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Metropolitan Greenspaces: Master Plan

Metro (Or.)

METROPOLITAN Greenspaces

Master Plan

A Cooperative Regional System of Natural Areas,
Open Space, Trails and Greenways
for Wildlife and People

METRO

Metro is the directly elected regional government that serves Clackamas, Multnomah and Washington counties and the 24 cities that make up the Portland metropolitan area.

Metro is responsible for solid waste management, operation of the Metro Washington Park Zoo, transportation and land use planning, urban growth boundary management, technical services to local governments and, through the Metropolitan Exposition-Recreation Commission, management of the Oregon Convention Center, Memorial Coliseum, Civic Stadium and the Portland Center for the Performing Arts.

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(As of July 1992)

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METROPOLITAN

Greenspaces

Master Plan

Adopted July 1992

METRO

Preface

July 1992

> *"Our options are expiring. As far as open space is concerned, it doesn't make a great deal of difference when the projected new population reaches target or whether it is going to be housed in green-belted mega-structures or linear cities or what. The land that is still to be saved will have to be saved within the next few years. We have no luxury of choice. We must make our commitments now and look to this landscape as the last one. For us it will be."*
>
> *William H. Whyte*
> *The Last Landscape, 1971*

Defining the Metropolitan Greenspaces program

During the past three years, the Metropolitan Service District has worked with cities, counties, park districts, state and federal agencies, businesses, nonprofit conservation organizations, "friends" groups and interested citizens in developing the Metropolitan Greenspaces program. From this cooperative genesis, the major themes and initial policy and implementation recommendations of this Metropolitan Greenspaces Master Plan have grown.

The master plan details the vision, goals and organizational framework of a regional system of natural areas, open space, trails and greenways for wildlife and people in the Portland, Oregon - Vancouver, Washington, metropolitan area.

At this time, the document focuses on the Oregon component of the plan. It will be amended to include the Washington component once a parallel planning effort is completed by Clark County and the city of Vancouver. The master plan and the regional system of greenspaces will then truly serve the larger metropolitan area.

The master plan is a complex planning document with deliberately broad scope. It may best be understood as a document that functions on two levels. The first, and most tangible, level articulates a desired system of large natural areas recommended for protection and interconnected with greenways and trails. The objectives of creating this system include maintaining the character and livability of the region and providing additional passive recreational opportunities and improvements for existing and future residents to enjoy and experience. Protection would be accomplished through a variety of strategies.

The second, and more subtle, level would cultivate a strong sense of stewardship for the natural resources among the region's constituents. It seeks to foster and shape a civic ethic through which full implementation of the plan may occur.

The need to protect open space

Metro's adopted population forecast projects that the Portland-Vancouver metropolitan area will grow by more than 480,000 people between 1987 and 2010. Growth trends during the last five years support this forecast. More homes and business opportunities will be created to serve anticipated growth. A crucial question is how the communities in our region will work together to plan for, direct and adjust to the changes brought on by growth.

The quality of life of this region is at a crossroads. It seems clear that, as communities continue to develop, the land supply available for open space and parks will be smaller and generally more expensive to purchase. What are our planning and funding priorities? Should

parks and open space continue to be among the first items cut in public budgets?

Lands outside designated urban areas are also experiencing growth, and some real estate speculation is occurring outside the urban growth boundary. Should some of these lands be set aside now as protected greenspaces?

It is our assertion that if we are to have parks and open space areas in the future, we need to reposition our planning and funding priorities now to reflect the importance of greenspaces in our urban fabric. The protection, acquisition and active stewardship of greenspaces must become just as important as planning highways, transit, water and sewer lines, and other basic public services.

The face of change

From 1970 to 1990, the population in the tri-county region increased from 878,676 to more than 1.1 million. Changes in the face of the overall community reflect this increase. With this 33.8 percent increase in numbers, many acres of land that had been open space, forest lands and meadows, ridge lines and buttes, wetlands and marshes have been built on. Streams have been diverted and put into culverts. Land that had been taken for granted as protected open space or as unlikely to be built on because of physical constraints such as steep slopes is becoming increasingly desirable for the development needed to accommodate a flourishing community. As we provide opportunities for all who seek to live and work here, the landscape that has defined our region for centuries is being changed irrevocably.

The structure of the visual and natural characteristics of the region includes watersheds that drain the land and topographic features that provide form and focus to the skyline. Each of these landscape units is affected by human settlement and the alterations that accompany development.

In 1989, Metro inventoried and mapped the remaining natural areas within the Oregon component, a 372,682-acre study area. At that time, approximately 29 percent of the land in the metropolitan region (including the Columbia Gorge between the Sandy River and the Mt. Hood National Forest) was considered to be largely without human-made structures. Only around 8.5 percent of the natural land in the study area is in public parks ownership or currently protected as natural areas or open space.

With more than 91 percent of the inventoried natural areas unprotected, many greenspaces can be developed tomorrow according to the local land use and zoning plan. This situation underscores the fact that we cannot take for granted that these green places will remain as we grow into the future.

Decent housing, family wage jobs and an efficient transportation system are all important to maintaining the livability of our region. However, if the people of the Portland-Vancouver area seek to retain livability and a green heritage as the region changes, we must act aggressively and act now to protect significant natural areas, open spaces, parks, forests, wetlands, rivers and streams, riparian corridors and wildlife habitat.

The Metropolitan Greenspaces Vision

"Let us leave a splendid legacy for our children . . . let us turn to them and say, 'this you inherit: guard it well, for it is far more precious than money . . . and once destroyed, nature's beauty cannot be repurchased at any price'."

Ansel Adams

We enjoy a high quality of life in the Portland-Vancouver metropolitan area. The diversity of natural landscapes – broad river valleys stippled with wetlands, narrow river canyons veiled by green strips 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.

To ensure a green legacy for ourselves and future generations, we have created the Metropolitan Greenspaces program. It is a cooperative approach among governmental and nongovernmental organizations to establish an interconnected system of natural areas, open space, trails and greenways for wildlife and people throughout the four-county metropolitan area.

It is our vision to protect, on a long-term basis, natural areas, open space, trails and greenways that lend character and diversity to our region even as more and more people move here to share our special place. It is our vision to balance our urban focus and drive for economic health and prosperity with an array of wildlife habitat in the midst of a flourishing cosmopolitan region.

Our vision is to conserve and enhance a diversity of habitats woven into a lush web of protected greenspaces. We seek to maintain our cities as places where nature is valued in and of itself and is an integral element in daily life. We seek to maintain our cities as places to live and work, to raise a family, play, grow, relax and retire where we forge a unique ecological relationship between human and natural communities. We seek to maintain our cities as places where we can balance our drive for a sustained economy with our need for sustained livability.

The Metropolitan Greenspaces program provides opportunities for community awareness, involvement and education. It offers us and future generations the prospect of a living museum where all can learn to appreciate and protect the wildlife and natural world in our own backyards.

The real potential for success lies within each person in the region. We must nurture – rather than destroy – nature's landscape. We must institutionalize a daily sense of stewardship for our remaining green places.

The Metropolitan Greenspaces Master Plan proposes a cohesive strategy to realize our vision. Through sustained implementation of its recommendations, we will continue to celebrate our special sense of place. Future generations will discover what living here has always meant – that the "country" in our cities is truly a legacy that has been saved for all to enjoy.

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Goals for the Metropolitan Greenspaces System

As the metropolitan area changes, the importance of coordinated and balanced planning programs to protect the environment and guide development becomes increasingly evident. The Metropolitan Greenspaces Master Plan is a starting point for integrating important aspects of the natural environment into a regional system of natural areas, open space, trails and greenways for wildlife and people. It was formulated through a cooperative process, and its evolution through a variety of continuing planning and implementation activities will be guided by the following overriding goals:

- **Create a cooperative regional system** of natural areas, open space, trails and greenways for wildlife and people in the four-county metropolitan area (Multnomah, Clackamas, Washington and Clark counties).
- **Protect and manage significant natural areas** through a partnership with governments, nonprofit organizations, land trusts, interested businesses and citizens, and Metro.
- **Preserve the diversity of plant and animal life** in the urban environment, using watersheds as the basis for ecological planning.
- **Establish a system of trails,** greenways and wildlife corridors that are interconnected.
- **Restore green and open spaces** in neighborhoods where natural areas are all but eliminated.
- **Coordinate management and operations** at natural area sites in the regional Greenspaces system.
- **Encourage environmental awareness** so that citizens will become active and involved stewards of natural areas.
- **Educate citizens about the regional system** of greenspaces through coordinated programs of information, technical advice, interpretation and assistance.

Planning and Coordinating a Cooperative Regional System

Planning a Regional System of Natural Areas

> *"We must provide leadership in transforming our institutions and communities. Our ultimate challenge is saving habitats, not just species. To achieve that, we need every employee, volunteer, visitor, citizen as a partner in conservation . . . only together can we forge our way from here to eternity."*
>
> *Y. Sherry Sheng, director, Metro Washington Park Zoo, 1991*

Purpose of the Metropolitan Greenspaces Master Plan

Protection of natural resource areas in the public interest is the primary objective of the Metropolitan Greenspaces Master Plan. The master plan is a policy document that includes specific tasks that need to be carried out in the coming years to achieve our goal of maintaining the quality of life for the region by protecting open space in perpetuity.

Accomplishing the objectives of the Metropolitan Greenspaces system will require a long-term commitment and sustained effort by Metro and others involved in the program. Metro has assumed the leadership role in planning the program. The master plan outlines key roles for protection and stewardship efforts in a variety of strategies.

The master plan is a program document, a planning activity that is the first step towards a regional system of greenspaces. It is not regulatory nor is it site specific. The recommendations are suggested guidelines to assist development of an interconnected system. It is a document based largely on ecological studies that identify the remaining natural areas within the urban and urbanizing parts of the region, evaluates their significance and relationship to the ecology of the regional landscape, and proposes a system of regional natural areas and connecting corridors to be designated for preservation, conservation and management.

The patches of natural area within our human-dominated urban landscape support the remnant systems of native flora and fauna that once flourished throughout the area. They also form an integral part of the visual setting associated with our metropolitan region. The Metropolitan Greenspaces system serves not only the urban passive recreational needs of human populations, but also accommodates wildlife in the region by preserving ecological connectivity through the Portland-Vancouver region to rural and forested resource lands that surround the urbanized area.

As described in later portions of the plan, assembling and protecting major components of the Greenspaces system calls for cooperative efforts to:

1. Acquire and otherwise protect a system of greenspaces for wildlife and people throughout the metropolitan area including large-acre natural areas of high ecological and aesthetic value, a system of trails and greenway interconnections among them.

2. Prepare management plans and standards for components of the Greenspaces system to guide facility development and management of sites to ensure that appropriate levels of access and passive recreational opportunities are provided while protecting the natural values and functions of the components.

3. Operate and maintain in a coordinated fashion major components of the system.

In addition to protection of significant sites through acquisition efforts, a strong community stewardship ethic will be key to the success of the Metropolitan Greenspaces program. The master plan specifically recommends that Metro, as coordinator of the cooperators in the system:

1. Develop and serve as a clearinghouse for informational, educational, financial, land use and legal functions related to greenspaces.

2. Develop an effective technical assistance network to assist government, private sector, nonprofit cooperators and the general public in understanding ecological systems, how daily routines affect and are affected by them and instill in as broad a reach of the public as possible a strong sense of natural resources stewardship.

3. Educate individuals on how to manage their own landholdings and daily activities in an environmentally responsible manner. Assist government cooperators in developing and implementing ecologically based land use and environmental regulations.

4. Advocate and serve as a catalyst to secure long-term funding for protection, operations and sound management of greenspaces.

5. Continue to inform, engage and involve the public in development and implementation of the Greenspaces program over time.

6. Serve as a clearinghouse to link students of all ages with educational service providers to take advantage of the environmental education opportunities currently available within the region and those to be offered in the future by the Metropolitan Greenspaces system. Develop interpretive programs as an integral part of Metro management of the Greenspaces system.

The planning basis: ecosystems

Greenspaces are an integral part of the region's quality of life. They provide a number of values critical to the region's livability. They enable residents to pursue activities that balance work with recreation on a day-to-day basis. We have grouped these greenspace values into three categories: resource-based, human-use and economic.

Resource-based values include protecting natural vegetation and biodiversity so that fish and wildlife will remain a significant part of the metropolitan landscape; protecting shorelines and riparian vegetation for both their intrinsic biological and habitat value, as well as their relationship to maintaining water quality in the region's rivers, lakes and streams; and protecting watersheds and wellheads of surface and ground waters that are used for municipal, industrial and agricultural water supplies.

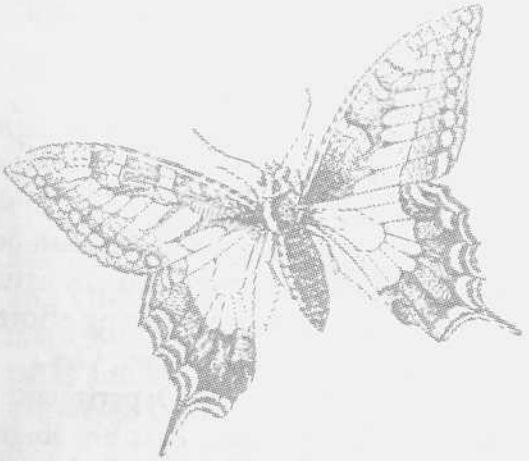
Human-use values include providing opportunities for a variety of experiences that promote healthy lifestyles, including low-intensity and wilderness recreation experiences; providing a visual setting for the metropolitan area including many outstanding views and vistas; and maintaining the identity of individual communities in an expanding metropolitan region. Greenspaces are an integral part of our Northwest quality of life and provide a sustainable balance to the hectic daily pace of an urban lifestyle.

Economic values include those attributed to agricultural and forest resources, which are vital elements of our region's general economy. Urban greenspaces also have been shown to protect air and water quality and enhance adjoining land values, often adding to the marketability of land nearby. Additional benefits related to greenspaces include lower

health care costs, income from the sale of sports and recreation equipment, environmental education programs supplies and eco-tourism.

The landscape of the Portland-Vancouver region is a mosaic of topographic, geologic and biological features interacting with human uses that modify the natural landscape. It is a region composed of changing land features dissimilar in form and function but woven together into interdependent ecosystems. This regional landscape ecology has been the framework that has shaped planning for the Metropolitan Greenspaces system.

The basic landscape unit of our region is the watershed or stream basin. It has a direct impact on the hydrology of the local ecosystem, and activities within the watershed have a cumulative impact. Each use of the land must be balanced in order to maintain a healthy overall system.



In defining the vision and priorities for the Greenspaces program, it is important to look at the structure and use of the surrounding landscape and how each natural area fits within the region as a whole. The following ecological principles are being pursued as a basis for protection and enhancement of natural areas:

1. Maintain biological diversity by protecting and enhancing a variety of habitats, including wetlands, riparian corridors, forests and agricultural lands distributed throughout the metropolitan area.

2. Consolidate natural areas as much as possible to create or maintain relatively large contiguous acreage because large areas, especially when connected to natural habitats outside the urban environment, generally have a greater potential to represent habitat diversity that can support more species.

3. Protect, restore and recreate stream corridor vegetation by replacing riparian vegetation where it is lacking or dominated by exotic species and removing barriers, where possible, to maintain connections with adjacent upland habitats.

4. Protect or restore naturally vegetated connections between watersheds at headwaters locations.

The destruction of natural habitats caused by conversion of land to other uses is the greatest threat to the biodiversity of relatively intact natural communities. Loss of biological diversity is a serious, sometimes irreversible, process and is probably the most important effect of habitat loss and environmental change. Providing adequate habitat patches and defining thresholds of habitat fragmentation are vital if we are to ensure that desired species continue to occupy habitats.

The remnant natural landscapes, as long as they are not isolated within the urban area, are the areas capable of maintaining viable fish and wildlife populations. Some highly urbanized landscapes have been so greatly altered that there is little hope of providing habitats of sufficient quality and extent to assure the long-term existence of many naturally occurring species. In order to maintain or enhance the diversity of the fish and wildlife species indigenous to the region, it is necessary to recognize and plan for their specific habitat requirements in the Greenspaces program.

Both the relative fragmentation of habitat and the land uses and activities surrounding a remaining patch of natural area can have significant effects on the species composition and diversity within some of the more isolated urban natural areas. Small natural areas are very vulnerable to human disruption and require consistent management and protection to maintain their natural condition.

An important strategy to preserve the quality and integrity of small isolated natural areas is to create and protect an integrated network of existing public natural areas that connect to larger more self-supporting sites through a system of corridors. The ultimate aim of an interconnected system of natural patches and corridors is to sustain both resource use and species viability over generations.

A network of corridors provides a means for species to move between patches of natural areas. Corridors and linkages have become the only safe passageways for animals through the maze of human-dominated land. They help to retain biological diversity and ecological balance and collectively provide sufficient quantities of habitat for species that require large areas.

Linkage and enhancement opportunities may occur through a variety of landscapes, including forested, cultivated, suburban and urban landscapes. Stream corridors and associated floodplains are among the most viable ecological linkages among habitats. Their value increases further when they connect to an upland or ridgeline habitat. It is important to remember that these linkages and corridors extend beyond Oregon into Southwest Washington and include the Columbia River, Vancouver Lake and associated wetlands.

The planning process

Because resources cross jurisdictional boundaries, natural resources planning and protection must be viewed from a regional perspective. It cannot be carried out at the local level alone. A coordinated regional strategy to identify, protect, acquire and manage natural areas, open space, greenways and trails for wildlife and for people is the hallmark of the Metropolitan Greenspaces program.

There are numerous regions across the country that have, to some degree, formulated regional open space and parks programs. We are looking to these areas for guidance as we establish our own regional approach to protection of natural areas. Input into our master planning efforts has come from Eugene/Springfield, Ore.; Oregon Parks and Recreation Department; Seattle/King County, Wash.; East Bay Regional Park District,Oakland, Calif.; Mid-Peninsula Open Space District, Palo Alto, Calif.; San Diego; Metroparks, Cleveland, Ohio; Greater Vancouver, British Columbia Regional District; Jefferson County, Colo.; Dallas, Texas; Hudson River Valley Greenway, N.Y. ; and New York City.

This information has helped us conclude that, while the goals and objectives of the master plan may not be new, our planning approach is. Bi-state cooperative planning efforts and partnerships involving more than 50 government agencies, many conservation organizations,

businesses, neighborhood associations, "friends" groups and interested citizens have been undertaken to formulate the Metropolitan Greenspaces program. As a result of this cooperation, all four counties and 22 of the 24 cities within the Metropolitan Service District boundaries have passed resolutions of support for the Greenspaces program since 1990.

We have come together through consensus-building, cost-sharing of projects, coordinated planning and use of uniform data bases and maps. We share, most importantly, a renewed understanding and appreciation of the fact that we are dealing with an ecosystem that crosses a multitude of political boundaries and that regional planning and cooperation are required in shaping the future of our bi-state community.

The master plan relationship to urban growth management goals

Growth management is a priority for Metro and for most local jurisdictions in the region. Metro is responsible for coordinating the efforts of all agencies within its boundary on growth management issues in the region. **Metro's Regional Urban Growth Goals and Objectives** cover these growth management issues, specifically listing natural areas, parks and wildlife habitat as crucial issues to be addressed within the regional perspective under RUGGO **Goal II, Objective 9:**

"Sufficient open space in the urban region shall be acquired, or otherwise protected, and managed to provide reasonable and convenient access to sites for passive and active recreation. An open space system capable of sustaining or enhancing native wildlife and plant populations should be established."

The master plan is not a functional plan nor does it amend adopted urban growth boundary policies. Local comprehensive plans, the UGB and adopted functional plans, including the Regional Transportation Plan, are not affected by the master plan. The master plan seeks to raise community awareness of the value of natural areas planning and protection to the same level of understanding and priority as other growth management issues, including land use, transportation and infrastructure planning.

The master plan is primarily a planning activity needed to implement RUGGO Objective 9, but it also complements many other RUGGO objectives and planning activities:

Objective 7, Water Resources – A multi-objective management approach for significant greenspaces is embraced in the master plan. Ecological information generated to date, and subsequent ecosystems planning called for in the plan, will be useful in identifying carrying capacities of water resources important to the region for municipal and industrial water supply, irrigation, fisheries, recreation, wildlife, environmental standards and amenities.

Objective 8, Air Quality – To the extent that the master plan facilitates development of pedestrian and trail linkages providing alternatives to automobile use, objectives of the regional air quality management plan will be supported.

Objective 10, Agriculture and Forest Resource Lands – The master plan acknowledges that continued economic use of resource lands outside the urban growth boundary for resource production purposes is an important tool in implementing master plan objectives, which are consistent with Objectives 10 and 10.1.

Objectives 10.2 and 15.3 mandate designation of urban reserves, which, once established, could result in long-term urban expansion onto resource lands. The master plan does not alter or supersede these objectives. In Objective 15.3.2, however, the hierarchy of lands to be considered for establishing urban reserves identifies pri-

mary forest resource and agricultural lands as the lowest priorities for inclusion in urban reserves.

Objective 12, Public Services and Facilities – The master plan directly responds to the provision of adequate public parks to keep pace with growth, as called for in Objective 12. It emphasizes natural parks as opposed to those dominated by active recreational facilities. Both categories of parks are necessary to meet RUGGO. The multi-objective approach to detailed greenspaces planning and management that is to be initiated subsequent to plan adoption may result in protection for sensitive portions of watersheds important for water supply and preserving biological treatment options for wastewater and stormwater that might otherwise be lost due to the establishment of incompatible land uses.

Objective 13, Transportation – The master plan facilitates development of pedestrian and trail linkages providing alternatives to automobile use and supporting many of the provisions of this objective. Coordination of master plan implementation with planned state, regional and local transportation projects may advance goals and objectives of each. Many of the trails identified in the master plan, such as the Springwater Corridor, are eligible to receive state transportation enhancement funds because they would provide efficient bicycle and pedestrian connections between destinations within the region. Environmental mitigation of the impact of planned transportation facilities on wetlands and other natural areas may also be considered for integration into the Greenspaces system.

Objective 14, Economic Opportunity – Protection of a system of greenspaces will maintain the green character of the metropolitan area. The physical attractiveness of this region is often cited as a major advantage in recruitment and retention of businesses and industry relative to other potential locations on the West Coast and nationally.

Objective 15, Urban/Rural Transition – The master plan responds to many of provisions of Objective 15. Specifically, the master plan identifies and recommends protection of topographic and biological features of the landscape that contribute significantly to the region's identity and sense of place.

Subsequent to adoption of the master plan, studies will be initiated to more specifically define and assemble a system of significant greenspaces and greenway interconnections to implement the plan. This continuing planning provides the vehicle to define and protect greenbelts that could create clear distinctions between urban and rural lands and natural linkages between established communities as called for in Objective 15.3.1.c and planning activity 4.

It should be noted that Objective 15 planning activity 1 calls for development of a generalized future land use plan to accompany designation of urban reserves. The planning effort will primarily be concerned with identifying and protecting future open space resources and development of short-term strategies needed to preserve future urbanization potential. The master plan will be an important vehicle for responding to this planning activity.

Objective 16, Developed Urban Land – Objective 16.3 calls for evaluation and designation of mixed use urban centers within the region. Open space is specifically identified as one of several components that needs to be included in such centers. Identification of open space in the master plan will assist designation and development of these.

Objective 17, Urban Growth Boundary – Metro will consider the effect of permanent greenspaces protection on the buildable land supply at its periodic review of the

urban growth boundary. As stated in Objective 17, criteria for amending the UGB are derived from **Statewide Planning Goals 2 and 14.** Metro will manage the boundary to assure a 20-year urban land supply.

Objective 18, Urban Design – The master plan recommends protection of natural areas, critical open space features, parks, greenways and wildlife corridors that, among other objectives, promote preservation of the identity of the region, existing communities and mixed use urban centers within it. Information developed for the master plan and its implementation directly support Objective 18.i and 18.iii.e and planning activities 1 and 2.

Metro's Region 2040 project will result in a unified framework depicting the long-term urban form of the region. A significant and accessible greenspaces system, a balanced transportation system, provision of needed housing and stimulation of economic development are all critical factors in maintaining the livability of the metropolitan area. All are interdependent, and long-term livability is the product of successfully balancing and synthesizing all factors. Region 2040 will consider several potential areas and activities of metropolitan significance in a common framework to guide the evolution of regional urban form, including:

1. Mixed use urban centers.
2. Transportation links between mixed use urban centers designed to offer non-auto mobility alternatives.
3. Historic, cultural, topographic and biological features of the regional landscape that contribute to the region's identity.
4. An urban growth boundary with urban reserves.

These elements will be identified and mapped in relation to each other and three to six future long-term urban form scenarios will be developed for consideration. Policy decisions may be made as to the appropriate long-term balance, location and interrelationships among the elements that would be used to guide Metro's management of the urban growth boundary, preparation and amendment of regional policy and functional plans, including the master plan, as well as local governments' comprehensive and capital improvement plans. Because the master plan identifies landscape features, natural areas, open space, trails and greenways of regional interest, its policies and priorities will be considered in shaping 2040 alternatives and, in turn, be shaped by and implement aspects of the 2040 recommendations.

The master plan is not a functional plan and does not mandate changes in adopted comprehensive plans nor adopted regional functional plans. If an amended master plan is recommended for conversion to a functional plan, the regional planning process described in **RUGGO Goal I** will be pursued.

The information developed through the program will assist Metro and local governments in meeting requirements of Oregon state planning laws. While not regulatory, the plan contains local government **Statewide Planning Goal 5** inventory information, new data and analyses of natural resources. It, therefore, is recommended for consideration in preparation, administration and periodic review of comprehensive plans, implementing land use regulations and regional functional plans.

Regional partnerships

Once a regional system of interconnected natural areas, parks and open space is established, it will be managed and operated by Metro in partnership with local park providers, state and federal agencies, nonprofit conservation organizations, land trusts and other interested resource agencies. Some lands will be owned by Metro, some by other park providers. Emphasis is on interagency cooperation and partnerships. Management of existing parks or natural areas owned or managed by other agencies will not be assumed by Metro unless by consent of the current provider and the Metro Council.

The master plan will serve as the vehicle for articulating and implementing a cooperative and coordinated natural areas and open space agenda for the region. It identifies the processes and strategies for coordinating actions of cooperators in further planning, assembly and management of the greenspaces system. It recommends a variety of actions to be undertaken by Metro and cooperators to realize the goals of the program.

Metro, as the lead agency in the development and implementation of the Greenspaces Master Plan, will seek protection for significant natural areas and open space in subsequent actions using its various powers. An initial means of protection consistent with this master plan is the purchase of identified natural areas from willing sellers. Accomplishing this by Metro is contingent upon approval by the voters for Metro authority and funds to acquire regionally significant sites in a system of interconnected natural areas and parks.

All program recommendations and implementation actions will continue to be developed in consultation with policy and technical advisory committees and with input from citizens. After adoption of the master plan by the Metro Council and a vote on a general obligation bond measure anticipated to be on the ballot in November 1992, policy advisory responsibilities to the Metro Council will transfer from the Metropolitan Greenspaces Policy Advisory Committee to the Regional Policy Advisory Committee established by Goal I, Objective 2 of Metro's adopted Regional Urban Growth Goals and Objectives. The Metropolitan Greenspaces Technical Advisory Committee will continue to provide technical advice on the implementation and future revisions to the master plan, reporting directly to RPAC.

Current and future planning partners include more than 150 elected officials and board members, parks and land use planners, city and county administrators, business people and finance managers, conservation specialists, biologists, geographers, educators, landscape architects and citizen advocates who have served directly on Metro committees and working groups in developing the Greenspaces program to date.

Private land trusts and their programs are also important components in the coordination and implementation of the master plan. Partners in the cooperative effort include the 40-Mile Loop Land Trust, Columbia Land Trust, The Nature Conservancy, Lake Oswego Land Trust, The Wetlands Conservancy, and the Trust for Public Land.

While the master plan will be reviewed and updated regularly, active participation and support of citizens are the most important components in saving our natural areas and open space. Public understanding of the issues, problems, needs, challenges and the concept of private stewardship of the land will determine the success or failure of the master plan. This community commitment to protection of our natural heritage is an overriding objective of a regional system of natural areas, open space, greenways and trails.

Cooperative and Coordinated Implementation

> *"Further progress requires that we go beyond compulsion and laws and incentives to insure the environmental integrity of our nation and our planet. We must shift our orientation. We must shift our consciousness. In short, we must engage the heart, which is seldom reached by appeals to law or economics. Our task is to bring our habits, choices, and lifestyles into harmony with the needs of nature."*
>
> *Lewis S. W. Crampton*
> *Environmental Protection Agency, 1991*

Coordinated land protection efforts

The planning process for the Metropolitan Greenspaces program has been extensive, inclusive and characterized by unparalleled cooperation among local governments, state and federal government agencies, nonprofit conservation and neighborhood organizations, and Metro. Successful implementation of the Metropolitan Greenspaces Master Plan depends on continuation of this cooperation through coordinated land protection efforts.

Local, regional, state and federal government agencies, nonprofit groups and other stakeholders must work together to complement acquisition and protection programs. We must coordinate the development and application of land use and environmental regulations, and educate and involve the public in issues and decisions related to greenspaces. By working together, we will maximize all our resources and the "on-the-ground" effects of the implementation actions called for in this master plan.

A common understanding and philosophical commitment to coordinated implementation of the master plan among all cooperators in the program is critical to successful creation of the system. "Cooperators" describes all governments for which Metro has planning coordination responsibilities as described in ORS.268 and all others who are interested in being active partners in the program. Cooperators include all citizens groups, resource agencies and jurisdictions in the region that would need to continue the established planning partnership we have had during the past three years in order to successfully implement the overall regional plan.

Some of the resource agencies that have a tremendous stake in protection, restoration and management of the region's natural areas, including wetlands, river and stream ecosystems, are the federal Environmental Protection Agency, U.S. Fish and Wildlife Service, Unified Sewerage Agency of Washington County, Portland's Bureau of Environmental Services, Clackamas County Department of Utilities, the Oregon Department of Fish and Wildlife, Water Resources Department, Department of Environmental Quality, Division of State Lands and Oregon State Parks.

Metro will work closely with these agencies in developing and implementing cooperative Greenspaces-oriented projects that promote multiobjective management of these natural areas. Roles and responsibilities that cooperators in the program will assume in regard to implementation of the plan through site acquisition, protection and enhancement efforts include:

1. Metro should place a greenspaces funding mechanism before the voters of the region, that, if successful, would establish a regional revenue source for acquisition and capital improvement of greenspaces. A regional

general obligation bond measure is being considered by Metro for referral to the voters at the November 1992 general election to fulfill this responsibility. Metro will also continue to pursue grants from state and federal government agencies, private foundations and other organizations to plan for and assemble the system.

2. Donations and dedications of greenspaces will continue to be accepted by public agencies and nonprofit land trusts in a coordinated strategy.

3. Greenspaces to be administered at the local level will be the responsibility of local governments to secure and manage. Greenspaces to be administered by Metro will be the responsibility of Metro to secure and manage.

4. Greenspaces of common interest administered by Metro will be the responsibility of Metro to secure. Metro will offer a first right of refusal to the local government where the sites are located to acquire the property. The first right of acquisition will be offered only to local governments providing park services in whose service area the greenspaces are located. It will not be offered to local governments having comprehensive planning responsibility that did not provide park services as of July 1, 1991.

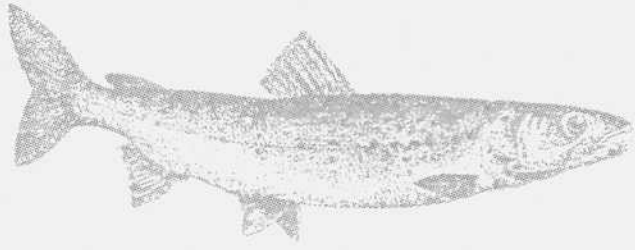
5. Greenspaces of common interest administered at the local level will be the responsibility of local governments to secure and manage. Lower priority will be given for acquisition of properties adequately protected by federal, state or local regulations.

6. If the local government accepts acquisition responsibility from Metro, the accepting government will be responsible for funding the acquisition of the greenspace with its own resources. If the local government expresses interest in acquiring a site, Metro may enter into an intergovernmental agreement that includes provisions related to regional or joint funding of the local acquisition. If the local government chooses not to acquire the property, Metro will be responsible for funding the acquisition of the greenspace with its own resources.

7. In evaluating priorities for acquisition, Metro will first determine whether existing federal, state, regional and local land use, environmental or other applicable regulations provide adequate protection of greenspaces. If not, Metro will then determine if legally defensible new regulations could be adopted by appropriate government agencies within timeframes necessary to protect significant greenspaces. If not, Metro will pursue acquisition based on fair market value.

The complete roles and responsibilities framework is located in Appendix 2 of this master plan. Appendices, and the information found in them, are held to be a full part of the master plan and its implementation processes.

The information developed through the Greenspaces program may assist Metro and local governments in meeting requirements of state planning laws. While not a regulatory document, the plan and supporting information are recommended for voluntary consideration in preparation, administration and periodic review of comprehensive plans, implementing land use regulations and regional functional plans. Metro encourages agencies and local governments to employ all tools at their disposal to assist in implementation of the plan and use master plan policies as guidance in establishing a common agenda for natural resource protection and stewardship.



The specific policies in the master plan are not intended to be binding in the "functional planning" or "land use decision" sense, as addressed by Oregon state planning law, and existing local responsibilities and regulatory tools are not directly affected in a regulatory sense. However, when Metro and cooperators articulate and commit to a cooperative planning and implementation agenda, it will allow the Greenspaces program to focus ongoing planning and future efforts, including specific policy and funding discussions, environmental and land use regulatory actions at the appropriate government level to ensure implementation of the plan.

Metro and cooperators in the Greenspaces program will work with state agencies such as the Oregon Parks and Recreation Department, Oregon Department of Fish and Wildlife, Governor's Watershed Enhancement Board and the Division of State Lands to ensure maintenance and expansion of parks, refuge areas, grant programs and enforcement of adopted regulatory policies. We will encourage these state agencies to address and fund the special urban needs of the region, including the identification, planning, acquisition and management of natural areas. Future state acquisitions should include the metropolitan region as a key target area. These lands, while owned and managed by the state, will be linked with and promoted as parts of the Metropolitan Greenspaces system.

In addition, Greenspaces cooperators will urge federal agencies such as the Fish and Wildlife Service, Bureau of Land Management, Forest Service, National Park Service, Bonneville and Northwest Power Planning Council to maintain existing refuge and recreational areas and identify new areas for acquisition. These lands, while owned and operated by the federal government, will also be linked with and promoted as parts of the Metropolitan Greenspaces system.

Protecting greenspaces at all levels of government

Acquisition is only one tool to protect and preserve natural areas and open space. Metro will continue to work with parks providers, city and county planning commissions to develop techniques and strategies to protect greenspaces. To ensure a regional continuity in natural areas planning and protection and to assemble the interconnections among greenspaces, the master plan should be used in regional development review processes as a reference to potential public acquisition and development activities.

Several of Oregon's land use regulations support the Greenspaces effort, especially Goal 5, which reads: "To conserve open space and protect natural and scenic resources." As mentioned previously, the Greenspaces program is not to be construed as a substitute for land use and natural resource management regulations at all levels of government.

Inter- and intra-agency cooperation is critical in order to ensure areas identified as environmental zones, areas of significant environmental concern, interim protection zones or basin protection districts are considered as complementary parts of the Greenspaces system. Continued application of such regulations to real property by appropriate levels of government are recognized as one of several strategies necessary to fully implement the master plan.

Many habitats identified in Metro's natural areas inventory are partially protected from urban encroachment either by public ownership or land use regulations. The Metropolitan Greenspaces program will improve protection where needed and extend protection to additional land associated with these natural areas. They will then become the nuclei or "anchors" around which an interconnected system of greenways and natural corridors can be planned.

Metro and cooperators in the Greenspaces program will:

1.1. Establish a natural area system based on ecological principles that encourage biodiversity and connections between watersheds.

1.2. Develop system-wide guidelines and standards for operation and management of natural area and open space sites.

1.3. Prepare site-specific management plans for areas assembled as part of the Greenspaces system.

1.4. Prepare and biannually update a five-year acquisition and capital improvement plan that will list land acquisition priorities and capital improvement projects on regionally significant sites and trails.

1.5. Execute inter-governmental agreements approved by the involved governing bodies whenever Metro agrees to assume responsibilities for a component of the Greenspaces system managed by another entity or, if another entity wishes to assume management responsibilities, for a Metro-managed site.

1.6. Initiate a study of the long-term funding needs and options available for operating sites and programs in the Greenspaces system.

1.7. Review and improve planning policies and ordinances that support greenspaces protection, enhancement and management.

1.8. Develop model greenspaces ordinances that can be adopted by local governments.

1.9. Coordinate policy development, implementation and enforcement of Greenspaces-related policy across jurisdictional boundaries.

1.10. Convene a focus group of individuals in the building and development industry and local government planners, to suggest urban design measures that preserve greenspaces.

1.11. Identify opportunities for streamlining and bringing consistency to development review processes at various levels of government for issues related to natural resources.

1.12. Emphasize coordination among governmental agencies with regulatory and permitting authority related to natural resource management issues.

1.13. Identify opportunities for streamlining permit processes with multiple layers of government regulation, such as stream-corridor protection, stormwater runoff, buffer zones, wetlands identification, protection, enhancement and mitigation.

Metro will:

1.14. Coordinate efforts by appropriate local, regional, state and federal agencies and citizen-based organizations to create a regional system of natural areas, open space, trails and greenways for wildlife and for people in Multnomah, Washington, Clackamas and Clark (Washington) counties. The geographic focus for protection and acquisition efforts in the Oregon component of the Greenspaces system will be bounded to the east by the Mt. Hood National Forest boundary, to the south by Oregon State Route 211 and the Chehalem Mountains, to the west by the Coast Range and

to the north by the Columbia River. (Clark County is responsible for the Washington component of the system.)

1.15. Consider lands outside the urban growth boundary and Metro's jurisdictional boundary for protection and potential addition to the regional system when these lands are determined to be of direct benefit to citizens of the region and enhance the system and protect natural resources or features of regional significance.

1.16. Negotiate public access agreements at key sites within greenspaces of regional significance, if the land is not in public ownership.

1.17. Potentially acquire and protect historic or cultural resource sites associated with urban natural areas.

1.18. Acquire and/or protect land via purchase, gift, dedication or conservation agreement and pursue appropriate local, regional, state, federal, foundation and private funding sources in its acquisition and operations strategies.

1.19. Own and operate some of the lands that will be acquired. Some lands will be owned and operated by other cooperators in the program, including local governments, water quality agencies, nonprofit conservation organizations, business corporations and land trusts.

1.20. Negotiate acquisition agreements primarily with willing sellers. Metro will exercise its powers of eminent domain only in extraordinary circumstances.

1.21. Have the option to use in-house services or contract with other agencies or private vendors for operations and maintenance of the sites and trails.

1.22. Assume management responsibilities of any park or natural areas owned and managed by other entities only with the consent of the governing body of the provider and the Metro Council.

1.23. Coordinate and publish the system-wide acquisition and improvement plans and updates, to facilitate coordinated planning and implementation.

1.24. Update periodically the Greenspaces Master Plan with the consultation of appropriate policy advisory and technical advisory committees, local, state and federal agencies, land trusts, conservation organizations and citizens of the region.

1.25. Use local park master plans and comprehensive plans to assist in identifying and implementing a regionally interconnected Greenspaces system.

1.26. Update the regional natural areas inventory and mapping project every five years, with field verification and data collection continuing on an ongoing basis as resources allow.

1.27. Produce and update a consolidated regional parks directory/natural areas directory.

1.28. Participate in development of park and open-space plans at federal, state, regional, county, special district and city levels and assist these agencies in implementing their open space land acquisition plans and regulatory functions, as resources allow.

Protecting, Managing and Financing Regionally Significant Natural Area Sites, Interconnections and Areas Deficient in Greenspaces

Regionally Significant Natural Area Sites and Interconnections

> *"The state of civilization of a people may be measured by its care and forethought for the welfare of generations to come."*
>
> *Dr. John C. Merriam*
> *Save the Redwoods League, 1931*

Natural area sites

Through a combination of regional and local actions, the master plan envisions protecting a regional system of natural areas and open space that preserves elements of the natural environment and the indigenous habitats that historically characterized the landscape. We will evaluate several factors in determining the importance and timing of protection of significant greenspaces, including:

1. **The immediacy or threat of development.** Lands where there is a high probability of loss or conversion should be protected prior to protecting lands where there is a low probability of loss or conversion. This should take into consideration physical constraints to urban development, comprehensive plan and zoning designations, market pressures for development, particularly rural residential development, property division and ownership patterns.

2. **Accessibility to residents of the region.** We should act to ensure a broad geographic distribution of greenspaces. In addition, some parts of the region have been determined to be deficient in natural areas. However, there is also a need to protect the highest quality natural areas and open spaces based on the location of the resource, rather than on uniform distribution throughout the region. When considering protection of lands of similar character, these two factors must be continually weighed and evaluated.

3. **Protection of large contiguous blocks of open space.** Preservation of larger blocks of natural areas should be emphasized at the regional level. In certain circumstances, however, it may be appropriate to acquire smaller parcels that have regional significance, such as in closing "gaps" along linear corridors, in restoring greenspaces to areas deficient in natural areas or to protect the last available piece of open space of a certain category or function. A small sites program should be initiated and coordinated with local governments, neighborhood groups, nonprofit conservation organizations and land trusts to evaluate and determine the desirability and feasibility of protecting them through locally based tools and programs.

4. **Expand and add on to existing regionally significant protected areas.** While Metro will establish regional funding sources for the acquisition and management of significant greenspaces, there will only be sufficient funding to acquire some of the key parcels in the greenspaces system. Priority consideration for acquisition and protection efforts should be given to greenspaces that expand, and thereby enhance, the value of other protected adjacent or neighboring parks, forests, wildlife preserves, natural areas or other open spaces.

To assemble the land for the Greenspaces system and develop appropriate facilities will be an incremental process accomplished over a number of years. While a five-year acquisition and capital improvement plan will be prepared and periodically updated, it is also recognized that taking advantage of opportunities will be an important strategy that will affect the actual sequence of implementation of the plan.

Cooperators in the Greenspaces program should work together, for example, to establish surplus land sale review policies for all public properties and institute a surplus land sale tracking and monitoring system. It is important that we not sell valuable land resources already in public ownership that might be important to the Greenspaces system. We will be able to consider less valuable sites as potential relocation sites for facilities that can be economically moved from existing locations with net environmental and greenspaces benefits.

After adoption of the master plan, much work will need to be done through continued planning processes. We need to more specifically delineate the boundaries of significant natural area sites proposed for protection, to identify the best opportunities for interconnections among them by greenways and corridors, and to locate specific trail alignments. We recommend that this be pursued using watersheds as the detailed unit of analysis as opportunities for building the system are identified.

Identification and definition of habitat sites and biological corridors will provide guidance for influencing the layout and management of natural areas consistent with regional nature conservation objectives. These studies will, in turn, result in practical guidelines for conservation of sites, species and habitats of metropolitan significance. We will also have the opportunity to identify and protect historic or relic habitats that have survived as remnant patches and incorporate these into the overall system of Metropolitan Greenspaces.

In their natural and unaltered condition, biological corridors, such as those associated with riparian systems not suited for urban development, are of great value to wildlife. They provide natural connections between habitats and food sources for the wildlife that use them. They also provide a potential concurrent use for the recreational needs of our expanding population. For example, the network of natural drainages throughout most of the region opens the possibility of accessible natural areas to large segments of the population. Other building blocks for corridor connections include existing parks (both with passive and active recreational facilities), schools, trails, utility easements, shorelines (where applicable), buffers (both inter- and intra-urban), other open spaces and natural areas.

Maintaining rich and diverse flora and fauna within the fabric of the region will enrich the lives of all and provide diverse visual and recreational experiences for all segments of the population. The richness of fish and wildlife that we currently enjoy in the region is the result of habitat that has not been disturbed. Its continuity is dependent on protection of both habitats and the linkages that sustain the plant and animal populations. It is these systems that we must protect as healthy, biologically diverse networks, in order to assure survival of this heritage for future generations.

Regionally significant components of the Greenspaces system will be evaluated case by case, and the maximum or minimum size of the land parcel to be brought into protection determined according to opportunities and factors at each location. There are four general land-assembly action categories, however, into which individual sites may be placed:

River access: Land sufficient for parking, limited picnic and passive recreation facilities, and maneuvering and launching facilities for small boats will be needed at key points along selected rivers. Acreage size should be ample for design compatible with natural features on the site and preservation of riparian vegetation.

Restoration: Restoration sites, or groups of sites, will be located in highly urbanized areas that are currently deficient in greenspaces. Fragmentation of sites will be of concern in this category, but the cumulative impact of restoration sites may result in restoration of much-needed open space to the most densely populated areas of the region.

Additions: These are lands added to an existing protected open space, natural area or park in order to buffer habitat or enhance the open space reserve.

Reserves: Reserves are large, contiguous natural areas that vary in size. They require minimal capital improvements or are initially of lower priority for capital improvement than the previous categories. Where possible, these will be connected to biological corridors or other trail and greenway connections through the region but will also function as large patches of self-sustaining habitats of high biological quality.

Descriptions of regionally significant natural area sites

The following natural areas are the major components of the proposed Greenspaces system. They have been identified at this time following an inclusive and cooperative planning process coordinated by Metro. *As the community grows and opportunities arise, there will be both additions to and deletions from this list.*

Existing regionally significant protected greenspaces as well as general geographic locations where Metro and cooperators in the Greenspaces program should aggressively pursue additional large acreage protection have been identified. *Placement on this list does not presume public acquisition, regulation or other form of public protection is slated.* Protection options through landowner stewardship or nonprofit land trusts are encouraged.

The watershed in which the potential protected area is located is also identified. Once assembled, these sites will serve as "anchors" in the overall Greenspaces system. They will be connected by the existing and proposed regional trails system that will be described subsequently.

Beaver Lake
(Abernethy Creek/Newell Creek watershed)
Man-made reservoir, 20-30 acres in size, surrounded by large-acre parcel of hilly forest and farm land that lies within single ownership. Fish ladder at dam for salmon. Increasing pressure for development in the area.

Beggar's Tick Marsh Addition
(Johnson Creek watershed)
Opportunity to add wildlife habitat and feeding areas for migratory and wintering waterfowl in important Johnson Creek floodplain. Near the Springwater Trail.

Boring Lava Domes
(Johnson Creek, Mt. Scott Creek, Clackamas River watersheds)
Group of extinct rugged lava domes providing high-quality habitat close to rapidly urbanizing areas. Second-growth forests; headwaters for several urban creeks.

Bull Mountain
(Tualatin River and Fanno Creek watersheds)
A high point in the Fanno Creek watershed. Remnant forest lands remain but are subject to rapidly developing suburban residential areas.

Burlington Bottom Addition
(Willamette River watershed)
Remnant wetland and slough landscape across the Multnomah Channel from Sauvie Island. Would enhance ecosystem connections to large-acre site acquired by The Nature Conservancy. Habitat for waterfowl, bald eagle, yellow-billed cuckoo, red-legged frog, and other native species.

Canemah Bluffs
(Willamette River watershed)
Willamette River bluffs that are sheer-faced with large acre forest areas. Mark the place where the Willamette carved through basalt before descending to the Columbia after flowing over the Willamette Falls. High-quality

wetlands at foot of cliffs. Historical cemetery on northern edge of bluffs. Oak and madrone growing on thinner soils.

Cedar Mill
(Beaverton Creek watershed)
Large stand of Western red cedar and limited intact patches of upland forest in area where much of forest cover lost or severely altered. Riparian connections along Cedar Mill Creek provide habitat for waterfowl, kingfisher, red-legged frog.

Clackamas River
(Clackamas River watershed)
World-class salmon and steelhead stream that originates in the Cascades. Portions already designated with state and national scenic river status.

Clear Creek Canyon
(Clackamas River watershed)
Large habitat base carved by Class 1 stream. Second-growth forest of mixed conifers and hardwoods support diverse species including big game, fur bearers and a variety of small mammals and birds. Salmonid fisheries also supported.

Columbia Shoreline
(Columbia River watershed)
Multnomah County's most extensive riparian and wetland habitats. Excellent potential for wetland restoration and linkage with Sandy River Scenic Gorge.

Columbia River Island Reserves
(Columbia River watershed)
Important wildlife refuges (osprey, bald eagles, herons) and recreational resources on Gary, Flagg, Government and West Hayden islands.

Columbia Slough Wetlands
(Columbia River watershed)
Floodplain containing remnant wetlands that have escaped alteration for agriculture or conversion to industrial or commercial uses. High-quality habitat for resident and migrating water fowl.

Cooper Mountain
(Tualatin River and Fanno Creek watersheds)
One of highest points in the Fanno Creek watershed. Some uncommon ponderosa pine stands remain. Remnants of forested headwaters of numerous streams draining into the Tualatin River are rapidly being lost or altered by surrounding development.

Council Creek
(Council Creek watershed)
Parallels city limits of Cornelius and Forest Grove. Narrow but fragmented riparian vegetation along creek. Heavy agricultural use along its edge.

Deep Creek Canyon
(Deep Creek watershed)
Originating in the Boring lava domes and flowing to the Clackamas River. A dramatic canyon formed by Class 1 stream. Has retained much of its natural character, providing connectivity, food, shelter and water to a variety of wildlife species and both resident and anadromous salmonids.

Fairview Creek Ponds/Wetlands
(Fairview Creek watershed)
Important linkage between Columbia River, Columbia Slough and forested buttes in Gresham. Support healthy native riparian vegetation.

Fairview Lake-Blue Lake Addition (Fairview Creek watershed)
Mixed deciduous, riparian, open emergent and forested wetland areas. Active farmlands near valuable wildlife habitat. Significant development pressure.

Fanno Creek Greenway
(Fanno Creek watershed)
Fourteen-mile stretch through residential, commercial and industrial lands. Densely forested land and scattered wetlands in upper reaches. Cutthroat trout habitat in some areas.

Finley Nature Reserve
(Willamette River watershed)
Natural area reserve maintained by one family for 100 years. Land contains potentially historic house and examples of plant species collected over the years. Fronts along the Willamette area between Gladstone and Milwaukie, where there is not much available in a natural state.

Forest Park Inholdings
(Willamette River and Tualatin River watersheds)
Scattered privately owned lands in 5,000-acre city park, the largest protected natural area in metropolitan area. Part of significant wildlife habitat, providing ecological connection between Columbia River, the Tualatin Valley and the Coast Range.

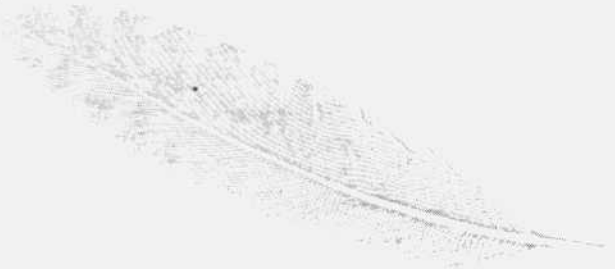
Four Corners
(Columbia Slough watershed)
Several hundred acres of wetland, riparian and forested habitats. Site of future wetland and wildlife habitats mitigation associated with industrial development in South Shore. Complements 2,000-acre Smith and Bybee Lakes as important wildlife (river otter, red-tailed hawks, northern harriers) habitat node.

Gales Creek
(Gales Creek watershed)
One of the headwater streams for the Tualatin. Mountain stream character in upper reaches, supporting trout populations. Agricultural uses predominate the lower watershed.

Hagg Lake
(Tualatin River watershed)
Man-made reservoir formed by impounding a tributary of the Tualatin (Scoggins Creek) for agricultural irrigation. Marks western edge of Tualatin Valley settlement area. Surrounded by large Washington County park, it provides access to recreational opportunities as well as connections with forests of the Coast Range.

Hedges Creek
(Tualatin River watershed)
One of Washington County's most diverse and largest wetland ecosystems. Runs through shrubby and forested wetlands, open fields and Oregon white oak/Douglas fir forests. Combination of upland and riparian habitats provides valuable nesting and cover for many species of birds and mammals, including beaver.

Heron Lakes
(Columbia River watershed)
Blends wildlife viewing with important great blue heron nesting site. Connection to 40-Mile Loop, nearby Force Lake, Smith and Bybee Lakes and adjacent wetlands.



Holcomb Trail Ruts
(Clackamas River watershed)
Remnant signs of settlers that came along the Barlow Trail. Within four miles of the end of the Oregon Trail, where the wagons disbanded. Area is hilly, forested. Recent logging has destroyed some of the ruts.

Jackson Bottom Addition
(Tualatin River watershed)
Would add valuable wildlife and waterfowl habitat to lowland areas in floodplain of Tualatin. Some agricultural areas mixed with riparian habitat along waterways and marshes.

Johnson Creek Canyon/Tideman Johnson Addition
(Johnson Creek watershed)
Lower reach of Johnson Creek flowing through a dramatic steep-sided canyon with small cascades and narrow flood plains. Opportunities to add segments to the Tideman Johnson Park would increase access to natural areas in this densely populated section of the city.

Johnson Creek Greenway
(Johnson Creek watershed)
Johnson Creek Corridor Committee has encouraged renewed restoration and enhancement interest along length of creek. Stimulated by recent enactment of water quality standards for Johnson Creek and purchase of the Springwater Corridor. Additions would enable expansion of riparian enhancement projects and water quality improvement efforts through private stewardship.

Johnson Lake
(Columbia Slough watershed)
Site attracting large numbers of wintering waterfowl (hooded merganser, American widgeon, common merganser, gadwall). Natural buffer to I-205 and glass recycling plant. Accessible by bicycle from 1-205 bike path.

Kelly Butte East Slopes Addition
(Willamette River watershed)
Prominent lava butte located in heavily urbanized area. Forested peak and steep walls provide drama to urban landscape and natural visual and recreation experiences for nearby residents.

Little Four Corners
(Columbia Slough watershed)
Springs feeding clear water into Columbia Slough. Habitat for hundreds of winter and resident waterfowl.

McKay/Dairy Creek Confluence
(McKay Creek and Dairy Creek watersheds)
Significant wetland habitat enhancement projects under way here as part of Jackson Bottom Master Plan. Major water quality planning effort to reduce phosphorous loads in the Tualatin is related to this site.

Milwaukie Waterfront
(Willamette River watershed)
Confluence of Johnson Creek and Kellogg Creek with the Willamette River. Juncture of four regionally significant trails.

Mt. Scott
(Kellogg Creek and Mt. Scott Creek watersheds)
Outstanding view of Portland skyline. Wooded sides of volcanic butte provide wildlife habitat as well as green backdrop to east side of urban area. Significant development pressure.

Mt. Talbert
(Kellogg Creek and Mt. Scott Creek watersheds)
Largely undeveloped, distinctive hill and valley terrain providing a diversity of wildlife habitats. Serves as green landmark on eastern edge of urban area. Some remnant "old-growth" size trees.

Northeast/Southwest Portland Restoration Opportunities
(Willamette River and Columbia River watersheds)
Opportunities to restore open and green spaces inside densely urbanized areas.

Newell Creek Canyon
(Abernethy Creek/Newell Creek watershed)
Nearly pristine canyon area including large old trees and great habitat diversity. One of the highest quality stream canyons in southeast portion of metropolitan area.

North Peninsula
(Columbia Slough watershed)
Habitat for Western pond turtle, belted kingfisher, killdeer, red-tailed hawk. Great blue heron nesting colony. Access to 40-Mile Loop with connections to Kelley Point Park, Smith and Bybee Lakes and Fairview Lake.

Petes Mountain
(Newland Creek and Willamette River watersheds)
Remnant forest and stream corridor habitat for raptors, including osprey. Marks confluence of Tualatin and Willamette rivers.

Powell Butte Addition
(Johnson Creek watershed)
Would add to protection of green backdrop for the city. East slopes are highly visible from Gresham. Provides linkage between protected upland habitat on Powell and Jenne buttes and Johnson Creek, which flows between them, contributing to the biodiversity of both systems.

Rock Creek and Sieben Creek
(Clackamas River watershed)
Originate in Boring Lava Domes in largely agricultural lands. Both creeks flow through forested canyons containing fairly old cedar and fir trees. Wetlands and streamsides provide high-quality wildlife and fisheries habitat. Sieben Creek is one of the last pristine creeks inside the urban growth boundary in Clackamas County. Experiencing very high pressure for conversion to urban and suburban uses in surrounding areas.

Rock Creek
(Rock Creek watershed – Washington County)
Complex system of several tributaries passing through largely agricultural lands. City of Hillsboro and Tualatin Hills Parks and Recreation District manage some natural areas along this system. Habitat for beaver, mink, otter, coyote and birds of prey.

Rock Creek Wetlands
(Rock Creek watershed – Washington County)
Near Portland Community College's Rock Creek campus. Wetlands restoration projects under way by Washington County Educational Service District and Cascadia Native Landscape Center.

Rocky Butte Addition
(Willamette River watershed)
Important for its historic prominence as a Portland landmark. Large portions of forested sides subject to increasing residential development.

Ross Island Complex
(Willamette River watershed)
Important scenic and natural riparian habitat on four-island complex. Adjacent to Oaks Bottom Wildlife Refuge near downtown. Nesting sites for belted kingfishers and more than 55 great blue heron pairs.

Sandy River Gorge
(Sandy River watershed)
Important wildlife habitat (elk, bear, deer, coyote, beaver, osprey, bald eagle) noted for native salmon and steelhead populations. Adjoins Columbia River Gorge National Scenic Area and extends scenic waterway systems.

Sandy River Tributaries
(Sandy River watershed)
Would add important riparian and forest habitat for fish and wildlife, including steelhead, trout and salmon. Would provide critical ecological linkage between Mt. Hood and Columbia River.

Sauvie Island/Bybee-Howell Marsh Addition
(Columbia River watershed)
Would add valuable wildlife habitat to low-lying marshy lands at site of historical significance. Adjacent areas are in agricultural use.

Sentinel Tree Park
(Tualatin River watershed)
In forested ravine in Clackamas County, south of Lake Oswego. Characterized by giant Douglas fir estimated to be at least 300 years old.

Terwilliger/Marquam Additions
(Willamette River watershed)
Would protect integrity of Terwilliger Parkway and ensure connection between Terwilliger and Marquam Nature Park.

Tonquin Geologic Area
(Willamette River and Tualatin River watersheds)
Unique geologic feature bearing 10,000-year-old scars associated with the Bretz floods. Portions used for sand and gravel quarries.

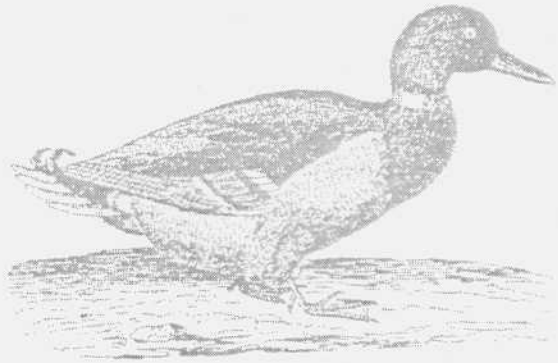
Tryon Creek Linkage
(Tryon Creek watershed)
One of the major remaining free-flowing tributaries running from West Hills to the Willamette River. Tryon Creek Park provides remarkable assemblage of natural vegetation and wildlife habitat in the midst of a very urban area.

Tualatin Hills Nature Park Addition
(Tualatin River watershed)
Floodplain with wooded, grassy uplands that provide good wildlife habitat. Would complement existing nature park and extend habitat and natural resource values.

Tualatin River Greenway and Access Points
(Tualatin River watershed)
Flows from headwaters in the Coast Range to confluence with the Willamette River. Runs through a mosaic of agricultural, commercial and industrial land use areas. Lush riparian vegetation in some areas.

Willamette Narrows
(Willamette River watershed)
Forested canyon between Petes Mountain and Wilsonville, the Canemah district of Oregon City and Molalla River State Park. Provide east-west ecological connectors between the Cascade Foothills and the Coast Range. Link upper and lower Willamette Valley and Tualatin Valley with the Tualatin Mountains. Willamette River Greenway addition.

Willamette River Island Reserves
(Willamette River watershed)
Provide habitat for plant and animal species within increasingly urbanized area. Wetland, riparian and shoreline opportunities provided by the islands are especially important.



Metro and cooperators in the Greenspaces program will:

2.1. Develop a regionwide greenspaces system that protects fish and wildlife habitats and provides passive recreational opportunities designed and managed to conserve fish, wildlife and botanic values.

2.2. Plan for the Greenspaces system using landscape ecology as a basis, and watersheds as primary units of analysis, so that protection and enhancement of natural functions across jurisdictional boundaries will be assured as the region continues to urbanize.

2.3. Recommend programs to conserve, enhance and appropriately manage habitats and nature reserves.

Metro will:

2.4. Coordinate efforts to protect natural areas and open space lands among local, regional, state and federal agencies and nonprofit land conservation organizations, to complement acquisition programs and maximize financial and land-resource potential.

2.5. Determine the importance and timing of acquisition and protection of regionally significant greenspaces case by case, weighing human and wildlife needs, as well as such factors as the immediacy of potential loss of site, cost, availability, financing options, etc.

Criteria to be used in prioritizing site selections include:

Biological component
- Relative rarity of ecosystem
- Connectivity to other habitat needs
- Biological diversity
- Parcel size
- Presence of wetlands and waterways
- Feasibility of ecological restoration

Human component
- Geographic distribution
- Connection to other sites
- Natural qualities of the landscape
- Proximity of sites to public access
- Views and vistas
- Local public support
- Historical/cultural significance

Variables in protective mechanisms
Short-term decisions
- Inside urban growth boundary
- Few physical constraints on development
- Transportation access
- Planning/zoning for development

Medium-term decisions
- Outside UGB
- Relatively large parcel without services
- Limited transportation access
- Some physical limitations on construction

Long-term decisions
- Extreme limitations on construction
- No current access to transportation
- Remote from existing development

Lands protected by other means
Regulation:
- State and federal wetlands fill and removal permitting programs
- Comprehensive plans and zoning, including floodplain and environmental zone overlays to protect significant Goal 5 resources

Public Control:
- Lands currently in public ownership
- Land trust holdings
- Easements

Significant Trails, Greenways and Wildlife Corridors

> *"A connected system of parks and parkways is manifestly far more complete and useful than a series of isolated parks."*
>
> *The Olmsted Brothers*
> *Report to the Portland Park Board, 1903*

The Greenspaces Regional Trails System

Establishing a network of interconnected trails and corridors is a major proposal put forth in the Greenspaces Master Plan. A system of linear linkages for human recreation, transportation, wildlife movement and ecological connectivity is proposed. Of importance to the Metropolitan Greenspaces system are trails that connect to regionally significant sites, are multijurisdictional, multiuse and that connect to national, inter-regional or other regional trails.

In identifying significant segments of the Greenspaces Regional Trails System, we are using the following definitions:

Land-based trails: Multiuse/recreational (hiking, biking, pedestrian, equestrian, etc.) alignments primarily used by people. Trails will be designed with sensitivity to the natural environment, the landscape they traverse and the intensity of anticipated use.

Greenways: Linear vegetated corridors often associated with rivers and streams that could be shared by humans and wildlife. Designation as a greenway does not presume public access to private property but does encourage consistent management by both public and private landowners to maintain ecological integrity.

Wildlife corridors: Linear natural areas and habitats primarily reserved for wildlife needs. They vary in width and composition but enable movement of wildlife between habitats and food sources. Human access will be discouraged in these corridors.

River trails: Rivers that are navigable by small craft. They provide water-based recreational opportunities, offering connections that might not be feasible on land-based trails. Opportunities for acquisition of additional lands along rivers for public access will be explored.

The trails network should foster a sense of community throughout the region and strengthen the connection to our cultural, historical and natural heritage.

Existing trail systems that have been planned and developed in the region will be key elements, serving as a foundation for the interconnected regional system. The accomplishments and cooperation achieved through years of planning and implementation will be built upon to implement the system, including the following:

1. The metropolitan area has access to a larger network of trails that extends outside the metropolitan area. Existing and proposed trails of wider influence will provide a useful framework for planning a four-county, bi-state system that connects areas within the region to significant destinations outside and to this larger network of trails.

2. The Greenspaces Regional Trails System also will be planned to dovetail with the local trails networks planned by each parks jurisdiction. It is envisioned that continuing trail planning and development will ultimately provide access to regional connections from each community. Inclusion of designated regionally significant trails in

local planning documents is mutually supportive and could benefit implementation of both systems of trails.

3. Inventory and regular update of the entire system of trails in the region and provision of public information regarding the accessibility of trails throughout the region will be undertaken by Metro.

4. Prioritization of trail segments will be recommended by a broad-based working group familiar with local needs and opportunities. This working group will consist of Metro staff, cooperators and citizen advocates representative of the region as a whole. It will develop a process, based upon the criteria listed, to rank individual projects in the context of available funds. The group will regularly review the status of all segments of the Greenspaces Regional Trails System and will recommend priorities for continuing development to appropriate agencies and organizations.

Implementation of the Regional Trails System

Implementation of the Greenspaces Regional Trails System will proceed incrementally as funding allows. Priority will initially be given to acquisition of corridors, easements and dedications that will enable development of continuous trail alignments. Only when large portions of the overall system have been assembled will emphasis be given to capital improvements. These will be prioritized in order to address:

1. Safety for users and adjacent land owners.

2. Continuity with regional and local trail systems.

3. Sensitivity to environmental conditions.

4. Local support for trail improvements.

5. Availability of operations and maintenance funds.

Local government and citizen participation will be encouraged in all implementation and operational stages. Development and management of transportation systems requires a high degree of cooperation among all levels of government. Pedestrian, equestrian and bicycle trails are no exception. The degree of cooperation from these local governments will influence priorities for trail development.

The master plan will be periodically updated. A strategic plan for trail development in the region will be prepared and incorporated into the five-year acquisition and capital improvement plan for the Greenspaces system. Priorities will be adjusted if necessary. Available funding will be allocated to mutually agreed projects.

A variety of funding sources are potentially available for trail development. Federal Intermodal Surface Transportation Enhancement Act funds are available through the Oregon Department of Transportation for development of off-road alternative transportation systems. ODOT bicycle funds can be used within rights-of-way and can be used for street-crossing safety devices for multiple use trails.

The larger network of trails: trails of national significance

Trails of national importance pass through, or close by, the metropolitan region. Some trails are renowned cultural resources that are nationally and internationally known. These could be considered "trunk lines" in a hierarchy of potential pedestrian movement. The Greenspaces Regional Trails System will link directly with this existing network. The program will also make people aware of the potential for individual communities to connect with the larger system, which could result in greater enthusiasm for development of local trail systems.

Lewis and Clark Trail
This trail includes both a land-based trail and river route following the Columbia River. The western end is at Astoria, where the National Park Service has undertaken a project to locate the original route relying on the Lewis and Clark diaries. Lewis and Clark State Park on the Sandy River near Troutdale interprets botanical discoveries credited to the explorers. The route follows the Columbia River through the metropolitan area.

Oregon Trail/Barlow Trail
This historic trail was the primary means of early settlement of the region by non-native populations. Although not presently a completely accessible pedestrian trail, it has been recently surveyed and some sections identified for preservation. Portions of the trail made use of the Columbia River, which provided a means of passage through the rugged terrain of the Cascade Range. The Barlow Trail, synonymous with the Oregon Trail, is marked where it corresponds with existing highways in the region. The End of the Oregon Trail Interpretive Center is currently being planned in Oregon City.

Pacific Crest National Scenic Trail
This hiking trail could technically be considered an international trail since it follows the crest of the Cascade Range from Canada to Mexico. In this region it passes through the Mt. Hood National Forest in the Gorge, crossing the Columbia from Washington at the Bridge of the Gods. It is accessible to the regional network by way of the Columbia River Gorge system of trails, through Mt. Hood National Forest and Gifford Pinchot National Forest.

Pacific Coast Trail
Known as Oregon Coast Trail in this state, the overall system extends far beyond the borders and provides a continuous alignment from Canada to Mexico. Although it is known primarily as a bicycle trail, adjacent lands provide numerous opportunities for hikers, campers and other tourist uses.

Gifford Pinchot National Forest Trails
The Mt. St. Helens National Volcanic Monument has become the primary attraction for these trails. The Forest Service is building a trail system throughout the monument to facilitate public access and encourage education programs. The Gifford Pinchot Forest is working with the Chinook Trail Association to provide trail ties between the forest and the Vancouver urban area, as well as communities along the Columbia River within the scenic area.

Mt. Hood National Forest Trails
The Mt. Hood National Forest is a mosaic of recreation opportunities scattered over 1 million acres of forest land in the north Oregon Cascade Mountains. Mt. Hood, at 11,235 feet, is the dominant feature of the forest. Mt. Hood is a nationally recognized name and is associated with Oregon as a destination for national and international tourists. There are 1,300 miles of trails ranging from paved and "boardwalk" trails, accessible to all users, to primitive trails in the 187,000 acres of wilderness. The Pacific Crest National Scenic Trail goes from Mexico to Canada and traverses the forest from north to south. It is the goal of the Forest Service to work cooperatively and tie the forest to local communities, for example, linking the Clackamas River Trail to the Springwater Trail.

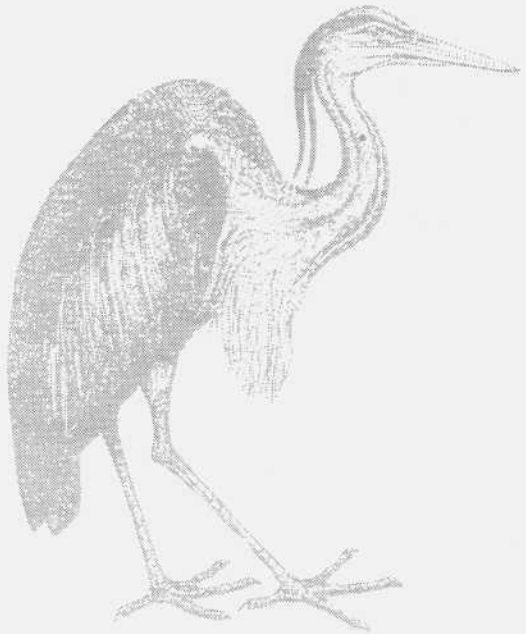
Columbia River Gorge Trails
Since its designation as a national scenic area, the Gorge has risen in importance from a regional treasure to a national scenic resource. Under the direction of the Forest Service and the Gorge Commission, an integrated system of trails will be developed in the course of management.

The larger network of trails: inter-regional trails

State trails form a network connecting many of the cities and towns of Oregon. The system is presently somewhat limited but will be supplemented by a series of newly proposed Rails-to-Trails projects. It is critical that state policy includes a means for acquiring abandoned rights-of-way as they become available since these corridors are nearly impossible to replace once lost to private ownership.

Portland to the Pacific Trail
This proposal has evolved from an ongoing interest in creating a wildlife corridor that connects the Willamette Valley to the Coast Range and ultimately to the Pacific Ocean. The current plan will include a recreational trail that will connect to the Coast Trail, linking not only the coastal cities of Oregon but also providing a connection to Washington and California.

Banks Vernonia Trail
This was the first attempt to complete a Rails-to-Trails project in Oregon. Public participation, in conjunction with state parks, will ultimately bring this project to fruition. This will become one of the most important components of the system currently under study.



Chinook Trail
The Chinook Trail is a proposed Columbia River Gorge loop trail that will connect Vancouver Lake, Maryhill State Park, Biggs and Portland. It will travel in part on existing trails. The concept was formalized in 1988 as a rim-top trail where possible.

Willamette Greenway
The 1967 and 1973, Oregon legislatures created the Willamette River Greenway program extending more than 255 miles between Cottage Grove and St. Helens. It was established to protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River. The program is coordinated by the Oregon State Parks and Recreation Division and implemented through partnerships with governmental entities that enforce setbacks and landscape management adjacent to the river. RUGGO Objective 9 calls for a Willamette River Greenway plan for the metropolitan region to be completed by the turn of the century.

Tillamook State Park Trails System
Following a series of forest fires in the Coast Range, the state purchased the Tillamook State Forest in order to manage the resource more carefully. Recent studies suggest that development of the recreational potential of the forest is appropriate with the increasing tourism in the region and population growth in the metropolitan region.

State of Oregon Rails-to-Trails Study
The state of Oregon has undertaken a study of railway abandonment and potential for incorporating segments of these alignments into major inter-regional trails. The intended outcome is a policy for acquisition and development of an extensive statewide system of trails connecting major destinations in the state.

Regional trails, greenways and wildlife corridors

The Greenspaces Regional Trails System proposes that the region be laced with trails that provide means of access to commerce, recreation and natural areas. Human-powered commuting would be one benefit that can be derived from development of a regional system, with these areas accessible directly or from the local trails network. Eugene's system of bikeways is a model that should be examined in the development of our regional system.

In identifying regional trails, greenways and corridors in the Greenspaces Regional Trails System, we are using the following definitions:

Regional trail: A regional trail provides a linear corridor, in a natural setting where possible, that is primarily for pedestrian use and might include equestrian and bicycling uses, as appropriate. Regional trails provide links between parks, local trails and local communities and should accomplish at least one of the following goals:

1. Provide non-motorized access to a parkland of regional scale for a major population center or mass-transit terminal.

2. Provide a connection between parklands of regional scale, especially between those that provide overnight camping.

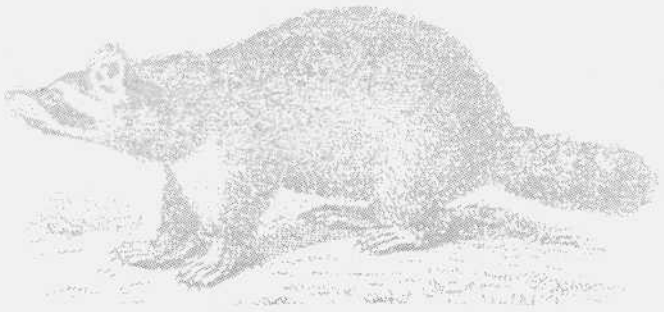
3. Provide a day-use loop or link through other regionally significant lands.

Regional greenway: A regional greenway is a linear corridor, in a riparian setting, that serves wildlife needs and also accommodates pedestrian, equestrian and bicycling uses. The master plan defines lands that the Soil Conservation Service has identified as prone to flooding as potential greenways. Regional greenways provide linkages for wildlife between habitat needs. Designation as a greenway does not presume pedestrian access to privately owned lands but encourages management compatible with riparian preservation and enhancement. Each greenway should:

1. Provide continuous riparian habitat along a stream or river as well as pedestrian, equestrian and bicycling uses where possible.

2. Provide access to a river trail with some provision for parking and passive recreation activities.

3. Provide recreational opportunities such as camping that are in short supply along river corridors.



Regional wildlife corridor: A regional wildlife corridor is a linear natural area that provides primarily for wildlife needs and uses. Within the metropolitan region potential for these preserves is clearly limited, and enhancement or extension of linkages between existing areas must be considered. In order to be considered a regional wildlife corridor, an area must:

1. Provide significant habitat for species that reside in and pass through the region along regular migratory routes.

2. Improve or enhance an existing reserve.

3. Provide a link between habitats that is beneficial to wildlife and assists maintaining biological diversity. Opportunities for limited human interaction will be encouraged only when it is possible that it will not detract from wildlife values.

Proposed and evolving trails and greenways

The 40-Mile Loop System of Trails
Originally proposed in the 1903 Olmsted Report, the 40-Mile Loop was the Portland region's first recreational circulation system. As envisioned by the Olmsted brothers, approximately 40 miles of parkways, boulevards and walkways would link major parks in the Portland area. The loop was revived in the late 1970s as an expanded system of hiking trails and bicycle paths totalling 140 miles. The 40-Mile Loop has been incorporated into the comprehensive plans of Multnomah County and the cities of Portland, Gresham and Troutdale. Implementation has occurred through voluntary easements, by conditioned developments and through local government acquisition and capital improvement programs.

The 40-Mile Loop includes only the urbanized portions of Multnomah County, but its fundamental premise is the same as the proposed Greenspaces Regional Trails System: to connect significant natural areas and open spaces via a recreational trail system aligned with greenways and natural landscape features. Important segments of the loop include:

- Wildwood Trail
- Marquam/Terwilliger Trails
- Springwater Corridor
- Columbia Slough and Columbia Bikeway

Springwater Corridor Trail
The abandoned Portland Traction Railroad Company right-of-way purchased by the city of Portland provides a major east-west link from the Willamette River to the foothills of the Cascades through some of the city's most densely populated sections. The Springwater Corridor originates at the Oaks Bottom Wildlife Refuge and continues east generally following Johnson Creek to its end in Estacada. Varying in width from 60 to 100 feet, the alignment generally follows Johnson Creek and includes some extraordinary natural areas along its course. The Gresham section is currently in the process of being improved as a multiple-use recreational trail that will accommodate bicyclists, walkers and equestrians. In conjunction with trail development, additional lands in the floodplain of Johnson Creek are also being acquired.

Tualatin River Greenway Trail
This greenway has been proposed for many years and has recently enjoyed new interest. Most of the Tualatin is outside the urban growth boundary. The wide floodplain and relatively few interruptions from transportation corridors make this an extremely important focus for multiple-use low-intensity recreation. As a river trail, the Tualatin is a fairly slow-moving watercourse that is ideal for novice canoeists. Active agricultural lands offer wonderful views along most of its length.

Clackamas River Greenway Trail
The Clackamas flows from the Cascades into the Willamette north of Oregon City. Most of the upper reaches of the river are outside the UGB. East of Carver Bridge, the river is classified as a wild and scenic river, lending it some protection from development that would impact its natural beauty. A greenway and trail has been proposed along the north bank of the river from Oregon City to Barton Park, where it intersects the Springwater Corridor Trail. It is also included as a river trail for canoes, kayaks and even rafts in the upper reaches.

Sandy River Gorge Trail
This proposed trail will link Troutdale with numerous publicly owned parks along the lower reaches of the Sandy, including the newly acquired Sandy River Delta, Lewis and Clark State Park and Dabney State Park, where it is currently proposed to terminate. The Sandy is one of the most pristine rivers in the region and should be preserved to the maximum extent possible.

Johnson Creek Greenway

This greenway has experienced renewed interest with the formation of the Johnson Creek Corridor Committee, enactment of water quality standards for the creek and purchase of the Springwater Corridor. Public agencies have begun to invest in riparian improvements and private landowners along the creek are being encouraged to participate in water quality improvement programs through stewardship of their holdings.

River trails

In addition to land-based trails, the system should also include river trails on navigable water courses that can provide linkages that might otherwise not be feasible. Traditional uses of these rivers by native Americans involved the canoe, and getting out into the environment in the same way can elicit similar sensations. Since rivers are publicly owned, the accessibility of river trails can allow public uses while respecting private ownership of the shorelines. Staging areas for water-based excursions could lessen the need for further acquisition along certain sections of otherwise inaccessible streams.

Several rivers in the metropolitan area are navigable by a variety of watercraft. This use should be encouraged as a means of connecting otherwise fragmented land routes. Opportunities for additional access points along these rivers should be expanded whenever practicable. A river route provides landing and launching sites that enhance linkages for appropriately sized craft along navigable rivers in the region.

The Columbia River

In spite of its role as a major transportation route for ships and barges, the Columbia River is widely used by recreational boats in the region. Fishing is pursued during all seasons, but skiing and pleasure boating are particularly popular in summer. Sailing of craft larger than is usually found in other local rivers or streams is also a popular activity. There are remarkably few access points to the Columbia River in the metropolitan area. This is largely due to intense development of industrial facilities along its shores and the privatization caused by waterfront residential development.

The Sandy and Clackamas Rivers

The Sandy and Clackamas rivers are cold, clear-water rivers typical of the streams and rivers flowing out of the Cascade Mountains. The streambeds are relatively narrow and flow through scenic canyons and foothill valleys. It is unusual in this country for scenic beauty of this quality to be found so close to a major metropolitan area.

Both of these rivers have sections designated as state scenic waterways, which provides some degree of protection to preserve their scenic beauty. The Scenic Waterways Act prohibits dams, reservoirs and placer mining in designated rivers. The act also stipulates that alteration of the stream channel or river bank requires a permit and that all land use changes and development within one-quarter mile of the river must be reviewed.

The rapid flow and white-water rapids in the upper reaches of these streams make them popular drift and kayak rivers. Canoeing is feasible in the lower reaches. Narrow channels and white water prevent larger craft from using much of the Sandy and Clackamas rivers. Fishing and water play are also popular recreational activities supported by these rivers.

Like the Willamette and Columbia rivers, recreation areas along the Sandy and Clackamas and the rivers themselves are often crowded during peak seasons. Crowding indicates their value and popularity among recreationists. The high levels of use may be adversely affecting the natural environment in the most popular areas.

The Willamette River

The Willamette River supports a wide variety of recreational activities and is a major attractor to the parks along its shore. It is considered a

medium-sized river and provides ample room for waterskiing, sailing of modest-sized craft and motor boating. It is small enough that wind doesn't create heavy wave action, which makes the river popular with oarsmen, beginning and intermediate windboarders and small-to-medium boats. The river's location in the urbanized area and the variety and level of recreational activities it provides makes this a popular and often crowded recreational resource.

The Lower Willamette River is considered to be the portion north of the falls in Oregon City. This part of the river is widest, flows through the most developed area and is used by commercial and recreational craft. It is in this area that the greatest number of developed recreation sites can be found. It is also the area of greatest congestion and, therefore, subject to the most conflicts in use.

There are a number of possible improvements and developments that could enhance the recreational and wildlife values of this section of the river. These could include additional launching facilities associated with human-powered craft, such as canoes and small sailboats, which could be rented by day-users of the river.

The Upper Willamette River flows through mostly undeveloped areas south of the falls. The upper portion is characterized by a narrower channel and steeper banks. The variety and intensity of use in this stretch of river is considerably less than in the lower reaches, but its scenic value is very high. The channel width, steep banks and lack of access discourage the level of use experienced by the lower river.

The Tualatin River

The Tualatin River is typical of the slow-flowing, meandering small rivers and streams that flow through the Willamette Valley floor. Its relatively low slope makes it ideal for canoeing and for amateur boaters. There are few access points within metropolitan areas along its course, which makes its further development for recreational uses more important. An additional facility that allows for camping would be a significant recreational addition along the river.

The Columbia Slough

The slough offers opportunities for non-motorized craft between Fairview Lake on the East and the confluence with the Willamette River at Kelley Point Park. A number of interesting greenspaces are accessible from the Slough including Smith and Bybee Lakes, North Peninsula Canal, Four Corners and other wetland habitats. A land-based trail will accompany the water route as it is constructed over time.

The proposed Greenspaces Regional Trails System

LAND-BASED TRAILS

Beaver Creek Canyon Trail

The northern section of this trail forms part of the 40-Mile Loop through Troutdale and then follows Beaver and Kelly creeks to their headwaters, terminating at Oxbow Park.

Beaver Lake Trail

A detailed alignment has not been determined. This trail could follow Newell Creek Canyon or Abernethy Creek from the proposed end of the Oregon Trail Center to provide a connection to the proposed Beaver Lake regional natural area.

Beaverton Creek Trail

The Beaverton Creek Trail begins at the confluence with Bronson Creek, following the creek to its headwaters in the west Tualatin Mountains. The route crosses the Tualatin Mountains joining the Marquam Trail near Council Crest.

Bronson Creek Trail

The Bronson Creek Trail begins at the confluence with Beaverton Creek, following the

creek to its headwaters in the west Tualatin Mountains. The route crosses the ridge linking with the Forest Park Trails.

Cazadero Trail
This extension of the Springwater Division Line, which links Boring to Estacada, is in Oregon State Parks' ownership and is the highest priority for trails in Oregon. It joins the Clackamas River Greenway at Barton Park.

Clackamas Bluffs Trail
Beginning at the intersection with North Clackamas Trail at Mt. Talbert, this route extends south along the ancient bluffs of the Clackamas River. It joins the Clackamas Greenway Trail at the confluence of Rock Creek with the Clackamas River.

North Clackamas Trail
Beginning at the Milwaukie waterfront, this trail follows the Kellogg Creek watershed through North Clackamas Regional Park to newly acquired property that will include the swim center and other recreational facilities planned by the North Clackamas Regional Parks District.

Columbia Bikeway/Columbia Slough Trail
Part of the 40-Mile Loop, the Columbia Bikeway follows the Columbia River from Blue Lake to Kelley Point Park. Parallelling the river along remnants of the Columbia Slough is a pedestrian hiking trail that is primarily in the planning stages, but it will ultimately provide a walking trail from Blue Lake through Smith and Bybee Lakes to Kelley Point Park. The northern section of the loop is comprised of the Marine Drive Trail, a bikeway that parallels the Columbia River, and the Columbia Slough Trail, a pedestrian trail being developed along remnants of the natural system of drainages and wetlands adjacent to the river. Large portions of the trail have been completed in conjunction with private sector interests in the slough. More partnerships continue to be formed.

Fanno Creek Greenway
This trail links the Tualatin River Greenway Trail with Beaverton Creek following the Fanno Creek Greenway system. It provides an alignment through natural areas and links up with other local trails.

Gresham to Fairview Trail
This trail is located along an abandoned spur of the Springwater Line, which branches from Linnemann Station in Gresham and runs north to the Columbia River near Blue Lake.

Hagg Lake Trail
Beginning in the foothills of the Coast Range at Hagg Lake, this trail follows Scoggins Creek to the confluence of the Tualatin River. It passes Fern Hill Wetland on the southern boundary of Forest Grove continuing to the confluence with McKay Creek near Jackson Bottom.

I-205 Corridor (bike route)
While the Greenspaces Regional Trails System will generally focus on trails through natural areas, this connector is extremely important in bicycle linkages through the populated areas of Portland and provides a link with Clark County and the county's developing system of trails.

Marquam/Terwilliger Trails
Beginning across Sunset Highway from the zoo, these trails traverse the West Hills from Canyon Road to the Sellwood Bridge crossing to East Portland. Points of interest along the route include Council Crest Park, Marquam Nature Park, Terwilliger Parkway, George Himes Park and Willamette Park. The Marquam Trail extends through and around the Marquam Nature Park and along neighborhood streets to connect to Terwilliger Parkway. Its southern end is the riverfront Willamette Park, which is part of the Willamette Greenway.

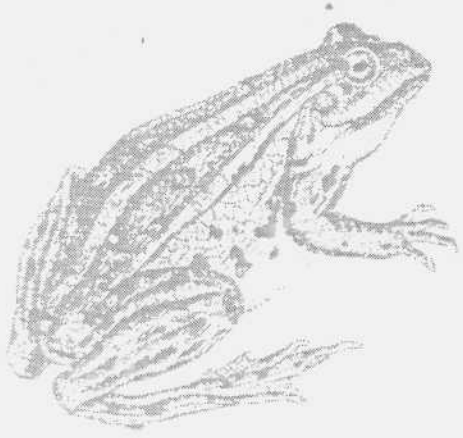
McKay Creek Trail
Extending north from the confluence with the Tualatin River, this trail follows the edge of Hillsboro to the confluence with Dairy Creek, continuing to North Plains where it joins the Portland to the Coast Rails-to-Trails route.

Mt. Scott Trail
From the junction with the North Clackamas Trail on Mt. Talbert, this trail extends north to join the Springwater Trail near Powell Butte. It crosses Mt. Scott and follows Johnson Creek before intersecting with the Springwater Corridor.

North Fork Trail
This segment of the Cazadero Trail connects the north fork of Deep Creek with Barton Park.

Oregon Trail/Barlow Road
It is hoped that a more accurate alignment of this historic road can be defined as a multi-use trail along the southern part of the region. Using early maps and other available research the corridor will be laid out as close to the original route as possible.

Portland to the Coast Trail
A segment of this Oregon State Parks' proposed Rails-to-Trails project from North Plains to the Sauvie Island bridge traverses the northwest portion of the Greenspaces study area. A spur to this line, the Oregon Electric Railway, extends into the center of Beaverton.



Portland Traction Line/Oregon City Alignment
The southern extension of the Portland Traction Railroad Line from Milwaukie to Gladstone is currently being considered for acquisition. This line once provided rail connections to Oregon City but has been abandoned since the late 1950s. It offers a nearly level trail connection, crossing primarily residential streets as far as Gladstone, where the bridge to Oregon City has been abandoned.

Powerline Trail
This Bonneville Power and Portland General Electric easement extends from the northern end of Forest Park to the newly proposed Tualatin River National Wildlife Refuge near Sherwood. It crosses the Bronson Creek and Beaverton Creek trails, passes through Tualatin Hills Nature Park, across Cooper and Bull mountains and joins the Tualatin River Greenway Trail at the southern end.

Rock Creek Trail
From the confluence of Rock Creek and the Tualatin River, the trail parallels the stream to its confluence with Beaverton Creek. The trail follows Beaverton Creek to the confluence of Bronson Creek.

Sandy River Gorge Trail
This trail follows the Sandy River, connecting the Sandy River delta on the Columbia River with Lewis and Clark State Park and terminating at Dabney State Park. It may eventually extend as far as Oxbow Regional Park, but at present the connection will be restricted to the proposed water-based river trail.

Scouters Mountain Trail
This trail forms a north-south link between the Springwater Corridor and the Clackamas River Greenway Trail. It follows Rock Creek from the Clackamas crossing Scouters Mountain and joins the Springwater near Powell Butte.

Springwater Corridor
Beginning beneath the Sellwood Bridge and now in city of Portland ownership, the route to the east generally follows Johnson Creek passing through Tideman Johnson Park, Beggars Tick Marsh, Leach Botanical Garden, Powell Butte, the Gresham Greenways and ultimately to Barton Park.

Tonquin Trail
The Tonquin Trail connects the Tualatin National Wildlife Refuge to the Willamette River near Wilsonville. It passes through the Tonquin geological area and the Dammasch property recently acquired by the Division of State Lands, before joining the Willamette Greenway Trail.

Lower Tualatin Trail
Following the Tualatin River from the proposed Wildlife Refuge to confluence with the Willamette River, this trail makes additional connections with Hedges Creek, Nyberg Creek and Saum Creek Greenway.

Upper Tualatin Trail
This trail follows the Tualatin River between Jackson Bottom and Rock Creek wetlands along tight meanders in the river. It is anticipated that river access points near either end could provide a parallel river trail route between these two anchor sites.

Wildwood Trail
From the north at the St. Johns Bridge, passing through the largest protected natural area in the metropolitan area, this trail provides walkers access to a variety of natural systems. The 23-mile trail links the St. Johns Bridge with Audubon House, Pittock Mansion, Hoyt Arboretum, Metro Washington Park Zoo and the International Rose Test Garden. It is primarily a hiking trail since the grades required do not allow for traditional bicyclists or handicapped access.

Willamette Greenway
The primary focus of the Greenspaces system with regard to the Willamette Greenway is that portion that extends between Wilsonville and the confluence with the Columbia River. A priority of the Greenspaces Regional Trails System is completion of as much as possible of this portion. This major north-south connection links with many existing and proposed trails and natural areas.

West Willamette Greenway Trail: Camassia, Mary S. Young, George Rogers, Willamette Park, Forest Park and Burlington Bottoms on the west side.

East Willamette Greenway Trail:
Clackamette Park, Meldrum Bar, Milwaukie Waterfront, Oaks Bottom

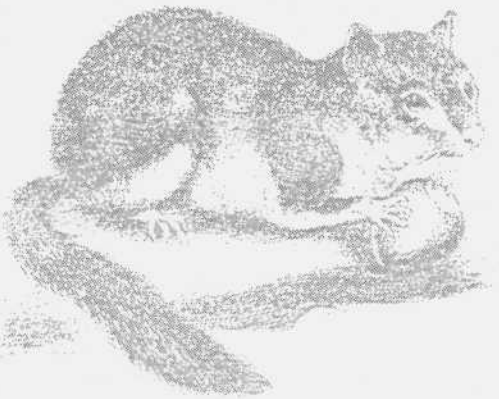
RIVER TRAILS

Clackamas River Greenway
The Clackamas River between River Mill Dam and Carver is designated as a scenic river by the Oregon Scenic Waterways Program. Access points, in association with the land-based trail proposal, should be considered at regular intervals.

Columbia Slough
The remnant channel of the Columbia Slough is navigable by canoe or kayak with occasional portage around culverted sections and across flood control dikes.

Lewis and Clark Trail/Willamette Greenway
The Lewis and Clark Trail follows the Columbia River through the metropolitan area. Several boat ramps and river access points also exist along the Willamette. These routes may be less appealing for non-motorized craft due to commercial and motorized recreational boat use.

Sandy River
The Sandy is among the most pristine rivers in the metropolitan region and already provides superb recreational opportunities for non-motorized craft. Additional access points will be considered in the course of planning the regional trails system.



Tualatin River Greenway
The Tualatin River between the Willamette and the confluence with Dairy Creek at Jackson Bottom has been designated as a river trail. Opportunities for additional access points will be explored as planning for this route continues.

Metro and cooperators in the Greenspaces program will:

2.6. Use existing trail systems including the 40-Mile Loop, the Willamette Greenway and trail systems in Clackamas, Clark and Washington counties as the initial framework for the Greenspaces Regional Trails System.

2.7. Connect the Greenspaces Regional Trails System to inter-regional trail systems that link the metropolitan region to destinations outside the planning area including:

North: to Mt. St. Helens, Gifford Pinchot National Forest via the Clark County and Washington systems of trails.

South: along the Willamette Greenway to Salem and Eugene including historic and natural landmarks in the Willamette Valley.

East: to the Columbia River Gorge National Scenic Area via the Chinook Trail; the Mt. Hood National Forest Trails via the Springwater and Barlow Road; establishing a strong connection to the Pacific Crest National Scenic Trail.

West: to Astoria via the Portland to the Pacific Trail; Tillamook via the Banks-Vernonia Trail and other rail abandonments; and to Tillamook State Forest trails system creating a link with the Oregon Coast Trail.

2.8. Link community and local trail systems to the Greenspaces Regional Trails system.

2.9. Encourage the Greenspaces Regional Trails system to be included in local planning documents.

2.10. Integrate the Greenspaces Regional Trails System with on-road trail systems in the region.

2.11. Identify biological corridors or opportunities to establish biological corridors through restoration efforts that can potentially connect significant natural habitat areas.

Metro will:

2.12. Inventory and prepare a master map and list of trails, greenways and corridors for the region.

2.13. Provide public information on the status of trails throughout the region.

2.14. Coordinate and facilitate planning, funding, acquisition, design, development, construction, operations and maintenance of the Greenspaces Regional Trails System including:

- trail standards, surfacing and signs for the regional system
- accessibility standards
- user policies
- safety standards for trail design and development

2.15. Coordinate a standing committee composed of Metro staff, Greenspaces cooperators and citizen advocates who will periodically evaluate system development and advise Metro on prioritization of trails projects, review management guidelines, and extend the system as appropriate. The following criteria will be used in setting priorities:

- inclusion in planning document(s) of the local government(s) through which the trail is routed.
- potential for use as loop trails in conjunction with local or regional trail segments.
- trails and corridors which interconnect natural areas, parks, open space and destinations of regional significance.
- segments which complete major systems.
- length and continuity of trail and/or corridor; connections to inter-regional trails.
- wildlife use.
- local support for the trail and/or corridor.
- immediacy of decision when opportunities to establish corridors may be lost due to imminent development or changes in property ownership.
- abandoned rail corridors.
- expanded access to river routes.

Restoration and Enhancement of Areas Deficient in Greenspaces

> *"Man requires a feeling of permanence to attain a sense of place, importance and identity. For many persons in the city, the presence of nature is the harmonizing thread in an environment otherwise of man's own making."*
>
> *Columbia Regional Association of Governments, 1971*

Opportunities to restore open space

Ecologically deficient areas must be addressed in the overall strategy for natural area enhancement in order to provide access to the richness of natural settings to every resident of the region. In some cases, areas of the metropolitan region have been so intensely urbanized that greenspaces have been all but eliminated from neighborhood access. The best option for providing natural areas in these neighborhoods may be to identify opportunities to restore lands as open space.

Through a series of analyses, potential open space sites can be identified within these areas of deficiency, which can then be individually examined more thoroughly for their potential. There might be opportunities for restoration of degraded vacant sites specifically to provide small enclaves in densely populated areas. There could also be enhancement of existing publicly owned lands, such as parks or schools that would not only provide places for enjoyment but would become part of the education of those involved in the restoration activities.

Because an acquisition program will not benefit areas with little or no open space remaining to purchase, Metro will give a priority in the overall strategy for enhancement to neighborhoods that are deficient in open space and natural areas. In some cases, restoration might involve the "daylighting" of culverted streams. It could also include enhancement of backyard wildlife habitats or street tree planting, which would help provide additional green to offset the city's "heat island" effects.

Restoration projects should be focused on, but not limited to, river and stream corridors and the riparian zones along these waterways. These projects support the Greenspaces objective of planning by watersheds, working for the improvement of water quality and providing best management of stormwater run-off problems.

Metro and cooperators in the Greenspaces program will:

2.16. Identify portions of the region deficient in natural areas and identify opportunities for major ecological restoration programs in these deficient areas.

Criteria to be used in selection of restoration sites include:

Human component
- Access to sites from large population groups
- Near schools
- Potential linkages to regional trails system
- Community support for projects

Ecological component
- Feasibility of ecological restoration
- Component of the existing open space system (i.e., park)
- Nearness to other potential habitat or
- corridors
- Sustainability of ecosystem relative to adjacent land use
- Significance of contribution to other beneficial environmental functions (i.e., water quantity/quality, floodplain protection)

Metro will:

2.17. Work with government agencies, citizens groups and the development community to identify potential restoration sites in areas deficient in greenspaces.

2.18. Provide technical and financial assistance to local restoration projects, as resources allow.

2.19. Extend the potential for wildlife to coexist within a framework of human settlement by promoting land use design and management that encourages ecological diversity and restoration in areas deficient in greenspaces.

Protection through Resource Management Plans

> *"More than overhunting, bad air, fouled water, or invading organisms, habitat fragmentation – the chipping apart of natural landscapes into patches isolated amid human development – deals biodiversity its heaviest blows."*
>
> *William Stolzenburg*
> *The Nature Conservancy*

Coordinated operating practices

To ensure consistency and continuity in operating practices, Metro and local agencies will maintain greenspaces included in the metropolitan-wide system in perpetuity in accordance with management plans. Acceptable maintenance, types and levels of programmed use, and development standards will be established for all components of the Greenspaces system by Metro, in conjunction with cooperating parks providers. These plans will serve as the basis for local government, special district, nonprofit organization, or Metro improvement and operations of the sites and the site operator (Metro or local government) shall be responsible for operation and management in compliance with the standards developed through the management plan.

The management practices employed by Metro, local governments, special districts or nonprofit groups for the operation and maintenance of greenspaces will be consistent with the adopted master plan and with specific site management plans. Metro will budget for and manage, operate and maintain all or portions of the greenspaces system that are of regional significance. Metro may make provisions with local parks providers for management of greenspaces of regional significance through intergovernmental agreements.

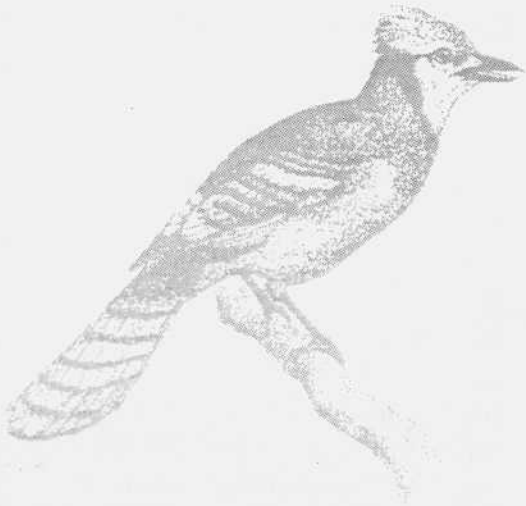
Local agencies will budget and fund the operation and maintenance of those portions of the greenspaces program to be administered by local governments. Local governments, special districts and Metro may choose to contract with private entities, nonprofit organizations and other providers for development, operation and maintenance, provided improvements and activities are consistent with adopted Greenspaces management plans.

Metro will offer local governments the opportunity to commit first to the management responsibility by intergovernmental agreement in order to protect and manage greenspaces of common interest. The first right to manage will only be offered to local governments providing park services as of July 1, 1991, in whose service area the greenspaces are located. If the local government accepts management responsibility from Metro, the accepting government will be responsible for funding the operation and maintenance of the greenspace with its own resources. If the local government chooses not to accept management responsibility and Metro does, Metro will be responsible for funding the operation and maintenance of these sites with its own resources, including private, federal and/or state grants.

As a part of the process of developing management plans, an inventory of the resources on each site will be taken. Within the context of implementing a regional system of natural areas, management planning teams will assess and evaluate existing public land uses and land management practices and pursue answers to questions that clarify best use of the land.

Metro and cooperators in the Greenspaces program will:

2.20. Require owners and operators of regionally significant natural area sites to manage these sites in compliance with approved management plans.



Metro will:

2.21. Prepare resource management plans for all regionally significant natural area sites, in cooperation with local and state governments, special districts and nonprofit groups, in a timely manner. In no event will site development or formal public use precede adoption of management plans.

2.22. Potentially adopt interim protection guidelines during preparation of management plans for regionally significant sites.

Financing the Greenspaces System

"The livability of Oregon is our competitive edge in economic development. Practicing healthy environmental stewardship isn't just a matter of good citizenship, it's also a matter of good business."

Richard Reiten, president, Portland General Corporation, 1990

Financing acquisition and capital improvements

To date, major funding to initiate planning for the Metropolitan Greenspaces program has been provided by the US Department of Interior Fish and Wildlife Service. As this federal source of start-up funds ends in fiscal year 1993-94, we must look elsewhere for support of site acquisitions and capital improvements, as well as support for general operations and maintenance of the Greenspaces system.

With Metro serving as coordinator of the Metropolitan Greenspaces program, a key strategy for public implementation of the Greenspaces system is possible. Because its focus and programs cross local jurisdictional boundaries, Metro will be able to propose funding on a regional basis to secure significant natural areas for inclusion in the Greenspaces system and thereby provide a solution to greenspaces protection on a regionwide basis.

Acquisition, while one of many tools to protect open space, is an essential strategy in developing a regional system of natural areas, open space and trails for the four-county area. With a dedicated source of funds, lands will be purchased as a means of protection; rights-of-way may be purchased to establish trails and wildlife corridors; restoration of existing degraded natural areas could be carried out, as well as negotiations of easements that preserve open space through a process that allows for continued private ownership of the majority of land.

Any financial solution and long-term plan must be developed on a regional basis, with funding for this regional system coming from throughout the district. The major source of funding currently available is a regional general obligation bond. The total assessed value of land and improvements within Metro's boundaries is more than $45 billion. While there are many variables involved in estimating how far funds from a bond would go toward acquisition of significant sites, a multi-million dollar bond might enable Metro to begin the important process of natural areas protection on a regional basis.

No other source of public revenues can generate an adequate amount of funds to "jumpstart" the land assembly process for the Greenspaces system. Bond funds can only be used for acquisition of land and capital improvements.

An overview of finance-related roles and responsibilities of cooperators in the Metropolitan Greenspaces system indicates that:

1. Metro will establish a Metro/local government split of the initial capital and acquisition funds that are raised on a regional basis. The regional (Metro) share of the net bond measure will be 75 percent; the local share will be 25 percent. Metro will use the regional portion of funds solely for acquisition and development of greenspaces of regional significance.

2. The local share of funds will be distributed to eligible parks providers as follows:

a. the local share will be allocated on the basis of assessed valuation by county.

b. parks providers within each county will negotiate an allocation formula for distribution of the countywide total among each parks provider in that county.

c. if parks providers cannot agree to a formula for distributing countywide shares, Metro will designate the formula.

3. Funds are to be used for any locally determined open space, parks and recreational acquisition and capital needs. Funds may not be used for operations and maintenance activities. Eligible local governments and special districts may form consortiums to combine their allocations for eligible purposes.

Expenditure of the local share of funds is under local government control to the extent that such expenditures conform to legal requirements. The local share funds must adhere to federal tax laws for tax-exempt bonds, to the limits of the ballot measure authority and to Ballot Measure 5 restrictions. Intergovernmental agreements will be developed for each local government project prior to local expenditures.

Cooperative planning efforts and a regional/local partnership are the foundations of a regional financing program. Metro and local parks providers may contract with nonprofit organizations to assist in site acquisition and capital improvements. All lands and conservation easements acquired by general obligation bond funds will be in public ownership as natural area/open space. Deed restrictions will be used where appropriate. Bond funds for capital improvement and restoration projects will be spent on lands, easements and/or improvements owned by a public agency.

A five-year plan will be created that will list all priority acquisition and construction/restoration projects on Metro-owned and managed greenspaces. A planning, budgeting and project monitoring system will be developed between Metro and local park providers to oversee the use of the local share of funds from a bond.

Metro may make "extra-territorial" purchases of land and conservation easements with potential revenues from a regional bond measure. A regional bond measure under Metro's bonding authority would allow the agency to buy lands outside its boundaries for open space protection if the residents within the district benefit. Many pristine and undeveloped lands important to the region are located outside of Metro's boundaries.

As the agency in charge of the bond, Metro would issue the bonds, coordinate all purchases and capital costs, and be the legal authority responsible to the U.S. Treasury and bond holders. The bonds would be secured by a tax on real property (land and improvements) within the Metropolitan Service District.

Operations and maintenance issues

The Greenspaces program involves much more than simply issuing general obligation bonds. Funding of acquisition and capital improvements is one key component; the second is funding of ongoing operation and maintenance of the acquired lands.

The need to buy land before it is developed and before the purchase price increases is apparent. In the early phases of the Metropolitan Greenspaces system, Metro may choose to land-bank as much of its purchases as possible in order to protect significant areas, yet still be able to minimize operations and maintenance costs.

Even if Metro acquires or accepts donated lands into the regional Greenspaces system, public access can be limited or forbidden pend-

ing the creation of a complete operations fund. Since the lands are to be kept as natural as possible, minimal landscaping and grooming costs would be necessary. Metro will cover the cost of liability insurance, safety and security costs for newly acquired greenspaces under its self-insurance fund.

A long-term funding source for Greenspaces operations must be identified. Basic maintenance costs assume that the land would be purchased and developed for passive, if any, recreational use. The funding of operational protection of the land must be a comprehensive approach that considers all available resources, including revenue generated internally by Metro, public funds, volunteer services and fund-raising efforts.

It is assumed that the land will be essentially left as is and, consequently, operating costs will be low. Possible revenue sources that may meet the needs of operations and maintenance include:

- Greenspaces parking permit
- Day-use fees and camping fees
- Concessions revenue
- Real estate taxes, such as a real estate transfer tax, a building permit charge or square foot on new construction charge, or a land corner preservation fee
- Vehicle rental charge
- "Green" fees, such as an excise tax on beer and wine, special bottle deposit programs, container taxes or tire sale fees.

If Metro chooses to enter into an intergovernmental agreement with another public agency to maintain selected greenspaces and trails, the local authority would bear the cost of operations and maintenance at these sites. This increased cost to the local jurisdictions would be offset, in part, by the availability of acquisition and capital costs from Metro. Metro may also choose to enter into contracts with local land trusts and nonprofit conservation organizations to operate and maintain greenspaces and trails. Local land trusts use volunteers and can receive liability insurance from national and private organizations such as the Land Trust Alliance.

Virtually all open space programs throughout the U.S. make extensive use of volunteers and "friends" groups to provide some maintenance and programming services. Services can range from general clean up to education and docent activities. Correctional inmate programs and youth crews are other additional sources for assistance.

In the course of acquiring lands for the Greenspaces program, it is likely that Metro and cooperators in the program will use various means to secure the rights to land. This will include outright purchase of the title to land as well as methods that do not include land ownership but insure preservation of the character of the land in its natural state.

Outright land purchases may require assistance from real estate professionals as well as nonprofit land preservation organizations, such as the Trust for Public Land, the Nature Conservancy, the Conservation Fund or the American Farmland Trust.

In some cases, Metro and other cooperators may be able to accomplish the goals of preserving land as greenspace without having to acquire title to the land. For example, a conservation easement can be obtained as a result of an agreement between a landowner and a public entity that limits the development rights on the property. The easement itself attaches to the deed on the land and defines the future uses of the land in perpetuity. The landowner continues to own the land, but the development restrictions placed on the property are recorded on the deed to the land. Conservation easements may either be donated or sold by the landowner. In the case of sale of the

easement, the cost could be a small fraction of the cost of outright purchase.

Conservation easements are an effective means of retaining property as a scenic backdrop. In such a case, public access to the protected property may be limited, but the natural qualities of the land will not be compromised by future development. Conservation easements can be drafted, however, to allow for public access through use of a trail easement or other mechanism set forth in the legal documents establishing the easement.

It may be possible that, if natural area sites held by local agencies through tax-foreclosure or mitigation are sold, cooperators can dedicate a portion of the revenues to Greenspaces acquisition and enhancement efforts. If valuable resources are not to be retained in public ownership, we may also want to consider the sale or transfer of title with an imposition of deed restrictions that would assure long-term protection of the resources.

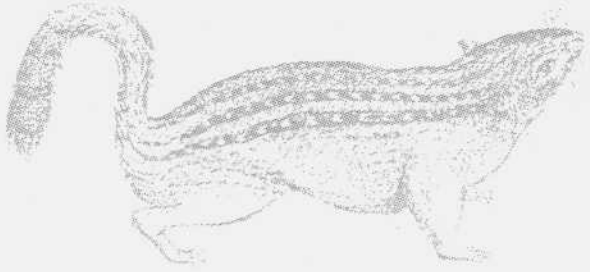
Donations and dedications

Possibilities exist to augment operating resources through fund-raising activities, memberships to a Greenspaces organization, "adopt an acre" programs, auctions and other targeted fund-raising activities. Earnings could be used to build a Greenspaces endowment for use in additional acquisition and capital improvements. An endowment could also be managed to return interest income each year that could be used for operation of regionally significant natural areas.

There are many individuals, businesses, private foundations and other potential donors who require or prefer that their support of Greenspaces-related efforts be channeled through a nongovernmental entity. To serve these supporters, a Greenspaces foundation will be established. It will be a private, nonprofit organization with an independent board of directors dedicated to the support of Greenspaces programs and operations. Its function will be to encourage, facilitate and coordinate the donation of property and conservation easements to the Metropolitan Greenspaces fund and/or other appropriate public or private parks providers, land banks or land trusts. It will also receive gifts from private sources of other assets such as cash, stocks or bonds that can be sold or used to further the Metropolitan Greenspaces program goals.

A Greenspaces foundation and all of its programs will be aimed at reaching the general public and private donors with information and advice on conservation issues that will help instill in the community a general sense of stewardship for the community's natural resource areas. The existence of a nonprofit support organization for Greenspaces will enhance the efforts of Metro and expand its outreach and funding capabilities. One important program a foundation will undertake will be the establishment of an endowment fund that will ensure continued private support for the Greenspaces system.

A Greenspaces foundation will encourage donations and dedications to the regional greenspaces system as well as to local park/open space systems. Donations and dedications will be reviewed case by case to see if they would be complementary to and cost effective to maintain in the regional system. Dedications of land, cash and other assets may be used to endow the acquisition/capital improvement fund and/or the operations/maintenance fund.



Metro and cooperators in the Greenspaces program will:

2.23. Evaluate lands of regional significance case by case to determine the best method to achieve system integrity, cost efficiency, and management efficiency and consistency.

Metro will:

2.24. Support development of new funding resources for the Metropolitan Greenspaces program and encourage, facilitate, and coordinate donations of land and related scenic and conservation easements as part of the Greenspaces system. Dedications of land, easements and cash to local jurisdictions will continue to be promoted.

2.25. Establish a Greenspaces acquisition and capital improvement fund to collect and manage funds dedicated for these purposes.

2.26. Make funding decisions consistent with the priorities of the master plan, acquisition and capital improvement plans.

2.27. Facilitate establishment of a Greenspaces foundation, a separate, private nonprofit organization dedicated to the support of Greenspaces programs and operations that would encourage and accept private donations of land, easements and other tangible assets such as cash, stocks or bonds, which would further the regional natural areas system. Acceptance of management responsibility for areas of mitigation will be considered case by case.

2.28. Establish, manage and fund a Metropolitan Greenspaces dedicated fund for acquisition, operations, and maintenance of sites, trails and corridors.

2.29. Propose, promote and implement a funding strategy to address ongoing operations and maintenance requirements of Metro-owned or Metro-operated greenspaces and parks.

2.30. Serve as a regional planning and financial information clearinghouse for projects related to the Greenspaces program regardless of how they are funded.

Protection and Enhancement of the System through Citizen Involvement, Education and Technical Assistance

Protection and Enhancement through Citizen Involvement and Education

> *"If you went out and took a picture now and looked at that picture 30 years from now, would you be satisfied with what you have?"*
>
> *Randy Fisher, director, Oregon Dept of Fish and Wildlife*

Citizen involvement

As required through Statewide Planning Goal 1, the Metropolitan Greenspaces Master Plan and its programs have been built on a strong base of community cooperation and unparalleled communication about regional greenspaces planning issues. To move ahead into the future, we need to ensure that interested agencies and citizens are informed, invited and involved at every level of the plan's implementation.

In implementing the master plan, it is important to acknowledge that not all lands will be protected through the acquisition and protection of a public agency. Therefore, it will be important for Metro and cooperators in the Greenspaces system to build and support a communication network among citizens and resource groups, establishing stewardship programs for private property owners, developers, builders, corporations, real estate industry and others so that privately held lands will be protected, developed or restored in a manner supportive of the Greenspaces theme.

Communication is one of the keys to building in our citizens a better awareness of their environmental options. Building regional communication networks around programs related to greenspace issues will be vital to successful implementation of the plan. As members of the public gain a comprehensive understanding of urban greenspaces challenges and opportunities, they will become active partners in our efforts to determine our future planning choices and help us conduct periodic public review of the master plan and other related plans.

In the early years of the Metropolitan Greenspaces system, energy and resources will be devoted to acquisition and preservation efforts. It is also important that we maintain a biologically and socially balanced approach to implementation of our plans. It will be important for Metro, as coordinator of the program, to integrate protection of natural resources with economic development, citizen involvement and recreational challenges and opportunities.

Implementation efforts in Metropolitan Greenspaces that focus on citizen involvement and education will be targeted to:

- increase awareness of natural areas and open spaces in the region.
- increase awareness that these areas are being lost to urban development and poor land management practices.
- develop a broad constituency that will understand the need for a broad-based land preservation strategy.
- empower the public to become involved with Metropolitan Greenspaces plans and programs through education and outreach activities.
- involve community members in preservation efforts centered around the stewardship of regional, as well as private and neighborhood, natural areas and open spaces.
- establish the Metropolitan Greenspaces program as the clearinghouse and regional coordinator for educational programming,

technical assistance and general information on natural areas and open spaces in the region.

- promote the implementation of incentive programs that enhance the stewardship of natural resource values on private or nonpublic lands.

Building environmental education networks

The Metropolitan Greenspaces program will have a three-pronged focus for environmental education services and programs:

- work with local school districts and other education providers, neighborhood groups, resource agencies, etc., to coordinate, interpret and expand community knowledge about urban natural resources.

- develop and help seek ways to fund environmental education models that can be used at numerous greenspace sites by diverse students of all ages.

- provide at regionally significant sites, as funding resources become available, interpretive services and centers such as urban rangers, naturalists, volunteer tour guides, etc., to enhance understanding, protection and use of our urban natural areas.

With a long-term commitment to establishing effective communications systems among environmental education providers, Metro will facilitate a holistic approach and ensure a greater awareness and understanding by the general public of the special qualities of the greenspaces in the region. To this end, Metro will work with Greenspaces cooperators to provide interpretive materials and assistance to school districts, teachers and environmental education providers related to a variety of sites and school use of those sites.

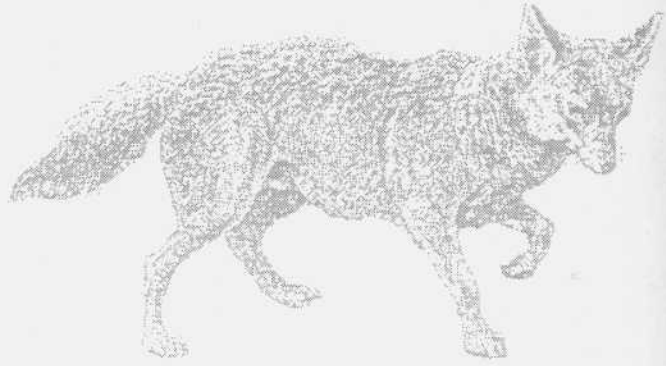
Metro will also establish a clearinghouse that will maintain a library of existing educational materials; provide marketing and informational materials; make referrals, house maps, brochures and periodicals; offer training and workshops; coordinate programs and schedules for Greenspaces-related environmental educational offerings.

As in all areas of implementation related to citizen involvement and education, Metro will cooperate with local, state and federal park providers, natural area and wildlife refuge managers, as well as other nonprofit organizations to:

- develop a coordinated Metropolitan Greenspaces sign system to be used throughout the regional system of sites that reinforces the concept of the area-wide system and the importance of preserving our natural environment and its related historical and cultural resources.

- develop brochures, books and facilities that interpret the Metropolitan Greenspaces system and its various sites.

Environmental education programs at regional sites and facilities should be designed to attract participants of different ages, ethnic groups, socio-economic levels and abilities. Environmental education programs also should be designed to become an integral part of everyone's lives, regardless of where we live, our age, ethnic, socio-economic group or level of ability.



Metro and cooperators in the Greenspaces program will:

2.31. Provide ongoing opportunities for public information sharing and citizen involvement in master plan implementation, land acquisition, resource development and operations of greenspace-related programs.

2.32. Serve as advocates for protection, restoration, conservation and management of natural areas in and adjacent to the metropolitan area, including management of passive recreational opportunities where appropriate.

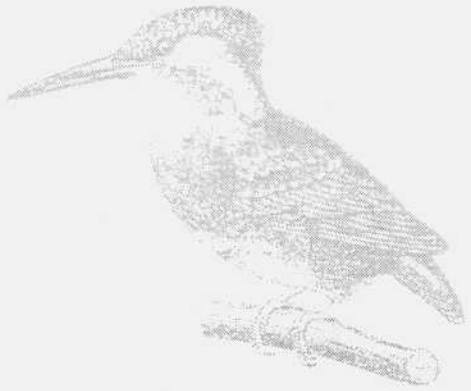
2.33. Promote public appreciation and understanding of the relationship between a healthy environment and a sustainable economy and encourage public involvement in natural resource management decisions.

2.34. Provide mechanisms for the business community to be involved in protection of natural areas.

2.35. Work with neighborhood groups, individual businesses, civic and community organizations to encourage volunteer support of operations and maintenance programs and encourage appropriate use of publicly owned natural areas.

2.36. Initiate education programs to inform the public about opportunities related to protection, restoration or creation of greenspaces; about soil and water quantity/quality challenges; about responsible use of sites and how the public impacts these and other natural resources; and about how citizens can become involved in solving these problems.

2.37. Work with environmental education resource organizations and agencies to use natural areas as vehicles for learning about the environment, to prepare and provide materials and facilities, where appropriate, that interpret urban natural areas and the regional Greenspaces system.



Metro will:

2.38. Continue to work with appropriate advisory committees, including members of the general public, planners and policy-makers, to review key steps in greenspace acquisition and management planning.

2.39. Host public forums to shape and review greenspace site-management plans and thereby provide opportunities for people to know about management and care of greenspaces in the region.

2.40. Periodically conduct public-opinion polls and monitor the use and accessibility of greenspaces and related programs by the general and special publics.

2.41. Facilitate and coordinate regional environmental education providers who have programs related to greenspaces by building and supporting a communication network among these resource groups, including establishment of a clearinghouse for environmental education related to greenspaces.

2.42. Establish partnerships with appropriate public and private land-holding entities, geographically based community land trusts and "friends" groups throughout the metropolitan area.

2.43. Establish a clearinghouse, referral and information center to provide to the public information on the private land trusts and public agencies in charge of open spaces, natural areas, wildlife corridors, trails and greenways.

Protection and Enhancement through Technical Assistance

> *". . . become more skilled in living with the earth rather than on it . . ."*
>
> *East Bay Regional Park District brochure*

Assistance in land management issues

As coordinator of the Metropolitan Greenspaces program, Metro will develop technical assistance capabilities to advise landowners, developers and public officials on environmentally sound land management practices and design concepts for sensitively integrating development with natural resources and the landscape. Advice on biological and natural resource management capabilities will be provided local governments, private organizations and individuals to support implementation of best management practices for greenspaces.

Through the Metropolitan Greenspaces program, Metro will serve as a clearinghouse to help provide information on technical assistance programs provided by a variety of agencies and programs. Additional assistance will be given the public and other agencies in locating information and finding guidance relevant to environmental regulations related to greenspace issues.

Metro will assist other partners in the Greenspaces program with preparation of informational displays about habitat enhancement programs for protected natural areas so that residents of the region may have the knowledge needed to participate effectively in public policy processes and natural resource management issues.

In providing technical assistance and teaching conservation techniques, Metro will prepare and provide educational and informational programs for planners, schools and interested public groups on conservation techniques that range from use of straw bales in construction to how to establish conservation easements.

Tools for sharing this information may include videos, brochures on conservation techniques and development processes, handbooks, guides to building permit processes and planning issues, classes, one-on-one consultations, demonstrations, maps and exhibits.

Metro and cooperators in the Greenspaces program will:

2.44. Propose and promote incentives for private landowners, developers, resource agencies, jurisdictions and the public to conserve natural areas and their associated values.

2.45. Provide technical assistance materials to and educational opportunities for the general public both at home and at the workplace, so that individuals learn about stewardship of natural resources, ecological principles and environmentally sensitive lifestyle choices.

Metro will:

2.46. Set management guidelines in consultation with appropriate advisors and cooperators for habitat, species and recreational use throughout the metropolitan area and prioritize ecological sites for the purpose of conservation, preservation, acquisition and recreation.

2.47. Coordinate and provide technical assistance and education, as resources allow, to the general public, businesses and industries related to land development (such as real estate, development and contracting communities) that encourage conservation techniques to protect urban natural areas.

Protection and Enhancement of Publicly Owned, Quasi-Public and Private Tax-Exempt Lands

> *"If we can learn to understand, protect and preserve what we already have, the benefits will fall to us."*
>
> *Henry J. Stern, commissioner, New York City Department of Parks and Recreation*

Enhancement of open spaces

Extensive lands are in public ownership as parks, highway and utility rights-of-way, as well as in quasi-public ownership, such as municipal facilities, schools, cemeteries and churches. They offer potential in extending the native plant cover from the countryside into the heart of the city. By providing environmental and visual enhancement to roadsides, they also could provide significant habitat for appropriate wildlife species.

Native groundcovers could replace mowed grass, which is not only the least productive planting for wildlife but also requires considerable maintenance. The species composition should be reconsidered to include a greater dominance of native species appropriate to the setting. Planting guidelines and lists should reflect native species and promote transition toward reinforcing native vegetation.

The original plant community that once covered the entire region has been systematically replaced by foreign plants that accompanied the settlers. It has continued to diversify as more imports have been introduced. More thorough investigation of native species should be undertaken to identify those that would fulfill human needs while reinforcing the native landscape. Replacement of exotic trees and shrubs will restore some of the integrity of the native landscape and provide cover in the relative quiet of residential streets.

Mitigation for private actions cannot occur on public lands, but the desirability of accepting into the Greenspaces system proposals involving mitigation efforts and sites will be evaluated. Principal tests will be that such sites or proposals physically extend or enhance the quality and diversity of the existing Greenspaces system, that they comply with state and federal regulatory programs, including U.S. Fish and Wildlife Service and Environmental Protection Agency wetland mitigation policies.

Mitigation must be entirely funded in perpetuity through mechanisms such as acquisition, capital improvements, operations and maintenance by the responsible private party. Once those are secured, the area could be conveyed along with funding for management to a public entity cooperating in the Greenspaces system.

Metro and cooperators in the Greenspaces program will:

2.48. Encourage adoption of planting standards that promote the use of appropriate native plants in the extensive highway and utility rights-of-way to restore the original native plant community to the extent practicable.

2.49. Encourage management practices by all road and utility providers and maintenance operations that enhance the potential for wildlife along rights-of-way.

2.50. Seek to prevent fragmentation of natural areas, trails, and corridors that are part of the protected Greenspaces system, once established, and seek to minimize disturbances or impacts to ecological systems (such as by roads or utility linkages). When adverse impacts are unavoidable, Metro and cooperators in the Greenspaces program will advocate for appropriate mitigation efforts to minimize damage and losses at the expense of the responsible individual, agency, organization or corporation.

2.51. Encourage appropriate agencies to provide native plantings on publicly owned lands, such as transportation corridors, sewer and water rights-of-way, and to manage them for wildlife habitat values appropriate to the setting.

2.52. Inventory surplus government lands and tax-foreclosed properties within each jurisdiction on a regular basis and evaluate their potential as a part of the regional network of greenspaces. Surplus and tax-foreclosed lands suitable for inclusion in the Greenspaces system should be retained in public ownership.

2.53. Encourage holders of large tracts of open space such as golf courses, and holders of underutilized public lands and private tax-exempt parcels including cemeteries, churches, and schools, to establish native plantings compatible with the surrounding natural landscape and Greenspaces conservation goals. Maintenance practices should include minimal chemical input, maximum use of native materials and minimal irrigation requirements.

2.54. Consider case by case disturbed sites such as mineral-extraction sites or landfills as potential areas for restoration of natural vegetation and wildlife habitat and for integration into the Metropolitan Greenspaces system once activities causing disturbance cease.

2.55. Consider case by case the desirability of accepting into the Greenspaces system proposals involving mitigation efforts or sites.

Protection and Enhancement of Waterways and Floodplains

> *"We have to guard our rivers for public use and enjoyment and for the protection of the natural life that is a part of river life. Our rivers are the heart and symbol of the society of this city."*
>
> *E. Kimbark MacColl*

Protection and restoration

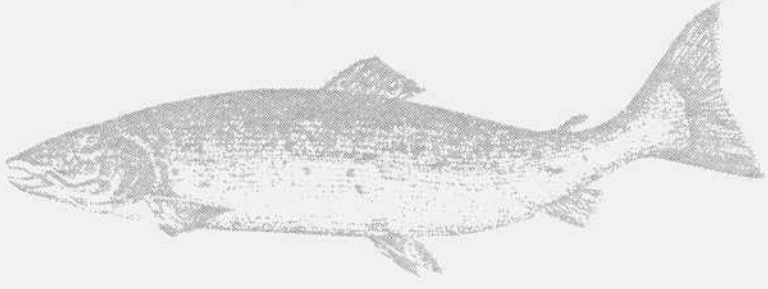
The metropolitan area is endowed with rivers and streams of great natural beauty. Prominent in the region, the Columbia and Willamette rivers provide a myriad of visual, recreational and commercial benefits. Although greatly changed in the course of development, restoration of altered sections could improve their natural character as well as enhance fish and wildlife habitat and recreational potential.

In some cases, if restoration programs were to be undertaken by the local communities, degraded reaches could be potentially significant scenic, fish and wildlife resources. Developing the potential of the region's waterways for recreation, education, tourism, the enjoyment and attractiveness of nature will be undertaken in a manner consistent with the long-term conservation of water quality, fish, wildlife and other ecological values.

Other rivers in the region have been less dramatically changed and should be afforded greater protection as linkages for fish and wildlife and people. Both the Tualatin and Clackamas rivers and many of their tributary creeks have broad, low-lying floodplains associated with them. Protection of floodplains simultaneously furthers several purposes compatible to Greenspaces system goals.

A major objective in preservation of floodplains lies in their function as natural reservoirs for stormwater during major rainfall events. Because they are natural storage areas that can be incorporated into regional flood control systems, they offer additional opportunities for wildlife and human uses. Open spaces that are occasionally inundated by flood waters can support a diverse flora and fauna and provide habitat for many migratory and resident wildlife species. In addition, functional floodplains offer a variety of passive recreational opportunities.

Stormwater management, water quality and flood control are basin-wide issues that should be coordinated among jurisdictions within each watershed. Water courses and watersheds are defined by natural features rather than jurisdictional boundaries. Metro, as coordinator of the Greenspaces system, will look at detailed planning on a watershed basis, working with water resource agencies to ensure that functional benefits to habitat and water quality are comprehensive and coordinated.



Metro and cooperators in the Greenspaces program will:

2.56. Promote the protection of natural areas along waterways and encourage continuous improvement of water quantity and quality through liaison with agencies that influence changes along streams and rivers in the metropolitan area.

2.57. Promote access to river systems for recreation, education and the enjoyment of these regional resources by the public in a manner consistent with protection of natural resource values.

2.58. Promote the incorporation of natural drainage systems into future planning and design processes and balance their contributions to environmental improvement with recreational uses.

2.59. Address the interrelatedness of greenspace protection, land use, transportation and water resources management issues.

Protection and Enhancement of Agricultural and Timber Lands

> *"We do not have to choose between a healthy environment and a healthy economy. We can and must have both."*
>
> *William Reilly*
> *Environmental Protection Agency*

Complementary linkages

Agricultural and timber lands provide valuable contributions to the regional economy. While sustaining themselves as a commercially viable use of the land, they also complement the Greenspaces program by providing linkages to larger natural areas of the urban area.

The Columbia, Tualatin and Willamette valleys are endowed with some of the most productive soils in the state. They provide potential for locally sustaining an increasing population in the urbanizing area as well as exporting food and fiber. Because agricultural lands are usually well-drained and level, there is often competition for construction of homes or businesses. Similarly, although perhaps not as fertile, forest lands may offer dramatic views over hilly terrain and are often desirable for rural view lots.

While acknowledging the need to maintain an adequate urban land supply required by Statewide Planning Goals 2 and 14, every effort should be made to continue the agricultural productivity of lands outside of the urban growth boundary through sustainable agricultural practices until such time as conversion to another use is appropriate, if ever.

In so doing, agricultural endeavors should respect natural systems that cross their lands. They should maintain riparian systems that function as natural filters and nutrient sponges and serve to protect the region's waterways from chemical input and excessive nutrient loading. Erosion should be minimized both to conserve the soil resource and to prevent siltation of water courses.

Forestry practices that assure sustained yields for future generations should be strictly adhered to on both public and private lands. Sound forestry practices will also minimize siltation of streams and rivers and contribute to healthy fish populations, which are also of commercial value. Alternative timber harvest methods should be explored, such as the "new forestry," which is visually and environmentally more sensitive than clearcutting techniques.

Metro and cooperators in the Greenspaces program will:

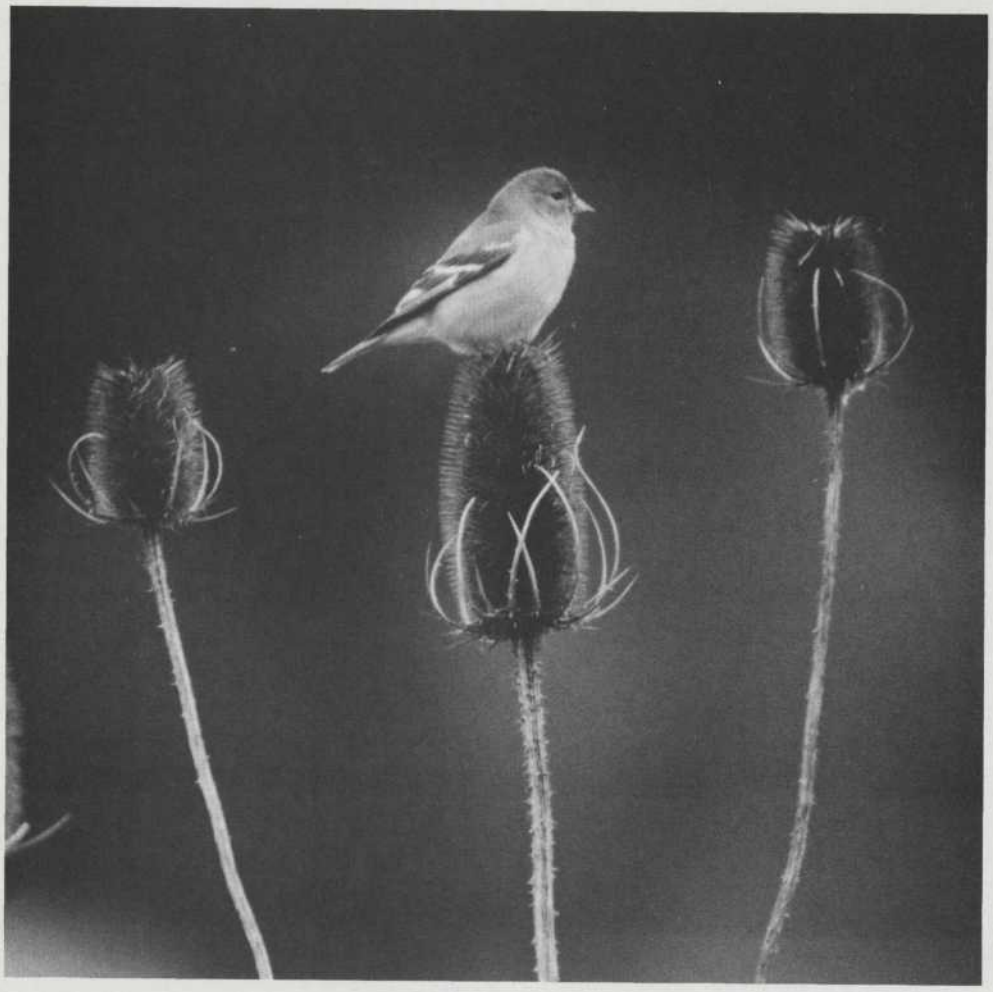
2.60. Within the framework of Statewide Planning Goals 2 and 14 and Metro's Regional Urban Growth Goals and Objectives, work with the Oregon Department of Land Conservation and Development, the Department of Agriculture's Extension Services, and other resource entities to promote settlement expansion that retains a sustainable agrarian economy in this region.

2.61. Within the framework of Statewide Planning Goals 2 and 14 and Metro's Regional Urban Growth Goals and Objectives, support planning, design and management practices that conserve prime agricultural lands outside the urban growth boundary, contribute to biodiversity and long-term productivity.

2.62. Support sound farming practices, including implementation of erosion-control practices and protection or restoration of riparian vegetation along watercourses connected to the Greenspaces system.

2.63. Support environmentally sound management of public and private forest lands within or on the edges of the urbanizing region and support strict enforcement of the state Forest Practices Act where applicable, or local regulations as they relate to harvest on steep slopes, lands adjacent to watercourses and waterbodies and timely reforestation.

History and Impact of Human Settlement
Geographic Features and Watersheds of the Region
Historical Planning Efforts



History and Impact of Human Settlement

The historic landscape

The topography and landscape of the region has been shaped by many events in geological and cultural history. Historic changes in sea level, periods of volcanic activity, the Bretz floods, and, most recently, human use and settlement of the region have all combined to produce our current landscape.

While geologic history has provided the region with its basic physical and climatological structure, it is the history of human settlement during the last 150 years that has done the most to alter the naturally occurring landscape. It is important to understand the changes that modern human society brings to the landscape if we are to approach planning and implementation of a Greenspaces system on the basis of landscape ecology.

In the 1880s ". . . .what really determined the flow of American pioneers into the Willamette Valley was its . . . beautiful prairies and oak openings, constituting an island in a sea of forest that swept practically unbroken from the Cascades to the Pacific . . . the ideal land of the pioneer . . . the perfect combination of fertile soil, timber in quantity sufficient for all needs . . . and close at hand a river route that led to a market. American pioneers could not resist such allurements."

The American Historical Review, 1923

In the 1840s, when the first American settlers began arriving, the metropolitan area was a land of forests, clear creeks, rivers, streams and marshes. To the west of the Willamette River, the landscape was dominated by mountains cloaked in fir, hemlock and maple with occasional stands of Oregon ash.

The wooded flatlands of the Tualatin Valley extended west to the Coast Range with marshy expanses along the river. The Tualatin Mountains, defining the western shore of the Willamette through the future city, were steep and heavily forested, sloping to riparian sloughs along both shores.

East of the Willamette River, the Portland Terraces, the ancient floodplains of the river that were "abandoned" as sea level dropped and the river incised deeply, were heavily wooded with fir and hemlock, dotted with stands of Oregon oak on the gravelly soils left by the Bretz floods. Once cleared, these broad, level expanses of fertile, well-drained soils were ideally suited for farm land.

Toward the Cascade foothills, the increasingly rolling landscape was punctuated by forested buttes, relics of a period of volcanic activity. The rich lava-derived soils of these buttes, combined with dramatic changes in elevation and aspect, supported a rich diversity of habitat niches with access to well-watered valleys.

The Willamette River flowed north through a broad, fertile valley stretching between the Coast and Cascade mountains. At the confluence with the Columbia, Sauvie Island divided the Willamette into small rivulets connecting the two rivers. With its interwoven channels, the island landscape blended so subtly with the Columbia Slough that the Lewis and Clark Expedition twice passed the river without noticing it.

Between the low flow-line of the Columbia River and the bluffs on either side, an extensive system of lakes, marshes and braided streams provided floodplains for the torrential runoff in winter and spring. Since the dynamic flows of the river system allowed only the most resilient

riparian vegetation to survive its erratic changes in flow and level, much of the shoreline remained as mud flats. The main stem of the Columbia brought massive runs of salmon each year, many of which turned into the Willamette to trace its many tributaries to spawning gravels far inland.

The history of settlement

Oregon settlement has been described in five successive periods of development according to influences brought about by changes in mobility and trends in planning. **Early Settlement** is the least represented in the surviving record and is known primarily from informal documentation. The **Railroad Era** (1865-1884) reflected the opening of the region to extensive trade capabilities and accessibility to an increasing population influx. The **Progressive Era** (1885-1913) experienced increased influence from other parts of the country and the world and saw the firm establishment of development of the region. The **Automobile Era** (1914-1941) displayed the increasing influence of the automobile on growth patterns and set the stages for the **Modern Era** (1942 to present.)

The benign climate and abundance of food that had sustained native populations for millennia before the arrival of early settlers continued to provide food and resources for trade for several generations. Rivers and streams were filled with salmon; the land provided fruits and game in seemingly endless abundance. Forests of primeval dimension extended in all directions to nearly incomprehensible horizons. The land appeared able to supply infinite resources, but as more settlers arrived and placed claims, the limits to their capacity became increasingly apparent.

Trappers were the first to exploit the rich resources of the Northwest Territories. Itinerant trapping and trading in pelts began after James Cook first explored the Northwest Coast in 1778. These early trappers hunted specific fur-bearing species to the verge of extinction before moving on to new, still productive, territories.

It was not until after the 1805 Lewis and Clark Expedition, however, that permanent trading posts were established. Trading posts were sited to satisfy two primary objectives: to establish locations close to native populations who could trap the animals and to ensure access to the Pacific along a major river course. These criteria also resulted in posts being sited along traditional native trails. Increased settlement accompanied by the destruction of habitat, however, eventually displaced trappers from the metropolitan area into more remote regions of the northwest.

Farmers cleared land for crop production, creating gaps in the once continuous fabric of vegetative cover, and began an extended change in the landscape composition of large areas of the region. Timber harvest, although temporary in landscape terms, has extended this impact further into the hinterlands. More permanent changes accompanied the construction of towns and the infrastructure that supported them.

The earliest permanent settlers laid claims prior to the institution of the Donation Land Act within the Oregon Territory in 1850. These settlers included employees of the famous Hudson's Bay Company who held claims at Fort Vancouver, on Sauvie Island and at the site of Oregon City. The remaining land was surveyed on a grid established by the Township system adopted by the U.S. Geodetic Survey Office in 1785.

Early land claims were usually determined by physical landscape features such as ridge lines and streams. Their patterns were reinforced by pre-existing transportation routes, also aligned with the landscape, that led to outlying communities. Claims prior to the USGS survey were not always adjusted afterwards, which

resulted in the layout of a more random patchwork of ownership in the areas that were settled first.

Human settlement initiated a process that has resulted in persistent and massive alteration of the regional landscape. Because the regional landscape is a complex mosaic of topographic, geologic and biological features interacting with human uses, a new mosaic of human settlement often displaces large areas of native cover. This causes fragmentation of the cover and results in adjustments to balances among pre-existing ecological systems.

Fragmentation has resulted from a variety of factors, both natural and human-caused. Destruction of habitat through fire or flood interrupts affected systems until regeneration can occur, but these perturbations are part of an overall cycle of disturbance and regrowth that has evolved in the region.

Development for human uses or occupation, however, has resulted in more permanent fragmentation. Many features of the human landscape block or inhibit natural connectivity and circulation in the landscape and can limit biodiversity. These disruptions include transportation and other services, agricultural fencing, cleared agricultural lands, culverted sections of streams and heavily altered riparian zones.

Several towns were established along the Willamette River in the early years of settlement. The earliest platted town in the region was Oregon City (1842) founded at the Willamette Falls and the confluence of the Clackamas River. From its position at the end of the Oregon Trail and its access to power from the falls, Oregon City gained an early influence in the region and became the first capital of Oregon and its government and cultural center. Portland (1845) was founded closer to the confluence with the Columbia. Milwaukie (1847) was founded as a rival to Oregon City. These three cities formed the centers of trade in Oregon and developed into the focus of regional development.

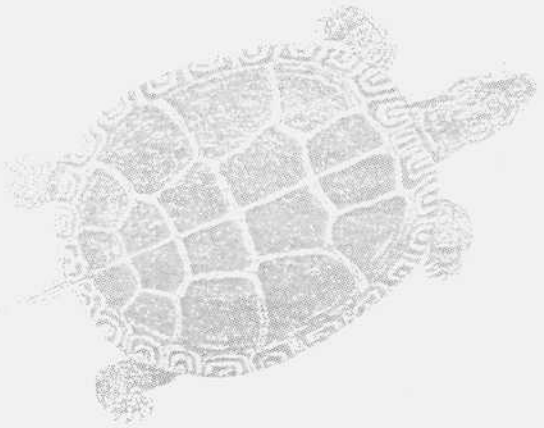
During the early period in Portland, the west side of the Willamette was the first to be intensively built up with residential, commercial and industrial development. The land east of the Willamette remained largely in farmland until late in the 19th century. Photographs of the Portland metropolitan area during this period reveal the east side as a predominantly rural landscape with only faint traces of the plat that has become the city we now know.

In the course of development, northwest Portland adjusted slightly from the alignment of the original city plat in order to remain perpendicular to the Willamette. This adjustment was repeated in other areas along the river, but some of the earlier transportation routes, such as Sandy Boulevard, an Indian trail, survived the realignment of the survey grid.

The Railroad Era (1865-1884) brought about extensive changes in development of the region. The rail connection through the Columbia River Gorge opened the region to increased immigration and trade. Further connections along the coast, in conjunction with development of the port, established Portland as a major trade center on the west coast. Not only did the railroad expand the potential for resource extraction and export, but it extended the horizons of lands available for residential and commercial development.

The Progressive Era (1885-1913) extended the rail system into a regional network of trolleys and suburban lines. Trolleys provided strong linkages within population centers, resulting in increased densities of development within cities. Vacation homes and suburban development sprang up along new interurban lines, which opened once remote areas of the region and influenced development of what was then the region's hinterland.

Early in the 20th century, the Columbia River Gorge Scenic Road heralded a new era of road improvement, and the automobile assumed its position as a major influence to development. The visit by the Olmsted brothers and their recommendations regarding Terwilliger Parkway and other scenic boulevards may have had considerable impact on the influence of **the Automobile Era** (1914-1942). Ownership of automobiles by an increasing proportion of the population expanded access to outlying points of the landscape far beyond previous limitations of distance and time.



Development after World War II relied more heavily on the automobile and traced the lines of this powerful new transportation resource. Suburban expansion depended on an expanding network of roads, while this increased dependence on cars required expansive accommodation for parking and frequent widening of trunk routes to commercial centers. An almost complete dominance over the landscape accompanied emerging construction technologies, and lands that had previously been avoided as incapable of being developed succumbed to the pressures of an expanding population.

The Columbia River is the most developed hydropower river in the world. The Grand Coulee Dam, built in 1931, was the first hydropower and irrigation dam erected along its course and the first in a series of obstructions that have severely impacted the natural migrations of the anadromous fish. Since completion of this project, numerous other dams have been erected along the Columbia and its tributaries. Bonneville Dam, completed in 1933, is the most westerly of the dams and the closest to the metropolitan region. This dam is primarily responsible for changes in the floodplains in the metropolitan area. The nature of the Columbia Slough, once a mosaic of braided streams, marshes and wetlands within the Columbia floodplain has especially been affected. Construction of flood control levees have isolated it from the Columbia River, and extensive filling behind the levees have converted historic wetlands to building sites.

In **the Modern Era** the transportation network has been the predominant factor in persistent landscape fragmentation. Early examples of transportation development, such as the Scenic Highway and Terwilliger Parkway, were built to engage the beauty of the natural landscape and were shaped by the land form that they traversed. Minimal alteration to landscape features ensured only modest impacts on natural systems.

Early bridges spanned streams in such a way as to celebrate their beauty. They did not severely interrupt associated riparian systems or the indigenous wildlife that followed their courses. The more recent reliance on culverts to convey water beneath roads disrupts and fragments riparian continuity and greatly impacts species dependent upon this connection to sources of food and cover.

The impact of settlement on the landscape

The course of 150 years of European settlement has changed the face of this region: most of the ancient forests have been cut, many creeks impounded in culverts, and lakes and wetlands filled, drained or otherwise altered. In making way for increased urbanization, the pristine native state of the landscape has given way to one in which human intervention is the predominant force.

Based on 1989 photography, only 20 percent of the area inside the Metropolitan Service District boundary could be mapped as "natural area" through the Metropolitan Greenspaces inventory process. Comparison of early maps of the Portland region with more recent versions reveals extensive alterations to the Columbia Slough that have resulted in isolation of this once dynamic system and the effective channelization of the Columbia River by a combination of levee construction, channel dredging and straightening, filling of floodplains for development and bank stabilization projects. Along the Willamette, islands were joined to land to form peninsulas. Guilds Lake, site of the 1906 World Exposition, has been filled with excavation from construction of Willamette Heights and converted to an industrial center.

Over time, some streams have been relegated to conduits and buried under the expanding grid of the Portland plat while others were simply filled and built over. Of those that remain, many have been degraded and are unable to support previous levels of healthy fish populations without substantial restoration. Spawning gravels have been silted, streams obstructed with dams and diversions and water quality in several of the regions streams and rivers are below adopted beneficial use standards.

Fragmentation of habitat continues today as we expand onto the landscape and construct barriers that interrupt formerly contiguous patches of the landscape. An increased awareness of the impacts of human-made features must accompany new development in order to minimize the future losses of habitat richness and diversity.

Within our living and working spaces, those places that are within easy reach for ourselves and our children, the rich diversity of plants, fish and wildlife that thrived in the pristine state of this region has grossly diminished. The diversity will continue to diminish unless aggressive steps are taken to secure an ecological equilibrium in the region.

It is our fervent hope that protection and enhancement of diverse habitats within a rational overall system of greenspaces will assure their continuity for future human and wildlife generations to enjoy. Through coordinated efforts, positive interaction with our native landscape can coexist with efforts toward sustainable future development.

Geographic Features and Watersheds of the Region

> *"It is particularly urgent that a city having beautiful scenery should secure the land lest these natural resources be destroyed or irreparably injured by the owners."*
>
> *John Charles Olmsted*
> *Report of Portland Parks and Open Spaces, 1903*

Existing geographic features

Nine distinct geographic features are readily distinguished in the Oregon portion of the metropolitan region:

- The Columbia River and associated lowlands
- The Cascade Foothills
- The Boring Lava Domes
- The Oregon City Plateau
- Petes, Parrett and the Chehalem mountains
- The Coast Range
- The Tualatin Mountains and West Hills
- The Tualatin River Valley
- The Willamette River Valley.

Many of these features provide green backdrops for portions of the region, distinct terrace forms or elevated patches of green visible from many parts of the region. They also support a broad diversity of wildlife habitat and preserve the perception of open space within a built-up area.

The Metropolitan Greenspaces Master Plan seeks to protect an interconnected system of natural areas that optimizes preservation of critical ecologic functions and values within these geographic units using the planning framework of landscape ecology. The previous section described historic changes that have created and altered the regional landscape. The challenge now is to understand major ecological principles and how they interrelate within an overall system so that we commence detailed planning for the Greenspaces system cognizant of the limitations inherent in natural processes and mindful of modern man's ability to alter them.

Watersheds in the metropolitan area

The master plan is a program document. Among the continuing planning activities called for is the need to more specifically define the particular parcels to be protected and assembled as parts of the overall regional system. Defining an aggressive network of linear interconnections between the large acre "anchors" of the system will be particularly challenging. Within the nine geographic units, finer level landscape units, watersheds, will be the detailed units of analysis for the master plan.

The watershed or stream basin is the basic landscape unit of a region. It relates directly to hydrology, a key parameter of the natural environment. Activities within the watershed have a cumulative impact, and each use must be balanced in order to maintain a healthy overall system. Watersheds are readily defined as discrete units from topographic data, and each watershed has a readily identifiable set of features including headwaters, main channel, slopes leading out from the channel, tributaries, mouth and other features about which data may be collected, organized, analyzed and compared. Watershed boundaries are determined by natural processes and change so slowly that they may be assumed permanent on the human time-scale.

Following is a description, by watershed, of the existing conditions, opportunities and challenges for establishing an ecologically based Greenspaces system. The individual watershed analyses are organized to be consistent with the nine geographic units with which they are most

closely associated. Introductory paragraphs addressing each geographic unit are presented first, followed by discussions of the individual watersheds within that particular unit. Descriptive information for each watershed includes:

Headwaters
The general location of the headwaters, or points of origin, of the watershed.

Mouth
The point of entry of a watercourse into the stream, river or waterbody into which the watercourse drains.

Geographic units
A list of a subset of the nine geographic units within which the watershed is located or for which the watershed serves as a connecting link.

Watershed area
The number of acres of the watershed that were within the Metropolitan Greenspaces natural areas inventory study area. Note that very few of the watersheds fall completely within the inventory study area. Metro is in the process of expanding the inventory to include significantly more of those watersheds. That information is expected to be available in the fall of 1992 and will be incorporated into an amended Greenspaces Master Plan as it is prepared.

Tributaries
A list of tributaries to each described watershed, as identified on U.S. Geological Survey 7.5 minute quadrangle maps, that are either wholly or partially within the inventory study area.

Note that while every watershed is part of the Columbia River watershed, for purposes of this report, the Columbia has been disaggregated into smaller tributary watersheds and the description of tributaries restricted to each subwatershed described.

Natural areas
The number of acres of natural areas within the study area for each watershed and the percentage of that portion of the watershed within the study area that was identified as natural areas by the Greenspaces natural areas inventory. It is important to note that for purposes of the inventory, natural areas were defined as:

"a landscape unit (a) composed of plant and animal communities, waterbodies, soil and rock, (b) largely devoid of man-made structures and (c) maintained and managed in such a way as to promote or enhance populations of wildlife."

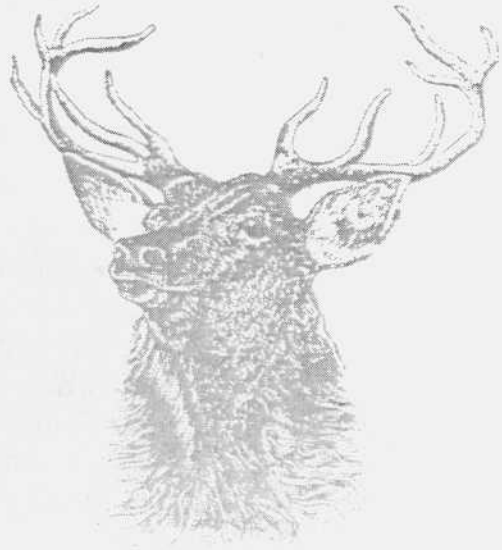
Thus, lands that many people consider undeveloped "open space," notably cultivated land and golf courses, were not considered natural areas in the inventory because they fail to meet (c). As a result, heavily agricultural watersheds, such as many in Washington County, may record a small percentage of natural area in the watershed, even though it is largely undeveloped with urban uses.

Population
The total population of the watershed within the inventory study area, based on 1990 census data.

Significant features
A listing of significant natural features within each watershed, most frequently larger public parks along the main stem of the watershed's principal stream.

Discussion
A narrative description of the current character, opportunities and challenges in each watershed to consider once detailed watershed planning begins.

The continuing planning process to identify the best opportunities for realizing the regional system in each watershed will be undertaken in consultation with citizens, government agencies, and interested parties. The detailed planning and implementation of the Greenspaces system will be an incremental process that continues for many years.



The Columbia River, associated lowlands and the Columbia River Gorge form the northern boundary of the Oregon component of the Metropolitan Greenspaces inventory study area. The Multnomah County portion of the Columbia River Gorge National Scenic Area (to the Mt. Hood National Forest boundary) is the eastern limit of the inventory study area and Sauvie Island the western limit.

Predominantly forested with fir and hemlock at the time of pioneer settlement, the dramatic changes in elevation and aspect associated with the scenic area's characteristic palisades and rugged terrain supported a rich diversity of habitats. The landscape today is not dramatically changed. Some open farmlands at the top of gently rolling foothills have displaced the indigenous forest cover. Significant tree harvesting has led to a greater proportion of deciduous trees overall and greater dominance of Douglas fir in second growth coniferous stands in the forests. Native conifer stands were historically preferred for lumber and other wood products and were in essence highgraded and removed from large areas that were then colonized by deciduous species. Due to its rapid growth relative to other coniferous species, Douglas fir has been the preferred plantation species on managed forest lands.

The Columbia River lowlands extend from the Sandy River delta on the east, where one enters the Columbia River Gorge, to Sauvie Island on the west. The southern limit of this geographic unit is demarcated by the toe of the Bretz Bar/Alameda Ridge on the east side of the Willamette River and the toe of the Tualatin Mountains on the west side of the Willamette.

The historic landscape was characterized by an extensive system of shallow lakes, marshes, mudflats, braided streams and bottomland forests. Since the migration of pioneers along the Oregon Trail, these lowlands have been systematically drained and converted to agricultural and, more recently, industrial uses. Wetlands and floodplains also have been systematically filled and levees now contain the Columbia River within the metropolitan area.

The Columbia River – *Columbia Gorge to Sauvie Island (in study area)*

Headwaters:	Rocky Mountains, Canada
Mouth:	Pacific Ocean
Geographic units:	Columbia River, Sandy River/ Cascade foothills, Willamette Valley, Tualatin Mountains
Watershed area:	51,097 acres within inventory study area
Tributaries included:	Latourell, Bridal Veil, Coopey, Donahue and Young creeks
Natural areas:	34,273 acres within study area (67 percent of watershed)
Population:	5,528 within study area
Significant features:	Columbia River Gorge, Sandy River Delta, Sturgeon Lake, Chinook Landing Marine Park, M. James Gleason Boat Ramp; Sauvie, Government, Gary and Flagg, Broughton, McGuire and Hayden islands

Discussion

The ***Columbia River,*** the largest river on the Pacific Coast of North America, cuts through the Cascade Mountains on its path westward to the Pacific Ocean. The section of the Columbia River that flows through the metropolitan

area is the single most significant landscape feature in the region. Although this section is relatively short, the river's impact on shaping the landscape is clearly evident. Shared responsibilities between Washington and Oregon in managing resources and activities along both shores of the Columbia River provide a linkage between the two states.

The ***Columbia River Gorge National Scenic Area***, jointly managed by the U.S. Forest Service and the Columbia Gorge Commission, extends 80 miles along the Columbia River from the Sandy River east to the Deschutes River. The Metropolitan Greenspaces natural areas inventory includes unincorporated land in Multnomah County between the Sandy River and the Mt. Hood National Forest boundary, most of which is located in the national scenic area. That portion within Multnomah County includes the most precipitous terrain in the entire Greenspaces study area, with nearly vertical basalt cliffs overlooking the Columbia River. The diverse and unique features and formations within the Gorge are a result of cataclysmic floods, volcanic action and landslides. Open farmland and rural residential uses have been established on the rolling foothills of the Cascade Range.

A combination of moss-covered basalt cliffs, lush temperate rain forest and waterfalls characterizes the portions of the scenic area within Multnomah County. The range of habitats includes mixed and conifer forests, riparian forests along the Columbia, open pasture and hay land. The palisades extending downstream through the Columbia Gorge National Scenic Area to the Sandy River, the floodplains and lowlands adjacent to the Columbia River provide multiple open space functions and benefits. In addition to benefits typical of all river and stream systems, the size and national significance of the Columbia River suggest a heightened value to the region. Large-craft boating, windsurfing, commercial barges and fisheries are benefits provided by the Columbia that are not possible in the region's other waterways, with the exception of the Willamette.

Since Bonneville Dam was built in the 1930s, the uninhibited flows of the Columbia have been significantly tamed by an extensive system of hydropower dams that have adversely affected salmon and steelhead migrations. The floodplains, which once provided additional natural storage capacity for heavy winter and spring flows, have been systematically drained and converted to agricultural and industrial uses, and levees now contain the river within the metropolitan area. Although now separated from the river by a system of levees, the larger remnant floodplains along the Columbia that have not been dredged, filled or converted to other uses, including ***Ridgefield and Steigerwald National Wildlife Refuges and the Vancouver Lake lowlands***, offer extremely diverse riparian habitat for local wildlife. ***Government, Gary, Flagg, the west end of Hayden and other Columbia River islands*** also provide a variety of habitats. In the larger context, these lands form an important component of the Pacific flyway, seasonally accommodating migrating waterfowl and other avifauna.

At the confluence of the Willamette and Columbia rivers, Sauvie Island is the largest island in the Columbia River system. It consists primarily of low-lying lands, shallow lakes, marshes and sloughs typical of the river systems in the region. The deposition of silts from the Willamette Valley made this extremely productive farm land. Its proximity to the Columbia resulted in very early settlement of the land. There are records of trumpeter swan, bald eagle, Western pond turtle, yellow-billed cuckoo, red-legged frog, wapato and other rare animal and plant species on Sauvie Island. The Oregon State Department of Fish and Wildlife manages the 12,000-acre wildlife refuge surrounding ***Sturgeon Lake***.

Although substantially altered, the ***Multnomah Channel/Sauvie Island*** complex is among the largest remnants of a once common system of braided channels, wetlands and riparian areas along the Willamette and Columbia rivers. While family farms and nurseries are the dominant uses on Sauvie Island, the combination of

vegetative and wildlife communities make it one of the more biologically diverse areas in the region. Its location between the Columbia River and Tualatin Mountains/West Hills geographic units increases its value for ecosystem connectivity.

Columbia Slough – *North Portland*

Headwaters:	Fairview Lake
Mouth:	Willamette River at Kelley Point Park
Geographic units:	Columbia River, Willamette Valley
Watershed area:	12,388 acres within inventory study area
Tributaries included:	Peninsula drainage canal
Natural areas:	4,315 acres within study area (35 percent of watershed)
Population:	5,384 within study area
Significant features:	Fairview Lake, Blue Lake Park, Heron Lakes Golf Course, Smith and Bybee Lakes, Kelley Point Park

Discussion

The ***Columbia Slough*** was once a mosaic of lakes, sloughs, creeks and wetland forests hydrologically connected with the Columbia River. From Fairview Lake and Blue Lake parks, the slough travels west through agricultural, industrial and airport properties 21 miles to its mouth at the confluence with the Willamette River at Kelley Point Park. Formerly an active floodplain, many lands surrounding the slough have been diked, drained and filled since the creation of drainage districts in 1917. These filled lands are currently utilized for agricultural and industrial purposes. Within the Smith and Bybee Lakes natural resources management area, a 2,000-acre wetland, riparian and open water complex located at the west end of the slough, forms a large remnant of this once prevalent dynamic wetland system.

Fairview/Arrata creeks – *Gresham/Fairview/ Wood Village*

Headwaters:	Gresham (Fairview Creek), Wood Village (Arrata Creek)
Mouth:	Fairview Lake (Fairview Creek), Columbia River (Arrata Creek)
Geographic units:	Boring Lava Domes, Columbia River
Watershed area:	5,259 acres within inventory study area
Tributaries included:	"No-name," Clear and Salmon creeks
Natural areas:	904 acres within study area (17 percent of watershed)
Population:	14,065 within study area
Significant features:	Grant Butte, Fairview Lake, Blue Lake Park

Discussion

Immediately below its headwaters on Grant Butte, ***Fairview Creek*** flows through a highly urbanized portion of East Multnomah County, passes under Interstate 84 and through agricultural lands until it reaches an area of residential development at the confluence with Fairview Lake. The Fairview Creek system is a patchwork of healthy native riparian vegetation, underground culverted portions of the creek and agricultural and residential uses that come up to the edge of the creek.

Fairview Lake, the headwaters of the Columbia Slough, was formerly an emergent wetland that has been excavated to accommodate increased stormwater storage. The combined lake and creek system provide important linkages between the Columbia River, Columbia Slough and the forested buttes in Gresham. The headwaters of Fairview have been acquired by the city of Gresham as part of the overall open space system being assembled by that city.

Arrata Creek originates in Wood Village east of Northeast 238th Drive and traverses mostly through a series of agricultural drainage ditches on undeveloped land through the Multnomah County Farm and Troutdale Airport before flowing into the Columbia north of Blue Lake County Park. Virtually none of the native forest or riparian cover remains along Arrata Creek.

Within the study area, the Sandy River watershed forms the limits of this geographic unit. It connects the Columbia River unit on the north with the Clackamas unit on the south, the Boring Lava Domes unit on the southeast and the Willamette Valley unit on the west.

Hemlock/fir forests interspersed with cedar and well-developed riparian communities along the main stem and tributaries characterized the landscape at the time of pioneer settlement. Clear, fast-flowing mountain streams with extensive gravel beds provided high-quality salmonid spawning habitat.

Much of this landscape character remains today, particularly east of the Sandy River, and extends into the Cascade foothills. Commercial forestry has somewhat affected species composition. Agricultural and domestic water withdrawals and reservoir development have affected natural flows in the river, but expanses of forest cover remain and productive anadromous fish runs continue.

West of the Sandy River, more dramatic changes have occurred. Open farmland and intensive commercial nurseries are well established in unincorporated areas, having displaced the native forest cover in the Progressive and Modern eras, respectively. During the last decade significant suburban residential development has occurred inside the urban growth boundary in the Troutdale/Gresham vicinity.

Sandy River – *Confluence of Bull Run/Sandy River to Columbia River (in study area)*

Headwaters:	Mt. Hood
Mouth:	Columbia River
Geographic units:	Sandy River/Cascade foothills, Boring Lava Domes, Columbia River
Watershed area:	29,541 acres within inventory study area
Tributaries included:	Deer, Buck , Trout, Martin, Walker, Pounder, Smith, Gordon, Thompson, Cat and Big creeks
Natural areas:	22,475 acres within study area (76 percent of watershed)
Population:	5,832 within study area
Significant features:	The Nature Conservancy Sandy River Reserve, Oxbow Park, Camp Namanu, Camp Collins, Greek Orthodox and church youth camps, Dabney State Park, Dodge Park, Lewis and Clark State Park, Troutdale Community Park, Sandy River Delta

Discussion

The ***Sandy River*** is notable for its many oxbows, timber growth down to the waterline and populations of native salmon, steelhead and smelt. Early surveyors described the Sandy drainage as a township containing excellent fir and cedar timber and a large amount of fine farming lands. Numerous small feeder streams scattered throughout the east end of Multnomah County empty into the Sandy and Columbia rivers. The general health and vitality of the habitat within the Sandy and its tributaries is good to excellent, and the Sandy River area today possesses one of the most natural urban parks in the state, ***Oxbow Park.***

The Sandy River drainage provides important habitat for a myriad of wildlife including elk, bear, deer, coyote, beaver, osprey and bald eagle. The segment of the Sandy located between Dodge and Dabney parks is included in both the State Scenic Waterway Program and the National Wild and Scenic River System. The lower six miles form the boundary of the ***Columbia River Gorge National Scenic Area.***

The Sandy offers a number of outdoor education and recreation opportunities, as indicated by the number of parks, church and youth camps located within the watershed. Estimated recreational use of the Sandy River from ***Dodge Park*** to the mouth is 1 million user days per year.

Gordon, Buck and Trout creeks, all Sandy tributaries, are three of the more natural, intact riparian systems in the Portland-Vancouver metropolitan region. A mixed forest shades the waters and provides habitat for trout, steelhead and salmon in these creeks. The creeks also provide a critical ecological linkage between Mt. Hood and the Columbia River.

Historically, the ***Sandy River Delta*** was a large complex of wetland communities, including wetland meadow, wetland shrub/scrub and wetland forest plant associations. Now diked, it functions largely as an upland meadow with only remnant wetland and riparian vegetation. Its habitat value has also been greatly reduced by grazing over a number of years. The delta was recently acquired by the U.S. Forest Service to be managed as a part of the Columbia River Gorge National Scenic Area.

Beaver/Kelly creeks – *Multnomah County in the Gresham/Troutdale vicinity*

Headwaters:	Orient/Pleasant Home vicinity
Mouth:	Sandy River at the city of Troutdale's Depot Park
Geographic units:	Sandy River/Cascade foothills
Watershed area:	8,271 acres within inventory study area
Tributaries included:	Burlingame Creek
Natural areas:	1,303 acres within study area (16 percent of watershed)
Population:	23,287 within study area
Significant features:	Beaver Creek Canyon, Kane Park, Troutdale Community Park

Discussion

Beaver and ***Kelly creeks*** originate east of Gresham and flow through Gresham and Troutdale to the Sandy River. The watershed varies from steep and rocky forested canyon walls to gently sloping agricultural fields and ponds. Much of the surrounding area, once primarily agricultural, is currently being developed for residential and commercial use. Adjacent agricultural uses are still common along Beaver Creek. Road intersections, agricultural practices and urban development have significantly impacted the fish and wildlife habitat by altering in-stream structure, destroying riparian cover and by degrading water quality. Some high-quality habitat remains however, particularly in ***Beaver Creek Canyon***. Salmon attempted to spawn in Beaver Creek as recently as January 1991.

The Boring Lava Domes, a group of extinct volcanic cones, provide high-quality habitat close to some of the fastest developing portions of the metropolitan area. The rugged topography encourages a variety of habitat niches and biodiversity. This geographic unit is located generally east of I-205 and south of Powell Boulevard. It straddles both sides of the urban growth boundary in Multnomah and Clackamas counties. Well-forested with second growth trees, the volcanic cones are characterized by a greater percentage of deciduous trees than native fir and hemlock, a testament to historical forestry and grazing activities. Headwaters of several urban creeks, including Johnson, Mt. Scott/Kelly, Sieben and Rock creeks, originate in this geographic region.

Since construction of I-205 in the mid-1980s, significant suburban residential development has been experienced inside the urban growth boundary, particularly in the Sunnyside area. Outside of the urban growth boundary, large lot residential development is displacing historical agricultural and pasture lands. Benefiting from the potential of wonderful vistas, this development is beginning to creep up the sides and onto the rounded tops of the forested cones.

Johnson Creek – *Clackamas and Multnomah counties*

Headwaters:	Clackamas and Multnomah counties east of Pleasant Home
Mouth:	Willamette River
Geographic units:	Sandy River/Cascade foothills, Boring Lava Domes, Willamette Valley
Watershed area:	26,290 acres within inventory study area
Tributaries included:	Butler, Mitchell, Veterans, Crystal Springs and Spring creeks
Natural areas:	7,986 acres within study area (30 percent of watershed)
Population:	85,760 within study area
Significant features:	Gresham Main Park, Boring Lava Domes, Powell Butte, Leach Botanical Gardens, Bundy Park, Beggars Tick Marsh, Tideman Johnson Park, Johnson Creek Park, Springwater Trail

Discussion

The ***Johnson Creek Corridor*** is a mosaic of human uses and vegetative communities integrated with a creek ecosystem that provides food, shelter, breeding and rearing areas for aquatic and terrestrial wildlife. Johnson Creek originates west of the Sandy River Canyon, near Troutdale, flowing approximately 18 miles east to west through a variety of land uses, ownerships and political jurisdictions to its confluence with the Willamette River in the city of Milwaukie.

Large commercial nursery operations are located in the headwaters east of the rapidly growing city of Gresham. Between Gresham and the city of Portland the creek flows

through the forested Boring Lava Domes, where several tributaries originate. Older commercial, industrial and residential areas of the metropolitan area characterize the landscape from the I-205 vicinity to the mouth of the creek at Milwaukie.

The Johnson Creek drainage basin is composed of three distinct geologic formations: the Portland Terraces, Kelso Clays and Boring Lava Domes. The Portland Terraces to the north of the stream make up approximately half of Johnson Creek's 54-square-mile watershed. Where relatively undisturbed, the terraces' permeable soils act as a filtering system feeding both Johnson and Crystal Springs creeks clear, clean water at a fairly constant rate throughout the year. It drains part of the volcanic buttes that begin at Mt. Tabor and extend east to Walter and Grant buttes in Gresham.

Eastern portions of the Johnson Creek watershed consist of Kelso soils that erode easily. The Boring Lava Domes surround the creek's middle reaches. Water runoff from the Kelso and Boring formations tends to be much more rapid and less evenly spaced over time than that in the terraces. Historic removal and alteration of vegetation have contributed significantly to soil erosion. Cultivation of the soil for agricultural uses, coupled with the naturally faster waterflow in southern and eastern portions of the watershed, is contributing to severe water quality problems. Historic development in the floodplain has also led to chronic flooding problems. Increases in both erosion rates and flood problems can be expected as development proceeds in the basin, replacing vegetation with additional impervious surfaces such as roads, parking lots, homes and driveways that will result in increased rates and volumes of flow after storms and resulting erosive potential.

These conditions have degraded the quality of waters in Johnson Creek, which historically supported productive anadromous fish runs. The combination of frequent and repeated flooding in some reaches and degraded water quality, coupled with the many opportunities to reestablish some of the natural functions and values of the watershed, have led to creation of a citizen-based Johnson Creek Corridor Committee and initiation of a basinwide resource management plan coordinated by the city of Portland's Environmental Services and Parks bureaus.

The Johnson Creek basin is dotted with interdependent wildlife habitats. Examples of these habitats are found in the several small parks located within the basin ***(Beggars Tick Marsh, Leach Botanical Garden, Bundy Park)***. Except for Powell Butte, however, there are few large publicly protected parcels. The creek itself is an important element in a riparian corridor that links the foothills of Mt. Hood with the Willamette River Valley.

The ***Springwater Trail*** parallels Johnson Creek from Milwaukie through Gresham, crossing it at several locations. The cities of Portland and Gresham are in the process of planning and developing the trail with an emphasis on natural area preservation along its course. Once developed, public access to Johnson Creek will dramatically improve.

Kellogg/Mt. Scott creeks – *Clackamas County*

Headwaters:	Clackamas County just east of Happy Valley
Mouth:	Willamette River
Geographic units:	Boring Lava Domes, Willamette Valley
Watershed area:	9,723 acres within inventory study area
Tributaries included:	Phillips Creek
Natural areas:	1,776 acres within study area (18 percent of watershed)
Population:	38,360 within study area
Significant features:	Happy Valley Park, Mt. Scott, Mt. Talbert, North Clackamas Park, Kellogg Lake

Discussion

Flowing through Clackamas County and Milwaukie, ***Kellogg and Mt. Scott creeks*** drain the south slopes of two volcanic buttes, ***Mt. Scott and Mt. Talbert*** in the Sunnyside/Happy Valley area east of I-205. The distinctive hill and valley terrain traversed by small streams provides a diversity of fish and wildlife habitats in a compact area, offering opportunities for upland connections among the lava domes, as well as riparian connections along streams.

Mt. Scott is characterized by a mosaic of residential development, undeveloped forest land, a golf course and cemeteries. Its remaining forests are still connected to Johnson Creek. Mt. Talbert is largely undeveloped, although zoned and undergoing development. In addition to its wildlife value, outstanding views of the east side and the downtown Portland skyline are available from Mt. Scott. Mt. Scott and Mt. Talbert together form a marvelous green "edge" to the east side of the urban area. West of the buttes and the watershed is largely developed with commercial, industrial and residential uses.

The vegetation on Mt. Talbert is currently a mature, conifer-dominated forest with some remnant "old-growth" size trees. In addition to providing wildlife habitat and aesthetic values, protection of these vegetated slopes is critical to bank stabilization and erosion control. The newly-formed North Clackamas Park and Recreation District has expressed interest in acquiring natural areas on Mt. Talbert and restoring riparian and wetland areas along Mt. Scott Creek.

The Clackamas River, like the Sandy, is a high-gradient, fast-flowing mountain stream originating in the Cascades. It connects the Sandy River and Boring Lava Domes units to the north, the Willamette Valley on the west and the Oregon City Plateau on the south. It supports one of the more productive salmon runs in the lower Columbia system. The foothills of the Cascades support many open space benefits in the Clackamas watershed, including fish and wildlife habitat and natural vegetation, as well as municipal and industrial water supply for the metropolitan area. In addition, the foothills provide the opportunity for remote and low-intensity recreation experiences. The harvest of timber is another underlying benefit of nearly all of the Cascade foothills.

The Clackamas basin was the "home stretch" of the Oregon Trail. Agriculture was established as the dominant use of this area by early settlers in the 1840s. Agricultural uses continue today particularly in the "flatlands" east of the metropolitan area in the Eagle Creek vicinity. As one moves east from the Willamette towards Mt. Hood, the landscape changes progressively from industrial/commercial use in the Sunrise Corridor to rural small farms and exurban residential development outside of the urban growth boundary to agricultural uses in the flatlands to forest uses approaching the Cascade foothills.

Forming the southern boundary of the Clackamas watershed and separating it from the Molalla/Pudding River system, the Oregon City Plateau ascends sharply from the river valleys and then flattens out considerably into a broad table top plain. Originally used for agriculture, this plateau more recently has become the urban growth area for Oregon City. Except for the steep slopes, which generally support a forest cover, most of the plateau is within the regional urban growth boundary. The dominant landscape east of the Clackamas Community College is agricultural, transitioning into forest lands and some exurban and rural development.

Clackamas River – *Carver to the Willamette River (in study area)*

Headwaters:	Mt. Jefferson
Mouth:	Willamette River
Geographic units:	Cascade foothills, Boring Lava Domes, Clackamas River/ Oregon City Plateau, Willamette Valley
Watershed area:	13,983 acres within inventory study area
Tributaries included:	Richardson, Rock and Clear creeks
Natural areas:	3,708 acres within study area (27 percent of watershed)
Population:	17,768 within study area
Significant features:	McIver State Park, Clear Creek Canyon, Rock Creek Canyon, Clackamette Park

Discussion

The ***Clackamas River*** is a high-gradient, world-class salmon and steelhead stream that originates in the Cascade Range. Within the study area, it passes through agricultural and forest land to the east and industrial, commercial, and residential areas moving west through the Sunrise Corridor before entering the Willamette River between Gladstone and Oregon City. In addition to fisheries, the Clackamas provides excellent canoeing,

kayaking and drift-boating opportunities. State and national scenic river status applies to portions of the upper Clackamas east of Carver.

Clear Creek originates near the north slope of Goat Mountain east of Oregon State 211. It drains the south side of the Clackamas River through Springwater, Viola and Fischers Mill, entering the Clackamas at Carver. It is a Class 1 stream of high quality that connects forested parcels scattered throughout the agricultural landscape east of the Oregon City Plateau with the Mt. Hood National Forest. Clear Creek Canyon supports a second-growth forest of mixed conifers and hardwoods. It supports a variety of resident wildlife including big game, furbearers, small mammals and a variety of bird species. Through the canyon, Clear Creek is well-shaded, contributing to its high quality, and supports resident and anadromous salmonid fisheries.

Rock Creek originates in the Boring Lava Domes in the Pleasant Valley vicinity a little east of the urban growth boundary. It flows into the Clackamas River near Carver close to the intersection of State Routes 212 and 224. Its headwaters consist of agricultural land now experiencing conversion to exurban residential uses. South of Pleasant Valley Golf Course, it flows through a forested canyon providing high-quality wildlife and fisheries habitat before emerging from the canyon and entering the urban growth boundary north of Oregon State Route 212. Trunk sewer lines are being constructed to serve the city of Happy Valley and portions of unincorporated Clackamas County east of Happy Valley within the urban growth boundary. This will likely increase pressure for conversion of land in the Rock Creek watershed to urban and suburban uses.

Richardson Creek originates east of Damascus in a suburban environment outside of the urban growth boundary with some remnant upland forest areas interspersed with agriculture. The creek passes through a forested canyon before emerging at State Route 224, flowing into the Clackamas shortly east of Carver.

Deep Creek – *Clackamas County*

Headwaters:	Sandy vicinity
Mouth:	Clackamas River near Barton Park
Geographic units:	Cascade foothills, Clackamas River/Oregon City Plateau
Watershed area:	4,020 acres within inventory study area
Tributaries included:	Noyer and Tickle creeks
Natural areas:	879 acres within study area (22 percent of watershed)
Population:	2,175 within study area
Significant features:	Barton Park, Deep Creek Canyon, Springwater Corridor, Cazadero Line

Discussion

There are a number of sub-basins within the Clackamas; one important one is the ***Deep Creek-Tickle Creek system***, which drains the area between Sandy and the Barton area of unincorporated Clackamas County. Deep Creek originates in the relatively flat agricultural and nursery-dominated area around Boring and enters a deep, forested canyon for the rest of its length. Commercial, industrial and golf course development is encroaching in the Boring vicinity and near the intersection of U.S 26 and State Highway 212 west of Sandy. Mill waste, stormwater runoff and spillage from irrigation ponds for the horticultural nurseries along the river may be adversely affecting water quality.

The ***Springwater Corridor*** extends south from Boring through Deep Creek Canyon to ***Barton Park***. From Barton Park, a state-owned rail right-of-way, the ***Cazadero Line***, extends to Estacada, where opportunities exist to link with U.S. Forest Service trails in the Mt. Hood National Forest.

Tickle Creek originates slightly to the south and east of Sandy and drains a patchwork of rural residential and forest uses along its banks. A large residential development along Tickle Creek has recently been initiated. Some developed recreation areas, such as church camps, are present in the area. Healthy anadromous fish runs are present in both streams and should be protected.

Abernethy/Newell creeks – *Oregon City vicinity*

Headwaters:	"The Hogback," a few miles east of Beaver Lake
Mouth:	Willamette River
Geographic units:	Clackamas River/Oregon City Plateau, Willamette Valley
Watershed area:	4,981 acres within inventory study area
Tributaries included:	Martin, Thimble, Potter, Charman, Holcomb and Tour creeks
Natural areas:	1,216 acres within study area (24 percent of watershed)
Population:	7,620 within study area
Significant features:	Beaver Lake, Newell Creek Canyon, Abernethy Green

Discussion

Abernethy Creek flows into the Willamette River in downtown Oregon City. The upper reaches are primarily farm and forest land, although some pressure for increased rural residential development is occurring. Beaver Lake, a man-made reservoir, lies at the upper part of the watershed. There have been numerous proposals for extensive residential and golf course development here. The middle section of the stream is rural residential, farm and forest land.

The riparian corridor along Abernethy Creek is in fairly good shape. Uses along the creek are mostly residential in the Oregon City area, until the stream reaches downtown Oregon City and the confluence with the Willamette River near Abernethy Green, the proposed site of the End of the Oregon Trail Cultural Center. Anadromous fish runs and a fish ladder at the dam that creates Beaver Lake are present.

Newell Creek is a short tributary of Abernethy Creek, originating at the John Inskeep Environmental Learning Center. This small stream supports anadromous fish runs. The canyon along Newell Creek is nearly pristine down to its confluence with Abernethy Creek. Variation in the forest age structure, in the canyon including large old trees, provide greater habitat diversity than most other areas.

Although the Oregon City bypass goes through it, Newell Creek is the highest quality stream and canyon existing in the southeast quadrant, perhaps in the southern half of the metropolitan area. Fairly recent commercial development has taken place at the upper part of the watershed and the area is rapidly changing. There have been locally initiated efforts to preserve the entire Newell Creek canyon, which is currently undeveloped.

The Oregon City highlands lie at the top end of this watershed. They include remnant patches of varying sizes of upland forest consisting of conifer, mixed and deciduous forests within a landscape that is in transition from agricultural and rural residential to more intensive rural residential and commercial.

This east-west series of ridge lines forms a visually prominent southern limit to the Tualatin Valley on the west side of the Willamette, visible from the West Hills, Forest Park, the south and west portions of the metropolitan area.

The Willamette River passes through a narrow, forested canyon between Petes Mountain and the Canemah district of Oregon City. It links the broad and fertile Willamette Valley upstream of Wilsonville with the urbanized portions of the Willamette Valley downstream of Willamette Falls. The narrows also link the Tualatin Valley geographic unit with the extension of the Tualatin Mountains through the West Hills and Lake Oswego. Coupled with the Clackamas River unit, they provide east-west ecological connectors between the Cascade foothills and the Coast Range.

Petes, Parrett and the Chehalem mountains are predominantly outside of the regional urban growth boundary. The landscape of this geographic unit may be described as "pastoral" with an interspersion of agricultural and forest landscapes. Petes Mountain marks the confluence of the Tualatin and the Willamette rivers. Considerable forest and agricultural lands remain, but many natural areas identified as part of the Metro inventory have succumbed to high-end exurban residential development since 1989. In fact, the construction of large, often huge, homes on 1 to 10-acre lots is a significant trend throughout this geographic unit.

Newland Creek – *Petes Mountain vicinity*

Headwaters:	Petes Mountain
Mouth:	Willamette River opposite Molalla State Park
Geographic units:	Petes, Parrett and Chehalem mountains, Willamette Valley
Watershed area:	528 acres within inventory study area
Tributaries included:	N.A.
Natural areas:	75 acres within study area (14 percent of watershed)
Population:	196 within study area
Significant features:	Petes Mountain, Canby ferry

Discussion

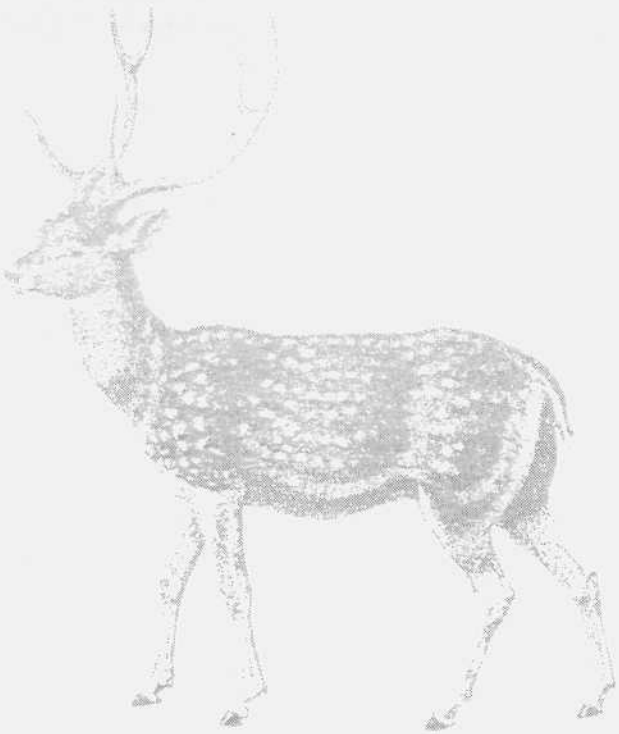
Newland Creek drains the south slope of ***Petes Mountain,*** located south of the Tualatin River and north of the Willamette between Wilsonville and West Linn. The area is in transition from mainly agricultural and dispersed rural residential uses to the more intensive upscale exurban residential development. Remnant forests and stream corridors are affected by ongoing logging, agriculture, residential and golf course development, but some very significant habitat areas remain. Ospreys have nested along the southern slope of Petes Mountain near the Willamette for several years. Raptors forage over the open agricultural landscapes. The north slope drains to the Tualatin River.

Cedar Creek – *Sherwood vicinity*

Headwaters:	Parrett Mountain
Mouth:	Chicken Creek near Scholls-Sherwood Road
Geographic units:	Parrett and Chehalem mountains, Tualatin Valley
Watershed area:	1,535 acres within inventory study area
Tributaries included:	N.A.
Natural areas:	237 acres within study area (15 percent of watershed)
Population:	1,416 within study area
Significant features:	Parrett Mountain, Stella Olson Park

Discussion

Cedar Creek flows north from its origin at ***Parrett Mountain*** through the city of Sherwood to Chicken Creek near the ***Onion Flats area.*** North and south of the city agricultural uses dominate. Parrett Mountain is a long razor-back ridge that is still a largely rural and agricultural landscape with substantial forested areas. It has long been considered high-quality pasture land and has many stables and other equestrian-oriented operations. Because of the expansive views across the Tualatin and Willamette valleys, it is experiencing considerable development. There is still timber harvest occurring on many of its slopes, both for economic gains and to open views from newly developed houses. The north slope drains to the Tualatin River via Cedar and Chicken creeks, the south slope drains to the Willamette River via Corral Creek. Since the 1970s, vineyards have been established on the south slope of Parrett Mountain.



The Coast Range demarcates the western limits of the metropolitan viewshed. Commercial forestry is an important economic activity in this area; otherwise, much of the land is relatively undisturbed, and the fish and wildlife habitat value is very high. Often described as a temperate rainforest, the Coast Range also serves as a major source of municipal, industrial, and agricultural water for the metropolitan area. Changes in species composition much as described in the Cascade foothills of the Sandy and Clackamas River geographic units have occurred as a result of commercial forestry operations. Agricultural and nursery operations, including several wineries established since 1970, are commonly found in the sandy, rolling foothills to the Coast Range.

Gales Creek – *Forest Grove vicinity*

Headwaters:	Coast Range
Mouth:	Tualatin River east of Dilley
Geographic units:	Coast Range, Tualatin Valley
Watershed area:	2,391 acres within inventory study area
Tributaries included:	N.A.
Natural areas:	71 acres within study area (3 percent of watershed)
Population:	4,401 within study area
Significant features:	Coast Range

Discussion

Gales Creek is one of the headwater streams of the Tualatin. Flowing parallel to the Wilson River Highway (State Route 6) for much of its length, it has a "mountain stream" character in its upper reaches and supports trout populations. Several vineyards have been established in the middle reaches of the watershed on south facing slopes of the Coast Range foothills. South of Forest Grove, the lower reaches of the creek are slower moving, and agricultural uses predominate.

Outside the urban growth boundary, the Tualatin River Valley serves as a vivid reminder of the culture and history of pioneer settlement of the region. The Tualatin meanders slowly through the valley floor and has left a broad floodplain and productive agricultural soils. It is quite a contrast to the mountain streams on the east side of the metropolitan area. The indigenous landscape of forested bottomlands interspersed with wetlands and beaver ponds provided a diverse fish, wildlife and waterfowl habitat. Although cleared by early pioneers and drained to enable cultivation, standing water is still common today on many of the agricultural fields during winter and spring. The combination of agricultural "stubble" and standing water makes these valleys important feeding and resting areas for migrating waterfowl.

Within the urban growth boundary, the Tualatin Valley has been significantly urbanized with residential, commercial, and industrial uses with little interconnected greenspace. Throughout much of Washington County, the northern edge of the broad Tualatin River floodplain serves as the southern limit of the regional urban growth boundary.

Cooper and Bull mountains are visually prominent north-south ridge lines emerging from the Tualatin Valley. They lie on the western flank of Beaverton and Tigard separating the Fanno and Rock Creek drainages, two major tributaries of the Tualatin. The urban growth boundary almost bisects these features near their ridge lines.

Inside the urban growth boundary, the landscape has dramatically changed during the last five years from forested hillsides with some agriculture on gentler slopes near the ridge tops to high-end suburban single-family and multifamily residential communities. Outside the urban growth boundary, forest and pastoral character remain. Some exurban residential encroachment has taken advantage of the sweeping views over the Tualatin Valley to the Chehalems and Coast Range. Excellent views of the Cascade peaks are also available on the eastern slopes, which are generally within the urban growth boundary.

In Clackamas County, an unconnected portion of the urban growth boundary encompasses the city of Wilsonville. In the area north of Wilsonville and east of the city of Tualatin, the Tualatin River forms the Stafford Basin. Outside of the contiguous UGB, this broad U-shaped valley between Petes Mountain and Lake Oswego is of exceptional visual quality. The valley narrows considerably as the river enters the city of West Linn about one mile from its confluence with the Willamette.

The landscape of the Stafford Basin is a pastoral landscape, a mixture of agricultural and forest lands that are now experiencing significant exurban growth of very high-end residential development on large lots (3-5 acres). Both the Tualatin River and Interstate 205 traverse the valley floor of the basin. As a result, West Linn has been one of the fastest growing suburban communities in the metropolitan area during the last decade.

Tualatin River – *Forest Grove to West Linn (in the study area)*

Headwaters:	Coast Range
Mouth:	Willamette River
Geographic units:	Coast Range; Petes, Parrett, Chehalem and Tualatin mountains/Forest Park/West Hills, Clackamas River/Oregon City Plateau, Willamette Valley
Watershed area:	26,837 acres within inventory study area
Tributaries included:	Butternut, Rock (Sherwood), Hedges, Saum, Athey, Shipley, Fields, Pecan and Wilson creeks
Natural areas:	7,401 acres within study area (28 percent of watershed)
Population:	57,914 within study area
Significant features:	Hagg Lake, Fern Hill Wetlands, Jackson Bottom, Onion Flats, Cook Park, Hedges Creek Marsh, Tualatin Community Park, Willamette Park (West Linn)

Discussion

The ***Tualatin River*** flows from its headwaters in the Coast Range to its confluence with the Willamette River. For about 80 miles downstream from Henry Hagg Lake, formed by impounding a tributary of the Tualatin for agricultural irrigation, the Tualatin flows through or borders much of the urbanized sections of Washington County. The Tualatin watershed is bound on the west by the Coast Range, on the north and east by the Tualatin Mountains and the West Hills, on the south by the Chehalem, Parrett and Petes mountains. The Tualatin River Valley is a mosaic of agricultural, commercial and industrial land uses, with its higher elevations in the Coast Range and Tualatin Mountains dominated by forests. Vegetation is lush in the upper reaches of the river riparian. It changes to a relatively unvegetated stretch through much of the agricultural and industrial areas. High phosphorus loads are a water quality problem along much of the river, with contributions coming from soil erosion, agricultural activities, urban runoff and effluent discharges from sewage treatment plants. Protection of the headwaters of the creeks draining into the Tualatin should be a priority, as these are under high development pressure.

The ***Chehalem Mountains*** lie south of the Tualatin River in a landscape still largely rural in nature but also experiencing pressure for rural residential development. Forested and vegetated streamside areas are still quite common but have been impacted by ongoing timber harvest, agricultural practices and residential development. It may be possible to acquire larger parcels of land here than in some other parts of the metropolitan area owing to individual ownership of larger parcels. The north slopes drain to the Tualatin while the south slopes drain to the Willamette.

Onion Flats is included in a proposed 3,100-acre Tualatin River National Wildlife Refuge under consideration by the U.S. Congress to enhance migratory waterfowl habitat along the Pacific flyway. Near the city of Sherwood, it is located generally south of the Tualatin River at the ***Chicken and Rock Creek*** tributaries, which originate on the Parrett/Chehalem mountains geographic unit south of Sherwood. The refuge is a mosaic of wetlands, riparian, forested and open meadows, and agricultural lands. The proposed refuge provides an opportunity to link the Tualatin Valley geographic unit of the region with surrounding units. Vegetated corridors between the valley lowlands, their riparian systems and the forested uplands of the Chehalem and Tualatin mountains are critical for wildlife movement and genetic diversity of plant and animal species.

Hedges Creek parallels the Tualatin River for much of its slow, meandering course through the city of Tualatin. ***Hedges Creek Marsh***, an area owned and administered by the Wetlands Conservancy, contains a complex of active beaver dams that have created habitat for a diversity of plant and animal species. Major residential and commercial developments are planned adjacent to Hedges Creek.

The ***Tualatin Mountains*** are a landscape once dominated with fir, hemlock and maple forests. A few stands of Oregon ash existed along streams. Many of the once-forested uplands have been cleared and intense suburban development dominates as you approach the West Hills. ***Forest Park***, at the crest of the Tualatins in the city of Portland, is a 5,000-acre city park and the largest protected natural area in the Portland-Vancouver metropolitan area. The Tualatin Mountains provide the ecological connection between the Columbia River geographic unit of the region and the Tualatin Valley. The south slopes drain to the Tualatin, while the north slopes drain to the Willamette and Multnomah Channel.

The ***Southwest Hills***, generally considered to be an extension of the Tualatin Mountains, stretch along the Willamette River as far as West Linn. The east slopes drain to the Willamette while the west slopes drain to the Tualatin via Fanno Creek. Although development has largely displaced much of the wildlife that would have thrived in earlier years, a considerable number of species still find habitat in the wooded hills. Many lots are oversized and remain covered with native vegetation. Mammals such as raccoons, opossums and deer are fairly common residents, as are numerous species of birds.

Council Creek – *Washington County*

Headwaters:	Forest Grove vicinity west of Verboort
Mouth:	Dairy Creek
Geographic units:	Tualatin Valley
Watershed area:	1,950 acres within inventory study area
Tributaries included:	NA
Natural areas:	172 acres within study area (8 percent of watershed)
Population:	2,588 within study area
Significant features:	Agricultural landscape

Discussion

Council Creek lies west of the Dairy Creek drainage paralleling the northern city limits of Cornelius and Forest Grove in western Washington County. It is heavily agricultural with a narrow, but fragmented, strip of riparian vegetation along the creek. The best-developed stretch of riparian vegetation is located within a shallow canyon immediately north of the city of Cornelius.

Dairy Creek – *Washington County*

Headwaters:	Tualatin Mountains near Meachams Corner
Mouth:	Tualatin River near Jackson Bottom
Geographic units:	Tualatin Mountains, Tualatin Valley
Watershed area:	1,657 acres within inventory study area
Tributaries included:	NA
Natural areas:	103 acres within study area (6 percent of watershed)
Population:	6,524 within study area
Significant feature:	Dairy Creek Park, Jackson Bottom

Discussion

Dairy Creek is a low-gradient tributary of the Tualatin River in western Washington County. Remnant forest patches can be found along this system, but it is generally agricultural. There is a narrow, but almost continuous, corridor of riparian vegetation along the creek. At its confluence with the Tualatin, significant wetland habitat enhancement projects are underway or planned as part of the Jackson Bottom Master Plan. A major water quality planning effort to reduce phosphorous loads in the Tualatin is under way. The effort could complement the Greenspaces program.

MacKay Creek – *Washington County*

Headwaters:	Tualatin Mountains north of Shadybrook
Mouth:	Dairy Creek near Dairy Creek Park
Geographic units:	Tualatin Mountains, Tualatin Valley
Watershed area:	4,854 acres within inventory study area
Tributaries included:	Jackson Creek
Natural areas:	1,786 acres within study area (23 percent of watershed)
Population:	6,303 within study area
Significant features:	Tualatin Mountains, Dairy Creek Park

Discussion

MacKay Creek is a low-gradient stream flowing through primarily agricultural land east of the city of North Plains. It enters Dairy Creek just north of the confluence of Dairy Creek and the Tualatin River on the west side of Hillsboro. Blocks of adjacent upland forest still exist along the stream, although many are grazed. A major water quality planning effort to reduce phosphorous loads in the Tualatin is under way. The effort could complement the Greenspaces program.

Rock Creek – *Washington County*

Headwaters:	Tualatin Mountains north of Helvetia
Mouth:	Tualatin River at Merriwether National Golf Club
Geographic units:	Tualatin Mountains, Tualatin Valley
Watershed area:	18,489 acres within inventory study area
Tributaries included:	Abbey, Dawson and Holcomb creeks
Natural areas:	5,461 acres within study area (29 percent of watershed)
Population:	38,473 within study area
Significant features:	Deerfield Park, Rock Creek Park

Discussion

Rock Creek is a complex system of several tributaries in western Washington County. It passes over low-gradient terrain after originating in the Tualatin Mountains and West Hills through mostly agricultural lands and rapidly urbanizing areas between Beaverton and Hillsboro. Tualatin Hills Parks and Recreation District and the city of Hillsboro own and manage some natural areas along this system. Beaver, mink and otters can be found in some reaches. Great horned owls, red tailed hawks and coyotes raise their young in the forested areas and forage over the remaining, rapidly disappearing open fields.

The dendritic (branching) pattern of the tributaries provides a foundation on which lengthy linear riparian connections could be reestablished that would improve habitat values and be accessible to a large number of the region's

residents. As with other watersheds in the Tualatin basin, water quality is a concern. Management plans and implementation actions for the Greenspaces program should be coordinated with planning and actions of water quality agencies.

Beaverton Creek – *Western Washington County in and surrounding city of Beaverton*

Headwaters:	Raleigh Hills/Tualatin Mountains south of Forest Park
Mouth:	Rock Creek near Hillsboro
Geographic units:	Tualatin Mountains/Forest Park/West Hills, Tualatin Valley
Watershed area:	18,219 acres within inventory study area
Tributaries included:	Cedar Mill, Johnson (north and south forks), Missinger, Golf, Bronson, Hall and Willow creeks
Natural areas:	4,820 acres within study area (26 percent of watershed)
Population:	98,106 within study area
Significant features:	Foothills Park, Tualatin Hills Nature Park

Discussion

The ***Beaverton/Cedar Mill Creek system*** originates in the Raleigh Hills and west slopes of the Tualatin Mountains, where some intact forests remain. It then flows through the flatter and more densely developed residential and commercial areas of Portland, Beaverton and unincorporated Washington County. Much of the forest cover in the headwaters and tributaries has been lost or severely altered, however some patches in the Cooper Mountain vicinity along the south fork of Johnson Creek remain as well as in the Cedar Mill area.

The dendritic pattern of the tributaries provides a foundation on which lengthy linear riparian connections could be reestablished that would improve habitat values and be accessible to a large number of the region's residents. The city of Beaverton is seeking to take advantage of these opportunities and has specific policies directed toward restoration and enhancement of the Beaverton Creek Corridor. As with all creeks in the urban portions of the Tualatin River Basin, in-stream water quality is a significant concern and remediation programs are underway by the Unified Sewerage Agency and local jurisdictions.

Fanno Creek – *Portland/Beaverton/Tigard*

Headwaters:	West Hills near Sylvan
Mouth:	Tualatin River, Tigard
Geographic units:	Tualatin Mountains/West Hills, Tualatin Valley
Watershed area:	20,799 acres within inventory study area
Tributaries included:	Sylvan, Ivey, Ash, Ball and Summer creeks
Natural areas:	3,792 acres within study area (18 percent of watershed)
Population:	99,821 within study area
Significant features:	Oregon Episcopal School Marsh, Vista Brook Park, Greenway Park, Koll Creekside Marsh, Summer Lake Park, Englewood Park, Fanno Creek Park

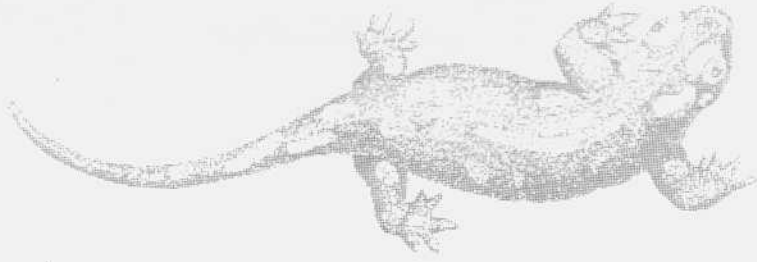
Discussion

The ***Fanno Creek Corridor*** drains the west side of the Tualatin Mountains and West Hills, running through parts of Portland, Multnomah County, Beaverton and Tigard. Fanno Creek meanders 14 miles through residential, commercial and industrial lands before entering the Tualatin River. The upper reaches and headwaters of Fanno Creek slowly flow through densely forested, privately owned residential lands that contain tributaries to the creek.

There are still scattered wetlands throughout the upper reaches of the creek. Cutthroat trout are known to spawn in the few remaining silt-free gravel beds. Much of the basin is within the Tualatin Hills Park and Recreation District, which owns and operates many recreational facilities and natural parks.

The lower stretches of the creek continue to show clear signs of degradation as pressure from urbanization, commercial, and residential uses increases. Associated with growth are water quality problems resulting from storm-water runoff from impervious surfaces and individual properties. The Unified Sewerage Agency of Washington County, the city of Portland Bureau of Environmental Services, and others have embarked upon aggressive programs to address water quality issues in the basin.

Portions of ***Bull and Cooper mountains*** are at the highest point in this watershed and are some of the most rapidly developing suburban residential areas in the Portland metropolitan area. Because of this, protection and enhancement of the headwaters of Fanno Creek should be a top priority. Some ponderosa pine stands remain that are uncommon in the metropolitan area. Remnants of forested headwaters of numerous streams draining into the Tualatin River remain but are rapidly being lost and significantly hydrologically altered by the surrounding development. It is critical to maintain adequate forest cover along these streams and adjacent uplands, as well as to bolster viable vegetated connections and corridors with larger systems draining to the Tualatin River.



Framing the northern and eastern portions of the Tualatin River Valley, these landscape features are generally forested and provide an upland habitat link from the city of Portland to the Coast Range. The Tualatin Mountains reflect most of the dramatic geologic history of this region. Rising steeply up from the Columbia River and Multnomah Channel, they link the Columbia lowlands and Willamette Valley geographic units with the Tualatin Valley. Extending almost into Portland's central business district, these ridge lines are viewed every day by thousands of commuters, residents and workers providing that sense of "country in the city" that distinguishes this metropolitan area from so many in the nation.

Northwest of Forest Park, the Tualatin Mountains are outside of the urban growth boundary. Significant commercial forestry operations have been conducted in this portion of the metropolitan area over the last few years, some in anticipation of exurban residential development.

Forest Park itself is entirely within the urban growth boundary. This magnificent amenity is the largest protected natural area within the Metropolitan Service District boundary, covering nearly 5,000 acres. It has become a magnet for high-end residential uses, with tremendous development pressure nibbling at its fringes.

South-facing slopes descending into Washington County from Forest Park offer sweeping views of the Tualatin Valley and the Coast Range. Except for a narrow strip along the ridge top generally adjacent to Skyline Drive, much of the slope immediately below Forest Park is within the regional urban growth boundary. In Washington County in particular, the mountain slopes are experiencing significant suburban development pressure. In fact, Washington County has been the fastest-growing county of the metropolitan area during the last decade.

The West Hills are an extension of the Tualatin Mountains, reaching south beyond Lake Oswego and Camassia Ridge to Petes Mountain near West Linn. They divide the Willamette and Tualatin valleys and provide an upland ecological link between the two. The eastern facing slopes in the Marquam Hill vicinity and along Terwilliger Parkway provide a green backdrop that defines the Portland central business district and Corbett/Lair Hill neighborhood. However, a strong residential market on the steep slopes has developed over the last few years due to spectacular views of the Willamette and Cascades that the West Hills offer.

Heavily logged by the turn of the century, conversion from forest and agricultural uses to suburban uses began in the Automobile Era with improvements and all-weather surfacing of the historic Old Plank Road (now Canyon Road) and Beaverton-Hillsdale Highway. Although the landscape is now characterized by suburban development, there are still several remnant second growth forest "patches" and numerous narrow riparian corridors along the many low-order creeks and streams.

Tryon Creek – *Lake Oswego vicinity*

Headwaters:	West Hills near Multnomah Village
Mouth:	Willamette River
Geographic units:	Tualatin Mountains/West Hills, Willamette Valley
Watershed area:	4,620 acres within inventory study area
Tributaries included:	Falling Creek
Natural areas:	1,567 acres within study area (34 percent of watershed)
Population:	18,340 within study area
Significant features:	Tryon Creek State Park

Discussion

Tryon Creek is one of the major remaining free flowing tributaries descending from the West Hills down to the Willamette at Lake Oswego. Urbanized in its upper reaches, its middle reaches run through *Tryon Creek State Park* before crossing under State Route 43. Tryon Creek State Park is rather unique for its large size and location, although it is somewhat overshadowed in the metropolitan area by the much larger Forest Park. Being surrounded by residential development, the state park still supports a remarkable assemblage of natural vegetation and wildlife. Like Forest Park, it is well used by residents of the metropolitan area. Much of the maintenance and upkeep is provided through the efforts of Friends of Tryon Creek State Park, a nonprofit citizen organization.

Like the Tualatin Valley, the Willamette Valley is characterized by productive agricultural soils and active farming operations outside of the urban growth boundary south of Wilsonville. Inside the urban growth boundary the valley floor and associated "terraces" are the most intensively-developed portions of the metropolitan area.

Rocky Butte, Kelly Butte and Mt. Tabor are visually prominent lava buttes located on both sides of I-205 north of Powell Boulevard. While their original habitat value has been compromised by surrounding urban development, forested peaks and steep walls provide drama to the urban landscape and a sense of "country in the city." They provide close by "natural" recreational experiences for nearby residents and are viewed by thousands of commuters every day along I-84 and I-205.

In the Progressive Era, the surrounding Portland Terraces originally converted from agriculture to suburban uses. Intensification of use continued during the Automobile and Modern Era. Pressure to develop the buttes was not experienced until the Modern Era, due to their rugged topography. Today, some forest cover remains on the top of the buttes, but with the exception of Mt. Tabor, only small portions are protected as open space. The entire east side north of Powell Boulevard has fewer remaining natural areas than any other area of the region.

Willamette River – *South of Wilsonville to the Columbia (in study area)*

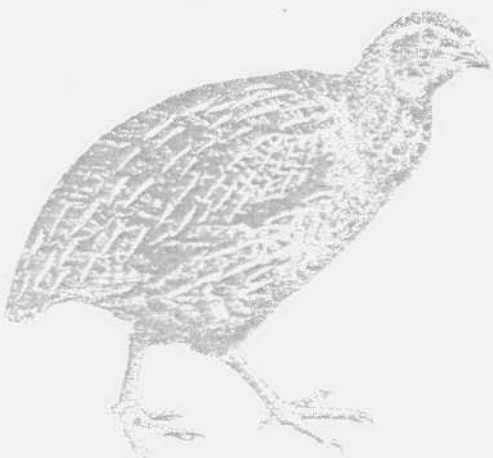
Headwaters:	Cascade Mountains near Waldo Lake
Mouth:	Columbia River
Geographic units:	Willamette Valley, Tualatin Valley, Clackamas River/ Oregon City Bluffs, Petes/ Parrett/Chehalem mountains, Tualatin Mountains/Forest Park/West Hills, Columbia River
Watershed area:	99,778 acres within inventory study area
Tributaries included:	Molalla River, Multnomah Channel and Beaver, Tanner, Spring Brook, Johnson (West Multnomah County), Balch, Saltzman, Doanne, Miller, McCarthy, Patterson, Crabapple, Jones, Joy, Jackson (North Multnomah County) and Ennis creeks
Natural areas:	33,499 acres within study area (34 percent of watershed)
Population:	490,166 within study area
Significant features:	Molalla River State Park, Willamette Park (West Linn), Willamette Falls, Oswego Lake, Clackamette Park, Meldrum Bar Park, Mary S. Young State Park, George S. Rogers Park, Elk Rock Island/ Keller Park, Ira S. Powers Park, Willamette Park (Portland), Ross Island, Oaks Bottom, Tom McCall Waterfront Park, Cathedral Park, Kelley Point Park, Bybee Howell Territorial Park, Sauvie Island Wildlife Refuge, Virginia Lakes, Burlington Bottom, Hampton old-growth stand.

Discussion

Similar to the Columbia River, the *Willamette River* was once a mosaic of braided channels, lakes, sloughs, creeks and wetland forests. Any opportunity to add to the existing wetland and riparian parcels should be encouraged. Steep slopes and forested hills define the viewshed from the Willamette, providing good wildlife habitat, and marking a distinct transition from urban to rural portions of the metropolitan area.

The ***Molalla River Delta*** area lies northwest of Canby and includes the lower reaches of the ***Molalla and Pudding rivers,*** their confluence, and within a mile, the confluence of the Molalla and Willamette rivers. ***Molalla River State Park*** includes some of this area and is the site of a great blue heron rookery. Extensive bottomland forests can be found along the Pudding River, a meandering low-gradient stream similar to the Tualatin River. An opportunity exists to create a large regional bottomland park. This park would give this river system sufficient room to continue actively meandering without interference based on concerns about flooding of agricultural lands.

The ***French Prairie*** area lies to the west of the Pudding River and may contain remnants of original Willamette River prairie and marsh habitats once common in the region prior to European settlement. Such habitats are now extremely rare.



The Tonquin Scablands are an extensive geological area near Sherwood that was formed by the cataclysmic Missoula floods, which occurred some 15,000-25,000 years ago. Huge volumes of gravel, sand and small boulders deposited by the abating floodwaters shaped a tousled landscape of rocky soils. These are actively exploited for fill and construction materials. The rich, gravelly soils support an unusual flora for the region. The topographic diversity provides a variety of ecological niches. The northern portion of the scablands drain to the Tualatin, while the southern portion drains to the Willamette.

The ***Willamette River Narrows*** consist of a forested canyon created by the Oregon City bluffs and Petes Mountain shortly upstream of the confluence of the Tualatin and Willamette rivers above Willamette Falls. Outside of the urban growth boundary, they offer an excellent opportunity to create a broad riparian and upland addition to the ***Willamette River Greenway*** between Wilsonville, West Linn, Canby and Oregon City.

The Camassia ridge area of West Linn lies on hilly terrain just north of I-205 and west of the Willamette River. It supports unique vegetation and is the home to The Nature Conservancy's ***Camassia Preserve.*** Thin soils covering basalt bedrock support open forests and savannah areas with oak, madrone, poison oak and native wildflowers such as brodiaea and camas. Areas with deeper soils support mixed coniferous/deciduous forests, more typical of the region.

The ***Southwest Hills,*** generally considered to be an extension of the Tualatin Mountains, stretch along the Willamette River as far as Oregon City. Traditionally these hills have formed a backdrop for downtown Portland. The Portland section of the Southwest Hills has been heavily built upon in recent years as land values have exceeded development costs on the steep and unstable slopes.

These hills once boasted many small streams, but these have long since been contained in underground drainage structures. The east slopes drain to the Willamette, while the west slopes drain to the Tualatin. Although development has largely displaced much of the wildlife that would have thrived in earlier years, a considerable number of species still find habitat in the wooded hills. Many lots are oversized and remain covered with native vegetation.

The ***Willamette River Terraces,*** also known as the Portland Terraces, are located on the east side of the Willamette River. The river's floodplain in ancient times, a drop in sea level altered the course of the Willamette River and ultimately abandoned the terraces. This area currently consists of single-family residential neighborhoods with little interconnected greenspace. Priorities in this area are identification of natural area restoration and creation opportunities. Connection of corridors by linking backyards and existing natural areas and open space should be encouraged, as well as opportunities to "daylight" underground creeks.

Mt. Tabor and Rocky and Kelly buttes are visually prominent topographic features rising up from the Portland Terraces. While habitat value is limited, they provide welcome visual relief from the surrounding sea of residential, commercial and industrial land uses on the east side of Portland. Protection of additional land on these urban buttes, maintenance and reestablishment of forest cover should be priorities. Improving public access and developing view points should also be pursued.

The Willamette River shoreline through the metropolitan area has been much-altered in the course of economic pursuits relating to shipping and industrial activities. Many of the associated sloughs and lakes that once formed a part of this drainage system have been progressively filled to provide for expansion of the urban area. Resulting loss of habitat over the last century caused a decline in populations of bald eagles, yellow-billed cuckoos, Western pond turtles, red-legged frogs, as well as wapato and other sensitive plant species that once thrived in the Willamette River system.

It will be important to retain a corridor from the Willamette River to the top of the ridge and on to the West Hills and Forest Park for the passage of plants, birds, mammals, reptiles and amphibians.

Historical Planning Efforts

> *"In one respect every natural area has a common uniqueness – it takes everyone forever to preserve it, but one person and one time to destroy it."*
>
> *E.J. Koestner*

Historical regional planning efforts

Stewardship of the land was carried out by the Native American population long before the settlement of the region by European pioneers. Much of the preservation of the land has been taken for granted for years, but, in fact, protecting natural areas and acquiring open space and park lands for the benefit of the public has been in the realm of government since cities and counties and the state of Oregon were established.

The city of Portland established one of the first public parks systems in the west when the Park Blocks were purchased for a linear park in 1870. Creating an interconnected system of parks and greenways for the Portland region was first espoused in 1903 by the Olmsted brothers, nationally respected landscape architects and planners, when they were retained by the Portland Parks Board to develop a parks master plan for the city.

The Olmsted Report, and others that have followed, emphasized the importance of striving for a balance in developing the urban environment and its surrounding areas. These visionaries have cited not only the recreational value of open space in the city but also the visual appeal of greenspaces in the urban setting. The significance of easily accessible, protected viewpoints at various places in the city has also been a recurring theme.

Unfortunately, while there has been much wisdom invested in these earlier plans, limited success has been attained in carrying out historical plan recommendations. The challenges of overcoming different perspectives and priorities within jurisdictional boundaries, limited long-term funding mechanisms and a general community assumption that "our green spaces will always be here" have hampered implementation of a comprehensive strategy to protect regional natural areas and open space.

It is important, nevertheless, to acknowledge that the roots of a protected regional natural areas system lie deep within a history of planning efforts that have time and again acknowledged a special quality given our region by the natural environment in which we live. The following, then, are key events and dates that have laid the foundation for today's Metropolitan Greenspaces program:

Parks Plan for the City of Portland – 1903
Landscape architects Frederick Law Olmsted Jr. and John Charles Olmsted proposed the establishment of an integrated and visionary park system by asserting that ". . . a connected system of parks, parkways and trails (would be) far more complete and useful than a series of isolated parks." Their recommendations cited the need for prompt public acquisition of natural areas and park lands, including lands outside the populated areas of that period. The concept of stewardship by private landowners was also stressed. Terwilliger Parkway and "the 40-Mile Loop," a pedestrian-oriented recreational trail system that connects parks around the urban area, are outgrowths of Olmsteds' plan.

Regional Planning in the Pacific Northwest – 1938
In a report to the Northwest Regional Council and City Club of Portland, sociologist and urban planner Lewis Mumford recommended that a bi-state and regional approach to urban planning, growth management and natural resources planning be undertaken in the Portland-Vancouver region. He predicted that economic benefits would occur if greenspaces and natural areas were preserved, stating that ". . . greenbelt towns with low cost housing should provide a special invitation to settlement by new industries."

Post-World War II Comprehensive Plans for Cities – late 1940s-60s
As the automobile, interstate highway system and low-interest loan programs for housing construction all became part of our domestic agenda, land was developed on a massive scale. With the widespread use of the automobile, suburban cities began to form and parks farther away from population centers became more accessible. Many comprehensive plans for cities and counties proposed large regional parks, scenic drives and parkways that were best reached and enjoyed by use of an automobile.

Parks Plan for the City of Forest Grove – 1958
Due to its proximity to Portland, Forest Grove began preparing for future growth and a population increase in the mid-1950s. The preservation of open space was a priority. To the city, "the fact that land development is most healthy indicates that land for future park and recreational needs should be acquired soon or desirable sites will be difficult to acquire within another decade." Indeed, the plan called for cooperative planning efforts between Washington County and its rural communities. Acquisition strategies and obtaining conservation easements were seen as essential tools to preserving natural areas and establishing parks. Greenways, scenic drives and park strips along Gales Creek and the Tualatin River were recommended to interconnect Forest Grove with large parks and forest preserves benefiting areas beyond its own city limits.

The Urban Outdoors: A New Proposal for Parks and Open Space – 1971
The Columbia Region Association of Governments (CRAG), a five-county/two-state planning organization and Metro's predecessor, completed a report on the "urban outdoors" that proposed a system of inner city and large regional parks and open spaces, trails, and natural areas in the Portland-Vancouver metropolitan area. The primary goals of the plan focused on "preserving and enhancing those environmental features (the rivers, streams, floodplains, high points and historical sites) that have already stamped the region with their unique form and character, which make it a very special place to live." Once again, regional planning, intergovernmental cooperation and immediate protection and/or acquisition of land were stressed. Much of the implementation of the plan's recommendations was dependent on grant funding, however, that was not forthcoming in adequate amounts. Little implementation was accomplished.

Willamette River Greenway Plan – 1974
The state of Oregon outlined (in ORS 390.310-368) protection and acquisition proposals for the Willamette River along its 150 land-miles from Cottage Grove to the Columbia River. The goals of the plan are to develop and maintain a natural, scenic, historical and recreational greenway on lands along the river, including the Multnomah Channel (west side of Sauvie Island). Comprehensive planning, scenic easements, public access points, acquisition of key recreational sites, farmland protection, environmental conservation, and intergovernmental cooperation were viewed as essential elements to successful implementation of the plan.

LCDC/Comprehensive Planning/Local Park Master Plans – late 1970s through 1980s

The state of Oregon, through its land use laws and the Land Conservation and Development Commission (LCDC), requires all cities and counties to develop comprehensive plans, including an inventory of key natural resource areas and locally adopted policies to protect them (Goal 5). Most cities and counties have adopted park master plans that outline open space, park and recreational needs and priorities, including acquisition and improvement strategies.

Columbia-Willamette Futures Forum/ Metropolitan Citizens League Study – 1984-1985

Two citizen groups met in the mid-1980s to address issues of significance to the metropolitan region. Citing recreation and leisure services as critical issues related to the quality of life in the Pacific Northwest, their reports recommended that recreational planning be addressed in a comprehensive manner through regional planning and multijurisdictional cooperation and that a regional parks study and inventory of parks be undertaken. Improved communication and cost-sharing of planning and operational activities among the various park providers in the region were also encouraged. Many of these recommendations have been acted upon already by Metro and its planning partners.

State of Oregon Comprehensive Outdoor Recreation Plan (SCORP) 1988-93 – 1989

The most recent update of the SCORP documented that recreational lands and facilities are not available in sufficient amounts near the metropolitan area. It calls for the identification and preservation of those lands and waters necessary to meet dispersed recreation needs.

Recent momentum

The following recent events have led directly to the current progress found in the Metropolitan Greenspaces program. They may well prove to be key factors that differentiate our current efforts from historical planning endeavors.

Metropolitan Wildlife Refuge System – 1988 to Present

The Audubon Society of Portland proposed an urban wildlife refuge system whose major objectives were to promote a comprehensive, regional approach for planning and management of natural areas. As means to expand the number of sites available for wildlife in the urban environment, it proposed limited use of sensitive natural areas by the public and governmental agencies and encouraged establishment of an appropriate organization to accept private donations of land and conservation easements. In order to institutionalize the natural areas system into a regional entity with land use planning authorities and potential long-term financing and implementation powers, this system has become part of the Metropolitan Greenspaces program.

Country in the City Symposiums – 1988-1991

The symposiums were held at Portland State University for more than 2,000 people and featured field trips and site visits to natural areas such as greenways, creeks, rivers and lakes throughout the four-county metropolitan area and the Willamette Valley. Speakers, who came from the Northwest as well as from around the world, shared information about their open space and natural areas planning programs. Many encouraged the Portland-Vancouver region to pursue a regional approach to natural areas planning and protection. These symposiums were initiated and planned by the Audubon Society of Portland, in cooperation with PSU's Geography Department. They were supported with financial and technical assistance from Metro, the U.S. Environmental Protection Agency's Office of Wetlands, the city of Portland's Bureau of

Environmental Services, Unified Sewerage Agency and many other local and state cooperators.

Greenprint for the Region Symposium – 1989
Dr. David Goode of the London Ecology Unit met with representatives from local jurisdictions and conservation organizations during a two-day workshop to lay out potential strategies on how the Portland-Vancouver metropolitan area could develop a regional approach to natural areas and open space planning. Having developed similar programs in Great Britain and Toronto, he cited the need for regional cooperation as essential and cost effective. The workshop was presented by the Audubon Society of Portland, with assistance from Portland General Electric and Metro.

Metro Regional Parks Study – 1989
With the support of the Oregon Parks Department; Clackamas, Multnomah and Washington counties; Tualatin Hills Parks and Recreation District and the city of Portland, Metro undertook a study of parks and natural areas planning and operations in the region. The results of this effort are printed in the "Metro Recreation Resource Study and Metropolitan Area Parks: A Directory of Parks and Recreational Facilities in the Region". The study found that there was no regional coordination in natural areas planning; that most park departments did not offer natural area parks and preserves; but, importantly, that there was a general interest from park professionals, conservation organizations, "friends" groups and other citizens to address this missing link in the region's overall parks and recreation system. It was again recommended that a regional approach be undertaken to meet such needs, reiterating that the ecosystem, natural features and wildlife do not respect city/county/state boundaries. It was also determined that coordinated planning and cost-sharing of activities would stretch the few public dollars available for natural areas planning.

Tours to East Bay Regional Park District (Oakland, Calif.) – 1989 and 1990
Elected officials and park managers from the Portland-Vancouver region visited East Bay, a 50-year-old two-county regional parks and open space district, to learn how our metropolitan area could develop a similar regional approach to parks and natural areas planning. Clackamas, Clark, Multnomah and Washington counties; the Tualatin Hills Parks and Recreation District; the cities of Portland, Beaverton and Lake Oswego; Metro and the Audubon Society of Portland were among the participants in the tours. Regional planning strategies and financing techniques, such as a bond measure, to implement a multijurisdictional approach to natural areas planning were discussed. Following these meetings, the travelling elected officials drafted a resolution supporting a cooperative approach to parks and natural areas planning for the Portland-Vancouver metropolitan area.

Passage of Open Space Bond Measures/ Park Levies – 1989-90
Funding measures to support the acquisition of greenspaces, natural areas, open space, parks and trails have been passed by the cities of Portland (1989), Tigard (1989), Tualatin (1989), Lake Oswego (1990) and Gresham (1990) and the North Clackamas Parks and Recreation District (1990). The passage of these local bond measures appears to be in response to increased environmental awareness, the desire to maintain the quality of life, pressures, and changes brought about by growth and development, traffic congestion and the feeling of urgency to save open space.

Portland Future Focus – 1990-91
The city of Portland's strategic plan was developed during a two-year period by citizens who donated more than 25,000 volunteer hours to that effort. Managing regional growth and maintaining livability were priority items in the strategic plan. Implementation recommendations supported the linkage of natural areas, open space, trails, greenways and significant landscape features into an integrated regional system. Metro was recommended in the plan as the lead agency in the establishment of this natural areas system. Portland, other local park and recreation providers, state and federal agencies, nonprofit conservation organizations, private land trusts and citizens were all encouraged to be partners with Metro.

Resolutions of Support for Metropolitan Greenspaces (Parks and Natural Areas Program) – 1990-91
During 1990-91, elected Metro officials and staff contacted all the cities and counties within the Metro boundaries about the above-mentioned resolution. Outlining the need for a cooperative regional approach to parks and natural areas planning, a partnership between Metro and the local jurisdictions was stressed as critical to the program. Presentations about the Greenspaces program were made at local staff meetings, parks advisory board meetings, and at city council/county commission meetings. All three county commissions and 22 of the 24 cities within Metro's boundaries passed the resolution supporting regional cooperation to protect and preserve natural areas. The city of Vancouver and Clark County, Wash., also passed the resolution, as did several nonprofit conservation and neighborhood organizations.

Regional Parks Forum – 1988 to present
More than 50 public and nonprofit park providers, land trusts, conservation organizations, "friends" groups and citizens in the region have been brought together periodically to improve cooperation on open space and parks issues. For the first time in the region's history, all the appropriate agencies and organizations met in 1988 to talk, exchange ideas and begin planning together as a community. A consensus was reached to begin a regional partnership and cooperative approach to natural areas planning, with Metro in the leadership role. Local resources in the form of grants, technical assistance, staff time, and data-sharing were combined with Metro's financial and staff resources to create a parks and natural areas program, which became the Metropolitan Greenspaces program in 1990.

Metro Council and Metro Executive Officer Policy Direction – 1989-present
Since 1989, the Metro Council has adopted various resolutions supporting a leadership role for Metro in regional planning of parks and natural areas. The executive officer and Metro Council have designated the Greenspaces program as a priority activity of the agency. Metro budgets have reflected continued funding for Greenspaces. In 1990, the council established two official groups, the policy and technical advisory committees, to assist in setting policies and priorities for the program.

Cooperative Regional Planning Efforts – 1989 to present
The establishment of the Greenspaces program has led to many cooperative efforts in natural resource identification and protection. In partnership with more than 50 government agencies, nonprofit conservation organizations, "friends" groups and private consulting firms, Metro undertook the role of regional coordinator for projects such as: an infrared aerial photography project, which has become the basis for our natural areas inventory (spring 1989); the Natural Areas Inventory and Analysis and a related mapping effort (1989 to 1991); review of local park master plans and Goal 5 natural resource inventories and policies in order to identify their relationship to the Greenspaces program (1991-92); Trip into Nature, a quarterly series of field tours for citizens to learn about and appreciate existing greenspaces (1991-92); initiation of a process that enables citizens to nominate specific sites and corridors for natural areas and open space protection (1992); the Greenspaces restoration

grant program described above for cities, counties, special districts and nonprofit organizations (1992 to 1993); and formulation of the Metropolitan Greenspaces Master Plan (1992).

U.S. Fish and Wildlife Service Grant– 1991-present

Congress and the president designated the Metropolitan Greenspaces program as one of two national demonstration projects for regional natural areas and open space planning. With this designation, the Greenspaces program received $1.134 million in grants in two fiscal years to carry out planning and citizen involvement activities in the four-county region. The work will be used by Congress and the U. S. Fish and Wildlife Service to develop model natural resource programs for other urban areas around the country. Two major products of the grant that they are looking at carefully are the Metropolitan Greenspaces Master Plan and a restoration grant program to which cities, counties, special districts and nonprofit organizations can apply for funds to restore and enhance greenspaces, natural areas, wetlands, and riparian zones in the urban area.

Citizen Forums on Greenspaces – 1991 and 1992

During July 1991 and January and February 1992, Metro, with the assistance of the National Park Service, conducted 19 citizen forums and workshops to solicit public input on the direction of the Greenspaces program. More than 500 participants voiced strong concern that protecting our remaining natural areas before they are all developed was a critical community goal. Livability issues, natural areas close to home, trails and the fear of overdevelopment were consistent themes at the forums. These themes have also been reflected in other reports and forums. Citizens have stated that government agencies need to work closely together in protection efforts. Small sites and neighborhood natural areas, as well as regionally significant sites, have been recommended to be protected. The immediacy of moving forward with a greenspaces/open space plan is seen as critical.

Preparation of the Metropolitan Greenspaces Master Plan – 1992

A public review draft of the Metropolitan Greenspaces Master Plan was released for comment in May of 1992. A series of five citizen workshops, briefings before every interested city, county and parks district in the region and presentations to several interest groups were conducted to solicit input on the master plan prior to adoption by the Metro Council.

References and Resources

Roles and responsibilities framework

approved by the Metropolitan Greenspaces Policy Advisory Committee 6-24-92
(includes references to text citations in the body of the plan)

Program Goal: To create a cooperative regional system of natural areas, open space, trails and greenways for wildlife and people in the four-county bi-state Portland Oregon/Vancouver Washington metropolitan area. **(referenced in the Vision and overall Program goals)**
Approach: Through a cooperative effort that complements local government and special district open space, parks and recreation programs in the metropolitan area of Clackamas, Multnomah and Washington counties, Oregon, Metro will identify, acquire and arrange for the management of a system of greenspaces of metropolitan significance. A closely coordinated parallel effort will be undertaken with the city of Vancouver, Clark County and the state of Washington so that the program will cover the entire metropolitan area. **(referenced in the Vision and Part One, Sections 1 and 2, and Policy 1.14)**

Program Planning and Management:
After adoption of the Master Plan by the Metro Council and the general obligation bond measure election, policy advisory responsibilities to the Metro Council will transition from the Metropolitan Greenspaces Policy Advisory Committee to the Regional Policy Advisory Committee established by Goal 1, Objective 2 of Metro's adopted Regional Urban Growth Goals and Objectives. The Metropolitan Greenspaces Technical Advisory Committee will continue to provide technical advice on the implementation and future revisions to the Master Plan, reporting directly to RPAC. **(referenced in Part One, Section 1)**

Roles of Metro and Local Governments

(Oregon portion of the region)

1) **IDENTIFICATION OF LOCAL AND REGIONAL GREENSPACES SYSTEM** **(referenced in Part One, Section 1 and 2)**

a) Local governments and special districts providing park services, and local governments with comprehensive planning responsibility, will identify greenspaces systems in their jurisdictions.

b) Metro will identify a system of large-acre natural areas and open spaces that should be protected throughout and proximate to the Metro boundary and a system of trails and greenways to interconnect them.

c) The local government-identified and Metro-identified systems will be "overlaid" to determine those greenspaces of common interest.

d) Local governments and special districts providing parks services, as well as local governments with comprehensive planning responsibility, will meet with Metro to decide whether the greenspaces of common interest are more appropriately administered by local governments or Metro. In the case where a Metro-identified greenspace designation would conflict with a local government comprehensive plan designation, the affected parties will negotiate a resolution to the conflict. Acquisition and management responsibility for those sites is discussed, respectively, in sections 3 and 4 of this document.

2) **PLANNING OF GREENSPACES**

a) Metro in cooperation with local governments, special districts, state and federal agencies, and nonprofit organizations will develop a metropolitan-wide Greenspaces Master Plan that will identify and recommend protection of a system of natural areas, open space, trails and greenways **(see section 1 of this document). (referenced in the Vision and Part One, Sections 1 and 2, and Policy 1.14)**

b) Criteria will be delineated in the Master Plan to assist in the establishment of priorities for inclusion of specific greenspaces into the system. However, some flexibility will be retained in order to quickly respond to unexpected preservation opportunities that may arise or unforeseen changes in circumstances that may affect priorities. **(referenced in Part Two, Section 1 and Policy 2.5)**

c) The location of large-acre protection sites, restoration sites, trail and other interconnections shown on the Metropolitan Greenspaces Master Plan system map are representative. More site-specific definition of system components will be undertaken in cooperation with local governments and other interests subsequent to Master Plan adoption by the Metro Council. Balancing natural resource value and development value will be an important planning activity when determining the ultimate size and location of specific greenspaces system components. **(referenced in Part One, Section 1)**

d) Management plans for specific natural area sites will be prepared within a specified time frame after securing

them. These plans will serve as the basis for local government, special district, nonprofit organization, or Metro improvement and operations of the sites. Metro will initiate management plans for greenspaces secured and/or managed at the regional level. Local parks providers will initiate management plans for greenspaces secured and/or managed at the local level. Metro and local governments in whose jurisdiction greenspaces are located will work cooperatively to prepare management plans and execute them through intergovernmental agreement. Interim protection guidelines may be adopted by Metro and/or local governments during preparation of management plans for protected greenspaces. **(reference in Part Two, Section 1 and Policies 1.2, 2.20 - 2.22)**

e) Metro will be responsible for planning a Greenspaces trail system. The trail system planning will result in a blueprint for a regional trail system that can be adopted by all participating agencies. This trail system will be developed in cooperation with local and state governments in Oregon and Washington, the U.S. Forest Service, the 40-Mile Loop Trust, the Greenway to the Pacific program, the Columbia Gorge Commission, the Chinook Trail and other interests. In the case where a trails designation would conflict with a local government comprehensive plan designation, the affected parties will negotiate a resolution to the conflict. **(referenced in Part Two, Section 1 and Policies 2.12-2.15)**

f) Metro will be responsible for working with local governments to delineate areas that are potential restoration sites. Metro will give a priority to areas which are deficient in open space and natural areas. Metro will provide technical and financial assistance to local governments as appropriate. **(referenced in Part Two, Section 1 and Policies 2.17 - 2.19)**

3) ACQUISITION OF GREENSPACES

a) Greenspaces to be administered at the local level will be the responsibility of local governments to secure and manage. **(referenced in Part One, Section 2)**

b) Greenspaces to be administered by Metro will be the responsibility of Metro to secure and manage. **(referenced in Part One, Section 2)**

c) Greenspaces of common interest administered by Metro will be the responsibility of Metro to secure. Metro will offer a first right of refusal to the local government in which the sites are located to acquire the property. The first right of refusal will only be offered to local governments currently providing park services in whose service area the greenspaces are located. It will not be offered to local governments having comprehensive planning responsibility that do not provide park services as of July 1, 1991. **(referenced in Part One, Section 2)**

(1) If the local government accepts acquisition responsibility from Metro, the accepting government will be responsible for funding the acquisition of the greenspace with their own resources. **(referenced in Part One, Section 2)**

(2) If the local government expresses interest in acquiring a site, Metro may enter into an intergovernmental agreement which includes provisions related to regional or joint funding of the local acquisition. **(referenced in Part One, Section 2)**

(3) If the local government chooses not to acquire the property, Metro will be responsible for funding the acquisition of the greenspace with its own resources. **(referenced in Part One, Section 2)**

d) Greenspaces of common interest administered at the local level will be the responsibility of local governments to secure and manage. **(referenced in Part One, Section 2)**

e) Lower priority will be given acquisition of properties adequately protected by federal, state or local regulations. The Greenspaces acquisition program will not be construed as a substitute for land use and natural resource management regulations at any level of government, including local comprehensive plans. Continued application of such regulations to real property by appropriate levels of government are recognized as one of several strategies necessary to fully implement the Greenspaces Master Plan. **(referenced in Part One, Section 2)**

f) In evaluating priorities for acquisition, Metro will first determine whether existing federal, state, regional and local land use, environmental or other applicable regulations provide adequate protection of greenspaces. If not, Metro will then determine if legally defensible new regulations could be adopted by appropriate government agencies within timeframes necessary to protect significant greenspaces. If not, Metro will pursue acquisition based on fair market value. **(referenced in Part One, Section 2)**

g) Metro will propose funding on a regional basis, to establish both:

(1) a greenspaces acquisition and capital improvement fund with which to acquire, in fee or easement, or otherwise secure and improve greenspaces proposed for inclusion in the regional greenspaces system by the Greenspaces Master Plan, and

(2) a management and operation fund. **(referenced in Part One, Section 2)**

h) Seventy-five percent (75%) of the capital and acquisition funds raised through the initial voter-approved regional general obligation bond, after netting out bond issuance costs, will be retained by Metro. Twenty-five percent (25%) of the net initial and capital and acquisition funds will be distributed by Metro to local governments. Cities and special districts not providing park and recreation services as of July 1, 1991, are not eligible to receive funds. The funds will be distributed to counties, cities and special parks districts in accordance with attachment "A" of this roles and responsibilities document. Funds will be expended as follows: **(referenced in Part Two, Section 1)**

(1) Metro will use the regional portion of funds for acquisition and development of greenspaces and interconnections to be secured and administered by Metro, for property transaction and associated administrative costs, and for overall financial management of bond funds. Funds may not be used for operations and maintenance activities.

(2) Funds distributed by Metro to local parks providers are to be used for any locally determined open space, parks and recreational acquisition and capital needs consistent with applicable tax laws and provisions of the regional funding measure. Funds may not be used for operations and maintenance activities nor be used outside the Metropolitan Service District's boundary unless Metro finds that such expenditures clearly benefit district residents.

(3) The "pass-through" of regional funds to local parks providers will be executed through intergovernmental agreements.

(4) Eligible local governments and special districts may form consortiums to combine their allocations for eligible purposes.

i) Metro and local agencies will maintain greenspaces included in the metropolitan-wide system in perpetuity in accordance with management plans. Where possible, deed restrictions will be included at the time of transfer of property, from private property owner to Metro or local government, Metro to local government, local government to Metro, or Metro or local government to nonprofit organization, which require use of the land for open space purposes in perpetuity. **(referenced in Part Two, Section 1 and in Policies 2.20 - 2.22)**

4) OPERATION AND MANAGEMENT OF GREENSPACES

a) Using the resource management planning process (see section 2), acceptable maintenance, types and levels of programmed use, and development standards will be established for all components of the Greenspace system. The operator (Metro or local government) shall be responsible for operation and management in compliance with the standards developed through the management plan. **(referenced in Part Two, Section 1 and in Policies 2.20 - 2.22)**

b) The management practices employed by Metro, local governments, special districts or nonprofit groups for the operation and maintenance of greenspaces will be consistent with the adopted Greenspaces Master Plan and with specific site management plans. **(referenced in Part Two, Section 1 and in Policies 2.20 - 2.22)**

c) Metro will budget for and manage, operate and maintain those portions of the greenspaces program to be administered by Metro (see Section 1 of this document). Metro may make provisions with local parks providers for management of Metro-administered greenspaces, section 3.b) notwithstanding, if local parks providers express interest to Metro. Nothing in this document shall be construed to preclude local governments or Metro from entering into ORS Section 190 agreements regarding park and recreation operations and maintenance. **(referenced in Part Two, Section 1)**

d) Local agencies will budget and fund the operation and maintenance of those portions of the greenspaces program to be administered by local governments (see section 1). **(referenced in Part Two, Section 1)**

e) Local governments, special districts and Metro may choose to contract with private entities, certified 501(c)(3) nonprofit organizations and/or local parks providers for development, operation and maintenance, provided improvements and activities are consistent with adopted greenspaces management plans. **(referenced in Part Two, Section 1)**

f) Metro will offer a first right of refusal to local governments in which greenspaces of common interest are located to provide management responsibility by intergovernmental agreement. The first right of refusal will only be offered to local governments providing park services, as of July 1, 1991, in whose service area the greenspaces are located. **(referenced in Part Two, Section 1)**

(1) If the local government accepts management responsibility from Metro, the accepting government will be responsible for funding the operation and maintenance of the greenspace with their own resources, except as provided in subsection (2). **(referenced in Part Two, Section 1)**

(2) When a regional funding source is available for operations and maintenance, Metro will enter into intergovernmental agreements with local parks providers to defray all or portions of the operations cost for locally administered or managed large-acre

components of the greenspaces system where: **(referenced in Part Two, Section 1)**

(a) The local parks provider agrees to manage sites in accordance with the standards established through adopted management plans and policies; and

(b) The local parks provider renders the service at a cost less than that which Metro could provide under the adopted management plan and regional operations and management policies.

(3) If the local government chooses not to accept management responsibility, Metro will be responsible for funding the operation and maintenance of these sites with its own resources. **(referenced in Part Two, Section 1)**

g) Metro will undertake studies to determine future regional financing options for greenspaces, parks and recreational facilities. The studies will be coordinated with local, state and federal agencies, and nonprofit groups. The studies will address Metro's immediate revenue needs to acquire and manage Metro-administered greenspaces identified in the Greenspaces Master Plan as well as a long-term financing options of local governments, special districts and Metro for additional acquisition, capital improvement, operations and maintenance of greenspaces, parks and recreational facilities. **(referenced in Part One, Section 1 and in Policy 1.6)**

5) ENVIRONMENTAL EDUCATION

a) Metro's role will be to actively pursue environmental education programs as both facilitator and provider. Metro will ensure regional coordination among environmental education providers. **(referenced in Part Two, Section Two and in Policies (2.31 - 2.43)**

b) Metro will cooperate with local, state and federal park providers, and refuge/wildlife managers, as well as the Audubon Society of Portland's Metropolitan Wildlife Refuge System project, Wetlands Conservancy and other nonprofit organizations to produce informational brochures, signage and other interpretive materials for environmental education for the general public. **(referenced in Part Two, Section Two and in Policies (2.31- 2.43)**

c) Metro will develop a technical assistance program that may include, but is not limited to, development of interpretive facilities and environmental education programs that relate to sites ultimately incorporated into the greenspaces system and to assist in the implementation of the Greenspaces Master Plan by local governments, special districts, nonprofit organizations and other interests. Metro will also promote and coordinate recreational and environmental education programs initiated by other governments and private organizations to broaden participation in such programs by the residents of the metropolitan area. **(referenced in Part Two, Section 2 and in Policies 2.31 - 2.47)**

6) ROLES OF STATE & FEDERAL AGENCIES

a) Metro, local governments, special districts and nonprofit organizations will work with state agencies such as Oregon Parks and Recreation Department, Oregon Department of Fish and Wildlife, Governor's Watershed Enhancement Board and Division of State Lands, to ensure maintenance, expansion of their parks, refuge areas, grant programs and regulatory efforts in a coordinated and complementary approach with the Metropolitan Greenspaces program. These agencies should address and fund the special urban needs of the region, including the identification, planning, acquisition and management of natural areas. Future state acquisitions should include the metropolitan region as a key target area. These lands, while owned and managed by the state, will be linked with and promoted as parts of the Metropolitan Greenspaces system. **(referenced in Part One, Section Two and in Policy 1.28)**

b) Federal agencies such as the Fish and Wildlife Service, National Park Service, Bonneville Power Administration and Northwest Power Planning Council should maintain existing refuge and recreational areas, and identify new areas for acquisition. These lands, while owned and operated by the federal government, will be linked with and promoted as parts of the Metropolitan Greenspaces system. **(referenced in Part One, Section Two)**

7) ROLES OF NONPROFIT ORGANIZATIONS AND LAND TRUSTS

a) Metro will work closely with nonprofit organizations, land trusts and "Friends" groups to explore partnerships which include acceptance of land donations, conservation and other easements and management of sites. These sites may be owned by a local, state, federal agency or Metro and operated by a nonprofit or the site may be owned by a nonprofit and managed by a local, state, federal agency or Metro. **(referenced in Part Two, Section One)**

b) Metro will work with Portland State University and other educational institutions throughout the region including, Audubon Society of Portland, Portland Bureau of Parks and Recreation, Saturday Academy, Multnomah County and others, nonprofit organizations and agencies to develop a comprehensive environmental education program that uses the greenspaces system. **(referenced in Part Two, Section Two)**

8) ROLES OF SPECIAL SERVICE DISTRICTS AND WATER QUALITY AGENCIES

a) Metro recognizes that agencies such as the federal Environmental Protection Agency, Unified Sewerage Agency of Washington County, Portland's Bureau of Environmental Services, Clackamas County Department of Utilities, state Water Resources Department and Department of Environmental Quality, and other interested agencies and other surface water managers have a tremendous stake in protection, restoration and management of the region's natural areas, including wetlands, and river and stream ecosystems. Metro will work closely with these agencies in development and implementation of cooperative Greenspaces-oriented projects which promote multi-objective management of natural areas, regional streams, rivers and wetlands. **(referenced in Part One, Section Two, in Part Two, Section Two, and in Policy 2.56)**

Parks providers, as of July 1, 1991

(eligible for local-regional general obligation bond split)

Special Districts
North Clackamas Parks and Recreation District
Tualatin Hills Parks and Recreation District

Counties
Clackamas County
Multnomah County
Washington County

Cities
Beaverton
Cornelius
Durham
Fairview
Forest Grove
Gladstone
Gresham
Happy Valley
Hillsboro
Lake Oswego
Oregon City
Portland
Rivergrove
Sherwood
Tigard
Troutdale
Tualatin
West Linn
Wilsonville
Wood Village

Attachment A

The local share of bond funds, as described in Section 3h of this Roles and Responsibilities Framework, shall be apportioned among parks providers in each county on the basis of county-wide totals established using FY 1991-92 assessed valuation within the Metropolitan Service District boundary. Estimated county-wide totals are as follows:

Clackamas County	19.56 percent
Multnomah County	50.20 percent
Washington County	30.24 percent

Formulas for allocating county-wide totals among parks providers in each county are as follows:

Clackamas County Parks Providers Local Share Allocation Formula

1. The "local share" of funds raised from any bond measure approved by the voters of the Metro region for a Greenspaces capital and acquisition program apportioned to the parks and recreation providers of Clackamas County shall be distributed to such providers as follows: (a) 50 percent shall be determined on the basis of the urban Clackamas County population (defined as those county residents living within the boundary of the Metropolitan Service District) residing within the boundary of each such provider. Those residents living within the city of Milwaukie and the unincorporated areas of Clackamas County who also reside within the service area of North Clackamas Park and Recreation District shall be included in the population count of the North Clackamas Park and Recreation District; and (b) 50 percent shall be determined on the basis of the assessed valuation.

2. The population used in this formula for the cities shall be the July 1, 1991, Certified Population Estimate developed by the Center for Population Research and Census, School of Urban and Public Affairs, Portland State University. The assessed valuation used in this formula shall be from the FY 1991-92 assessment rolls.

3. The unincorporated population used for NCPRD shall be an estimate based on a GIS tracing of the district boundaries and an adjustment to 1990 census data based on the average percentage change for urban Clackamas County cities as shown by the PSU data from 1990 to 1991.

4. The unincorporated Clackamas County share shall be calculated on the basis of all unincorporated population (both inside and outside the Metro boundary, excluding unincorporated population within the NCPRD) and assessed value of unincorporated Clackamas County within the Metro boundary outside of NCPRD.

5. Distribution to those cities included in more than one county will be based on the population and assessed value that lies within Clackamas County.

Based on these statements, the distribution within the county will be:

Gladstone	3.11 percent
Happy Valley	0.70 percent
Lake Oswego	13.82 percent
Milwaukie	6.92 percent
Oregon City	5.32 percent
Portland	0.32 percent
Rivergrove	0.10 percent
Tualatin	0.90 percent
West Linn	6.61 percent
Wilsonville	4.32 percent
North Clackamas Park and Recreation District	20.68 percent
Clackamas County	37.20 percent

Multnomah County Parks Providers Local Share Allocation Formula

1. Divide total Multnomah County allocation into two equal shares – 50 percent for the county; 50 percent for the cities.

2. From the county share, allocate 200,000 to each city with a population of less than 50,000 (Troutdale, Wood Village and Fairview).

3. Distribute "cities" share based on percentage of population* (1990 census information).

* Population for distribution purposes is defined as the sum of the populations from each municipality that was a "park provider" as of July 1, 1991, i.e., 518,611.

Table 1

Amount to be allocated: $24,786,250*
County share: 12,393,125**
Cities share: 12,393,125

City	Base Allocation	% Total County Population	Population Allocation	Total Allocation
Portland	0	84.3%	$10,447,405	$10,447,405
Gresham	0	13.2%	1,635,893	1,635,783
Troutdale	$200,000	1.5%	185,897	385,897
Fairview	$200,000	.5%	61,965	261,965
Wood Village	$200,000	.5%	61,965	261,965
Totals	**$600,000**	**100%**	**$12,393,125**	**$12,993,125**

* Assumes $200 million bond sale; no interest
** After adjustment for base allocation, county share = $11,793,125

4. From the county share, establish a $5 million fund for the pursuit of cooperative natural areas projects to be administered by the county as follows:

a. Each city with a population of less than 50,000 to have $50,000 reserved for cooperative natural area projects within their city limits.

b. Pro rata shares of the balance in this fund to be reserved for cooperative natural area projects in each city as in "3" above.

c. All cooperative projects to be consistent with the Multnomah County Natural Areas Protection and Management Plan.

d. "City" cash contribution to be required for cooperative projects. (Specific levels to be determined at later date.)

e. Pro rata share of interest, if any, to "county" portion of allocation shall accrue to this fund.

f. Any city which has not identified cooperative natural area project(s) within three years from the time funds are available shall forfeit their access to resources reserved in this section. See Table 2 for details.

Table 2

City	Base Reservation	% Population	Population Reservation	Total Reservation
Portland	0	84.3%	$4,088,550	$4,088,550
Gresham	0	13.2%	640,200	640,200
Troutdale	$50,000	1.5%	72,750	122,750
Fairview	$50,000	.5%	24,250	74,250
Wood Village	$50,000	.5%	24,250	74,250
Totals	**$150,000**	**100%**	**$4,850,000**	**$5,000,000**

Washington County Parks Providers Local Share Allocation Formula

1. The "local share" of funds raised from any bond measure approved by the voters of the Metro region for a Greenspaces capital and acquisition program apportioned to the parks and recreation providers of Washington County shall be distributed to such providers based on the percentage of the urban Washington County population (defined as those county residents living within the boundary of the Metropolitan Service District) residing within the boundary of each such provider and where those residents living within the unincorporated areas of Washington County who also reside within the service area of the Tualatin Hills Park and Recreation District shall be included in the population count of THPRD.

2. The population used in this formula for cities shall be the most recent July 1 Certified Population Estimate developed by the Center for Population Research and Census, School of Urban and Public Affairs, Portland State University.

3. The population used for THPRD shall be based on a GIS tracing of the district boundaries excluding the population of the city of Beaverton and an adjustment to the 1990 census data based on the average percentage change for urban Washington County cities as shown by the PSU data from 1990 to the appropriate date as described in 2 above (most likely 1992 or 1993).

4. The population estimate for the urban unincorporated area of the county shall be the population used by Metro to determine the county's assessment for local government dues less the population of the urban cities (excluding King City) and the estimated THPRD population.

5. For purposes of this program, estimated allocations for "parks and recreation providers" based on PSU certified 1991 population data include:

Beaverton	19.29 percent
Cornelius	2.14 percent
Durham	0.26 percent
Forest Grove	4.66 percent
Hillsboro	13.30 percent
Lake Oswego	0.00 ($357)
Portland	0.41 percent
Rivergrove	0.01 percent
Sherwood	1.11 percent
Tigard	10.38 percent
Tualatin	5.46 percent
Tualatin Hills Park and Recreation District	31.85 percent
Washington County	11.12 percent

An introduction to Metro

Metro is the regional government that spans the urban and urbanizing areas of Clackamas, Multnomah and Washington counties in Oregon. The Metro area has a population of 1,051,822 citizens, living in a land area covering nearly 500 square miles. In addition to portions of three counties, there are 24 incorporated cities and two special districts providing parks and recreational services within Metro's boundaries.

Metro was established in 1979 to manage issues of metropolitan significance. These issues include transportation, air, water quality, land use, and growth-management planning; solid waste management; and recycling program coordination. Metro owns and operates the Metro Washington Park Zoo, Oregon Convention Center and solid waste transfer stations. Management and operation of regional facilities such as the Memorial Coliseum, Civic Stadium and the Portland Center for the Performing Arts are also under Metro's purview.

Metro is governed by a 12 member council (13 after January 1, 1993) and an executive officer. Councilors are elected by district and the executive officer elected regionwide every four years. All positions are elected on a non-partisan basis. The executive officer serves as the chief administrative official. The councilors serve in a policy-making, budgeting and legislative role.

Metro has the regional perspective and possesses the statutory authority (Oregon Revised Statute 268) to plan for and implement the Metropolitan Greenspaces program. Regional financing options can be addressed by Metro, including regional bonding authority for parks and open space acquisition, pending voter approval.

Metropolitan Greenspaces Program
sponsors and cooperating organizations

January 1991

1. Metro
2. Audubon Society of Portland
3. Portland State University – Geography Department

4. U.S. Fish & Wildlife Service
5. U.S. Environmental Protection Agency
6. U. S. Army Corps of Engineers
7. National Park Service

8. Oregon Parks Department
9. Oregon Water Resources Department
10. Oregon Department of Land Conservation and Development
11. Oregon Department of Fish and Wildlife
12. Oregon Division of State Lands

13. Clackamas County
14. Clark County
15. Multnomah County
16. North Clackamas Parks District
17. Washington County
18. Unified Sewerage Agency of Washington County
19. Tualatin Hills Park and Recreation District

20. Tri-Met
21. East Multnomah County Soil and Water Conservation District
22. West Multnomah County Soil and Water Conservation District
23. Clackamas Water District
24. Oak Lodge Sanitary District
25. Wolf Creek Highway Water District
26. Intergovernmental Resource Center of Clark County
27. Bi-State Advisory Committee
28. Clark County Natural Resources Council
29. City of Beaverton
30. City of Cornelius
31. City of Durham
32. City of Fairview
33. City of Forest Grove
34. City of Gladstone
35. City of Gresham
36. City of Happy Valley
37. City of Hillsboro
38. City of Johnson City
39. City of King City
40. City of Lake Oswego
41. City of Milwaukie
42. City of Oregon City
43. City of Portland
44. City of Rivergrove
45. City of Sherwood
46. City of Tigard Parks Advisory Board
47. City of Troutdale
48. City of Tualatin
49. City of West Linn
50. City of Wilsonville
51. City of Wood Village

52. 40-Mile Loop Land Trust
53. The Wetlands Conservancy
54. Interlaken Neighborhood, Inc.
55. Linnton Neighborhood
56. League of Women Voters of West Clackamas County
57. John Inskeep Environmental Learning Center

58. Portland General Electric
59. Esther Lev, environmental consultant
60. Lynn Sharp, environmental consultant
61. Rittenhouse, Zeman and Associates

Natural resource and regulatory agencies

Federal

US Department of Agriculture:
- Forest Service (USFS)
- Soil Conservation Service (SCS)
- Agricultural Stabilization and Conservation Service (ASCS)

US Army:
- Corps of Engineers

US Department of Interior:
- Office of Environmental Affairs
- Fish and Wildlife Service (USFWS)
- Bureau of Land Management (BLM)
- National Park Service (NPS)

US Environmental Protection Agency (EPA)
- Air Quality Section
- Hazardous Waste Section
- Water Quality Section

State – Oregon

Oregon Department of Fish & Wildlife (ODFW)
Oregon Department of Forestry
- Urban Forestry Office

Oregon Division of State Lands (DSL)
Oregon Department of Water Resources
Oregon Department of Environmental Quality (DEQ)
- Water Quality Division
- Air Quality Division
- Hazardous and Solid Waste Division

Oregon Department of Agriculture (ODA)
- Natural Resources Division
- Soil and Water Conservation Districts

Oregon Department of Land Conservation & Development (DLCD)
- Land Conservation and Development Commission

Oregon Parks & Recreation Department
Governor's Watershed Enhancement Board (GWEB)
Oregon State University (OSU)
- County Extension Services

State – Washington

Department of Wildlife
Department of Fisheries
Department of Natural Resources
Parks and Recreation Commission

Regional and Special Districts

Metro
- Planning Department
- Solid Waste Department

Intergovernmental Resources Center of Vancouver – Clark County
Unified Sewerage Agency of Washington County
Tualatin Hills Parks and Recreation District
North Clackamas Park District
Multnomah Drainage District

County – Clackamas

Transportation and Development Department
- Land Use Planning Division
- Solid Waste Division
- Community Environment Office

Department of Utilities
Vector Control
Animal Control
County Forester

County – Clark

Cooperative Extension
Parks and Recreation Department
Environmental Services
Health Department
Planning and Development
Road Maintenance Department

County – Multnomah

Department of Environmental Services
- Planning and Development Division
- Transportation Division
- Parks Services Division
- Environmental Sanitation Division

Vector Control Office
Animal Control Office
Mosquito Control Office

County – Washington

Land Use and Transportation
- Planning Office
- Dog Control and Animal Shelter
- Land Use, Code Enforcement and Zoning Office

Health and Human Services

City – Portland

Bureau of Environmental Services
Bureau of Parks and Recreation
Planning Bureau

Land conservation techniques and regulatory tools

(list partially derived from "Preserving Open Space: A Guide for New England" by Stacey Marx, Kennedy School of Government at Harvard)

Development Regulations

Zoning/subdivision regulations and growth controls
- large lot zoning
- performance zoning
- carrying capacity zoning
- cluster zoning/planned unit development (PUD)
- conservation density subdivisions
- incentive zoning
- service limits
- adequate facility rules
- curb cut controls
- buffer and set-back requirements
- viewshed protection
- phased growth
- special district zoning
- moratoria
- site plan review
- local comprehensive planning requirements
- Regional Urban Growth Goals and Objectives (RUGGOS)
- Urban growth boundary (UGB)

State regulations
- statewide planning goals
- coastal zone management
- state-created special districts
- state overrides of local zoning
- state-mandated dedication

Environmental review
- local environmental ordinances
- critical environmental areas (CEAs)
- conservation commissions/councils/boards
- other governmental review (i.e., environmental impact analyses)

Financial mechanisms (regulatory fees, assessments)
- exactions/dedications
- impact fees
- payments in lieu of dedication
- preferential assessments
- special assessment districts
- transfer of development rights (TDRs)
- density bonuses
- purchase of development rights (PDRs)

Land Acquisition and Rehabilitation Techniques

Funding Sources
- bond funding
- general fund appropriations
- real estate transfer taxes
- land gains taxes
- tax return check-offs
- commodity taxes
- state/regional grants
- sale/transfer of tax default property
- land and water conservation funds
- land banks
- land conservation grants
- tax abatement/credits
- current use valuation
- lotteries
- loans

Transaction Types
- outright donation
- bargain sale
- fair market value (fee simple)
- land exchange
- restricted auction (to nonprofits)
- eminent domain
- tax foreclosure
- agency transfer
- easement acquisition
- partial development
- leaseback/resale
- installment sale
- undivided interest

Ownership Options
- government ownership and management
- government purchase with intention for leaseback or resale
- state/federal partnership
- state/local partnership
- government/nonprofit partnership
- government partnership with corporate or other private entity
- sale or transfer of tax default property

Metro Regional Urban Growth Goals and Objectives

Statewide Land Use Planning Goals

Goal 1 – citizen participation

Goal 2 – comprehensive plans to address all state goals

Goal 3 – farmlands

Goal 4 – forest lands

Goal 5 – inventories (open spaces, scenic and historic areas, and natural resources)

Goal 6 – air, water and land resources quality

Goal 7 – areas subject to natural disasters and hazards (floodplains, potential landslide areas)

Goal 8 – recreation needs

Goal 14 – urban growth boundaries

Goal 15 – Willamette River Greenway

List of references

Oregon's Statewide Planning Goals

Metro Studies and Reports

Metro Recreation Resource Study
February 1989

Metropolitan Area Parks
June 1989

Attitudes Toward Natural Areas
October 1990

Environmental Baseline Report
July 1991

Environmental Education in the Portland Area
July 1991

Goals for Metropolitan Greenspaces
August 1991

Public Awareness Plan
August 1991

Regional Urban Growth Goals and Objectives
September 1991

Natural Areas Report
November 1991

Ten Essentials for a Quality Regional Landscape
January 1992

Natural Areas Inventory: Phase III Data Analysis
February 1992 (review draft)

Metropolitan Greenspaces Watershed-Based Analysis
March 1992 (review draft)

Favorite Metropolitan Greenspaces
March 1992

accessible
capable of being entered or reached by a broad constituency of individuals derived from a widespread metropolitan geographic distribution

active recreation
recreation that uses specially built facilities or that occurs in such density or form that it requires or results in a modification of the area or resource (i.e. campgrounds, golf courses) (sometimes called high-intensity recreation)

agrarian
relating to or derived from cultivated land

anadromous fish
fish such as salmon that hatch in fresh water, migrate to ocean water to grow and mature, and return to fresh waters to spawn

aquatic habitat
the water-based locality or geographic area in which a plant or animal species naturally lives or grows

areas deficient in greenspaces
parts of the metropolitan region that have been so intensely urbanized that greenspaces have been all but eliminated

aspect
the facing or fronting of something (e.g., a slope) in any direction; exposure

biological diversity (biodiversity)
variety of plant and animal life co-existing in a specific habitat

buffer
natural area or open space used as divider or barrier between two developed or developing areas

conduit
restricted natural passageway such as a stream; greater limitations than corridor

confluence
junction or union of two or more streams; body of water produced by the union of several streams

connectivity
the ability to create functionally contiguous blocks of land or water through linkage of similar habitats

cooperators in the program
all governments that Metro has functional planning or other land use authority over through O.R.S. 268 and citizens groups, resource agencies, jurisdictions and others who are interested in being active partners in the program

corridor
linear natural areas and habitats primarily reserved for wildlife needs

disturbed site
location where natural functions have been disrupted by human-caused activities

Donation Land Act (1865)
guaranteed 640 acres to a couple or 320 acres to any single man newly settling the region

ecological connectivity
the degree to which separate ecosystems form linkages that allow the physical and biological systems to interact; the ability of interdependent ecological systems to support species' movement and varying survival needs

ecosystem
the living and nonliving components of the environment which interact or function together, including plant and animal organisms, the physical environment and the energy systems in which they exist

environmental education
planned, often comprehensive, and potentially long-term programs that focus on knowledge of ecological and natural systems; programs aimed at creating a deep level of understanding and at providing skills to change behavior that will lead to informed decision-making, constructive action, and knowledge of human effects on the natural world

exurban
land outside of the regional urban growth boundary that transitions between suburban and rural settings; often large-parcel tracts developed as very low density residential uses

flow
the volume of water, often measured in cubic feet per second, flowing in a stream

"new forestry"
selected harvesting of trees, as opposed to clear-cutting

fragmentation
isolation of habitats into single parcels of land

geographic unit
a landscape feature that is distinguishable as a topographic form within the Oregon portion of the metropolitan area

greenspaces
natural areas, open space, trails and greenways that function for both wildlife and people

greenway
generally linear vegetated corridors associated with rivers and streams that are shared by both humans and wildlife

[natural] habitat
locality or geographic area in which a plant or animal species naturally lives or grows

habitat niche
a place or position adapted to the character or capabilities or suited to the merits of a specific plant or animal within its natural habitat

high-gradient stream
stream with relatively steeply sloped stream bed; characterized by fast-moving water, riffles, rocky bottoms

high-intensity recreation
recreation that uses specially built facilities or that occurs in such density or form that it requires or results in a modification of the area or resource (i.e., campgrounds, golf courses) (sometimes called active recreation)

hydrology
the study of the occurrence and properties of water

indigenous
native to the region

infrastructure
systems such as roads, water, sewage, stormwater and bridges and other facilities that are developed to support the functioning of the developed portions of the environment

isolated urban natural areas
natural area sites surrounded by human development

landscape ecology
the mosaic of topographic, geologic and biologic features that interact with human uses that modify the natural landscape

landscape unit
discreet portion of a landscape that can be defined by natural edges (e.g., a watershed)

low-gradient stream
stream with low-sloping, mostly soil-lined streambed characterized by slow-moving water, pool-like conditions, meandering course

low-intensity recreation
recreation not requiring developed facilities that can be accommodated without change to the area or resource (sometimes called passive recreation)

low-order tributaries
stream headwaters, spring inlets and other non-branching tributaries that combine to form creeks and rivers

management plan
set of policies and actions, including delineation of potential capital improvements and natural resource management objectives, for specific units of land assembled as a part of the Metropolitan Greenspaces system

mitigation
the creation, restoration or enhancement of a wetland area to maintain the functional characteristics and processes of the wetland, such as its natural biological productivity, habitats, and species diversity, unique water features and water quality

multiple use
a land management objective seeking to maximize several economic, environmental and/or social values in the same geographic area (as opposed to concentrating on only one objective)

natural area
a landscape unit composed of plant and animal communities, water bodies, soil and rock; largely devoid of human-made structures; maintained and managed in such a way as to promote or enhance populations of wildlife.

neighborhood
geographically distinct areas within the region's communities distinguished both by landmarks and the frequency and patterns of interaction among residents and landowners within the specific areas; recognized by many local governments as planning organizations citizen participation organizations and the like to assist in public decision-making

neighborhood park
public park, generally of small size (1 – 10 acres) is intended for use primarily by residents of the neighborhood in which it is located

old growth
a figurative expression indicating presence of very large trees within a habitat or particular site

open space
developed parks with active recreational facilities such as ball fields, tennis courts, playgrounds, community gardens, golf courses, cemeteries, vacant lands with the potential of becoming a park or natural area.

parkland
land in public ownership designated largely for recreational human uses or park purposes

parks provider
government or agency directly involved in developing, maintaining and operating public parks and recreational services

passive recreation
recreation not requiring developed facilities that can be accommodated without change to the area or resource (sometimes called low-intensity recreation)

patches
associations of vegetative materials that are distinguishable from adjacent associations along an edge or gradient; large contiguous blocks of homogeneous land uses, especially open spaces and natural areas

plat
the legally recorded document and map used for layout or design of a city or portion thereof or used to subdivide real property for sale and/or development

protect
save or shield from loss, destruction, or injury or for future intended use

regional park
public park of larger size (often in excess of 100 acres) intended for use by residents of several cities and/or counties in a metropolitan area

regionally significant
of importance to multi-jurisdictional constituents and/or providing unique ecological value to plant and wildlife communities

remnant
a quantity of open space or natural area that is not contiguous with another block of open space or natural area

riparian
relating to the banks of a water body

riparian community
specific plant associations adapted to living in riparian areas

sensitive wildlife and plant species
species negatively impacted by human activities

township system
land surveying system designed by Thomas Jefferson in order to speed settlement of the western states and established as a system by the U.S. government in the 1800s; "township" is 36 square miles in size and subdivided into 36 one-square-mile "sections"

trail
multi-modal/recreational (e.g., hiking, biking, pedestrian, equestrian) alignment generally used by people

urban growth boundary
a boundary that identifies urban and urbanizable lands needed during the 20-year planning period to be planned and serviced to support urban development densities, and which separates urban and urbanizable lands from rural lands

upland
high ground, as opposed to meadow or marsh; ground not liable to flooding

view
field of vision from a specific geographic location providing a general panorama that includes a variety of elements and features

vista
distant "wide-angled" view with controlled focus on a singe element (e.g., Mt. Hood is often used as the focus of vistas in Portland)

watershed
a topographically discrete unit or stream basin, including the headwaters, main channel, slopes leading from the channel, tributaries and mouth area

wetland communities
land areas where excess water is the dominant factor determining the nature of soil development and the types of plant and animal species living at the soil surface. Wetland soils retain sufficient moisture to support aquatic or semi-aquatic plant life.

Goal 1
Record of Public Meetings and Presentations
January 1989 to Present

Goal 1 – Record of public meetings and presentations

January 1989 to present

Meeting	Location	Date/Time
40-Mile Loop Land Trust Board meeting	Portland	Thursday, Jan. 12, 1989
Parks Forum VI	Lake Oswego	Tuesday, Jan. 17, 1989
Parks Forum VI	Gresham	Wednesday, Jan. 18, 1989
Parks Forum VI	Beaverton	Thursday, Jan. 19, 1989
Parks Forum VI	Portland	Friday, Jan. 20, 1989
Metro Intergovernmental Relations Committee	Portland	Tuesday, Jan. 24, 1989
PSU: Seminar in Natural Area Planning	Portland	Tuesday, Jan. 31, 1989
Metro Council meeting – resolution supporting the Parks and Natural Areas Planning Program	Portland	Thursday, Feb. 9, 1989
Sunnyside/205 Corridor Association	Clackamas	Thursday, Feb. 16, 1989
2nd annual "Country in the City" Symposium and City Club meeting	Portland	Friday-Saturday, Feb. 24-25, 1989
Parks Forum VII	Portland	Monday, Feb. 27, 1989
Forest Grove City Council	Forest Grove	Monday, Feb. 27, 1989
Oregon Marine Board	Salem	Tuesday, Feb. 28, 1989
Wilkes Neighborhood Association	Portland	Thursday, March 2, 1989
Economic Development Corridor Association	Portland	Friday, March 10, 1989
Washington County area public meeting	Beaverton	Tuesday, March 28, 1989
Portland area public meeting	Metro	Wednesday, March 29, 1989
Clackamas area public meeting	Lake Oswego	Thursday, March 30, 1989
Multnomah area public meeting	Troutdale	Friday, April 1, 1989
Parks Forum VIII	Portland	Thursday, April 27, 1989
Sunnyside United Neighbors of Clackamas County	Sunnyside	Monday, May 8, 1989
Chinook Trail Association	Vancouver	Wednesday, May 31, 1989

Meeting	Location	Date/Time
Greenprint for the Region Seminar Committee	Portland	Monday-Tuesday, June 5-6, 1889
Linnton Community and Sauvie Island	Portland	Tuesday, June 13, 1989
Parks Forum IX	Portland	Thursday, June 15, 1989
FAUNA	Portland	Tuesday, July 11, 1989
Metro Intergovernmental Relations Committee	Portland	Tuesday, July 18, 1989
Metro Council	Portland	Thursday, July 27, 1989
Multnomah County Planning	Portland	Tuesday, Aug. 8, 1989
THPRD Board meeting	Beaverton	Wednesday, Aug. 9, 1989
Metro IRC	Vancouver	Tuesday, Aug. 15 1989
Parks Forum X	Portland	Tuesday, Aug. 22, 1989
Oregon Parks and Recreation Conference	Bandon	Thursday-Saturday, Sept. 21-23, 1989
Parks Forum XI	Portland	Wednesday, Sept. 27, 1989
Multnomah County Board of Commissioners	Portland	Tuesday and Thursday, Oct. 10 and 12, 1989
Portland City Club	Portland	Friday, Oct. 13, 1989
Parks Forum XII	Portland	Wednesday, Nov. 1, 1989
Clackamas County Board of Commissioners	Oregon City	Thursday, Nov. 2, 1989
Parks Forum XIII	Portland	Wednesday, Feb. 7, 1990
Natural Areas Workshop	Portland	Tuesday, Feb. 27, 1990
East and West Multnomah Soil & Water Conservation District meeting	Portland	Tuesday, March 13, 1990
Lake Oswego City Council regarding Natural Areas Planning	Lake Oswego	Tuesday, April 3, 1990
Lake Oswego Work Session regarding Natural Areas Planning	Lake Oswego	Tuesday, April 17, 1990
Natural Areas Planning Coordination Resolution City of Gresham Parks Advisory Board	Gresham	Wednesday, April 18, 1990
Regional Corridors and Trails	Portland	Wednesday, May 9, 1990

Meeting	Location	Date/Time
Natural Areas Planning Coordination Resolution City of Portland	Portland	Wednesday, May 9, 1990
Bi-State Policy Advisory Committee	Portland	Friday, May 11, 1990
Natural Areas Planning Coordination Resolution City of Milwaukie	Milwaukie	Tuesday, May 15, 1990
Parks Forum XIV	Vancouver	Wednesday, May 23, 1990
Natural Areas Planning Coordination Resolution Multnomah County	Portland	Thursday, May 31, 1990
Natural Areas Planning Coordination Resolution Washington County Parks Advisory Board	Hillsboro	Friday, June 1, 1990
Natural Areas Planning Coordination Resolution City of Gresham	Gresham	Tuesday, June 5, 1990
Policy Committee meeting	Portland	Friday, June 8, 1990
Regional Corridors and Trails Committee	Portland	Wednesday, June 13, 1990
Natural Areas Planning Coordination Resolution 40-Mile Loop Land Trust	Portland	Thursday, June 14, 1990
Natural Areas Planning Coordination Resolution Interlaken, Inc. Neighborhood	Portland	Monday, June 18, 1990
Natural Areas Planning Coordination Resolution City of Lake Oswego	Lake Oswego	Tuesday, June 19, 1990
Natural Areas Planning Coordination Resolution City of Vancouver, Parks and Recreation Commission	Vancouver	Wednesday, June 20, 1990
Natural Areas Planning Coordination Resolution Intergovernmental Resource Center, Clark County	Vancouver	Thursday, June 21, 1990
National Parks Service meeting	Vancouver	Friday, June 22, 1990
Natural Areas Planning Coordination Resolution Bi-State Advisory Committee	Vancouver	Friday, June 22, 1990

Meeting	Location	Date/Time
Natural Areas Planning Coordination Resolution City of Gladstone, Parks and Recreation Board	Gladstone	Monday, June 25, 1990
Natural Areas Planning Coordination Resolution City of Rivergrove	Rivergrove	Monday, July 9, 1990
Natural Areas Planning Coordination Resolution City of Troutdale, Parks Advisory Board	Troutdale	Tuesday, July 10, 1990
Greenspaces Local Support Resolution (formerly Natural Areas Planning Coordination Resolution) City of Gladstone	Gladstone	Tuesday, July 10, 1990
East Multnomah County Soil and Water Conservation District Board meeting	Portland	Tuesday, July 10, 1990
Greenspaces Local Support Resolution The Wetlands Conservancy	Tualatin	Wednesday, July 18, 1990
Greenspaces press conference with Les AuCoin re: federal grant	Beaverton	Monday, Aug. 13, 1990
Clark County Open Space Commission	Vancouver	Monday, Aug. 13, 1990
Greenspaces Local Support Resolution City of King City	King City	Wednesday, Aug. 15, 1990
Greenspaces Local Support Resolution City of Happy Valley	Happy Valley	Tuesday, Sept. 4, 1990
Greenspaces Local Support Resolution City of Johnson City	Johnson City	Tuesday, Sept. 4, 1990
Greenspaces Local Support Resolution City of Sherwood	Sherwood	Wednesday, Sept. 12, 1990
Parks Forum XV	Portland	Monday, Sept. 17, 1990
Greenspaces Local Support Resolution City of Durham	Durham	Wednesday, Sept. 19, 1990

Meeting	Location	Date/Time
Greenspaces Local Support Resolution City of Cornelius	Cornelius	Monday, Oct. 1, 1990
Metro Natural Areas Policy Advisory Committee	Portland	Wednesday, Oct. 10, 1990
Greenspaces Local Support Resolution City of Wood Village	Wood Village	Wednesday, Oct. 10, 1990
Greenspaces Local Support Resolution City of Cornelius	Cornelius	Tuesday, Oct. 16 1990
Greenspaces Local Support Resolution City of Fairview	Fairview	Wednesday, Oct. 17, 1990
Greenspaces Local Support Resolution City of Maywood Park	Gresham	Monday, Oct. 22, 1990
Greenspaces Local Support Resolution City of West Linn	West Linn	Wednesday, Oct. 24, 1990
Greenspaces Local Support Resolution City of Tigard, Parks Advisory Committee	Tigard	Tuesday, Nov. 13, 1990
Greenspaces Local Support Resolution City of Troutdale	Troutdale	Tuesday, Nov. 13, 1990
Greenspaces Local Support Resolution City of Wilsonville	Wilsonville	Wednesday, Nov. 19, 1990
Greenspaces briefing for Beaverton Rotary	Beaverton	Wednesday, Nov. 21, 1990
Metro Natural Areas Policy Advisory Committee	Portland	Wednesday, Nov. 28, 1990
Greenspaces Local Support Resolution City of Forest Grove	Forest Grove	Monday, Dec. 10, 1990
Parks Forum XVI	Hillsboro	Thursday, Dec. 13, 1990
Greenspaces briefing for Leach Botanical Garden president	Portland	Friday, Jan. 4, 1991

Meeting	Location	Date/Time
Greenspaces briefing for Wilsonville Councilor Sandra Chandler	Wilsonville	Tuesday, Jan. 8, 1991
Greenspaces briefing for Portland Garden Club	Portland	Tuesday, Jan. 8, 1991
Greenspaces briefing for Beaverton Rotary	Beaverton	Friday, Jan. 11, 1991
Greenspaces display at Friends of Trees Conference	Portland	Saturday, Jan. 12, 1991
Greenspaces briefing for FAUNA Steering Committee	Portland	Wednesday, Jan. 16, 1991
Greenspaces Technical Advisory Committee	Portland	Friday, Jan. 18, 1991
Bald Eagle Watch	Portland	Saturday, Jan. 19, 1991
Greenspaces tour of Washington County	Washington County	Saturday, Jan. 19, 1991
Greenspaces briefing for Southeast Uplift Land Use Committee	Portland	Monday, Jan. 21, 1991
Environmental Education meeting	Portland	Wednesday, Jan. 23, 1991
Greenspaces briefing for Charles Little	Portland	Wednesday, Jan. 23, 1991
FAUNA/Greenspaces Lecture	Portland	Thursday, Jan. 24, 1991
Greenspaces briefing for League of Conservation Voters	Portland	Tuesday, Jan. 29, 1991
City Club of Portland Transportation and Planning Committee Forum	Portland	Thursday, Jan. 31, 1991
Greenspaces briefing for Washington County Public Affairs Forum	Hillsboro	Monday, Feb. 11, 1991
Greenspaces Technical Advisory Committee	Portland	Friday, Feb. 15, 1991
Greenspaces display for Home and Garden Show	Portland	Feb. 16-25, 1991
Greenspaces briefing for West Linn City Council	West Linn	Wednesday, Feb. 20, 1991
Native Plant Society lecture	Portland	Wednesday, Feb. 20, 1991

Meeting	Location	Date/Time
Biodiversity Lecture Series	Portland	Wednesday, Feb. 20, 1991
Greenspaces briefing for Fairview Creek Steering Committee	Gresham	Tuesday, Feb. 26 1991
Greenspaces Policy Advisory Committee	Portland	Wednesday, Feb. 27, 1991
Greenspaces briefing for Ridell Corporation	Tualatin	Friday, March 1, 1991
Greenspaces briefing for CH2M Hill	Portland	Tuesday, March 12, 1991
Greenspaces briefing for People's Republic of China delegates	Portland	Tuesday, March 12, 1991
Greenspaces Technical Advisory Committee	Portland	Thursday, March 14, 1991
Fairview Creek meeting (Steering Committee)	Gresham	Monday, March 18, 1991
Metro, USFW signed interagency agreement to allocate federal demo grant	Portland	Friday, March 22, 1991
Parks Forum XVII	Gladstone	Monday, March 25, 1991
Greenspaces briefing for Oregon Recreation Council	Salem	Tuesday, March 26, 1991
Greenspaces briefing for Senator Hatfield and staff	Portland	Tuesday, March 26, 1991
Greenspaces Policy Advisory Committee	Portland	Wednesday, March 27, 1991
Meeting with City Managers Group	Portland	Monday, April 1, 1991
Greenspaces Clark County Lowlands Tour	Vancouver	Thursday, April 4, 1991
Tour of proposed Tualatin Wildlife refuge	Sherwood	Thursday, April 4, 1991
Greenspaces briefing for Clark County	Vancouver	April 4-5, 1991
Meeting of Clark County Open Space Commission re: values of natural areas	Vancouver	Friday, April 5, 1991

Meeting	Location	Date/Time
Greenspaces briefing for Friends of Forest Park Subcommittee	Portland	Monday, April 8, 1991
Metro Transportation and Planning Committee re: approval of demo grants, criteria and application	Portland	Tuesday, April 9, 1991
Coordinating meeting with NPS	Portland	Thursday, April 11, 1991
Greenspaces Local Support Resolution City of Vancouver	Vancouver	Monday, April 15, 1991
Greenspaces Technical Advisory Committee	Portland	Friday, April 19, 1991
Greenspaces briefing for Oregon Congressional delegation staff	Portland	April 20-24, 1991
NPS national training session	Chattanooga, Tenn.	April 20-26, 1991
Fairview Creek Planning Committee meeting	Gresham/Fairview	Monday, April 22, 1991
Friends of Olmsted Parks	Seattle	Thursday, April 25, 1991
NPS meeting	Portland	Friday, May 3, 1991
Tour of Fairview Creek	Fairview	Saturday, May 4, 1991
Demonstration Grants Pre-Application Workshops	Portland	Monday, May 6, 1991
ODFW hearings on protection of natural areas	Portland	Tuesday, May 14, 1991
Presentation of Greenspaces map to Portland Planning Commission	Portland	Wednesday, May 15, 1991
Greenspaces Technical Advisory Committee	Portland	Friday, May 17, 1991
FAUNA training session on public speaking	Portland	Saturday, May 18, 1991
Greenspaces briefing for FAUNA Steering Committee	Portland	Tuesday, May 21, 1991
Greenspaces briefing for CPO 4, Tigard	Tigard	Wednesday, May 22, 1991
1000 Friends of Oregon Study of Goal 5 Work	Portland	Thursday, May 23, 1991

Meeting	Location	Date/Time
Meeting with City Managers Group	Portland	Friday, May 24, 1991
TDR meeting with Forest Park	Portland	Friday, May 24, 1991
Greenspaces briefing for Portland Chamber of Commerce Subcommittee	Portland	Wednesday, May 29, 1991
Great Blue Heron Week dedication	Portland	Thursday, May 30, 1991
Friends of Forest Park re: citizen handbook on conservation techniques	Portland	Friday, May 31, 1991
1000 Friends of Oregon Goal 5 Project	Portland	Friday, May 31, 1991
NPS meeting re: public forums	Portland	Monday, June 3, 1991
NPS trails meeting for Oregon, Idaho, Washington	Salem	Tuesday, June 4, 1991
Greenspaces briefing for Nob Hill Lions' Club (Northwest Portland)	Portland	Wednesday, June 5, 1991
Demo Grant Review Committee meeting 1	Portland	Thursday, June 6, 1991
Greenspaces briefing for City Managers, County Administrators and Planning Directors	Portland	Friday, June 7, 1991
Transportation Planning Committee, program update	Portland	Tuesday, June 11, 1991
Presentation to Multnomah County Board of Commissioners	Portland	Tuesday, June 11, 1991
Open house at Tualatin Wildlife Refuge	Sherwood	Tuesday, June 11, 1991
Greenspaces briefing for Seattle and King County	Vancouver	Wednesday, June 12, 1991
Meeting with Audubon Society re: wetlands protection handbook	Portland	Friday, June 14, 1991
NPS meeting re: public forums	Portland	Monday, June 17, 1991
Demo Grants Review Committee to review 14 applications	Portland	Tuesday, June 18, 1991

Meeting	Location	Date/Time
Greenspaces Technical Advisory Committee	Portland	Friday, June 21, 1991
Meeting with NPS staff re: federal assistance to Metro for greenways	Portland	Tuesday, June 25, 1991
Meeting with staff of Senator Hatfield and Representative AuCoin re: second federal appropriation ($800,000) for USFW	Washington, D.C.	Tuesday, June 25, 1991
Transportation and Planning Committee meeting	Portland	Tuesday, June 25, 1991
Greenspaces Policy Advisory Committee	Portland	Wednesday, June 26, 1991
Greenspaces booth at Tualatin River Discovery Day Festival	Washington County	Saturday, June 29, 1991
Meeting with City Managers Group	Portland	Monday, July 1, 1991
Country in the City IV	Portland	July 11-13, 1991
Metropolitan Greenspaces Program: A Four-County, Bi-State Cooperative Initiative	Portland	Friday, July 12, 1991
Greenspaces Open Public Forum	Milwaukie	Monday, July 15, 1991
Greenspaces Open Public Forum	Vancouver	Tuesday, July 16, 1991
Greenspaces Open Public Forum	Vancouver	Tuesday, July 16, 1991
Greenspaces Open Public Forum	Beaverton	Wednesday, July 17, 1991
Greenspaces Open Public Forum	Gresham	Thursday, July 18, 1991
Greenspaces Open Public Forum	Portland	Saturday, July 20, 1991
Work session, potential bond measure meeting Southeast 122nd Ave. Portland	Portland	Tuesday, July 30, 1991
Metropolitan Greenspaces and Natural Areas program, dinner	Vancouver	Tuesday, July 30, 1991
Parks Forum VIII	Fairview	Wednesday, July 31, 1991
Greenspaces Technical Advisory Committee	Portland	Friday, Aug. 23, 1991

Meeting	Location	Date/Time
Greenspaces Policy Advisory Committee	Portland	Wednesday, Aug. 28, 1991
Alpha Xi Delta Alumni Chapter's meeting	Portland	Thursday, Sept. 12, 1991
Friends of Cedar Mills Community Events Booth with Greenspaces Material	Portland	Saturday, Sept. 21, 1991
Briefing for CPO 4	Beaverton	Wednesday, Sept. 25, 1991
Metro Council meeting	Portland	Thursday, Sept. 26, 1991
Portland *Downtowner* newspaper article "Harmony Interviews" on Mike Houck and Greenspaces	Portland	Monday, Sept. 30, 1991
Briefing for CPO 9	Hillsboro	Tuesday, Oct. 1, 1991
Salmon Festival - Greenspaces Booth	Gresham	Saturday-Sunday, Oct. 12-13, 1991
Clean River Confluence	Portland	Saturday-Sunday, Oct., 12-13, 1991
Briefing for Lane County Audubon Society	Eugene	Thursday, Oct. 17, 1991
Washington County Political Caucus	Hillsboro	Thursday, Oct. 17, 1991
TAC meeting – approve in concept roles and responsibilities	Portland	Friday, Oct. 18, 1991,
Transportation and Planning Committee meeting	Portland	Tuesday, Oct. 22, 1991
Fall FAUNA meeting – guest speaker Ann Riley	Portland	Tuesday, Oct. 22, 1991
PAC meeting – approve in concept roles and responsibilities	Portland	Wednesday, Oct. 23, 1991
Environmental Educators Annual Conf.	Portland	Saturday, Oct. 26, 1991
Presentation to Lewis and Clark Law School	Portland	Tuesday, Oct. 29, 1991
Regional Corridors and Trails Working Group meeting	Portland	Tuesday, Oct. 29, 1991
OPB Radio Interview on Greenspaces	Portland	Wednesday-Thursday, Oct. 30-31, 1991
Briefing for Larkin G. Franks' Mt Hood Community College Class	Gresham	Monday, Nov. 4, 1991
Briefing for NPO 7 meeting	Tigard	Wednesday, Nov. 6, 1991

Meeting	Location	Date/Time
Presentation to Beaverton High School Teachers	Beaverton	Thursday, Nov. 7, 1991
Presentation on AM Northwest (Channel 2)	Portland	Friday, Nov. 8, 1991
Tour with Vera Katz of Greenspaces	Metropolitan area	Sunday Nov. 10, 1991
Slide presentation to Rose City United Methodist Church	Portland	Sunday Nov. 10, 1991
Briefing for Forest Grove City Council meeting	Forest Grove	Tuesday, Nov. 12, 1991
Briefing for Alpha Xi Delta Women's meeting	Beaverton	Tuesday, Nov. 12, 1991
Meeting with Friends of Cedar Springs	Portland	Tuesday, Nov. 12, 1991
TAC meeting	Portland	Friday, Nov. 15, 1991
Regional Corridors, Greenways and Trails Working Group meeting	Portland	Tuesday, Nov. 19, 1991
Presentation to the United Methodist Church on Greenspaces	Portland	Wednesday, Nov. 20, 1991
North Clackamas Parks and Recreation District Public Informational meeting	Milwaukie	Wednesday, Nov. 20, 1991
Meeting with Multnomah County Parks, Audubon & US Forest Service	Portland	Thursday, Nov. 21, 1991
Parks and Natural Areas Inventory and Mapping Workshop	Portland	Friday, Nov. 22, 1991
Revised Greenspaces update article for Oregon Chapter of National Wildlife Federation	Oregon coast	Saturday, Nov. 23, 1991
Greenspaces briefing for the City of Wilsonville	Wilsonville	Wednesday, Nov. 27, 1991
TAC meeting	Portland	Tuesday, Dec. 3, 1991
Trails, Greenways and Corridors Working Group meeting	Portland	Tuesday, Dec. 3, 1991
PAC meeting	Portland	Wednesday, Dec. 4, 1991
East County open house briefing on Metropolitan Greenspaces	Gresham	Thursday, Dec. 5, 1991
Greenspaces Field Trip	Portland	Monday, Dec. 9, 1991
Burlington Bottoms Press Conference	Portland	Tuesday, Dec. 10, 1991

Meeting	Location	Date/Time
Cultural Resources (Landscape) Inventory Workshop	Portland	Wednesday, Dec. 11, 1991
Parks Forum XX	Vancouver	Thursday, Dec. 12, 1991
Balch Creek Demonstration Grant	Portland	Saturday, Dec. 14, 1991
Transportation and Planning Committee meeting - approval of roles, responsibilities	Portland	Wednesday, Dec. 18, 1991
Greenspaces Finance Working Group meeting	Portland	Friday, Dec. 20, 1991
Greenspaces Demonstration Grants Working Group meeting	Portland	Friday, Dec. 20, 1991
Greenspaces Trails Working Group meeting	Portland	Monday, Jan. 6, 1992
Briefing for League of Women Voters	Portland	Wednesday, Jan. 8, 1992
FAUNA Steering Committee meeting	Portland	Wednesday, Jan. 8, 1992
Governor's Watershed Enhancement Board Conference	Portland	Thursday-Friday, Jan. 9-10, 1992
USFWS meeting	Portland	Friday, Jan. 10, 1992
Finance Plan meeting with Gresham	Gresham	Tuesday, Jan. 14, 1992
Clark County Trails meeting	Vancouver	Wednesday, Jan. 15, 1992
West Mult. County Soil & Water Consv. Dist. meeting	Portland	Thursday, Jan. 16, 1992
Demonstration Grants Working Group meeting	Portland	Friday, Jan. 17, 1992
Washington County ESD meeting re: demonstration grants	Hillsboro	Friday, Jan. 17, 1992
Greenspaces Public Forum on Master Plan	Troutdale	Monday, Jan. 20, 1992
Greenspaces Public Forum on Master Plan	Oregon City	Tuesday, Jan. 21, 1992
USFWS meeting	Portland	Wednesday, Jan. 22, 1992
Greenspaces Public Forum on Master Plan	Hillsboro	Wednesday, Jan. 22, 1992
Greenspaces Public Forum on Master Plan	Vancouver	Thursday, Jan. 23, 1992
Technical Advisory Committee meeting	Portland	Friday, Jan. 24, 1992

Meeting	Location	Date/Time
Greenspaces Public Forum on Master Plan	Portland	Saturday, Jan. 25, 1992
Education Committee Advisory meeting	Portland	Tuesday, Jan. 28, 1992
Policy Advisory Committee meeting	Portland	Wednesday, Jan. 29, 1992
Briefing for Senator Hatfield	Washington, D.C.	Monday, Feb. 3, 1992
Briefing for Representative AuCoin's staff	Washington, D.C.	Monday, Feb. 3, 1992
Briefing for Representative DeFazio's staff	Washington, D.C.	Tuesday, Feb. 4, 1992
Briefing for Representative Wyden's staff	Washington, D.C.	Tuesday, Feb. 4, 1992
Briefing for Representative Kopetski	Washington, D.C.	Tuesday, Feb. 4, 1992
Portland Parks/PDC Commission meeting on Willamette River East Bank Project Technical Advisory Committee	Portland	Tuesday, Feb. 4, 1992
Briefing for Representative Unsoeld's staff	Washington, D.C.	Wednesday, Feb. 5, 1992
Briefing for Senator Packwood's staff	Washington, D.C.	Wednesday, Feb. 5, 1992
Willamette National Cemetery meeting on trails	Clackamas County	Wednesday, Feb. 5, 1992
City of Happy Valley Parks and Trails Tour	Happy Valley	Wednesday, Feb. 5, 1992
West Mult. County Soil & Water Consv. Dist. meeting	Portland	Thursday, Feb. 6, 1992
Metro Area Planning Directors meeting	Portland	Friday, Feb. 7, 1992
Regional Light Rail Summit meeting	Portland	Saturday, Feb. 8, 1992
Oregon Parks Dept. staff meeting	Portland	Wednesday, Feb. 12, 1992
TPL & Local Parks Providers meeting on potential acquisition areas	Portland	Wednesday, Feb. 12, 1992
FAUNA planning meeting	Portland	Wednesday, Feb. 12, 1992
Metro area city managers meeting on review of parks & greenspaces	Portland	Thursday, Feb. 13, 1992
GreenCity Data Project meeting	Portland	Thursday, Feb. 13, 1992

Meeting	Location	Date/Time
Greenspaces Boat tour of Willamette river for PAC & TAC members	Oregon City	Friday, Feb. 14, 1992
Technical Advisory meeting	Portland	Friday, Feb. 14, 1992
Earth Summit conference	Portland	Saturday, Feb. 15, 1992
Presentation to Home Builders Association	Portland	Thursday, Feb. 20, 1992
Education Committee meeting	Portland	Thursday, Feb. 20, 1992
Presentation to Portland Environmental Commission	Portland	Thursday, Feb. 20, 1992
EPA Conference	Portland	Feb. 21-23, 1992
Public Forum	Troutdale	Monday, Feb. 24, 1992
Public Forum	Oregon City	Tuesday, Feb. 25, 1992
Policy Advisory Committee meeting	Portland	Wednesday, Feb. 26, 1992
Public Forum	Hillsboro	Wednesday, Feb. 26, 1992
Government briefing on Master Plan for City of Wilsonville	Wilsonville	Wednesday, Feb. 26, 1992
Presentation to Rex Putnam H.S.	Hillsboro	Wednesday, Feb. 26, 1992
Public Forum	Vancouver	Thursday, Feb. 27, 1992
Technical Advisory Committee meeting	Portland	Friday, Feb. 28, 1992
Public Forum	Portland	Saturday, Feb. 29, 1992
Presentation at First Unitarian Church	Portland	Wednesday, March 4, 1992
Transportation and Planning Committee meeting	Portland	Tuesday, March 10, 1992
Government briefing on Master Plan for City of Tigard	Tigard	Tuesday, March 10, 1992
Policy Advisory Committee meeting	Portland	Wednesday, March 11, 1992
FAUNA meeting	Portland	Wednesday, March 11, 1992
Presentation at Rose City United Methodist Church	Portland	Thursday, March 12, 1992
GreenCity Data Project kick-off	Portland	Saturday, March 14, 1992
Briefing for Columbia Corridor Association	Portland	Thursday, March 19, 1992
Technical Advisory Committee meeting	Portland	Thursday, March 19, 1992

Meeting	Location	Date/Time
Parks Forum XXI	Gladstone	Friday, March 20, 1992
Presentation for Business and Professional Women of American Association of University Women	Portland	Friday, March 20, 1992
Trails Working Group meeting	Portland	Monday, March 23, 1992
Presentation at First Presbyterian Church	Portland	Tuesday, March 24, 1992
Public Involvement/Education Working Group meeting	Portland	Wednesday, March 25, 1992
Government Briefing on Master Plan for the City of Lake Oswego	Lake Oswego	Tuesday, March 31, 1992
Northwest Week in Review (OPB TV) – program on Greenspaces	Portland	Friday, April 3, 1992
Streamwalk Conference	Portland	Saturday, April 4, 1992
Metropolitan Greenspaces 1992 Lecture Series - "Retaining our sense of place"	Portland	Wednesday, April 8, 1992
Technical Advisory Committee meeting	Portland	Friday, April 10, 1992
World Forestry Center Open House	Portland	Saturday, April 11, 1992
Presentation to Multnomah County Library	Portland	Monday, April 13, 1992
Presentation to Jackson Middle School Neighborhood Group	Hillsboro	Monday, April 13, 1992
Dedication of Fern Hill Wetlands Restoration site/Grant Award Ceremony	Forest Grove	Saturday, April 18, 1992
Presentation to Southeast Uplift group	Portland	Monday, April 20, 1992
Greenspaces display at Growth Conference	Portland	Tuesday, April 21, 1992
Presentation to Friends of Powell Butte	Portland	Tuesday, April 21, 1992
Government Briefing on Master Plan for the City of Sherwood	Sherwood	Wednesday, April 22, 1992
Metropolitan Greenspaces 1992 Lecture Series - "Connecting to our Greenspaces System"	Portland	Wednesday, April 22, 1992
Greenspaces display at "Walk your Talk" event	Portland	Wednesday, April 22, 1992

Meeting	Location	Date/Time
Metro Council meeting	Portland	Thursday, April 23, 1992
Presentation at Friends of Forest Park meeting	Portland	Thursday, April 23, 1992
Presentation at PSU/Earth Day celebration	Portland	Friday, April 24, 1992
Presentation to PDC	Portland	Friday, April 24, 1992
Earth Day Children's Festival talk	Portland	Saturday, April 25, 1992
Backyard Tree Farm Workshops talk	Portland	Saturday, April 25, 1992
Earth Day talk	Portland	Sunday, April 26, 1992
Policy Advisory Committee meeting	Portland	Wednesday, April 29, 1992
Jackson Bottom Spring Wetlands Celebration	Hillsboro	Saturday, May 2, 1992
Government Briefing on Master Plan for U.S. Fish & Wildlife Service	Portland	Monday, May 4, 1992
Talk and slide show at Neighborhood House Senior Center	Portland	Tuesday, May 5, 1992
Talk and slideshow at Cedar Hills Lions Club	Portland	Tuesday, May 5, 1992
Government briefing on Master Plan for the City of Johnson City	Johnson City	Tuesday, May 5, 1992
Government briefing on Master Plan for the W. Multnomah Soil & Water Conservation Dist	Portland	Tuesday, May 5, 1992
Government briefing on Master Plan for the City of Hillsboro	Hillsboro	Tuesday, May 5, 1992
Environmental Technology & Society: Issues in Sustainable Development Conference	Portland	Wednesday, May 6, 1992
Metropolitan Greenspaces 1992 Lecture Series "Reclaiming Neighborhood Greenspaces"	Portland	Wednesday, May 6, 1992
Government briefing on Master Plan for the City of Wood Village	Wood Village	Wednesday, May 6, 1992
Talk and slide show at Open Space Preservation Conference	Kitsap County, Wash.	Thursday-Friday, May 7-8, 1992
Technical Advisory Committee meeting	Portland	Friday, May 8, 1992

Meeting	Location	Date/Time
Government briefing on Master Plan for Washington Parks Adv. Bd. and USA Adv. Bd. Commission	Hillsboro	Friday, May 8, 1992
Young Presidents' Organization/ League of Women Voters' tour of Greenspaces sites	Portland	Saturday, May 9, 1992
Trails Working Group meeting	Portland	Monday, May 11, 1992
Government briefing on Master Plan for the City of Beaverton	Beaverton	Monday, May 11, 1992
Government briefing on Master Plan for the City of Rivergrove	Rivergrove	Monday, May 11, 1992
Government briefing on Master Plan for East Multnomah Soil & Water Conservation Dist.	Portland	Tuesday, May 12, 1992
Transportation Planning meeting	Portland	Tuesday, May 12, 1992
Government briefing on Master Plan for the City of Gladstone	Gladstone	Tuesday, May 12, 1992
Policy Advisory Committee meeting	Portland	Wednesday, May 13, 1992
Government briefing on Master Plan for the City of Oregon City	Oregon City	Wednesday, May 13, 1992
Government briefing on Master Plan for the U.S. Fish & Wildlife Service	Portland	Thursday, May 14, 1992
Metro Council meeting – briefing on the Master Plan	Portland	Thursday, May 14, 1992
Government briefing on Master Plan for N. Clackamas Parks and Recreation Dist.	Oregon City	Thursday, May 14, 1992
Government briefing on Master Plan for the U.S. Forest Service	Portland	Friday, May 15, 1992
Second government briefing on Master Plan for Washington Parks Adv. Bd. and USA Adv. Bd Commission	Hillsboro	Monday, May 18, 1992
Government briefing on Master Plan for Oregon Dept. of Parks and Recreation	Salem	Monday, May 18, 1992
Government briefing on Master Plan for the City of Portland	Portland	Monday, May 18, 1992
Government briefing on Master Plan for the City of Cornelius	Cornelius	Tuesday, May 19, 1992
Talk and slide show at Wilsonville Kiwanis Club	Wilsonville	Tuesday, May 19, 1992

Meeting	Location	Date/Time
Government briefing on Master Plan for the City of Gresham	Gresham	Tuesday, May 19, 1992
Government briefing on Master Plan for the City of Happy Valley	Happy Valley	Tuesday, May 19, 1992
Government briefing on Master Plan for the City of Milwaukie	Milwaukie	Tuesday, May 19, 1992
Talk and slide show at Montevilla Kiwanis Club	Portland	Tuesday, May 19, 1992
Government briefing on Master Plan for Oregon Dept. of Fish & Wildlife Comm.	Portland	Wednesday, May 20, 1992
Government briefing on Master Plan for Clackamas County	Oregon City	Wednesday, May 20, 1992
Government briefing on Master Plan for the City of King City	King City	Wednesday, May 20, 1992
Government briefing on Master Plan for the State Agency Council on Growth	Portland	Wednesday, May 20, 1992
Metropolitan Greenspaces 1992 Lecture Series "Balancing Dollars & Sense in Greenspaces"	Portland	Wednesday, May 20, 1992
Government briefing on Master Plan for the City of Fairview	Fairview	Wednesday, May 20, 1992
Government briefing on Master Plan for the City of Portland	Portland	Wednesday, May 20, 1992
Government briefing on Master Plan for the Portland Environmental Commission	Portland	Thursday, May 21, 1992
Finance Working Group meeting	Portland	Thursday, May 21, 1992
Finance Committee	Portland	Thursday, May 21, 1992
Technical Advisory Committee meeting	Portland	Friday, May 22, 1992
Government briefing on Master Plan for Multnomah County	Portland	Tuesday, May 26, 1992
Government briefing on Master Plan for Port of Portland	Portland	Tuesday, May 26, 1992
Transportation and Planning meeting	Portland	Tuesday, May 26, 1992
Government briefing on Master Plan for the City of Troutdale	Troutdale	Tuesday, May 26, 1992
Government briefing on Master Plan for the City of Durham	Durham	Tuesday, May 26, 1992

Meeting	Location	Date/Time
Parks Forum XXII	Wilsonville	Wednesday, May 27, 1992
Public Workshop on Metropolitan Greenspaces Master Plan/ Government Briefing on the Master Plan for the City of Wilsonville	Wilsonville	Wednesday, May 27, 1992
Government briefing on Master Plan for the U.S. Fish & Wildlife Service	Portland	Wednesday, May 27, 1992
Policy Advisory Committee meeting	Portland	Wednesday, May 27, 1992
Government briefing on Master Plan for the City of West Linn	West Linn	Wednesday, May 27, 1992
Metro Council meeting – first hearing on parks resolution	Portland	Thursday, May 28, 1992
Greenspaces Restoration Grants Workshop	Portland	Thursday, May 28, 1992
Government briefing on Master Plan for the City Managers Subcommittee	Portland	Friday, May 29, 1992
Regional Trails Working Group meeting	Portland	Friday, May 29, 1992
GreenCity Data Project Environmental Education Pilot Project Final Conference	Portland	Saturday, May 30, 1992
Public Workshop on Metropolitan Greenspaces Master Plan	Portland	Saturday, May 30, 1992
Public Workshop on Metropolitan Greenspaces Master Plan	Milwaukie	Monday, June 1, 1992
Public Workshop on Metropolitan Greenspaces Master Plan	Beaverton/Portland	Tuesday, June 2, 1992
Public Involvement/Education Working Group meeting	Portland	Tuesday, June 2, 1992
Public Workshop on Metropolitan Greenspaces Master Plan	Fairview	Wednesday, June 3, 1992
Government briefing on Master Plan for the City of Tualatin	Tualatin	Thursday, June 4, 1992
Technical Advisory Committee meeting	Portland	Friday, June 5, 1992
Greenspaces briefing to West Clackamas County League of Women Voters	Lake Oswego	Monday, June 8, 1992
Government briefing on Master Plan for the City of Forest Grove	Forest Grove	Monday, June 8, 1992
Regional Policy Advisory Committee meeting	Portland	Wednesday, June 10, 1992

Meeting	Location	Date/Time
Policy Advisory Committee meeting	Portland	Wednesday, June 10, 1992
Government briefing on Master Plan for the THPRD	Beaverton	Wednesday, June 10, 1992
Talk and slide show at Sierra Club	Portland	Wednesday, June 10, 1992
Technical Advisory Committee meeting	Portland	Friday, June 12, 1992
Greenspaces volunteer meeting	Portland	Monday, June 15, 1992
Government briefing on Master Plan for the State Agency Council on Growth	Portland	Wednesday, June 17, 1992
Policy Advisory Committee meeting	Portland	Wednesday, June 17, 1992
Talk at Portland/Oregon Visitors Association weekly breakfast meeting	Portland	Thursday, June 18, 1992
Technical Advisory Committee meeting	Portland	Friday, June 19, 1992
Transportation and Planning meeting	Portland	Tuesday, June 23, 1992
Workshop on Master Plan for the City of Gresham	Gresham	Tuesday, June 9, 1992
FAUNA annual meeting	Portland	Wednesday, June 24, 1992
Policy Advisory Committee meeting	Portland	Wednesday, June 24, 1992
Presentation to League of Conservation Voters office	Portland	Thursday, June 25, 1992
Greenspaces booth at Tualatin River Days	Washington County	Saturday, June 27, 1992
Greenspaces Restoration Grants Workshop	Portland	Thursday, July 2, 1992
Boundary Commission Hearing	Portland	Thursday, July 2, 1992
Metro Transportation and Planning Committee Hearing	Portland	Tuesday, July 14, 1992
Metro Finance Committee meeting	Portland	Thursday, July 16, 1992
Metro Council meeting – second hearing for adoption of Master Plan and Bond referral	Portland	Thursday, July 22, 1992

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