervious area that is not managed is called "effective impervious area." The higher the percent of effective impervious area in a watershed, the greater the negative impacts of stormwater runoff to streams. Stream science indicates that when effective impervious area reaches 10% of a watershed, negative stream impacts become significant; and at 25%, these impacts on waterways can be substantial. An additional consideration is the differences in soil conditions and other factors that influence the ability of pervious areas to retain, infiltrate or filter pollutants from stormwater. For example, a mature forest is much more effective in managing stormwater than a manicured lawn; both areas would have a lower effective impervious surface percentage than a developed site, but they have different outcomes for stormwater management.

For Resource Area SK6, 12.2% of the total area is effectively impervious, indicating a critical level of vulnerability, with negative impacts beginning to impact natural functions, but natural processes are still in place and providing support to biologic systems.

Table C. Impervious Area within Resource Site SK6

Total area (acres)	Total impervious Area (acres)	Total unmanaged impervious area* (acres)	Percent of resource site that is effectively impervious
629.3	138.7	76.7	12.2%

*Total unmanaged impervious area refers to the number of acres within a resource area that receives no formal stormwater management measures to regulate flow or treat pollutants before they reach surface waters, also referred to as effective impervious area.

Metro Title 13 and Oregon Goal 5 Compliance

The following information supplements evaluation of natural resource protections presented in Volume 3 and supports compliance with Metro Title 13 and Oregon Plan Goal 5.

Title 13 Habitat Conservation Areas

Map G presents the Habitat Conservation Areas (HCA) within the resource site SK6. Natural resources should be protected within HCA as follows:

1. *Strictly limit* or *limit* conflicting uses within Class I/High Rank Riparian Areas in all Urban Development Areas.
2. *Strictly limit* or *limit* conflicting uses within Class II/Medium Rank Riparian Areas within Moderate and Low Value Urban Development Area as well as parks and open spaces.
3. *Strictly limit* or *limit* conflicting uses within Class A/High or B/Medium Rank Wildlife Habitat within parks and open spaces.
4. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class III/Low Rank Riparian Areas in all Urban Development Areas.
5. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class A/High, Class B/Medium or Class C/Low Rank Wildlife Habitat in all Urban Development Area, expect parks and open space.

Strictly limiting or *limiting* conflicting uses in HCA will protect and conserve existing streams and wetlands to maintain significant natural resource functions including: 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 fish and wildlife habitat. *Strictly limiting* or *limiting* conflicting uses in HCA will allow for additional urban development that is sensitive to the natural resource features and requires mitigation for unavoidable negative impacts to features and functions. The recommendation will also contribute towards meeting other regulatory requirements including the Metro Title 3, Water Quality and Flood Management; Oregon Goal 6, Air, Water and Land Resources Quality; Oregon Goal 7, Areas Subject to Natural Hazards; the Clean Water Act; and the Endangered Species Act.

Goal 5 Significant Natural Resources

Resource site SK6 contains natural resource features that are not a Title 13 HCA and are therefore subject to Statewide Planning Goal 5 OAR 660-023-0110. The General ESEE analysis, Volume 3, 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.

The common impacts of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; adding impervious surface; modifying streams, wetlands and flood areas; 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 RF, R10 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.

The analysis of economic, social, environmental and energy consequences provided in Volume 3 is confirmed for resource site SK6, with the following additional information that clarifies the analysis.

Strictly limiting or *limiting* conflicting uses would retain the wildlife habitat functions provided by significant natural resource features including maintaining habitat for at risk plant, fish and wildlife species, 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 Class A or Class B wildlife habitat should be required.

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*.

Natural Resources Protection Decisions

Based on the analysis presented in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation for SK6, the following decisions are applied to protect the significant riparian corridors and wildlife habitat:

1. Apply a protection overlay zone ('p' zone) to stream channels from top-of-bank to top-of-bank, wetlands, and land within 50 feet of stream top-of-bank or 25 feet of wetlands.
2. In dedicated natural resource tracts, apply a protection overlay zone ('p' zone) to areas of forest or woodland vegetation that are contiguous to but more than 50 feet from stream top-of-bank.
3. Outside of resource tracts, apply a conservation overlay zone ('c' zone) to areas of forest or woodland vegetation that are contiguous to but more than 50 feet from stream top-of-bank.
4. Apply a conservation overlay zone ('c' zone) to land between 25 and 50 feet of wetlands.
5. Allow conflicting uses within all other areas containing significant natural resources.

As part of creating subdivisions, large areas of forest and woodland vegetation surrounding streams were placed in common-ownership conservation tracts. The streams and contiguous tree canopy are maintained by the homeowners for protection of the resources.

Resource Site No.: SK7 **Resource Site Name:** Cedar Mill Creek Pond

Previous Plan: Skyline West Conservation Plan
Previous Resource Site No.: 145

The results of the analysis found in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation, are presented in the following maps:

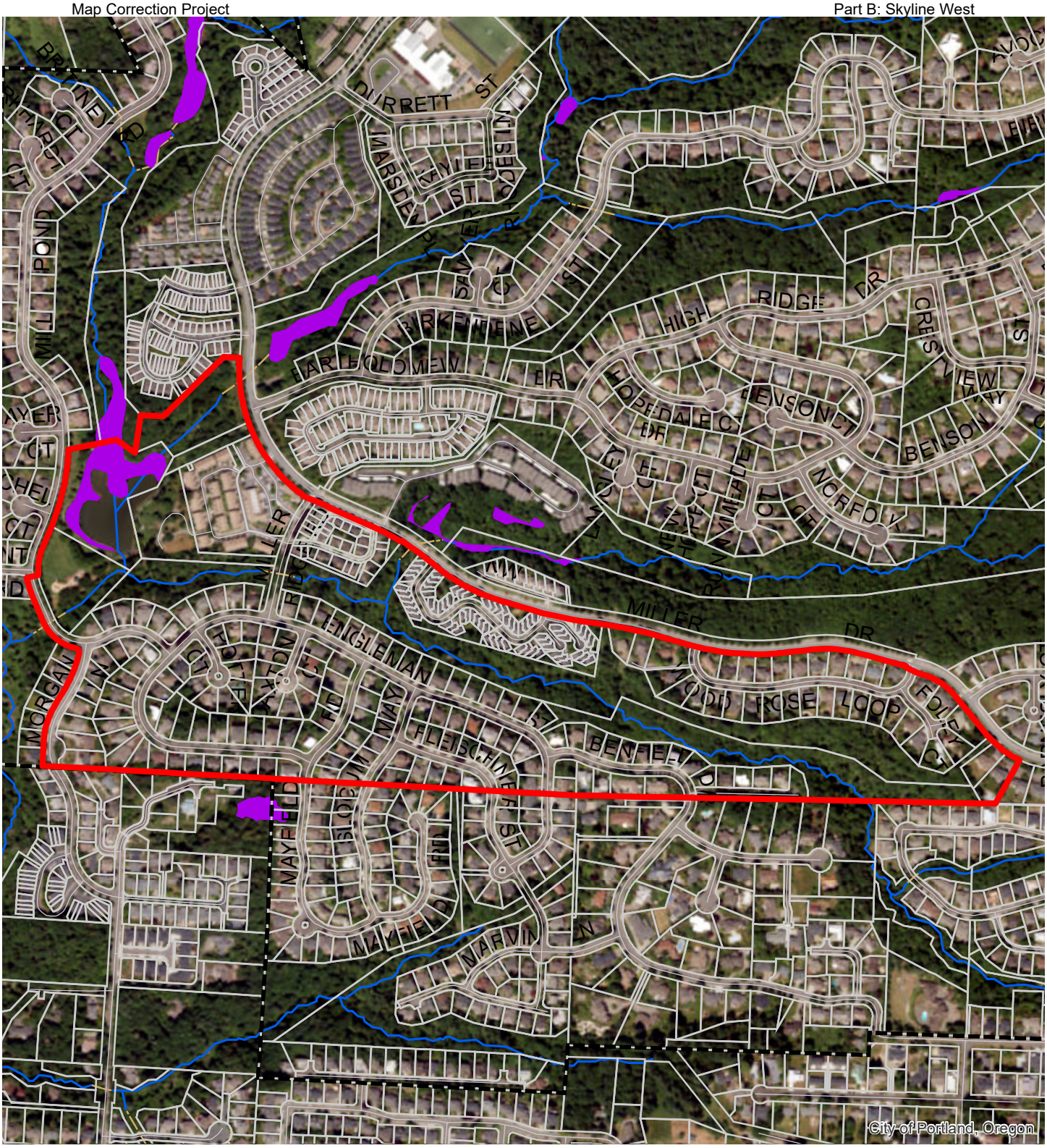
A. Water Features – rivers, streams, wetlands and flood areas
B. Land Features – forest, woodland, shrubland and herbaceous vegetation, steep slopes
C. Special Habitat Areas
D. Riparian Corridor Classifications
E. Wildlife Habitat Classifications
F. Urban Development Value
G. Metro Title 13 Habitat Conservation Areas
H. Statewide Planning Goal 5 Areas
I. Recommended Natural Resource Protections

Following the maps, additional information about existing natural resource features and functions in the resource site is presented.

Implementation of the results is found in Volume 1, Part B, updates to zoning maps and zoning code.

Resource site SK7 includes the following:

Site (acres)	91.2
Base zones (acres)	
CM1	2.1
OS	2.1
R10	84.3
RM1	2.8



Map A: Water Features

Resource Site: SK7

Updated: May 2022

NORTH

0 312.5 625 Feet

Resource Sites
Urban Service Boundary
Taxlots
Wetlands
Rivers
Open stream channel
Piped Stream Segment
Flood Area

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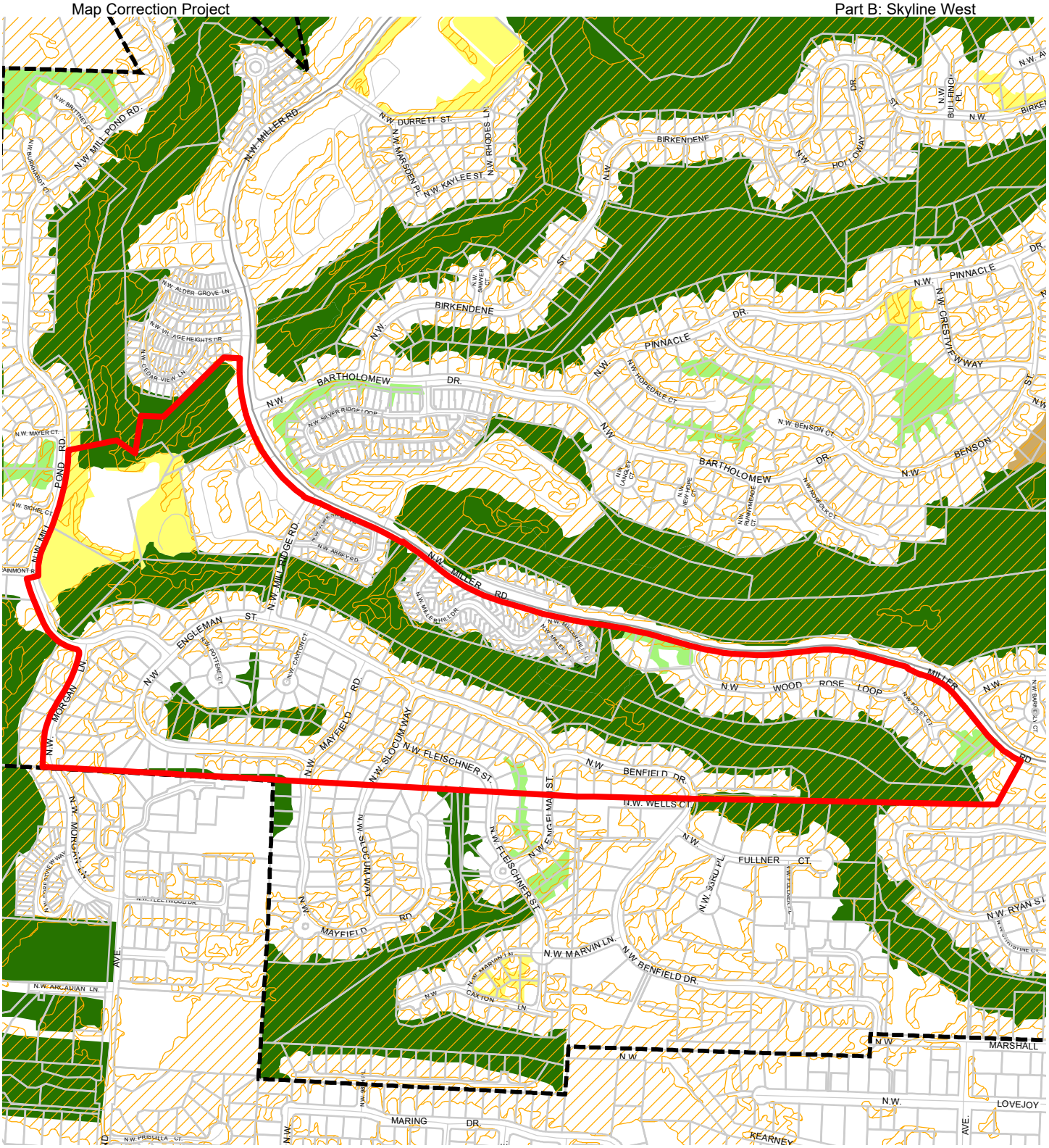
The information on the map was derived from digital databases. Care was taken in the creation of this map but it is provided "as is". The City of Portland ensures meaningful access to city programs, services, and activities to comply with Civil Rights Title VI and ADA Title II laws and reasonably provides: translation, interpretation, modifications, accommodations, alternative formats, auxiliary aids and services. To request these services, contact 503-823-7700, City TTY 503-823-6868, Relay Service: 711.



Map B: Vegetation and Steep Slopes

Resource Site: SK7

Updated: May 2022

NORTH

0 425 850 Feet

- Resource Sites
- Urban Service Boundary
- Taxlots
- Forest
- Woodland
- Shrubland
- Herbaceous

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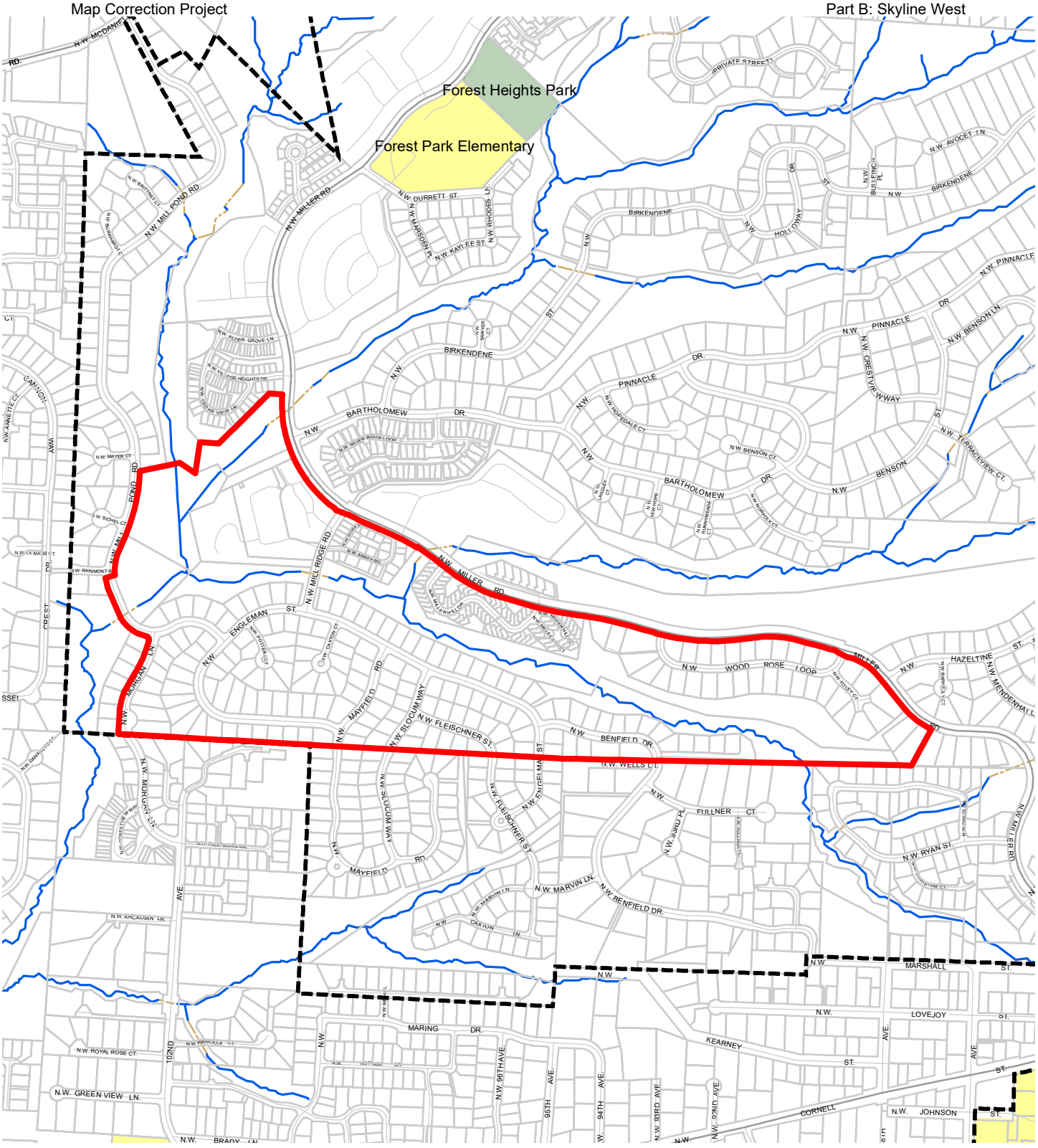


Map C: Special Habitat Areas

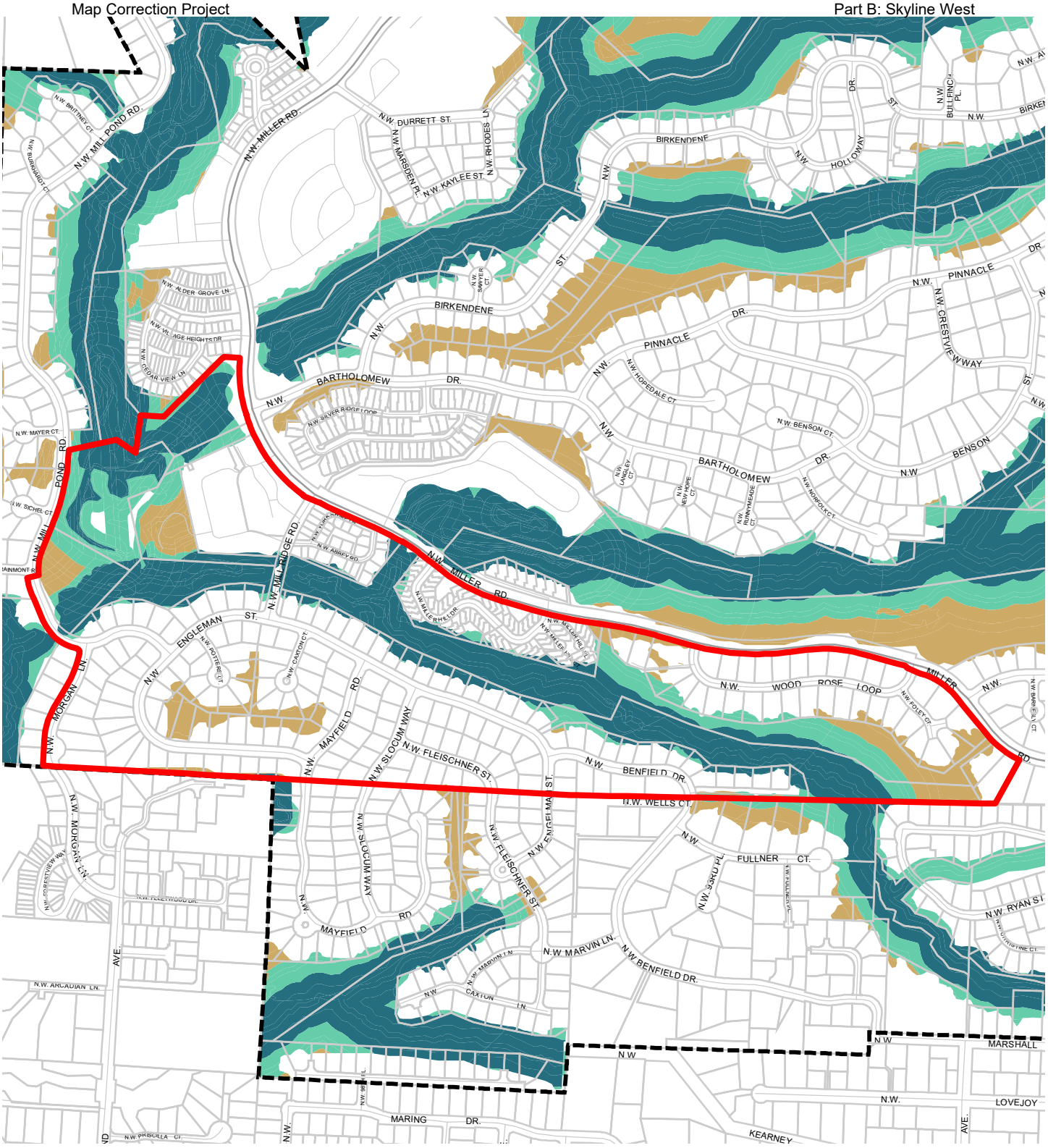
Resource Site: SK7

Updated: May 2022

NORTH

0 405 810 Feet

- Resource Sites
- Special Habitat Areas (SHAs)
- Open Stream Channel
- Piped Stream Segment
- Parks
- Schools
- Urban Service Boundary
- Taxlots



Map D: Riparian Corridors Habitat Classification

Resource Site: SK7

Updated: May 2022

Class I (high rank)
Class II (medium rank)
Class III (low rank)
Resource Sites
Urban Service Boundary
Taxlots

NORTH

0 312.5 625 Feet

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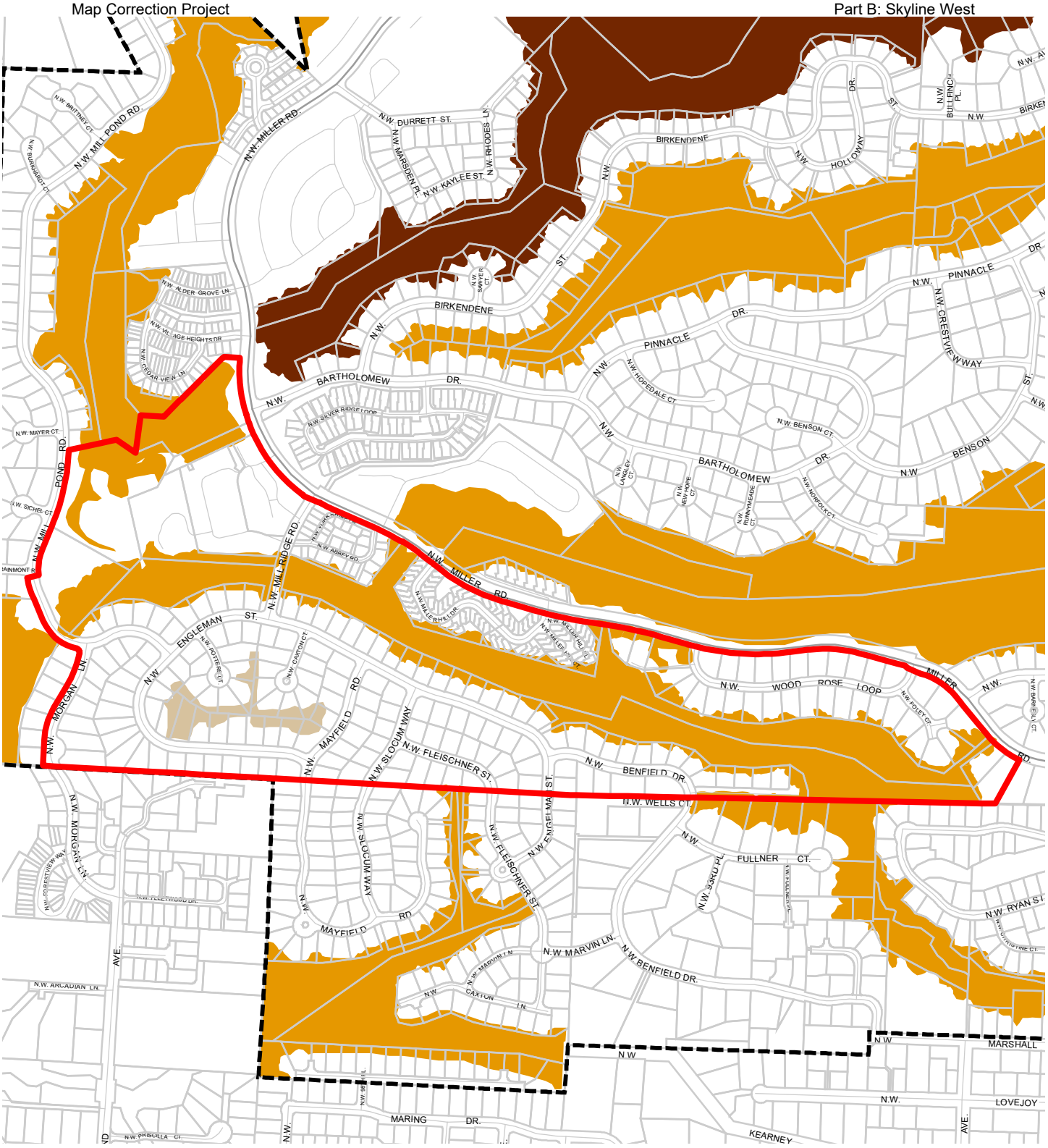

Map E: Wildlife Habitat Classification

Resource Site: SK7

Updated: May 2022

NORTH

0 255 510 Feet

- Resource Sites
- Class A (high rank)
- Class B (medium rank)
- Class C (low rank)
- Urban Service Boundary
- Taxlots

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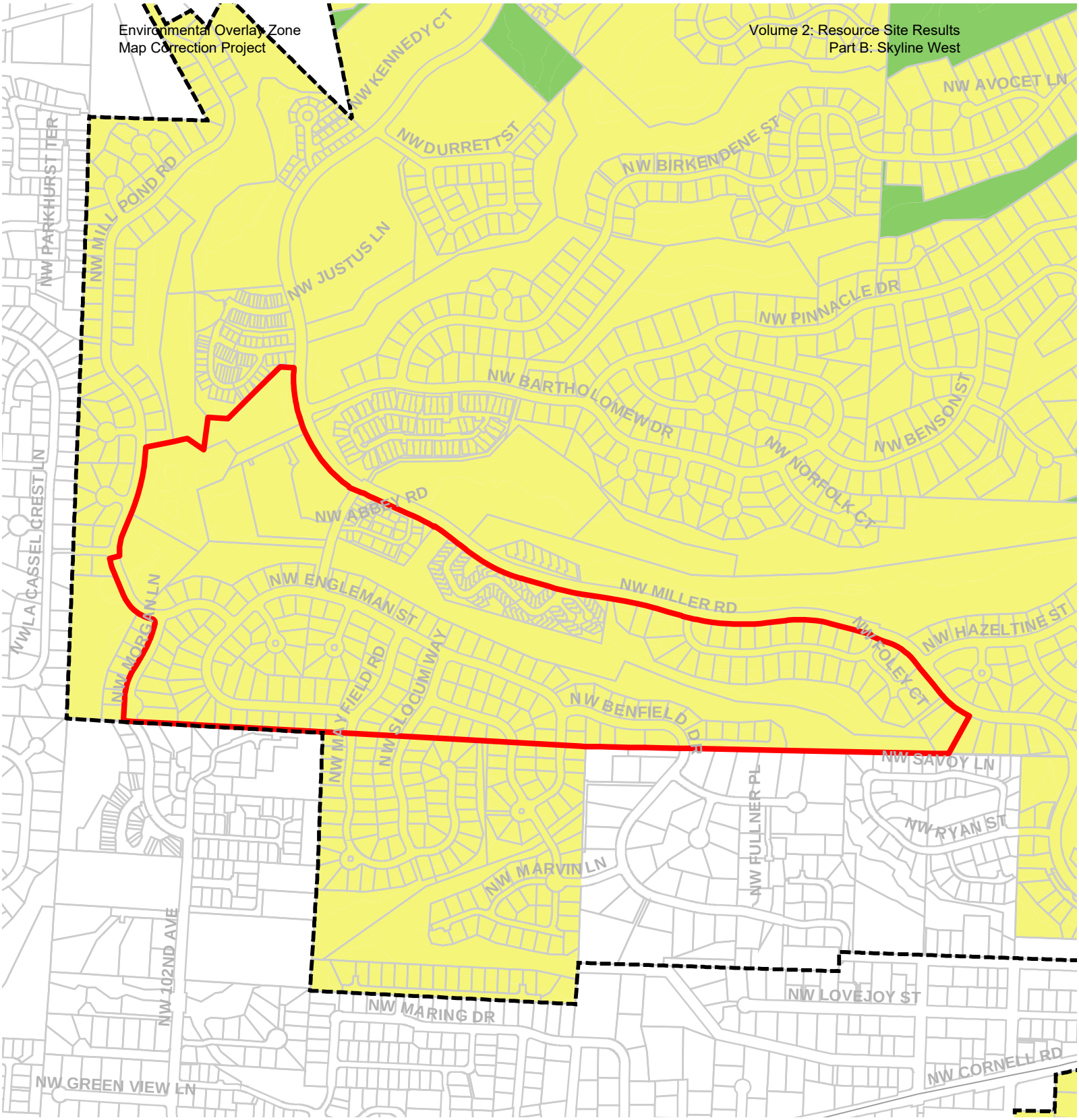

Map F: Urban Development Value (Title 13)
Resource Site: SK7

- Urban Service Boundary
- Resource Sites
- High Development Value
- Medium Development Value
- Low Development Value
- Parks

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Updated: July 2021

NORTH

0 460 920 Feet

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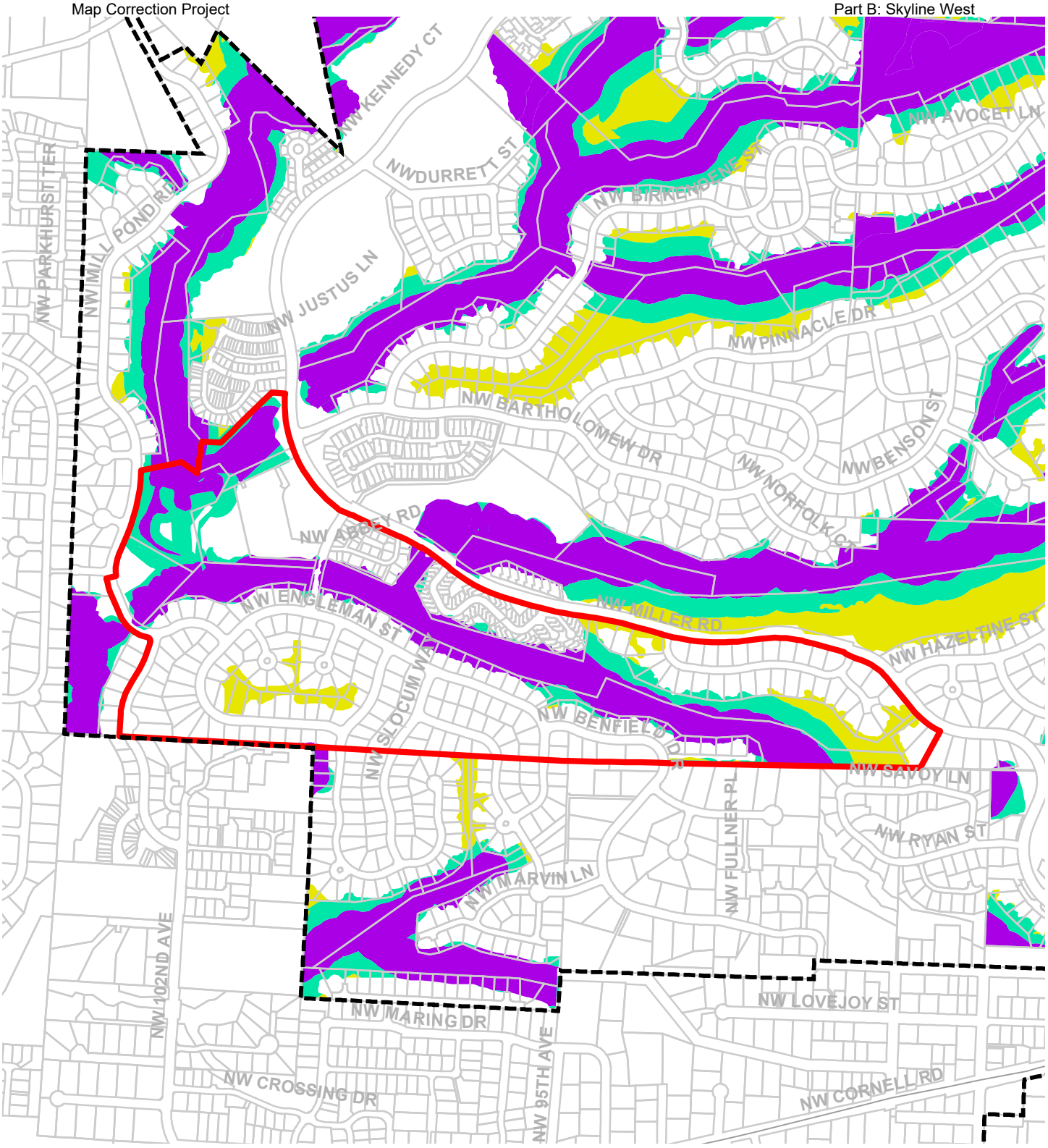

Map G: Title 13 Habitat Conservation Areas (HCA) and Goal 5 Areas

Resource Site: SK7

Updated: May 2022

NORTH

0 500 1,000 Feet

Recommended Draft - As Amended

- Urban Service Boundary
- Resource Sites
- HCA High Value
- HCA Moderate Value
- HCA Low Value
- Goal 5 Significant Natural Resources

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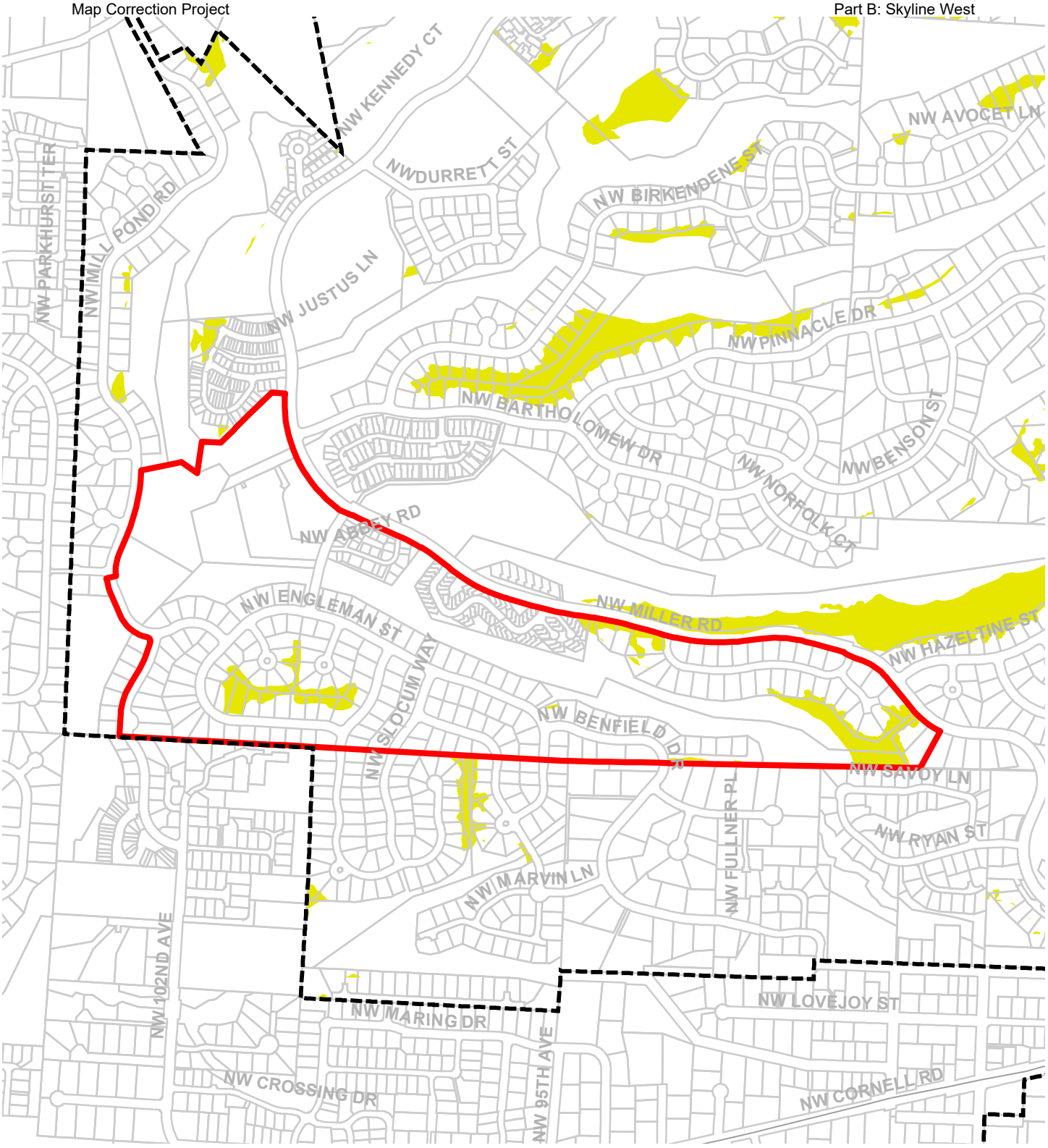
May 2022



Map H: Goal 5 Resources

Resource Site: SK7

Updated: May 2022

NORTH

0 500 1,000 Feet

Recommended Draft - As Amended

- Urban Service Boundary
- Resource Sites
- Goal 5 Significant Natural Resources

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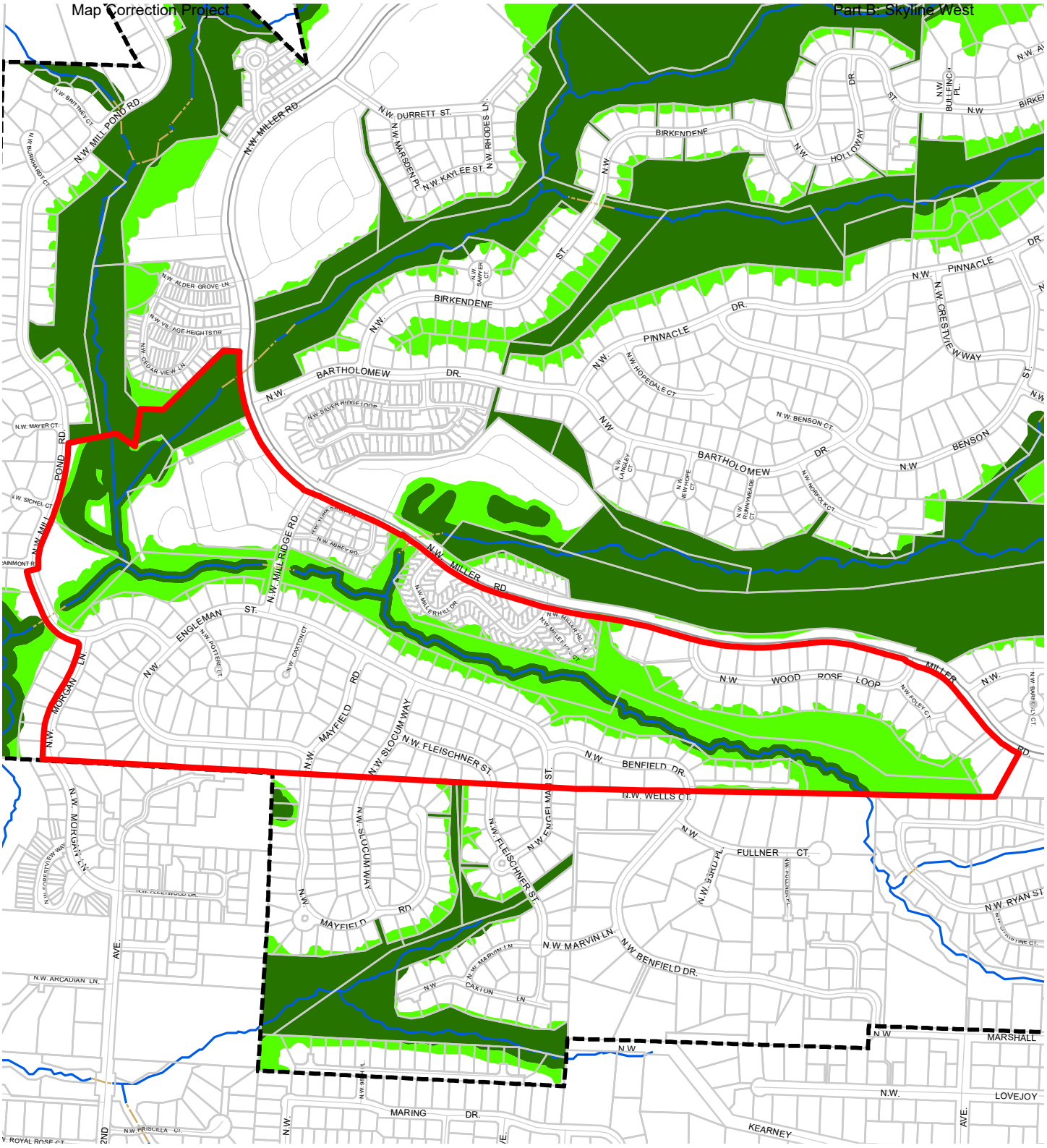

Map I: DRAFT Proposed Environmental Overlay Zones

Resource Site: SK7

Updated: May 2022

Resource Sites
Open Stream Channel
Piped Stream Segment
Proposed Conservation Zone
Proposed Protection Zone
Urban Service Boundary
Taxlots

NORTH

0 340 680 Feet

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Natural Resource Description

Within resource site SK7 the following significant natural resource features and functions are present:

Significant Riparian Corridor Features: open stream; wetland; land within 50 feet of waterbodies; forest, woodland, shrubland and herbaceous vegetation within 300 feet of waterbodies; and forest vegetation on steep slopes (>25% slope) contiguous to and within 780 feet of waterbodies.

Significant Wildlife Habitat Features: forest patches, and associated and contiguous wetlands, two acres in size or larger.

Special Habitat Areas: None

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.

Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; reduction of noise, light and vibration; and habitat patches that support special status fish and wildlife species.

Table A: Quantity of Natural Resource Features in Resource Site SK7	
	Study Area
Stream (Miles)	1.0
Wetlands (acres)	1.4
Vegetated Areas >= 1/2 acre (acres)	
Forest (acres)	28.9
Woodland (acres)	1.1
Shrubland (acres)	0.0
Herbaceous (acres)	4.2
Flood Area*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Steep Slopes (acres)**	52.4
* 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 areas with a slope greater than 25%.	

Although this site is also largely covered in residential development, Forest Heights, it contains headwater and tributary streams to Cedar Mill Creek. Cedar Mill Creek flows into designated critical habitat for Endangered Species Act-listed upper Willamette River steelhead trout. The reticulate sculpin has been documented in the resource site. In addition, the remaining forested areas provide cover and habitat for the coastal giant salamander. This resource site also contains the Cedar Mill Creek pond. This decorative pond was once the pond for the Jones Lumber Mill. This pond is now included in the privately run, Mill Pond Park, with associated developed park amenities.

Numerous bird species have been known to use this resource site in all of their life stages. These species include: Bald eagle, band-tailed pigeon, black-throated gray warbler, brown creeper, bufflehead, bushtit, common yellowthroat, downy woodpecker, great blue heron, green heron, hooded merganser, olive-sided flycatcher, orange-crowned warbler, pacific-slope flycatcher, pacific wren, pileated woodpecker, purple finch, red crossbill, rufous hummingbird, Swainson's thrush, varied thrush, Vaux's swift, western wood-pewee, white-breasted nuthatch, willow flycatcher, Wilson's warbler, and wood duck.

Table B: Quality of Natural Resource Functions in Resource Site SK7				
Resource Site (acres) = 91				
	Class 1/A	**Class 2/B**	**Class 3/C**	**Total**
Riparian Corridors*				
acres	20.2	8.5	7.1	35.8
percent total inventory site area	22.2%	9.3%	7.8%	39.3%
Wildlife Habitat*				
acres	0.0	28.5	2.0	30.5
percent total inventory site area	0.0%	31.3%	2.2%	33.4%
Special Habitat Areas**				
acres	0.0			
percent total inventory site area	0.0%			
Combined Total+				
acres	20.2	11.8	4.0	36.0
percent total inventory site area	22.2%	12.9%	4.4%	39.5%

* Class I riparian resources, Special Habitat Areas, and wildlife habitat include open water.

** Metro Title 13 designated all Special Habitat Areas as Class I riparian corridors.

+Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.

Stormwater runs off impervious surfaces (e.g., rooftops, driveways, parking areas, streets, etc..) rapidly. Without a place to retain the water (such as wetlands or adequate stormwater facilities), stormwater runoff results in spikes in stream levels which can cause or exacerbate flooding and increase stream erosion. In addition, when water runs off quickly, it does not have a chance to infiltrate and recharge streams or aquifers to provide water during drier periods.

The type and capacity of stormwater facilities to manage the runoff from impervious surfaces varies in the city, affecting the local rate and amount of runoff, and the amount of pollutants in the water. Much of the city was developed prior to any stormwater regulations and receives limited or no management prior to discharging to pipes and surface waters.

Table C shows the total amount of impervious area within the resource site and how much of that impervious area lacks stormwater management; the percentage of total impervious area that is not managed is called "effective impervious area." The higher the percent of effective impervious area in a watershed, the greater the negative impacts of stormwater runoff to streams. Stream science indicates that when effective impervious area reaches 10% of a watershed, negative stream impacts become significant; and at 25%, these impacts on waterways can be substantial. An additional consideration is the differences in soil conditions and other factors that influence the ability of pervious areas to retain, infiltrate or filter pollutants from stormwater. For example, a mature forest is much more effective in managing stormwater than a manicured lawn; both areas would have a lower effective impervious surface percentage than a developed site, but they have different outcomes for stormwater management.

For Resource Area SK7, 18.0% of the total area is effectively impervious, indicating a critical level of vulnerability, with negative impacts beginning to impact natural functions, but natural processes are still in place and providing support to biologic systems.

Table C. Impervious Area within Resource Site SK7

Total area (acres)	Total impervious Area (acres)	Total unmanaged impervious area* (acres)	Percent of resource site that is effectively impervious
91.2	22.6	16.4	18.0%

*Total unmanaged impervious area refers to the number of acres within a resource area that receives no formal stormwater management measures to regulate flow or treat pollutants before they reach surface waters, also referred to as effective impervious area.

Metro Title 13 and Oregon Goal 5 Compliance

The following information supplements evaluation of natural resource protections presented in Volume 3 and supports compliance with Metro Title 13 and Oregon Plan Goal 5.

Title 13 Habitat Conservation Areas

Map G presents the Habitat Conservation Areas (HCA) within the resource site SK7. Natural resources should be protected within HCA as follows:

1. *Strictly limit* or *limit* conflicting uses within Class I/High Rank Riparian Areas in all Urban Development Areas.
2. *Strictly limit* or *limit* conflicting uses within Class II/Medium Rank Riparian Areas within Moderate and Low Value Urban Development Area as well as parks and open spaces.
3. *Strictly limit* or *limit* conflicting uses within Class A/High or B/Medium Rank Wildlife Habitat within parks and open spaces.
4. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class III/Low Rank Riparian Areas in all Urban Development Areas.
5. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class A/High, Class B/Medium or Class C/Low Rank Wildlife Habitat in all Urban Development Area, expect parks and open space.

Strictly limiting or *limiting* conflicting uses in HCA will protect and conserve existing streams and wetlands to maintain significant natural resource functions including: 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 fish and wildlife habitat. *Strictly limiting* or *limiting* conflicting uses in HCA will allow for additional urban development that is sensitive to the natural resource features and requires mitigation for unavoidable negative impacts to features and functions. The recommendation will also contribute towards meeting other regulatory requirements including the Metro Title 3, Water Quality and Flood Management; Oregon Goal 6, Air, Water and Land Resources Quality; Oregon Goal 7, Areas Subject to Natural Hazards; the Clean Water Act; and the Endangered Species Act.

Goal 5 Significant Natural Resources

Resource site SK7 contains natural resource features that are not a Title 13 HCA and are therefore subject to Statewide Planning Goal 5 OAR 660-023-0110. The General ESEE analysis, Volume 3, 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.

The common impacts of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; adding impervious surface; modifying streams, wetlands and flood areas; 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 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.

The analysis of economic, social, environmental and energy consequences provided in Volume 3 is confirmed for resource site SK7, with the following additional information that clarifies the analysis.

Strictly limiting or *limiting* conflicting uses would retain the wildlife habitat functions provided by significant natural resource features including maintaining habitat for at risk plant, fish and wildlife species, 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 Class A or Class B wildlife habitat should be required.

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*.

Natural Resources Protection Decisions

Based on the analysis presented in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation for SK7, the following decisions are applied to protect the significant riparian corridors and wildlife habitat:

1. Apply a protection overlay zone ('p' zone) to stream channels from top-of-bank to top-of-bank, wetlands and land within 25 feet of stream top-of-bank or wetlands.
2. In dedicated natural resource tract to the northwest of NW Village Dr, apply a protection overlay zone ('p' zone) to areas of forest or woodland vegetation that are contiguous to but more than 50 feet from stream top-of-bank.
3. Outside of resource tracts, apply a conservation overlay zone ('c' zone) to areas of forest vegetation that are contiguous to but more than 50 feet from stream top-of-bank.
4. Apply a conservation overlay zone ('c' zone) to land between 25 and 50 feet of wetlands.
5. Allow conflicting uses within all other areas containing significant natural resources.

As part of creating subdivisions, large areas of forest and woodland vegetation surrounding streams were placed in common-ownership conservation tracts. The streams and contiguous tree canopy are maintained by the homeowners for protection of the resources.

Resource Site No.: SK8 **Resource Site Name:** Cedar Mill Creek South

Previous Plan: Skyline West Conservation Plan
Previous Resource Site No.: 145

The results of the analysis found in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation, are presented in the following maps:

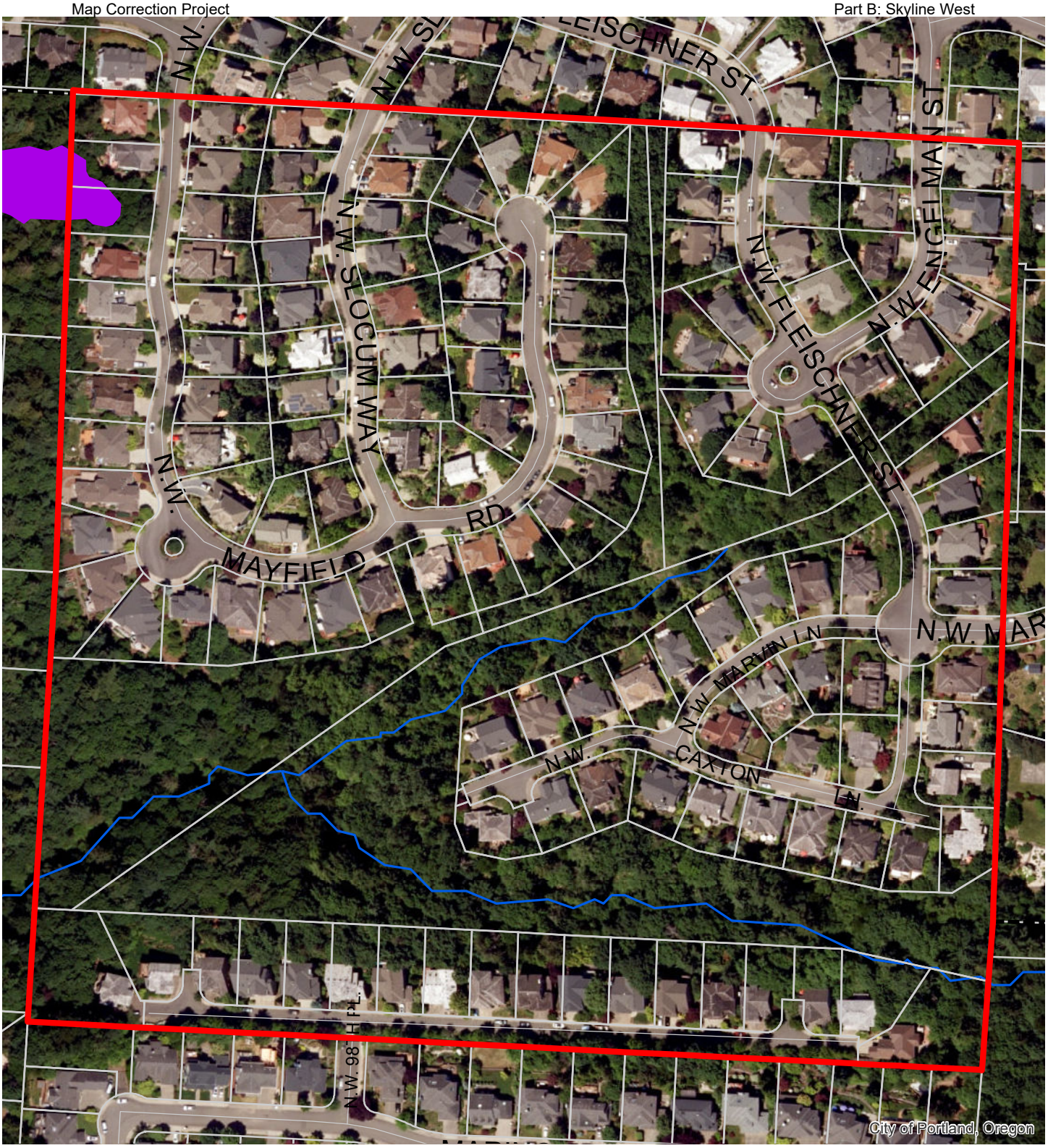
A. Water Features – rivers, streams, wetlands and flood areas
B. Land Features – forest, woodland, shrubland and herbaceous vegetation, steep slopes
C. Special Habitat Areas
D. Riparian Corridor Classifications
E. Wildlife Habitat Classifications
F. Urban Development Value
G. Metro Title 13 Habitat Conservation Areas
H. Statewide Planning Goal 5 Areas
I. Recommended Natural Resource Protections

Following the maps, additional information about existing natural resource features and functions in the resource site is presented.

Implementation of the results is found in Volume 1, Part B, updates to zoning maps and zoning code.

Resource site SK8 includes the following:

Site (acres)	39.8
Base zones (acres)	
R10	39.8



Map A: Water Features

Resource Site: SK8

Updated: May 2022

Resource Sites
Urban Service Boundary
Taxlots
Wetlands
Rivers
Open stream channel
Piped Stream Segment
Flood Area

NORTH

0 100 200 Feet

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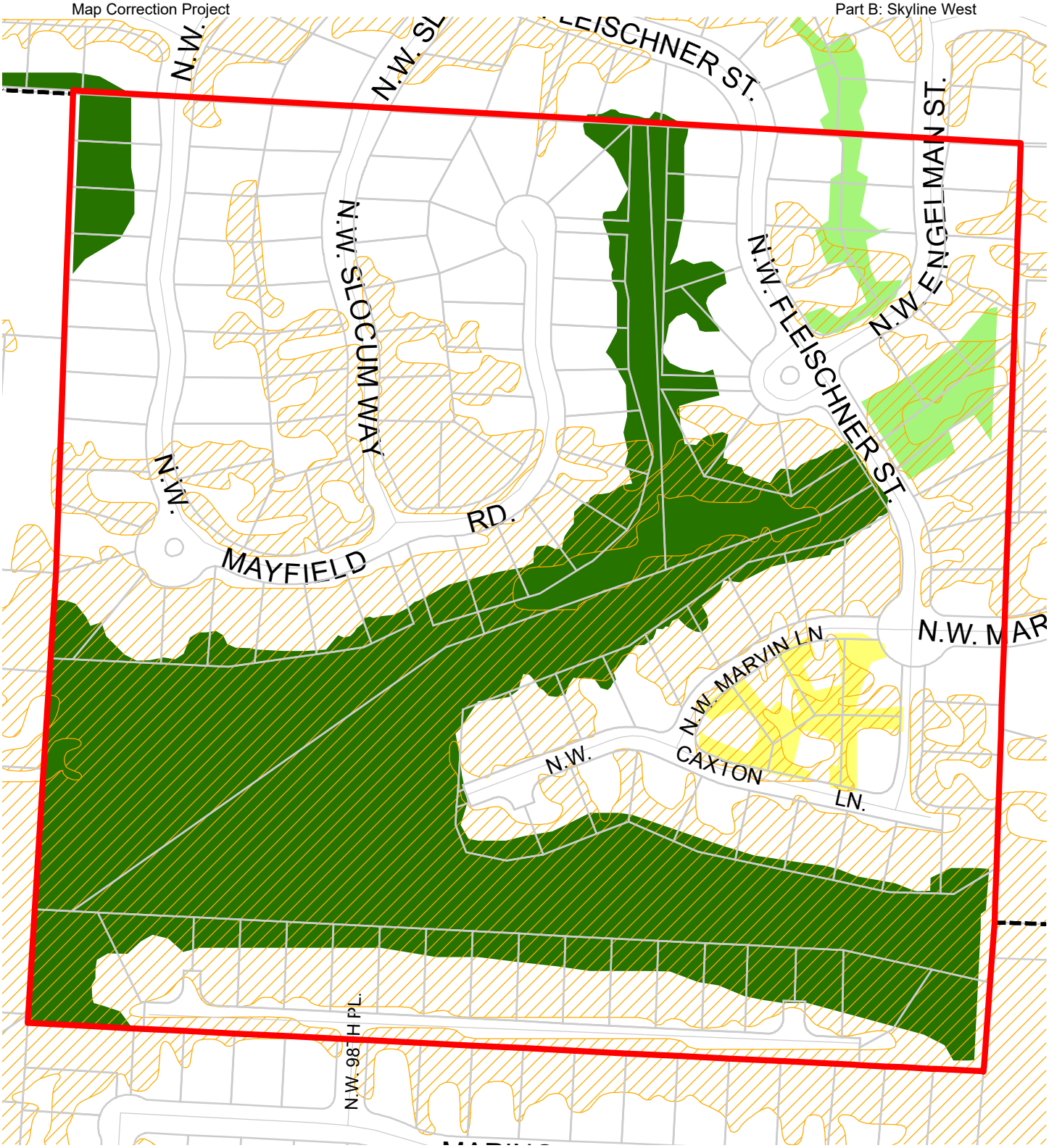


Map B: Vegetation and Steep Slopes

Resource Site: SK8

Updated: May 2022

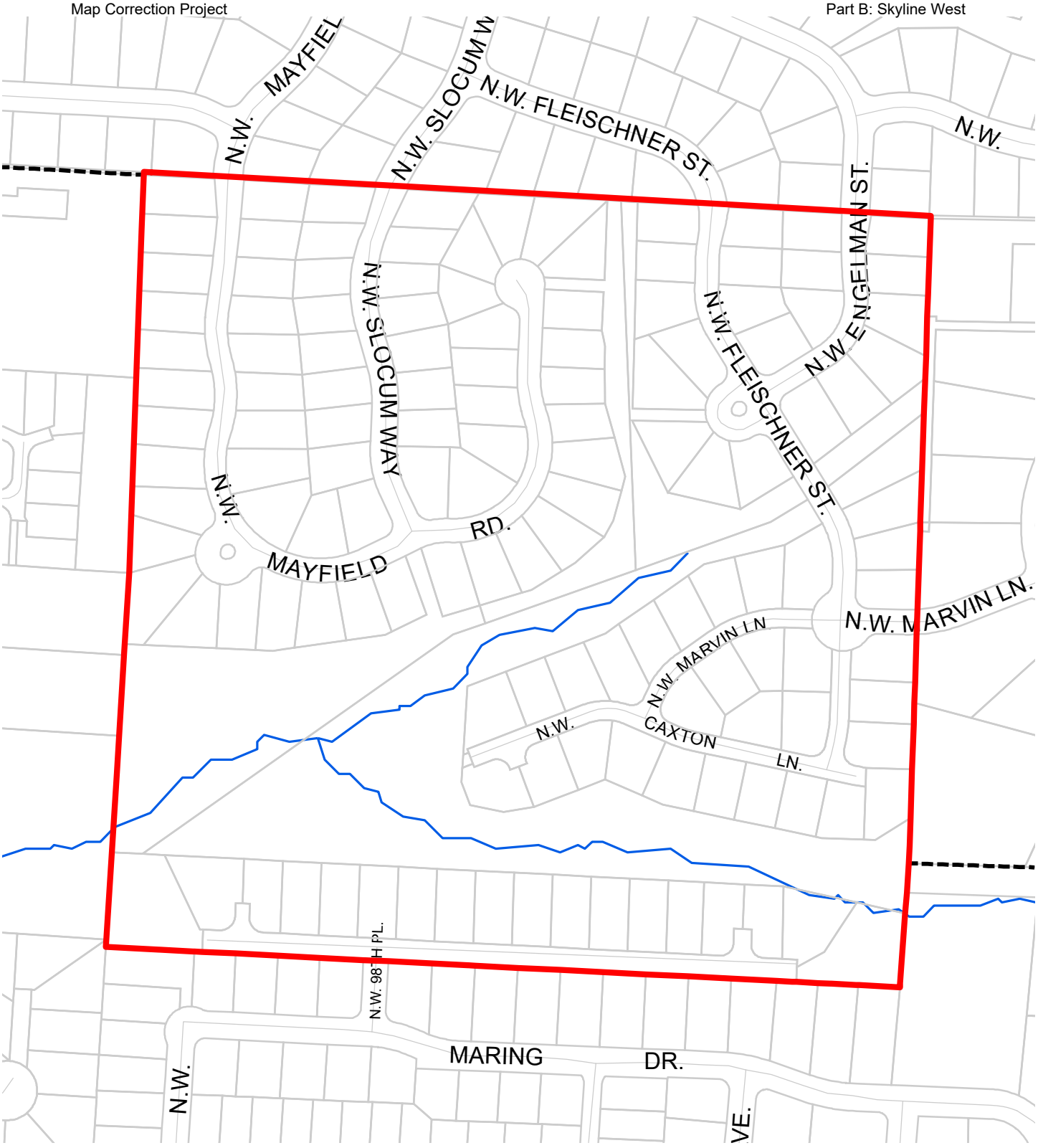
NORTH

0 137.5 275 Feet

- Resource Sites
- Urban Service Boundary
- Taxlots
- Forest
- Woodland
- Shrubland
- Herbaceous

[redacted]

May 2022



Map C: Special Habitat Areas

Resource Site: SK8

Updated: May 2022

NORTH

0 130 260 Feet

Resource Sites

Special Habitat Areas (SHAs)

Open Stream Channel

Piped Stream Segment

Parks

Schools

Urban Service Boundary

Taxlots

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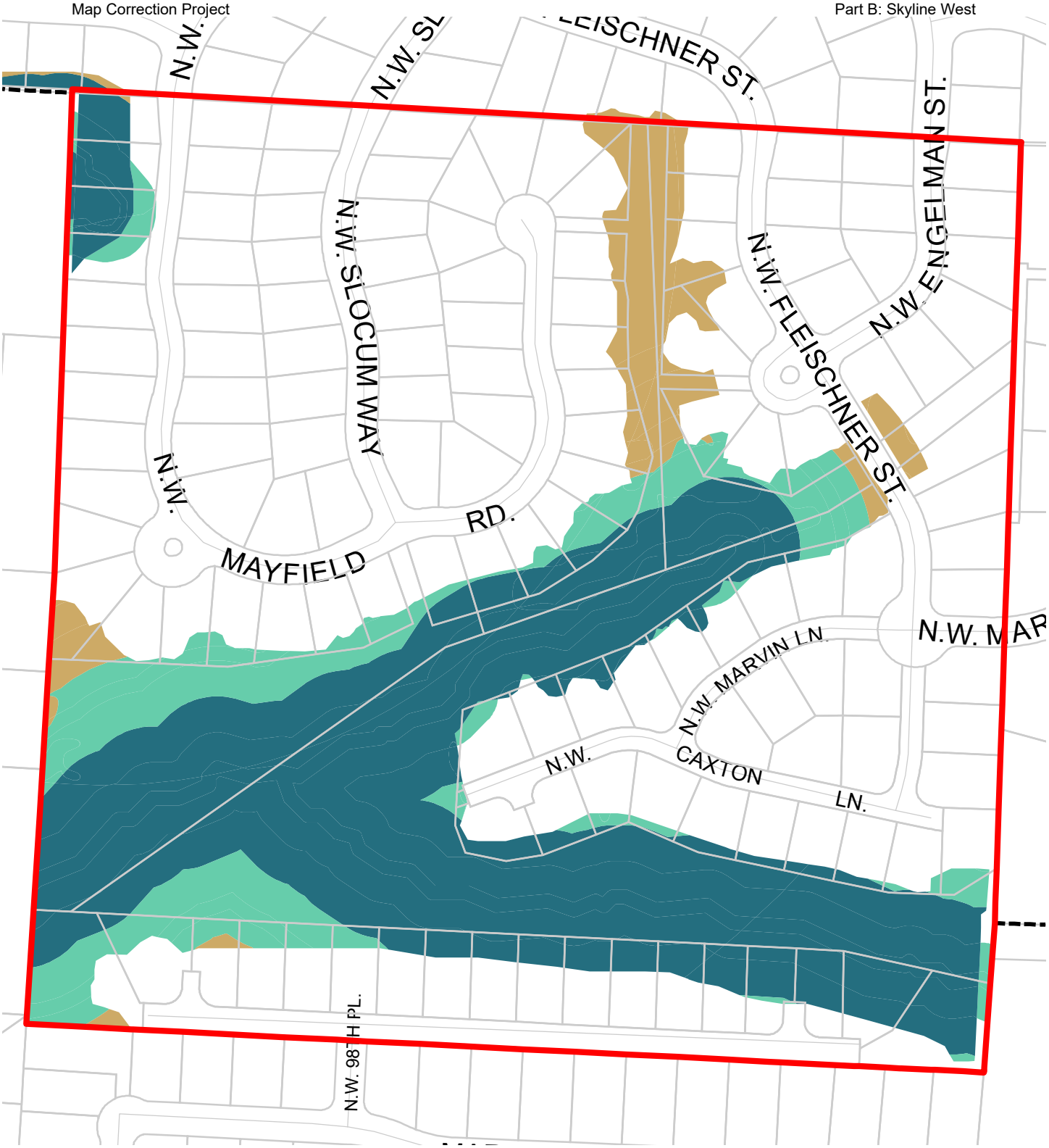

Map D: Riparian Corridors Habitat Classification

Resource Site: SK8

Updated: May 2022

Class I (high rank)
Class II (medium rank)
Class III (low rank)
Resource Sites
Urban Service Boundary
Taxlots

NORTH
0 100 200 Feet

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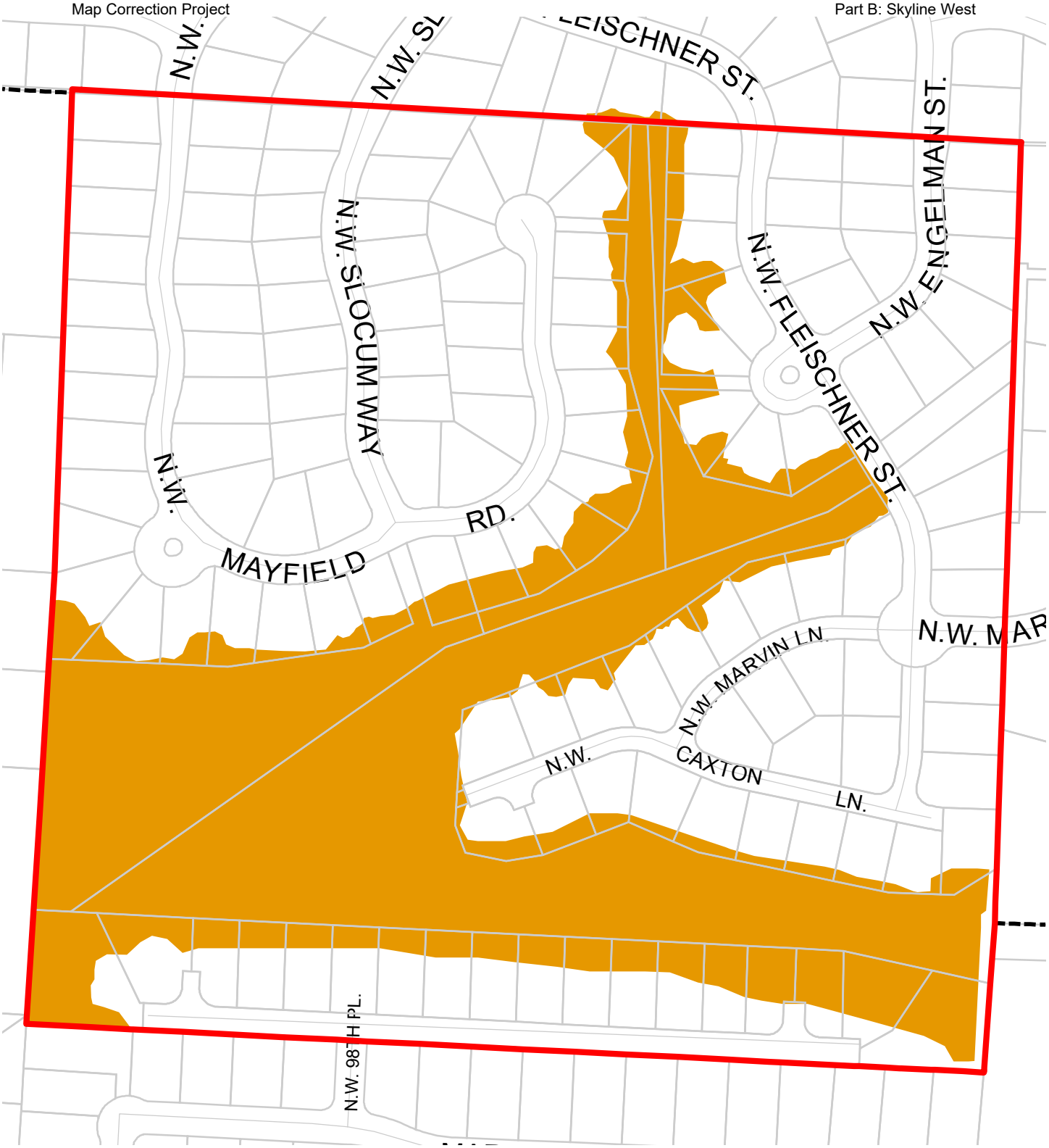


Map E: Wildlife Habitat Classification

Resource Site: SK8

Updated: May 2022

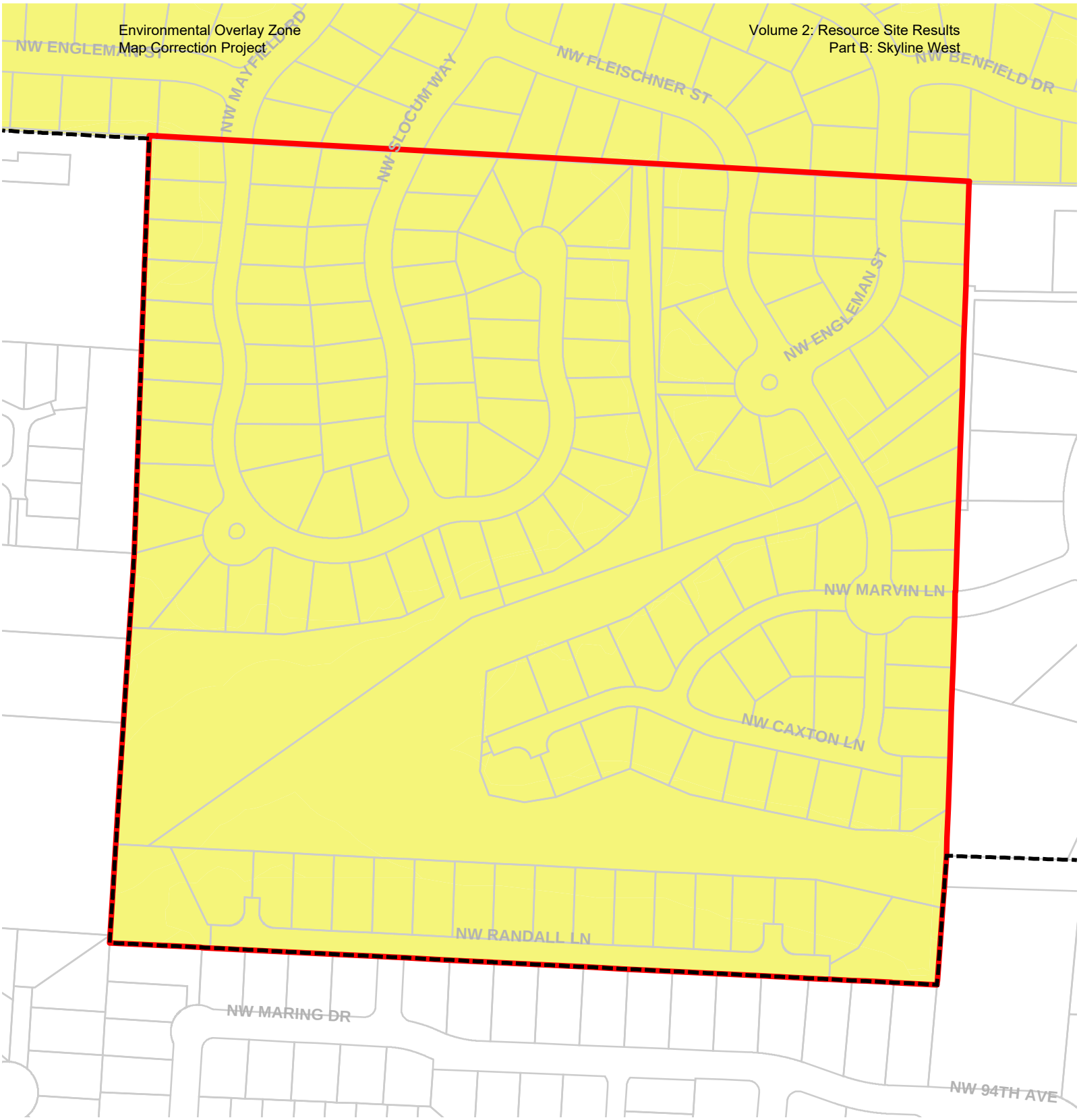
NORTH

0 80 160 Feet

- Resource Sites
- Class A (high rank)
- Class B (medium rank)
- Class C (low rank)
- Urban Service Boundary
- Taxlots

[redacted]

May 2022



Map F: Urban Development Value (Title 13)
Resource Site: SK8

- Urban Service Boundary
- Resource Sites
- High Development Value
- Medium Development Value
- Low Development Value
- Parks

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Updated: July 2021

NORTH

0 145 290 Feet

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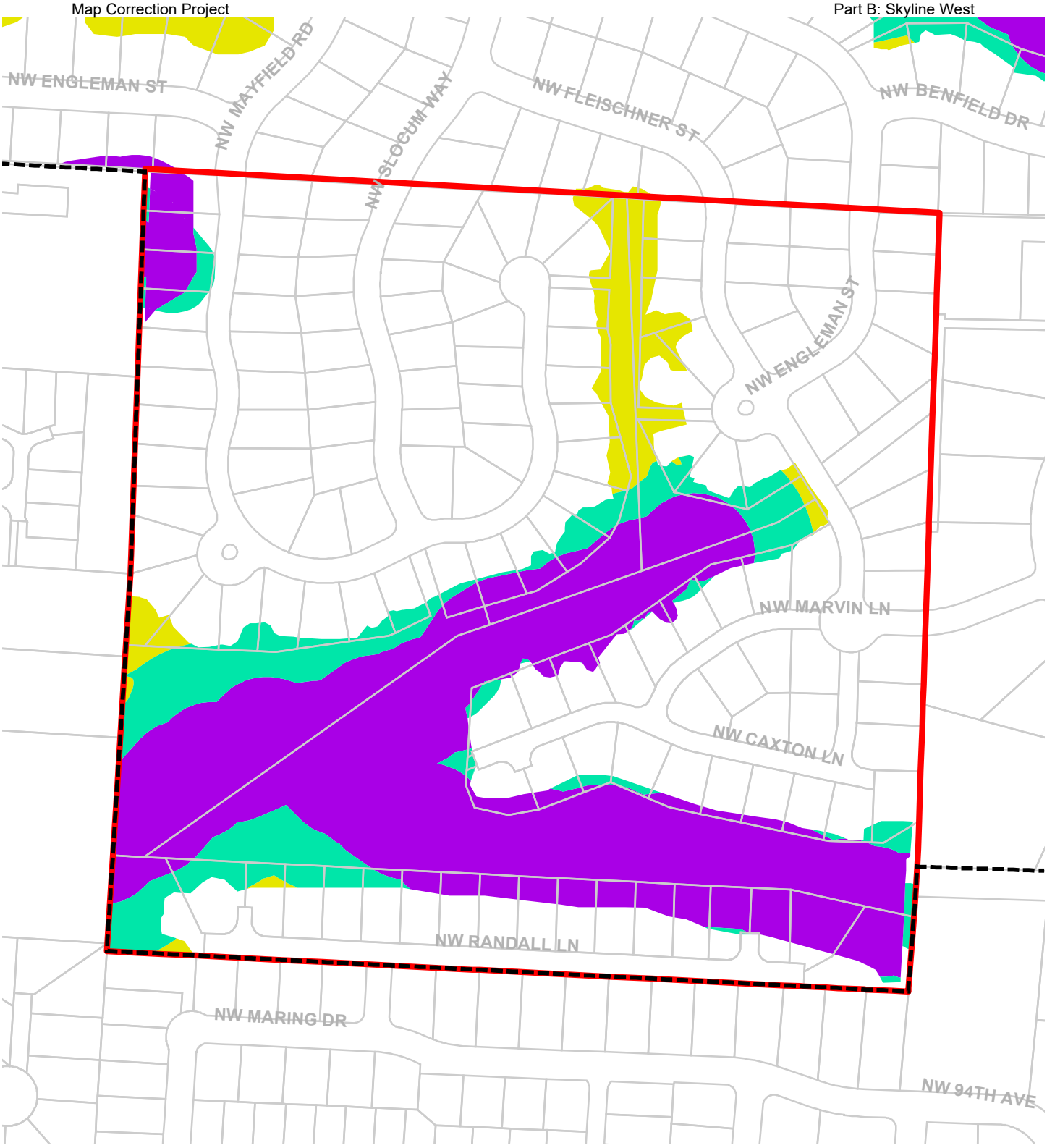

Map G: Title 13 Habitat Conservation Areas (HCA) and Goal 5 Areas

Resource Site: SK8

Updated: May 2022

NORTH

0 162.5 325 Feet

- Urban Service Boundary
- Resource Sites
- HCA High Value
- HCA Moderate Value
- HCA Low Value
- Goal 5 Significant Natural Resources

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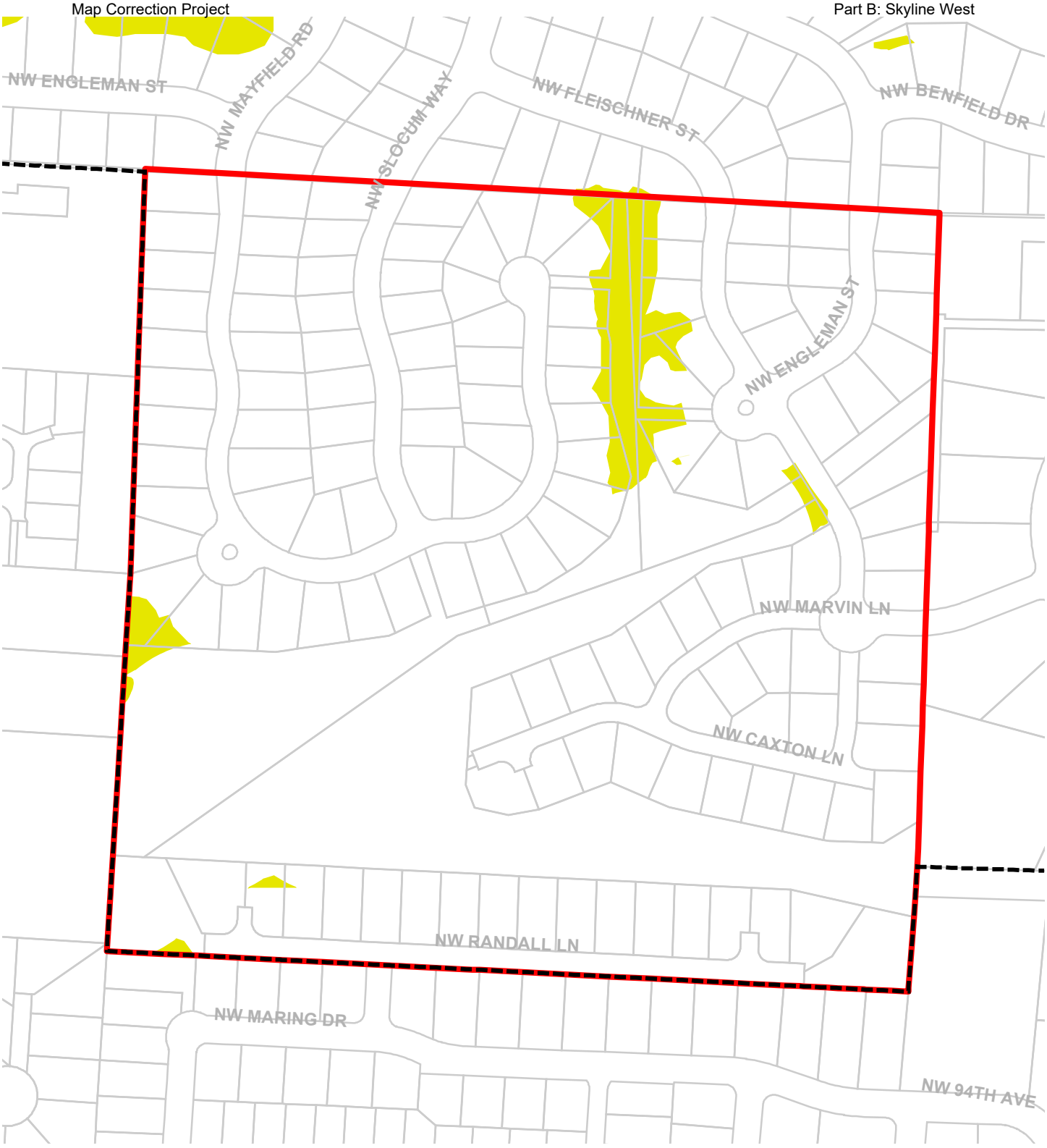

Map H: Goal 5 Resources

Resource Site: SK8

Updated: May 2022

NORTH

0 162.5 325 Feet

Urban Service Boundary

Resource Sites

Goal 5 Significant Natural Resources

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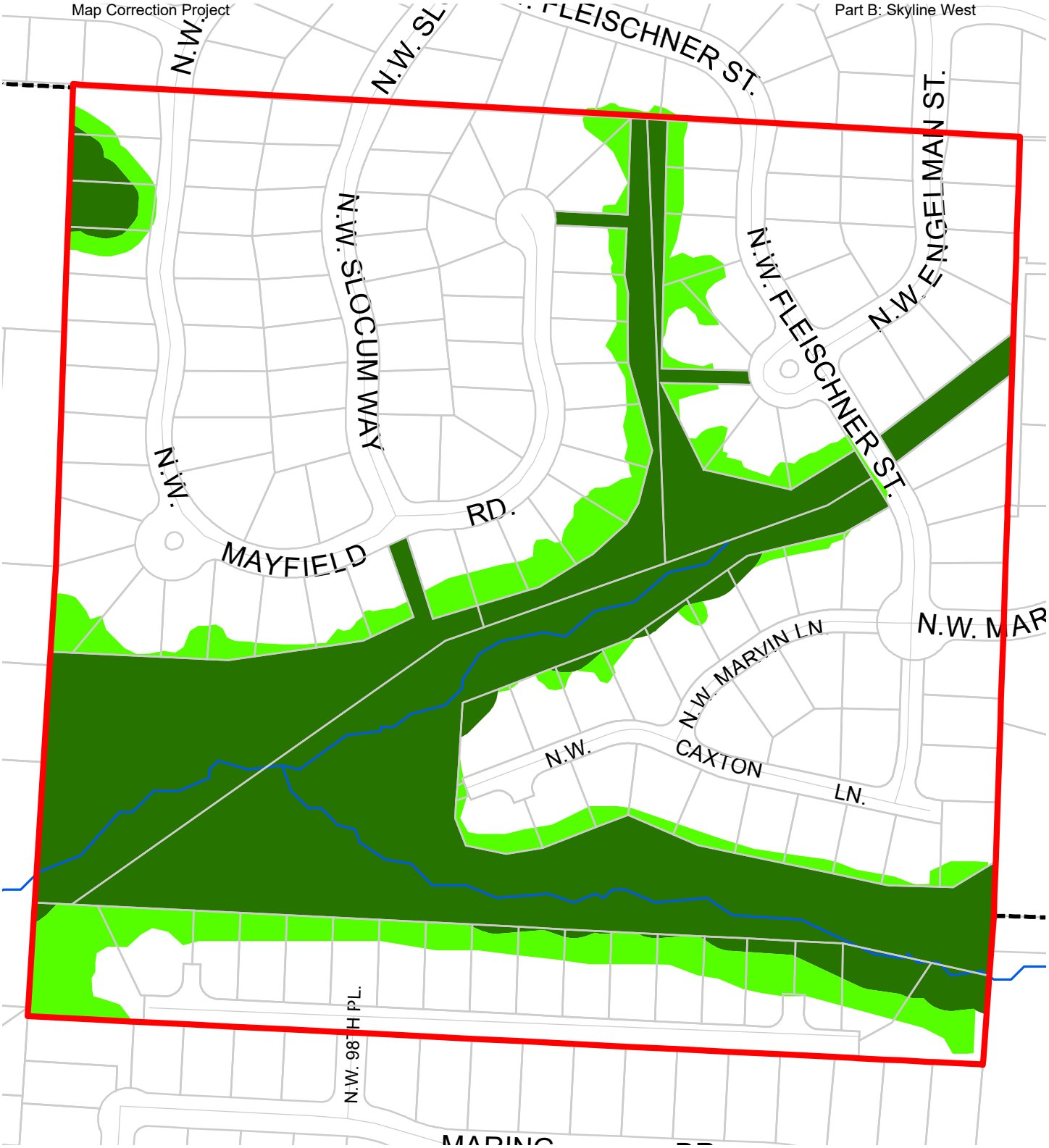
May 2022



Map I: DRAFT Proposed Environmental Overlay Zones

Resource Site:

SK8

Updated: May 2022

Resource Sites
Open Stream Channel
Piped Stream Segment
Proposed Conservation Zone
Proposed Protection Zone
Urban Service Boundary
Taxlots

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NORTH
0 110 220 Feet

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Natural Resource Description

Within resource site SK8 the following significant natural resource features and functions are present:

Significant Riparian Corridor Features: open stream; wetland; land within 50 feet of waterbodies; forest, woodland, shrubland and herbaceous vegetation within 300 feet of waterbodies; and forest vegetation on steep slopes (>25% slope) contiguous to and within 780 feet of waterbodies.

Significant Wildlife Habitat Features: forest patches, and associated and contiguous wetlands, two acres in size or larger.

Special Habitat Areas: None

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.

Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; reduction of noise, light and vibration; and habitat patches that support special status fish and wildlife species.

Table A: Quantity of Natural Resource Features in Resource Site SK8	
	Study Area
Stream (Miles)	0.4
Wetlands (acres)	0.1
Vegetated Areas >= 1/2 acre (acres)	
Forest (acres)	13.6
Woodland (acres)	0.8
Shrubland (acres)	0.0
Herbaceous (acres)	0.6
Flood Area*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Steep Slopes (acres)**	22.9
* 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 areas with a slope greater than 25%.	

Cedar Mill Creek tributary streams cross this resource site from east to west. The coastal giant salamander may use the forested areas associated with the streams.

Numerous bird species have been known to use this resource site in all of their life stages. These species include: Bald eagle, band-tailed pigeon, black-throated gray warbler, brown creeper, bushtit, common yellowthroat, downy woodpecker, great blue heron, green heron, olive-sided flycatcher, orange-crowned warbler, pacific-slope flycatcher, pacific wren, pileated woodpecker, purple finch, red crossbill, rufous hummingbird, Swainson's thrush, varied thrush, Vaux's swift, western wood-pewee, white-breasted nuthatch, willow flycatcher, Wilson's warbler, and wood duck.

Table B: Quality of Natural Resource Functions in Resource Site SK8				
Resource Site (acres) = 40				
	Class 1/A	**Class 2/B**	**Class 3/C**	**Total**
Riparian Corridors*				
acres	9.5	2.9	1.5	14.0
percent total inventory site area	23.9%	7.3%	3.9%	35.1%
Wildlife Habitat*				
acres	0.0	13.2	0.0	13.2
percent total inventory site area	0.0%	33.3%	0.0%	33.3%
Special Habitat Areas**				
acres	0.0			
percent total inventory site area	0.0%			
Combined Total+				
acres	2.4	4.1	0.1	6.6
percent total inventory site area	23.9%	11.0%	0.2%	35.1%

* Class I riparian resources, Special Habitat Areas, and wildlife habitat include open water.

** Metro Title 13 designated all Special Habitat Areas as Class I riparian corridors.

+Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.

Stormwater runs off impervious surfaces (e.g., rooftops, driveways, parking areas, streets, etc..) rapidly. Without a place to retain the water (such as wetlands or adequate stormwater facilities), stormwater runoff results in spikes in stream levels which can cause or exacerbate flooding and increase stream erosion. In addition, when water runs off quickly, it does not have a chance to infiltrate and recharge streams or aquifers to provide water during drier periods.

The type and capacity of stormwater facilities to manage the runoff from impervious surfaces varies in the city, affecting the local rate and amount of runoff, and the amount of pollutants in the water. Much of the city was developed prior to any stormwater regulations and receives limited or no management prior to discharging to pipes and surface waters.

Table C shows the total amount of impervious area within the resource site and how much of that impervious area lacks stormwater management; the percentage of total impervious area that is not managed is called "effective impervious area." The higher the percent of effective impervious area in a watershed, the greater the negative impacts of stormwater runoff to streams. Stream science indicates that when effective impervious area reaches 10% of a watershed, negative stream impacts become significant; and at 25%, these impacts on waterways can be substantial. An additional consideration is the differences in soil conditions and other factors that influence the ability of pervious areas to retain, infiltrate or filter pollutants from stormwater. For example, a mature forest is much more effective in managing stormwater than a manicured lawn; both areas would have a lower effective impervious surface percentage than a developed site, but they have different outcomes for stormwater management.

For resource site SK8, 3.1% of the total area is effectively impervious. This indicates a significant degree of stormwater management and/or existing natural resources that should be preserved. Areas with very low impervious cover and existing vegetation are more likely to be functioning properly to support biologic systems.

Table C. Impervious Area within Resource Site SK8

Total area (acres)	Total impervious Area (acres)	Total unmanaged impervious area* (acres)	Percent of resource site that is effectively impervious
38.7	10.5	1.2	3.1%

*Total unmanaged impervious area refers to the number of acres within a resource area that receives no formal stormwater management measures to regulate flow or treat pollutants before they reach surface waters, also referred to as effective impervious area.

Metro Title 13 and Oregon Goal 5 Compliance

The following information supplements evaluation of natural resource protections presented in Volume 3 and supports compliance with Metro Title 13 and Oregon Plan Goal 5.

Title 13 Habitat Conservation Areas

Map G presents the Habitat Conservation Areas (HCA) within the resource site SK8. Natural resources should be protected within HCA as follows:

1. *Strictly limit* or *limit* conflicting uses within Class I/High Rank Riparian Areas in all Urban Development Areas.
2. *Strictly limit* or *limit* conflicting uses within Class II/Medium Rank Riparian Areas within Moderate and Low Value Urban Development Area as well as parks and open spaces.
3. *Strictly limit* or *limit* conflicting uses within Class A/High or B/Medium Rank Wildlife Habitat within parks and open spaces.
4. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class III/Low Rank Riparian Areas in all Urban Development Areas.
5. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class A/High, Class B/Medium or Class C/Low Rank Wildlife Habitat in all Urban Development Area, expect parks and open space.

Strictly limiting or *limiting* conflicting uses in HCA will protect and conserve existing streams and wetlands to maintain significant natural resource functions including: 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 fish and wildlife habitat. *Strictly limiting* or *limiting* conflicting uses in HCA will allow for additional urban development that is sensitive to the natural resource features and requires mitigation for unavoidable negative impacts to features and functions. The recommendation will also contribute towards meeting other regulatory requirements including the Metro Title 3, Water Quality and Flood Management; Oregon Goal 6, Air, Water and Land Resources Quality; Oregon Goal 7, Areas Subject to Natural Hazards; the Clean Water Act; and the Endangered Species Act.

Goal 5 Significant Natural Resources

Resource site SK8 contains natural resource features that are not a Title 13 HCA and are therefore subject to Statewide Planning Goal 5 OAR 660-023-0110. The General ESEE analysis, Volume 3, 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.

The common impacts of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; adding impervious surface; modifying streams, wetlands and flood areas; 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. 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.

The analysis of economic, social, environmental and energy consequences provided in Volume 3 is confirmed for resource site SK8, with the following additional information that clarifies the analysis.

Strictly limiting or *limiting* conflicting uses would retain the wildlife habitat functions provided by significant natural resource features including maintaining habitat for at risk plant, fish and wildlife species, 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 Class A or Class B wildlife habitat should be required.

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*.

Natural Resources Protection Decisions

Based on the analysis presented in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation for SK8, the following decisions are applied to protect the significant riparian corridors and wildlife habitat:

1. Apply a protection overlay zone ('p' zone) to stream channels from top-of-bank to top-of-bank, wetlands and land within 50 feet of stream top-of-bank or 25 feet of wetlands.
2. In dedicated natural resource tracts, apply a protection overlay zone ('p' zone) to areas of forest or woodland vegetation that are contiguous to but more than 50 feet from stream top-of-bank.
3. Outside of resource tracts, apply a conservation overlay zone ('c' zone) to areas of forest vegetation that are contiguous to but more than 50 feet from stream top-of-bank.
4. Apply a conservation overlay zone ('c' zone) to land between 25 and 50 feet of wetlands.
5. Allow conflicting uses within all other areas containing significant natural resources.

As part of creating subdivisions, large areas of forest and woodland vegetation surrounding streams were placed in common-ownership conservation tracts. The streams and contiguous tree canopy are maintained by the homeowners for protection of the resources.

Resource Site No.: SK9 **Resource Site Name:** Cedar Mill Creek Headwaters

Previous Plan: Multnomah County Urban Lands
Previous Resource Site No.: 111

The results of the analysis found in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation, are presented in the following maps:

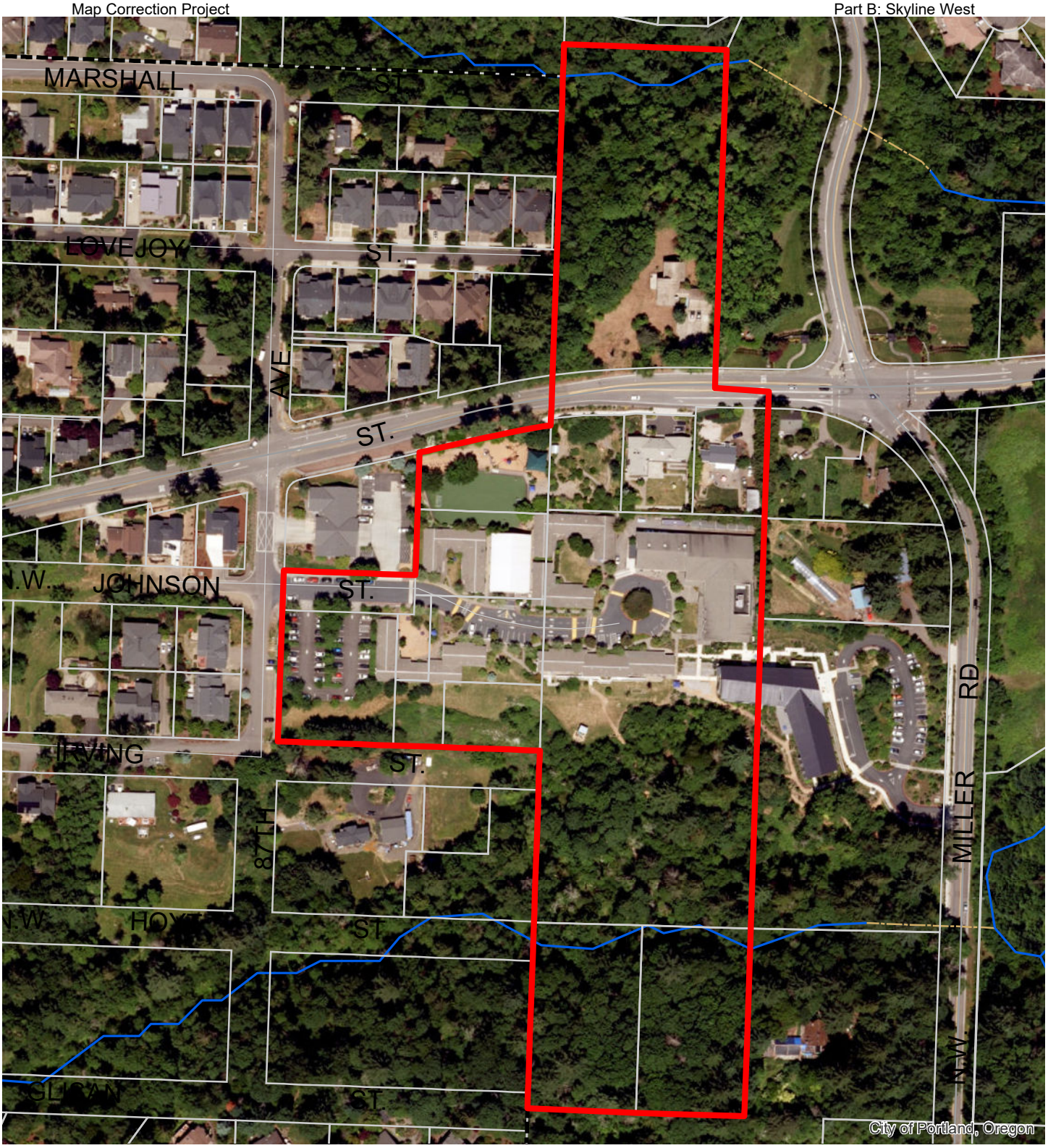
A. Water Features – rivers, streams, wetlands and flood areas
B. Land Features – forest, woodland, shrubland and herbaceous vegetation, steep slopes
C. Special Habitat Areas
D. Riparian Corridor Classifications
E. Wildlife Habitat Classifications
F. Urban Development Value
G. Metro Title 13 Habitat Conservation Areas
H. Statewide Planning Goal 5 Areas
I. Recommended Natural Resource Protections

Following the maps, additional information about existing natural resource features and functions in the resource site is presented.

Implementation of the results is found in Volume 1, Part B, updates to zoning maps and zoning code.

Resource site SK9 includes the following:

Site (acres)	14.6
Base zones (acres)	
R10	14.6



Map A: Water Features

Resource Site: SK9

Updated: May 2022

Resource Sites
Urban Service Boundary
Taxlots
Wetlands
Rivers
Open stream channel
Piped Stream Segment
Flood Area

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NORTH

0 105 210 Feet

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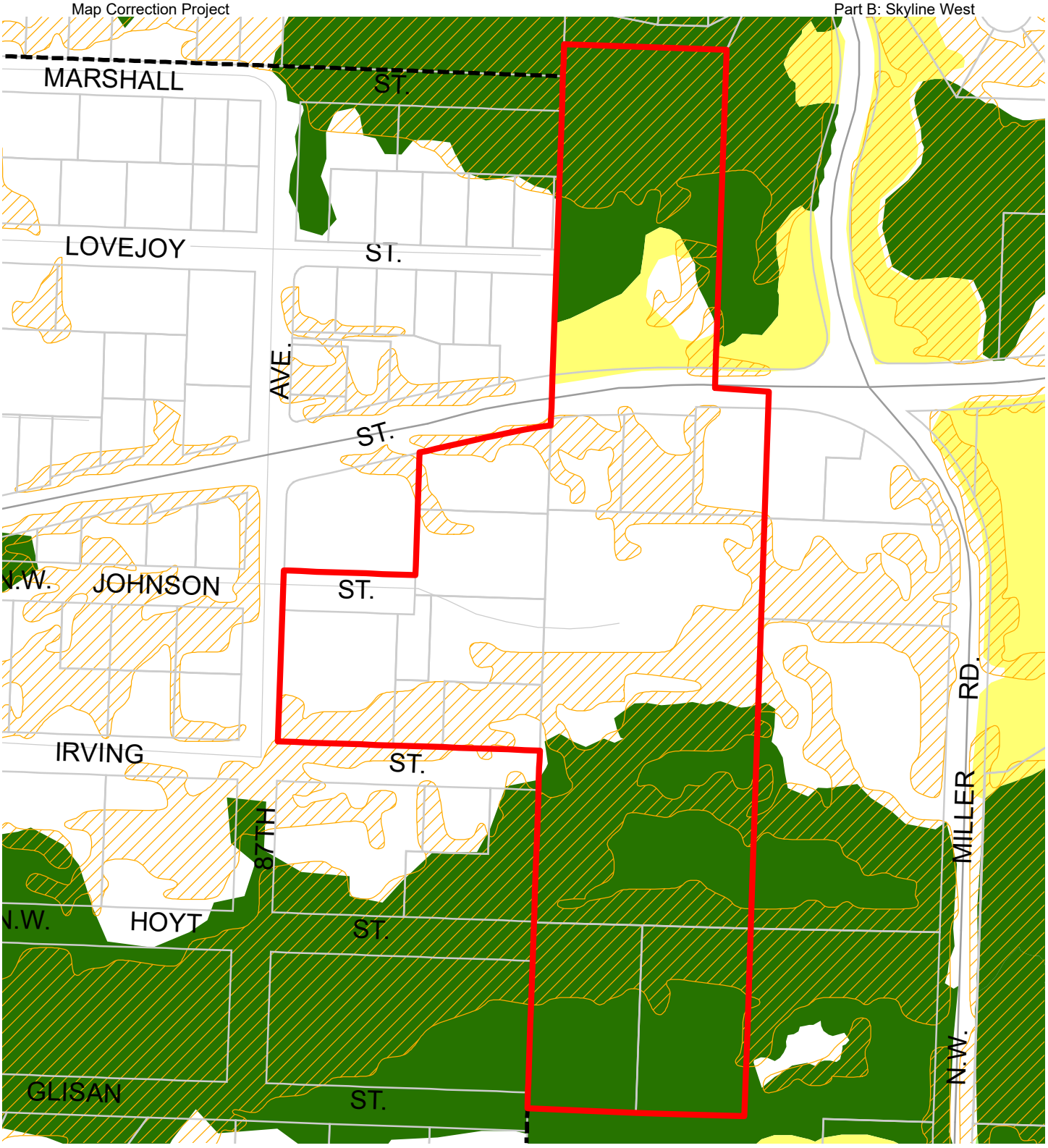


Map B: Vegetation and Steep Slopes

Resource Site: SK9

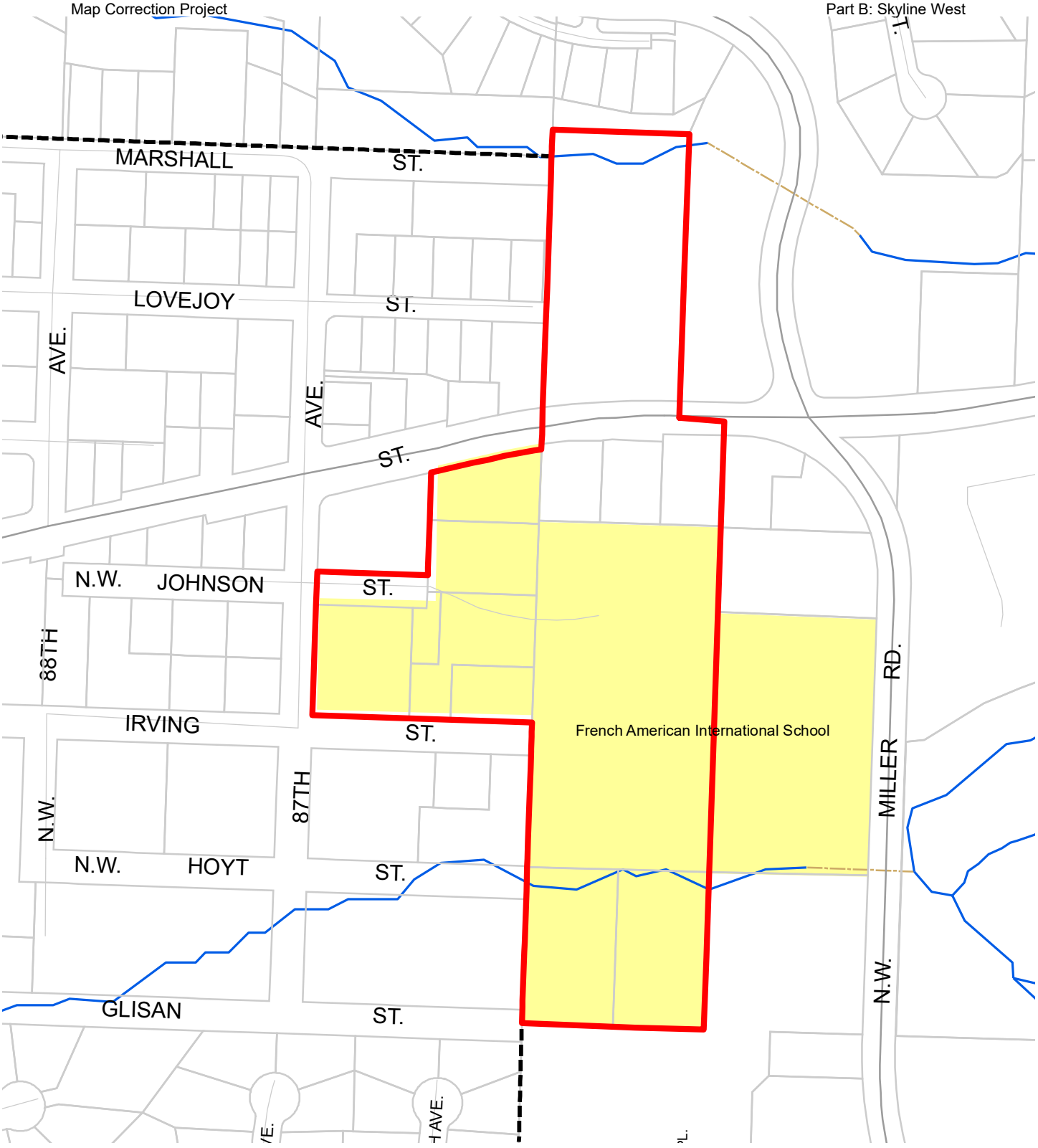
Updated: May 2022

NORTH

0 150 300 Feet

Resource Sites
Urban Service Boundary
Taxlots
Forest
Woodland
Shrubland
Herbaceous

May 2022



Map C: Special Habitat Areas

Resource Site: SK9

Updated: May 2022

NORTH

0 140 280 Feet

Resource Sites
Special Habitat Areas (SHAs)
Open Stream Channel
Piped Stream Segment
Parks
Schools
Urban Service Boundary
Taxlots

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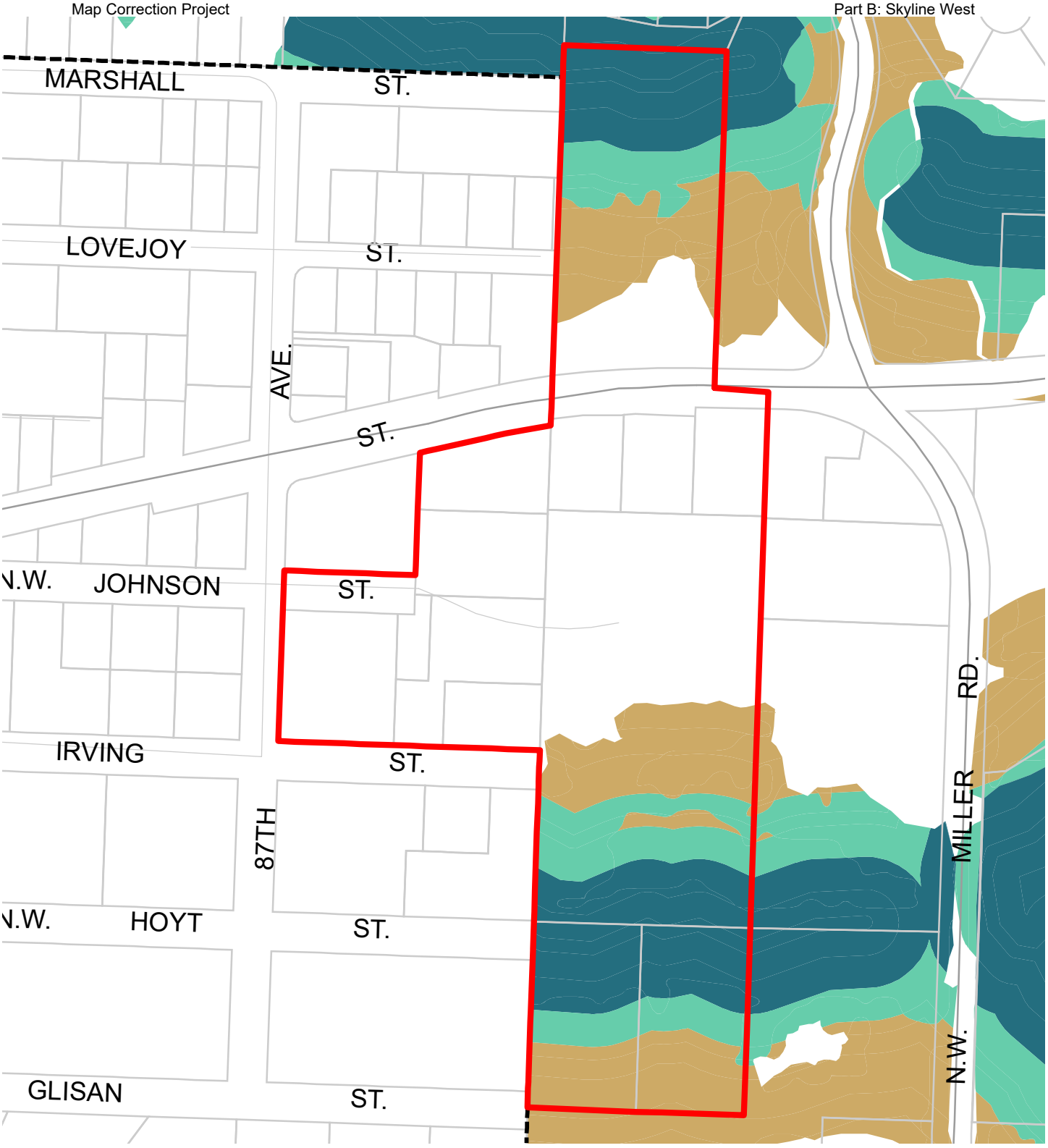

Map D: Riparian Corridors Habitat Classification

Resource Site: SK9

Updated: May 2022

Class I (high rank)
Class II (medium rank)
Class III (low rank)
Resource Sites
Urban Service Boundary
Taxlots

NORTH

0 110 220 Feet

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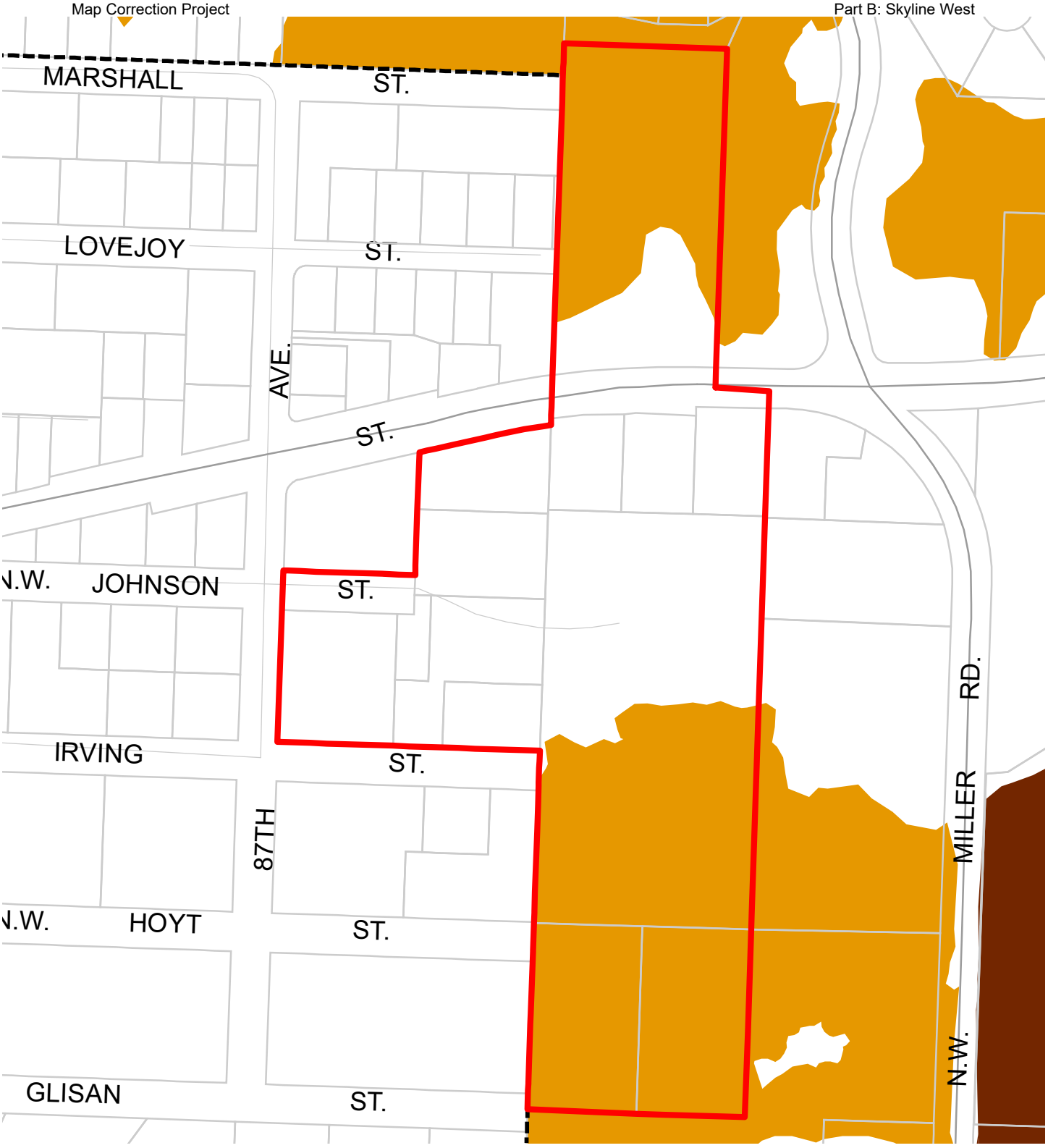


Map E: Wildlife Habitat Classification

Resource Site: SK9

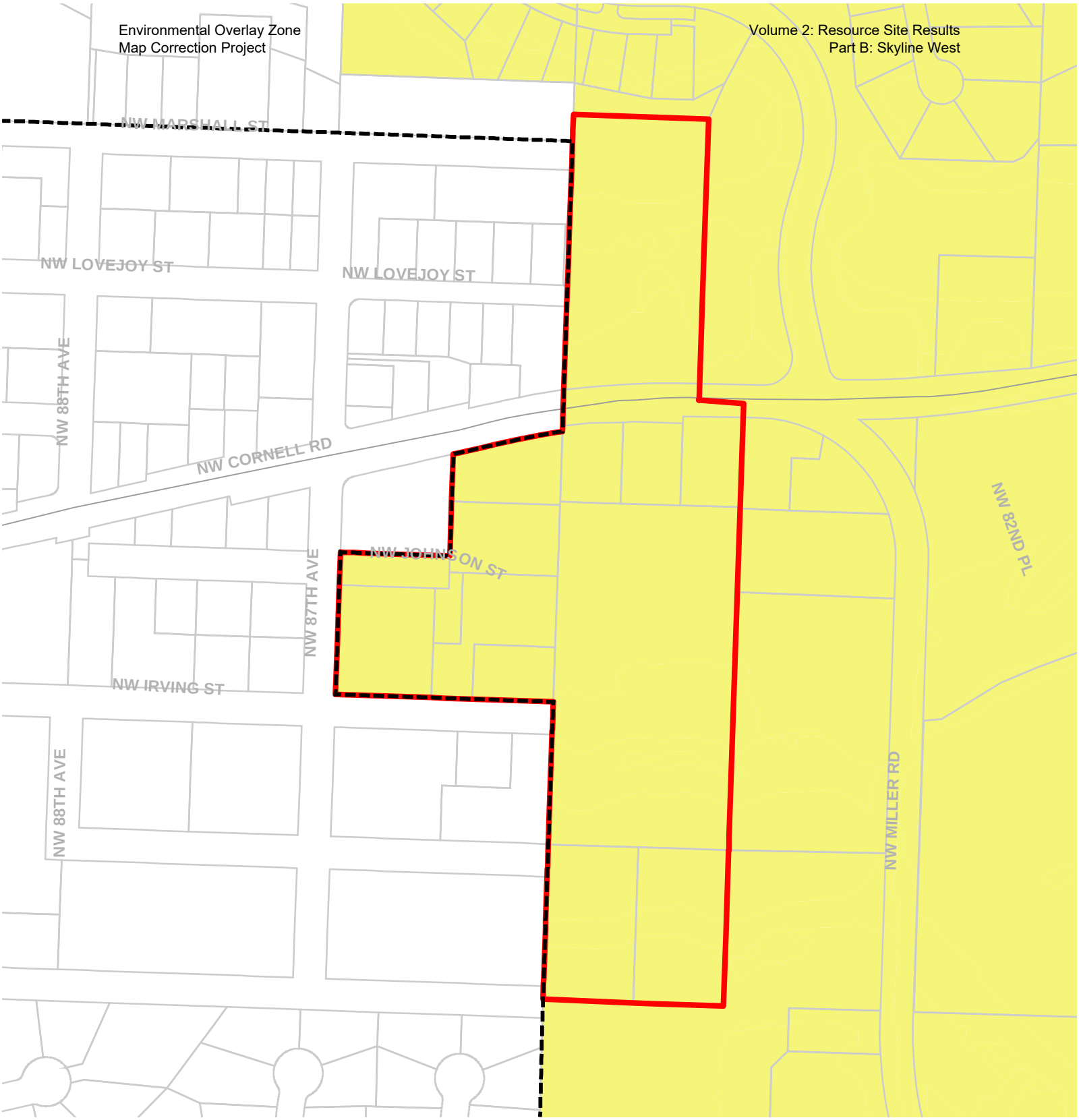
Updated: May 2022

NORTH

0 87.5 175 Feet

Resource Sites
Class A (high rank)
Class B (medium rank)
Class C (low rank)
Urban Service Boundary
Taxlots

May 2022



Map F: Urban Development Value (Title 13)
Resource Site: SK9

- Urban Service Boundary
- Resource Sites
- High Development Value
- Medium Development Value
- Low Development Value
- Parks

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Updated: July 2021

NORTH

0 165 330 Feet

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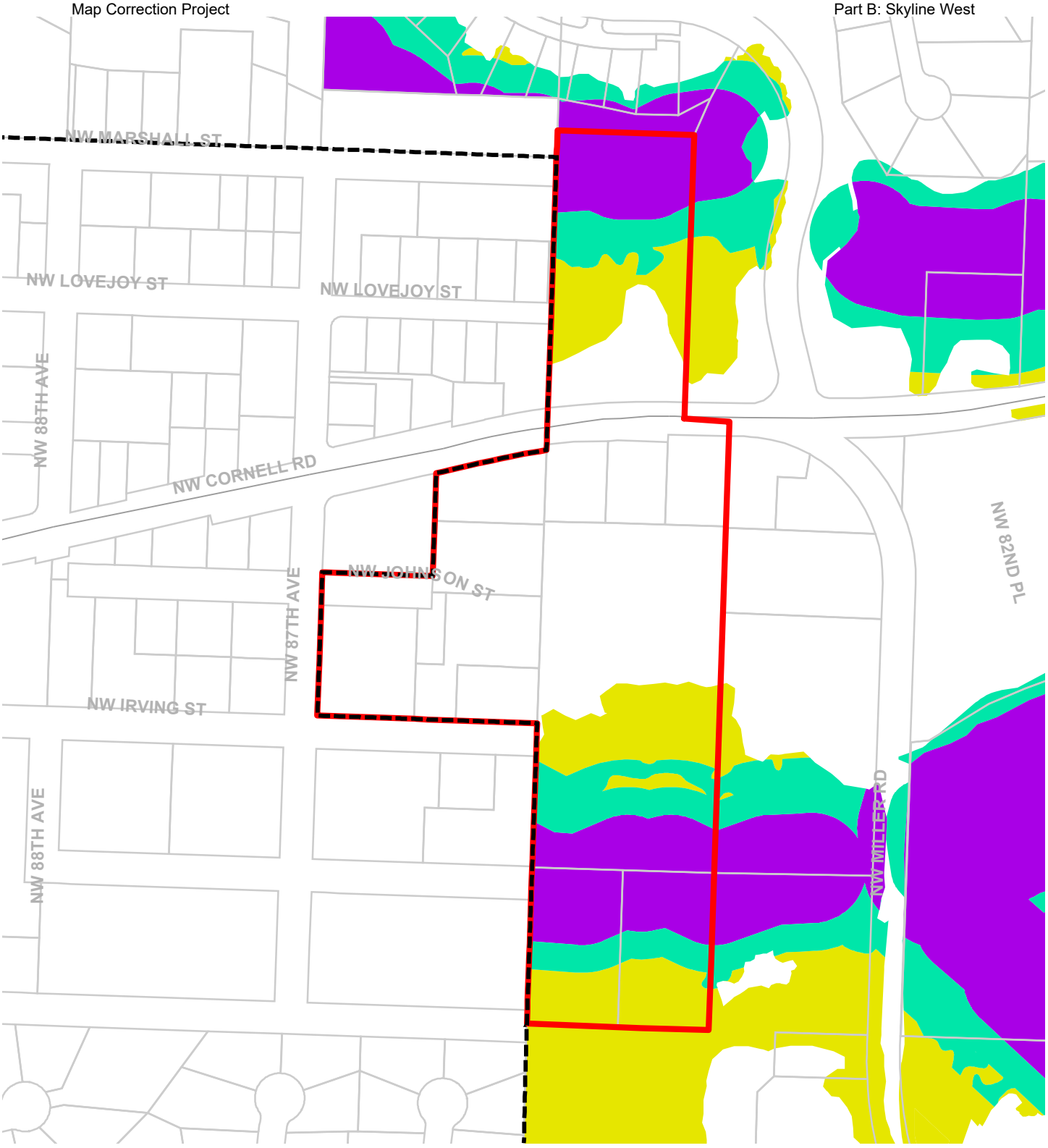

Map G: Title 13 Habitat Conservation Areas (HCA) and Goal 5 Areas

Resource Site: SK9

Updated: May 2022

NORTH

0 175 350 Feet

Recommended Draft - As Amended

- Urban Service Boundary
- Resource Sites
- HCA High Value
- HCA Moderate Value
- HCA Low Value
- Goal 5 Significant Natural Resources

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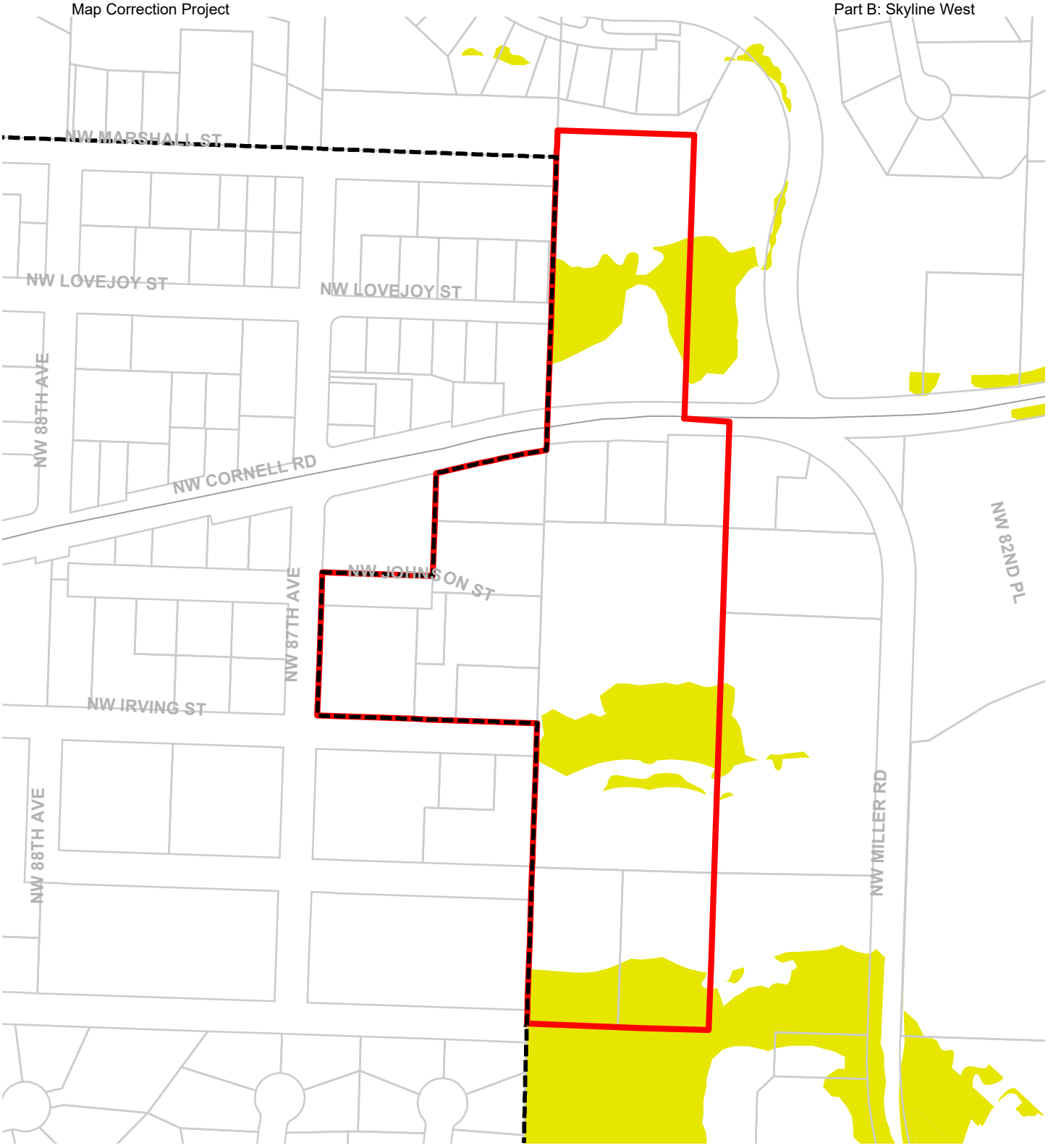
May 2022



Map H: Goal 5 Resources

Resource Site: SK9

Updated: May 2022

NORTH

0 175 350 Feet

Recommended Draft - As Amended

- Urban Service Boundary
- Resource Sites
- Goal 5 Significant Natural Resources

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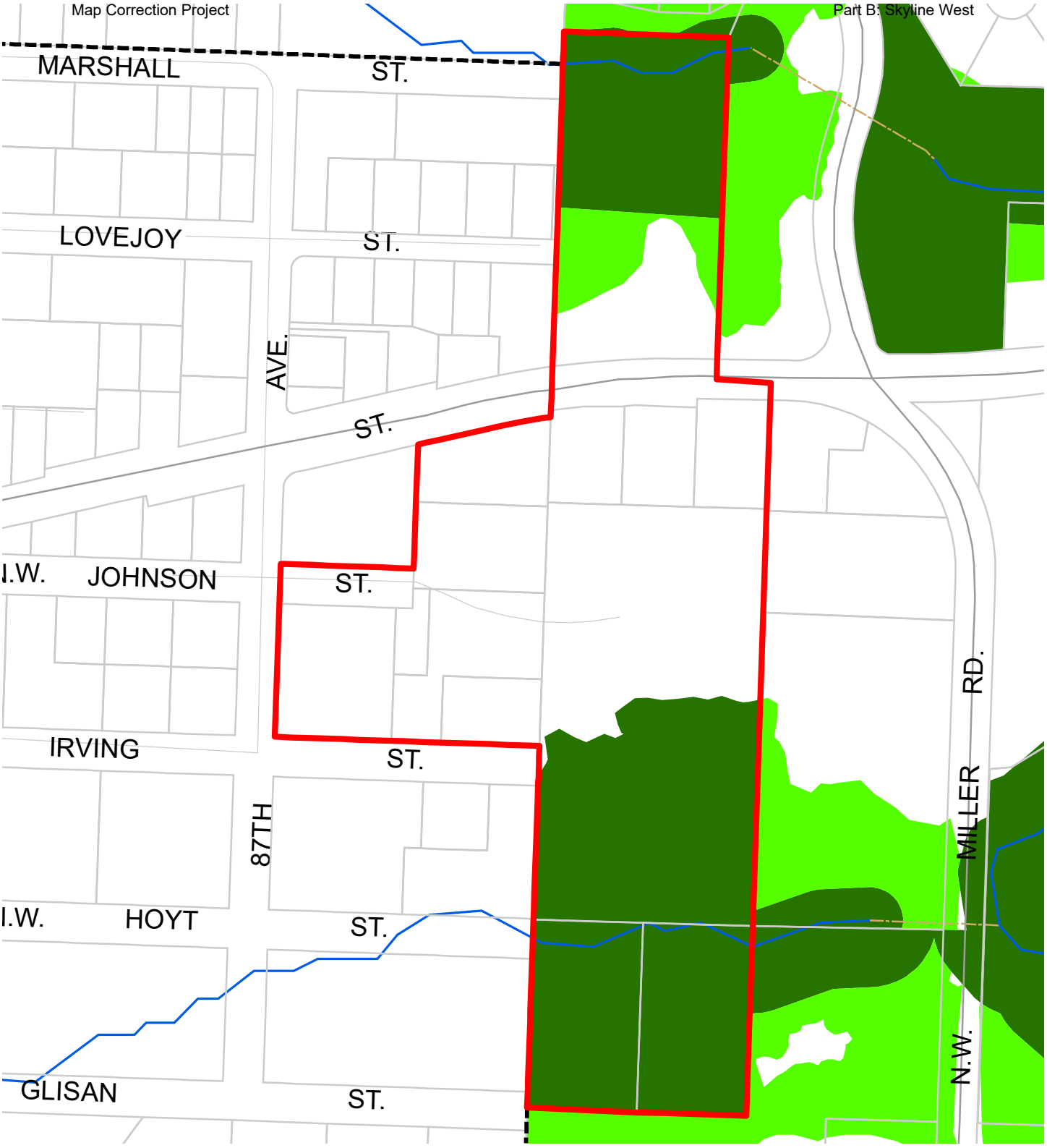
May 2022



Map I: DRAFT Proposed Environmental Overlay Zones

Resource Site:

SK9

Updated: May 2022

Resource Sites
Open Stream Channel
Piped Stream Segment
Proposed Conservation Zone
Proposed Protection Zone
Urban Service Boundary
Taxlots

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NORTH
0 115 230 Feet

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Natural Resource Description

Within resource site SK9 the following significant natural resource features and functions are present:

Significant Riparian Corridor Features: open stream; land within 50 feet of waterbodies; forest, woodland, shrubland and herbaceous vegetation within 300 feet of waterbodies; and forest vegetation on steep slopes (>25% slope) contiguous to and within 780 feet of waterbodies.

Significant Wildlife Habitat Features: forest patches, and associated and contiguous wetlands, two acres in size or larger.

Special Habitat Areas: None

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.

Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; reduction of noise, light and vibration; and habitat patches that support special status fish and wildlife species.

Table A: Quantity of Natural Resource Features in Resource Site SK9	
	Study Area
Stream (Miles)	0.1
Wetlands (acres)	0.0
Vegetated Areas >= 1/2 acre (acres)	
Forest (acres)	6.6
Woodland (acres)	0.0
Shrubland (acres)	0.0
Herbaceous (acres)	0.6
Flood Area*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Steep Slopes (acres)**	6.3
* 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 areas with a slope greater than 25%.	

Cedar Mill Creek tributary streams cross this resource site from east to west. The coastal giant salamander may use the forested areas associated with the streams.

Numerous bird species have been known to use this resource site. These species include: Bald eagle, band-tailed pigeon, black-throated gray warbler, brown creeper, bushtit, common yellowthroat, downy woodpecker, great blue heron, green heron, olive-sided flycatcher, orange-crowned warbler, pacific-slope flycatcher, pacific wren, pileated woodpecker, purple finch, red crossbill, rufous hummingbird, Swainson's thrush, varied thrush, Vaux's swift, western wood-pewee, white-breasted nuthatch, willow flycatcher, and Wilson's warbler.

Table B: Quality of Natural Resource Functions in Resource Site SK9

Resource Site (acres) = 15				
	Class 1/A	**Class 2/B**	**Class 3/C**	**Total**
Riparian Corridors*				
acres	2.4	1.6	2.6	6.6
percent total inventory site area	16.7%	10.7%	18.0%	45.4%
Wildlife Habitat*				
acres	0.0	6.6	0.0	6.6
percent total inventory site area	0.0%	44.9%	0.0%	44.9%
Special Habitat Areas**				
acres	0.0			
percent total inventory site area	0.0%			
Combined Total+				
acres	2.4	4.1	0.1	6.6
percent total inventory site area	16.7%	28.2%	0.5%	45.4%

* Class I riparian resources, Special Habitat Areas, and wildlife habitat include open water.

** Metro Title 13 designated all Special Habitat Areas as Class I riparian corridors.

+Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.

Stormwater runs off impervious surfaces (e.g., rooftops, driveways, parking areas, streets, etc..) rapidly. Without a place to retain the water (such as wetlands or adequate stormwater facilities), stormwater runoff results in spikes in stream levels which can cause or exacerbate flooding and increase stream erosion. In addition, when water runs off quickly, it does not have a chance to infiltrate and recharge streams or aquifers to provide water during drier periods.

The type and capacity of stormwater facilities to manage the runoff from impervious surfaces varies in the city, affecting the local rate and amount of runoff, and the amount of pollutants in

the water. Much of the city was developed prior to any stormwater regulations and receives limited or no management prior to discharging to pipes and surface waters.

Table C shows the total amount of impervious area within the resource site and how much of that impervious area lacks stormwater management; the percentage of total impervious area that is not managed is called "effective impervious area." The higher the percent of effective impervious area in a watershed, the greater the negative impacts of stormwater runoff to streams. Stream science indicates that when effective impervious area reaches 10% of a watershed, negative stream impacts become significant; and at 25%, these impacts on waterways can be substantial. An additional consideration is the differences in soil conditions and other factors that influence the ability of pervious areas to retain, infiltrate or filter pollutants from stormwater. For example, a mature forest is much more effective in managing stormwater than a manicured lawn; both areas would have a lower effective impervious surface percentage than a developed site, but they have different outcomes for stormwater management.

For resource site SK9, 1.3% of the total area is effectively impervious. This indicates a significant degree of stormwater management and/or existing natural resources that should be preserved. Areas with very low impervious cover and existing vegetation are more likely to be functioning properly to support biologic systems.

Table C. Impervious Area within Resource Site SK9

Total area (acres)	Total impervious Area (acres)	Total unmanaged impervious area* (acres)	Percent of resource site that is effectively impervious
14.6	0.3	0.2	1.3%

*Total unmanaged impervious area refers to the number of acres within a resource area that receives no formal stormwater management measures to regulate flow or treat pollutants before they reach surface waters, also referred to as effective impervious area.

Metro Title 13 and Oregon Goal 5 Compliance

The following information supplements evaluation of natural resource protections presented in Volume 3 and supports compliance with Metro Title 13 and Oregon Plan Goal 5.

Title 13 Habitat Conservation Areas

Map G presents the Habitat Conservation Areas (HCA) within the resource site SK9. Natural resources should be protected within HCA as follows:

1. *Strictly limit* or *limit* conflicting uses within Class I/High Rank Riparian Areas in all Urban Development Areas.
2. *Strictly limit* or *limit* conflicting uses within Class II/Medium Rank Riparian Areas within Moderate and Low Value Urban Development Area as well as parks and open spaces.
3. *Strictly limit* or *limit* conflicting uses within Class A/High or B/Medium Rank Wildlife Habitat within parks and open spaces.
4. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class III/Low Rank Riparian Areas in all Urban Development Areas.
5. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class A/High, Class B/Medium or Class C/Low Rank Wildlife Habitat in all Urban Development Area, expect parks and open space.

Strictly limiting or *limiting* conflicting uses in HCA will protect and conserve existing streams and wetlands to maintain significant natural resource functions including: 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 fish and wildlife habitat. *Strictly limiting* or *limiting* conflicting uses in HCA will allow for additional urban development that is sensitive to the natural resource features and requires mitigation for unavoidable negative impacts to features and functions. The recommendation will also contribute towards meeting other regulatory requirements including the Metro Title 3, Water Quality and Flood Management; Oregon Goal 6, Air, Water and Land Resources Quality; Oregon Goal 7, Areas Subject to Natural Hazards; the Clean Water Act; and the Endangered Species Act.

Goal 5 Significant Natural Resources

Resource site SK9 contains natural resource features that are not a Title 13 HCA and are therefore subject to Statewide Planning Goal 5 OAR 660-023-0110. The General ESEE analysis, Volume 3, 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.

The common impacts of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; adding impervious surface; modifying streams, wetlands and flood areas; 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 base zones. 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.

The analysis of economic, social, environmental and energy consequences provided in Volume 3 is confirmed for resource site SK9, with the following additional information that clarifies the analysis.

Strictly limiting or *limiting* conflicting uses would retain the wildlife habitat functions provided by significant natural resource features including maintaining habitat for at risk plant, fish and wildlife species, 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 Class A or Class B wildlife habitat should be required.

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*.

Natural Resources Protection Decisions

Based on the analysis presented in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation for SK9, the following decisions are applied to protect the significant riparian corridors and wildlife habitat:

1. Apply a protection overlay zone ('p' zone) to stream channels from top-of-bank to top-of-bank, wetlands and land within 50 feet of stream top-of-bank or 25 feet of wetlands.
2. Apply a protection overlay zone ('p' zone) to areas of forest vegetation that are contagious to but more than 50 feet from stream top-of-bank extending to 100 feet from top-of-bank.
3. Apply a conservation overlay zone ('c' zone) to land between 25 and 50 feet of wetlands; and within areas of forest vegetation that are contiguous to but more than 100 feet from stream top-of-bank.
4. Allow conflicting uses within all other areas containing significant natural resources.

Resource Site No.: SK10 **Resource Site Name:** NW Skyline & Brynwood

Previous Plan: Multnomah County Urban Lands
Previous Resource Site No.: 111

The results of the analysis found in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation, are presented in the following maps:

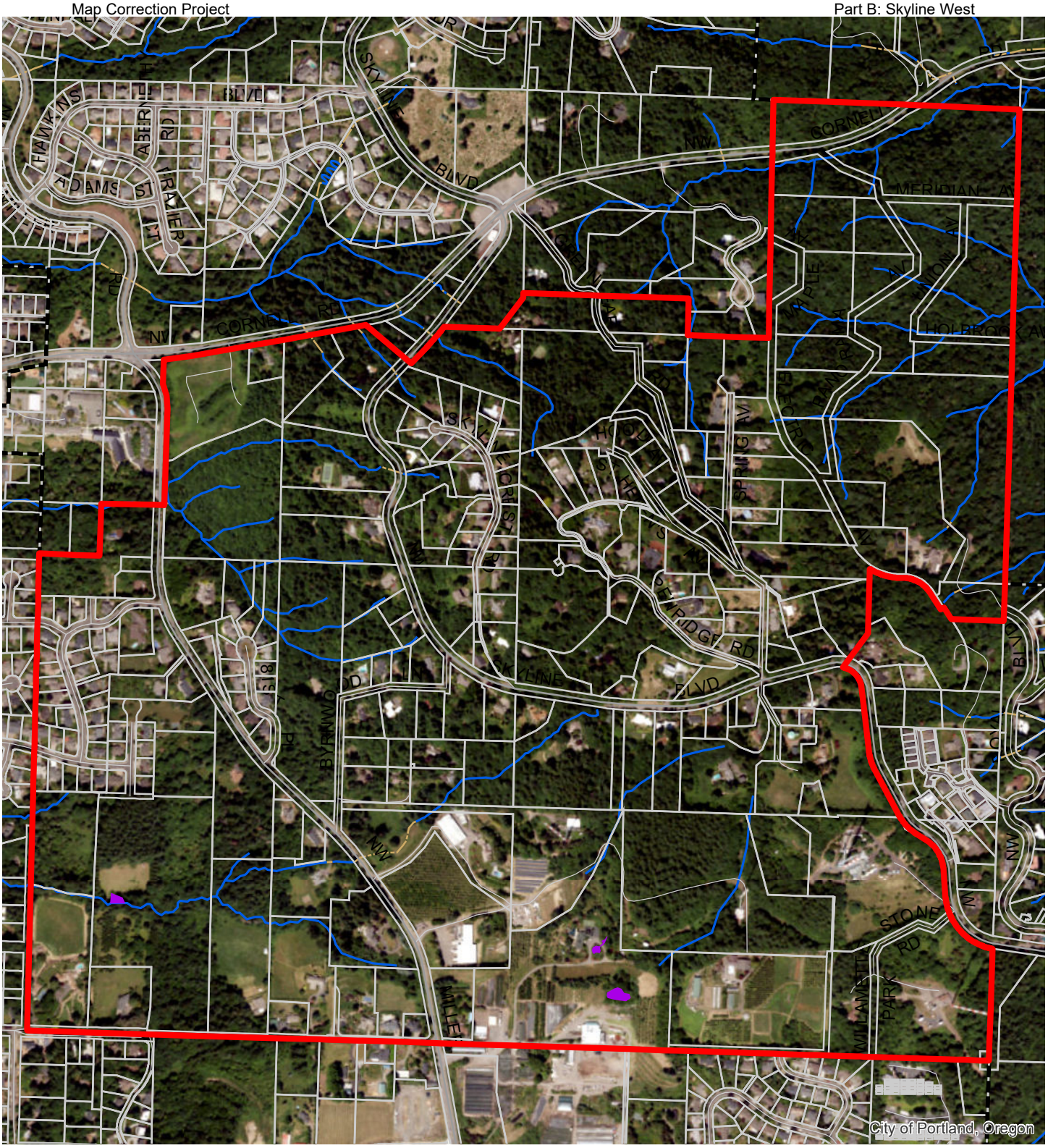
A. Water Features – rivers, streams, wetlands and flood areas
B. Land Features – forest, woodland, shrubland and herbaceous vegetation, steep slopes
C. Special Habitat Areas
D. Riparian Corridor Classifications
E. Wildlife Habitat Classifications
F. Urban Development Value
G. Metro Title 13 Habitat Conservation Areas
H. Statewide Planning Goal 5 Areas
I. Recommended Natural Resource Protections

Following the maps, additional information about existing natural resource features and functions in the resource site is presented.

Implementation of the results is found in Volume 1, Part B, updates to zoning maps and zoning code.

Resource site SK10 includes the following:

Site (acres)	475.3
Base zones (acres)	
R10	290.3
R20	105.1
RF	79.9



Map A: Water Features

Resource Site: SK10

Updated: May 2022

Resource Sites
Urban Service Boundary
Taxlots
Wetlands
Rivers
Open stream channel
Piped Stream Segment
Flood Area

NORTH

0 395 790 Feet

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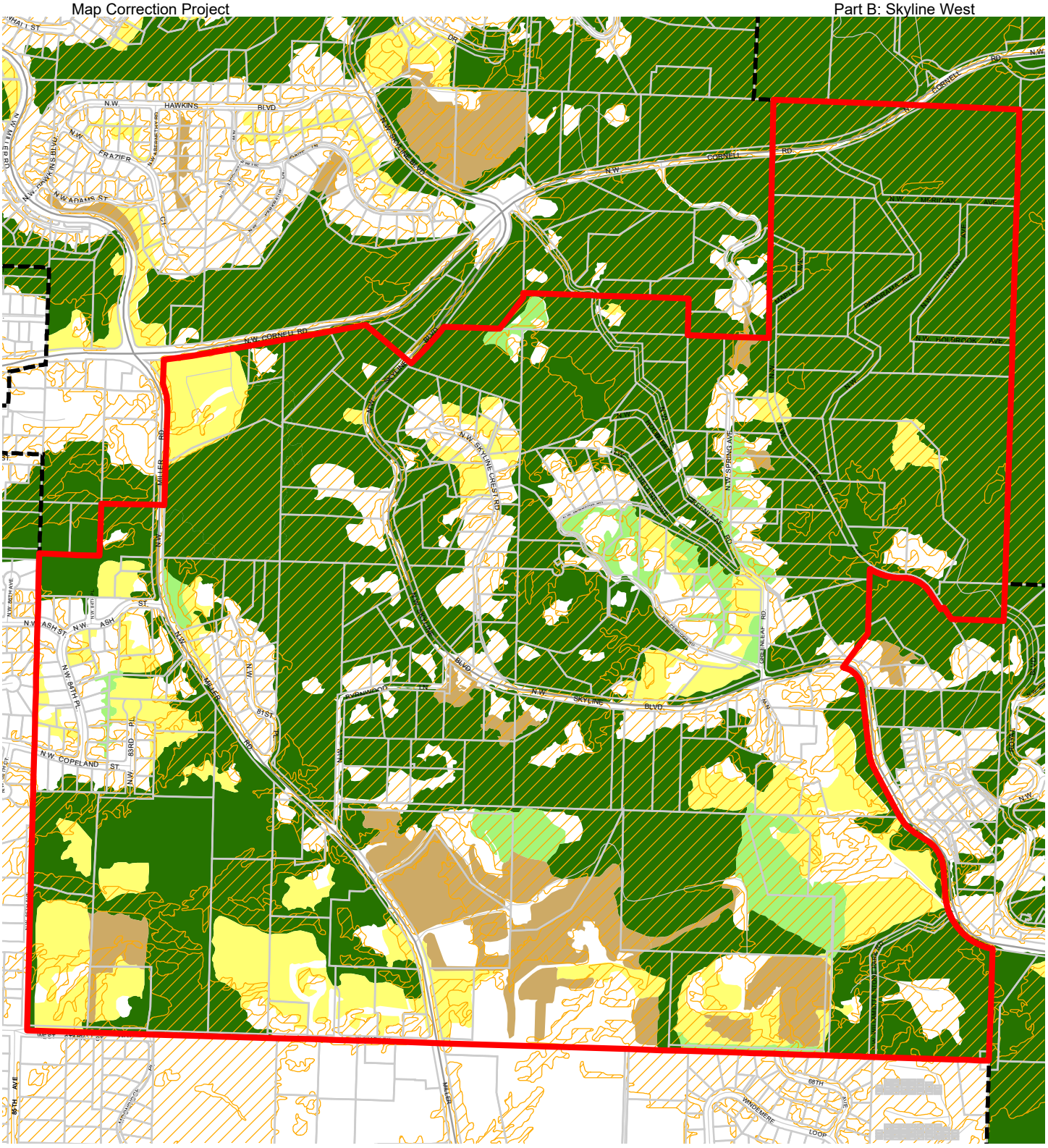

Map B: Vegetation and Steep Slopes

Resource Site: SK10

Updated: May 2022

NORTH

0 500 1,000 Feet

Recommended Draft - As Amended

- Resource Sites
- Urban Service Boundary
- Taxlots
- Forest
- Woodland
- Shrubland
- Herbaceous

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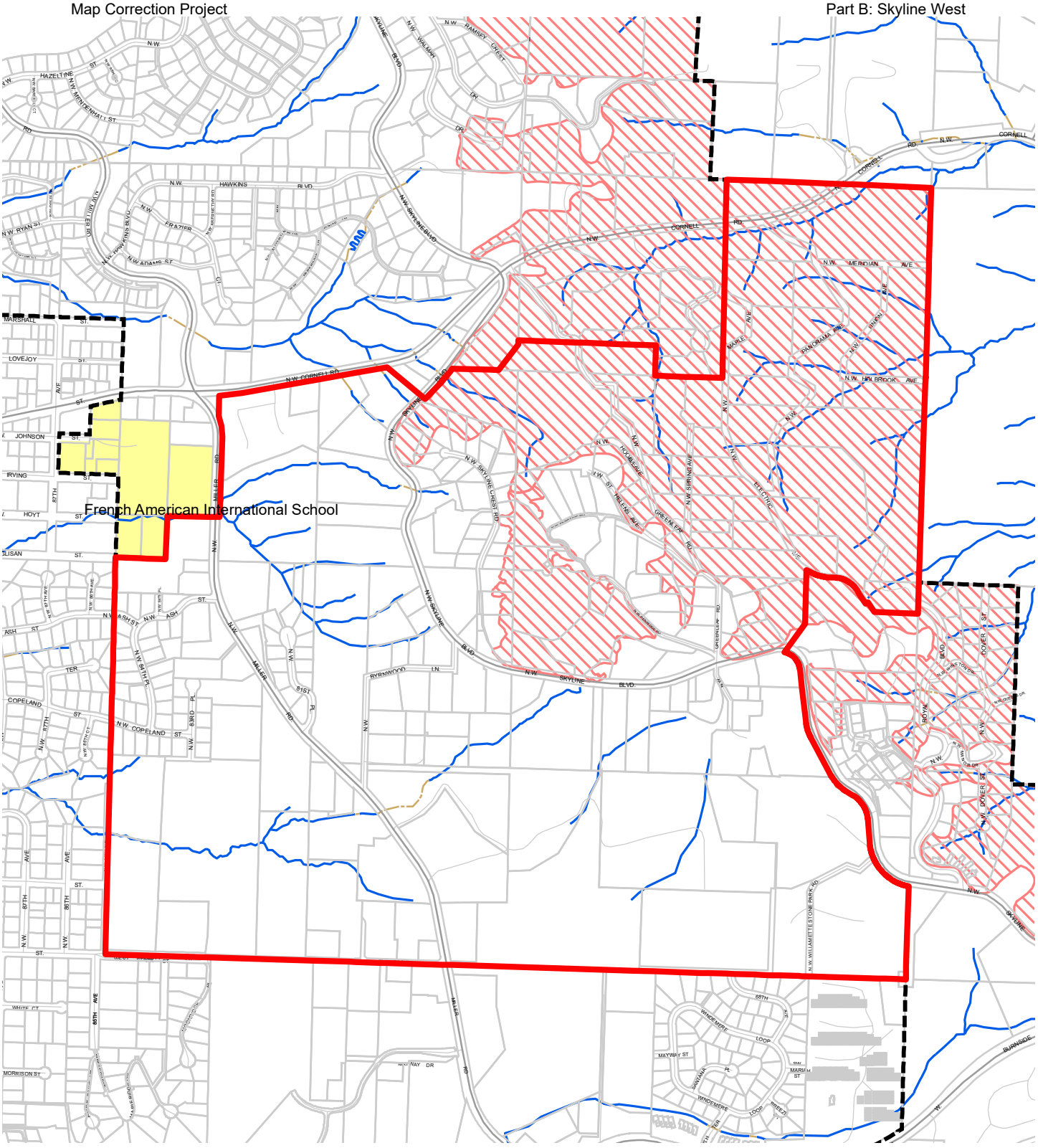
May 2022



Map C: Special Habitat Areas

Resource Site: SK10

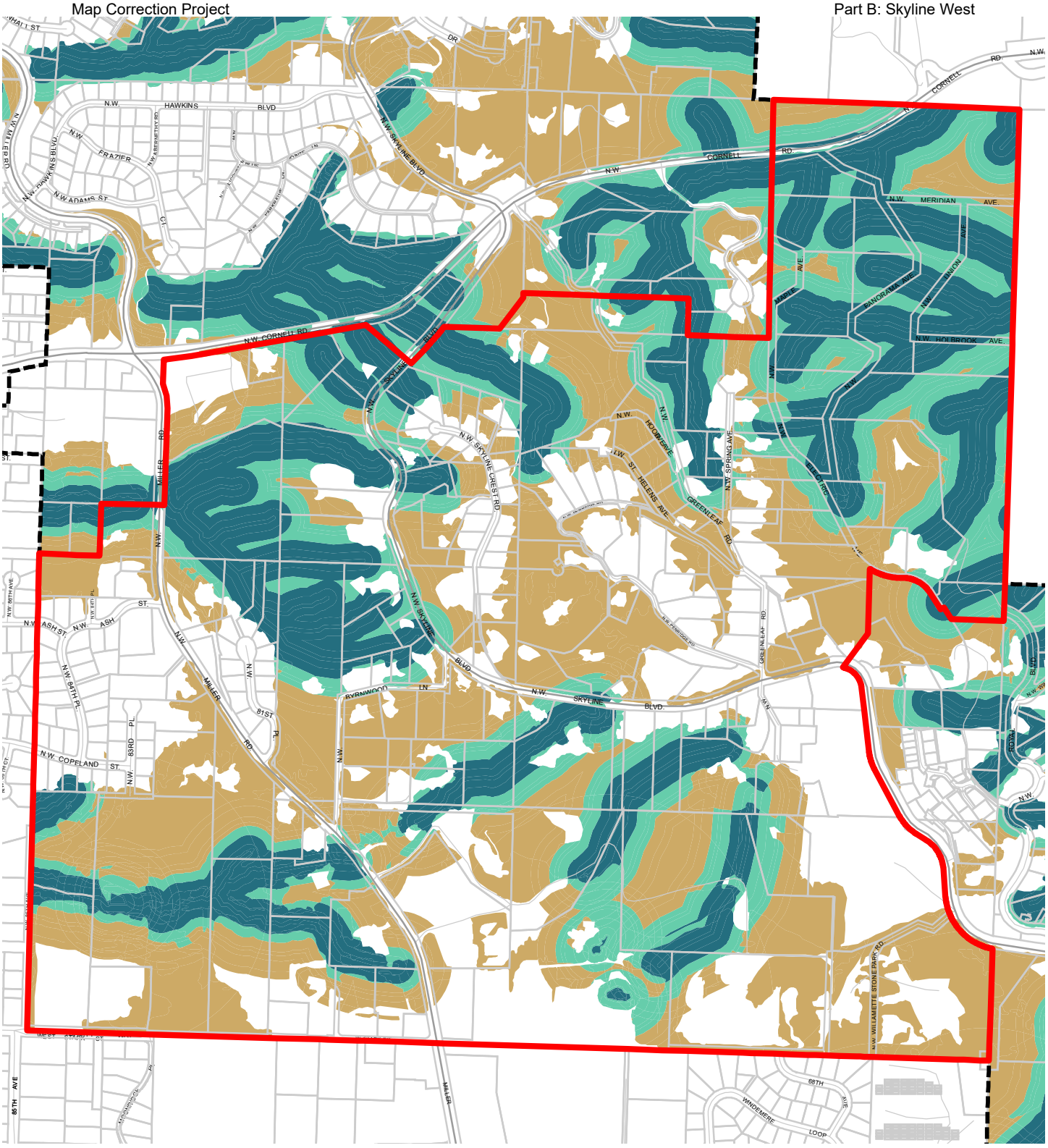
Updated: May 2022

NORTH

0 500 1,000 Feet

- Resource Sites
- Special Habitat Areas (SHAs)
- Open Stream Channel
- Piped Stream Segment
- Parks
- Schools
- Urban Service Boundary
- Taxlots

The information on the 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 services. To request these services, contact 503-823-7700, City TTY 503-823-6868, Relay Service: 711.



Map D: Riparian Corridors Habitat Classification

Resource Site: SK10

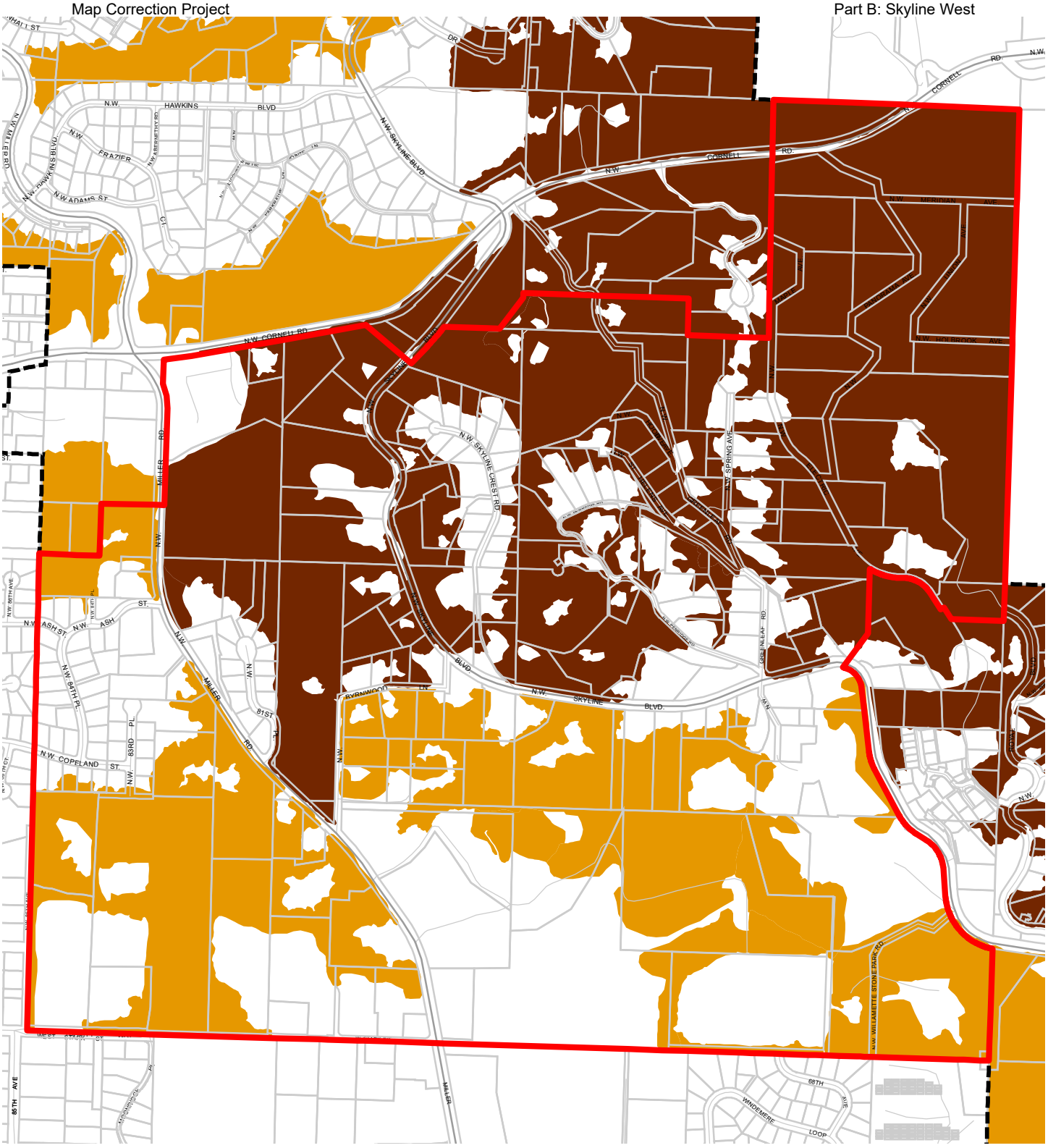
Updated: May 2022

Class I (high rank)
Class II (medium rank)
Class III (low rank)
Resource Sites
Urban Service Boundary
Taxlots

NORTH

0 395 790 Feet

The information on the 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 services. To request these services, contact 503-823-7700, City TTY 503-823-6868, Relay Service: 711.



Map E: Wildlife Habitat Classification

Resource Site: SK10

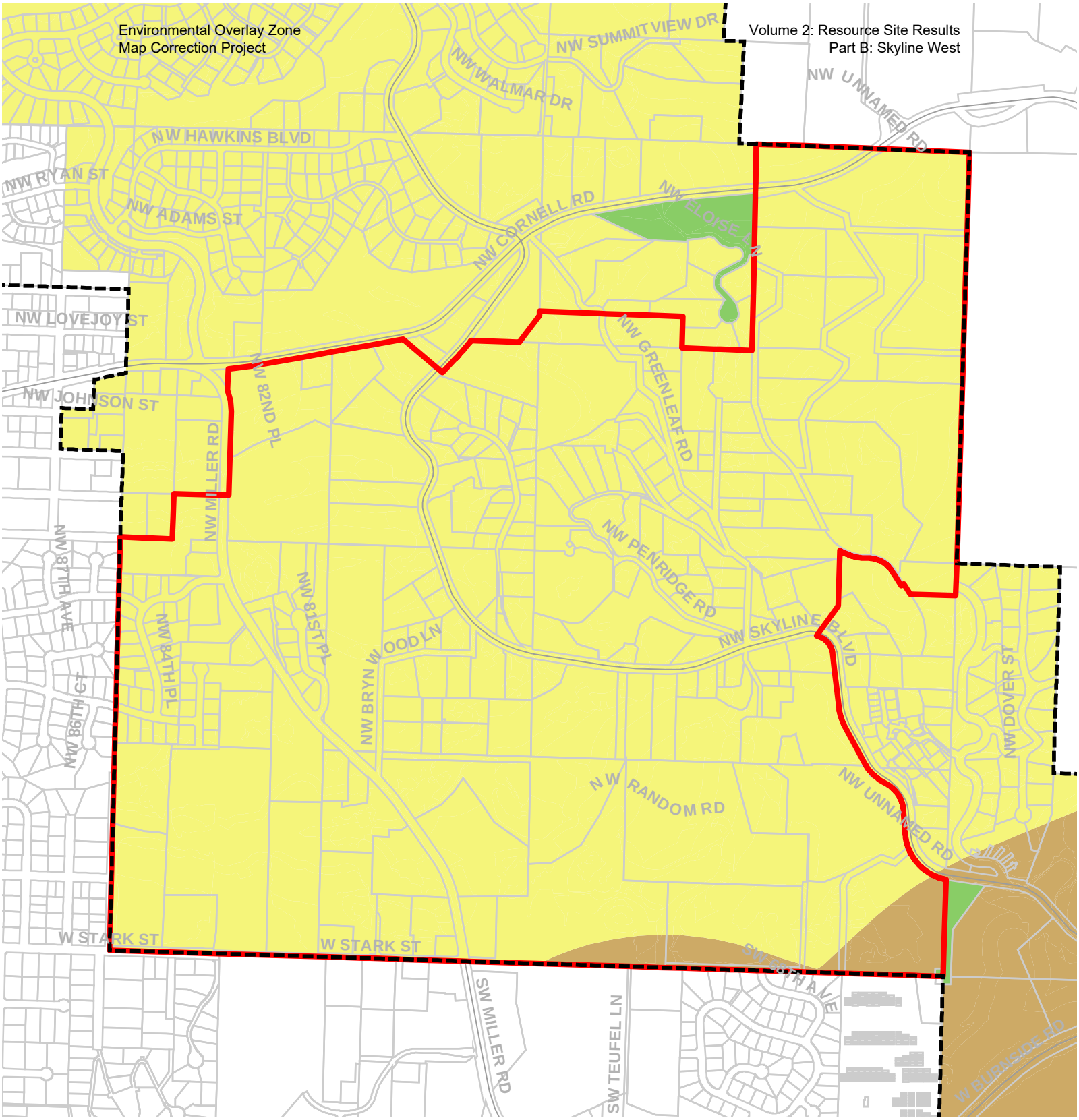
Updated: May 2022

NORTH

0 320 640 Feet

- Resource Sites
- Class A (high rank)
- Class B (medium rank)
- Class C (low rank)
- Urban Service Boundary
- Taxlots

[redacted]



Map F: Urban Development Value (Title 13)
Resource Site: SK10

- Urban Service Boundary
- Resource Sites
- High Development Value
- Medium Development Value
- Low Development Value
- Parks

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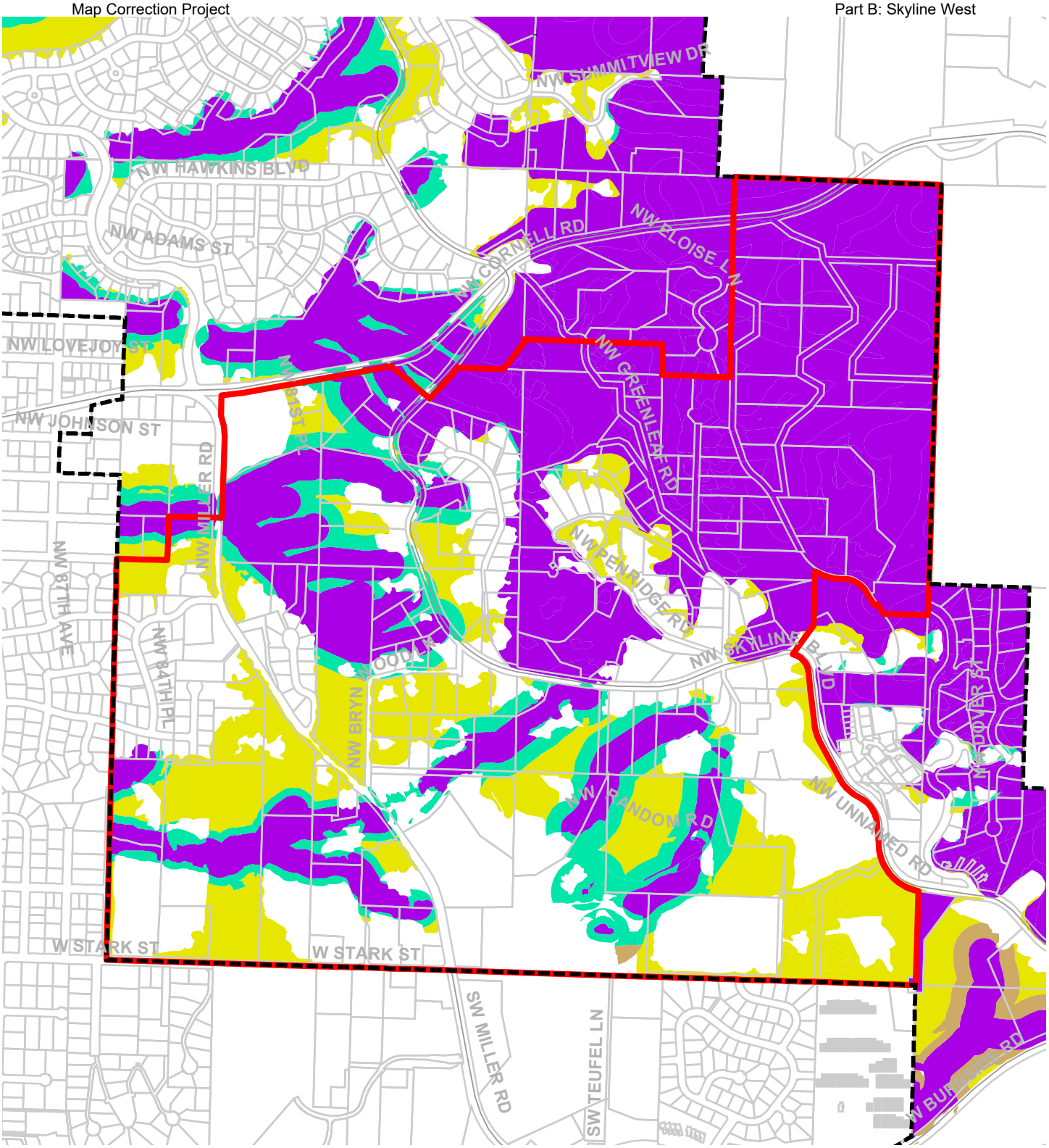
Updated: July 2021

NORTH

0 550 1,100 Feet

The information on the 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 services. To request these services, contact 503-823-7700, City TTY 503-823-6868, Relay Service: 711.



Map G: Title 13 Habitat Conservation Areas (HCA) and Goal 5 Areas

Resource Site: SK10

Updated: May 2022

NORTH

0 600 1,200 Feet

- Urban Service Boundary
- Resource Sites
- HCA High Value
- HCA Moderate Value
- HCA Low Value
- Goal 5 Significant Natural Resources

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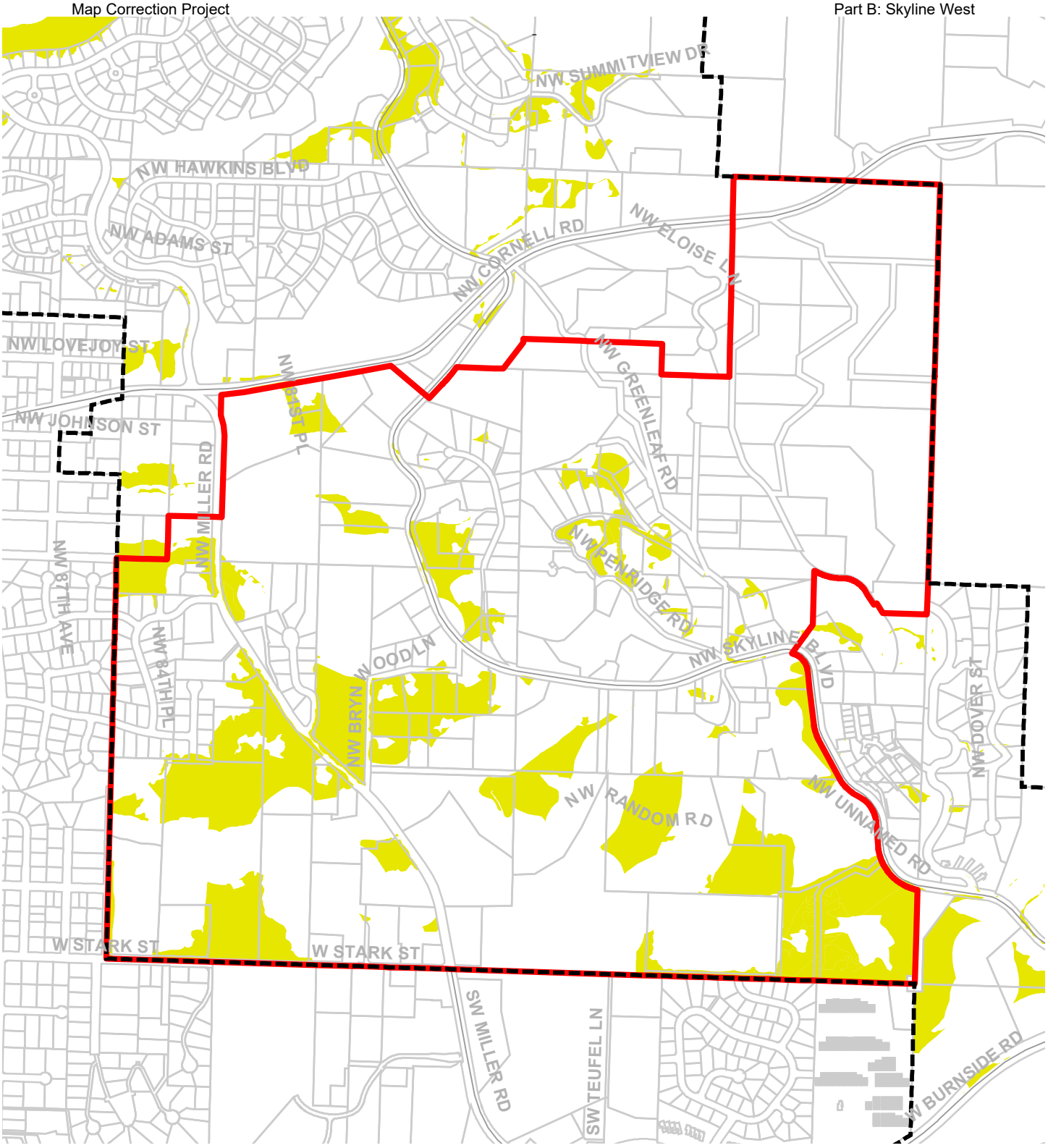

Map H: Goal 5 Resources

Resource Site: SK10

Updated: May 2022

NORTH

0 600 1,200 Feet

Urban Service Boundary

Resource Sites

Goal 5 Significant Natural Resources

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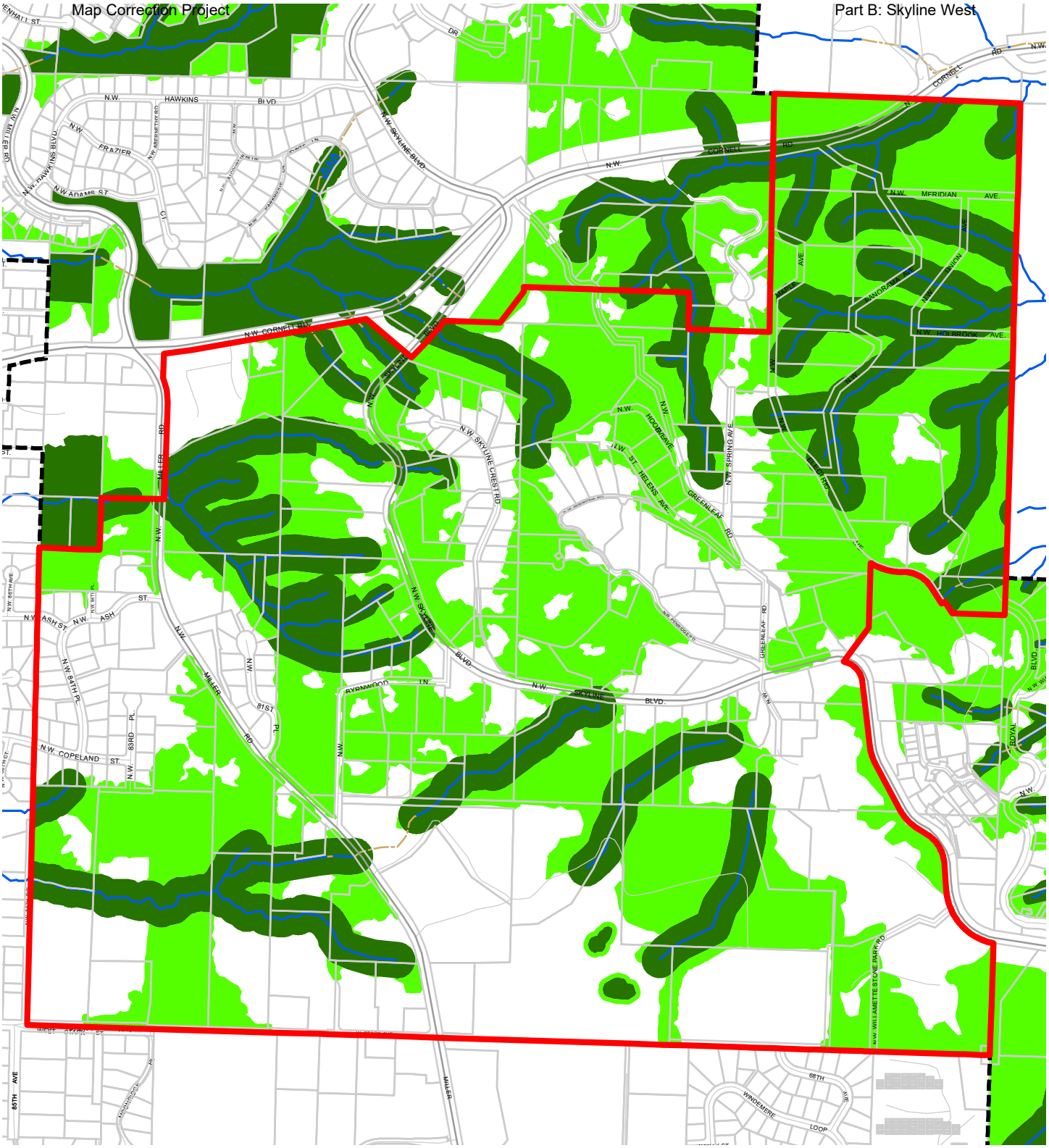
May 2022



Map I: DRAFT Proposed Environmental Overlay Zones

Resource Site: SK10

Updated: May 2022

- Resource Sites
- Open Stream Channel
- Piped Stream Segment
- Proposed Conservation Zone
- Proposed Protection Zone
- Urban Service Boundary
- Taxlots

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NORTH

0 430 860 Feet

Natural Resource Description

Within resource site SK10 the following significant natural resource features and functions are present:

Significant Riparian Corridor Features: open stream; land within 50 feet of waterbodies; forest, woodland, shrubland and herbaceous vegetation within 300 feet of waterbodies; and forest vegetation on steep slopes (>25% slope) contiguous to and within 780 feet of waterbodies.

Significant Wildlife Habitat Features: forest patches, and associated and contiguous wetlands, two acres in size or larger.

Special Habitat Areas: Balch Creek Watershed (O, B, M, C, E, U)

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.

Wildlife Habitat Functions: interior area; food and water; resting, denning, nesting and rearing; movement and migration; reduction of noise, light and vibration; and habitat patches that support special status fish and wildlife species.

Table A: Quantity of Natural Resource Features in Resource Site SK10	
	Study Area
Stream (Miles)	4.7
Wetlands (acres)	0.3
Vegetated Areas >= 1/2 acre (acres)	
Forest (acres)	288.0
Woodland (acres)	17.3
Shrubland (acres)	26.3
Herbaceous (acres)	53.4
Flood Area*	
Vegetated (acres)	0.0
Non-vegetated (acres)	0.0
Steep Slopes (acres)**	346.3
* 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 areas with a slope greater than 25%.	

This resource site is unique amongst the sites contained in Skyline West in that it straddles the ridge along NW Skyline Boulevard and drains to the east and west. The western streams are tributary and headwater streams of Cedar Mill Creek. These streams flow into designated critical habitat for Endangered Species Act-listed upper Willamette River steelhead. Draining to the east are headwater streams to Balch Creek. These streams flow to designated critical habitat for Endangered Species Act-listed upper Willamette River steelhead and chinook salmon, lower Columbia River steelhead and chinook salmon, and lower Columbia River coho salmon. The coastal giant salamander may also use this resource site.

Located between NW Skyline Blvd, NW Skyline Crest and NW Penridge Rd is the highest elevation point in Portland and the top most headwaters for Balch Creek.

Numerous bird species are known to use this resource site as well. They include: bald eagle, band-tailed pigeon, black-throated gray warbler, brown creeper, bushtit, common yellowthroat, downy woodpecker, great blue heron, green heron, olive-sided flycatcher, orange-crowned warbler, pacific-slope flycatcher, pacific wren, pileated woodpecker, purple finch, red crossbill, rufous hummingbird, Swainson's thrush, varied thrush, Vaux's swift, western wood-pewee, white-breasted nuthatch, willow flycatcher, Wilson's warbler, and wood duck.

Table B: Quality of Natural Resource Functions in Resource Site SK10				
Resource Site (acres) = 475				
	Class 1/A	**Class 2/B**	**Class 3/C**	**Total**
Riparian Corridors*				
acres	107.0	78.2	155.6	340.8
percent total inventory site area	22.5%	16.4%	32.7%	71.7%
Wildlife Habitat*				
acres	190.2	109.5	0.0	299.7
percent total inventory site area	40.0%	23.0%	0.0%	63.0%
Special Habitat Areas**				
acres	141.9			
percent total inventory site area	29.9%			
Combined Total+				
acres	219.3	92.1	35.2	346.6
percent total inventory site area	46.1%	19.4%	7.4%	72.9%

* Class I riparian resources, Special Habitat Areas, and wildlife habitat include open water.

** Metro Title 13 designated all Special Habitat Areas as Class I riparian corridors.

+Because riparian resources, Special Habitat Areas, and wildlife Habitat overlap, the results cannot be added together to determine the combined results.

Stormwater runs off impervious surfaces (e.g., rooftops, driveways, parking areas, streets, etc..) rapidly. Without a place to retain the water (such as wetlands or adequate stormwater facilities), stormwater runoff results in spikes in stream levels which can cause or exacerbate flooding and increase stream erosion. In addition, when water runs off quickly, it does not have a chance to infiltrate and recharge streams or aquifers to provide water during drier periods.

The type and capacity of stormwater facilities to manage the runoff from impervious surfaces varies in the city, affecting the local rate and amount of runoff, and the amount of pollutants in the water. Much of the city was developed prior to any stormwater regulations and receives limited or no management prior to discharging to pipes and surface waters.

Table C shows the total amount of impervious area within the resource site and how much of that impervious area lacks stormwater management; the percentage of total impervious area that is not managed is called "effective impervious area." The higher the percent of effective impervious area in a watershed, the greater the negative impacts of stormwater runoff to streams. Stream science indicates that when effective impervious area reaches 10% of a watershed, negative stream impacts become significant; and at 25%, these impacts on waterways can be substantial. An additional consideration is the differences in soil conditions and other factors that influence the ability of pervious areas to retain, infiltrate or filter pollutants from stormwater. For example, a mature forest is much more effective in managing stormwater than a manicured lawn; both areas would have a lower effective impervious surface percentage than a developed site, but they have different outcomes for stormwater management.

For Resource Area SK10, almost the entire area is located outside current city boundaries and calculations on the impervious area managed are not currently available. The area likely falls into the category of 10-25% effective impervious area, which indicates a critical level of vulnerability, as negative impacts may be beginning to influence natural functions, with ecological processes still in place and providing support to biologic systems.

Table C. Impervious Area within Resource Site SK10

Total area (acres)	Total impervious Area (acres)	Total unmanaged impervious area* (acres)	Percent of resource site that is effectively impervious
475.4	51.4	not available	not available

*Total unmanaged impervious area refers to the number of acres within a resource area that receives no formal stormwater management measures to regulate flow or treat pollutants before they reach surface waters, also referred to as effective impervious area.

Metro Title 13 and Oregon Goal 5 Compliance

The following information supplements evaluation of natural resource protections presented in Volume 3 and supports compliance with Metro Title 13 and Oregon Plan Goal 5.

Title 13 Habitat Conservation Areas

Map G presents the Habitat Conservation Areas (HCA) within the resource site SK10. Natural resources should be protected within HCA as follows:

1. *Strictly limit* or *limit* conflicting uses within Class I/High Rank Riparian Areas in all Urban Development Areas.
2. *Strictly limit* or *limit* conflicting uses within Class II/Medium Rank Riparian Areas within Moderate and Low Value Urban Development Area as well as parks and open spaces.
3. *Strictly limit* or *limit* conflicting uses within Class A/High or B/Medium Rank Wildlife Habitat within parks and open spaces.
4. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class III/Low Rank Riparian Areas in all Urban Development Areas.
5. *Allow* conflicting uses or conducted a local Goal 5 ESEE for Class A/High, Class B/Medium or Class C/Low Rank Wildlife Habitat in all Urban Development Area, expect parks and open space.

Strictly limiting or *limiting* conflicting uses in HCA will protect and conserve existing streams and wetlands to maintain significant natural resource functions including: 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 fish and wildlife habitat. *Strictly limiting* or *limiting* conflicting uses in HCA will allow for additional urban development that is sensitive to the natural resource features and requires mitigation for unavoidable negative impacts to features and functions. The recommendation will also contribute towards meeting other regulatory requirements including the Metro Title 3, Water Quality and Flood Management; Oregon Goal 6, Air, Water and Land Resources Quality; Oregon Goal 7, Areas Subject to Natural Hazards; the Clean Water Act; and the Endangered Species Act.

Goal 5 Significant Natural Resources

Resource site SK10 contains natural resource features that are not a Title 13 HCA and are therefore subject to Statewide Planning Goal 5 OAR 660-023-0110. The General ESEE analysis, Volume 3, 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.

The common impacts of conflicting uses in the resource site include clearing vegetation; grading activities and soil compaction; adding impervious surface; modifying streams, wetlands and flood areas; 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 RF, R20 and R10 base zones. 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.

The analysis of economic, social, environmental and energy consequences provided in Volume 3 is confirmed for resource site SK10, with the following additional information that clarifies the analysis.

Strictly limiting or *limiting* conflicting uses would retain the wildlife habitat functions provided by significant natural resource features including maintaining habitat for at risk plant, fish and wildlife species, 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 Class A or Class B wildlife habitat should be required.

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*.

Natural Resources Protection Decisions

Based on the analysis presented in Volume 3, Natural Resources Inventory, Volume 3, Title 13 and Goal 5 Compliance, and the resource site-specific evaluation for SK10, the following decisions are applied to protect the significant riparian corridors and wildlife habitat:

1. Apply a protection overlay zone ('p' zone) to stream channels from top-of-bank to top-of-bank, wetlands, land within 100 feet of stream top-of-bank and land within 25 feet of wetlands.
2. Apply a conservation overlay zone ('c' zone) to areas of forest vegetation that are contiguous to but more than 100 feet from stream top-of-bank.
3. Apply a conservation overlay zone ('c' zone) to the large patch of forest and woodland vegetation extending from the south-eastern corner of the resource site, contiguous to Willamette Stone State Heritage Site) to the street at NW Random Road; and within the 5-acre patch of forest vegetation adjacent to NW Skyline Blvd between NW Willamette Stone Park Rd and NW Greenleaf Rd.
4. Apply a conservation overlay zone ('c' zone) to land between 25 and 50 feet of wetlands.
5. Allow conflicting uses within all other areas containing significant natural resources.

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

Volume 1: Project Overview, Zoning Amendments, Ezone Remapping

The purpose of the Project Report is to document the overall project approach and methodology, summarize public engagement, and it includes all of the zoning code amendments. An appendix provides summary information on the mapping protocols that are used to map ezones, as well as maps of the existing and proposed ezone mapping in each resource site.

Volume 2: Resource Site Inventory and Resource Protection Decisions

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

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 3: Natural Resources Inventory, Compliance, and Appendix

This volume contains a summary of the approach and methodology used to produce the citywide Natural Resources Inventory, documentation that demonstrates compliance with Metro Urban Growth Management Plan Title 13 for Habitat Conservation Areas and Oregon State Planning Goal 5 for significant natural resources that are not a Habitat Conservation Area, and appendices that provide background information on the Environmental Overlay Zone Map Correction Project.