# New Look

The Shape of the Region

## Natural Landscape Features Inventory

A NEW LOOK
AT REGIONAL
CHOICES
FOR HOW
WE GROW



METRO
PEOPLE PLACES
OPEN SPACES

#### INTRODUCTION

The Metro Council launched the New Look at Regional Choices work program, to re-examine the way we carry out the region's long-range plan, the 2040 Growth Concept. The New Look at Regional Choices work program is separated into three broad categories: Investing in our Communities, Shape of the Region and the Regional Transportation Plan (RTP). The Shape of

the Region portion of the New Look work program, a coordinated effort with Clackamas, Multnomah and Washington Counties and the State Departments of Land Conservation and Development and Agriculture, focuses on balancing regional agricultural land needs with the protection

of natural resources and the creation of great communities. This memo focuses on the natural resources component of the Shape of the Region. The intent is to define a simple mapping process that will identify those



features of the landscape that influence the sense of place for the greater region and ultimately will help define the future urban form of the greater region. This information will also be used to identify possible environmental integration strategies to be included in the updated RTP.

#### **BACKGROUND**

The protection of natural and cultural resources has long been a key driving force of Metro's charge. The preamble of the 1992 Metro Charter proclaims that Metro's most important service is to preserve and enhance the quality of life and the environment for ourselves and future generations. The 1992 Greenspaces Master Plan further expands this notion stating that the diversity of natural landscapes in the region – broad river valleys stippled with wetlands, narrow river canyons veiled by green ways of riparian vegetation, buttes and forests, mountains and meadows, foothills and farms - all impart a special sense of place and character to this metropolitan area. It speaks to the creation of a cooperative system of natural areas, open space, trails and greenways for wildlife and people in the four-county metropolitan area.

This acknowledgement of the key role the greater regional landscape plays in the minds of the region's citizens was further established through the development of Metro's Fish and Wildlife Habitat Protection Program's Vision Statement (2000). The vision articulated an overall goal to conserve, protect and restore a continuous ecologically viable streamside corridor system, from the stream's headwaters to their confluence with other streams and rivers, and with their floodplains in a manner that is integrated with the surrounding urban landscape. Maintaining access to nature, managing growth to address watershed health and connections between habitat areas, and fully integrating the built and natural environment are important elements of Metro's policy framework. The current RTP encourages environmental integration and context sensitive design through its policies and regional street design guidelines contained in the Livable Streets and Green Streets Handbooks. Finally, the establishment of the Nature in Neighborhoods Initiative in 2005, with the Metro Council's support of protecting and restoring more habitat in future Urban Growth Boundary expansion areas, solidified the Council's goal of enhancing the quality of life and the environment for future generations.

In January 2006 Davis, Hibbitts & Midgehall, Inc. completed public opinion research for Metro that confirmed the importance of natural and cultural features to the citizens of the region. For instance, seventy-eight percent of those polled indicated that protecting rivers and streams is one of the most urgent/high priority planning goals to deal with population growth over the next ten years. The top two answers to the question "what is it that you enjoy most about the quality of life you have in the region?" were environmental quality and nature/scenery, at twelve and eleven percent respectively.

The Metro Greenspaces Policy Advisory Committee's Vision calls for the creation of an exceptional, multi-jurisdictional, interconnected system of neighborhood, community and regional parks, natural areas, trails and open spaces and recreational opportunities distributed equitably throughout the region. Coincidentally, a sub-committee of GPAC was initiating an assessment of the natural areas component of the "system" at the same time that Metro Planning staff initiated the Natural Landscape Features Inventory of the New Look at Regional Choices work program. Thus it made sense for the two initiatives to join forces.

#### NATURAL LANDSCAPE FEATURES INVENTORY

In an effort to reflect this interest and respect of the natural components of the larger regional landscape, Regional Planning and Parks & Greenspaces staff developed an inventory and assessment approach at a broad level based on a couple of key questions. From these questions we can identify the resources in the landscape that will help define the future urban form. The questions are:

- What natural resources are essential to the health and welfare of the region?
- What landscape features define the sense of place for the region?

#### What natural resources are essential to the health and welfare of the region?

At the very basic level, clean air and water are essential to the health and welfare of the region. Besides the need for clean drinking water, the abundant supply of quality water has played a role in attracting the high-tech industry to the region, which has helped drive the changing economy of the state. Healthy river and stream corridors, along with forested lands are essential for maintaining air and water quality, watershed health and habitat for hundreds of fish and wildlife species. Protecting lands that are susceptible to natural hazards is another key component of the health and welfare of the region. This includes floodplains and wetlands that store floodwaters and help reduce flooding as well as steep sloped areas that are at risk to landslides or earthquakes.

#### What landscape features define the sense of place for the region?

Citizens of the region have been steadfast in their desire for easy access to nature, whether it is Mt. Hood or the Columbia River Gorge, Forest Park or Jackson Bottom. Views to Mt. Hood are sacred, as are views of the buttes in Clackamas County or the Chehalem Mountains in Washington County. Citizens and trail planners have worked continuously through the years to complete the 40-Mile Loop, ever since John Charles Olmsted recommended the creation of a comprehensive and interconnected system of parks, boulevards and parkways and greenways in his 1903 Portland Park Master Plan.

These defining elements - quick access to nature, trails, protection of fish and wildlife habitat and views of the larger natural landscape, along with innovations in transportation and land use planning have defined the sense of place that is most acknowledged by the region's citizens today. Metro's 2006 Parks and Greenspaces Bond Measure target areas, as originally defined, represent on a broad scale the larger anchor areas that tie the natural features of the landscape together. These areas build upon the 1995 Parks & Greenspaces bond purchases as well as other public and private park and open space land such as the Tualatin River Wildlife Refuge.



#### **METHODOLOGY**

The process for identifying key natural resource and landscape features on a landscape scale incorporated natural resources available in a GIS database format and the collective expertise of a select group of ecology and park professionals from various federal, state, local and private organizations. GIS coverages were overlayed to create a base map on which the experts could add more information. The base map included soils, slopes, rivers and streams, wetlands, floodplains, public/private parks and natural areas, the 2006 Bond Natural Area for Clean Air and Water target areas, Metro's Fish and Wildlife Habitat Protection Areas rural habitat inventory, greenways, and natural hazard data.

To give context to the broader New Look perspective, the map was extended from north of Salem to the North Fork of the Lewis River on a north-south axis and from the Cascade foothills to the Coast Range on the east-west axis. Land cover information outside of the Metro area was taken from the National Land Cover Database (NLCD) at the 30-meter resolution scale. The Multi-Resolution Land Characteristics Consortium (MRLC), a group composed of eight federal natural resources management agencies generated this data.

On June 20, 2006, the Greenspaces Policy Advisory Committee (GPAC) organized a natural landscape features charette. The participants were selected for their intimate knowledge of the regional landscape, their grounding in ecological and landscape ecology principles, and their familiarity with Metro's regional growth management and greenspaces program. A list of the participants can be found at the end of the document.

The participants were organized into teams for an exercise designed to allow each team to identify a "system" of those elements of the regional landscape, natural resources and collections of natural resources that meet the objectives outlined below. This natural features work is to be incorporated into additional work GPAC is conducting to identify a bi-state, interconnected system of parks, trails and natural areas.

#### The participants' analyses focused on identifying:

- A variety of habitats needed to protect and enhance the region's biological diversity,
- Opportunities to consolidate and connect existing or potential natural areas as much as possible,
- Critical stream and river corridors.
- Natural connections between watersheds at their headwaters, and
- Geographic features that define and distinguish the region

#### The objectives of the charette were to:

- Identify an interconnected, ecologically significant system of natural resources that respond to objectives identified in the GPAC Vision and the New Look at Regional Choices work program.
- Illustrate natural resource landscape patterns that can support ecological processes in the existing urban area and help define future urban and rural development patterns
- Discuss and document how the system contributes to meeting the objectives of the GPAC Vision and the New Look at Regional Choices work program.

Each charette team was asked to produce a marked-up map of significant natural systems and land patterns that define the quality and character of the region and a diagrammatic concept for the "system" that captures the region's sense of place, allows for resource protection at a larger landscape and ecosystem scale and helps define where future growth should and should not occur. The three teams were then asked to evaluate each of the maps and a consensus set of landscape features were agreed on. A composite map that compiled data from each of the maps was created.

The composite map reflecting a consensus of all charette participants was scanned and digitized. Additional data was then added from three data sets:

- Priority Conservation Areas of the Willamette Valley-Puget Trough-Georgia Basin Ecological Assessment by the Nature Conservancy
- Conservation and Restoration Opportunities in the Willamette River Basin Planning Atlas: Trajectories of Environmental and Ecological Change by David Hulse et al
- Conservation Opportunity Areas from the Oregon Conservation Strategy developed by the Oregon Department of Fish and Wildlife

This data either established more precise boundaries on previously identified areas or highlighted new areas of significance on the composite map.

The final product is the regional natural features base map to be used in the Shape of the Region work program as well as GPAC's work creating the bi-state regional parks and greenspaces system map.

Complimentary to this GIS-based natural features map, a series of graphical perspective maps of the region were generated by James Pettinari, University of Oregon Department of Architecture. The region was divided into five "rooms" or perspectives and oblique representations of landforms were drawn from each perspective. Natural features were highlighted in colors. The results are accurate perspectives of the region that are evocative of a sense of place as seen from aerial views. While these perspective drawings are not appropriate for GIS analysis, they are useful in that they make the observer look at the region in a new way and stimulate conversations about the future shape of the region.

#### IDENTIFIED SIGNIFICANT NATURAL LANDSCAPE FEATURES

It should be noted that the GPAC charette process identified landscape features in Clark County Washington, due to the bi-state nature of the GPAC work. While the Shape of the Region work program is confined to Oregon, the areas identified in Clark County are represented on the map for contextual purposes, but are not described in the report. Listed below are the areas identified as natural landscape features of the region. It is important to note that natural features inside the UGB are not examined in this New Look process and are well documented in Metro's Fish and Wildlife Habitat Inventory.

#### **Columbia River Gorge Scenic Area**

The purpose of the National Scenic Area Act is to protect and provide for the enhancement of the scenic, cultural, recreational and natural resources of the Gorge. The Columbia River Gorge is a spectacular river canyon, 80 miles long and up to 4,000 feet deep, cutting the only sea level route through the Cascade Mountain Range.

The Sandy River Delta, which serves as the "front porch" for urbanites entering the Columbia River Gorge from the west, is a 1,400-acre river delta that contains extensive floodplain forests, scrub/shrub communities, and seasonal wetlands.

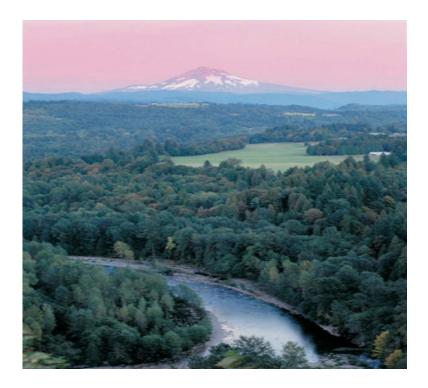
#### **Cascade Foothills**

The Cascade Mountain foothills provide a scenic panorama for Portland and the eastside of the region and define the eastern and southeastern edges of the greater metropolitan area. The forest contains healthy fish and wildlife populations and provides drinking water for the majority of the population of the region.

#### **Sandy River Gorge**

The Sandy River cuts a 55-mile-long serpentine swath from Mt. Hood to the Columbia River. A 12.5-mile stretch of the river – from Dodge Park on the south, downstream to the Stark Street Bridge on the north - wends its way through the 800-foot-high basalt and sandstone canyons known as the Sandy River Gorge. This portion of the river is designated as both a State Scenic Waterway and a National Wild and Scenic River.

The Sandy River Gorge area also provides a big game corridor ("connectivity") between Larch Mountain and the lower Sandy River, and protection of critical habitat for steelhead, resident trout and salmon.



#### **East Buttes**

The forested buttes stretching from Gresham south through Damascus and Happy Valley create a unique geography for local residents and provide welcome relief from surrounding land uses. The slopes of these extinct lava domes provide opportunities to protect water quality and large areas for wildlife habitat and corridors that stretch from inner urban Portland to the edge of the Cascades.

#### **Deep Creek Canyons**

The intact steeply wooded slopes of Deep Creek and its major tributaries of Nover and Tickle Creeks have some of the largest contiguous wildlife habitat remaining in the region. The creeks serve as the principal corridor connecting the Clackamas River to habitat areas to the north within urbanized areas. The corridor also includes the Cazadero Trail, which will link Gresham and Barton, completing the Springwater Trail from downtown Portland to Barton with potential for connection to Estacada.

#### **Clackamas River**

The Clackamas River watershed is home to the last significant run of wild late winter Coho in the Columbia Basin. The watershed also has one of only two remaining runs of spring Chinook in the Willamette Basin and supports a significant population of winter steelhead, cutthroat trout and native lamprey.

The Clackamas River is a part of the national wild and scenic river system, designated as a recreational river. Four sections of the Clackamas River are designated as Scenic Waterways, Whitewater and floating enthusiasts, hikers, campers, fisher folk and equestrians enjoy the river's clear water and excellent scenery. The Clackamas is the closest significant whitewater river to Portland. Wildlife, beautiful forests and dramatic 500-foot high basalt cliffs provide a backdrop to a recreational outing on the Upper Clackamas.

The Clackamas River watershed, which also includes a number of other areas identified in this report, provides high quality drinking water to approximately 200,000 people. There are four municipal surface water intakes on the river that provide water for households in the towns of Estacada, Gladstone, Lake Oswego, Milwaukie, Oregon City and West Linn.

#### **Clackamas River Bluffs and Greenway**

The Clackamas River Bluffs abuts the Clackamas River North Bank Greenway from Barton Park to Clackamette Park, thus providing an important link to the lower river for the communities of Damascus and Happy Valley. The area contains uncommon habitat types, due to wet and dry conditions in close proximity that create a rich diversity of plant and animal habitats. Large undeveloped tracts of land surrounding the bluffs form a critical mass sufficient to provide landscape-scale wildlife habitat.

#### **Newell and Abernethy Creeks**

Located within and surrounding Oregon City, Newell and Abernethy Creeks provide critical fish and wildlife habitat in a rapidly urbanizing area, especially threatened habitat for steelhead and cutthroat populations.

#### **Clear Creek Canyon**

The Clear Creek Canyon begins south of Carver on Clear Creek, a free-flowing tributary of the Clackamas River. Clear Creek is a high-quality fish-bearing creek originating in the Cascades that meanders through a valley terrace before entering pools and riffles of its lower canyon channel. The stream supports 11 different varieties of fish, including rainbow trout and endangered fall chinook and coho salmon, steelhead and threatened coastal cutthroat trout. Unimpeded by dams from its origin to the ocean, the creek provides excellent fish spawning beds.

More than 100 species of wildlife are found at Clear Creek, including coyotes, cougar, blacktail deer, elk and 76 species of birds. Falcons, hawks, osprey, owls, pheasant, willow flycatchers and warbling vireos are a few of those birds. The mature riparian forests, wooded canyon walls, terraced uplands, open meadows, ponds, springs and wetlands provide diverse wildlife habitat.

#### **Lower Pudding River**

Flowing through forests and the developed plains of the Willamette Valley, the Pudding River joins the Molalla River at its confluence with the Willamette River to form a large floodplain delta at Molalla State Park. Once an important breeding area for wood ducks, this area does provide an important seasonal resting area for large gathering of waterfowl.

#### Willamette Narrows to Canemah Bluff

Just south of its confluence with the Tualatin, the Willamette River draws itself in, narrowing through a stretch of steep cliffs and rocky islands called the Willamette Narrows. The Narrows is botanically rich, home to plants normally found far north and east of our region. The area contains mixed forests of Oregon white oak, Oregon ash and Douglas fir in the uplands that give way to Western red cedar and Grand fir

and some madrone in the lower levels. The Willamette Narrows is home to deer, coyote, frogs, salamanders, osprey, owls, herons, woodpeckers and many songbirds. The area also contains a unique place called Peach Cove Bog, believed to be the only wetland of its kind remaining in the Willamette Valley. This 20-acre shallow lake and associated emergent marsh sit in a depression scoured in bedrock by the Missoula Floods thousands of years ago. A floating peat mat rises and falls as the lake level fluctuates with seasonal rains.

Located along the east bank of the river south of Oregon City, Canemah Bluff is noted for a diversity of habitats including steep cliffs, rock outcroppings, oak/madrone forest, well-established native plant communities, diverse topography, seeps and numerous wetlands. Its historical use by Native Americans is apparent given its location overlooking Willamette Falls, a restriction to fish and boat passage.



#### **Tonquin Geologic Area**

Bearing visible marks left by the ancient floods that shaped our region, this area located between Wilsonville, Sherwood and Tualatin is unique. The Tonquin geologic area was created 12,000-15,000 years ago when the Missoula floods scoured out the Columbia River Gorge, ultimately backing up past the current vicinity of the city of Wilsonville and filling the Willamette Valley. When the floodwaters subsided, unique geologic formations including "kolk" ponds, channels, basalt hummocks and knolls were left behind.

Protection of the rocky outcrops that frame these former lake bottoms will provide wildlife habitat of considerable complexity and richness and preserve the area's rare geologic features. Within this area, a 12-mile trail corridor will connect nearby cities and the new town center of Villebois to regionally significant natural areas (e.g., Graham Oaks Natural Area, Tualatin River National Wildlife Refuge, the Cedar Creek Greenway in Sherwood and the Willamette River Greenway).

Coffee Lake Creek originates in the Tualatin-Sherwood area and flows south through this area to Wilsonville, connecting the Tualatin River National Wildlife Refuge to the Willamette River. The wetland habitat along the creek supports many important species of migratory and residential wildlife and wetland plants. Near Wilsonville, the basin widens to form Coffee Lake, an ancient lakebed that has become a large scrub/shrub wetland.

#### **Tualatin River**

The Tualatin River watershed drains 712 square miles and ranges from the densely populated areas of southwest Portland, Hillsboro, Tigard and Beaverton to agricultural areas near Scholls, Gaston, Banks, Mountaindale and North Plains to the forests of Oregon's Coast Range, Tualatin Mountains and Chehalem Mountains. Most of the fast-growing urban population -- approximately 500,000 residents -- resides on 15% of the watershed's area. Agricultural uses take up 35% of the area while 50% of the watershed's area is forest.

The riparian areas and floodplains of the Tualatin are important to protecting the water quality of this river heavily impacted by urban and agricultural uses. In addition to providing flood storage, the floodplains and associated wetlands support considerable numbers of waterfowl and migrating neotropical birds.

#### **Chehalem Mountains**

The unbroken ridges and forested slopes of the Chehalem Mountains provide an important scenic panorama from the urbanized portion of Washington County and define the southwestern edge of the greater metropolitan region. Protection of headwaters and riparian lands within the important drainages of Chicken, Baker and McFee Creeks insures good water quality prior to entering the urbanized region and the Tualatin River. There is significant wildlife habitat value along Chicken, Cedar and Baker creeks and wildlife corridors that extend from the urban area to the Coast Range. The northern terminus of the Chehalem Mountains forms a large forested ridge leading to Wapato Lake and Tualatin River floodplain currently being restored to wildlife habitat.

#### Parrett Mountain.

An extension of the Chehalem Mountains southeast to the Willamette River, Parrett Mountain is the prominent topographic feature separating Wilsonville from Newberg. Scattered rural developments mixed with forested creeks provide habitat connectivity from Sherwood south to the river.

#### Willamette River Floodplain

Historic channels and meander scars of the Willamette River fill stretches of this wide floodplain, providing productive wetland habitats for migratory waterfowl and native amphibians and off-channel refuge for migrating salmonids. With its high restoration potential, this complex floodplain system is essential for flood storage and water quality protection of the Willamette River.

#### Yamhill/McMinnville/Amity Oaks

Three areas east of McMinnville and near Amity referred to as Yamhill, McMinnville and Amity Oaks, respectively, contain large tracts of Oregon white oak woodlands. Oak woodlands are key habitat for many at-risk species dependent on this disappearing habitat type. What was historically a major component of the Willamette Valley landscape, only a few large stands of Oregon white oak woodland and savanna are remaining.

#### **Wapato Lake**

This ancient lakebed historically supported large numbers of waterfowl, including tundra swans. This flood-prone bottomland of the Tualatin River is being considered as a future wildlife refuge that will connect to existing public lands to the north located near Forest Grove and Hillsboro and attract tourists to Washington County. The area has the highest potential for protecting wildlife habitat and water quality in this part of the region, and also offers significant restoration opportunities. The lakebed serves as a catchment for the upper Tualatin River as it transitions from steep slopes of the Coast Range and Chehalem Ridge to its meandering lower floodplain.



#### **Tillamook State Forest**

The Tillamook State Forest provides a scenic panorama for the western portion of the region and defines the western edge of the greater metropolitan area. The forest contains healthy fish and wildlife populations and provides drinking water for a substantial population of the region.

#### **Lower Gales Creek**

Lower Gales Creek provides the opportunity for a linear greenway connection between the Fernhill Wetlands complex and the Tualatin River to the upper reaches of Gales Creek, the only remaining steelhead spawning area of the Tualatin River. The area provides wildlife habitat, water quality/quantity benefits and recreation, education and stewardship opportunities.

#### **Dairy and Mckay Creeks Confluence**

Dairy and McKay Creeks drain a largely agricultural watershed within Washington County and converge at the interface of farmland and the urban growth boundary, forming broad wetlands accessible to a rapidly urbanizing area. McKay Creek forms the western boundary of the city of Hillsboro and flows into Dairy Creek north of the Tualatin Valley Highway. Near the confluence of Dairy Creek and the Tualatin

River, Jackson Bottom Wetlands Preserve contains a variety of wetland communities. Wetland habitat enhancement projects are under way that will enhance the area's value for wildlife, water quality and environmental education. Protecting and enhancing water quality and providing wildlife habitat along these major tributaries contributes significantly to the natural functions of the Tualatin River.

#### **Rock Creek Headwaters**

Rock Creek flows from the Tualatin Mountains in Forest Park to the Tualatin River. Watershed managers have identified protection of the upper watershed as a high priority for meeting water quality protection goals in the lower watershed. Opportunities to improve and protect habitat also exist through the protection of key tributaries and their associated wetlands. Because the creek and its tributaries pass through rapidly urbanizing neighborhoods within the cities of Hillsboro and Beaverton, protecting water quality is a priority. These headwaters also provide wildlife habitat and trail connectivity from the Tualatin Valley to the Tualatin Mountains that includes Forest Park.

#### **Forest Park Connections**

Forest Park lies within the city of Portland and unincorporated Multnomah County. It is considered by many to be the "crown jewel" of the region's open spaces network. At more than 5,000 acres of mostly second-growth forest, Forest Park contains an abundance of wildlife and its massive tree canopy and substantial undergrowth serves as a natural air purifier, water collector, and erosion controller.

The Forest Park connection area provides protection to key watersheds like Balch, Miller, Ennis and Agency Creeks and secures the integrity of the "big game" corridor that links the park with habitat in the northern Coast Range. Connecting Forest Park to Rock Creek and the proposed Westside Trail will keep important wildlife corridors intact and provide trail connections between the region's largest urban park and Washington County.

#### **Dixie Mountain**

Lying within the Tualatin Mountains range northwest of Forest Park, Dixie Mountain is a heavily forested area that serves as a major attractant for roosting and nesting bald eagles, which hunt the adjacent Sauvie Island and Scappoose bottomlands as well as the Ridgefield National Wildlife Refuge and Vancouver Lake bottomlands in Washington. There are considerable and accessible land tracts containing late successional forests.

#### Sauvie Island

The 26,000-acre Sauvie Island, formed by alluvial deposits at the confluence of the Willamette and Columbia Rivers, is highly accessible to the citizens of the Portland metropolitan region. Surrounded by the two rivers and interspersed with floodplain lakes, Sauvie Island is one of the largest attractants to waterfowl, neo-tropical bird migrants, and raptors in the region. With over 12,000 acres in wildlife refuge protection and much of the remaining land in agricultural use, the island is one of the region's most identifiable landscape features.

#### **Columbia River Islands**

From the Sandy River to the Willamette River lay a number of large mostly undeveloped islands in the main channel of the Columbia River: Reed, Flag, Gary, Lady, Government, Sand Lemon and Western Hayden Island. These islands are characterized by sand flats, scrub-shrub plant communities and cottonwood groves that provide significant aquatic habitat for migrating salmon and protected upland wildlife habitat for nesting shorebirds and raptors and are very identifiable within the bi-state landscape.

#### **Summary and Next Steps**

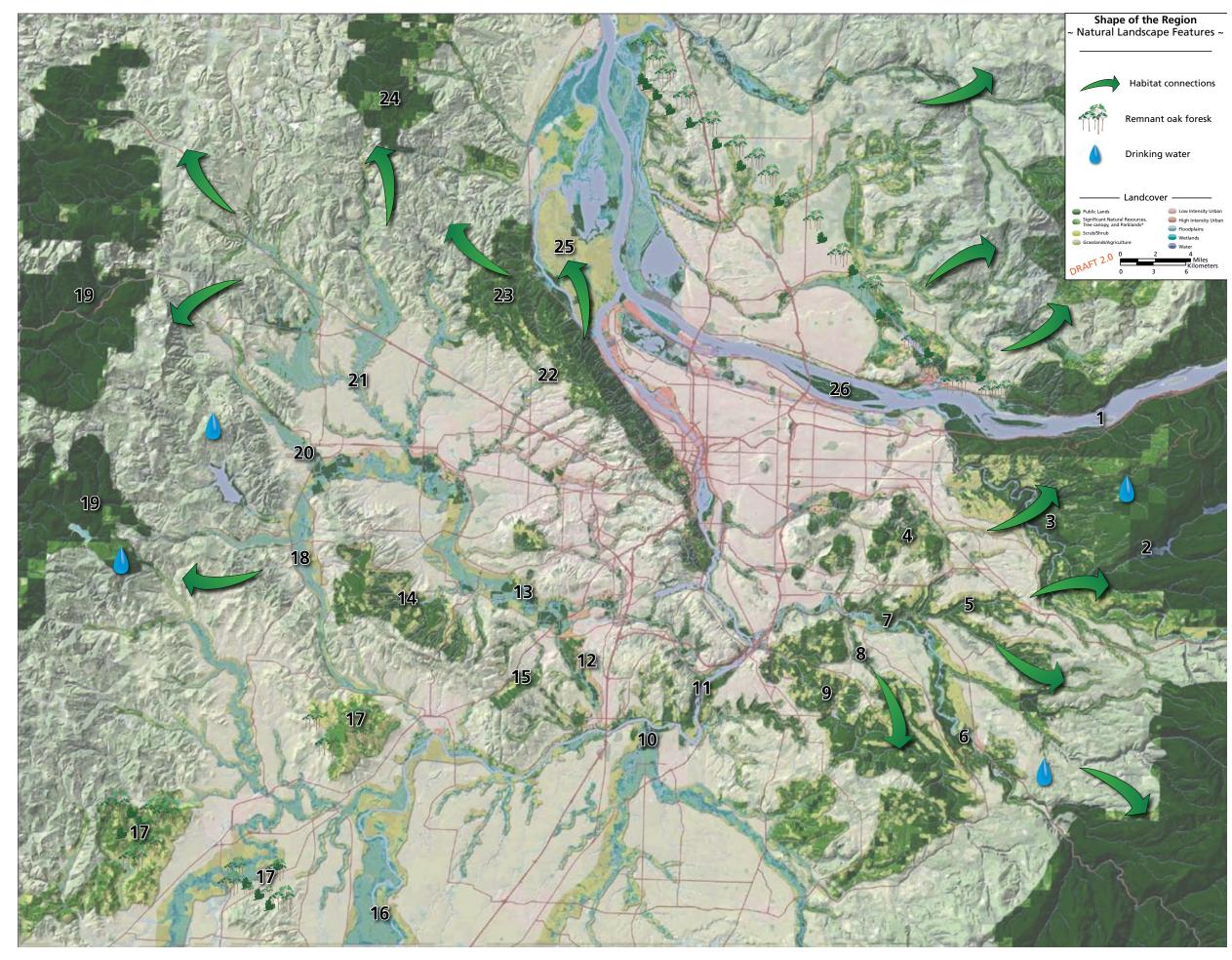
The natural landscape features identified in this report represent an integral component of the region's future urban form. The preservation, and in some cases restoration of these landscape features will ensure that the region's citizen's will continue to have quick access to nature and trails, scenic vistas and views that define the region, while providing for the protection of fish and wildlife habitat and air and water quality.

The next step in the Shape of the Region work element is to integrate this work with the products from the other two work elements, the Agricultural Land Inventory and Analysis and the Great Communities research work. Metro Planning and Parks & Greenspaces staff, with continued involvement from Clackamas, Multnomah, and Washington counties, DLCD and ODA will initiate the integration of the three work elements to provide a platform for future discussions on the creation of urban and nonurban reserves for the greater metropolitan region.

### NATURAL LANDSCAPE FEATURES

Below are the twentysix identified natural landscape features, listed as one moves in clockwise motion starting at the Columbia River in the east portion of the region.

- 1 Columbia River Gorge Scenic Area
- 2 Cascade Foothills
- 3 Sandy River Gorge
- 4 East Buttes
- 5 Deep Creek Canyons
- 6 Clackamas River
- 7 Clackamas River Bluffs and Greenway
- 8 Clear Creek Canyon
- 9 Newell and Abernethy Creeks
- 10 Lower Pudding River
- 11 Willamette Narrows to Canemah Bluff
- 12 Tonquin Geologic Area
- 13 Tualatin River
- 14 Chehalem Mountains
- 15 Parrett Mountain
- 16 Willamette River Floodplain
- 17 Yamhill/McMinnville/Amity Oaks
- 18 Wapato Lake
- 19 Tillamook State Forest
- 20 Lower Gales Creek
- 21 Dairy and Mckay Creeks Confluence
- 22 Rock Creek Headwaters
- 23 Forest Park Connections
- 24 Dixie Mountain
- 25 Sauvie Island
- 26 Columbia River Islands



#### Metro

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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 25 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.

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