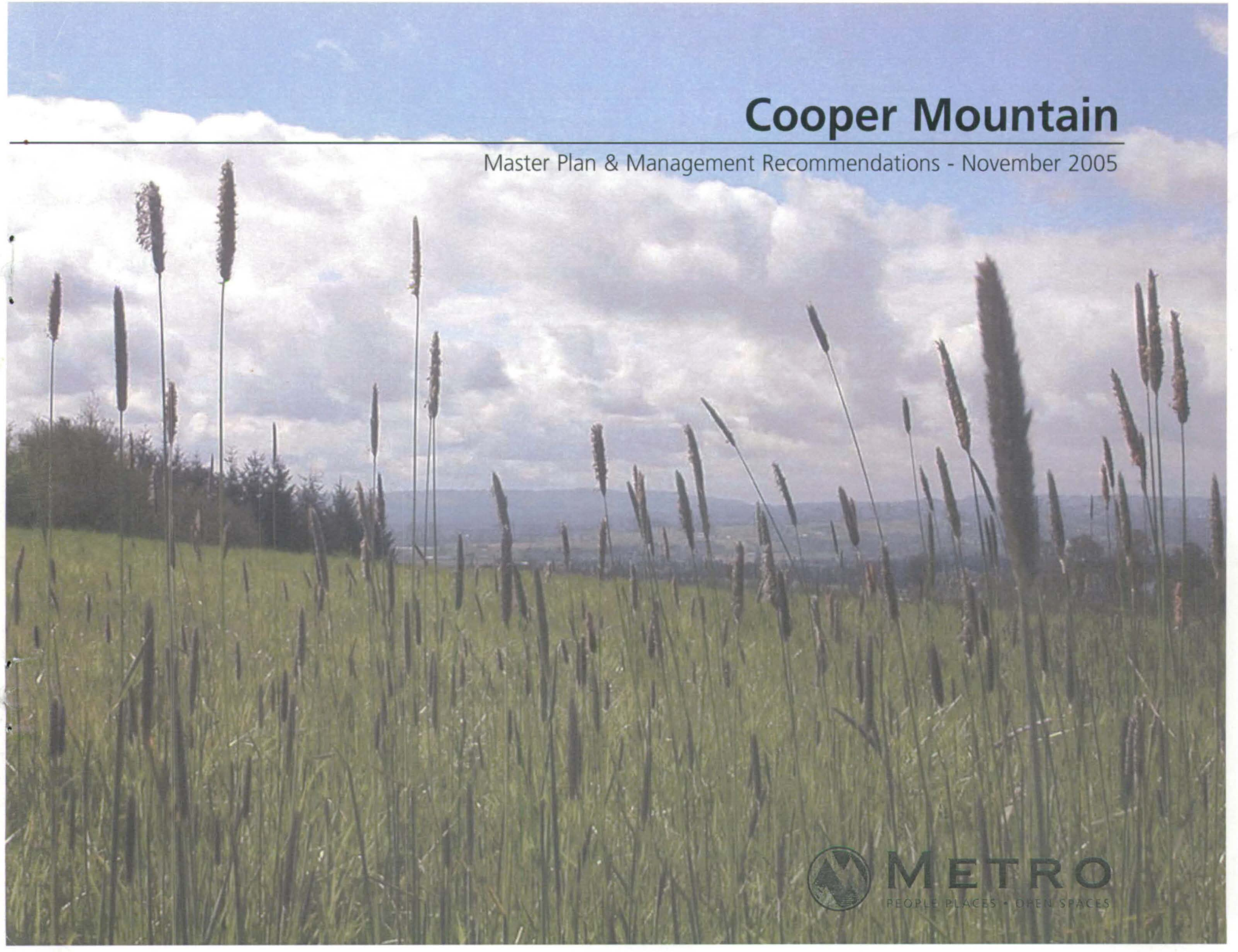

Cooper Mountain

Master Plan & Management Recommendations - November 2005

METRO

PEOPLE PLACES • OPEN SPACES

Cooper Mountain

M*aster* **P***lan* **& M***anage***m***ent Rec***omm***endati***o***ns*

NOVEMBER 2005

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Table of Contents

Executive Summary

Process and Goals

Recommendations

Conclusion

Executive Summary

Cooper Mountain, located on the southwest edge of Beaverton, was formed by the Columbia River basalt flows millions of years ago. Rising nearly 800 feet, it is a prominent feature in the landscape of the Tualatin River Valley. The mountain has been part of the forest and farm fabric typical of the region; it has historically been used for timber production, and more recently, for recreation. In recent years, as the urban growth boundary has expanded, the north and east slopes of the mountain have become fully developed residential neighborhoods.

With 1995 bond measure funds, Metro purchased 256 acres in the Cooper Mountain Target Area, including 231 contiguous acres near the crest on the southwest slope of the mountain. Cooper Mountain Natural Area is a mosaic of oak and madrone woodlands, native prairies, and mixed conifer forest. These habitats provide homes for nine plant and wildlife species that have been identified at the state and federal level as "sensitive species" or "species of concern" – species at risk of being listed as threatened or endangered. The site also contains the headwaters of Lindow Creek (a major tributary of the Tualatin River), and offers commanding views of the valley.

Conifer forest, oak woodland & native prairie

Process and Goals

The Cooper Mountain Natural Area Master Plan is the result of a public involvement process that engaged neighbors, local governments, recreation groups, and natural resource specialists in creating a viable long-term vision for the site. This input, combined with assessments of the site's resources, opportunities and constraints, shaped six broad goals for the natural area:

1. Protect and enhance Cooper Mountain's unique natural and scenic resources and create a place for wildlife to thrive.
2. Encourage community access and recreational use that is compatible with natural resource protection.
3. Interpret the unique natural, cultural and scenic resources of Cooper Mountain.
4. Maximize operational efficiencies and protect the public's investment.
5. Minimize impacts to surrounding neighborhoods and farmlands from site development and public use of Cooper Mountain.
6. Work with our partners to seek appropriate public and private funding for master plan implementation and ongoing management.

Recommendations

The master plan recommendations are an attempt to balance the need for protection and enhancement of the unique natural resources present on the site, with the public's use and enjoyment of nature-based recreational activities. The preferred site design concept includes the following elements:

- A 3.5-mile trail system, marked by interpretive signs, to accommodate hikers, wheelchair users, and equestrians.
- A nature house that will provide environmental education classrooms for school groups and meeting space for community groups.
- Two parking areas and trailheads – one on the north edge of the site at Kemmer Road and the other at the southeast corner of the site at Grabhorn Road. Trailhead facilities will include restrooms, shelter, picnic tables, drinking fountain, interpretive signs and other facilities.
- A children's play area designed with natural elements of sand, rock, water and plants to accommodate educational activities and neighborhood use.
- A caretaker residence and maintenance yard to provide a management presence and to oversee facilities.

In addition, a Natural Resource Management Strategy and an Interpretive Program Concept are being developed to help guide the habitat management and educational programming that will occur on site. A phased implementation plan is recommended for the development of the facilities in order to consider visitor needs and minimize construction costs and operational impacts.

This Master Plan represents today's vision for an important regional natural area that provides an exciting opportunity for habitat enhancement and compatible public use within a neighborhood context. In addition to providing a framework for future development and management, the plan also identifies long-term opportunities. For example, if adjacent properties come up for sale in the future by willing sellers, consideration will be given to purchasing these parcels in order to expand habitat protection goals, recreation uses (including regional trail connections), and buffers between the natural area and surrounding neighbors.

Conclusion

In 1995, voters approved a bond measure to acquire regionally significant natural areas, parks and other greenspaces throughout the metropolitan area. Cooper Mountain Natural Area is one of these regional treasures – a place where nature is flourishing in the midst of our neighborhoods. In 2004, the Metro Council dedicated resources to develop Cooper Mountain Natural Area for public use. This master plan is a key step toward responsible management of this resource, while providing the public with a safe enjoyable experience of one of our region's great resources.

Introduction

Project Background

Project Setting & Study Area

Master Plan Purpose

Public Involvement

Introduction

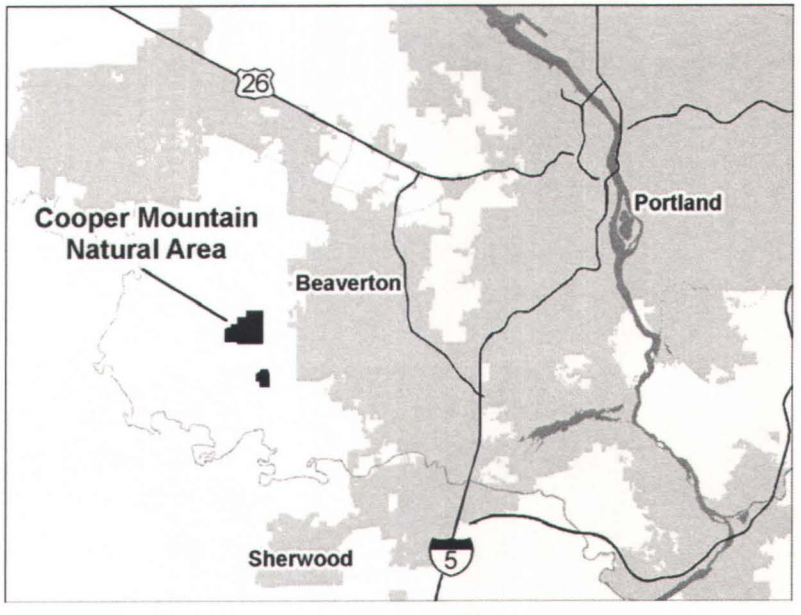
Project Background

A primary mission of Metro's Regional Parks and Greenspaces Department is to work cooperatively with the public to maintain the quality of life for the region by protecting natural areas, trails and greenways for wildlife and people. The Metropolitan Greenspaces Master Plan of 1992 identified Cooper Mountain in Washington County as a regionally significant natural area.

The 1995 passage of Metro's Open Space, Parks and Streams Bond Measure provided funding for the acquisition of land in the Cooper Mountain Target Area. The bond measure and the Cooper Mountain Target Area Refinement Plan included the following acquisition goals:

- Acquire between 400-700 acres to protect and enhance Cooper Mountain's unique biological diversity
- Protect water quality of Tualatin River by protecting headwaters of tributaries including Lindow Creek
- Protect spectacular scenic vistas "out from and in to" Cooper Mountain.
- Provide linkages from Cooper Mountain to other trails, greenways, parks and community facilities (e.g., schools)

At the time of the printing of this document, 256 acres of land have been purchased by Metro in the Cooper Mountain Target Area. This includes 231 contiguous acres that constitute the bulk of Cooper Mountain Natural Area, a 16-acre parcel to the south along Scholls Ferry Road, and a 9-acre parcel on the northeast slope of the mountain. All Metro parcels were acquired on a "willing seller" basis.



Location map

Project Setting and Study Area

Cooper Mountain, located on the southwest edge of Beaverton, rises to an elevation of 795 feet. Traditionally, this mountain has been part of the rural farm and forest fabric that typifies the Tualatin Valley. However in recent years, the north and east slopes of the mountain have been brought into the urban growth boundary, and they have become, for the most part, fully developed residential neighborhoods. The southern and western slopes of the mountain remain a mosaic of farm and forest land that meets the Tualatin River, valuable for both watershed and habitat protection.

Cooper Mountain Natural Area is located in Township 1S, Range 2W, Section 25 on the southwest slope of Cooper Mountain. The site offers a commanding view of the Tualatin River Valley and the Chehalem Mountains. It also contains the headwaters to Lindow Creek, a major tributary of the Tualatin River. The site features shallow, rocky soils; small, seasonally-perched seeps; oak and madrone woodlands; and a diverse prairie community of wildflowers - habitats that are primarily defined by the site's geomorphic origins and southern exposure.

The project study area includes the Metro-owned property and the lands immediately surrounding it in order to identify the opportunities and constraints represented by the Natural Area.

View from the meadow overlooks the Tualatin River Valley

Master Plan Purpose

The purpose of this master plan is to provide a long term collective vision and implementation strategy to guide future public use and enjoyment, development and natural resource management of Cooper Mountain Natural Area. This master plan establishes goals, and provides recommendations and a site concept for future trail design, facility development and vegetation management.

It also lays out a framework for addressing natural resource management and future maintenance and operations needs; and for implementing future development by identifying required project permits and approvals, cost estimates, phasing and potential funding sources. Most importantly, this master plan is a guiding vision that reflects the community's desires. The completed plan can also serve as a useful tool in obtaining future funding.

Public Involvement

Over the course of 20 months, from December 2003 to July 2005, the Cooper Mountain Natural Area planning process involved interested citizens, neighbors, natural resource and recreation groups, businesses and local governments. The purpose of such broad involvement was to:

- Draw upon local knowledge, interest and experience to provide a variety of perspectives on the use of Cooper Mountain;
- Build a public understanding of the issues related to natural resource management of publicly-owned land on Cooper Mountain;
- Build a public understanding of the final plan recommendations; and
- Produce a master plan that best serves the entire community.

At the onset of the planning process, a Cooper Mountain Project Advisory Committee was established to assist Metro in the development of the master plan. This committee represented a diverse set of key community interests and included representatives from the City of Beaverton, Washington County, Tualatin Valley Fire and Rescue, Tualatin Hills Park and Recreation District, Beaverton High School, Cooper Mountain neighbors, Tualatin River Watershed Council, Oregon Equestrian Trails, Portland United Mountain Pedalers, Kemmer View Estates Homeowners Association, Valley View Riders, and the Convention and Visitors Bureau of Washington County. The Advisory Committee met six times throughout the planning process.

Outreach to the general public was achieved through a variety of strategies. At the beginning of the process, a public interest survey was mailed out and posted on the Metro website and was completed by 400 citizens. A Cooper Mountain Chronicle newsletter was produced and distributed four times to 2,000 households. The master plan process was featured in five issues of the Metro GreenScene, a regular publication mailed to 15,000 households. Additional outreach included local newspaper stories, speaking engagements and information posted on Metro's web site. Many citizens also used e-mail to submit their comments or ask questions.

Activities in the community included:

- Nine guided public tours of Cooper Mountain Natural Area
- Two public open houses
- One Cooper Mountain neighborhood town hall meeting
- Community briefings with the Highland Neighborhood Association, Beaverton Committee for Citizen Involvement, Washington County Committee for Citizen Involvement, Metro Committee for Citizen Involvement, Kemmer View Estates Neighborhood Association, Oregon Equestrian Trails, Beaverton Optimists, and Washington County Commission

Design teams explore scenarios for future use and management of Cooper Mountiain

Finally, a full day "charette" or design workshop was held to explore visitor use, site design and vegetation management scenarios for the Cooper Mountain Natural Area. The design workshop included five multi-disciplinary teams of resource specialists, recreation providers, trail experts, land managers, and landscape architects from other agencies and non-profits, as well as Metro staff. Each team was charged with developing a conceptual plan for the natural area that integrated public use opportunities and habitat conservation. In addition, each team was given a different focus in order to explore the relationship between public use and habitat conservation. Ideas from the five proposals were then consolidated into three alternative design concepts that were presented to the PAC and the public for review and comment. In addition to an open house, over 600 citizens visited the "virtual Cooper Mountain open house" on the Metro web site to view and comment on the concept alternatives.

Metro's web site proved to be an effective tool in engaging interested citizens in the project planning process. Citizens were able to gather information about the project, review documents, be regularly notified and updated, submit comments and complete public opinion surveys. Over 5,000 visits to the Cooper Mountain web pages were made during the planning process.

Copies of the Project Advisory Committee meeting notes and of the Cooper Mountain Chronicle newsletter are included in the appendix of this plan. A complete record of the public involvement process and design refinement process for the Cooper Mountain Master Plan is also available for public review upon request.

Natural & Cultural History

Geology

Presettlement Vegetation

Native Cultures

Early Settlement

Recent History

Natural & Cultural History

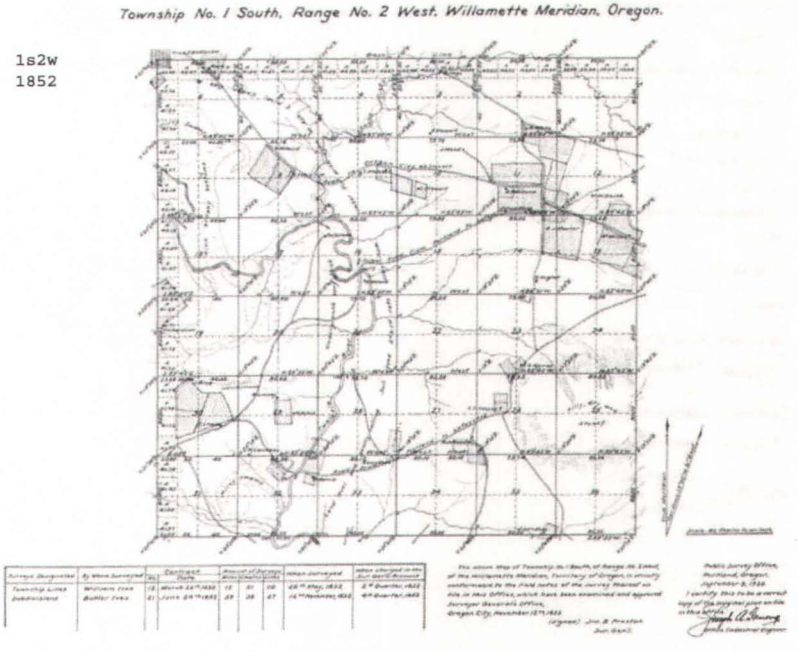
Geology

Cooper Mountain was formed by the ancient Columbia River basalt flows that shaped the landscape over millions of years. The fluid lava flows originally covered much of the Northern Willamette Valley with a nearly level surface up to 100 feet thick in places. The subsequent folding, fracturing and uplifts of this lava layer have also formed most of the higher hills in the Portland area.

Multiple layers of the basalt can be observed within the Cooper Mountain Natural Area at two quarry locations. These layers have differing characteristics due to the degree of fracturing, as well as different rates of weathering. The uppermost basalts, which are part of the Grande Ronde sequence of flows, are typically more fractured or cracked than flows at lower elevations. This network of fractures permits surface water to percolate down through the bedrock more quickly in some locations than in others.

Presettlement Vegetation

The oldest record of vegetation cover on Cooper Mountain is from the 1852 General Land Office Land Cover records. This presettlement vegetation was noted in the township and section line surveys conducted by the General Land Office. Vegetation notes from this time are believed to be a close approximation of the vegetation cover prior to widespread changes brought about by European settlement. With the exception of a small, distinguished upland prairie located at the eastern edge of the Cooper Mountain Natural Area site, the remainder of the site was identified in 1852 as a Mesic mixed conifer forest with a mostly deciduous understory. Likely species that were listed for this mixed conifer forest included Douglas fir, western hemlock, red cedar, grand fir, big leaf maple, yew, dogwood, white oak and red alder. To the immediate northwest of the site, the survey lists a Douglas fir forest with no oak. To the northeast of the site the survey notes a conifer-dominated woodland. To the immediate southwest of the site the survey notes a scattering of thinly timbered Douglas fir-white oak woodland.



1852 Historic Survey of Coooper Mountain

Native Cultures

The Tualatin River Valley, like the other inland valleys of the Willamette River and its tributaries, was a place of abundance for the eight Kalapuyan tribes that once inhabited it. One of these tribes

was the Atfalati, commonly known as the Tualatin or Wapato Lake Indians. The Atfalati lived in about 24 villages on what is now the Tualatin River Valley, in the hills around Forest Grove, along the shores of Wapato Lake, along the north fork of the Yamhill River, in Hillsboro, and in Portland. One of these Atfalati villages was named Cha-kepi, "Place of Beaver," which is the present-day location of Beaverton.

The Atfalati roamed between the Willamette River and the slopes of the Coast Range, and from present day Wilsonville to the Columbia River. These seasonal movements were tied to variations in food sources during different seasons and at different elevations. For instance, the Willamette floodplain provided camas, wapato and marsh birds, while the higher elevation valley margins (which Cooper Mountain represents) provided stands of acorn oaks, abundant mammals, and upland bird species such as grouse and quail. The Atfalati practiced controlled burning, which made it easier to hunt deer and renew the open expanses of land for camas to grow. The 1852 mapped records of vegetation show that the south face of Cooper Mountain overlooking the Tualatin Valley was partially comprised of oak woodlands and open prairie amidst the conifer stands, thus indicating that Native American burning practices may have extended up the southern slope of the mountain.

Warm weather months were used to hunt, gather and store food, and obtain provisions for clothing, shelter and tools. Tribal members camped in smaller family groups and moved to places where plants could be harvested or animals hunted. Important staple foods such as camas (bulb of the wild lily), wapato (Indian potato or arrowhead), acorns, hazelnuts and tarweed seed were usually gathered by women. Cooper Mountain was likely used by tribal members for hunting and gathering.

During the winter months tribal families came together in more permanent large plank houses. The Atfalati used this time to keep their culture alive by story telling, and making and repairing tools for the next season.

The Atfalati lifestyle was greatly altered by the entry of settlers into their lands early in the 19th century. Conflicts arose over the Atfalati migratory hunting-gathering lifestyle and the permanent farms and ranches of the settlers. Armed conflicts broke out after the late 1840s, which resulted in the gradual displacement of the Atfalati population to reservation lands, first at Wapato Lake in 1851 and subsequently to the Grand Ronde Reservation near the Oregon Coast.

Early Settlement

Cooper Mountain lies within the old "Twality District," originally defined by the Oregon Provisional Government in 1843. This large district was named for the Tualatin River.

A 1959 centennial newspaper article on the history of Cooper Mountain states, "It is a common belief among older inhabitants that few early pioneers settled in this area. Their reasons being thus, lack of a ready water supply and the vast stands of timber. More ready farmland was available to them in the valley." However, Perry Cooper, for which Cooper Mountain is named, was one such early pioneer who made his Oregon land claim on the slopes of this mountain in March 1853. He and his wife Nancy had five children. His donation land claim is the present day site of Cooper Mountain Vineyards.

Timber was the first industry on Cooper Mountain as trees were harvested to make room for farmland. The Livermore Saw Mill operated in three different locations on the mountain. Francis Livermore and his family moved to Portland in 1890 and purchased 280 acres on Cooper Mountain near what is now 170th Avenue and Rigert Road. In the winter, logs were slid downhill on Ruesser Road (now 175th), and then dragged along what is now 170th Avenue to the railroad to the north. There they were stockpiled to be shipped to a local sawmill. Many of the roads we see today on

Cooper Mountain are named after early residents of the area. These include Gassner, Ruesser, Rigert, Hart, Weir and Kemmer roads. On the south side of Cooper Mountain at the crossroads of Scholls Ferry Road and Tile Flat Road, a cluster of buildings remains from early settlement days. These include the Kinton Grange (constructed in 1917), a small schoolhouse and the Kindt house (constructed in 1853 and named for Peter Kindt, an early pioneer).

The Livermore Mill 1910, at 170th & Farmington

The Cooper Mountain Catholic Cemetery on Kemmer Road (directly across the street from Cooper Mountain Natural Area) was the site of St. Peters Church and is the resting place of many of the first settlers on Cooper Mountain. The United Brethren Congregational Church and cemetery on Hazeldale Road is located on land that was donated by Perry Cooper in 1899. The church no longer exists, but its cemetery is the resting place of later settlers of the area.

The original Cooper Mountain School circa 1892

Cooper Mountain School District, which covered Cooper Mountain and its north slopes, was established in 1892. The original Cooper Mountain School was located about 2/3 of a mile west of the present school (which is at 170th and Hart Road). It was a one-room schoolhouse with fewer than 20 students attending during its first 20 years of existence. This original building was replaced with a larger one-room schoolhouse in 1912 at the present Cooper Mountain School location.

Recent History

The 231 acres that comprise the Cooper Mountain Natural Area were largely forested up until 1936 when the area was first logged. It was logged again in 1995. Two small quarries were mined for gravel to construct roads for the logging operations. Prior to Metro's ownership, the northern-most portion of the property had been leased to farmers for growing perennial rye grass crops. At the time

Metro acquired the property, most of the land was clear-cut from logging. Slash remained on the ground and invasive non-native vegetation had taken hold. Informal public use (hiking, dog walking, bicycling, and horseback riding) along the site's logging roads and on many social trails was heavy.

Metro's interim management activities on the site over the course of the last eight years have included: access control, slash removal, invasive plant removal, reforestation of clear cut areas with the planting of approximately 60,000 native trees, native seed collection, prescribed burns to keep fuel loads down, plant monitoring and wildlife tracking. In addition, Metro sponsors periodic, naturalist-led walks and volunteer involvement in many of its restoration and monitoring activities.

Existing Conditions

Natural Resources

Scenic & Cultural Resources

Land Use

Regional Context

Recreation Context

Existing Conditions

Natural Resources

Cooper Mountain Natural Area is located on the southwest slopes of Cooper Mountain from 550 to 755 feet elevation. This exposure, in addition to the thin soils, has resulted in a unique mosaic of oak–madrone woodlands, prairies and mixed conifer forests. The site is divided by five intermittent streams that flow from north to south and drain into Lindow Creek, which in turn flows into the Tualatin River. The streams are at the bottom of narrow, steep–sided ravines with broader, flatter ridges between the stream corridors. This mixed topography adds to the diversity of plant and wildlife communities on site.

Plant and Wildlife Communities

Oak Woodland

Once abundant in the Willamette Valley, oak woodland is now a rare habitat in the region. Over 80 percent of the oak woodlands in the Willamette Valley have been lost due to development, agriculture, exclusion of fire, and competition from Douglas fir and invasive non-native shrubs. This is a valuable plant community that supports a wide variety of wildlife, including many rare and sensitive species.

Approximately 44 acres of the site is in open oak habitat. Oak woodland is characterized by a 30 to 60 percent canopy of Oregon white oak and madrone with an open understory dominated by shrubs such as Indian plum, snowberry, and poison oak. Over 200 species of wildlife are associated with this habitat including neotropical birds (migratory birds that overwinter in Central America) such as warblers and vireos, and resident species such as the white-breasted nuthatch. Mammals using this habitat include deer, western gray squirrel, fox and coyote.

A primary challenge to oak woodland management at Cooper Mountain involves control of invasive, non-native shrubs such as Scotch broom and Himalayan blackberry.

Upland Prairie

Only one percent of original upland prairie remains in the Willamette Valley primarily due to urban and rural development and fire suppression.

About six acres of this rare upland prairie occur at Cooper Mountain. These prairies are underlain with thin soils perched above basalt. Although currently dominated by exotic pasture grasses, the Cooper Mountain prairies retain populations of several

Native oaks in upland prairie

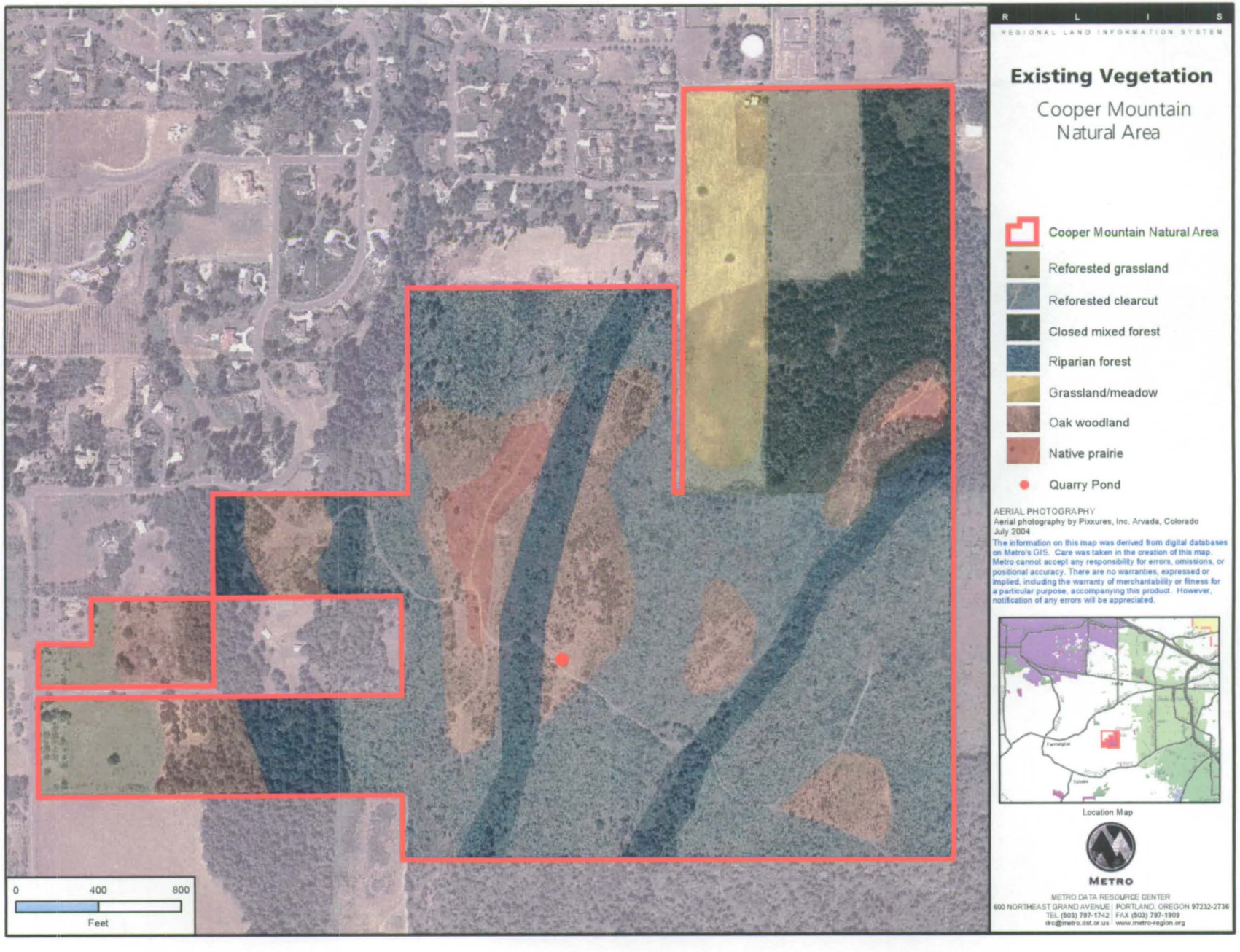
native grasses (e.g. California oatgrass, California brome, junegrass) and native wildflowers, including several regionally rare and uncommon species. Healthy populations of white rock larkspur (state endangered, federal species of concern) and meadow sidalcea (state candidate) both occur in the prairies along with many other native wildflowers such as Oregon sunshine, clarkia, Oregon saxifrage, and a large variety of native lilies. The prairies of Cooper Mountain provide their strongest wildflower bloom displays in spring and early summer. Because of the thin soils and southern aspect of the site, the prairies become dry and largely dormant by mid summer.

The biggest threats to the prairies are woody shrub encroachment from surrounding oak woodland habitat, competition from non-native plants, and interruptions in the natural disturbance regimes, such as fire and grazing, that maintain the plant communities. Non-native plants include tall oat grass, velvet grass, Scotch broom and a variety of non-native annual grasses. Metro has utilized a variety of practices, including controlled burns, to manage this habitat.

Riparian Areas

Approximately 30 acres of Cooper Mountain are in the riparian corridor. This habitat is dominated by an open canopy of 50 to 100 year old trees such as big leaf maple, black cottonwood, alder, Douglas fir, and western red cedar. Numerous cottonwood and alder trees, most between five and ten years old, can be found along the riparian corridor. The understory includes sword fern, snowberry, Indian plum and Oregon grape. The streams on the site are intermittent and nearly dry up during the summer months. Most wildlife species at Cooper Mountain Natural Area will use riparian areas for breeding, feeding, resting or traveling. Some areas of the riparian corridor are invaded by Himalayan blackberry and Scotch broom.

Riparian understory


R L I S
REGIONAL LAND INFORMATION SYSTEM
Existing Vegetation
Cooper Mountain Natural Area
Cooper Mountain Natural Area
Reforested grassland
Reforested clearcut
Closed mixed forest
Riparian forest
Grassland/meadow
Oak woodland
Native prairie
Quarry Pond
AERIAL PHOTOGRAPHY
Aerial photography by Pixxures, Inc. Arvada, Colorado
July 2004
The information on this map was derived from digital databases on Metro's GIS. Care was taken in the creation of this map. Metro cannot accept any responsibility for errors, omissions, or positional accuracy. There are no warranties, expressed or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.
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Mixed Forest

Approximately 136 acres of mixed forest habitat occur on the property. This forest habitat is distributed in the northeast, central and south sections of the property. Most of this area is reforested clearcut, with the exception of the northeast corner of the property where there is a stand of closed mixed forest consisting of 30- to 40-year old Douglas fir, grand fir, Oregon white oak and western red cedar. Ground cover consists of sword fern and native trailing blackberry. Deer and red fox use this habitat along with birds such as the pileated woodpecker, downy woodpecker and olive sided flycatcher. There is a minimal invasion of exotic species because of the closed forest canopy.

In the remaining mixed forest areas which were previously logged, Metro planted 60,000 trees including Douglas fir, madrone, red alder, western red cedar, ponderosa pine and grand fir. The future forested areas will enhance the valuable wildlife habitat and scenic value of the property. The management challenge to the replanted areas will be to control the invasion of non-native plants such as hawthorn and blackberries until the tree canopy is well established.

Closed mixed forest stand of 30-40 year old trees

Quarry Pond

A small excavated quarry located adjacent to the primary logging road seasonally ponds water providing a refuge for resident wildlife and breeding habitat for northern red-legged frogs and other amphibians. The northern red-legged frog is a state-sensitive species and a federal species of concern.

Quarry pond provides habitat for the red legged frog

Meadow

Approximately 16 acres are in non-native meadow. Some of this grassland has been planted by Metro for reforestation. While not native habitat, the open grasslands give visitors the opportunity to take in views over the Tualatin River Valley and Chehalem Mountains beyond. They are also important habitat for deer, birds of prey and the Western bluebird in particular. Nesting boxes for the Western bluebirds have been placed near the edges of the meadow.

The meadow is mowed annually to reduce potential wildfire fuel, protect views, control non-native vegetation, and maintain grass dominance by preventing the establishment of trees and shrubs.

Sensitive Species

Various types of species inventories, as well as ongoing botanical, avian and herpetological monitoring, have been conducted at Cooper Mountain. Table 1 lists species detected at Cooper Mountain since 1995 that have been recognized by a state or federal program as exhibiting some form of rarity or special concern.

White rock larkspur, a member of the buttercup family, is a regional endemic found only in a few sites in the northern Willamette Valley and southwest Washington. It is a slender perennial growing from a cluster of tubers and blooming from April through June. Although apparently thriving in wet meadow environments, white rock larkspur now generally persists in rocky areas and shallow-soil prairies. Approximately 4,500 plants have been counted in the prairies of Cooper Mountain Natural Area. White rock larkspur appears to have responded well to the prescribed burns conducted by Metro in 1997 and 2001.

White rock larkspur

Meadow checker-mallow is found in the prairie at Cooper Mountain Natural Area. The plant can grow over six feet tall. The pale-pink flowers are borne on hairy stems and serve as a nectar source for the Fender's blue butterfly. This plant can be found in the Willamette Valley in meadows, fencerows and roadsides, but occurrences are declining due to meadow degradation and destruction.

Northern goshawk is the largest North American "true raptor" that frequents Cooper Mountain to forage and perch in the mixed forest. It maneuvers through dense mature woods, taking prey as small as squirrels and as large as grouse and crows. While most hawks search and dive for their prey over open meadows, goshawks swoop through wooded areas and even pursue their prey by foot. Goshawks prefer mixed habitat for both nesting and foraging. Up to 6,000 acres of forest are needed by a pair of nesting goshawks to rear their young. The Northern goshawk occurs even in fragmented forests, but perhaps less consistently than it does in large contiguous forest areas.

Yellow-breasted chats breed in very dense scrub often along streams and at the edges of swamps or ponds. They are sometimes found in overgrown pastures and in upland thickets along margins of woodlands. They have been sighted near Cooper Mountain's riparian forests.

Olive-sided flycatchers breed mostly in conifer forests, especially around the edges of open areas including bogs, ponds and clearings. They have become less common in recent years because of a loss of habitat on the wintering grounds. They have been sighted in the closed mixed forest (south and central section) near the logging road.

Species	Federal Species of Concern*	State		State			ORNHIC Ranking****
		Listed Endangered	Candidate	Critical	Vulnerable	Undetermined	
Delphinium leucophaeum - White rock larkspur	X	X					1
Sidalcea campestris - Meadow checker-mallow			X				4
Accipiter gentiles - Northern goshawk	X			X			4
Icteria virens - Yellow breasted chat	X			X			4
Contopus cooperi - Olive-sided flycatcher	X				X		4
Empidonax traillii brewsteri - Little willow flycatcher					X		4
Sialia mexicana - Western bluebird					X		4
Rana aurora aurora - Northern red-legged frog	X				X		4
Sciurus griseus - Western gray squirrel						X	4

Table 1: Sensitive Species Documented in Cooper Mountain Natural Area

Key:

* Federal "Species of Concern" are taxa whose conservation status is of concern to the U.S. Fish and Wildlife Service, but for which further information is still needed. They are not recognized/defined/regulated per the Endangered Species Act. Many were previously known as "Category 2 Candidates".

** At the state level, the Oregon Department of Agriculture (ODA) lists species as "Endangered" under the Oregon Endangered Species Act of 1987 (OESA). A "Candidate" species is a candidate for listing by the ODA under the OESA.

*** At the state level, "sensitive species constitute those naturally-reproducing native animals which may become threatened or endangered...in Oregon." They are categorized by the Oregon Department of Fish and Wildlife (ODFW) as follows:

- Critical: species for which listing as Threatened or Endangered is pending, or those for which listing as Threatened or Endangered may be appropriate if immediate conservation actions are not taken
- Vulnerable: species for which listing as Threatened or Endangered is not believed to be imminent and can be avoided through continued or expanded use of adequate protective measures and monitoring.
- Peripheral or Naturally Rare: species whose populations are on the edge of their range or which have had low numbers historically in Oregon.
- Undetermined Status: species for which status is unclear; may be susceptible to population decline; scientific study is needed.

****Key to Oregon Natural Heritage Information Center (ORNHIC) rankings:

1 = Critically imperiled because of extreme rarity or because it is somehow especially vulnerable to extinction (5 or fewer occurrences)
2 = Imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (6-20 occurrences)
3 = Rare, uncommon or threatened, but not immediately imperiled (21-100 occurrences)
4 = Not rare and apparently secure, but with cause for long-term concern (>100 occurrences)
5 = Demonstrably widespread, abundant and secure

SOURCE: Rare, Threatened, and Endangered Species of Oregon, Oregon Natural Heritage Information Center, May 2004

Little willow flycatcher is a neotropical bird that uses Cooper Mountain's riparian areas to nest and feed. It prefers open shrubby areas of willow and alder patches. One of its biggest threats is habitat loss and cowbird parasitism.

Western blue birds are resident birds that are confined to areas above 600 feet in elevation. They prefer open habitat where abundant food and perches are available. The Prescott Western Bluebird Recovery Project identified Cooper Mountain Natural Area as potentially good habitat for these birds and installed 10 to 12 bluebird nest boxes in the upper prairie of the site. At least one pair has bred successfully.

Northern red-legged frog population has been regularly documented to breed in a small excavated quarry located towards the south end of the site on the old logging road. Typically, red-legged frogs breed in seasonal pools during February to April when water temperatures reach 7° C, and disperse during the non-breeding period into forested uplands. From a life history perspective, red-legged frogs live and breed in stream habitats and off-channel pools most often characterized as small, shaded standing pools or ponds. Generally, these breeding pools or ponds must be a meter in depth and provide optimal breeding habitat (e.g., clean water with ample vegetative cover and narrow-stemmed plant material for oviposition).

Western bluebird

Northern red-legged frog

Western gray squirrels are shy squirrels that are dependent upon older mixed forests with a variety of oak and pine or oak and fir trees. These trees provide the squirrel with an interconnected tree canopy for food, cover, nesting sites and arboreal travel. Favorite foods are pine nuts, acorns, nuts, berries, fungi, green vegetation and insects. They have been sighted nesting near oak trees in the closed mixed forest located in the northeast corner of the site.

Hydrology and Wetlands

Cooper Mountain Natural Area contains the headwaters to Lindow Creek which flows into the Tualatin River. Five well-defined seasonal streams collect and convey surface water off site. Drainage is usually rapid due to the sloping terrain. In addition to the seasonal streams, numerous wet zones caused by groundwater seepage over the ground's surface, are especially evident during wetter periods. These seepage areas are found where thin soils combined with more fractured layers of basalt occur. Most of the groundwater discharge zones are found on the site between 480 feet and 690 feet. Some of these seepage areas have formal perched wetlands.

Past land uses surrounding Cooper Mountain have likely affected the locations and rates of groundwater seepage over time at this site. For example, increased pumping of upper elevation wells in the vicinity through the early 1960's likely contributed to lower aquifer levels by the end of that decade. Many of these wells were deepened in the late 1960's and early 1970's to access deeper aquifers. More recent housing developments in the vicinity are now served by public water lines rather than wells, likely contributing to the recharge of the higher aquifer horizons.

Soils

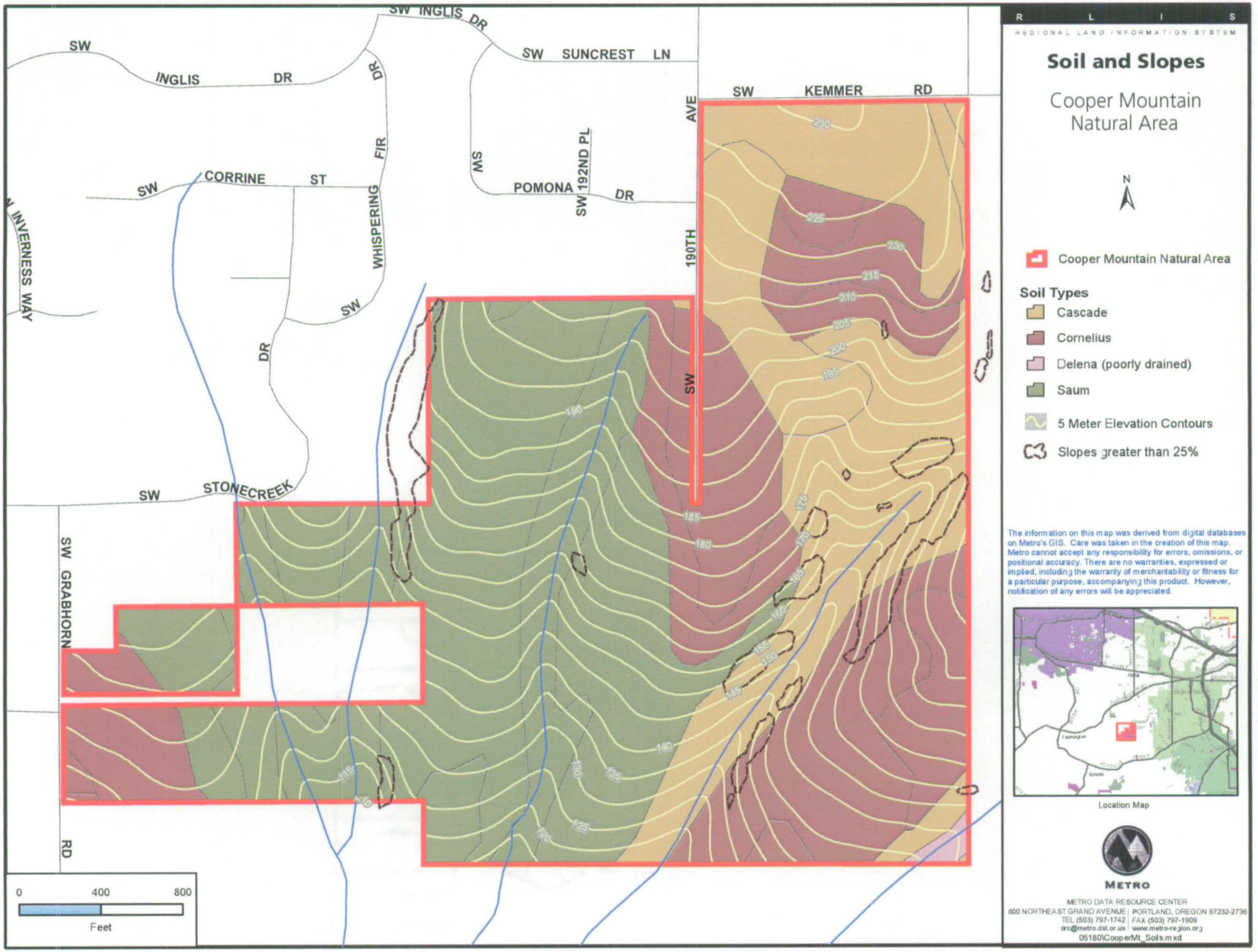
Soils on top of the basalt flows are derived to a large extent from windblown silts deposited over a period of tens of thousands of years during the Pleistocene ice ages. The thickness of these deposits varies greatly depending on the prevailing wind direction during those periods. The site is comprised of three silt types - the

Saum silt loam series, Cascade silt loam series and the Cornelius and Kinton silt loams.

The Saum series occupies most of the western half of the site, most of which falls within the 12 to 20 percent slope range. This series consists of well-drained soils that formed in mixed eolian material, old alluvium, and residuum from basalt on uplands. The top horizon of soil is silt loam to silty clay loam texture; lower horizons have increased clay contents ranging from 30-50%. Slopes vary from 2 to 60 percent and elevations of this soil range from 250 to 1,200 feet. Where these soils are not cultivated, the vegetation is typically a mix of Douglas fir, Oregon white oak, poison oak, grasses and forbs. Permeability is moderately slow. Effective rooting depth is 20 to 40 inches. The depth to bedrock is typically 40 to 60 inches. Runoff is medium to rapid depending upon the slope, with corresponding erosion hazards that are moderate to severe.

The Cascade series exists along the several intermittent streams on site on moderately steep slopes ranging from 12 to 20 percent. This series consists of somewhat poorly drained soils that formed in silty loess and old mixed alluvium on uplands. A fragipan exists at a depth of 24 to 48 inches. Where these soils are not cultivated, the vegetation is typically Douglas fir, western red-cedar, big leaf maple, salal, red huckleberry, vine maple, swordfern, grasses, and forbs. Permeability is slow. Effective rooting depth is 20 to 30 inches. Runoff is medium and erosion hazard is moderate.

The Cornelius and Kinton loams series primarily occurs on the eastern half of the site. Slopes generally range from 5-12 percent. This soil group is generally comprised of about 50 to 65 percent Cornelius soils and 25 to 35 percent Kinton soils occurring in a variable pattern. This soil consists of moderately well drained soils that formed in loess like material over fine-silty, old alluvium of mixed origin on uplands. Permeability is slow. Effective rooting depth is 30 to 40 inches. Depth to bedrock ranges from 40-60 inches. The top horizon ranges in texture from silt loam to silty clay loam. Clay content in the lower horizons ranges from 30-50 percent. Runoff is slow to medium according to slope and erosion hazard is slight to moderate.


SW INGLIS DR
SW INGLIS DR
SW SUNCREST LN
SW KEMMER RD
SW CORRINE ST
POMONA DR
SW 192ND PL
190TH AVE
WHISPERING DR
SW INVERNESS WAY
SW STONECREEK
SW GRABHORN RD
0 400 800
Feet
R L I S
REGIONAL LAND INFORMATION SYSTEM
Soil and Slopes
Cooper Mountain Natural Area
N
Cooper Mountain Natural Area
Soil Types
Cascade
Cornelius
Delena (poorly drained)
Saum
5 Meter Elevation Contours
Slopes greater than 25%
The information on this map was derived from digital databases on Metro's GIS. Care was taken in the creation of this map. Metro cannot accept any responsibility for errors, omissions, or positional accuracy. There are no warranties, expressed or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of any errors will be appreciated.
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05180\CooperMt_Soils.mxd

Scenic and Cultural Resources

Scenic and cultural resources are addressed by policies in the *Washington County Comprehensive Framework Plan.*

Scenic Resources

Policy 13 of the County's *Rural/Natural Resource Plan*, which is one of a number of support documents that make up the *Comprehensive Plan*, states that it is the general policy of Washington County to protect and enhance its outstanding scenic views, routes and features. No views, routes or features are specifically designated for the Cooper Mountain Natural Area site itself, or for the streets immediately adjacent. However, scenic resources are noted for the neighborhood areas to the immediate north of the site in the *Aloha-Reedville-Cooper Mountain Community Plan,* another support document of the *Comprehensive Plan.*

That plan recognizes the forested slopes on the north side of the mountain as outstanding scenic features as viewed from the valley floor. It also recognizes that "several outstanding scenic views exist at points along roads traversing Cooper Mountain, and that the viewsheds of these points shall be determined through master planning processes. Additionally, road turn out facilities shall be constructed at identified scenic viewpoints in conjunction with improvements to bring roads up to standards."

Although not specifically required, this master plan recommends that vegetation in the natural area be managed in such a way as to protect outstanding views both into the site from Kemmer Road, and from within the site overlooking the Tualatin Valley and Chehalem Mountains to the south. The most significant views on the site are from the existing open meadow and prairie areas. Many of the more detailed scenic features of the site (such as the quarry pond and the two native prairies) are also important interpretive features.

Historic and Cultural Resources

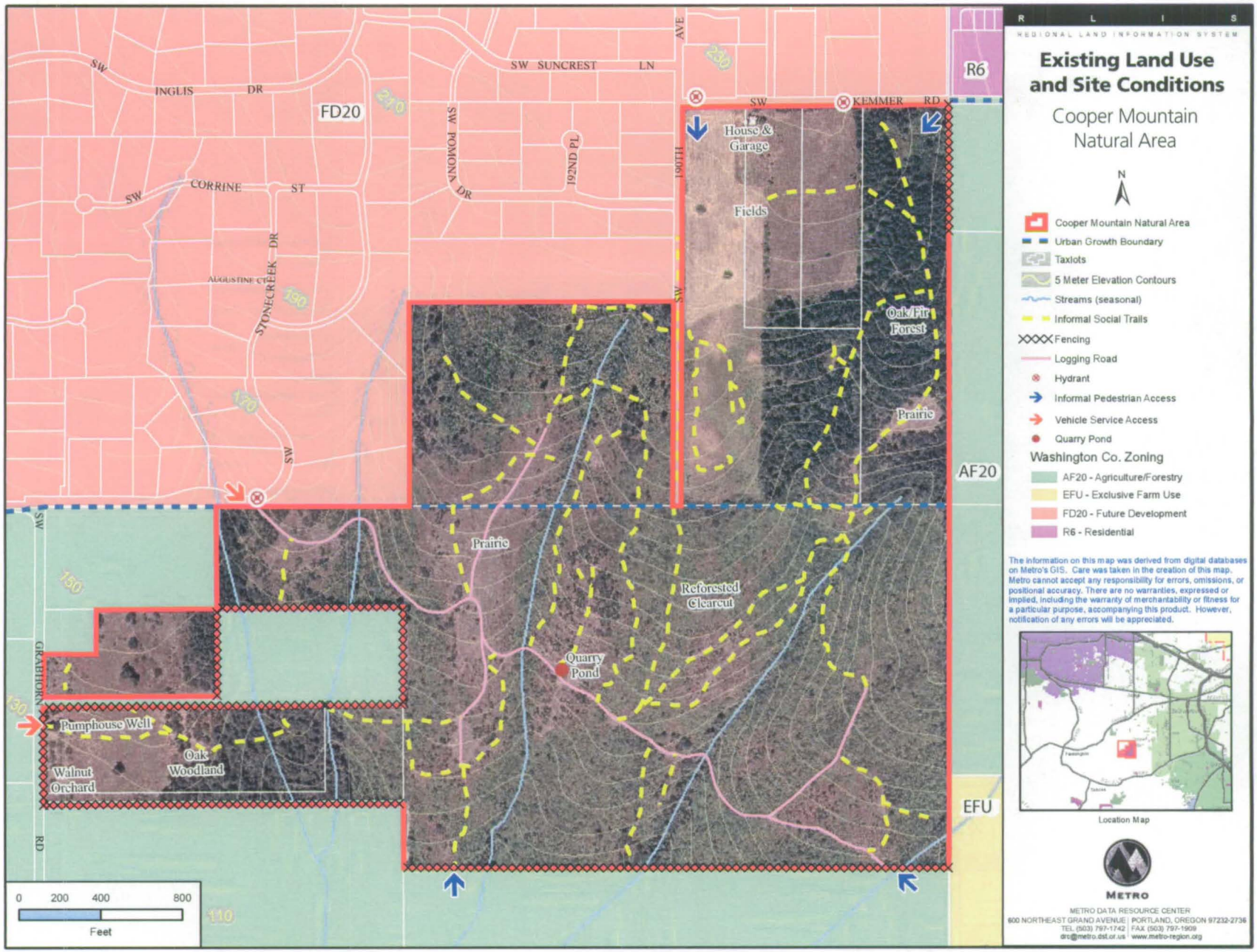
No historic or cultural resources have been designated for this site in the County's *Rural/Resource Plan* or in its immediate vicinity in the *Aloha-Reedville-Cooper Mountain Community Plan*. An inquiry to the State Historic Preservation Office records reveals that there are also no known archaeological sites on this property or in either of the sections it occupies. Dennis Griffin, archaeologist for the State Historic Preservation Office, states, "There have been no previous cultural resource surveys in this area so the potential for sites to exist remains largely an unknown. However, due to the steepness of terrain over much of the sections, and the original forest cover, the likelihood is not high for Native American archaeological resources. The top of Cooper Mountain, however, may have contained rock cairns or other prehistoric objects as it would have provided an excellent view of the surrounding landscape."

While there are no known historic or cultural resources on this site proper, the preservation of the land as a public natural area represents an opportunity to interpret the indigenous cultures and early settlement history of the Cooper Mountain area.

Land Use

Zoning

The northernmost portion of the site, which comprises approximately one-third of the overall site area, lies within the urban growth boundary. This area, zoned Future Development 20 (FD-20), requires a minimum lot size of 20 acres and allows park use. This designation was given to a variety of county lands in 2002 and is an 'interim holding zone' until such lands can be master planned per Metro's Title 11 (Urban Area Planning). Surrounding private parcels immediately adjacent to this portion of the site are zoned FD-20 to the west, and Agriculture/Forest (AF-20) to the east, with a minimum parcel size of 80 acres.


R L I S
REGIONAL LAND INFORMATION SYSTEM
Existing Land Use and Site Conditions
Cooper Mountain Natural Area
N
Cooper Mountain Natural Area
Urban Growth Boundary
Taxlots
5 Meter Elevation Contours
Streams (seasonal)
Informal Social Trails
Fencing
Logging Road
Hydrant
Informal Pedestrian Access
Vehicle Service Access
Quarry Pond
Washington Co. Zoning
AF20 - Agriculture/Forestry
EFU - Exclusive Farm Use
FD20 - Future Development
R6 - Residential
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SW INGLIS DR
SW CORRINE ST
SW AUGUSTINE CREEK DR
SW STONECREEK DR
SW SUNCREST LN
SW POMONA DR
192ND PL
190TH AVE
SW KEMMER RD
SW GRABHORN RD
FD20
R6
AF20
EFU
House & Garage
Fields
Oak/Fir Forest
Prairie
Prairie
Reforested Clearcut
Quarry Pond
Pumphouse Well
Oak Woodland
Walnut Orchard
210
230
190
170
150
130
110
0 200 400 800
Feet

The remaining two thirds of the Cooper Mountain site is located outside the urban growth boundary on land zoned Agriculture/Forest (AF-20). This designation is used for Natural Resource Areas within the county. It generally includes lands above 350-feet in elevation that are somewhat limited for farming and forestry due to steep grades and limited water supply. The surrounding parcels immediately adjacent to this portion of the site are also zoned AF-20. A parcel abutting the site's southeast corner is zoned Exclusive Farm Use (EFU).

Existing Facilities

Existing facilities on the several parcels that comprise the site include former residences, logging roads and informal trails.

Roads and Trails

The gravel logging road is approximately 1.2 miles. At least 5 miles of informal trails have been mapped but this is not exhaustive.

Erosion in the upland prairie caused by informal trails

Some of the existing trail network may be incorporated into a future trail system, but many of the trails are redundant and cause erosion and fragmented habitat due to poor locations.

Access

Currently, there is no established public vehicular access onto the site. There are maintenance and service access gates located at Stone Creek Drive (which accesses the existing logging road), Grabhorn Road, and 190th Ave. Interim informal public access to the site occurs by parking along the shoulder of 190th Street, and along Stone Creek Drive outside the maintenance gate. There are also several informal pedestrian access points from neighboring properties that occur at corners of the property. They pose a potential problem to both Metro and adjacent property owners and will need to be addressed.

Service access at Stonecreek Drive

Fencing

At the time of purchase, the property was largely unfenced and will remain so to maintain wildlife corridors and allow wildlife passage. Partial fencing exists along the southern boundary of the property. New fencing has been installed around the private in-holding and

partially along the eastern boundary as needed to control vehicular access in and out of the site.

Former Residences

A residence that was located along Grabhorn Road at the time of purchase has since been removed. Remaining infrastructure includes a functioning well, pump house, electrical service, a driveway, and a small walnut orchard. Because Cooper Mountain has been identified as a critical groundwater area, the water from the well is restricted to domestic use and stock water purposes.

A small 1,100 SF home with a detached double garage exists along Kemmer Road that is currently rented. A cell tower is located on top of the garage. Metro currently has leases with three companies for use of the tower and one half of the garage is designated for cell tower equipment. Utilities for the home include city water, oil heat and a septic system.

A private mobile home is located on the detached parcel to the south on Scholls Ferry Road and is under a lease agreement with Metro. This property contains a working well and has rights to the private road on its western boundary.

Existing structures along Kemmer Road

Regional Context

The communities of Beaverton, Aloha, Southwest Portland, Tigard, Durham, Tualatin, King City, Sherwood and Hillsboro are all within a 6-mile radius of Cooper Mountain. Transportation, schools and other parks and open spaces in the vicinity are important considerations in understanding its existing context and in determining its future. Both regional access and multi-modal ways to get to the natural area are important. Schools and other parks in the vicinity represent potential linkages and partnerships, as well as constraints since there may be no need to duplicate facilities already provided.

Roads

The site can be reached by several arterial and collector streets. From the south, it can be reached from Scholls Ferry Road to 175th to Kemmer Road. From the north, it can be reached via Tualatin Valley Highway to 185th or 190th to Kemmer Road, and also from Farmington Road to 170th and 175th to Kemmer Road.

Public Transit

Public transit is currently not available to the site nor planned. There is a light rail stop north of the site at SW 185th Ave and Willow Creek (395 SW 185th Ave), which is approximately 4.5 miles from the Kemmer Road entrance. In addition, four bus lines (#88, #52, #62 and #92) run to the north and east of the site along SW 185th Ave, SW Farmington Rd, SW 170th Ave., SW Murray Blvd., and SW Teal Blvd. Each of these lines has at least one stop between 1.5 and 2.5 miles from the Kemmer Road entrance.

Bikeways

In the Washington County Transportation plan, bikeway designations are applied to 185th Ave., Scholls Ferry and Farmington roads. However, bike lanes do not currently exist on these streets. Oregon statute requires that bicycle facilities be provided on all collector or arterial streets when they are constructed or reconstructed.

Trails

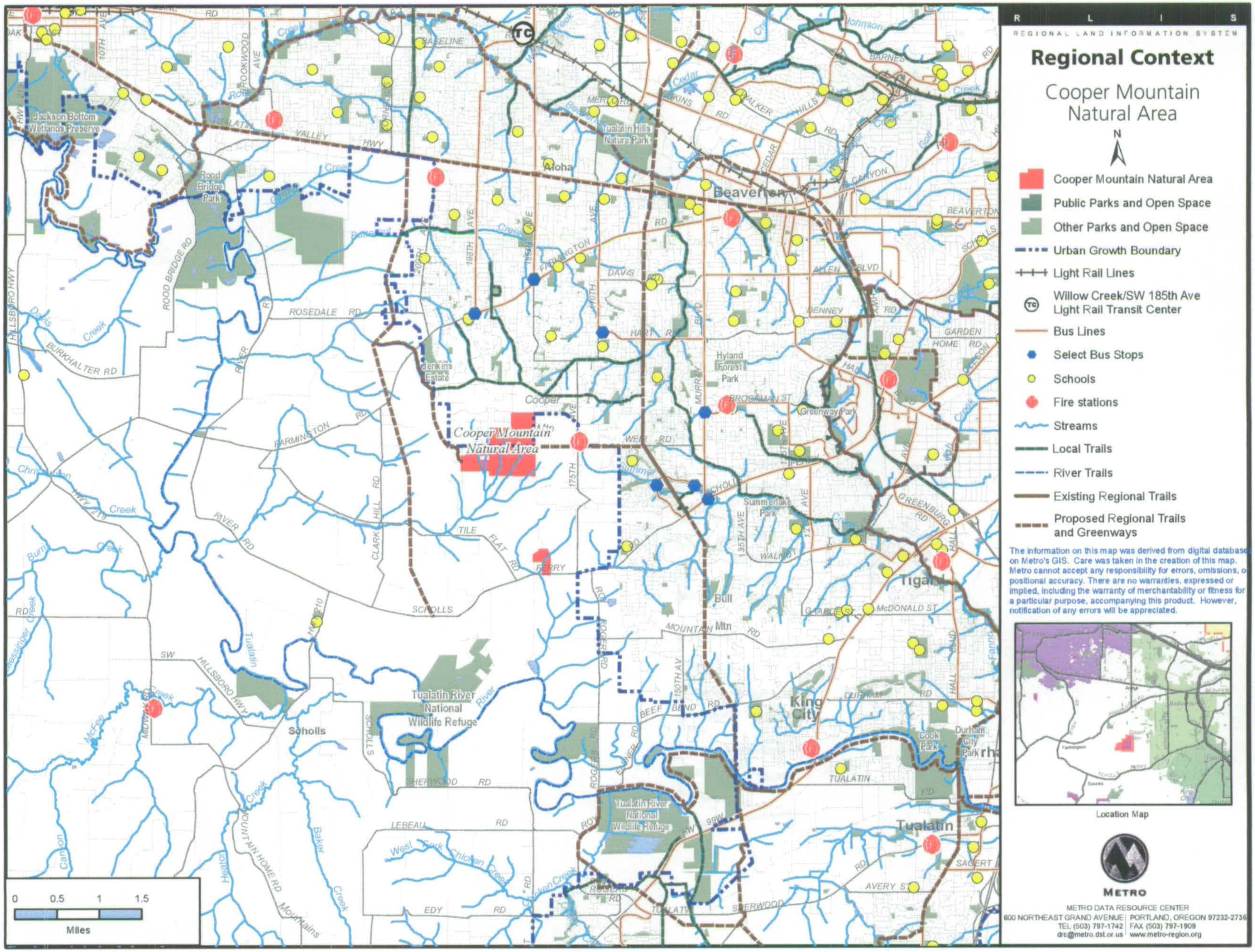
Several off-street trails exist and are planned near the site. One mile east of the natural area, the Beaverton Powerline Trail, a regional north-south trail is planned to connect a number of other natural areas (i.e. Tualatin Hills Nature Park, Bull Mountain and potentially the Tualatin River National Wildlife Refuge). The Burlington Northern Powerline Trail, a north-south corridor approximately one mile to the west of the natural area, has recently been nominated as a regional trail corridor. The Cooper Mountain Trail, an east-west route connecting these two north-south corridors has also been nominated as a regional trail. The specific alignment of this trail is unknown but every effort will be made to link it with Cooper Mountain.

Schools

21 schools are located within a 4-mile radius of the natural area;14 grade schools, 3 middle schools and 4 high schools. Nine of these schools are located within a 2-mile radius. The proximity of the natural area to so many schools highlights its potential to provide outdoor education and service-learning opportunities to school groups.

Parks and Natural Areas

45 smaller neighborhood parks and open spaces (which provide many traditional park facilities such as playgrounds, ball fields and tennis courts), as well as smaller natural areas are located within a 4-mile radius of the site. Larger parks and natural areas in this vicinity are therefore significant for potential regional and local trail connections. (e.g. Bull Mountain, the Beaverton Powerline Trail, Jenkins Estate and Tualatin Hills Nature Park). A quarry operation located directly south of the Jenkins Estate also represents potential long-term future park land.


R L I S
REGIONAL LAND INFORMATION SYSTEM
Regional Context
Cooper Mountain Natural Area
N
Cooper Mountain Natural Area
Public Parks and Open Space
Other Parks and Open Space
Urban Growth Boundary
Light Rail Lines
Willow Creek/SW 185th Ave Light Rail Transit Center
Bus Lines
Select Bus Stops
Schools
Fire stations
Streams
Local Trails
River Trails
Existing Regional Trails
Proposed Regional Trails and Greenways
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0 0.5 1 1.5
Miles
Cooper Mountain Natural Area
Beaverton
Aloha
Tigard
King City
Tualatin
Scholls
Jackson Bottom Wetlands Preserve
Rood Bridge Park
Tualatin Hills Nature Park
Jenkins Estate
Hyland Forest Park
Greenway Park
Summerlake Park
Cook Park
Durham City Park
Tualatin River National Wildlife Refuge

Recreation Context

Recreation context of the site was determined from the following sources: regional trends and demands identified by the SCORP (Statewide Comprehensive Outdoor Recreation Plan), existing recreation facilities provided or deficient in the vicinity, and existing use patterns on the site.

Regional Recreation Trends (SCORP)

Oregon's Statewide Comprehensive Outdoor Recreation Plan (SCORP) provides an overall understanding of recreation trends, demands and needs for the state as well as for each of 11 regions within the state. Washington County and Cooper Mountain Natural Area are located in Region 2. The plan, recently updated by Oregon State Parks, tracks demographic trends and includes in-depth recreation surveys that identify recreation patterns, issues and needs for the next 5-10 years.

Demographic Trends

Washington County has experienced the largest growth in the Metro region (43%) over the past decade. Its population is currently about 500,000. Washington County's age distribution is comparatively young: 70% of the total population is 44 or under, and 20% of the total population is school age children. Only 8.8% are retirement age. Washington County overall is approximately 85% Caucasian, although Hillsboro and Beaverton are 80% Caucasian. Hispanic and Asian populations represent the largest percentage of minorities. Washington County has the lowest percentage of population below the poverty level in the state (4.9%). Ninety-four percent of housing in the Cooper Mountain area consists of single-family homes. Homeowners at the top of Cooper Mountain generally reflect the highest per capita income in the county.

Recreation Demands and Issues

The SCORP survey identifies those recreation activities that have the largest participation levels, and those that have experienced the largest growth or loss in participation levels for each region over the past 15 years.

Most notably, of 40 activities surveyed in Region 2, nature study possesses the highest participation levels and has experienced the largest growth (254%) over the past 15 years. Other activities that have experienced significant growth and may have relevance to Cooper Mountain are: playground play (114% increase) and sightseeing (68% increase). Trail walking/running and picnicking have not seen large percentage increases over the past 15 years, but they remain in the top 10 highest participation activities.

Horseback riding has seen a 27% decrease in participation in this region over the past 15 years. However, according to nearby equestrian users, this decrease may reflect the county's transition from rural to more developed lands rather than reflect a decline in interest.

The top recreation issues that have been identified for this region by the SCORP include several that could apply to Cooper Mountain. These are:

- The need to acquire more park lands to keep pace with population growth
- The need for non-motorized recreational trail connectivity
- The need to balance resource protection and recreation through environmental education

Existing Recreation Providers

Metro shares responsibility for providing outdoor recreation opportunities to the public with other providers in Washington County. The following recreation providers are also located within a 6-mile radius of Cooper Mountain.

U.S. Fish and Wildlife Service

The Service manages the Tualatin River National Wildlife Refuge, which is currently about 1,268 acres in size and is located along the Tualatin River directly south of Cooper Mountain. The USFWS has completed a master plan for visitor facilities on a portion of the Refuge. Like Metro, the USFWS provides resource-based recreation and education opportunities that are focused on protecting the resource. Planned facilities include trails, observation decks and shelters, an interpretive kiosk, and a wildlife center, which will be open to the public in 2005 or 2006. While the refuge's wetland habitat setting contrasts substantially from Cooper Mountain's upland habitats, it provides facilities for a visitor experience similar to those envisioned for Cooper Mountain.

Tualatin Hills Park and Recreation District

THPRD provides park and recreation services to 200,000 residents within 55 square miles of eastern Washington County, including the City of Beaverton. Parks and greenspaces total approximately 1500 acres. Half of this acreage is wetland and natural areas, and half is neighborhood and community parks. The district's park facilities include numerous aquatic centers, community recreation centers, specialized recreation facilities, and nearly 30 miles of trails. The district provides over 13,000 recreational programs annually.

Included in the district's facilities is Tualatin Hills Nature Park, a 222-acre wildlife reserve with an interpretive center. The Nature Park is located in the heart of Beaverton, approximately three miles northeast of Cooper Mountain. It is primarily a wetland and riparian habitat (in contrast to Cooper Mountain's upland setting). A variety of classes, programs and activities are offered at the Nature Park to foster environmental education and an appreciation of nature.

Nine other parks, managed by THPRD are located within a 2-mile radius of Cooper Mountain. Jenkins Estate, an historic home site that is rented by groups for special occasions, meetings and retreats, is located just one mile northwest of Cooper Mountain Natural Area.

Tigard Parks

The City of Tigard has 300 acres of parkland, which include 57 neighborhood parks, creek greenways and natural areas. Cook Park, which provides boating access to the Tualatin River, is the largest park in Tigard.

Hillsboro Parks and Recreation

Hillsboro Parks and Recreation facilities include 20 parks, a sports complex and stadium, community centers and aquatic facilities. While most of the parks contain more traditional recreation facilities, five of the city's parks include natural areas ranging from 9 to 60 acres. However, Hillsboro's facilities are primarily designed to provide traditional recreation activities.

Jackson Bottom Wetlands Preserve

Jackson Bottom is a 710-acre wetland co-owned by City of Hillsboro and Clean Water Services, and is located just south of the center of Hillsboro. The preserve is a premier resource center for wetland and aquatic education in the region. An array of school, individual and family programs are offered. Facilities include approximately three miles of trails and observation shelters. A new Wetlands Education Center was recently opened to support the Preserve's programs.

Current and Former Use Patterns

As a prominent feature in the landscape, the natural area has a long established history of informal recreational use. Many of these current and former uses are typical on public properties that are not actively managed which includes a combination of "trail based" use and nuisance activities that have undesirable impacts on neighbors and on the resource.

The site is actively used by neighbors and nearby residents for walking, hiking, biking, horseback riding, and dog walking. Motorized ATV use of the trails was common before Metro's purchase, but has greatly diminished due to fencing and

enforcement of pedestrian use only regulations. The site's high elevation and open views also make it a popular spot for stargazing and viewing fireworks displays. Metro also sponsors guided nature walks for interested citizens.

An array of nuisance activities also occurred on this site prior to Metro's purchase and to a lesser degree still continue. These have included: dogs running off-leash, dog hunting training, target shooting, paint ball gaming, night time activities involving alcohol and campfires, dumping and itinerant camping. The Stone Creek Drive service access tended to be the entry point for this kind of use because it offered a shoulder to park on and a heavily vegetated edge that reduces visibility into the natural area.

Defining a Recreation Role for Cooper Mountain

Because city municipalities and service districts such as THPRD provide many traditional park facilities (ball fields, basketball courts, etc.) relatively close by, such facilities are not needed at Cooper Mountain Natural Area.

While there are a number of nature-based recreation and educational facilities in close proximity (e.g., Jackson Bottom Wetlands Preserve, Tualatin Hills Nature Park and the Tualatin River Wildlife Refuge), facilities and environmental education at Cooper Mountain Natural Area could focus on its distinctive upland habitats and spectacular open views, hence expanding the region's environmental outreach capacity.

Analysis

Land Use Suitability

Survey of Community Desires & Needs

Opportunities & Constraints

Surrounding Areas

Analysis

Recommendations for the future use, design and management of the Cooper Mountain Natural Area resulted from the following analyses:

1) an analysis of the landscape's suitability to accommodate recreation uses and development that complement the site's natural resource areas
2) a survey of community desires and needs
3) an assessment of key site opportunities and constraints, and
4) a review of adjacent properties to identify their relationship to habitat connections, potential recreation activities, existing and planned uses, and to assess potential site and/or visitor impacts.

Land Use Suitability

To determine the site's level and location of suitable uses, the design team used the Oregon Department of Parks and Recreation suitability assessment procedure. The method includes mapping of individual natural (plant communities, wildlife habitat, hydrology, wetlands, geologic hazards) and cultural resources and classification of them into one of four levels of resource suitability (RSC) ranging from most to least restrictive use. Resources are classified according to the following criteria:

- Uniqueness (rarity or significance to region)
- Quality of habitat (based on existence of non-native species and amount of human-caused disturbance)
- Presence of state or federally listed threatened and endangered species
- Presence of Oregon Natural Heritage Program listings 1, 2 or 3
- Geologic instability
- Soil constraints
- Cultural and Scenic resources

Once resource categories are mapped and classified, they are overlain to produce a composite suitability map for a given site. The composite typically highlights sub areas of the site that are most restrictive on any one of the layers. Sub areas with a suitability level of RSC 1 or 2 are generally least suitable for accommodating use and development. Areas with a RSC 3 or 4 rating are considered most suitable for development.

Resource Suitability Class (RSC) Descriptions

RSC 1 – Resource Protection/Very Limited Development

Defined by unique and high quality habitats, protected species status, riparian areas, steep slopes and/or geologically unstable areas.

RSC 1 areas at Cooper Mountain Natural Area include the oak woodlands, prairies, riparian forests, and their associated plant and wildlife communities (e.g., white rock larkspur, and Western bluebird). Oak woodland is a unique community that is a disappearing resource in the Willamette Valley. This plant community, which includes Oregon white oak/poison oak and oval leaf viburnum, is ONHP listed as NHP-G1 (vulnerable). The quarry, which is located within an oak habitat unit, is home to the red-legged frog, a state listed species. Riparian corridors are habitat to the yellow-breasted chat and willow flycatcher – both state listed species. Some segments also contain steep slopes (greater than 25%) and unstable, highly erosive soils.

RSC 2 - Limited Development

Defined by habitat of high quality value, areas with limited or no exotic species in the understory, perched water, geologically unstable areas, and moderate slopes.

RSC 2 designated areas include mixed second growth conifers and their associated wildlife such as pileated woodpecker. These areas are mostly free of invasive vegetation in the understory. They have wet soils and moderately steep slopes (12-25%)

RSC3 - Moderate Development

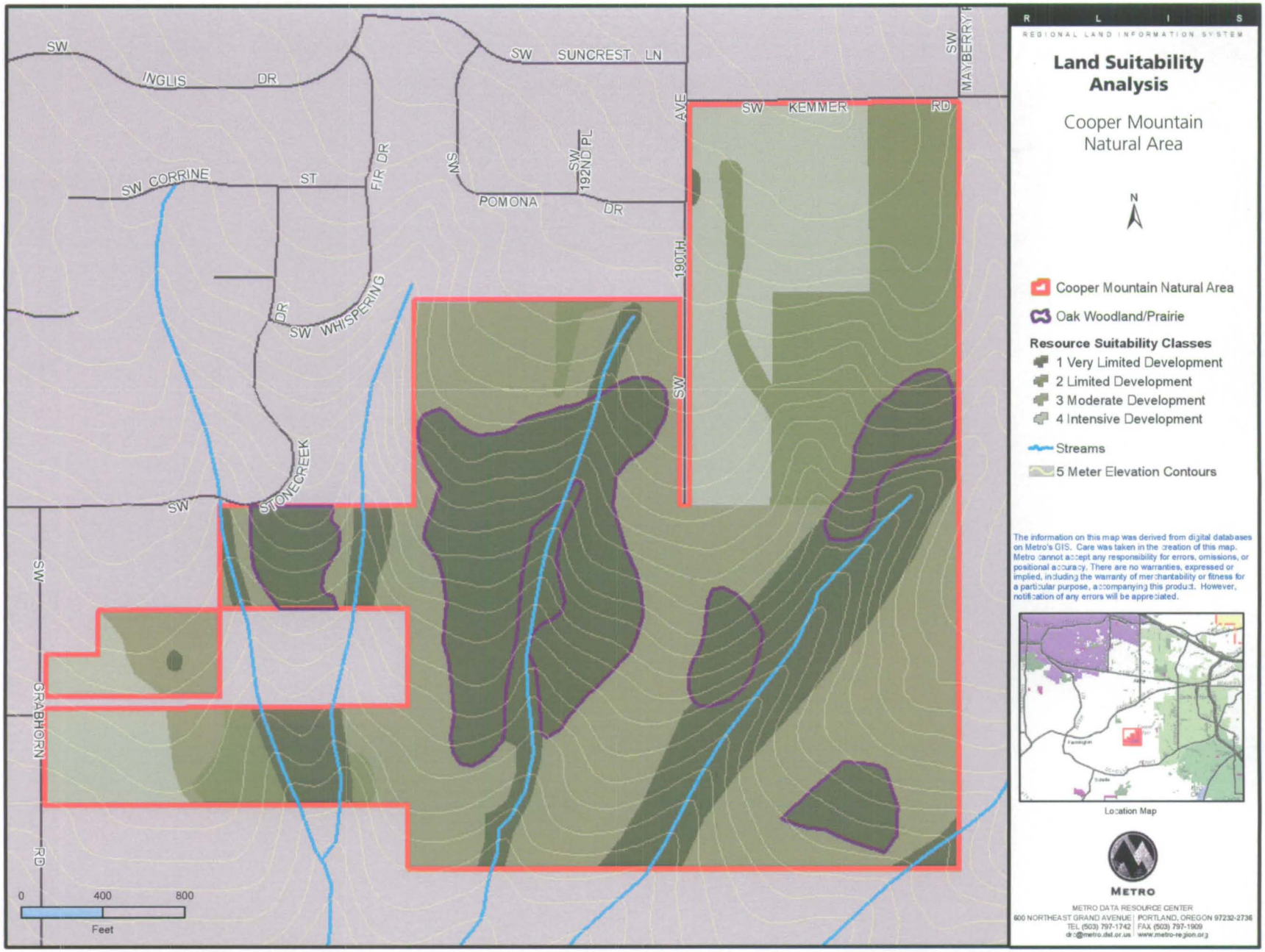
Defined by lower quality habitats, more exotic vegetation in the understory and geologically stable areas.

RSC 3 areas include disturbed mixed oak-conifers areas of lower quality, open canopy with exotics in the understory, gently sloping areas with soils with the least erosive properties, and/or moderate slopes of 6 to 12% in most areas.

RSC4 - Intensive Development

Defined by minimal and low habitat quality, disturbed edge areas, little anticipated restoration activity, and gentle slopes (under 6%).

RSC 4 areas include open areas of non-native grasses that are mowed or restored with little or sparse vegetation. These areas are mostly located at the edges of the property, and have little habitat value. Slopes are less than 6% in these areas. These areas are most appropriate for accommodating development.


SW
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SW MAYBERRY
SW KEMMER RD
AVE
SW 192ND PL
SW CORRINE
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STONECREEK
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REGIONAL LAND INFORMATION SYSTEM
Land Suitability Analysis
Cooper Mountain Natural Area
N
Cooper Mountain Natural Area
Oak Woodland/Prairie
Resource Suitability Classes
1 Very Limited Development
2 Limited Development
3 Moderate Development
4 Intensive Development
Streams
5 Meter Elevation Contours
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Survey of Community Desires and Needs

Public opinion and input was solicited on a variety of issues related to the future of the Cooper Mountain Natural Area. One-on-one interviews, stakeholder meetings, open houses and a general public interest survey (completed by over 400 people) were used to identify existing uses, concerns and desires for the site. The survey results provided below, help provide a picture of local community desires, concerns and values for Cooper Mountain.

Residents unanimously value having a natural open space in their community and provided the following reasons for making improvements at Cooper Mountain Natural Area (in order of most listed reasons to fewest):

- To allow public access and use by residents and visitors
- To preserve the natural beauty and limit development
- To protect and improve habitat
- To manage and restore the ecosystem
- To control invasive vegetation
- To balance recreation opportunities with preserving habitat
- To be able to experience nature close to home
- To provide opportunities to learn about natural systems
- To provide a place to be active outdoors
- To accommodate all trail users
- To provide parking and sidewalks along Kemmer Rd.

People's concerns about public use at Cooper Mountain Natural Area include the following (in order of most listed concern to fewest):

- Increased traffic
- Vandalism and other criminal activity
- Littering
- Noise and partying
- Degradation of natural beauty and habitat because of overuse
- Wildfire
- Overdevelopment, attracting large groups
- Conflicting trail uses
- Dogs chasing wildlife
- Exclusion of mountain bike use
- Conflict with mountain bikes
- ATV use
- Poison oak
- Shooting/target practice

Additional comments and suggestions to help shape the master plan included the following:

- Keep dogs out
- Keep dogs on leash, or provide a restricted dog run area
- Allow dogs - they have less impact than mountain bikes or horses
- Provide an open informal playfield for children
- Provide amenities for children
- Horses have too much impact and require too much parking space
- Improve trails for mountain biking, provide single track trails
- Keep mountain bikes out
- Provide for all trail user groups
- Only provide a minimal network of walking trails
- Provide good interpretive signage
- Provide "leave no trace" signage
- Provide parking and access at multiple locations

- Preserve nature by not bringing large crowds
- More emphasis on nature study, less on recreation
- Provide fitness stations along trail
- Use boardwalks to keep people on trails
- Provide an open structure "outdoor classroom" to deliver outdoor programs
- Minimal development –parking, tables, play structure, restroom and trails
- Do more invasive vegetation removal

Metro has a policy that prohibits dogs from natural areas. The policy is intended to minimize conflicts with wildlife. Survey respondants were asked their opinion of the policy: 38% strongly agreed, 21% somewhat agreed, 18% somewhat disagreed, and 23% strongly disagreed.

The following table illustrates the level of interest in specific features and activities at the future natural area as reported in 400+ public surveys.

	Very important	**Somewhat important**	**Not important**
network of walking trails	84%	14%	2%
help improve habitat	78%	18%	4%
loop trail with viewpoint	68%	27%	6%
wildlife viewing	61%	31%	8%
a place to spend time with family and friends	60%	30%	10%
restrooms	58%	31%	11%
resting/viewing benches	52%	36%	12%
interpretive signs	40%	41%	19%
school field trips	30%	50%	19%
individual picnic areas	29%	45%	26%
bike racks	24%	45%	30%
guided nature tours	16%	43%	41%
mountain biking	24%	34%	43%
parking for at least 30 vehicles plus two buses	29%	26%	45%
parking for at least 15 vehicles plus one bus	34%	21%	45%
a group picnic shelter	16%	37%	47%
trails for horses	38%	14%	48%
play structure for young children	16%	29%	56%
Should the park provide for small groups (25-50) and family gatherings?	41% yes		59% no

Table 2: Desired Features & Activities for Cooper Mountain

Opportunities & Constraints

Opportunities and constraints for Cooper Mountain were distilled from the collective information gathered which included public survey results, input from the project advisory committee and resource and site technical information. The opportunities and constraints identified at this stage of the analysis helped shape the goals and objectives for the site, and informed the design concept and recommendations outlined in the following chapters. Opportunities and constraints are organized into the following five categories:

1) Natural Resource Protection and Management
2) Providing for Recreation Needs
3) Interpretation and Education
4) Operation and Management
5) Transportation and Neighborhood Impacts

Natural Resource Protection and Management

Opportunities

- Preservation/restoration of unique oak/madrone habitat.
- Preservation/restoration of unique meadow habitat.
- Protection/restoration of habitats for sensitive species.
- Restoration of conifer and mixed conifer forest in logged areas.
- Control and removal of invasive vegetation.

Constraints

- Reforestation efforts need to accommodate and protect important views.
- Large areas of natural resources are currently in poor condition as a result of logging and reforestation practices.
- The site's relatively small size, combined with public use, limits the degree to which resources can be protected and restored.
- Need to balance cost/benefit of resource protection & recreation opportunities.
- Vegetation management is limited by available funding and staff resources.
- Using controlled fires as a habitat management tool may concern some neighbors.

Providing For Recreation Needs

Opportunities

- Site offers the potential to provide for a variety of trails featuring views, loop options, challenge levels, and other nature-based recreation activities.
- Site offers potential for public gathering space (e.g., picnics and other group events).
- The northern third of the property provides gentle grades for universal accessibility.
- Site has high potential to provide nature interpretive experiences.
- Site has outstanding views of the Tualatin River Valley.
- There is sufficient "suitable" land (gently sloped with low habitat value) to provide recreation support facilities.
- Even limited equestrian trails will provide a valuable experience for young, beginning riders and people with disabilities.
- There is good potential for trails within the natural area to connect to regional trails to the east and west of the site.
- Public input revealed broad support for a 3-4 mile trail system.

Constraints

- The site has limited capacity to accommodate public use, with respect to quantities of trails, due to its size, slopes and natural resources.

- Concentrated multiple recreational uses – equestrian, pedestrian, bicyclists, dog walking – can result in conflicts with each other. (For example, mountain bike users typically prefer trails six miles or longer, single-track and steeper slopes; this use tends to conflict with hikers and horses unless there is adequate room for multiple uses and separated trails.)
- Increased recreational use of the site could have additional impacts on neighbors (e.g., noise, traffic, vandalism and litter). Important to limit impacts to neighborhood through design.
- There is limited potential for ADA access beyond the top third of the property due to steep slope gradients.
- Trail design will need to consider presence of any threatened and endangered species, setbacks from streams and slope limitations.
- Organized mountain biking groups have advised that, because of the site's small size, use will likely be from youth and unorganized riders. These bike users may be difficult to manage, as they tend not to stay on designated trails.
- Trails located too close together will encourage short-cut trails, further fragmenting habitat and causing erosion.
- Dogs on leash and dog waste cleanup rules are frequently ignored and difficult to manage. The presence of dogs will have negative impacts on wildlife and opportunities for wildlife viewing.
- Trail use of the northern parcel along Grabhorn Road will require a trail easement from one of the adjacent property owners to provide access.

View of the Tualatin River valley

Interpretation And Education

Opportunities

- High potential to provide interpretive nature experiences.
- Distinctive and numerous interpretive themes based on site natural resources and geographic setting.
- Spectacular views of Tualatin River Valley.
- Good stargazing conditions.
- High public interest and demand for environmental education and interpretation opportunities.
- Close proximity to schools and other environmental education and natural history interpretation providers.
- Existing house on site can potentially accommodate education classroom, storage and office.

Constraints

- Breadth and scale of programs will be defined and limited by the site infrastructure, by market demands, and by the extent of educational partnerships developed.
- There are concerns about potential illicit use of an education/picnic shelter after hours.

Operations And Management

Opportunities

- Management efficiencies may be optimized by a shared management role between Metro and Tualatin Hills Park and Recreation District.
- Tualatin Valley Fire and Rescue station is in close proximity to the site and equipped to respond to wild land fires.
- Public access to the site can be managed and controlled with the installation of entry gates.
- House and garage on site provide potential for a more constant management presence on site. In addition, they offer a combination of office, storage area, and nature house
- Existing logging roads provide sufficient access for service and emergency vehicles. All trails can serve dual function as fire breaks.
- The former residence site along Grabhorn Road is suitable for accommodating a maintenance yard and caretaker residence.
- Volunteer partnerships can provide valuable assistance in expanding maintenance and operations capacity.
- Providing for public access to the site creates an opportunity for revenue generation to support operations and management.

Constraints

- Metro park rangers do not currently have the authority to enforce park rules in Washington County.
- Need to secure sufficient funding for long-term maintenance and management.

Impacts to Neighborhood

Opportunities

- Preserve the scenic quality of Cooper Mountain.
- Provide access to nature and trails close to home.
- Provide a neighborhood gathering place.
- Facilitate community-building through partnership involvement in the natural area.
- Improve safe bike/pedestrian routes from neighborhoods to the site, in particular from residences of the north side of Kemmer Road.
- Explore traffic calming measures for Kemmer Road and Grabhorn Road (turn lane, median, speed bump, street trees, etc.).

Constraints

- Public concern that increased traffic generation by natural area users will impact already busy local roads. Need to address potential traffic impacts on adjacent roads.
- Scale of public use needs to be limited to minimize impacts to adjacent neighbors (loss of privacy, noise, litter, illegal activities, etc.).
- Neighbors have concerns about wildfire and fire management impacts.
- Neighbors have concerns about street parking by natural area users, and also pedestrian access along Kemmer Road.

Surrounding Areas

A review of surrounding properties identifies their relationship to the natural area with respect to habitat connectivity, potential recreation opportunities, existing and planned uses, and potential impacts from the site. Any area considered for one or more of these reasons is recognized as an "area of concern" in the master plan, with long-term opportunities for solutions identified through design, resource management and zoning strategies.

In addition, Metro may discuss potential management agreements, easements or acquisitions with willing sellers. In the 1995 bond measure's approved work plan (Cooper Mountain Refinement Plan) for land acquisition in the Cooper Mountain Target area, targeted parcels included those linking the site with other trails and natural areas, supporting biodiversity and protecting unique biological resources, thus facilitating future land transactions in the area.

Landscape/Habitat Connections

To maintain viability of habitat and wildlife movement, it is important to retain connections to natural areas to the north, east and south of the property. Presently, these properties are in private ownership. Habitat values can be maintained on rural private properties as well as public lands if doing so is a goal of the owner. However, as zoning allows, these properties may be developed. It is important to recognize these current habitat links and strive to maintain connectivity from Metro's site to other natural areas through planning, education stewardship assistance, conservation easements or acquisition from a willing seller.

The most important habitat connection is the linkage to the south and west of the property along Lindow Creek as it drains to the Tualatin River. See Surrounding Conditions Map on page 49. For long-term habitat protection, it makes sense to either purchase the property or purchase conservation easements along Lindow Creek all the way to the Tualatin River. To complete this linkage, design of a wildlife crossing would need to be incorporated in any improvements made on Scholls Ferry Road. Metro's deer/elk accident survey (2002) documented substantial deer kills along this highway.

A well-used deer crossing corridor crosses Kemmer Road from the conifer forest at the northeast corner of the site to a pond located north of the road and the forested open space areas on the north slopes of the mountain. It is recommended that either speed bumps or wildlife crossing signs be installed on that section of Kemmer Road to protect wildlife.

Relevant changes to Washington County's Community Development Plan, Development Code, and Transportation System Plan should also be considered to address these issues.

Trail Connectivity and Recreation Potential

The gravel quarry and undeveloped properties to the northwest of the Cooper Mountain Natural Area site represent a long-term opportunity to provide trail corridor routes between Jenkins Estate and the natural area. In particular, they have the potential to accommodate THPRD's proposed east-west regional trail, which is envisioned to pass through Cooper Mountain Natural Area and connect both of the north-south regional trails located east and west of the site.

The 300+ acre property to the immediate south of Cooper Mountain Natural Area represents the single largest potential for habitat protection and expanded recreational trails. This larger area could also support other trail uses, including mountain bikers and equestrians. If the property became available for purchase, Metro's interest in acquiring it would be high. Acquisition of this parcel would also provide potential access to Cooper Mountain Natural Area from a section of Scholls Ferry Road (a major arterial) where Metro currently owns land. Entry to Cooper Mountain from the Metro property on Scholls Ferry Road could reduce traffic on Kemmer and Grabhorn roads (both classified as collector streets).

In-Holding Property

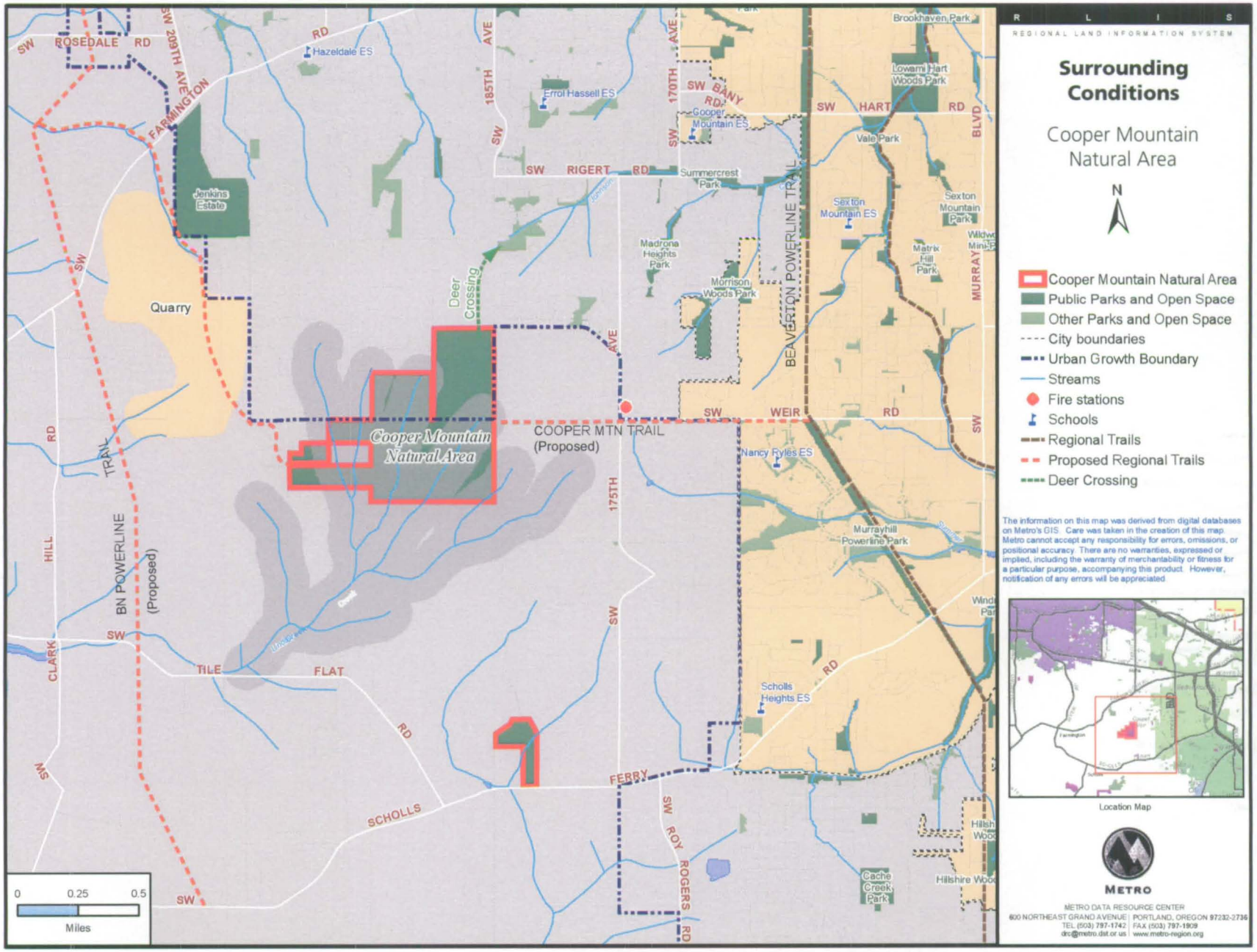
Metro has an interest in acquiring the in-holding property located near the Grabhorn Road entrance, for several reasons. Currently, one parcel of Metro's property is completely cut off from the remainder of the site because of this in-holding. Bringing the in-holding into public ownership would simplify management of Cooper Mountain Natural Area. It would provide the needed facilities and infrastructure for a caretaker residence and maintenance shed without requiring new construction. Finally, it would provide wildlife connections along two creek drainages that are currently fenced off, and additional opportunities for trail loops. If the opportunity for purchasing it came available, it would be a priority acquisition for Metro.

Neighboring Residential Parcels

There are several residential developments adjacent to the Natural Area, in particular on the northwest side. Several of these landowners are concerned that development and public use could impact their quality of life and intrude on their privacy. Impacts to neighbors will be minimized through appropriate siting and design of trailheads, trails and facilities. All trails will be at least a minimum of 50 feet back from property lines and natural vegetation will be used to screen and buffer areas to reduce any impacts. Metro's property boundaries will be clearly marked. If trespassing occurs on private properties once the formal trail network has been established and informal trails have been closed, fencing may be a necessary management action.

Potential Surplus Property

In the acquisition of open space properties in the Cooper Mountain Target Area, Metro purchased a parcel along Scholls Ferry Road in 1999. The acquisition represented also potentially important access to Cooper Mountain provided other parcels could also be purchased. Metro was unsuccessful in purchasing the additional properties needed to create a contiguous, publicly-owned connection down to Scholls Ferry Road. If properties between Scholls Ferry and the current southern boundary of the natural area ultimately become developed, Metro should consider the Scholls Ferry property as surplus and sell it in order to redirect public funds.


R L I S
REGIONAL LAND INFORMATION SYSTEM
Surrounding Conditions
Cooper Mountain Natural Area
N
Cooper Mountain Natural Area
Public Parks and Open Space
Other Parks and Open Space
City boundaries
Urban Growth Boundary
Streams
Fire stations
Schools
Regional Trails
Proposed Regional Trails
Deer Crossing
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Cooper Mountain Natural Area
COOPER MTN TRAIL (Proposed)
BEAVERTON POWERLINE TRAIL
BN POWERLINE TRAIL (Proposed)
Deer Crossing
Quarry
Jenkins Estate
Hazeldale ES
Errol Hassell ES
Cooper Mountain ES
Summercrest Park
Brookhaven Park
Lowami Hart Woods Park
Vale Park
Sexton Mountain ES
Sexton Mountain Park
Madrona Heights Park
Morrison Woods Park
Matrix Hill Park
Nancy Ryles ES
Murrayhill Powerline Park
Scholls Heights ES
Cache Creek Park
Hillshire Woods
ROSEDALE RD
FARMINGTON RD
SW 209TH AVE
SW 185TH AVE
SW 170TH AVE
SW BANY RD
SW HART RD
SW RIGERT RD
SW WEIR RD
SW 175TH AVE
MURRAY BLVD
SW HILL RD
SW CLARK TRAIL
SW TILE FLAT RD
SW SCHOLLS FERRY RD
SW ROY ROGERS RD
0 0.25 0.5
Miles

Goals & Objectives

Goal 1: Natural Resource Protection & Management

Goal 2: Access & Use

Goal 3: Interpretation

Goal 4: Operations

Goal 5: Minimizing Impacts to Surrounding Neighborhoods

Goals & Objectives

The following goals and objectives for management and design of the Cooper Mountain Natural Area were developed by the Project Advisory Committee and Metro planning team. These goals reflect broadly shared values about public use and natural resource management. The objectives identify specific short- and long-term actions to carry out each goal.

Goal 1: Natural Resource Protection and Management

Protect and enhance Cooper Mountain's unique natural and scenic resources and create a place for wildlife to thrive.

Protecting important riparian areas, plant communities, habitats and views is the number one goal for the management of this natural area.

- Locate and design proposed improvements and public uses to avoid significant impacts to important natural resources
- Maintain ridge–to-ridge view of the Tualatin River watershed
- Restore an oak-prairie habitat at Cooper Mountain
- Manage habitats to increase diversity of native plants and animals including migratory songbirds
- Employ the best practices (such as mechanical and chemical methods and controlled burns) to decrease non-native invasive species and expand oak woodland and prairie habitat
- Incorporate adaptive management practices to achieve natural resource goals
- Improve water quality and habitat value of Cooper Mountain by expanding the area in public ownership as opportunities arise – in particular, along Lindow Creek to the Tualatin River
- Work with adjacent landowners to protect and enhance the natural resource value of private lands
- Follow Metro's "Green Trails" guidelines for all trail development at Cooper Mountain

Goal 2: Access and Use

Encourage community access and recreational use that is compatible with natural resource protection.

Public natural areas such as Cooper Mountain are rare in Washington County. A variety of recreational activities and amenities will be provided to encourage greater use and enjoyment by the community and regional residents.

- Provide a system of trails that serve appropriate multiple uses including wildlife viewing
- Provide scenic viewpoints
- Provide safe pedestrian and vehicular access to Cooper Mountain Natural Area
- Provide necessary site amenities and infrastructure to serve visitors
- Provide connections to regional trails
- Provide a family-friendly environment with opportunities for people of all ages to enjoy the site.

Goal 3: Interpretation

Interpret the unique natural, cultural and scenic resources of Cooper Mountain

Provide quality environmental education and natural history interpretation that promotes stewardship of natural resources and inspires learners to discover nature for themselves.

Primary interpretive themes will highlight the Tualatin watershed, the cultural and geologic history of the area, and the diverse and rare habitats, plants and animal species.

- Provide effective, durable interpretive signs at appropriate locations
- Provide environmental education programs serving students of all ages
- Provide low cost natural history interpretive programs to the public
- Encourage environmental education partners to use Cooper Mountain in program delivery.

Goal 4: Operations

Protect the public's safety and welfare and maximize operational efficiencies to protect the public's investment.

Metro is committed to ensuring the public's safety and enjoyment of Cooper Mountain and strives to manage the public's investment in the most effective and cost efficient way.

- Coordinate site operations with Washington County Sheriff's office and Tualatin Valley Fire and Rescue to assure efficient response to incidents, emergencies and potential wildfires.
- Provide a sufficient management presence and base of operations on the site to realize maintenance efficiencies
- Evaluate short and long-term operational costs and financial risks associated with proposed improvements
- Leverage limited resources for site operations and maintenance, including the use of volunteers, youth and correction crews.

Goal 5: Minimizing Impacts to Surrounding Neighborhoods

Minimize impacts to surrounding neighborhoods and farmlands from site development and public use of Cooper Mountain.

Metro strives to be a good neighbor by working closely with communities to plan appropriate types and levels of public use and limit unauthorized activities.

- Provide controlled access and on-site parking scaled to the site's capacity
- Work with Washington County to address site-related transportation requirements.
- Assure privacy of neighbors by controlling access and providing setbacks and buffers
- Coordinate with local fire and police service providers to help enforce rules and ensure safety

Goal 6: Funding

Work with partners to seek appropriate public and private funding for master plan implementation and ongoing management.

Both public and private funds are available for restoration, capital development and ongoing maintenance of public parks and natural areas like Cooper Mountain. Creative funding options and partnerships should be explored.

- Work in cooperation with local partners to identify funding sources and potential cooperative management agreements
- Work with the community to provide financial support for the ongoing management of Cooper Mountain
- Apply for available capital improvement and restoration grants for Cooper Mountain
- Explore and implement opportunities for revenue generation at the site
- Encourage volunteer stewardship for site management, restoration and monitoring

Master Plan Recommendations

Concept for the Master Plan

Summary of the Natural Resources Management Plan

Interpretive Program Concept

Operations & Maintenance

Master Plan Recommendations

This Master Plan attempts to balance protection and restoration of the unique natural resources of Cooper Mountain Natural Area with the public's enjoyment of nature-based recreation. The following master plan concept and recommendations guide the future development, vegetation management and operations of the natural area.

Concept for the Master Plan

It is envisioned that visitors to Cooper Mountain Natural Area will be able to arrive at one of two trailheads. Each offer essential comfort amenities and welcoming signs designed to orient them and highlight the site's unique habitat and wildlife features.

Those entering at Kemmer Road will arrive at an open meadow of tall grasses at the top pf the mountain. There they will have expansive views southward to the Tualatin River Valley framed by the Chehalem Mountains in the distance. Next to the trailhead they may see a group of school children engaged with a naturalist in hands-on exploration of "nature finds" at the Nature House. Near by, an open grassy area, some picnic tables and a nature playground facilitate organized education activities and invite casual use by neighborhood families.

The first trail that visitors will find at this high elevation, is a gently sloped easy half-mile paved loop that passes through three distinct habitats: a tall grass meadow, a wetland meadow and a cool dark forest. Here, the sky and field are vast. A Western bluebird, gold finch or hawk may be seen overhead. Mice, grasshoppers or snakes might quickly scamper, jump or slither away into the grass as hikers pass by. This trail connects to other loops that ultimately meander to each corner of the natural area and through all of the changing settings it has to offer: cool shaded riparian woodlands studded with old growth cedar stumps, open sunny prairies filled with wild flowers, oak woodlands draped in lichen, dark conifer forests, tall grassy meadows filled with butterflies, and a small pond edged with rock outcroppings where a lizard may be sunning itself. In each of these settings, visitors will find interpretive signs to enhance their understanding of each habitat they are experiencing.

Cedar stump in the riparian woodland

At the Grabhorn Road entrance (near the southwest corner of the park), visitors will find a remnant walnut orchard, a reminder of the farmstead that once existed there. This entrance provides parking for horse trailers and cars, and a small equestrian trail loop through the lower elevations of the natural area that passes through oak, riparian and mixed woodlands. A small picnic shelter near this trailhead overlooks the agriculture valley to the south, and offers neighbors, families and community groups a place to picnic and rest after a wonderful ride or hike.

More detailed descriptions of each of the Master Plan Concept components are provided on the following pages.

Vegetation Management

Vegetation management is the single greatest habitat restoration challenge at Cooper Mountain Natural Area. Vegetation management of the natural area will aim to achieve the following results:

- The existing independent oak woodland patches will be consolidated into one contiguous patch. This consolidated area will be slightly expanded for management efficiency and to improve habitat quality.
- Most of the upper, non-native meadow will remain to retain field habitat and provide views from the site.
- Mixed forest habitat will expand in most of the clearcut areas.
- Native prairies will be protected and restored by relocating trails away from their centers.
- A wet meadow in an existing seep area is proposed along the ADA trail for interpretation and to increase habitat diversity.
- Native screening will be established along 190th Avenue to provide a buffer to nearby residents, but still allow views into the natural area.
- Vegetation buffers will be maintained along all property edges to minimize potential user impacts on neighbors.

Trails and Trail Use

Given that nature study has experienced the largest growth of any recreation activity over the past 15 years in the Portland area, a trail system that connects visitors to nature and wildlife will be the primary focus of the natural area. Habitat protection will be compatible with trail use if the quantity and lay out of trails limit fragmentation of habitat.

A proposed 3.5-mile trail system will be designed to preserve views and pass through or by a variety of habitats. The trails will support a variety of uses but emphasize hiking. "Green Trails" guidelines will be used to minimize trail impacts on the site's natural resources (e.g. appropriate paving materials and bio-swales to drain stormwater).

The planning team reviews a proposed trail network

Trail layout will include setbacks from private properties, streams, and prairies, and discourage shortcuts. Interpretive points and distance markers will be incorporated throughout the trail system. "You are here" orientation maps and messages to help minimize impacts to the resources will be incorporated into interpretive signage. Trailheads will be located at the Kemmer Road and Grabhorn Road entrances. It will be necessary to obtain a trail easement from one of the adjacent property owners in order to provide a trail connection through the natural area parcel along Grabhorn Road that is not contiguous to the remainder of the site.


SW KEMMER RD.
SW 190TH AVE.
KEMMER TRAIL HEAD
*PARKING *NATURE HOUSE
*CHILDREN'S PLAY AREA
*PICNIC TABLES *RESTROOM
RANGER RESIDENCE /
MAINTENANCE AREA
GRABHORN RD.
GRABHORN TRAIL HEAD
*VEHICLE & TRAILER PARKING
*RESTROOM *SHELTER
*PICNIC TABLES
LEGEND:
MIXED CONIFER / DECIDUOUS FOREST
OAK WOODLAND
STREAM / RIPARIAN FOREST
NATIVE PRAIRIE
MEADOW
WET MEADOW / WETLAND
MOWED GRASS
TRAILS
INTERPRETIVE POINTS
Master Plan Concept
Cooper Mountain Natural Area
Metro
Prepared by JD Walsh Associates, PS

Hiking Trails

Public input revealed the strongest support for hiking trails. Hikers will share access to the paved, ADA-accessible trail loops near the top of the site, and the equestrian trail loop at the lower portion of the site. Approximately .75 miles of the 3.5 mile system will be for hiking only. These narrow, earthen trails will offer a more intimate view of habitat areas and will access steeper areas of the site.

A hiking trail leads visitors from the meadow into the forest

ADA Accessible Trails

The northern third of the property provides gentle grades suitable for less challenging hiking. A .5-mile paved interpretive trail loop can be accessed from the Kemmer Road trailhead and will ADA accessibility standards. This loop will connect to a second, .7-mile, higher-challenge ADA trail loop that will take visitors to the native prairie and oak woodland habitats and offer views of the Tualatin River Valley. A portion of trail from the Grabhorn Road trailhead could also be designed to provide higher-challenge ADA access.

Equestrian Trails

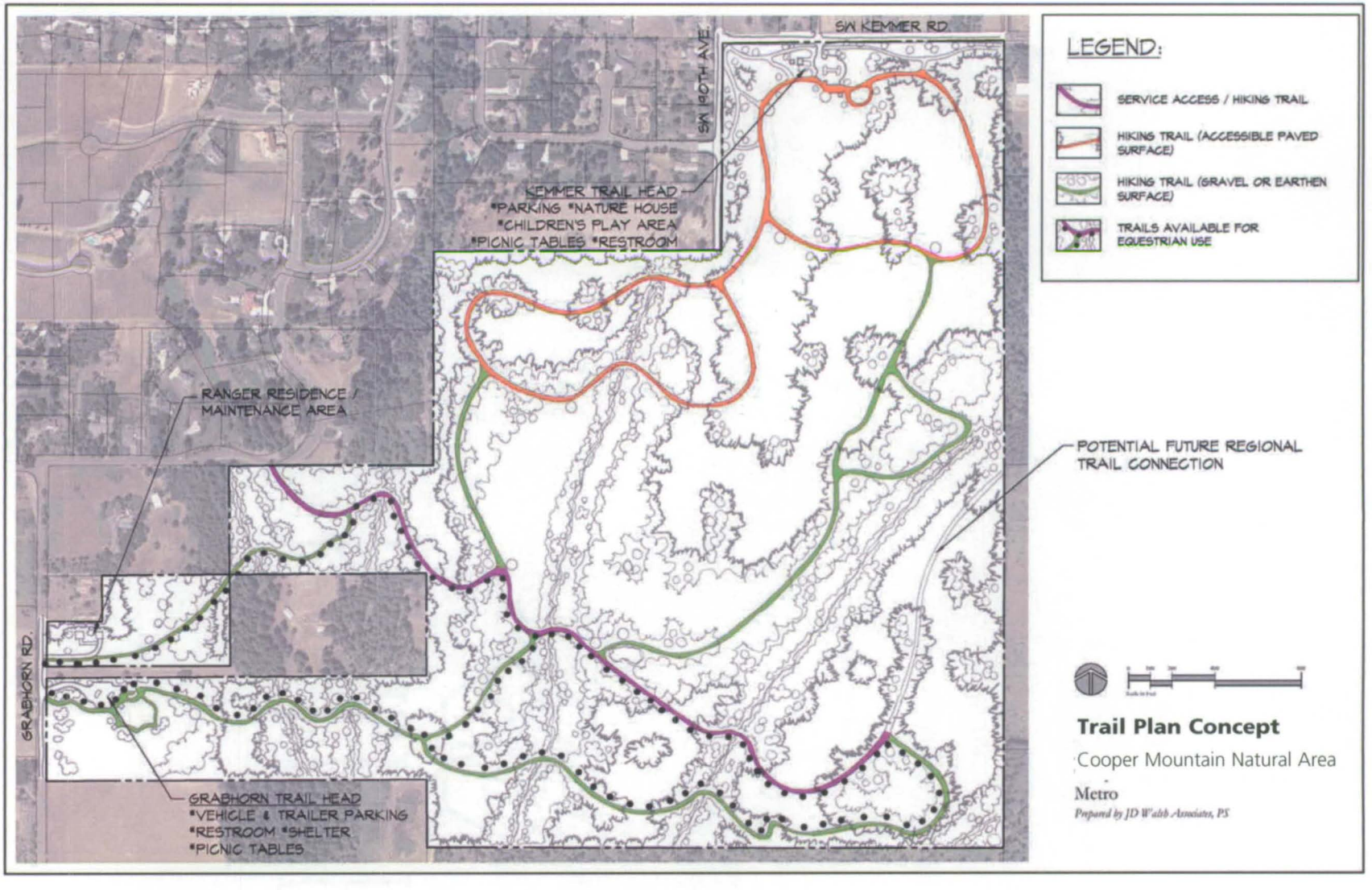
Equestrian trail use is compatible with natural resource protection in the Cooper Mountain Natural Area if trails are sited away from sensitive resource areas, particularly the native prairies. Equestrian trails are designated along the existing gravel service road and the lower portion of the site. This 1.75 mile equestrian trail loop can be reached from the Grabhorn Road trailhead. The trailhead will provide horse trailer parking and a loading ramp for persons with disabilities.

Regional Bike Trail

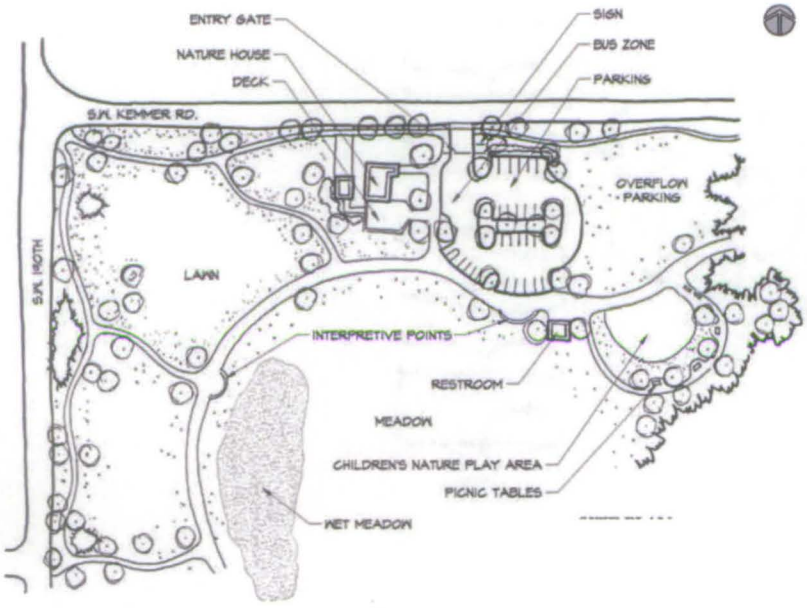
Because of its size, the site does not have the capacity to accommodate mountain biking and other trail uses without creating user conflicts and resulting in resource degradation. The relatively small size of the natural area also does not adequately provide the recreational experience desired by most mountain bikers. However, the existing service road can accommodate the proposed east-west regional trail connection between the two north-south regional trails located east and west of the site. Bicycling will only be permitted if the proposed east-west regional trail alignment is sited inside the natural area.

Access and Parking

Two parking areas will distribute vehicle impacts – one at the Kemmer Road trailhead and the other at the Grabhorn Road trailhead. Both entrances will be controlled with gates that will be closed and locked in the evenings. A completed traffic study indicates that both Grabhorn and Kemmer Road sight distances and road classifications are sufficient to accommodate new entrances to the site.


SW KEMMER RD
SW 190TH AVE
KEMMER TRAIL HEAD
*PARKING *NATURE HOUSE
*CHILDREN'S PLAY AREA
*PICNIC TABLES *RESTROOM
RANGER RESIDENCE /
MAINTENANCE AREA
GRABHORN RD.
GRABHORN TRAIL HEAD
*VEHICLE & TRAILER PARKING
*RESTROOM *SHELTER
*PICNIC TABLES
POTENTIAL FUTURE REGIONAL
TRAIL CONNECTION
LEGEND:
SERVICE ACCESS / HIKING TRAIL
HIKING TRAIL (ACCESSIBLE PAVED SURFACE)
HIKING TRAIL (GRAVEL OR EARTHEN SURFACE)
TRAILS AVAILABLE FOR EQUESTRIAN USE
Trail Plan Concept
Cooper Mountain Natural Area
Metro
Prepared by JD Walsh Associates, PS

The Kemmer Road trailhead will provide parking for up to 30 vehicles and a bus drop-off. An overflow parking area is also designated. Sidewalks and landscaping will be provided along Kemmer Road to provide pedestrian access.

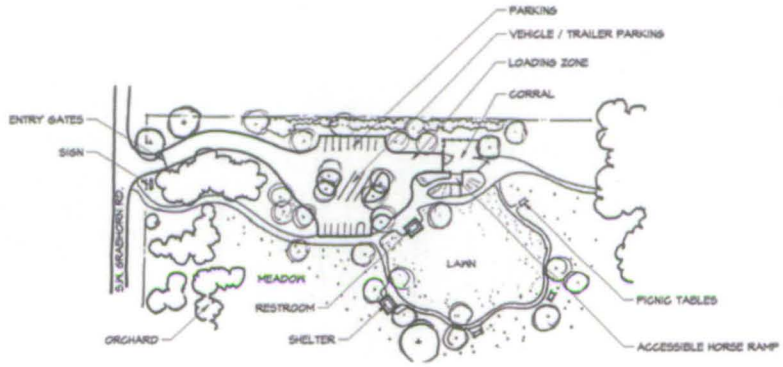


Kemmer Trailhead - Preliminary Concept Sketch

The Grabhorn Road trailhead will provide parking for up to 20 vehicles, including pull-through spaces for horse-trailers. A loading ramp is also proposed to assist riders with disabilities. This entrance will also provide access for emergency vehicles.

The Stone Creek Drive gated entrance, which accesses the existing gravel road, will serve maintenance and emergency access only. Turnarounds will be provided along the existing gravel road for emergency vehicles.

The end of 190th Avenue will remain barricaded and will serve as secondary emergency vehicle access to the site. Formal sidewalk improvements and landscaping will be provided along 190th only if required by the Washington County Development Code.



Grabhorn Trailhead - Preliminary Concept Sketch

Facilities and Amenities

Nature House

The house and garage near Kemmer Road will be converted to a nature house, which will act as a staging and orientation area for tours and field trips. It will provide indoor meeting/classroom space, a large, covered deck for school programs and community gatherings, and on-site storage of education supplies and operation equipment. The facility is not likely to compete with other education facilities in the vicinity.

Play Area

A "naturalistic" children's play area providing a hands-on, exploratory nature experience for younger children and augmenting education programs is proposed. Such a play area will be designed for durability and low maintenance, and will be located near the Nature House.

Caretaker Residence

A caretaker residence and maintenance storage area is proposed to provide on-site management. It is recommended that it be located on the north side of the Grabhorn Road trailhead to provide privacy and oversight of the trailhead facilities.

Shelter

A small picnic shelter with tables is proposed near the Grabhorn trailhead. This shelter would also be used for organized educational or recreational activities.

Support Facilities

Support facilities are proposed at the trailheads on Kemmer and Grabhorn Roads. These include restrooms, benches, drinking fountain, picnic tables, trash receptacles, bike racks, signs (interpretive and directional) and small grassy areas seeded with eco-lawn to accommodate outdoor activities and "neighborhood park" activities like playing catch or tossing a Frisbee.

Summary of Natural Resources Management Strategy

The Cooper Mountain Natural Area Management Strategy is a companion technical document which will guide natural resource management activities for Cooper Mountain. Following is a summary of the plan's habitat management priorities.

Metro will prioritize management of habitat at the Cooper Mountain Natural Area to maximize investment of its resources. Management of habitats is prioritized by habitat rarity, intensity of invasive species and amount of resources already invested in habitat restoration activities.

Metro will use various natural resource management techniques, such as prescribed burns1 in the oak woodland and prairie habitat and thinning in the forest habitats to enhance habitat and increase wildlife species on Cooper Mountain.

Prescribed burning is an important and historic management tool used to maintain and protect oak woodland and prairie habitat in the Willamette Valley. After European settlement, the lack of fire contributed to the loss of oak and prairie habitat and facilitated encroachment by invasive species and conifers. Metro will use prescribed burns and actions that mimic fire - cutting, mowing and/or chemical applications - to return the site to pre settlement conditions, reduce fuel loads and decrease the potential for wildfires. Prescribed burns will be coordinated with Tualatin Valley Fire and Rescue and neighbors will be notified in advance. Contractors involved in application of prescribed burns will possess sufficient liability insurance.

Scotchbroom removal in oak woodland

Thinning is crucial in mixed forests, to recreate old-growth characteristics such as snags, multistory layers and woody debris. These characteristics facilitate the presence of wildlife and possess reduced fuel loads, decreasing the potential for wildfires.

O*ak* **W***oodlands*

Oak woodlands are a high priority for management and maintenance because 1) Oak woodlands are, in general, a "conservation priority habitat" for the Willamette Valley (Campbell 2004), and 2) Increasing the viability of a rare habitat on Cooper Mountain is one of the Master Plan's overall goals.

A variety of wildlife use the oak woodland habitat. Twenty-six of the 118 neotropical species are associated with this habitat. Of these, 12 species of neotropical birds have been spotted at Cooper Mountain. The western gray squirrel also uses this site for foraging. The small artificial quarry within the oak woodland habitat provides breeding habitat for a sensitive species – the red-legged frog.

Metro will use prescribed burns, oak plantings and snags to create and expand a viable oak community. Metro will also use cutting, mowing and chemical applications to control invasive species such as Scotch broom and Himalayan blackberry. Tree canopy and woody structure will be increased in the vicinity of the quarry pond to protect the native red-legged frogs. Finally, social trails will be closed and restored to minimize habitat fragmentation and provide better connections for wildlife.

U*pland* **P***rairie*

The prairies are a high priority for management because 1) Prairies are a "conservation priority habitat" for the Willamette Valley (Campbell 2004), and 2) Increasing the viability of rare habitat on site (and thereby increasing the white rock larkspur habitat) is one of the Master Plan's overall goals.

Upland prairie

Many species of wildflowers, birds, amphibians, reptiles and mammals are generally associated with this prairie habitat. However, because of their relative small size at this site (six acres), few wildlife species have been observed. Since the only federally-listed plant species on site is located in the prairies, a major management emphasis will be to enhance these rare plant populations.

Metro will use prescribed burns and cutting, mowing and chemical applications to stimulate and expand populations of native forbs and grasses, such as white rock larkspur, to control invasive species such as Scotch broom, Himalayan blackberry and tall oat grass, and limit the encroachment of Douglas fir. Social trails will be relocated to the edge of the prairies in order to minimize habitat fragmentation but still provide a viewpoint for visitors

Closed **Mix***ed Forest* **(***Central and Southern Sections***)**

This closed mixed forest is a high priority for management because 1) The forest has been intensively replanted and it is important to manage these areas until the young trees have reached the "free-to-grow" stage, and 2) The forest is covered with invasive species and needs a high level of management to reduce invasive cover.

A variety of wildlife – including the Western gray squirrel, black-throated gray warbler and great horned owl – reside in and use this closed mixed forest habitat.

Metro will use various management techniques such as cutting, mowing and chemical applications to control invasive species such as Scotch broom and Himalayan blackberry. Management techniques including thinning will be focused on attaining old growth characteristics including creating snags and downed logs to increase habitat for a variety of birds and mammals.

Riparian **Hab***itat*

The riparian forest is a medium priority for management because 1) The streams are seasonal and not fish bearing, and 2) Invasive species cover only portions of this habitat, and do not require as intensive management as some of the other areas.

A majority of mammals and birds use this habitat. Riparian habitats are critical to small non-game birds such as neotropical birds foraging and breeding. The state-listed yellow- breasted chat and willow flycatcher have been seen using this habitat.

Metro will eradicate invasive species in the understory and manage the riparian habitat as a healthy functioning system providing shade, bank stability, and stream nutrients.

Closed **Mix***ed Forest* **(N***ortheast Section***)**

The closed mixed forest is a low priority for management because 1) It is a 30-40 year old forest with a 60-70% canopy cover, and 2) It has a minimum level of invasive species in its understory.

Birds such as the pileated woodpecker, great horned owls and the western gray squirrel use this habitat to nest and forage. Black bear, black tailed deer, coyote and red fox footprints have been spotted in this habitat.

Metro will use both spot treatments and thinning to enhance habitat. Spot treatments will include using chemical or physical methods to manage invasive species in the understory. Thinning will be used to help create snags, down logs and a multilayered forest canopy layer.

The complete Cooper Mountain Natural Area Management Strategy document is available upon request.

Interpretive Program Concept

Metro's education programs serve two important goals: To provide quality environmental education services and to promote stewardship – care of the land and its natural systems by visitors and the general public. Metro provides environmental education programs that enhance an awareness and understanding of the ecology, resources and values inherent in our regional parks and natural areas, and the natural systems upon which they depend.

Metro provides tools for experiential learning from nature, and focuses on low-impact behavior and sensory awareness skills that help program participants enhance their experiences with wildlife and the natural environment. Metro also strives to reach a diverse audience by providing environmental education opportunities to all the region's residents. Its education programs help to minimize site impacts by providing the information needed to insure appropriate, safe use of an area, and to convey management goals and policies to park visitors. Metro works with both public and non-profit partners to meet education goals and provide education opportunities to the public.

Metro offers programs to the following audiences:

For General Public

- Interpretive signing
- Interpretive walks, talks, demonstrations

For Groups

- Guided group tours

For Students

- Guided school field trips
- Independent on-site studies (by high school students)
- Service learning (by high school students)

There is strong public support for environmental education activities at Cooper Mountain Natural Area. The varied natural resources present on Cooper Mountain and the expansive views of the surrounding landscape offer opportunities for a variety of education and interpretive programs. Programs and self-guided interpretive signs will make the rich multi-faceted qualities of the site come alive for its visitors.

Interpretive topics were developed based on the natural resources present on the site, the expected audience, and the high demand in the region for opportunities to learn about nature. The topics, locations to interpret the topics, and program delivery methods are summarized in the following table.

Hikers identify wildlife tracks near a puddle

Topic	Detail	Location
Tualatin River Watershed	Ridge-to-ridge view of over 700 square miles of watershed	Top of mountain; north side of the site
Diverse habitat	Wet areas next to dry, oak/madrone woodland next to riparian forests	Trails throughout the site
Biodiversity	278 species of plants (including 184 native species). Red-legged frogs.	Trails throughout the site
Wildflowers	Primarily April - June	Closed mixed conifer forest (Northeast section
Rare Species	White rock larkspur	Closed mixed conifer forest (Northeast section); Upland prairie
Rare habitats	Prairie, elfin oak forest, oak/madrone woodland	Center of site
Geologic history	Basalt shield cone	Quarry
Diverse bird community	Western bluebird; Lazuli Bunting	Quarry
Fire ecology	Prescribed burns integral to ecosystem heath	Numerous locations incl. upland prairie
Exotic species management	Control non-native, invasive plants	Numerous locations incl. upland prairie
Reforestation	Helps control invasive species	Closed mixed forest
Forest succession	Large stumps	Closed mixed forest (Northeast section)
Wildlife and animal tracks	Sand/ dirt substrates ("tracking boxes") that clearly register recent animal tracks	Near the Nature House and trails; locations TBD

Table 3: Interpretive Topics / Places on Site to Interpret

Operations & Maintenance

The following recommendations for future operations and maintenance of Cooper Mountain Natural Area are based upon the assumption that Metro will remain the site manager. However, this does not preclude the possibility that management responsibilities could be shared with Tualatin Hills Parks and Recreation District or could be transferred to another agency or organization in order to realize optimum management and operational efficiencies. Metro and THPRD are continuing discussions to determine the most efficient and effective way to manage the Cooper Mountain Natural Area for the public.

Park Regulations

All rules and regulations at Cooper Mountain Natural Area will be consistent with Metro's Title 10, which outlines regulations "governing the use of Metro owned and operated regional parks and greenspaces facilities by members of the public in order to provide for protection of wildlife, plants and property, and to protect the safety and enjoyment of persons visiting these facilities."

For public security and safety, hours of operation and regulatory signs will be installed at each access point. An orientation map of the natural area will be installed at each parking lot to assist visitors and emergency and police response teams with way-finding. Regulatory signs will include public use restrictions on dogs, fires, camping, motorized vehicles, firearms, hunting, smoking, intrusive noise, plant collecting and other uses outlined in Metro's Title 10. Due to conflicts with wildlife, a no-dogs policy will be enforced consistent with all other Metro-managed natural areas.

Safety and Security

Access Control

Vehicle access will be controlled to prevent after hours use. Each of the vehicular entrances to Cooper Mountain Natural Area will be controlled with gates. These will be locked daily at park closure times by either ranger staff, the park caretaker or other contracted service provider. Boundary markers will be installed along the perimeter of the natural area to clearly delineate the public/private edge. Fencing will be considered and installed only on an as-needed basis to control access in problem locations where other measures are not sufficient.

Incident Response and Enforcement

Currently, the Washington County Sheriff can respond to 911 calls or all other violations of the law that may occur on site. However, Metro's Title 10 regulations currently only apply in Multnomah County, so Metro rangers do not have the ability to issue citations in Washington County. In addition, Washington County Sheriffs do not have the ability to enforce Metro's regulations (unless the violations in question are also illegal in Washington County). To address this concern, Metro is working with Washington County to develop a plan that will allow Metro Park Rangers and Washington County Sheriffs to enforce specific park regulations.

Tualatin Valley Fire & Rescue truck at Cooper Mountain

Wildfire Control and Emergency Response

Wildfire prevention will be addressed as part of the vegetation management of the site, by reducing fire loads and maintaining firebreaks. Proposed trails will serve as both firebreaks and/or service roads that could accommodate emergency response vehicles in the event that a fire occurs. As an additional fire prevention measure, Metro has added a no-smoking policy at Cooper Mountain Natural Area.

The Tualatin Valley Fire and Rescue Station is located at SW 175th and SW Weir, about a mile away from the Kemmer Road entrance. Emergency response time is estimated at five to seven minutes. The department contains keys to the site and has smaller equipment suited to the service roads, terrain and conditions of the site. Fire hoses can reach up to 1000 feet from their trucks or from the street fire hydrants along Kemmer Road and Stone Creek Drive. In the unlikely event of a larger fire, the fire station will dispatch air support. A grid map of the natural area will be prepared and provided to the 911 system in order to aid responders in the event of an emergency.

Facility Use

Nature House

The Nature House will be used to accommodate school and community environmental education programs. It is anticipated that it will not be open and staffed on a full time basis. However, it will also serve as office and supply storage for operations of the natural area, and will likely be staffed part time. The nature house will also serve as a venue for education programs sponsored by other organizations and will be available as a community meeting space on a reservable basis. Ongoing use of the Nature House will provide an added management presence on site.

Caretaker Residence and Maintenance Yard

Assuming Metro has the lead management role, a caretaker residence with maintenance yard is proposed on site near the Grabhorn entrance. This facility will result in management efficiencies by providing a storage area for equipment and tools on site, and a management presence on site for oversight and efficient response to issues that arise.

Picnic Shelter Use

The proposed small picnic shelter near the Grabhorn entrance will be available for use on a first-come, first-serve basis for small group or family gatherings. It may also be reserved under a special use permit if it is to be part of a community event or educational program.

Special Use Permits

In addition to Metro-sponsored programs, Cooper Mountain Natural Area has the potential to accommodate group activities sponsored by other organizations in the community. Anyone wishing to host or organize activities within the natural area must first obtain a special use permit to ensure that all management issues are addressed and that these activities will have sufficient management support.

Maintenance of Park Facilities and Amenities

Daily maintenance of the park will include the opening and closing of entry gates, cleaning of the restrooms and Nature House when in use, litter pick up and general monitoring. Routine seasonal maintenance of the natural area facilities will include upkeep of the Nature House, restroom buildings, benches and picnic tables, signs, drinking fountain, play area, and mowing of grass areas.

Trail Monitoring and Maintenance

Routine trail maintenance on a year-round basis will not only improve trail safety, but will also prolong the longevity of Cooper Mountain Natural Area's trails. The key to trail maintenance will be to institute regularly scheduled monitoring to identify trail problems

early, and to catch and address "social" or "demand" trails. Monitoring can be a time consuming task. Trail volunteer groups will provide vital assistance in monitoring the site above and beyond what staff can provide.

Both paved and unpaved trails will be developed on site. Unpaved trails will require greater attention than paved trails. During the first year after construction, and after the first heavy rains, close attention should be paid to drainage and erosion patterns. Ongoing trail maintenance activities will typically include vegetation clearing and pruning along trails to keep passages and selected views open, erosion control measures, trail pavement surfacing and stabilization, bridge and culvert clearing and upkeep, litter and illegal dumping clean up, signage replacement, and closing of "social trails" through the use of natural barriers and vegetation. Fifteen foot wide vegetation clearance will be maintained on the trail sections that must accommodate emergency vehicles.

Staffing

As the Cooper Mountain Natural Area opens, additional staff will be required in three distinct areas to ensure successful maintenance and operation of the site:

Rangers

- Manage day-to-day operations of the site; assist with habitat restoration

Scientists & Land Managers

- Oversee monitoring, restoration and enhancement projects

Educators

- Interpret the resource for visitors

Currently, Metro staffs four full time rangers who are responsible for managing Cooper Mountain Natural Area in addition to 5,200 acres of undeveloped natural areas and 2,155 acres of developed parks. Metro also has a team of scientists and expert land managers who are responsible for overseeing monitoring, restoration and enhancement projects on Metro lands.

When Cooper Mountain Natural Area is open to the public, the estimated increased staffing needs include 0.5 FTE Regional Park Supervisor, 1.0 FTE Park Ranger, and Seasonal Employees (equivalent to approximately .5 FTE). This does not mean that there will be a ranger staffing the site full time throughout the year, or throughout each day. Instead, staffing hours at Cooper Mountain Natural Area will fluctuate according to seasonal use and demands. Summer months will have more hours and staff on site than the projected average, and winter months will have less.

In addition to ranger staffing, a 0.5 FTE naturalist will be devoted to education and interpretive programming at Cooper Mountain Natural Area.

Further detail regarding the estimated costs of these proposed staffing additions can be found in the next chapter on Implementation.

Volunteer Partnerships

Volunteer partnerships have proven valuable in all aspects of park management throughout the region and are essential in leveraging limited public funds. There will be a number of ways that volunteers can become involved at Cooper Mountain Natural Area to enhance habitat quality for wildlife and help ensure a quality experience for the public.

Site Stewardship Program

Site Stewardship provides "eyes and ears" above and beyond what staff can provide. Through routine walking and monitoring of the trails, Volunteer Site Stewards can alert staff early to issues that need addressing. They can also serve as "ambassadors" for Cooper

Mountain Natural Area, answer questions and ensure that visitors are abiding by rules and trail etiquette.

Trail Building, Maintenance and Monitoring

Established trail groups bring volunteers to help build, maintain, and monitor trails on an ongoing basis. Equestrian groups, such as Oregon Equestrian Trails, could also become valuable stewardship partners in helping construct, monitor and/or maintain the equestrian trail segments.

Education & Interpretation

Volunteer naturalists help expand program offerings beyond what staff alone offer. Metro has a well-established volunteer naturalist program in place and relies on these very dedicated and highly trained volunteers to lead nature walks for the general public and civic groups, and to deliver outdoor education programs, such as school field trips.

Volunteers remove Scotch broom at Cooper Mountain

Vegetation Restoration

Currently, Metro uses volunteers to assist in restoration efforts. Many of these volunteers perform ongoing monitoring to help assess and evaluate the success of restoration and other management activities. Other volunteer activities will include invasive plant removal and native seed collection. Cooper Mountain restoration and monitoring projects will also provide college and graduate students with research opportunities via case studies and field experience.

Implementation

Site Improvements

Habitat Restoration

Ongoing Operations &
Maintenance

Implementation

Site Improvements

Project Phasing

The primary purpose of a phasing plan is to ensure a logical, efficient sequence of implementation that takes into account visitor needs while minimizing construction costs and operational impacts. Success of the first phase of construction and development will set the stage for implementation of additional master plan elements over time. The first phase must be well received by the public and not create unnecessary operational or management problems.

Metro has identified dedicated capital funding of approximately $1.5 million to implement the Cooper Mountain Master Plan and Natural Resource Management Plan. Given the current cost estimates for this project, it appears that additional funding will be required to complete all phases of the project. Potential funding sources are discussed at the end of this section.

Certain elements of the plan may not warrant immediate implementation and are dependent on other management and operational decisions. For example, if Metro and the Tualatin Hills Parks and Recreation District enter into a shared management agreement for this area, it may not be necessary to create a caretaker residence on site as this plan recommends. Additionally, a significant in-holding within the publicly owned portion of Cooper Mountain Natural Area includes a home and maintenance building that could be utilized for the caretaker function, if indeed such a residence is needed and if the current resident became a willing seller. Other nearby residences also have the ability to perform this function. Thus Metro may postpone construction of any residence on site until actual needs become clear and various options for meeting those needs have been considered.

The following phased approach is recommended:

Phase I: Northern Entrance (190th and Kemmer Road)

Phase I includes design and construction of the entrance to the Cooper Mountain Natural Area located off of 190th Avenue and Kemmer Road, the area located at the northern edge of the site. This phase would provide a parking area, sidewalks and landscaping along Kemmer Road, gated entrance, bus turnaround for school and other group field trips, trail head, restrooms, interpretive and other signs, renovations to the existing house as a classroom and Nature House, a covered deck and children's "naturalistic" play area.

Phase I improvements will also include implementation of the complete trail network. This includes all of the trails, interpretive signage, distance markers, footbridges, split rail fencing at view points and other elements such as replacement of existing or adding new culverts.

Phase II: Grabhorn Entrance

Phase II includes design and construction of public facilities at the Grabhorn entrance including parking area, horse trailer parking and a handicap accessible equestrian mounting ramp, trail head, restrooms, picnic shelter, interpretive and directional signing, and trail connections from the parking area to the already constructed trail system.

Phase III: Caretaker Residence

Construction of this facility may be included in an earlier phase, depending on management and operational needs.

Cost Estimates

Cost estimates have been developed for the design, engineering, and construction of site improvements. These costs are preliminary estimates and subject to revision during the design and engineering phase of development. They are based on 2005 dollars and are expected to appreciate. The estimates account for all potential required development, some parts of which may not be necessary (i.e., sidewalks on SW 190th Ave. and irrigated landscaped areas). The following table provides a summary of estimated phased costs, and an estimated total for all completed phases.

Cooper Mountain Master Plan Preliminary Development Cost Estimates

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
PHASE I - KEMMER RD TRAILHEAD				
NATURE HOUSE RENOVATION	1150	SF	$30.00	$34,500
COVERED DECK (15'X32')	480	SF	$18.00	$8,640
PARKING LOT (25 SP + BUS)				$0
ASPHALT	20,000	SF	$3.00	$60,000
LANDSCAPE (10%)	2,000	SF	$5.00	$10,000
STORM WATER MANAGEMENT FACILITIES	1	LS	$20,000.00	$20,000
ELECTRONIC GATE	1	LS	$22,000.00	$22,000
KEMMER RD SIDEWALK (1240'X8')	9,920	SF	$5.00	$49,600
KEMMER RD LANDSCAPE (TREES @30')	42	EA	$150.00	$6,300
190TH ST SIDEWALK (900'X8')	7200	SF	$5.00	$36,000
190TH ST LANDSCAPE (900 LF)	7200	SF	$5.00	$36,000
TREES @ 30' O/C	30	EA	$150.00	$4,500
SHRUBS @ 10' O/C	90	EA	$25.00	$2,250
CONCRETE WALKWAY (400'x5')	2,000	SF	$5.00	$10,000
STORM WATER COLLECTION SYSTEM FOR KEMMER & 190TH	2,140	LF	$18.70	$40,018
CHILDREN' NATURE PLAY AREA (25'X35')	1250	SF	$10.00	$12,500
RESTROOM (2 UNIT FLUSH)	1	LS	$40,000.00	$40,000
FURNISHINGS (DRINK FTN, BENCHES, ETC)	1	LS	$8,000.00	$8,000
ENTRY SIGN	1	EA	$15,000.00	$15,000
SUBTOTAL				**$415,308**

Cooper Mountain Master Plan Preliminary Development Cost Estimates (continued)

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
TRAILS				
UPPER ADA TRAIL LOOP (2650'X8' ASPHALT)	21,200	SF	$3.00	$63,600
LOWER ADA TRAIL LOOP (3500'X8' ASPHALT)	28,000	SF	$3.00	$84,000
NEW MAINTENANCE ROAD/SERVICE TRAIL (1100'X10' ASPHALT)	11,000	SF	$3.00	$33,000
EARTHEN HIKING TRAILS (3650'X6')	21,900	SF	$0.50	$10,950
EARTHEN EQUESTRIAN TRAILS (4400'X6')	26,400	SF	$0.50	$13,200
EARTHEN EQUESTRIAN SHOULDER (2'X1900')	3,800	SF	$0.50	$1,900
FOOT BRIDGES/CULVERTS				
ADA LOOP WOODEN BRIDGE (15L'X6'W)	90	SF	$90.00	$8,100
ADA LOOP WOODEN BRIDGE (20L'X6'W)	120	SF	$90.00	$10,800
GRABHORN TRAIL WOODEN BRIDGE (20'L'X6'W)	120	SF	$90.00	$10,800
GRABHORN TRAIL WOODEN BRIDGE (35'L'X6'W)	210	SF	$90.00	$18,900
LOWER EQUESTRIAN TRAIL WOODEN BRIDGE (60L'X6'W)	360	SF	$90.00	$32,400
LOWER EQUESTRIAN TRAIL WOODEN BRIDGE (60L'X6'W)	360	SF	$90.00	$32,400
MITIGATION FOR CWS REQUIREMENTS (RIPARIAN AREAS)	1,260	SF	$15.00	$18,900
SUBTOTAL				**$338,950**
INTERPRETIVE STATIONS & INFORMAL AMPHITHEATRE SEAT	12	EA	$5,000.00	$60,000
MISC SIGNAGE & MILE MARKERS	15	EA	$150.00	$2,250
PHASE I CONSTRUCTION COSTS				**$816,508**
CONTINGENCY @ 25%				$204,127
DESIGN & PERMIT COSTS @15%				$122,476
PHASE I TOTAL COST				**$1,143,111**

Cooper Mountain Master Plan Preliminary Development Cost Estimates (continued)

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
PHASE II - GRABHORN RD TRAILHEAD				
ASPHALT PARKING LOT (16 SP + 4 TRAILER)	18,000	SF	$3.00	$54,000
LANDSCAPE (10%)	1,800	SF	$5.00	$9,000
STORM WATER MANAGEMENT FACILITIES	1	LS	$20,000.00	$20,000
ELECTRONIC GATE	1	LS	$22,000.00	$22,000
RESTROOM (2 UNIT VAULT)	1	LS	$26,000.00	$26,000
FURNISHINGS (DRINK FTN, BENCHES, ETC)	1	LS	$8,000.00	$8,000
PICNIC SHELTER	1	LS	$35,000.00	$35,000
ENTRY SIGN	1	EA	$10,000.00	$10,000
ADA EQUESTRIAN RAMP	1	EA	$10,000.00	$10,000
PHASE II CONSTRUCTION COSTS				**$194,000**
CONTINGENCY @ 25%				$48,500
DESIGN & PERMIT COSTS @15%				$29,100
PHASE II TOTAL COST				**$271,600**
PHASE III				
RANGERS RESIDENCE & STORAGE SHED	1200	SF	$200.00	$240,000
CONTINGENCY @ 25%				$60,000
DESIGN & PERMITS @15%				$36,000
PHASE III TOTAL COST				**$336,000**
GRAND TOTAL COST				**$1,750,711**

Approvals and Permits

The Cooper Mountain site contains lands both inside (urban) and outside (rural) of the urban growth boundary (UGB). While some state and county land use requirements apply equally to both urban and rural lands, some requirements are specific only to urban or rural lands. For purposes of this discussion, land use approvals and permits needed to implement the master plan will be categorized as follows:

- Approvals/requirements that pertain to the portion of the site within the UGB
- Approvals/requirements that pertain to the portion of the site outside of the UGB
- Approvals/requirements that pertain to the entire site

Based on preliminary consultation with the Washington County Department of Land Use and Transportation, the following state and county land use approvals will be required to implement the Cooper Mountain Master Plan:

Approvals and Permits Required for Lands within the Urban Growth Boundary

Type I or Type II Administrative Review:

Type I or Type II administrative review can provide for the proposed park uses on the top third of the site within the UGB, zoned Future Development 20 Acre District (FD-20).

Approvals and Permits Required for Lands outside of the Urban Growth Boundary

Washington County Comprehensive Plan Amendment to adopt a State and Regional Park Overlay District:

The Washington County Board of Commissioners (Board) approved the creation of a State Park Overlay District (Section 383 of the County's Development Code) for Washington County in 2001. The creation of this district defines the types of uses and facilities that will be allowed on county lands outside the UGB developed for State Park use. On October 5, 2004, the Board approved Ordinance 628 which amended the State Park Overlay District to include Regional Parks. This ordinance enables regional park planners to use a master planning process that meets the provisions of Oregon Administrative Rule 660, Division 34 for State and Local Park Master Planning.

The State and Regional Park Overlay District will be applied on the appropriate Plan map (for the portion of the site outside the Urban growth boundary) and the Cooper Mountain Master Plan will be adopted into the County's Comprehensive Plan once the Board of County Commissioners gives their final approval to the Cooper Mountain Master Plan.

Type I or Type II Administrative Review

Following the Comprehensive Plan amendment to adopt the overlay district and the master plan, each phase of development must be reviewed through the land development process, which requires a Type I or Type II administrative review. The overlay district allows for minor revisions to the master plan. Major revisions would require an amendment to the Master Plan, and likely require an additional amendment to the Comprehensive Plan.

Approvals and Permits Required for the Entire Site

Oregon Transportation Planning Rule – (OAR 660-012-0060)

Proposed master plan improvements must be consistent with Oregon Transportation Planning Rule 660-012-0060. The rule requires an analysis of the impact of a proposed plan amendment on the planned transportation system to determine whether the proposal will "significantly affect" the planned transportation system in the area. This analysis will be prepared for the entire site when the Comprehensive Plan amendment is filed for the State and Regional Park Overlay.

Impacts to Surrounding Farm or Forest Practices – (ORS 215.296)

Proposed master plan improvements will need to be consistent with ORS 215.296 which requires an analysis of the impact of a proposed plan amendment on the surrounding farm and forest practices to determine whether the proposal will "force a significant change" in accepted farm and forest practices. This analysis will be prepared for the entire site when the Comprehensive Plan amendment is filed for the Master Plan approval.

Both a Traffic Impact Statement and Transportation Analysis have been conducted in anticipation of development review and master plan approval by Washington County.

Funding Sources

In 2003, the Metro Council approved raising some fees in order to provide funding for the development and operation of new natural area sites around the region. These funds will be expended at Cooper Mountain Natural Area, Mt. Talbert Natural Area, Graham Oaks Natural Area and Willamette Cove. It is anticipated that this funding will not be adequate to implement all projects at these four sites and that additional funding will be needed. Additional funding will be sought by Metro and partner agencies from a variety of sources, including but not limited to the following:

Land and Water Conservation Fund Grants

(National Park Service funding administered by Oregon Parks and Recreation Department)

www.prd.state.or.us/grants_lwcf.php

U.S. Department of Interior Fish and Wildlife Service

North America Wetlands Conservation Act Grants (NAWCA)
www.tgci.com/fedrgtxt/o4-2717.txt

Oregon Parks and Recreation Department Certified Local Government Grant Program

www.prd.state.or.us/grants-localgov.php

Oregon Watershed Enhancement Board Small Grant Program

http://egov.oregon.gov/OWEB/GRANTS/smgrant_main.shtml

Recreation Trails Program Grants

(SAFETEA-LU funding administered by Oregon Parks and Recreation Department)

http://egov.oregon.gov/OPRD/GRANTS/about_us.shtml

Habitat Restoration

Restoration by habitat type is described in the Natural Resources Management Plan Summary (see Chapter 6). Considerable vegetation management activities were initiated prior to development of the Cooper Mountain Master Plan and will continue for several years after adoption of the Plan. For example, the first phase of reforestation efforts in the mixed deciduous/conifer forest area is approaching completion toward the "free-to-grow" stage.

Once completed, annual maintenance will be relatively minimal and primarily focused on invasive plant removal, with periodic activities such as thinning of the developing forest. It is anticipated that active restoration of the forested areas will continue up to 2011. Costs of these improvements range considerably, depending on availability of native plant material, success of controlling exotic and noxious weeds, annual weather variations, and availability of personnel and other resources. The maximum cost anticipated for implementing habitat restoration is $375,000, approximately.

Annual Operations and Maintenance

Based upon the maintenance and operations staffing needs determined in the previous chapter, annual costs for personnel additions and associated materials and services costs are estimated below. These costs are estimated in fiscal year 08-09 dollars.

Position		**Estimated Annual Cost**
Regional Park Supervisor (.5FTE)		$48,545
Park Ranger (1 FTE)		$67,815
Seasonal Employee (.5FTE)		$22,383
Naturalist (.5FTE)		$34,587
SUBTOTAL		**$173,330.00**
Category	**Detail**	**Estimated Annual Cost**
Materials and Services for Maintenance	annual vehicle charges, fuel, equipment rental, landscape supplies, uniform supplies, staff development, maintenance supplies and services, utilities, etc.	$38,245
Renewal and Replacement	an annual amount placed in reserve for major maintenance needs and costs related to facility improvements	$56,825
Materials for Education and Programming	supplies, equipment, uniform allowance, staff development, etc.	$7,000
SUBTOTAL		**$102,070.00**
Total Estimated Annual Staffing and Operational Costs		**$275,400.00**

Table 5: Estimated Annual Staffing and Operational Costs

Appendices

Project Advisory Committee
Meeting Notes

Cooper Mountain Chronicle
Newsletters

Cooper Mountain Project Advisory Committee Meeting Notes

Date: **Wednesday, February 4, 2004**

Time: **6:00 – 8:00 p.m.**

Place: **Tualatin Hills Nature Center, Robin's Nest Room, 15655 SW Millikan Way, Beaverton**

Attending: Barbara Fryer, Aisha Willits, Mark Charleston, Joan Andersen-Wells, Steve Gulgren, Megan Garvey, Judy Fox, Larry Fox, David Green, Ryan Durocher, Brian Harney, Lori Smith, Debbie Chin, John Chin, Heather Kent, Lora Price, Jennifer Budhabhatti, Ron Klein

Metro staff presented the following overview and site information in the first hour of the meeting:

- Background and overview of the planning process
- Existing conditions and recreation context
- Natural resource features
- Public involvement process and preliminary results of the Cooper Mt. opinion survey

Written summaries and accompanying resource maps of the above site information will be provided to PAC members.

The second hour was devoted to questions, comments and discussion by committee members to address overall concerns, values and desires for the site:

- Lori Smith indicated a strong interest in serving on the Cooper PAC, representing Teal Ridge/Cairn Heights neighborhoods.
- Members requested interest in receiving reduced copies of the natural resource maps for their notebooks.
- Joan Andersen-Wells said that the Tualatin Hills Nature Park does not have locked gates at the entrance and most of the illicit activities/problems have significantly diminished over the years with ongoing use and management of the park.
- Because preliminary public opinion survey results show a fairly strong lack of support for park facility features that would attract or accommodate groups, Megan Garvey expressed concern that the park needs amenities such as a shelter and bus turn around to accommodate school groups on field trips. The survey does, however, indicate support for using the site for school field trips.
- Larry Fox and David Green stated they thought most of the concern around accommodating groups to the site is about the associated traffic.
- Joan Anderson-Wells indicated that THPRD has used Metro's Cooper Mountain property for some group programs. She also noted that at the Tualatin Hills Nature Park there are designated off-trail areas for environmental education activities and should be considered when planning for Cooper Mt.
- David Green said that a small natural greenspace exists in the Kemmer View Estates neighborhood. A majority of residents support maintaining the area as a natural space with minimal amenities. Green expects these values would also hold true for Metro's Cooper Mt. property.
- Larry Fox said that one of the most valued attributes of the Cooper Mt. property is its quiet ambiance. A quiet, outdoor environment for visitors should be recognized as one of the distinct qualities to protect in planning for the park. His observation of the site's use to date is that it is predominantly one or two people having a quiet experience. However, the site also been used by Volkswalk groups.
- Lori Smith said that maintaining a feeling of being in the country is important. Street lights, for

example, don't contribute to that quality. Another concern is that infrastructure such as off-street parking should properly accommodate and manage public use and not to rely on street parking capacity.

- In consideration of how existing gravel road and trails might be removed or changed, several committee members stressed the importance of keeping the existing gravel roads (i.e. logging roads) for continued fire management access and other park maintenance activities.
- David Green asked whether it was possible to consider the nearby public water reservoir property to accommodate parking. Barbara Fryer indicated that because of increased security requirements around public facilities, it may be difficult to accommodate public parking adjacent to a water tank. However, Fryer said she would look into the feasibility of the idea. Larry Fox supported the idea of moving access to the park in that direction (away from 190th) because of improved traffic sight lines along Kemmer Rd. It would improve the safety of people getting in and out of the park. There are a lot of accidents at the corner of SW Kemmer Rd. and 190th.
- Committee members suggested that Metro staff look at other relevant natural area models (e.g. Tom McCall Nature Preserve in the Columbia Gorge, Powell Butte Nature Park, Tualatin Hills Nature Park, Mt. Pisgah in Eugene) to help determine the appropriate mix and balance of recreation amenities and natural resource protection.
- Steve Gulgren explained that at his former agency, the policy for providing minimum support facilities in conservation districts included a 20-car parking lot, restroom(s), drinking fountain and trails.
- Tentative dates for future meetings were presented and discussed. Wednesday evenings seemed to be the best time to hold Cooper Mt. PAC and other related public meetings. Ryan Durocher, however, had an ongoing conflict with Wednesday evenings.

Cooper Mountain Project Advisory Committee Meeting Notes

Date: **Wednesday, March 31, 2004**
Time: **6:00 - 8:00 p.m.**
Place: **Tualatin Hills Nature Center, Robin's Nest Room, 15655 SW Millikan Way, Beaverton**

Attending: Cooper PAC members: Joe Reeves, Jody Newberry, Mark Charleston, Doug Myers, Joan Andersen-Wells, Steve Gulgren, Kyle Spinks, Larry Fox, David Green, David McClain, Tim Morgan, Lori Smith, Debbie Chin, Bryan Pasternak, Eric Meckel. Metro staff: Heather Kent, Jennifer Budhabhatti, Ron Klein. Citizens: Boyce Smith, Eric Squires, Ed Bartholemy, Kathy Bartholemy.

No corrections or additions were suggested to the February 4, 2004 meeting notes of the Cooper Mt. PAC.

J. Budhabhatti presented an assessment of the Cooper Mt property for recreational use. Metro used the Oregon Parks and Recreation Department's method of land assessment that recognizes four levels of suitability for recreational use. The resource inventories that were assessed for suitability analyses included habitat for wildlife, protected species, water and geologic hazards (slope and soil) and cultural resources. No significant cultural resource was found on site. Each resource category was mapped and classified with respect to the four suitability levels, based on the following criteria:

- Uniqueness and quality of habitat
- Federal/state listed threatened, endangered or sensitive wildlife species
- Oregon Natural Heritage Program listings 1,2 or 3
- Riparian and wetland areas
- Geologic instability

B. Pasternak asked what other planning projects used the Oregon State assessment method. Oregon State Parks used the model for the proposed Hares Canyon State Park in Washington County. Washington County also requested that Metro use this model for the Cooper Mt planning process. K. Spinks asked if Oregon Land Use Goal 5 would affect the suitability results. Metro staff noted the Goal 5 findings would likely be consistent with the suitability assessment results.

R. Klein presented a summary of 385 public opinion survey returns for Cooper Mt. Klein noted that the survey was not a scientific poll or was meant to convey the types of public facilities that would be developed in the natural area. The survey was one of many tools Metro used to help identify issues, concerns and natural area facilities and experiences to consider in the planning process. Survey returns mostly came from residents of zipcode 97007. Equestrian use and mountain bike use were considered important uses. Representatives of these recreational uses were invited to serve on the Cooper Mt. PAC. Consideration of equestrian and mountain bike use will be carried through the master planning process. Trails and improved habitat for wildlife were highly-demanded natural area features.

The survey also asked if people agreed with Metro's 'no dog policy' in its parks and natural areas. About 59% of the respondents strongly or somewhat agreed with Metro's policy. Klein distributed a handout explaining the Metro 'no dogs allowed' policy and noted that such a policy is important to assure the

protection of wildlife habitat. Such a policy also helps provide visitors a quality experience in nature.

The top three concerns expressed in the survey were: 1) illicit activities, vandalism and loitering, 2) litter and 3) traffic or parking issues. Many thought a group shelter would become an attractive nuisance for these problem activities. Metro staff noted that the existing house on Kemmer Rd. could possibly serve as a shelter with more controlled access for appropriate activities. H. Kent said there would be a transportation analysis when the planning process gets closer to a preferred facility concept design.

H. Kent reviewed the draft Planning Goals and Objectives for Cooper Mountain Natural Area. The eight goals are direction-setters and intended to reflect Metro's general natural area management policies against which decisions about public use and natural resource management can be assessed. The planning objectives listed under each goal are specific short and long-term tasks. Generally, the Cooper Mountain PAC supported the draft Planning Goals and Objectives with the following additional comments:

D. Green recommended that the first goal should be worded stronger to better reflect Metro's role to protect, enhance and manage habitat for wildlife. Adding the phrase such as "...a place for wildlife to thrive." was suggested. Being more clear in the first goal may help in better understanding Metro's policy relative to no dogs in its parks and natural areas.

D. McClain explained to achieve the habitat management objectives, Cooper Mt. will need to be actively managed, including selective removal of trees (i.e. logging). A long-term management plan (60-year cycle) could also be a possible revenue source for the natural area. An April 1, 2004 memo from D. McClain provides details of a forest management approach to the Cooper Mountain Natural Area. H. Kent acknowledged that the site will require active management to achieve the desired habitat objectives and that natural resource management will be a component of the master plan.

Goal 2 relates to public access and recreational use. K. Spinks asked if Metro's "green street guidelines will be a planning reference. H. Kent said yes along with recently developed "green trail" guidelines. Poorly planned trails can do a lot of natural resource damage and as well as increase maintenance costs if not carefully considered for placement, materials and maintenance. J. Reeves said that ADA access should be considered in a broader sense to accommodate a variety of people with limited mobility (e.g. disabled horse riders, strollers, wheelchairs, walkers, canes).

M. Charleston emphasized the need to have good orientation signs (e.g. trail mileposts, you are here maps, etc.). It is important for visitors to have a reasonable sense of where they are in the natural area as it relates to safety and rescue. D. Meyer pointed out that emergency access was important, but if TVFR cannot gain access the regular way, they will make a way that will likely cause habitat damage. J. Reeves said that a volunteer trail patrol is effective in Tillamook State Forest. J. Anderson-Wells said the Tualatin Hills Nature Park is mapped with a grid for emergency purposes and they also have a volunteer "park watch" team that patrols the park.

Signs, trail location and vegetation barriers should be used to help assure that visitors remain on public property.

B. Pasternak suggested that an objective be added to Goal 3 engaging volunteer in stewardship activities. Environmental education and interpretation of the natural area should lead to a growing number of people who want to volunteer at Cooper Mountain and other places.

Related to Goal 6 and minimizing impacts to surrounding neighborhoods, L. Fox said that any communication tower leases should be limited and not to turn the top of Cooper Mountain into a "cell tower farm". D. McLain added that any revenue generated from a communication tower lease should be dedicated to Cooper Mt. Natural Area.

Other comments included a recommendation from L. Fox that Metro should be clear about what facilities and activities that will not be considered in the planning process (e.g. motorized vehicles, dogs, field sports) to avoid public misunderstanding of the expected use of the natural area. In addition, T. Morgan supported quality, on-site interpretive features (e.g. interpretive signs, well-designed trails that highlight natural area attributes) as visitor attraction. Morgan asked how people were going to be directed to the natural area. H. Kent said Metro will work with Washington County and ODOT to determine what is possible for directional road signs.

R. Klein said he would look into using Southridge High School in Beaverton for the remaining Cooper Mountain PAC meetings and public open houses.

MEMORANDUM

Date: April 1, 2004
To: Ron Klein, Metro
From: Dave McClain, Kemmer View Estates
RE: Cooper Mountain Natural Area Planning Goals

One of the goals and objectives for Cooper Mountain should be to reestablish the fir forest ecosystem. The majority of the property area once was a western Oregon fir and cedar mix conifer forest ecosystem with riparian areas that included a mix of alder, vine maple and other deciduous trees and riparian shrubs.

Go and look at a mix conifer old growth stand and picture what this area may have looked like in 1860. To get this area to start to progress toward this objective will require a long range ecosystem recover plan that is generational in scope (200 years).

To understand how to plan for this objective, one must first understand the dynamics of the mix conifer fir forest system in this area. The site has been logged multiple times over the past 100 years. It is not a pristine area that needs to be preserved. It is a forest plantation that needs to be replanted, managed and nurtured along so that in 20 to 60 years it will be a unique complex fir forest ecosystem that is rapidly approaching a natural function condition that will result in a significant old growth stand of trees in about 100 years.

The area is currently in various stages of stand (forest) replacement and the site has various potential for regeneration of the forest based on soil, moisture and nutrient availability. To understand these conditions and to prepare a plan the following steps need to be taken:

- Map/assess the size, basal area requirements, density of the existing plantations. The Oregon Department of Parks classification system does not provide Metro with the level of detail that is needed. A more detailed map of the existing forest conditions is needed.
- Estimate the regeneration rate for the fir forest areas and open areas that have been converted to grass (pasture areas). A great deal of the "open grass areas" could be replanted and would support healthy stands of fir.
- Understand the basal area requirements and site classification of the area with regard to the potential of the site to grow trees through time.
- Estimate the thinning program needed to keep the forest moving toward a healthy climax forest condition.

This last point is very critical to the basic planning process. A qualified forester needs to make a site classification of the area based on Oregon Department of Forestry Site Classification system. Site class is a way to classify forest according to how well trees grow. Trees grow fast in forest with fertile soils and plenty of moisture and this forest have higher "site classifications". Trees grow slowly in rock soils and dryer climates where the site class is lower. Oregon Department of Forestry can provide this information based on a site review. Usually at no cost or you can hire a consulting forester.

You need to know the basal area of the reforestation areas and any riparian management areas. Because of higher moisture content, riparian area will have different site classifications that the rest of the park. These riparian forest areas will need a different plan for ecosystem recovery and in general the width of these areas will be 250 feet or greater depending upon slope and soil moisture content.

The Basal Area is the cross sectional area of a tree stem at 4.5 feet above ground. If you know the basal area of the existing trees and the site class, you can generally calculate the number of trees per acre that the site is capable of producing. Basal area in a reforestation unit can be determined by sampling stands with plots spaced evenly over the area along compass lines. There are standard methods for doing this.

The survey will tell you the basal area and this will tell you how many trees per acre are growing on the site (or could grow on the site) and what the general spacing should be between trees.

As the trees grow over a 100 to 200 year cycle, the number of trees that a given acre can sustain reduces with increased basal area. For example a typical fir forest acre covered with 6 inch trees would grow about 400 trees per acre. The same area with 24 inch trees would grow 25 to 50 trees per acre. This density difference reflects productivity over approximately 20 year period to grow trees from 6 inches to 24 inches. This simple example also illustrates the planning problem in that 375 trees per acre may need to be removed from every acre of the fir forest area over the next twenty years.

This information then takes the planner to the next level of planning. If the objective is to manage the forest to recreate a functioning old growth stand in 100 year, then numerous trees will have to be removed at various stages of growth.

To accomplish this activity, adequate maintenance and harvest roads must be built into the plan to accommodate the removal of the trees cut to make room for the remaining trees to grow. The roads need to be stable, have adequate drainage control and stream crossings (bridges, fords, culverts). I prefer fords in intermittent stream areas. These roads can double as walking trails, emergency access, fire breaks, equestrian area, and mountain bike areas.

The need to thin can be easily modeled and the cycle of thinning predicted based on the existing stand density and size of the stand. The plan should allow for the use of the full range of silvaculture activities to achieve the ecosystem recovery goal. If the fir forest ecosystem is not managed for occasional removal of overstocked trees, then disease, root rot, stress and insects will flourish and this will result in dead and dying trees and considerable higher wild fire potential.

Also the trees that are removed will have value. The volume of trees can be modeled with some standard Oregon Department of Forestry models and the economic value can also be estimated in present value terms. The ability of this park to generate revenue from ecosystem management thinning programs should be discussed in the management plan.

Public perception of this concept is another planning issue. The concept must be explained as biomass recovery from ecosystem restoration work. The plan is not intended to treat this site as a forest plantation with a rotational cut every 20 to 35 years. Regular thinning will be required to achieve the ecosystem recovery goals and the material that is thinned will have economic value. Good public policy would require that economic recovery of thinned material is an established goal of the management plan. Also the plan should provide for a program that will re-invest the revenue from biomass recover back into the park improvements and ecosystem recovery.

The basic planning approach must first consider the dynamics of this site as a forest ecosystem which will be growing trees. These trees will, if left alone, create an overstocked condition. Such conditions will result in marginalized ecosystems, and increased risk for stand replacement fire. Prudent planning must design a

recreation management plan based on the site requirements for a 20 to 100 year recovery program for the forest ecosystem. This changes the paradigm regarding how to plan this park. Roads, trails, riparian areas, habitat areas and recreation improvements must be designed around the basic requirements of the forest recovery program.

I recommend that Metro call the Oregon Department of Forestry and ask for a consultation. You may want to consider asking Oregon State University, College of Forestry if they would like to take on this site as a field laboratory for their forestry program. The park site is in reality an arboretum in the early stages of development and the basic recreation management plan must be based on the forest recovery plan.

Thank you for your consideration.

Cooper Mountain Project Advisory Committee Meeting Notes

Date: **Wednesday, May 12, 2004**
Time: **6:00 - 8:00 p.m.**
Place: **Southridge High School, Community Room, 9625 SW 125th Ave., Beaverton**

Attending: Cooper PAC members: Joe Reeves, Jody Newberry, Leigh Crabtree, Mark Charleston, Joan Andersen-Wells, Steve Gulgren, Kyle Spinks, Larry Fox, Judy Fox, David Green, Megan Garvey, Tim Morgan, Lori Smith, Debbie Chin, Bryan Pasternak. Metro staff: Heather Nelson Kent, Lora Price, Ron Klein. Citizens: Beth Webber, Debbi Bethel, Boyce Smith, Carol Robillard, Ray Wold, Diana Hammer, Ed Bartholemy, Kathy Bartholemy.

No corrections or additions were suggested to the March 31, 2004 meeting notes of the Cooper Mt. PAC.

H.N. Kent introduced the process that led to drafting three design concepts for Cooper Mt. After Metro staff and the Cooper PAC established planning goals for the project, a design workshop was held on April 14, 2004 to develop a variety of design concepts for Cooper Mt. Natural Area. Workshop attendees included landscape architects, planners, natural resource/land managers, environmental educators and trail experts. Design concepts were based on five scenarios:

- Minimal Development / Maximum Conservation
- Maximum Environmental Education and Interpretation / Maximum Habitat Diversity
- Maximum Recreation and Trail Opportunities / Minimum Habitat Conservation
- Focus on Very Important Features and Activities Identified in the Public Survey
- Fully Integrated Recreation / Interpretation and Habitat Conservation

Metro staff developed three design concepts from the workshop results for public review. Lora Price presented these concepts (see concept summaries) to the Cooper PAC for discussion and refinement before presentation at the open house on May 19, 2004. The Cooper PAC was asked to fill out an evaluation and comment form (see evaluation summary). The following are notes from the Cooper PAC meeting discussion.

Concept 1- B. Smith noted the limited access to the upper meadow for emergency vehicles. J. Reeves said natural area expansion to the south should be noted (missing in Concept 1).

Concept 2- D. Green said that maintenance and emergency roads in the natural area should be better indicated. Even though equestrian use is not indicated for Concept 2, J. Reeves pointed out that the Grabhorn Rd. parking location would be best for horses as this is the primary rural interface with the property.

Concept 3- K. Spinks noted that because Concept 3 indicates the most visitor use, one can expect the most bad or inappropriate use on the property. An on-site ranger is most important to monitor and correct park use in a timely fashion. J. Reeves said a volunteer trail patrol could be an effective management partner. D. Green said to locate the ranger residence where the most anticipated problems would occur.

Other comments-S. Gulgren said trail surfaces can vary depending on anticipated user and location (i.e. ADA hard surface or compact gravel; regional trail 8' to 12' wide hard surface or combo to accommodate horses; smaller soft surface trails for more sensitive areas). H.N. Kent said that specific trail design and surfaces will be identified during the construction design phase of the project. L. Crabtree said that Goal 5 results may limit development on the property. The city of Beaverton's adjacent water tower property is not "off the table" for associated planning considerations. M. Charleston said, in general, the fire/safety infrastructure needs to be improved (e.g. lower east spur needs upgrading; better access at Kemmer Rd., accommodate emergency vehicle access). Residential areas are the top priority; natural areas are secondary for emergency response. J. Anderson-Wells suggested a 5-ft minimum width on any trail. Bikes and pedestrians can be a dangerous use mix if the trail are not designed properly. B. Pasternak said trail surfaces can be on site, natural based if it is hard surface like clay or rock. R. Wold suggested consideration of one-way trails to reduce safety risk among different trail uses.

Summary of committee members evaluation sheet responses to alternative design concepts presented Wednesday, May 12, 2004

Trail Features

Of the four design components evaluated (i.e.habitat types, trail features, facilities & amenities and site management), the preponderance of comments addressed the issue of trails, specifically trail uses and lengths.

A significant number of respondents supported trails for all three user types (hikers, bikers and equestrians), with most of those preferring separate single-use trails, expressing a concern for safety on combination trails. Although multi-user inclusiveness was frequently referred to as desirable, that was not consistently matched by respondents' ratings of importance in those categories.

An even larger number of respondents, however, preferred single-use, hiking-only trails in the park. Reasons listed for this preference included:

1) Better supports planning goals for the Cooper Mountain Natural Area, particularly goals 1 and 2:

   Goal 1- Protect and enhance Cooper Mountain's unique natural and scenic resources and create a place for wildlife to thrive.

   Goal 2- Encourage community access and recreational use that is compatible with natural resource protection.

2) The site is not large enough to accommodate exclusive trails for all three types of activities.

3) Appropriate trails for bikers and equestrians likely would not be long enough for a satisfying experience.

Loop trails and distance markers received positive responses from most survey participants. The numbers favoring increased trail lengths were nearly matched by those preferring no increase or shortening trail lengths fearing increases in site degradation.

The need for ADA trails was uniformly agreed upon, although the gradient of the site was seen as a possible impediment. Other comments related to ADA trails included the hope they could include areas of

multiple park features to provide users with a more varied nature experience.

Interpretive stations were considered desirable by most, although not given high ratings of importance by all.

Other comments related to trails included the introduction of invasive weeds with trail usage. Those supportive of equestrian trails were consistent in their opinion that horses are not major seed carriers; bikers and hikers are more likely a seed source.

Facilities and Amenities

The largest number of comments in this category pertained to parking areas and restrooms.

Respondents overwhelming preferred both parking areas/trailheads and restrooms at Kemmer and Grabhorn roads as described in Design Concept 3.

Other suggestions included a drinking fountain in the larger parking area and lighting in both lots.

Assuring space enough for trucks and horse trailers also was mentioned by the equestrian trail supporters as very important.

Some respondents rated picnic shelters and/or tables as important amenities. Ratings also were high for a nature-based children's play feature.

The concept of a mowed grass/informal play field received mixed reviews. Some considered it unnecessary; some suggested a meadow area sufficient for such use and others saw no adequate flat area for that purpose.

A terraced seating area also rated high by some for group presentations or scenic viewing and as undesirable by some because of its appeal for illicit activities.

An education center was rated an asset for environmental education activities and public outreach by several respondents. Others thought an education/picnic shelter could serve a similar purpose.

Site Operation

Less than half of those completing the evaluation sheets commented on this design component. The section on providing access within the site for service vehicles drew multiple comments of concern that there be adequate access for fire and rescue vehicles.

Vegetation buffers were considered by some to be beneficial for defining natural area boundaries while others expressed a concern that maturing vegetation might obstruct views.

The value of a ranger/caretaker residence was described as required for security purposes and to monitor park usage, and by an equal number of survey participants as unnecessary.

Habitat Types

Very few respondents offered comments on this design component, but those that did were very specific. For example, one reported "Prairies and oak savannahs have decreased significantly in the Willamette Valley making preservation of those remaining very important."

High importance also was given to stream corridors and wetlands for healthy wildlife habitat.

Another respondent stated, "All headwater streams in the Metro region are in great need of preservation due to existing and historic impacts." Fewer stream crossings were suggested for better water quality.

Cooper Mountain Project Advisory Committee Meeting Notes

Date: **Wednesday, July 14, 2004**
Time: **6:00 - 8:00 p.m.**
Place: **Jenkins Estate, 8005 SW Grabhorn Rd. in Aloha**

Attending: Cooper PAC members: Joe Reeves, Jody Newberry, Barbara Fryer, Mark Charleston, Joan Andersen-Wells, Gery Keck, Kyle Spinks, David Green, Tim Morgan, Lori Smith, Debbie Chin, Bryan Pasternak. Metro staff: Heather Nelson Kent, Lora Price, Ron Klein. Citizens: Sally Rask, Chris Girard, Boyce Smith, Carol Robillard, Ray Wold, Ruth Ann Mask, Ed Bartholemy, Kathy Bartholemy.

No corrections or additions were suggested to the May 12, 2004 meeting notes of the Cooper Mt. PAC.

Before the staff presentation of the Cooper Mt. Natural Area draft preferred design concept, attendees had an opportunity to view the large design concept drawing. L Price presented the elements of the proposal including local access and parking, trails and trail uses, habitat features and other amenities such as the nature house, ranger residence, children's nature-oriented play area and picnic facilities (see summary sheet).

HN Kent reviewed the rationale that led to the draft design concept based on public review and comment, planning goals and objectives, management implications, potential recreation conflicts and quality of visitor experience (see decision matrix). The identified planning goals and objectives, physical and policy constraints helped determine the scale and level of proposed use on the property. HN Kent also introduced the concept of a dog corral on adjacent city of Beaverton property to meet the recreational needs of dog owners as well as maintain the need to protect habitat areas on Cooper Mt.

K Spinks asked about water resources for the development. HN Kent noted that there were water rights for residential use, but not park use. The restrooms for the natural area will likely be vault toilets and not require water. Metro will explore the possibility of water fountains, but it may not be feasible.

B Smith noted that the design should clearly indicate fire and safety access to the property.

K Spinks noted that brush removal would likely encourage oak habitat and reduce wildfire risk. He asked if Metro has investigated how changes of habitat patterns would affect the hydrology of the area. HN Kent said changes in hydrology from habitat management applications has not yet been considered.

C Robillard noted that smoke from poison oak burning is toxic and should be considered in controlled burning activities.

G Keck asked about the nature of the horse trail. HN Kent said that the equestrian trail along the existing logging road would remain until the regional trail is established through the natural area. At that time the trail surface would likely change to better accommodate other uses. The regional trail might be eligible for federal transportation funding, but a case needs to be made that it is a commuter trail. THPRD is working

on a community trail update that may speed up the regional trail process.

B Pasternak noted that "extreme" mt bikers require 6 to 20 miles for their activity, sometimes more. Cooper Mt. can not accommodate this kind of use, but some mt biking could perhaps be accommodated along the equestrian trail or other low impact areas for beginners and young families.

D Chin asked for clarification of bike use in the natural area. She emphasized the importance of making it clear to the general public that bike use is a future use and that it may be several years before it is allowed.

M Charleston said that fire trucks are 10-feet wide with a 40,000-pound load. The brush rigs are 8-feet wide. The existing logging road needs to be improved for adequate fire and safety response in the natural area. With the improvements made to the main service road (i.e. logging road), M. Charleston said the draft preferred design concept would provide the infrastructure necessary to adequately provide for the fire and safety response of the Tualatin Fire and Rescue District. The road spurs off the main service road are adequate for getting to different portions of the natural area with brush rigs and equipment such as 1,000-ft. hoses.

Cooper Mountain Project Advisory Committee Meeting Notes

Date: **Wednesday, January 20, 2005**
Time: **6:00 - 8:00 p.m.**
Place: **Tualatin Hills Nature Center, 15655 SW Millikan Way, Beaverton**

Attending: Cooper Mountain PAC members: Joe Reeves, Barbara Fryer, Joan Andersen-Wells, Judy Fox, Kyle Spinks, April Obrich, David Green, Tim Morgan, Lori Smith, Debbie Chin. Metro staff: Heather Nelson Kent, Jennifer Budhabhatti, Ron Klein. Citizens: Gery Keck, Boyce Smith, Ed Bartholemy, Kathy Bartholemy.

The Cooper Mountain PAC meeting notes of July 14, 2004 were accepted as amended (i.e. clarification of comments made by Bryan Pasternak and Mark Charleston).

J. Budhabhatti presented an overview of the Natural Resource Management Plan for Cooper Mountain Natural Area including historic cover types and land use and habitat management strategies. Neighboring habitats will be important to establish wildlife corridors. Metro will work closely with adjacent property owners. Oak woodland, prairie and mixed forest will be the primary habitats managed. Controlled burns, mowing, invasive species removal and select herbicide application will be among the management techniques for oak woodland. Small controlled burns, mowing and select herbicide application with be the primary management applications for prairie habitat. The mixed forest will be managed to old growth and the replanted areas will be managed as 2nd growth forest.

D. Green asked what contingency plans does Metro have in the event that recreation produces adverse impacts to habitat and wildlife populations. J. Budhabhatti said that Metro would employ adaptive management to the natural area and conduct periodic reviews of the compatibility of recreation and habitat condition.

HN Kent noted that DKS (a transportation planning firm) was contracted to do a transportation study for Cooper Mountain. Metro also met with Washington County to discuss transportation requirements for public facilities at Cooper Mountain Natural Area. The county will issue a traffic impact statement and may require modifications including site constraints, sight distance requirements at Kemmer and Grabhorn roads, mitigation measures, refuge turning lane, etc. At this time, Metro does not anticipate a large transportation issue related to building public visitor facilities.

HN Kent discussed operations of public visitor facilities. The master plan will assume Metro will be the manager of the property. However, Metro will discuss partnership possibilities with THPRD. Metro is discussing with Washington and Clackamas counties the possibility of adopting Metro's Title X rules for parks and natural areas. Natural area rules will be posted at the public access points.

L. Smith recommended that "no smoking" be included in the rules, at least for the summer months. JA Wells noted that the Tualatin Hills Nature Park has a no smoking policy.

J. Reeves noted that well-placed signs can go a long way to help people do the right thing.

HN Kent also noted that there will be lockable gates (manual or automatic) at the natural area entrances. Wildfire prevention will be addressed through vegetation management and assuring adequate emergency access to the site. The nature house will be used as an office, classroom and storage. The nature house also could be reserved for community activities. The shelter at Grabhorn will be available on a first come, first served basis, but could be reserved for community activities through Metro's Special Use Permit process. There are no plans for a BBQ at the shelter. There will be no visitor fee at the natural area.

Trail maintenance will be conducted on a seasonal and as needed basis. Staff and volunteers will be involved in trail maintenance.

Metro plans to allocate 2.5 FTE for the operation and management of Cooper Mountain Natural Area including 0.5 Supervisor, 1.0 Park Ranger, 0.5 Seasonal Ranger and 0.5 Naturalist. For FY 08-09, Metro estimates $260,000 will be needed to cover the cost of staff, materials and capital reserve.

J. Reeves suggested an "adopt-a-trail" program may work well at Cooper Mountain.

HN Kent reviewed the draft cost estimates for the project. The total cost of the Cooper Mountain Natural Area project construction is estimated to be $1.5 to $2 million.

B. Fryer asked if alternative parking surfaces were considered. Stormwater management requirements will change depending on the porosity of the parking area. HN Kent said that different surfaces have been reviewed, an asphalt surface costs about the same as maintaining a gravel surface, for example.

The Cooper Mountain facilities may need to be phased in over time, depending on final cost estimates and availability of funds. Opening the Kemmer Road parking area first may be necessary. It also seems prudent to wait to establish a ranger residence to consider a variety of opportunities such as other housing adjacent to the site as a rental or existing housing for sale.

E. Bartholemy pointed out that Grabhorn Road property adjacent to Metro property was for sale.

K. Spinks asked if Metro could build outside the UGB. HN Kent stated that one house could be built on Metro-owned property.

J. Fox said that the proposed children's play yard seemed out of character to a natural environment.

K. Spinks asked about water use on the site. HN Kent summarized that existing water is from a well. There will be a drinking fountain, but the drain water will be captured as gray water. Any irrigation would be limited to the proposed small turf area on Kemmer Road. Final restroom use of water has to been finalized. K. Spinks noted that there is technology available that can use stored gray water first in restrooms. Compost toilets also are a possibility.

HN Kent also said that Metro will pursue grant funds where applicable (especially state grants). The master plan will only depict trails on Metro property; the regional trail connection will be presented conceptually.

One final meeting (TBA) of the Cooper Mountain PAC will involve the review of the draft master plan before being published for citizen comment.

Cooper Mountain Project Advisory Committee Meeting Notes

Date:	**June 30, 2005**
Time:	**6:00 - 8:00 p.m.**
Place:	**Tualatin Hills Nature Center, 15655 SW Millikan Way, Beaverton**
Re:	**Review Comments on Draft Master Plan**

Comments on TVF&R issues:

Good idea to use trails as dual fire break/service

Access looks adequate (with the N and SW access points).

Minimum trail width of 15' is needed for rigs (this includes vegetation clearance and shoulders in addition to pavement width). Rock quarry road has adequate base as is.

Provide turn-arounds for ambulance, pull off or other 3 point turn-around area. 500 ft. is limit of backup.

Most likely that emergency vehicle access will be for medical emergency problems.
General response 5 minutes if in area – 6-7 minutes if out of area.

Provide grid map for to help emergency response locate where accidents are. THPRD Nature Park uses this.

Provide neighborhood notification for controlled burn – if/when used.

Include sufficient liability requirements for operators/contractors during controlled burns.
Coordinate with Tualatin Valley Fire and Water/Fire Marshal's office.

Hydrants in vicinity should provide sufficient access to water supply for fire suppression.

Additional comments:

Correction – the Nature Park is 222 acres.

Instead of referring to pale larkspur specifically, it may be better to generalize the reference to sensitive species so as not to become a tool used against access and development of the natural area.

Check document text to clarify future vs. today's vision (in particular with references to bicycling).

Kemmer View Estates Board is universally positive about the plan. However, pedestrian crossing on Kemmer Road is an issue. 182nd is a problem spot. Strongly advocate for a bike trail or sidewalk along Kemmer Road connecting to the natural area.

There is a sidewalk on the north side of the road along Kemmer View frontage. A safe road crossing point will need to be determined to connect to sidewalks fronting the natural area. It was asked if city of Beaverton could provide a sidewalk along the water tower property? A sidewalk is also needed along one private property to complete the connection.

It was also asked if speed bumps or other traffic calming devices could be implemented on Kemmer Road. There is a lot of concern about kids crossing this busy street. David Green can provide more info on where existing pedestr ian crossing points are.

Turn lane would be useful for both entrances to the natural area in both directions. Should be considered.

Street trees are effective as traffic calmers and should be incorporated even if not required by the county.

A sidewalk along 190th is not desired by 190th Street residents. It is out of character with the neighborhood and not deemed necessary by the PAC. Furthermore there is a large ditch along 190th that is full when the water tower is drained. If necessary, Metro should appeal this county requirement.

The irrigated grassy area shown on the Kemmer Road edge seems out of character with the rest of the natural area. It should not be turf. Lora clarified that it was not intended that it be managed as turf. The character would be more like a back yard or school yard that gets mowed but is not regularly irrigated. It will be an eco-lawn. (It was included in the cost estimate for purposes of noting all potential construction requirements and costs.)

Consensus agreed on keeping unirrigated grassy areas as they support programming with school groups. It was also felt that the grassy area location should be shifted away from the 190th/Kemmer Road corner and traffic edge.

Find ways to ensure meadow access is secure (riders).

It was asked where would irrigation water will come from and how sewer will be handled? Also asked where existing septic field was. We are assuming water will be from the City water line. There is a _ acre limit for irrigation. Not sure at this point if septic or sewer will be used.

Distances in the regional context section should be clarified. "As the crow flies" distances are misleading to real travel distances. Double check light rail distance and add other bus stops nearby.

Correction – Cooper Mountain is not really used that much to watch the Hillsboro Air Show but it is used for star/astronomy events and fireworks watching.

Check Pg. 89, referencing the 2 small acreages.

On pg. 8, Background, clarify where acquisition goals came from for Cooper – bond measure, target areas, refinement plan?

Would like to see a bibliography for the history section.

In Natural Resource Section: Clarify status of Oak Woodland – "rare, threatened" may not be best terminology since it has regulatory meaning.

Be clear that the Acorn Woodpecker is a potential future resident of the habitat. It is not there now.

Explain Neo-tropical

Double check if Elk have been present on site. P.16.

Check vocabulary in hydro wetlands.

Correction – It is Stonecreek Drive - not Road

On surrounding areas map show regional trail entering and exiting park in the likely locations and do not show alignment within property boundaries.

Check that we have made it clear that the current policy is no bikes until a regional trail is designated through the park. The regional trail will also accommodate equestrian use.

Will dogs be allowed on the regional trail? Clarify how Metro's "no pets" policy will be enforced on regional trail.

Include well water constraints (this is or should be addressed in the existing facilities section.

p. 36, eliminate "caretakers residence".

In Issues/opportunities & Constraints section: add neighborhood concerns about on-street parking by natural area users and sidewalk and pedestrian access along Kemmer Road.

O&M section: Add marking boundaries of property where needed. Fencing is a last resort to control access.

"Warning Poison Oak" signage could be a good deterrent to unauthorized access.

Consider "no exit" signs on dead end trails (specifically for the road that ends at Stonecreek).

On interpretive signs, use a "you are here" trail map insert.

Provide explanatory signage for why people need to stay on trails, particularly at the prairies. Address no collecting policy (e.g., mushrooming, geocashing and flower collection will be a desire).

Add text regarding the trail we show passing between the corner of the two private properties to explain that an easement will need to be granted by one of the property owners to allow this trail to exist.

Under the volunteer partnership section, expand the discussion re: student study and natural resource work beyond restoration.

P.55 add "such as Oregon Equestrian Trails" when referring to equestrian trail groups.

It is fine to have a dry trailhead at Grabhorn—horse users will pack their own water.

Refer to the horse ramp as an "assisted loading ramp".

Cooper Mountain *chronicle*

Metro's Regional Parks and Greenspaces Department • Summer 2003

Cooper Mountain offers spectacular views of the Chehalem Mountains.

Summer Metro GreenScene
News and activities for nature lovers of all ages.
Call (503) 797-1850 for a copy or visit www.metro-region.org/parks

What's happening on Cooper Mountain?

It has been more than a year since the last issue of Cooper Mountain Chronicle. Metro has not added to the 256-acre property overlooking the Tualatin Valley, but the greenspace has improved, benefiting the many plants and animals that call Cooper Mountain home.

Metro staff and hundreds of volunteers have worked to remove invasive weeds, and plant and care for nearly 60,000 trees to restore the recently-logged site. Pockets of oak and madrone trees balanced with open meadow areas and wetlands now support a fascinating array of plants and wildlife. The increased presence of the beautiful rare delphinium and the return of the Western bluebird are just two examples. Cooper Mountain also serves as one of several butterfly-monitoring sites in the region.

Next year, Metro will begin work to prepare a master plan to establish a nature park on its Cooper Mountain property. The plan will identify proposed uses (e.g., hiking, picnicking, nature education and enjoyment) and amenities (e.g., parking, trails, viewpoints, restrooms, signs) featured in the nature park. Natural resource protection measures also will be part of the plan. Interested in participating in the planning process? Call Jane Hart at (503) 797-1585 or send e-mail to hartj@metro.dst.or.us. The Metro Council will approve the plan by December 2004.

For more information about Cooper Mountain, other Metro parks and greenspaces or volunteer opportunities call at (503) 797-1850 or visit Metro's web site at www.metro-region.org/parks.

Street of Dreams partnership benefits Cooper Mountain

The 2003 Street of Dreams at Renaissance Pointe takes place July 19 through Aug. 17 on Cooper Mountain.

The Home Builders Association of Metropolitan Portland, which hosts the event, arranged with Metro to use a grass field at the intersection of Southwest 190th Avenue and Kemmer Road for parking.

The association will provide traffic management, site security and restore the site if needed. The temporary parking lot is in an area of marginal wildlife use and avoids areas where sensitive plants and animals live.

Since the event takes place in mid summer, most wildflowers have gone to seed and wildlife activity is low.

In exchange for use of the field, the association will help fund the master planning for Cooper Mountain and build greater awareness of the benefits of Metro's open spaces acquisition program for area residents. Residents, businesses and local governments are working together with Metro to assure that the natural environment remains a vital part of our communities.

"Investments in open spaces provides important benefits to our community," said Jim Desmond, director of Metro's Regional Parks and Greenspaces Department. "This partnership gets us one step closer to opening Cooper Mountain as a nature park for the public to enjoy."

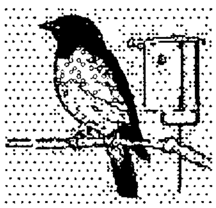
Western bluebirds return to Cooper Mountain

With help from volunteers and the Prescott Bluebird Recovery Project, Western bluebirds have returned to Cooper Mountain. These gentle and colorful thrushes have diminished in numbers in Western Oregon. However, placement of 15 nest boxes in strategic areas on Cooper Mountain during the last four years has given them a new home.

Historically, Western bluebirds were common into the early 20th century, when small farms with interspersed clearings and woodlands dominated the Willamette Valley. The bluebirds used holes in snags, dead and dying trees and wooden fence posts to build their nests. These natural cavities diminished as residential development and large-scale agriculture replaced family farms. Fewer nesting sites and increased competition from house sparrows and European starlings pushed Western bluebirds to a few scattered populations. By the mid-1940s, bluebirds were only found near Cooper Mountain in places such as Ladd Hill near Sherwood and Parrett and Chehalem mountains near Newberg.

Western bluebirds prefer open fields, pastures or large mowed yards with medium-sized trees for nest guarding and perching. Nest boxes are placed in the open on fence posts or metal poles near select trees. When nesting season begins in March, the male establishes and defends feeding territories to which he brings his mate. Females choose the "best" nest box within that territory. A successful pair will return year after year to the same area, often to the same nest box.

The Cooper Mountain bluebirds are not migratory. Many will remain in their nesting territories throughout the winter in small flocks. They may move to lower elevations if the weather becomes too cold or may roost overnight in a nest box.



Today, the Western bluebird is making a comeback throughout the Willamette Valley. The work of many volunteers and Metro staff to establish and maintain suitable habitat for bluebirds on Cooper Mountain is part of that success. Visitors can look forward to enjoying these beautiful birds for many years to come.

The Prescott Bluebird Recovery Project is a nonprofit organization dedicated to the recovery, restoration, and enhancement of the Western bluebird and other native cavity nesting birds (swallows, wrens, nuthatches, chickadees). To learn more about Western bluebirds and their recovery in Oregon, go to www.prescottbluebird.com.

Cooper Mountain – a stop on the summer open spaces tour series

Metro Council President David Bragdon is hosting a series of guided summer open space tours for interested citizens. On Saturday, July 12, the tour bus will pay a visit to Cooper Mountain as part of the Washington County tour.

Thanks to voter approval of the 1995 open spaces, parks and streams bond measure, Metro purchased 8,000 acres of greenspaces throughout the region, including 256 acres on Cooper Mountain. This land will support fish and wildlife, soften the urban landscape and offer people future access to nature close to home.

The tours offer people an opportunity to visit some of these remarkable places and learn about how Metro is working with other park agencies to assemble a system of parks, greenspaces, trails and greenways around the greater Portland metropolitan region.

To find out more about the free guided summer greenspaces tours, call (503) 797-1560.

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Department
600 NE Grand Ave.
Portland, OR 97232

Cooper Mountain *chronicle*

Metro's Regional Parks and Greenspaces Department • January 2004


Cooper's hawk

Planning begins for a nature park on Cooper Mountain

Together with the public, Metro and its partners will begin preparing a master plan next month for a natural area park on Cooper Mountain. The park will not become a site for active recreation (for example, sport or ball fields). Instead, the property will be developed to protect Cooper Mountain's native plants, wildlife and views while providing opportunities for nature-related use and enjoyment by park visitors.

A project advisory committee representing interested citizens, local government agencies and groups will work with Metro staff to identify issues, develop park design alternatives and natural resource protection measures. The committee's first meeting will be in early February. Interested citizens will also be invited to attend public meetings, participate in guided tours of the property and get involved in helping shape the elements of the master plan and park concept designs.

Some 256 acres are protected on Cooper Mountain so far – including the summit and southern slope of the mountain. This area, on the western edge of Beaverton, is home to many native plants and wildlife and offers views of the Tualatin Valley and Chehalem mountains. Hundreds of volunteers have contributed thousands of hours to improve Cooper Mountain's natural environment. The return of Western bluebirds and several species of wildflowers to Cooper Mountain is a good sign that the hard work is paying off.

The Cooper Mountain Master Plan will be adopted by Metro Council in spring 2005. "Balancing the protection and enhancement of the property's natural values with appropriate public use requires careful consideration. It's going to take some time," said Metro Councilor Carl Hosticka. Hosticka represents Metro District 3, which includes Cooper Mountain.

Organizations or residents interested in participating in the master planning process or getting on the mailing list should call Ron Klein at (503) 797-1774 or send e-mail to kleinr@metro.dst.or.us.


Meadowlark

Be a part of planning the park on Cooper Mountain

You can help us begin the master planning process by taking a few minutes to give us your thoughts about a park on Cooper Mountain. Complete and return this survey by Feb. 27 to Ron Klein, Metro Regional Parks and Greenspaces Department, 600 NE Grand Ave., Portland, OR 97232.

You also can complete the survey by going on line at www.metro-region.org. Go to "Quicklinks" and click on "Cooper Mountain master plan." On the master plan page you can link to the survey in the left column. The web site also contains additional information about the master planning activity schedule, site tours and volunteer opportunities.

1. Do you think having natural open space in your community is valuable? *(circle one)* yes no

2. What do you think is the most important reason for making improvements at the Cooper Mountain natural area?

   _____
   _____
   _____
   _____
   _____

3. How important are the following park features and activities for a park on Cooper Mountain? *(circle one)*

- play structure for young children
  very important *somewhat important* *not important*
- network of walking trails
  very important *somewhat important* *not important*
- loop trail with viewpoint
  very important *somewhat important* *not important*
- trails for horses
  very important *somewhat important* *not important*
- mountain biking in the park
  very important *somewhat important* *not important*
- parking for at least 15 vehicles plus one bus
  very important *somewhat important* *not important*
- parking for at least 30 vehicles plus two buses
  very important *somewhat important* *not important*
- wildlife viewing
  very important *somewhat important* *not important*
- help improve habitat for plants and animals
  very important *somewhat important* *not important*
- bike racks
  very important *somewhat important* *not important*
- restrooms
  very important *somewhat important* *not important*
- a place to spend time with family and friends
  very important *somewhat important* *not important*

continued

How important are the following park features and activities for a park on Cooper Mountain? (continued)

- individual picnic areas
  very important *somewhat important* *not important*
- a group picnic shelter
  very important *somewhat important* *not important*
- resting/viewing benches
  very important *somewhat important* *not important*
- guided tours to learn more about nature
  very important *somewhat important* *not important*
- a place for school field trips for outdoor learning
  very important *somewhat important* *not important*
- signs that showcase the natural and cultural features of the park
  very important *somewhat important* *not important*

4. Should the park provide for small groups (25-50) and family gatherings? *(circle one)* *yes* *no*

5. What concerns or issues do you have about opening a park on Cooper Mountain? (for example, noise, litter, wildfire, vandals, traffic)

____

____

____

____

6. How often would you visit the park if it had some of the features you would use? *(circle one)*
weekly *monthly* *a few times per year* *never*

7. Because of conflicts with wildlife and to protect sensitive plants, Metro employs a "no-dogs-allowed" policy in its nature parks. Would you agree with a similar policy at a Cooper Mountain park? *(circle one)*
strongly agree *somewhat agree* *somewhat disagree* *strongly disagree*

8. Please provide other comments and suggestions that would be helpful to Metro in preparing a draft Cooper Mountain Master Plan.

____

____

____

____

9. What is your age group? *(circle one)*
younger than 18
18-34
35-54
55-65
older than 65

10. What is your ZIP code? ________________

Metro
People places • open spaces

Clean air and clean water do not stop at city limits or county lines. Neither does the need for jobs, a thriving economy and good transportation choices for people and businesses in our region. Voters have asked Metro to help with the challenges that cross those lines and affect the 24 cities and three counties in the Portland metropolitan area.

A regional approach simply makes sense when it comes to protecting open space, caring for parks, planning for the best use of land, managing garbage disposal and increasing recycling. Metro oversees world-class facilities such as the Oregon Zoo, which contributes to conservation and education, and the Oregon Convention Center, which benefits the region's economy.

Your Metro representatives
Metro Council President – David Bragdon
Metro Councilors – Brian Newman, deputy council president, District 2; Rod Park, District 1; Carl Hosticka, District 3; Susan McLain, District 4; Rex Burkholder, District 5; Rod Monroe, District 6
Auditor – Alexis Dow, CPA

Metro's web site
www.metro-region.org

Take a guided nature tour of Cooper Mountain this spring! with Metro naturalists Deb Scrivens and James Davis. Check your spring 2004 issue of Metro GreenScene or visit www.metro-region.org/greenscene

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Cooper Mountain *chronicle*

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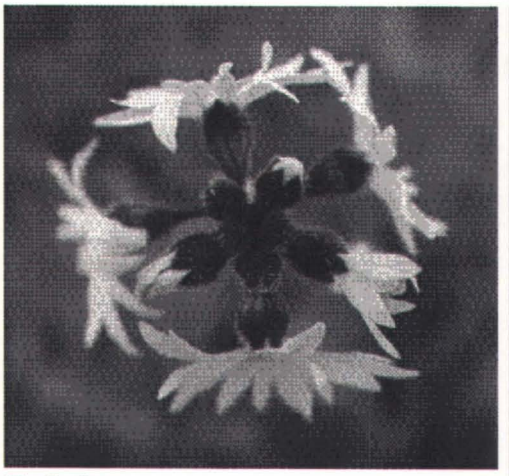
Cooper Mountain *chronicle*

Metro's Regional Parks and Greenspaces Department • May 2004



Woodland star

Open house offers look at plans for Cooper Mountain natural area

Attend an open house to view facility design options for the Cooper Mountain natural area from **6 to 8 p.m. Wednesday, May 19**, at Southridge High School, 9625 SW 125th Ave., Beaverton. Three design options and maps will be on display. Metro staff will be available to answer questions and take your comments.

Metro and its partners began work earlier this year to prepare a master plan to build visitor facilities on its 240-acre natural open space on Cooper Mountain near Beaverton. The plan will recommend public uses and amenities to be featured at the natural area. Above all, the plan will address how visitors can enjoy the greenspace while protecting native plants, wildlife and views.

Citizen comments, technical analysis and review by the Cooper Mountain Project Advisory Committee and Metro staff will serve to help shape and select a recommended natural area design option. The recommended design will be featured at another open house in September and published in a draft master plan by the end of 2004. The draft master plan will be subject to public review and comment. Metro Council is expected to adopt the final master plan by spring 2005.

Find out more about the Cooper Mountain natural area by visiting Metro's web site at www.metro-region.org/parks, by calling Ron Klein at (503) 797-1774 or by sending an e-mail to kleinr@metro.dst.or.us.

Public opinion survey helps shape plans for Cooper Mountain

Nearly 400 people took the time to complete and return a survey posted on Metro's web site and distributed to 1,800 addresses in the vicinity of Cooper Mountain. The survey is not scientific, but is an important part of the master planning process to help identify possible public facilities, uses and issues associated with the natural area property. Most of the respondents (69 percent) were from the immediate surrounding area of Cooper Mountain and most (98 percent) valued natural open space as a community benefit.

Eighteen possible public facilities and visitor experiences were rated. Respondents ranked providing a network of trails (98 percent), viewing wildlife (92 percent) and environmental education such as school field trips (81 percent) as very important or somewhat important. The top five concerns and issues included activities such as vandalism, littering, noise, wildfire, traffic and parking in adjacent neighborhoods. Based on this survey and discussions with neighbors; various

continued

Take a trip into nature!

Metro is offering a guided nature tour of Cooper Mountain's birds and wildflowers from **12:30 to 4 p.m. Sunday, May 23**. The tale of the Cooper Mountain landscape includes volcanoes, wildfire, oak prairies, perched wetlands, rare wildflowers including the pale larkspur and uncommon birds such as the western bluebird. Explore this greenspace, compare diverse habitats and track wildlife with Metro naturalist Deb Scrivens.

Bring a snack and plenty of water for this stroll. Terrain is steep and rough in some places. For adults and children 6 or older; children must be accompanied by an adult.

The tour is free, but advance registration is required by calling (503) 797-1850 option 4. You will receive directions to the meeting place and other details after you register.

Public opinion survey continued from page one

citizen, recreation and environmental groups; and the Cooper Mountain Project Advisory Committee, Metro developed a series of master planning goals and objectives to guide proposed site designs and facility improvements.

Three design alternatives will be presented out that will feature public facilities, public uses and habitat protection measures. These draft designs will be available for public review and comment at the May 19 open house.

Cooper Mountain natural area to get new signs

There's a lot of excitement surrounding future plans to build new facilities at Cooper Mountain natural area. However, until public use can be carefully planned to protect its special natural features, Metro's Cooper Mountain property is not officially open to the public. Indiscriminant use of the property has caused some land and habitat damage from newly established informal trails and inappropriate activity (e.g., paintball games). There was even a recent man-caused fire on the property that could have been more serious.

Consistent with its park rules (Metro Regulatory Code, Title 10.01.220), Metro will post signs on its Cooper Mountain property prohibiting motorized vehicles, firearms, bikes and dogs.

Not allowing dogs in Metro parks and natural areas has been puzzling to many people. The primary reason for such a rule is because of the conflict pets (particularly dogs) produce in parks and natural areas managed for fish and wildlife habitat.

For example, Smith and Bybee Lakes Wildlife Area and Oxbow Regional Park are open year-round for public use and enjoyment, but are managed in a way that protects habitat for a wide variety of fish and wildlife species. Visitors to these places have a unique opportunity to experience the native plants and animals in a natural environment. Dogs, by nature, can significantly alter a visitor's experience and can damage sensitive habitats or restored habitat sites as well as harass or kill vulnerable wildlife.

A "dogs-on-leash" rule has proved ineffective in the past, because many people disregard the policy. We also have experienced that a number of pet owners do not take the responsibility to pick up pet waste.

With the exception of special service dogs, Metro will continue its current policy of excluding pets from their parks and natural areas to help assure a quality visitor experience and help protect the natural resource values of places such as Cooper Mountain.

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People places • open spaces

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Auditor – Alexis Dow, CPA

Metro's web site
www.metro-region.org

Summer Metro GreenScene
News and activities for nature lovers of all ages.
Call (503) 797-1850 for a copy or visit
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Cooper Mountain *chronicle*

Metro's Regional Parks and Greenspaces Department • September 2004

Cooper's hawk

Plan taking shape for Cooper Mountain Natural Area

The vision for a public natural area on Cooper Mountain comes into focus this fall with the release of a proposed design concept for trails, access points, a nature house and other visitor facilities. Attend an open house in September to see the draft facility design for this 231-acre open space in Washington County. Later this year, the public will review and comment on a draft master plan that will go before the Metro Council for adoption in spring 2005.

New funding identified by the Metro Council will help make the plan a reality. "Metro's acquisition program has been very successful in protecting more than 8,000 acres of open space throughout the region," said Metro Councilor Carl Hosticka, whose district includes Cooper Mountain. "Opening some of these incredible places to the public is an important next step. Cooper Mountain Natural Area will provide access to nature, learning and recreation for generations to come."

Nearly a year in the making, the proposed design is intended to protect and enhance the natural area for wildlife while offering visitors high-quality experiences in nature. Successfully achieving this balance requires the participation, expertise and leadership of many. Tualatin Hills Park and Recreation District, the city of Beaverton, a dedicated project advisory committee and hundreds of neighbors and citizens all helped produce the draft design concept.

Under the proposal, visitors will access the natural area from both Southwest Kemmer and Grabhorn roads. Entrance areas will include parking lots, picnic tables and other amenities. With an emphasis on use by hikers, Cooper Mountain will feature a 3 1/2-mile trail network that will include an equestrian loop and a 1/2-mile ADA accessible summit trail with views of the Tualatin River Valley. In the future, a nature house will be the staging area for a variety of environmental education activities, including school field trips and guided nature tours. When complete, regional trail connections to the natural area will offer opportunities for bicycle use.

More information about the natural area and the master planning process is available on Metro's web site at www.metro-region.org/parks. Get on the Cooper Mountain mailing list by calling Ron Klein at (503) 797-1774 or sending e-mail to kleinr@metro.dst.or.us.

Come to an open house on Sept. 22

See inside for details

Review the proposed design concept

Open house at the Jenkins Estate

6 to 8 p.m. Wednesday, Sept. 22

Review the proposed visitor facility design concept for the Cooper Mountain Natural Area. Metro staff will be on hand to answer your questions and receive your comments about the proposed facilities, habitat protection measures and recommended recreational uses. The Jenkins Estate is located at 8005 SW Grabhorn Rd., Aloha.

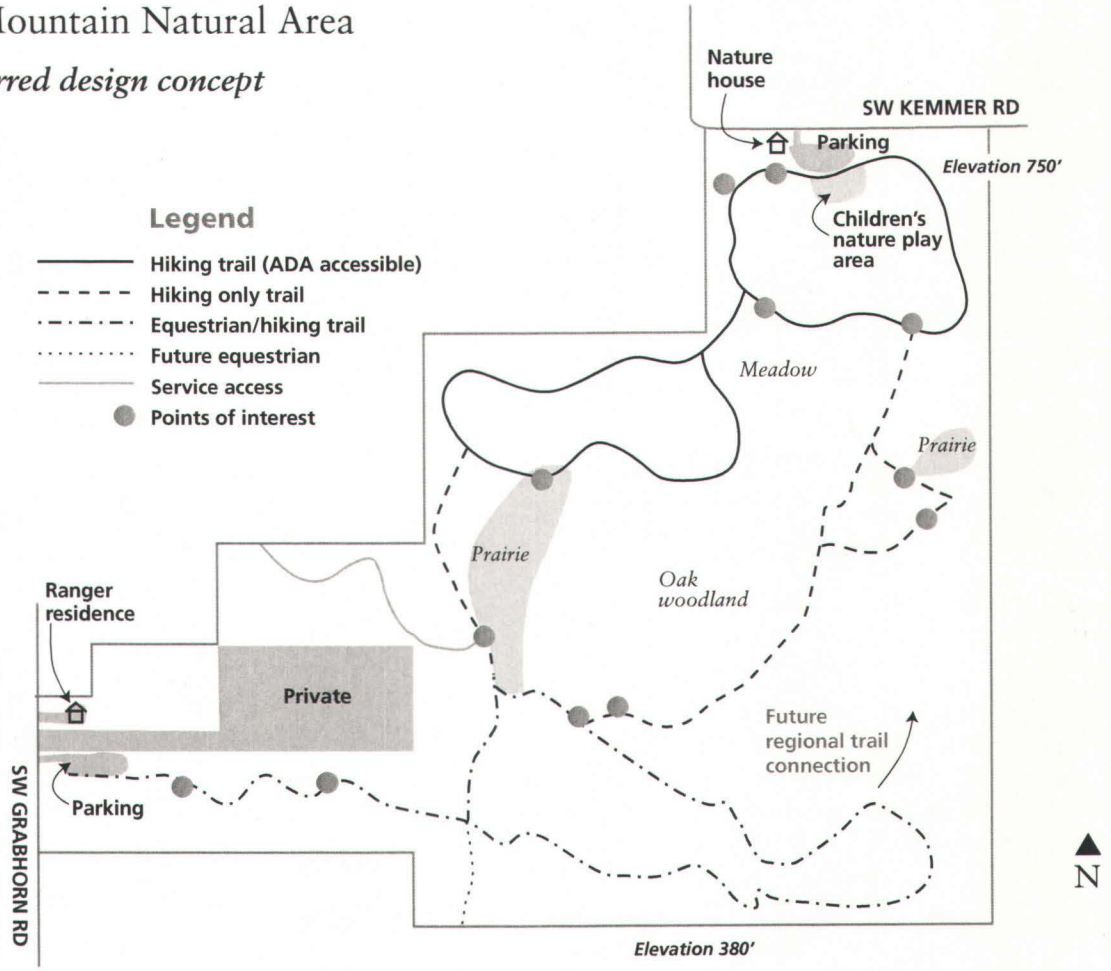
Can't make the open house?

Attend a virtual open house on Metro's web site

If you can't attend the Cooper Mountain open house at the Jenkins Estate, visit the virtual open house on Metro's web site. See the proposed design concept, review background information, maps and planning documents, ask questions via e-mail or the phone, and give us your input in an online survey. Go to **www.metro-region.org/parks** and click on "Cooper Mountain virtual open house" between Sept. 22 and Oct. 15.

Cooper Mountain Natural Area

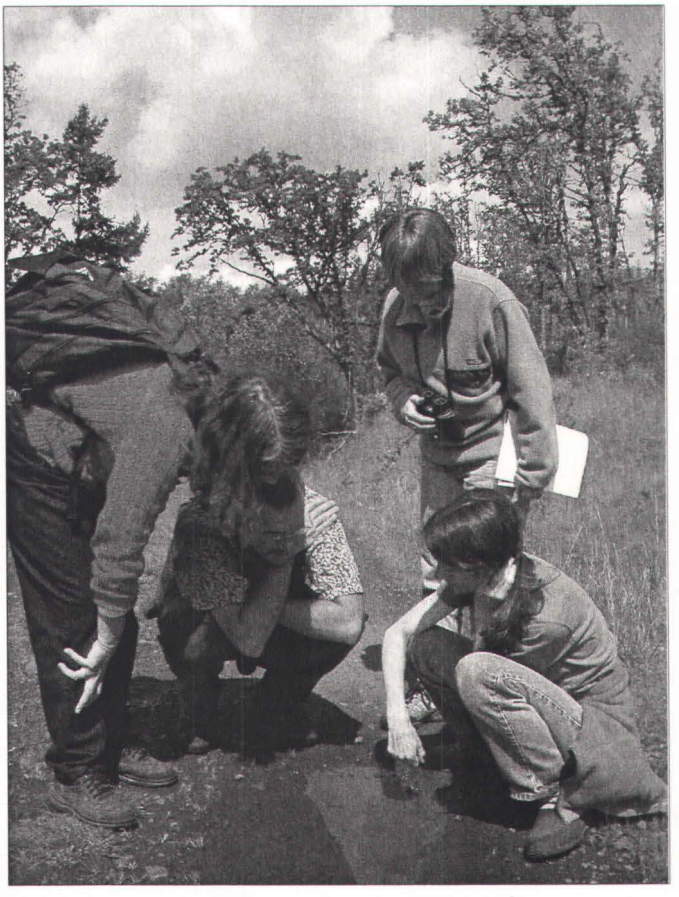
Draft preferred design concept



Get to know Cooper Mountain

It is likely to take a few years for Cooper Mountain Natural Area to officially open to the public. Design, permitting and construction take time. But you don't have to wait to enjoy the nature of Cooper Mountain. Take advantage of one of the many opportunities that Metro offers to explore and experience this unique natural area.

Metro naturalists lead nature tours highlighting the wild side of Cooper Mountain throughout the year. Discover the many plants and animals that call Cooper Mountain home, including rare birds and wildflowers. Public tours are listed in the Metro GreenScene and on Metro's web site. For groups of 10 to 25 people, Metro will arrange a private tour. Call Metro naturalist Deb Scrivens at (503) 797-1852 for group tour details.



Cooper Mountain visitors examine wildlife tracks.

Since Metro purchased the Cooper Mountain property in 1997, dozens of volunteers have helped with a variety of habitat restoration and management projects. Volunteers are needed to continue in the restoration effort and help monitor plant and wildlife populations.

If you would like to get involved in habitat improvement projects for wildlife or have special skills in identifying native plants, birds, mammals, reptiles or amphibians, call Mary West at (503) 797-1814 for more information about becoming a Cooper Mountain volunteer.

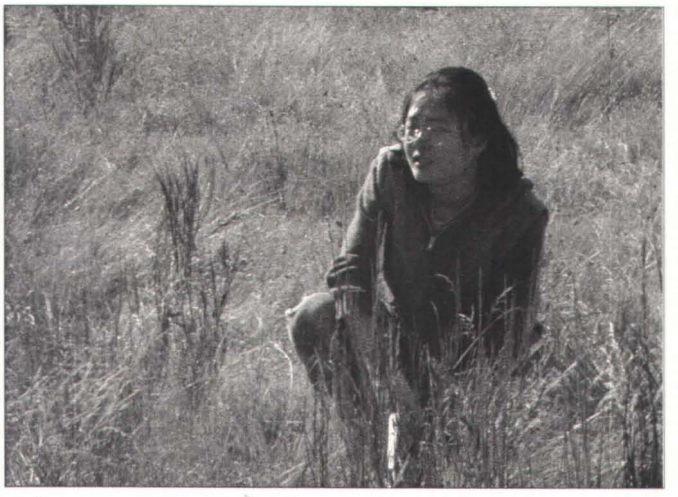
Until facilities are developed and adequate access and protection of natural resources is ensured, the public is asked to limit their use of Cooper Mountain Natural Area to these guided tours and volunteer activities. In the meantime, Metro has posted signs on the property that prohibit dogs and the use of motorized vehicles, firearms and bikes (Metro Regulatory Code, Title 10.01.220). These interim policies are critical to the success of restoration efforts.

Learn about the nature of Cooper Mountain

Naturalist guided tours

11 a.m. to 1:30 p.m. Sunday, Sept. 19, and 10 a.m. to 12:30 p.m. Saturday, Sept. 25

Join a Metro naturalist on a guided tour of the Cooper Mountain Natural Area. Learn about the interesting geologic history of the site, and see forests of different ages, as well as many rare species of plants and trees, including the Willamette Valley ponderosa pine. Much of the Tualatin River watershed can be viewed from the site. Bring a snack and plenty of water. Terrain is steep in some places. All ages are welcome, but an adult must accompany children. Free. Advance registration required; call (503) 797-1850 option 4.



Volunteer pauses to enjoy the view from Cooper Mountain Natural Area.

Fall Metro GreenScene

News and activities for nature lovers of all ages.
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