

MANDATES AND CURRENT URBAN FOREST MANAGEMENT

FEDERAL, STATE AND METRO MANDATES

In recent years, new mandates have been handed down that have a considerable effect on City planning, programs and regulations. The Endangered Species Act, the Clean Water Act and the Superfund Law have resulted in extensive changes in how development occurs and how natural resources are managed. Portland's decision to exceed the requirements of the mandates in an effort to restore the natural environmental to the best possible condition has resulted in more rules, regulations and City involvement than ever before.

The primary mandates affecting urban forestry are listed below, followed by descriptions of the agencies and groups who manage the urban forest, their responsibilities, plans and projects.

FEDERAL MANDATES

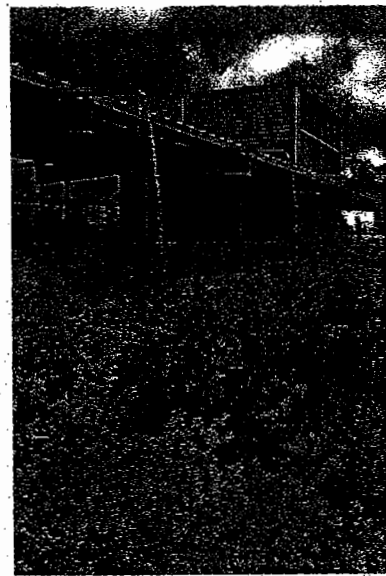
The following federal mandates have implications for urban forestry in Portland. Agencies at all levels of government are involved in complying with these mandates.

Endangered Species Act (ESA). This act lists steelhead trout and Chinook salmon as threatened species. The City's proactive response is as follows:

1. Work collaboratively with National Oceanic and Atmospheric Administration (NOAA) Fisheries to prepare a program for salmonid recovery.
2. Collaborate with the region and state to restore affected watersheds which cross political boundaries.
3. Enlist the help of citizens to develop the City's response to the listing.

The City is developing a coordinated Framework for Integrated Management of Watershed and River Health (the Framework) to respond to the ESA requirements. The Framework informs and guides multiple existing City programs that contribute to improving the Willamette River. These programs are explained later in this chapter.

Clean Water Act (CWA): National Pollution Discharge Elimination System (NPDES). The CWA established the basic structure for regulating discharges of pollutants into the waters of the U.S. It also established the National Pollution Discharge Elimination System (NPDES)



Roof drainage to vegetation

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which regulates point and non-point sources of pollution including wastewater treatment plants, permits, combined sewer overflows (CSOs) and stormwater. The Oregon Department of Environmental Quality (DEQ) enforces these regulations and issues permits for approved plans such as Portland's Stormwater Management Plan which includes increased tree planting and vegetation management to improve the environment and mitigate for certain activities.³⁷



Oregon ash (*Fraxinus latifolia*)

Clean Water Act: Total Maximum Daily Load (TMDL) Program. Under section 303(d) of the Clean Water Act, states are required to develop lists of impaired waters that do not meet water quality standards set by the state. Rivers and streams listed as water-quality impaired include: Tryon Creek, Johnson Creek, Fanno Creek, the Columbia Slough and the mainstem of the Willamette River and Columbia River are currently listed as water quality limited on the 303(d) list. This requires Oregon DEQ to develop total maximum daily loads (TMDLs) for the listed parameter(s) — specifying the maximum amount of the parameter that a waterbody can receive from all point and non-point sources and still meet water quality standards. Affected jurisdictions must then develop management plans to achieve the identified requirements. Urban stormwater runoff contributes to a number of 303(d)/TMDL parameters.

Safe Drinking Water Act: Underground Injection Control (UIC) Program. The Safe Drinking Water Act (SDWA), established in 1974 and amended in 1986 and 1996, protects the quality of drinking water in the U.S. It requires a number of actions to protect waters actually or potentially designed for drinking use, as well as their sources including rivers, lakes, reservoirs, springs and groundwater wells. The Underground Injection Control (UIC) program is a permit program under the SDWA that protects underground sources of drinking water by regulating five classes of injection wells.³⁸ EPA has authorized DEQ to enforce the UIC program in Oregon. Trees and vegetation can affect the quality of surface and ground water and reduce the need for dry wells, sumps or artificial injection.

Superfund Law (Comprehensive Environmental Response, Compensation and Liability Act — CERCLA). The Superfund Law authorizes the Environmental Protection Agency (EPA) to take remedial response actions to reduce the dangers associated with hazardous waste. In 2000, the Portland Harbor area of the Willamette River was listed on EPA's National Priorities List as a site that must be cleaned of toxic contaminants. Harbor sediments contain pesticides, polychlorinated biphenyls (PCBs), heavy metals and carcinogenic compounds found in petroleum products, which pose a serious risk to people who use the river for

³⁷City of Portland Bureau of Environmental Services.

³⁸An underground injection is any system, structure or activity created to place fluid below the ground or subsurface. This includes stormwater systems such as sumps, drywells and trench drains, which DEQ classifies as "Class V Injection Wells" under the UIC program.

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recreation, to the Native American tribes who use the river as a natural and cultural resource and to wildlife — including threatened salmonids.³⁹ The urban forest affects the water quality of the upland areas above the harbor.

STATE MANDATES

The State of Oregon has 19 Statewide Planning Goals and Guidelines.⁴⁰ The City of Portland's Comprehensive Plan addresses these goals. The following goals are particularly relevant to the urban forest.

Goal 5. "To protect natural resources and conserve scenic and historic areas and open spaces." The goal requires local governments to develop programs to protect these resources for present and future generations to promote livability in the State. This includes the protection of fish and wildlife habitats, stream flow and water levels, and natural areas — all areas where a healthy urban forest is an important component.

Goal 6. "To maintain and improve the quality of the air, water and land resources of the state." The vegetation of the urban forest affects air and water quality. Increasing the quality and quantity of the vegetative cover can improve these resources.

Goal 7. "To protect life and property from natural disasters and hazards." This goal requires planning that considers the benefits of maintaining and protecting natural hazard areas as open space, avoids development in hazard areas and manages potential hazards such as floods and landslides through stormwater management and erosion control — all of which use vegetation management to accomplish these objectives.

Goal 15. "To protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River as the Willamette River Greenway." This goal sets forth provisions for recreation, fish and wildlife habitat, vegetative fringe and development away from the river.

METRO MANDATES

2040 Growth Concept. Metro's 2040 Growth Concept, adopted in 1995, is the blueprint for future growth in the Portland metropolitan region. The unifying theme is to preserve the region's livability while planning for expected growth by developing a compact urban form to be achieved in 2040. The 2040 Growth Concept complies with statewide land use goals and is the foundation of Metro's 1997 Regional Framework Plan.



Trees improve urban living conditions

³⁹U.S. Environmental Protection Agency (2000).

⁴⁰Oregon Department of Land Conservation and Development.

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The 2040 Growth Concept has the following components:

- Centers and corridors with an emphasis on higher development densities, mixed land uses, ease of traveling by transit, bicycling and walking and streets designed for people, not just cars.
- Neighborhoods that will remain largely residential in nature, and change very little from today.
- Industrial areas and marine, rail and air cargo terminals that serve as the hub for regional commerce.
- Environmentally sensitive areas that need special protections.

Regional Transportation Plan. The 2000 Regional Transportation Plan (RTP) is a 20-year blueprint for the region's transportation system that supports the land uses in the 2040 Growth Concept and serves all forms of travel. The plan deals with how best to move people and goods in and through the region and sets the direction for regional investments in a mix of transportation options, including roadways, light rail, freight, transit, pedestrian access and bicycles. It is updated and adopted by the Metro Council every three years.⁴¹

Street Design Guidelines. Metro has developed guidelines for incorporating the RTP concepts into local design codes and individual projects. The following documents integrate transportation planning, land use and natural resources:

- *Creating Livable Streets* handbook.
- *Green Streets* document, a companion guide with designs for multi-modal transportation systems that protect the quality of the region's streams and rivers.
- *Trees for Green Streets*, which suggests tree species and strategies to implement the Green Streets plan. Street trees are a key component of green streets.

These documents are available from Metro or can be downloaded from Metro's web site (www.metro-region.org).

Urban Growth Management Functional Plan. Metro's Urban Growth Management Functional Plan provides a framework for growth in the region and includes the following mandates that affect the urban forest. "Title 3: Water Quality, Flood Management, and Fish and Wildlife Conservation" is the regional implementation of State Goals 5, 6, and 7. It has two elements; both relate to the urban forest.

- *Part 1 Natural Resource Protection—Stream and Flood Plain Protection Plan.*
This plan describes regional performance standards for new development and large redevelopments and designates riparian areas to be regulated.

⁴¹The 2000 Regional Transportation Plan was adopted by the Metro Council on August 10, 2000.

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- *Part 2 Natural Resource Protection — Fish and Wildlife Habitat Protection Plan*
This plan, currently in development, will conserve, protect and restore a continuous ecologically viable streamside corridor system, from headwaters to the floodplains, in a way that is integrated with the surrounding urban landscape.

CITY CODE REQUIREMENTS

The following city codes, standards, guidelines and regulations relate to urban forestry:

City Code Title 10: Erosion and Sediment Control. Title 10 requires the prevention and control of sediment at the source during construction and development. All new and redevelopment projects with ground-disturbing activities with over 500 square feet of impervious surface or projects of any size that are classified as high risk because of site characteristics or activities are required to have an erosion control plan and a site inspection. This title includes a requirement to plant replacement vegetation.

City Code Title 17: Public Improvements: Drainage and Water Quality (17.38). This chapter provides for the effective management of stormwater and drainage, and maintains and improves water quality in the watercourses and water bodies within the city. It sets forth policies for stormwater management to avoid a net negative impact on nearby streams, wetlands, groundwater and other water bodies, and requires that the quality of stormwater leaving the site after development to be of equal or better quality than the stormwater leaving the site before development. This chapter affects landscaping and environmental zone regulations. The urban forest is a key component in reducing stormwater runoff and enhancing water quality.

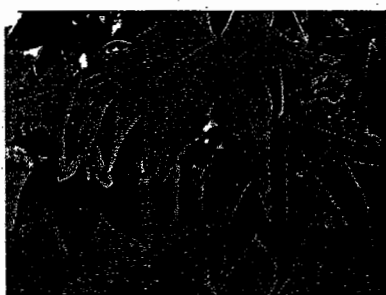
City Code Title 17: Public Improvements: Trees (17.52). This chapter sets forth provisions for tree trimming, cleanup and removal to prevent interference by trees with wires, sidewalks and sewers.

City Code Title 20: Parks and Recreation: Street and Other Public Trees (20.40). The purpose of this chapter is to manage, conserve and enhance the existing trees located in the parks and public areas so as to preserve the wooded character of the city, enhance the appearance of the city and protect the urban forest as an important environmental and economic resource. It establishes the Urban Forestry Commission, and mandates the creation of this plan. Section 20:42 regulates tree cutting in order to preserve the wooded character of the city and protect the urban forest.

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City Code Title 24: Building Regulations: Clearing, Grading, and Erosion Control (24.70). This chapter requires a permit for cutting trees or clearing vegetation under specified circumstances. This chapter is primarily aimed at proposals to cut trees or clear vegetation on slopes and/or areas greater than 5,000 square feet.

City Code Title 24: Building Regulations: Flood Hazard Management (24.50). This chapter's protects public health, safety and welfare by restricting or prohibiting uses which are dangerous to health, safety or property in times of flood or which increase vulnerability to flooding. It regulates development and construction in identified flood hazard areas. As with stormwater management, the urban forest can help reduce flooding problems.



Sweet gum (*Liquidambar styraciflua*)

City Code Title 33: Zoning Code: Landscaping and Screening Standards (33.248). This chapter recognizes the aesthetic, ecological and economic value of landscaping and requires its use for many purposes, including: to preserve and enhance Portland's urban forest, promote water quality, enhance the city's visual appearance, provide wildlife habitat, promote the retention of existing vegetation and aid in energy conservation. The chapter establishes landscaping and tree planting or preservation requirements for a variety of settings.

City Code Title 33: Zoning Code: Environmental Overlay Zones (33.430). The purpose of this code chapter is to protect and conserve significant natural resources in Portland. Currently, the environmental overlay zones apply to approximately 19,000 acres including streams, wetlands, trees and vegetation. The regulations guide where and how development may occur in environmental zones, and include standards for removal and replacement of trees and vegetation. Development proposals must meet standards and/or approval criteria to ensure that adverse impacts on natural resources are avoided, limited and mitigated.

City Code Title 33: Zoning Code: Scenic Resource Zone (33.480). The Scenic Resource Zone protects Portland's significant scenic resources as identified in the Scenic Resources Protection Plan and enhances the appearance of Portland to make it a better place to live and work. The Scenic Resource Zone establishes height limits within view corridors to protect significant views and may require additional landscaping and screening to preserve and enhance identified scenic resources. This chapter regulates tree removal to enhance the character along corridors.

City Code Title 33: Zoning Code: Land Division Regulations (33.600).

These regulations cover all land divisions and involve preservation of significant trees, stormwater management, installation of other utilities,

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rights-of-way, clearing and grading, landscaping, development in landslide and floodplain hazard areas, and other site development factors.

Other chapters of City Code Title 33 that apply to specific areas and protect trees include:

33.508	Cascade Station/Portland International Center Plan District
33.515	Columbia South Shore Plan District
33.535	Johnson Creek Basin Plan District
33.570	Rocky Butte Plan District
33.563	Northwest Hills Plan District
33.580	South Auditorium Plan District

Natural Resources Management Plans. Natural Resources Management Plans (NRMPs) provide guidance for the protection and management of natural resources within a given area. NRMPs are alternatives to case-by-case environmental reviews. These plans provide the means to evaluate the cumulative effects of development and mitigation proposed at different times and in different places within the same large ecosystem. NRMPs are of particular value in areas of multiple ownership. The plans also present opportunities for coordination with, or joint adoption by, other local governments, special districts and regional, state and federal agencies.

NRMPs have been prepared for East Columbia Neighborhood, Smith & Bybee Lakes, Forest Park and Peninsula One Drainage District.

CITY PROGRAMS AND GUIDELINES

A key element in the City's response to the federal mandates is its "Framework for Integrated Management of Watershed and River Health"⁴² (the Framework Plan), which coordinates and implements the plans and programs that affect and impact the City's natural resources. The chart at the end of this City of Portland section shows the general relationship between the mandates, the Framework Plan and City plans and programs. Improving the urban forest and managing vegetation for mitigation and environmental improvement are important elements in all these plans.⁴³ The bureaus, commissions and programs that manage and affect the City's natural resources are as follows:

Endangered Species Act (ESA) Program. The City of Portland's Endangered Species Act Program was established in 1998 in response to federal listings of steelhead trout and Chinook salmon as threatened. The ESA Program is involved with developing a comprehensive,

⁴²City of Portland. *Framework for Integrated Management of Watershed and River Health – Internal and 1st Review Draft, Portland, OR. (November 2002).*

⁴³The ESA program is partially funding the preparation of this updated Urban Forestry Management Plan.

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Salmon

integrated citywide strategy to carry out City Council's resolution to assist with recovery of listed salmonids, and its "Clean and Healthy River" River Renaissance Vision theme. The ESA Program provides guidance to City bureaus and programs to avoid "take" and reduce the City's liability under the federal ESA by establishing strategies, criteria and procedures on ESA-related matters.

ESA Program staff participate in the development and implementation of watershed plans following processes described in the City's Framework Plan. This includes assessing the health of each City watershed, establishing watershed-and-reach-specific objectives, identifying, evaluating and selecting actions, developing watershed plans, implementing approved watershed plans and monitoring actions.

River Renaissance Program. This program is the foundation for river-related activities. It sets forth visions and guides the community-wide effort to revitalize the Willamette River by integrating plans and future actions for the Willamette and its tributaries. The program is directed by the River Renaissance Team — an inter-bureau team led by Bureau of Planning, Bureau of Environmental Services and Portland Development Commission staff with assistance from PP&R, Superfund and Endangered Species Act staff. This team coordinates City river-related work plans and projects to protect the Willamette River and important Portland streams so they play an integral role in the natural, economic, urban and recreational life of the city.

Sustainable City Principles. In 1994, the City of Portland adopted ten Sustainable City Principles.⁴⁴ Led by the Sustainable Portland Commission, the City periodically conducts an environmental review to assess its progress. The overarching goal is to "promote a sustainable future that meets today's needs without compromising the ability of future generations to meet their needs."

The City supports activities that:

- Support a stable, diverse and equitable economy.
- Protect the quality of the air, water, land and other natural resources.
- Conserve native vegetation, fish, wildlife habitat and other ecosystems.
- Minimize human impacts on local and worldwide ecosystems.⁴⁵

⁴⁴See Appendix for Sustainable City Principles.

⁴⁵City of Portland Office of Sustainable Development (1994).

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Portland's Current Urban Forest Management

Actively managing the different areas of the urban forest is a fairly recent activity. For many years, only the trees in the City's parks were managed and maintained. Problems with Portland's street trees — planted when the city was first developed — began to emerge in the 1940s. Trees were too closely spaced, sidewalks and curbs were rupturing and conflicts occurred between trees and utility wires. In 1944, Parks Superintendent C. P. Keyser urged the City to assume the administration of street trees. But not until 1972 did City Council give Portland Parks & Recreation responsibility over the trees on City property and in the public rights-of-way. Two years later, the first City Forester was hired to manage those trees. Now many bureaus, agencies, utilities and nonprofit agencies manage and care for various elements of the urban forest.

The following section identifies those agencies and their roles, responsibilities, programs and plans. These have evolved in response to the numerous mandates noted previously — particularly the Clean Water Act and the ESA listing of Chinook salmon and Steelhead trout as threatened species.

City of Portland Bureaus

PORTLAND PARKS & RECREATION (PP&R)

The City Code charges the PP&R Director (Superintendent), assisted by the City Forester and the Urban Forestry Commission, with developing and maintaining the Urban Forest Management Plan and with implementing portions of it. The following PP&R programs manage, plan and coordinate the care of various parts of the urban forest: Urban Forestry, Natural Resources, Horticultural Services, Planning and Design Development and Districts.

By City Code, the duties of PP&R's Superintendent include:⁴⁶

- Preserve and enhance the Urban Forest.
- Develop and maintain the Urban Forestry Master Plan.
- Administer and monitor the implementation of the Master Plan.

Urban Forestry Commission (UFC). The eleven-member Commission has the following duties:⁴⁷

- Provide assistance in the development of the UFMP, submit the plan to City Council for approval and review and update the plan periodically.
- Advise the City Forester, the Superintendent and the Parks Budget Advisory Committee on the preparation and contents of the Annual Urban Forestry Division budget request.



Variety of trees in the urban forest

⁴⁶Portland City Code Chapter 20.40 Street Tree and Other Public Tree Regulations.

⁴⁷Portland City Code Chapter 20.40 Street Tree and Other Public Tree Regulations.

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- Review plans and policies developed pursuant to other City Code provisions which contain elements or which affect matters related to urban forestry and arboricultural concerns in the city and other matters brought forward by the City Forester and others.
- Prepare and submit to the Commissioner of Parks & Recreation an annual report containing a section dealing specifically with the relations with and concerns of the various City bureaus.
- Serve as an appeal board for citizens with tree issues.
- Support the Urban Forestry Program's public outreach and education efforts.

Heritage Tree Program. This program promotes and educates the public about unique trees in Portland. A subcommittee of the UFC evaluates, inspects and recommends trees to be added to the Heritage Tree Program to City Council. See Appendix for further information on the Heritage Tree Program.

PP&R Urban Forestry Program. Over the years, the Urban Forestry Program has grown or shrunk depending on the economy and funding. At its maximum in 1983-84, a full-time crew of 29 did large-scale tree planting projects — planting, pruning and spraying individual street trees at the request of property owners. When funding reductions forced layoffs, Urban Forestry discontinued most of these activities.

Although the City regulates public trees, the care and maintenance of the street trees is the responsibility of the adjacent property owners. Urban Forestry currently employs 25 full-time staff with responsibility for the public trees in parks, along streets and around public buildings as mandated by City Code. Their responsibilities include:

- Coordinating the planning, planting and maintenance of public trees.
- Maintaining, planting and replacing trees in parks and on City property.
- Advising and educating property owners about the planting, care and preservation of street trees.
- Permitting and inspecting all street tree plantings, pruning and removals.
- Providing 24-hour emergency response services for storm and tree-related emergencies.
- Enforcing City Code to preserve significant trees.
- Working with other City bureaus on tree-related issues.



Installing new trees

By City Code, the City Forester supervises all tree maintenance services including cutting, pruning, spraying, planting and tree removal required by or performed by City bureaus. The Forester may plant or cause trees to be planted in the streets, parks and other property of the City.

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Other responsibilities include:

- Reviewing development plans to preserve trees.
 - Working with the Urban Forestry Commission to resolve conflicts related to trees.
 - Providing information and clerical support to the Urban Forestry Commission.
 - Providing support to Friends of Trees and other nonprofit organizations to promote tree planting and enhance the urban forest.
 - Maintaining an experimental planting of ornamental trees for possible use on streets and in parks.
 - Educating the public through the Neighborhood Tree Liaison Program, Arbor Day Celebration, brochures, flyers, workshops and other presentations.
 - Educating park employees and recreation leaders about hazard trees and tree care in parks.
 - Assisting neighborhoods in their efforts to save mature elms in neighborhoods.
 - Developing and updating recommended street tree lists.
- **Neighborhood Tree Liaison Program.** Urban Forestry Program staff train community volunteers to serve as neighborhood-based resources for information and education about urban forestry issues and to organize community tree-related projects, including planting and pruning street trees. They also lead educational walks through the community. To date, 120 people have completed training.

PP&R Horticultural Services. Horticultural Services staff operate greenhouses and nurseries where they specialize in growing native plants for habitat restoration for PP&R, BES and other City bureaus as well as growing other plants for PP&R grounds. They provide Integrated Pest Management services (see below) including organizing regional efforts to control invasive weeds and providing training and consultation to multiple public agencies.

Horticultural Services manages the Community Gardens program that includes 900 garden plots at 27 sites, and conducts numerous education programs. Staff act as liaisons for the Classical Chinese Garden and the Portland Memory Garden, and provide citywide landscape construction services, installing landscapes and plantings in parks, on transportation sites and on other city-owned landscapes, as well as restoration and enhancement of native plantings.

- **Integrated Pest Management.** The Integrated Pest Management (IPM) program includes the NOAA Fisheries approved 4d exemption, which meets the stringent requirements of Portland's ESA listing. IPM controls pests that are harmful to the health or aesthetic value of park plantings in a manner that is cost-effective, safe and



Revegetation activities.

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environmentally responsible. To accomplish this, the principles of Integrated Pest Management (IPM) are endorsed.⁴⁸ This approach uses multi-faceted strategies that minimize negative impacts on the environment and on human health.

PP&R Natural Resources Program. The Natural Resources Program staff manages 6,700 acres in 30 natural areas including over 5,000 acres at Forest Park, over 600 acres at Powell Butte and 220 acres at Hoyt Arboretum. Other significant areas include Oaks Bottom Wildlife Refuge, Elk Rock Island, Marquam Nature Park, Springwater Corridor and many of the larger natural resource areas in other parks. They also manage over 100 miles of trails.

Other responsibilities include:

- Forming cooperative agreements with Metro and other organizations for special projects such as ivy pulling and natural area restoration.
- Assisting with preservation and restoration projects at other sites.
- Assisting with 15 Friends groups, citizen-led committees, numerous watershed councils, schools and many ad-hoc volunteer activities.
- Providing educational programs at Hoyt Arboretum that interpret the large collection of native and exotic species for visitors and Hoyt Arboretum Friends.
- Working closely on natural resource issues with City and Metro staff.
- **Ecosystem Management Planning.** Ecosystem Management Planning is based on an adaptive management cycle of inventory, statement of desired future condition, assessment, prescription, intervention and monitoring, which is similar to the resource planning used in the City's Framework Plan. Natural Resources' staff ecologists use this method of collecting scientific information to track and improve the condition of the City's natural areas.
- **Riparian Assessments.** PP&R's Natural Resource Program is conducting an ESA-funded project to assess vegetation in riparian areas in the city. This will contribute to the information that is available about the urban forest.

⁴⁸PP&R uses the following definition of Integrated Pest Management: "Integrated Pest Management (IPM) attempts to lower pest populations below levels that cause economic damage by using a balance of biological, cultural, chemical, genetic or other control methods. Control may be aimed at one or more pests depending upon the scope and complexity of the management system. IPM takes into account interactions among pests, environment and commodity. IPM differs from traditional control approaches in which each pest was considered and controlled individually, with emphasis often being placed on a single measure." (Portland Parks & Recreation (2001), p. 3).

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In addition to those programs, PP&R staff members are involved in the following activities:

OTHER PP&R ACTIVITIES

Environmental Education and Stewardship. PP&R offers many environmental education opportunities through classes, outdoor excursions, volunteer programs and community events. There are also community stewardship programs for many individual parks. Representatives from the Natural Resources, Urban Forestry and Outdoor Education programs coordinate their environmental education offerings.

Salmon-Safe Park Certification Program. Salmon-Safe park certification is a new program that evaluates overall park management policies and operations that are related to the protection and restoration of water quality and fish habitat. This system-wide evaluation will be backed by field assessment of individual park sites against objective standards to evaluate whether the management of candidate parks is consistent with best management practices for avoiding harm to stream ecosystems.

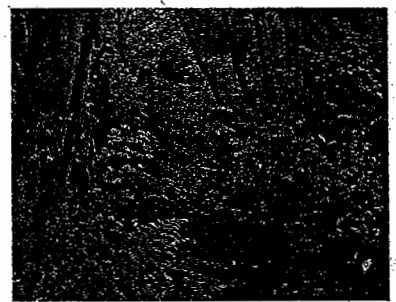
Restoration and enhancement projects will be assessed in the field to determine if significant system-wide progress is being made to address existing habitat deficiencies. This assessment will occur with consideration for the public use mandate for the particular site and recognizing the financial constraints of the park system.

PORTLAND BUREAU OF PLANNING (BOP)

The Bureau of Planning is responsible for the development of plans, policies, strategies and regulations that guide Portland's future.⁴⁹ BOP coordinates changes to Portland's Comprehensive Plan, which directs long-range future needs in transportation, parks, stormwater management and support infrastructure with other City bureaus, regional and state agencies and the public.

BOP staff work on citywide projects related to housing, design for all types of development, environmental protection and other issues of concern to Portland. Staff also maintains and updates Portland's Zoning Code, which implements the Comprehensive Plan Map and contains, in part, environmental and Land Division regulations to ensure that development regulations support the adopted goals. Much of their work directs the plans, policies and procedures that affect the urban forest.

River Renaissance Program. This citywide program strives to integrate plans and activities to advance the River Renaissance Vision: A Clean and Healthy River; a Prosperous Working Harbor; Vibrant Waterfront Districts; Portland's Front Yard; and, Partnerships, Leadership and Edu-



A healthy Portland stream.

⁴⁹The Bureau of Development Services is a separate Bureau that is responsible for the implementation of those plans, policies, and regulations.

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cation. The program is directed by the River Renaissance Management Team — an inter-bureau team led by the Director of the Bureau of Planning.

Healthy Portland Streams (River Renaissance project). The goal of the Healthy Portland Streams project is to evaluate and recommend regulations and voluntary efforts to help protect and restore Portland's creeks, sloughs and other riparian areas to ensure clean water, prevent erosion, manage floods and preserve the natural spaces for wildlife, fish and people to enjoy.

A major component of Healthy Portland Streams involves updating the city's natural resource inventories and environmental overlay zoning program to address new scientific information and city watershed health goals and to address regional, state and federal mandates. This project will amend the City's existing environmental to make them clearer and simpler to implement and enforce. The project will also involve recommending amendments to Portland's Comprehensive Plan Goal 8, Environment to update city policies relating to streams and water bodies and watershed health.

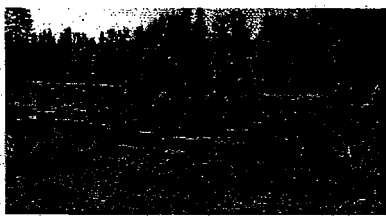
The River Plan (River Renaissance project). The BOP will be revising and expanding the Willamette River Greenway Plan to implement the River Renaissance Vision and River Renaissance Plan and to address emerging issues, challenges and opportunities in and along the Willamette River. The River Plan will guide future land use decisions and investments in the quarter-mile wide area on each side of the Willamette River.

BUREAU OF DEVELOPMENT SERVICES (BDS)

BDS is responsible for implementing national, state and local building codes, conducting plan reviews and inspecting and enforcing many of the City Code titles that pertain to building and site development. Of particular interest to urban forestry are Title 33 — Planning and Zoning, and Title 10 — Erosion and Sediment Control.

Code Enforcement. BDS ensures that requirements for landscaping and trees on private property are met under development permits. Code Compliance and Housing Maintenance sections enforce these requirements.

Other bureaus also perform reviews and enforce sections of the City Code that relate to urban forestry. The chart at the end of this City of Portland section summarizes the roles of various city bureaus.



Wetlands

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Environmental Zones. BDS implements Portland's Environmental Zones — the overlay zones that apply to various natural resource sites throughout the city. The Environmental Conservation ("c") Overlay Zone conserves important resources and the functions they perform. Environmentally sensitive development is allowed in the "c" zone if the resource can be protected. The Environmental Protection ("p") Overlay Zone provides the highest level of protection to the most important resources and the functions they perform. Development is approved in the "p" zone only in rare and unusual circumstances.

Review of Site Development Processes. BDS reviews development related to the environment such as landscaping, erosion control and stormwater management codes to define the problems and identify improvements in administering and enforcing site development regulations.

BUREAU OF ENVIRONMENTAL SERVICES (BES)

BES is responsible for developing and implementing programs to protect Portland's rivers and streams. Their responsibilities include wastewater collection and treatment, providing stormwater drainage, preventing and reducing stormwater pollution, restoring native vegetation and improving watershed health in general. The following BES planning, implementation and regulatory activities are of particular importance to Portland's natural areas and urban forest.

Combined Sewer Overflow (CSO) Program: Clean River Plan. The CSO program separates the combined storm and sanitary sewers that overflow into the Willamette River and Columbia Slough during times of heavy rain to eliminate the resulting pollution.

The Clean River Plan addresses the combined sewers as well as protection and improvements to important urban watersheds through its "Ten Actions for Success." It aims to reduce stream flow, restore floodplains and foster environmental education and stewardship. Action 2 reads, "Plant trees, native vegetation and create buffers and shade along streams." The plan calls for the City to develop partnerships with agencies, neighborhoods, schools, organizations and businesses for restoration and planting projects. It also mandates that the City adopt and enforce development standards that protect vegetation, respond to the requirements of the ESA, increase the in-stream structures in creeks and create slow-moving backwater areas and braided channels. The plan calls for planting 63,000 trees along 350 miles of bare curb to increase tree canopy by 100 acres.⁵⁰

Planting 63,000 trees along 350 miles of bare curb will increase tree canopy by 100 acres.

⁵⁰Holladay/Sullivan/Stark Predesign Project Draft (12/01).

⁵¹A watershed is the land area that drains into a stream. An area of land that contributes runoff to one specific delivery point; large watersheds may be composed of several smaller "subsheds," each of which contributes runoff to different locations that ultimately combine at a common delivery point.

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Comprehensive Watershed Planning and Management. Watershed plans being developed for Portland include four sub-watersheds: the Columbia Slough, Fanno/Tryon Creek, Johnson Creek, and the mainstem of the Willamette River.⁵¹ Each sub-watershed plan addresses the particular problems of that watershed and provides ways to protect, enhance and restore the watershed. Healthy tributaries and watersheds will contribute to the improved health of the Willamette. BES actively works with other agencies and jurisdictions and the public to protect and restore the beneficial functions and health of the watershed. These plans comply with State Goal 5, the Endangered Species Act, the River Plan and the Clean Water Act.

Environmental Education and Stewardship. This program informs, educates and involves businesses and residents in water quality and natural resources activities and projects to build a long-term advocacy for watershed health and improved water quality. BES sponsors events, provides educational materials and distributes stewardship grants that involve the public in the preservation and restoration of ecosystem functions.

Erosion Control Manual. The Erosion Control Manual details site specific requirements for any ground-disturbing activity. It requires trees and vegetation for mitigation. It provides guidance for complying with the City Code Title 10, which requires no visible or measurable sediment or pollutant to leave the site.

Property Acquisition Program. BES acquires properties from willing sellers in targeted areas to restore floodplain functions and protect water quality critical lands.

Superfund Response. BES is responding to the Superfund listing of the Portland Harbor with its Sustainable Stormwater Program — which calls for use of trees and vegetation to retain stormwater inflows. It also addresses conflicts between trees and sewer systems (roots, pipe damage, access and interference).

Stormwater Management Manual. The BES Stormwater Management Manual (SWMM) outlines stormwater management requirements and identifies who is required to comply with them. Requirements apply to any development that increases impervious surfacing by 500 square feet or more, and it requires trees and vegetation for mitigation. This manual provides guidance and detailed requirements for complying with City Code 17.38. Effective September 1, 2002, the revised SWMM includes requirements for onsite vegetative mitigation measures such as tree planting.

Stormwater Management Program. The Stormwater Management Program responds to both federal regulations and the City's desire to protect and enhance its valuable water resources. BES coordinates the

MANDATES AND CURRENT URBAN FOREST MANAGEMENT

program, which also involves a number of other City bureaus and local jurisdictions. The success of the program also depends on partnerships with public and private groups such as businesses and schools and the involvement of Portland's residents.

Street Trees and Canopy Assessment Program. BES is currently using GIS data and field work to identify the canopy coverage provided by street trees in the Holladay/Sullivan/Stark sub-area of Portland. This assessment also quantifies potentially plantable areas.

Watershed Revegetation Program. This program restores native vegetation in Portland's watersheds along degraded stream banks and upland areas to improve water quality, control erosion, reduce stormwater pollution, aid in long-term salmon recovery and enhance wildlife habitat. The program covers the entire Portland area. Projects include upland and riparian zone plantings.

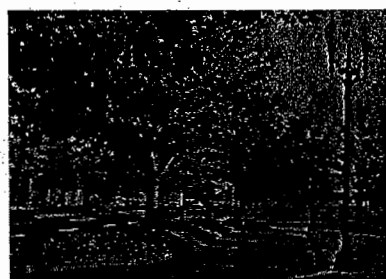
Willamette River Design Notebook. BES and PDC created a "Willamette River Design Notebook" that contains innovative design options for the Willamette riverbank for both public and private developers. Development models show urban riverfront projects that also protect threatened fish species. The notebook illustrates bank designs to protect and improve fish and wildlife projects that also protect threatened fish species. The notebook illustrates bank designs to protect and improve fish and wildlife habitat, water quality and access and bank stabilization — designs that often use trees and vegetation.

Stormwater Advisory Committee. BES provides staff support for the Stormwater Advisory Committee (SAC), which makes recommendations for stormwater management issues in development areas. Planting trees and revegetating sites are among their recommendations.

OFFICE OF TRANSPORTATION (PDOT)

PDOT is responsible for Portland's Transportation System Plan (TSP) which is the City's 20-year plan for transportation improvements and investments, and helps Portland comply with federal requirements, including the Transportation Equity Act, Clean Air Act, Clean Water Act and Americans with Disabilities Act. It complies with State and regional goals, policies, and regulations.

The TSP addresses local transportation needs for cost-effective street, transit, freight, bicycle and pedestrian improvements. The plan provides transportation choices for residents, employees, visitors and firms doing business in Portland, making it more convenient to walk, bicycle, take transit and drive less to meet their daily needs. The TSP provides a balanced transportation system to support neighborhood livability and economic development.



Portland boulevard with trees

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The following Office of Transportation bureaus are involved with street trees:

PDOT Bureau of Engineering and Development. Responsible for the design and construction of the transportation infrastructure which includes street trees.

- Coordinates with the City Forester to assure that street trees are included in the design stage of new construction projects.⁵²
- Plants approximately 2,000 street trees per year as part of transportation corridor improvements.

PDOT Bureau of Maintenance (BOM). BOM is concerned with interactions between trees and sidewalks, cutouts, curbs and streets.

- Manages the maintenance of sidewalks, curbs and driveways in a way that protects street trees and other desirable vegetation whenever possible.⁵³ Property owners are responsible for the maintenance of the sidewalk and the street trees adjacent to their property.
- Routinely coordinates with the City Forester to reduce damage to trees because of pavement repair and damage to pavement because of trees.
- Cleans streets of leaves and other tree debris.
- Contracts with PP&R to maintain landscaping on certain arterial projects. (This work is currently not funded due to reduced revenue from gas taxes.)

PDOT Bureau of Transportation System Management. This bureau is concerned with street trees or trees on private property if they obstruct the visibility of traffic signals, street lights and oncoming traffic at intersections and curves. Proper selection of tree species, proper location of trees and lights, pruning and flexible lighting designs reduce conflicts.

- Works with neighborhood groups to identify traffic problems and to devise solutions to those problems. Use of landscaped traffic circles and diverters is one of several approaches.
- Contracts annually with Urban Forestry Program to prune trees to maintain clearance for lights. Pruning occurs primarily in response to citizen requests. (This work is currently not funded due to reduced revenue from gas taxes.)

OFFICE OF SUSTAINABLE DEVELOPMENT (OSD)

OSD develops programs and policies that promote recycling and reduce solid waste, improve energy efficiency and support the use of renewable energy resources, promote green building practices and enhance sustainability throughout the community. Work that relates to

⁵²The Portland Pedestrian Design Guide, developed by an inter-bureau Technical Advisory Committee, defines and assigns the available space in the public right-of-way for public improvements including street trees.

⁵³Objective from Sidewalk Maintenance Program, Policy and Operating Guidelines. Property owners are responsible for the maintenance of the sidewalk and the street trees adjacent to their property.

The urban forest reduces greenhouse gases and provides stormwater benefits.

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urban forestry includes:

- Supporting, planting and maintaining trees to improve local air quality, sequester carbon and reduce greenhouse gases, thereby slowing climate change.
- Promoting use of those trees that allow year-round solar access while providing summer shade, and reducing energy needs for cooling.
- Working with developers to implement green building standards.⁵⁴

Local Action Plan on Global Warming. This plan recognizes the role of the urban forest in reducing greenhouse gases and providing stormwater control benefits. It promotes tree planting, maintenance of existing vegetation as a greenhouse gas reduction strategy and working to ensure that the community understands the role of the urban forest as a vital part of Portland's character that improves the environment.

Green Building Policy. The City's adopted Green Building Policy (January 2001) states that Portland will promote green building standards in its own buildings and in private sector development. Standards related to urban forestry encourage reducing urban heat islands, minimizing site disturbance and using water-efficient landscaping.

PORTLAND FIRE AND RESCUE

Fire and Rescue is concerned with the interface of the urban forest with human habitations, especially where structures are located in or near natural areas. Increased fire hazards result from increased development in forested areas. The Fire Bureau is currently developing recommendations to alleviate risks from urban wildfires in certain areas.

PORTLAND DEVELOPMENT COMMISSION (PDC)

PDC develops and redevelops areas in the city that are physically deteriorated, unsafe or poorly planned. PDC uses urban renewal funds to carry out capital projects such as parks, streetscape improvements and community centers that would not happen on their own. Parks and street improvements are the primary areas where PDC projects affect the urban forest.

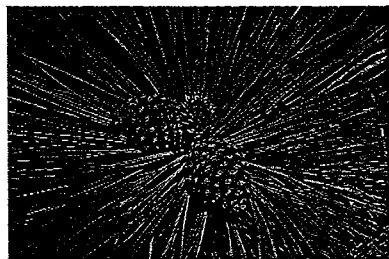
THE PORT OF PORTLAND

The Port owns and manages about 10,000 acres of land and 12 miles of riverfront on the Willamette and Columbia Rivers. Port staff use ecosystem-based planning and natural resources management strategies, and shares data with the City and regional planning agencies.

RELATIONSHIPS CHARTS

The following charts provide:

⁵⁴In July 2002, the Office of Sustainable Development introduced Portland LEED, a supplement to the U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) rating system. Portland LEED tailors the national standard to local building and development requirements while maintaining third party verification and official certification by the USGBC. It is the first local adaptation of LEED accepted by the USGBC in the U.S.



Ponderosa pine (*Pinus ponderosa*)

MANDATES and CURRENT URBAN FOREST MANAGEMENT

1. A general summary of the current relationships among Portland's City bureaus regarding planning and regulating of the urban forest.
2. The relationship between the mandates listed in Chapter Two, the bureaus and agencies, their plans and projects, and the City's Framework Plan. The Framework Plan coordinates the City's responses to the ESA listing for salmonids and relates to many other city plans.

ROLES OF VARIOUS CITY BUREAUS & ORGANIZATIONS IN URBAN FORESTRY

Note: These are *broad and general* definitions. There are many exceptions and refinements.

Public Trees – Parks & other City-owned property	Planned or Proposed by	Reviewed by	Implemented by	Regulated or Enforced by
Trees in Developed Parks and Open Spaces	UF / other PP&R unit	UF/BDS	UF / other PP&R unit/BDS	UF/BDS
Trees in Publicly-owned Natural Areas	NR (PP&R) Ecosystem MP/ BES/Metro/OSP	UF/BDS	NR/BDS	UF/BDS in e-zones, etc.
Private Trees in Public Rights-of-Way ⁵⁵	Planned or Proposed by	Reviewed by	Implemented by	Regulated or Enforced by
Street Trees – Neighborhoods	FOT/ UF/ BES	UF	FOT, Neighbors, UF	UF – Title 20/BDS
Street Trees – Individual Lots	PPO/ BES	UF	PPO	UF – Title 20 ⁵⁶ /BDS
Street Trees – Transportation Improvements	PDOT Engineering	UF	PDOT	UF – Title 20/BDS
Street Trees – Subdivisions (public or private streets)	PPO/ BES	UF/BDS	PO/BDS	UF – Title 20/BDS
Private Trees – Developed Areas	Planned or Proposed by	Reviewed by	Implemented by	Regulated or Enforced by
Trees in Parking Lots	PO/ BES	BDS (BES for SWMM)	PO	BDS – Title 33
Required Landscaping	PO	BDS	PO	BDS – Title 33
Erosion Control	PO	BDS	PO	BDS – Title 10
Stormwater Management Facilities	PO/ BES	BES	PO	BES – Title 17
Heritage Trees		UF		UF
Removal of trees over 12" (except on SF residential)	PO	UF/BDS	PO	UF - Title 20.42/BDS
Other Trees on private property (generally)	PPO	BDS	PPO	BDS
Private Trees in Overlay Zones	Planned or Proposed by	Reviewed by	Implemented by	Regulated or Enforced by
Environmental zones	PO	BDS	PO	BDS
Willamette Greenway	PO	BDS	PO	BDS
Scenic Resources	PO	BDS	PO	BDS
Private Trees – Under or Undeveloped Areas	Planned or Proposed by	Reviewed by	Implemented by	Regulated or Enforced by
Trees on Divisible Lots – cutting ⁵⁷ & preservation	PO	UF/BDS	PO	UF – Title 20/BDS
Cutting of regulated trees w/ clearing & grading ⁵⁸	PO	BDS	PO	BDS
Subdivisions – tree preservation	PO	BDS	PO	BDS

BES = Bureau of Environmental Services
 BDS = Office of Planning & Development Review
 FOT = Friends of Trees
 NR = PP&R Natural Resources Program
 PDOT = Portland Office of Transportation
 PO = Property Owner (public or private)

PPO = Private Property Owner
 PP&R = Portland Parks & Recreation
 SF = Single Family
 SWMM = Stormwater Management Manual
 UF = Urban Forestry Program

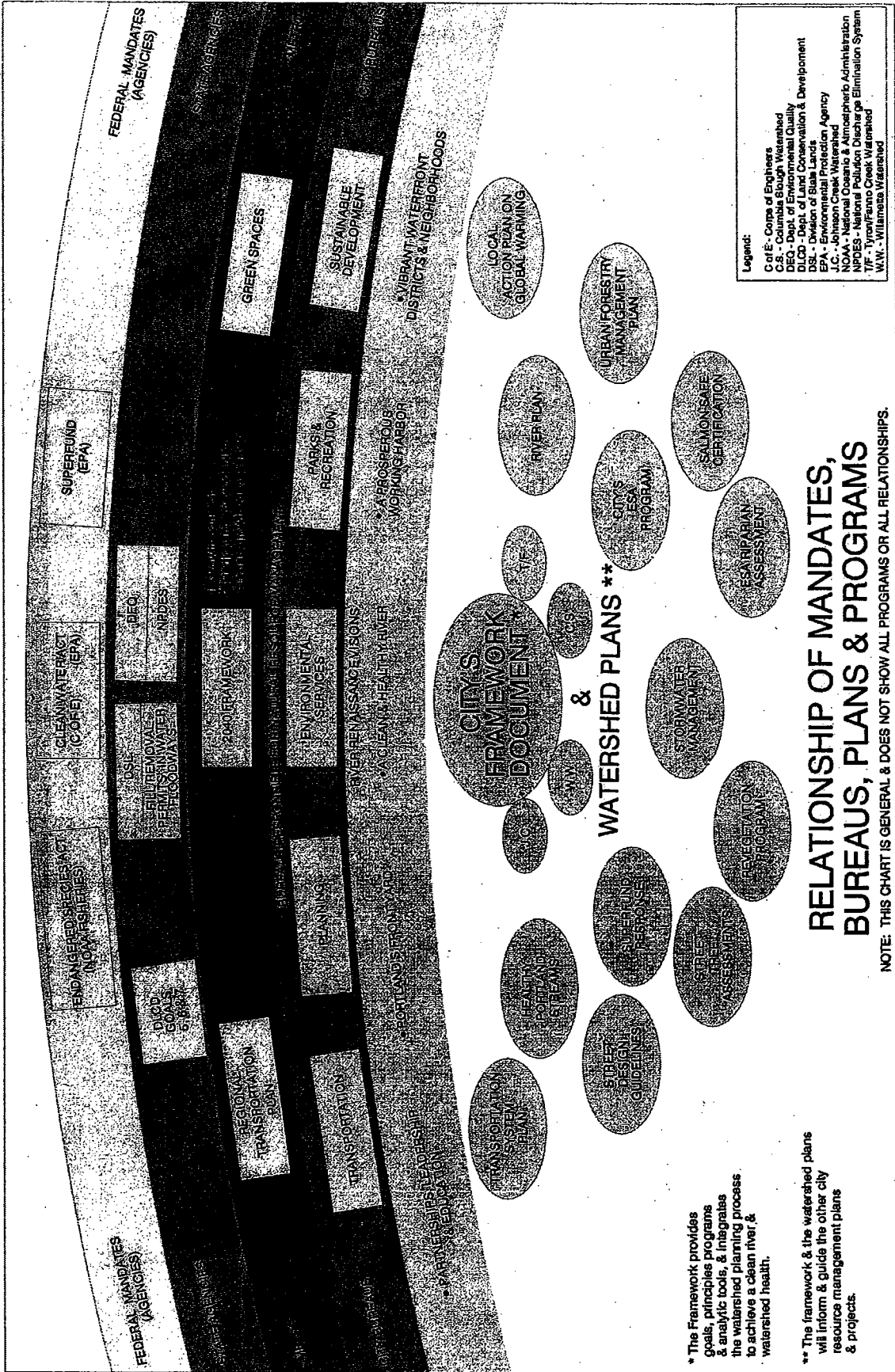
⁵⁵Property owners are required to maintain and care for street trees.

⁵⁶The City Forester can require street trees on private property.

⁵⁷For trees 12" and over.

⁵⁸BDS handles clearing and grading under Title 24.

MANDATES and URBAN FOREST MANAGEMENT



MANDATES AND CURRENT URBAN FOREST MANAGEMENT



Tree planting

NONPROFIT ORGANIZATIONS

Friends of Trees (FOT). FOT is dedicated exclusively to planting urban trees, assuring their survival and inspiring public stewardship of the urban forest. FOT uses a community-building model to work with willing partners in three planting programs:

- Neighborhood Trees — plants street and yard trees in neighborhoods and business districts.
- Natural Area Restoration — restores urban natural areas.
- School Trees — plants trees on school grounds.

Each of these programs has a tree care and monitoring component.

FOT currently plants about 30,000 trees and seedlings each year, utilizing current scientific and strategic data about what and where to plant. Target areas include those with fewest trees, those that are losing trees, low-income areas, those that provide habitat connectivity and those that lend themselves to community outreach and education. FOT works closely with Urban Forestry, local nurseries and many agencies, community groups and volunteers to assure that the right trees are planted in the right places.

Since its founding in 1989, FOT has involved over 31,000 volunteers in planting more than 260,000 trees. This volunteer infrastructure builds community and improves the urban forest. FOT provides environmental education in schools and emphasizes public education about the importance of the urban forest and how residents can become involved in its conservation, protection and restoration.

Save Our Elms. This community elm inoculation program is dedicated to protecting Portland's American elm trees from Dutch elm Disease — a devastating and incurable disease.

- Reinforces Urban Forestry's elm inoculation program.
- Educates residents about urban forestry issues and disease prevention.

Other Nonprofit Organizations. Numerous nonprofit organizations play important roles in preserving and protecting the urban forest and providing environmental education opportunities. Among them are:

- Portland Audubon Society
- Three Rivers Land Conservancy
- The Urban Streams Council
- Watershed Councils
- Wetlands Conservancy
- Friends Groups
- World Forestry Center
- Community Development Organizations (e.g., REACH)

EDUCATIONAL INSTITUTIONS

MANDATES AND CURRENT URBAN FOREST MANAGEMENT

Portland State University (PSU) provides classes about the urban forest and has mapping and inventory services.

- Coordinates and interprets satellite and aerial mapping data.
- Assists in developing Geographic Information Systems (GIS) for various groups.
- Performs tree inventories in various parts of the city.
- Develops displays and presentations relating to urban forest issues.

Portland Public Schools (PPS). Land around public school buildings contributes to the city's supply of open space and recreation areas. Many of these areas include a variety of trees, ranging from mature large canopy trees to recent revegetation and restoration plantings. These areas provide opportunities for additional plantings and for environmental education.

Portland schools also provide environmental education to their students and work with nonprofit groups — including Friends of Trees and Save Our Elms — to supplement their curriculum.

PRIVATE UTILITIES

Portland General Electric (PGE) provides electric power to most of the Portland area. Their Forestry Division employs seven professional foresters that maintain all trees around power lines on a two or three-year cycle on a contract basis.

- Maintains landscaping around substations.
- Provides funds and technical assistance through their tree replacement program to remove and replace incompatible trees under power lines.
- Provides educational materials including a brochure on planting appropriate tree species under power lines, notices in newsletters to customers and information in bill inserts.
- Has provided funding for several of PP&R Urban Forestry Program's brochures.

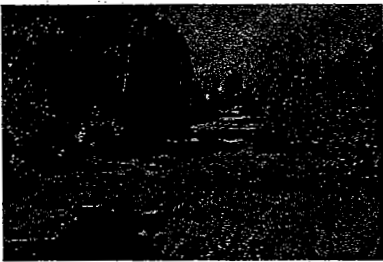
Pacific Power provides power to a portion of Northeast Portland.

- Maintains trees under power lines.
- Assists property owners in removing hazardous trees and replacing them with suitable species through their tree replacement program.
- Sponsors the "Green Corps" grant program for tree planting projects.
- Distributes tree care information through tree crews. Educational materials are also distributed through nurseries and at special events.

REGIONAL AGENCIES

Metro. Metro owns over 10,000 acres in Clackamas, Multnomah and Washington counties, and coordinates with 26 park providers in those counties to "ensure a vital green heritage" and to provide nature-based recreation, education and volunteer opportunities as part of a regional

MANDATES AND CURRENT URBAN FOREST MANAGEMENT



Wetland

greenspaces system. This includes environmental education programs at Oxbow Park and at Smith and Bybee Lakes.

The Metro Greenspaces Master Plan (adopted by Metro in July 1992) is a policy document that outlines goals and specific tasks to establish a framework to prioritize acquisition, and/or preservation and restoration of natural areas, open spaces, trails and greenways for wildlife and people.⁵⁹ Metro and other park providers in the region are currently updating the Regional System Plan, a master plan scheduled for approval by Metro Council in 2002.

STATE AGENCIES

Oregon Parks and Recreation Department. OPRD owns and manages the 650-acre Tryon Creek State Natural Area located in Southwest Portland.

- Provides environmental education programs at Tryon Creek.

Oregon Department of Forestry, Urban and Community Forestry Assistance Program. This ODF program provides technical assistance to communities throughout Oregon.

- Administers several grant programs that fund many community forestry activities.
- Develops and provides other educational materials in the form of a newsletter and topical brochures.
- Sponsors conferences and seminars.
- Provides environmental education.

Oregon Urban and Community Forest Council. The council promotes urban forestry issues on statewide basis. Representatives from around the state work cooperatively on educational programs and special projects.

- Provides forum for networking between communities.
- Lobbies for urban forests and greenspaces.
- Reviews grant proposals for urban forestry projects.

Oregon Department of Fish and Wildlife. ODF&W promotes the "Naturescaping" program that encourages homeowners to plant native materials in their yards.

OTHERS

Numerous other organizations and individuals have an interest in the urban forest, including professional societies and associations, nursery growers and retail nurseries, arborists, landscape architects and contractors, gardeners, wildlife biologists, urban forestry academicians, consultants and planners.

⁵⁹Local city and county recreation agencies are responsible for developing and providing active recreation facilities for their residents.

