

# Introduction

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## What Is the *Framework*?

This *Framework for Integrated Management of Watershed Health* describes how the City of Portland intends to achieve and maintain healthy conditions and ecological functions in its urban watersheds – specifically, the areas draining into the lower Willamette River<sup>1</sup>, the Columbia Slough, the parts of the Columbia River that are within the City’s jurisdiction, Johnson Creek, Fanno Creek, Tryon Creek, and Balch Creek and other tributaries (see Figure 1-1).<sup>2</sup>

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**This *Framework* describes how the City of Portland intends to achieve and maintain healthy conditions and functions in its urban watersheds.**

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This *Framework*, whose concept the Portland City Council endorsed in June 2001, presents the following:

- A citywide vision and goals for achieving and maintaining healthy urban watersheds, rivers and streams (Chapter 1)
- Scientific principles and restoration guidelines that serve as the foundation for achieving and maintaining healthy watersheds (Chapter 2)
- A watershed management process (Chapter 3) that involves the following:
  - Characterizing watershed conditions
  - Establishing measurable objectives and benchmarks for achieving watershed health goals
  - Analyzing, selecting, prioritizing and implementing protection and restoration actions<sup>3</sup>

### What is a watershed?

A watershed is a geographic area that includes a river or stream, its tributaries and the lands they drain.

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<sup>1</sup> Geographically the lower Willamette extends from Willamette Falls to the river’s confluence with the Columbia River, but the City of Portland has jurisdiction in the Willamette watershed only from approximately the Sellwood Bridge to the Columbia.

<sup>2</sup> The City of Portland is developing a habitat conservation plan (HCP) to address watershed health issues and Endangered Species Act (ESA) compliance for the City’s actions in the Bull Run/Sandy River watershed. The process of developing this HCP is separate from the process described in the *Framework* because the issues, impacts, stakeholders and geographic area are significantly different from those in the City of Portland’s urban and urbanizing watersheds. However, the relevant science and technical approach are similar.

<sup>3</sup> It is assumed that protection and restoration actions will take many forms, such as management of stormwater runoff, control of non-stormwater discharges, changes in site designs, land acquisition and zoning, removal of nonnative plant species, fencing to exclude predators of native biota, and public outreach and education. Table 3-4 provides specific examples of potential protection and restoration actions.

- Monitoring actions to determine progress in achieving goals, objectives and benchmarks
- Processes for ensuring, to the extent possible, that all City projects and activities are planned and conducted in ways that are compatible with watershed health goals (Chapter 3)
- Ongoing elements of watershed management, including additional scientific, policy or procedural steps needed to achieve watershed health goals (Chapter 4)
- Additional information about the regional context for the City’s actions, applicable regulations, the City’s natural environment, salmonid (salmon and trout) population goals, indicators of watershed health, and some of the technical methods and analytical tools that will be used during the watershed management process (Appendixes A through H)

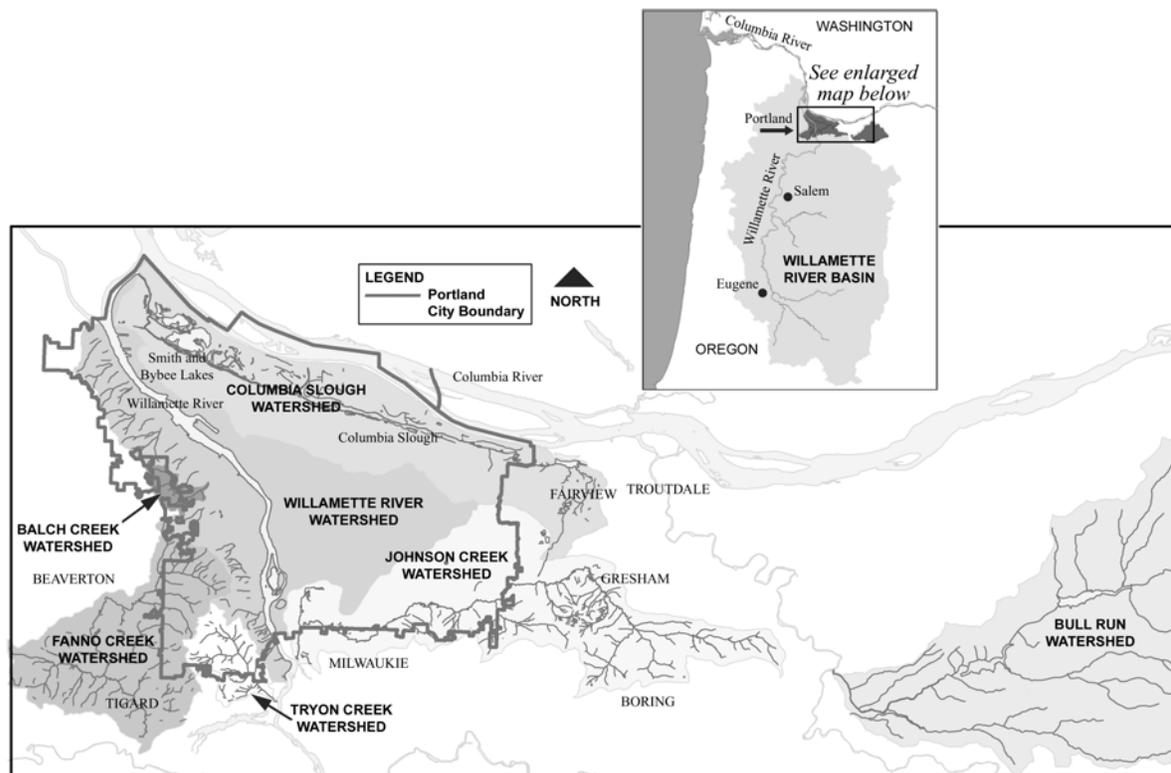


FIGURE 1-1  
City of Portland Watersheds

## Origins of the Framework

Several factors spurred development of the City of Portland’s *Framework for Integrated Management of Watershed Health*:

- **City Council Resolutions.** The Portland City Council adopted several resolutions related to the health of its watersheds. The first (Resolution 35715, in July 1998) states that the

City will “assist with the recovery” of steelhead, a species listed under the federal Endangered Species Act (ESA).<sup>4</sup> Since that time the Council has directed City natural resources staff to assist with the recovery of all ESA-listed salmonids. The second Council resolution (No. 35894, in June 2000) endorses the development of a comprehensive framework to guide the City’s integrated response to the ESA, the Clean Water Act and other laws and City objectives. The third resolution (No. 35962, in February 2001) expresses the City’s interest in playing a leadership role in determining the cleanup and natural resource restoration strategies for the Willamette River and the Portland Harbor under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, or Superfund).<sup>5</sup>

- **The River Renaissance Vision for a Clean and Healthy River.**<sup>6</sup> In March 2001 the City Council adopted Resolution 35978, endorsing a vision for Portland’s future that involves revitalizing the Willamette River and its tributaries for the benefit of fish, wildlife and people. The Council’s action further recognized the integral role of a clean and healthy river system in the natural, economic, urban and recreational life of the City.
- **Regulatory Requirements.** The City faces the challenges of complying with requirements of the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), the ESA and CERCLA. In addition, Title 3 of Metro’s *Urban Growth Management Functional Plan* (Metro 2003) specifically requires implementation of several Oregon statewide land use goals through the avoidance, limitation or mitigation of development’s impact on streams, rivers, wetlands and floodplains. By integrating these efforts, the watershed process described in this *Framework* will advance the City’s efforts toward compliance with each of these obligations.
- **Regional Subbasin Planning and Salmon Recovery Efforts.** The City of Portland is playing an active role in a number of collaborative regional efforts to restore fish and wildlife and improve water quality and watershed conditions. These efforts include Northwest

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<sup>4</sup> In February 2002, the National Marine Fisheries Service in the National Oceanic and Atmospheric Administration (NOAA Fisheries) announced that it would reconsider its ESA listing determinations for 27 populations (called evolutionarily significant units, or ESUs) of Pacific salmon and steelhead in light of court decisions (67 Code of Federal Regulations [CFR] 6215). In May 2004, NOAA Fisheries announced the release of new proposed listing determinations for the 27 ESUs. These include 13 ESUs of steelhead and salmon that may use or migrate through watercourses in the Portland area. Ten of these 13 ESUs were proposed for listing as threatened: the upper Willamette River, lower Columbia River, Snake River fall-run and Snake River spring/summer-run Chinook salmon (*Oncorhynchus tshawytscha*); the upper Willamette River, lower Columbia River, middle Columbia River and Snake River basin steelhead (*O. mykiss*); the lower Columbia River coho salmon (*O. kisutch*); and the Columbia River chum salmon (*O. keta*). Three of the 13 ESUs are proposed for listing as endangered: the upper Columbia River spring-run Chinook salmon (*O. tshawytscha*), upper Columbia River steelhead (*O. mykiss*) and Snake River sockeye salmon (*O. nerka*). NOAA Fisheries published its final listing designations during June 2005. The ESA listing status for the 13 ESUs of salmon and steelhead found in the Portland area are summarized in Table B-2.

<sup>5</sup> A 1997 study by the Oregon Department of Environmental Quality (DEQ) and U.S. Environmental Protection Agency (EPA) identified elevated levels of some hazardous substances in shallow, near-shore sediments throughout the Portland Harbor. In December 2000, EPA placed the Portland Harbor Superfund site on the National Priorities List of sites requiring cleanup under CERCLA. EPA is overseeing the CERCLA remedial investigation and feasibility study (RI/FS) for the cleanup of Portland Harbor sediment. The RI/FS will include a natural resources damage assessment (NRDA) to determine whether the sediment contamination in the Portland Harbor is found have caused injury to habitat. If so, a restoration plan will be developed.

<sup>6</sup> Having a clean, healthy river is one of five River Renaissance “vision themes.” The other vision themes are to maintain and enhance Portland’s prosperous working harbor, embrace the Willamette River as Portland’s front yard, create vibrant waterfront districts and neighborhoods, and promote partnerships, leadership and education. Together the five vision themes define a direction for Portland’s future: to have a vibrant city whose thriving river system links together industry, habitat, business districts and neighborhoods (see Appendix A).

Power and Conservation Council subbasin planning, the Oregon Plan for Salmon and Watersheds, the Willamette Restoration Initiative and coordination with other regional governments and stakeholders on ESA and water quality planning and activities.

- **Economic Health.** The City of Portland recognizes that healthy, thriving natural systems provide a more sustainable and certain economic base than degraded ones. Healthy natural systems provide valuable ecosystem services, attract skilled labor and entrepreneurs and pass on a legacy of sustainable resource use to future generations – and they help provide these benefits at the best return for the tax dollar. In turn, economic health provides the financial resources necessary to protect, preserve and enhance natural resources. Similarly, responding to multiple and often redundant environmental mandates with independent programs increases costs and delays, reducing Portland’s economic competitiveness. An integrated, coordinated approach to environmental regulations and mandates will reduce delays and costs and help retain and recruit business investments.
- **Citizen Interest.** Individual property owners, neighborhood associations, watershed councils, environmental organizations and others throughout the region have consistently recognized the value of healthy watersheds, rivers and streams in improving community vitality and livability.

## A Backdrop of Land and Water

In the Pacific Northwest, rivers and the lands they drain are a living link with the region’s history and heritage. They have supported human life for millennia, powered modern economic growth and development and nurtured species such as salmon and Douglas fir that have become icons of our unique region, people and lifestyle. This is especially true in Portland, Oregon, where today – as in the past – the City is defined socially, culturally and economically by the Willamette River, its tributaries and the lands they drain.

Everyone wants rivers to be clean and healthy. For some people, this means having rivers in which people can swim and fish. For others it implies meeting state and federal requirements for human health and safety. And to some, it connotes fully restored and properly functioning aquatic and terrestrial ecosystems. However it is defined, though, a river’s health depends on things that happen on land, even miles away.

It is rainfall and the resulting runoff that so closely link land and rivers. Before urban development occurred, the rain that is so characteristic of the Portland area fell through a dense canopy of trees, dripped onto understory vegetation and soaked into the soil, slowly making its way into the river. Even during summer months, when there was little rainfall, cool, clean water in the ground slowly made its way to streams. Today many of the trees are gone, soil is covered by pavement and buildings in major portions of the city, and many streams have been buried or diverted into pipes.

These changes have had many negative environmental effects. Streams and wetlands that once provided habitat for fish and other wildlife no longer exist. Rainwater splashes off roofs instead of vegetation and sheets across parking lots instead of seeping into the ground. It forms urban torrents that run down streets and gulleys, picking up metals, oil and other pollutants along the way. Some of this runoff enters sewers and is cleaned before being

discharged into the river. However, runoff often reaches a river or stream untreated, harming fish and wildlife by causing erosion and delivering doses of pollutants. Some pollutants end up in river sediments, while others are transported even farther downstream. During the summer months many streams are denied the infusion of cool, clean water because groundwater levels are low, as a result of reduced recharge.

In Portland, the task of restoring watersheds to healthier conditions is complicated by years of river and watershed degradation, significant alterations in the landscape, disruptions of natural processes, extreme habitat fragmentation, urban growth and seemingly competing goals within the City. In addition, the City has no legal authority over some of the major factors that influence watershed health, such as dams and land uses in other jurisdictions.

There are many things in this picture the City of Portland cannot change. Yet Portland can consciously choose how it develops and how it will influence the health of its watersheds, and it can provide leadership to other entities within the region. The *Framework for Integrated Management of Watershed Health* is a means of doing just that.

## A Vision for Healthy Watersheds

An underlying assumption of the *Framework* is that urban areas do not have to contribute to the degradation of clean water or be devoid of native species and thriving natural systems, just because they are urban. In fact, Portlanders repeatedly have stated that they want healthy watersheds, rivers and streams. They recognize that the City does not have to replicate the conditions present when Lewis and Clark traveled through this region in order to have rivers and watersheds that provide clean water, enhance community livability, invigorate the economy, protect human health and support the region's unique biological communities.

The City intends to restore the health of its watersheds for these reasons but also as a way of preserving a legacy for future generations—the natural legacy on which our community originally was built and that in some sense still defines who we are. By altering Portland's urban design, institutional structures and practices in accordance with sound science and with broad public participation, the City seeks to keep the Willamette River and its watersheds the defining features of the community. The City believes that, as the Portland area grows, it will be possible to focus on the root causes of environmental problems instead of their symptoms—to fix problems instead of merely manage them—such that urban activities create a net benefit for the environment and enhance our natural legacy. In addition, improving the health of local rivers and watersheds makes it easier for the City of Portland to meet its obligations under laws, such as the Clean Water Act, the Safe Drinking Water Act, the Endangered Species Act, Superfund, and state and regional land use goals.

Considering citizen values, the contributions that a healthy ecosystem makes to the economy, the River Renaissance vision and legal mandates facing the City of Portland, this *Framework* proposes the following as a vision of the future of Portland's watersheds:

*Portland's urban form supports both a thriving economy and natural processes that maintain healthy ecosystems. Portland protects and restores properly functioning conditions throughout its watersheds to provide clean water and support abundant, self-sustaining populations of native fish and wildlife. These*

*efforts enhance the livability and vitality of Portland for its citizens and help meet the City's obligations under the Clean Water Act, the Endangered Species Act, Superfund, the Safe Drinking Water Act and other laws.<sup>7</sup>*

## Healthy Watersheds in an Urban Context

**Defining Watershed Health in an Urban Area.** Given that each watershed (and even subwatershed) is unique, what is healthy in a particular watershed may not be healthy in another watershed. Generally, however, a healthy urban watershed can be defined as follows:

*A healthy urban watershed has hydrologic, habitat and water quality conditions suitable to protect human health, maintain viable ecological functions and processes, and support self-sustaining populations of native fish and wildlife species whose natural ranges include the Portland area.*

**The Natural and Built Environments.** Portland's urban setting includes a combination of both natural and built environments. The natural environment includes a host of natural features and processes, such as climate, soils, water, physical habitat and biological communities. The built environment can be defined very comprehensively to include such things as urban land uses, buildings, utilities infrastructure, transportation facilities, parks and various other human-made features. The *Framework* recognizes that the built environment constrains the level of watershed health that it is practical to achieve and sustain. It is not realistic, for example, to expect urban-area watersheds to provide the same level of ecological function as a pristine, undisturbed watershed. Nevertheless, Portland's watersheds provide important habitats for fish and wildlife species and are capable of maintaining ecological functions and processes such as providing clean water.

The key elements of the built environment that most directly affect watershed and river health are physical habitat modification and loss; facilities and management of stormwater, sanitary wastewater, water supply and delivery; and transportation (streets, bridges and so on). Natural processes that take place in the urban setting are modified by features of the built environment. Although these natural features and processes can be negatively affected by the built environment, in many cases the built environment can be modified or managed to minimize its impacts, or even to help improve the natural environment.

Thus, the natural and built environments are linked, and each is influenced by the other. This means that watershed plans and management actions must take into account, for example, how stormwater is currently managed, how roads and other urban features are built and maintained, and how this affects hydrology, physical habitat, water quality and biological communities. Conversely, recommendations to achieve watershed health goals and objectives very likely will include changes to how features of the built environment are constructed, reconstructed and managed. For example, features of the built environment that affect the volume and flow of stormwater, such as roads and buildings, can be designed to be relatively narrow and have small footprints, thus reducing the amount of impervious

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<sup>7</sup> See Appendix B for information about these laws.

surface area and volume of stormwater runoff. Measures such as stormwater swales and the disconnection of downspouts can contribute to the storage of runoff and its slow release later, via infiltration.

By applying the processes described in this *Framework*, the City seeks to:

- Understand the built environment and how it affects natural features and processes
- Develop solutions to watershed problems that reflect this understanding
- Modify the way the built environment is developed, redeveloped and managed, to improve watershed conditions

## Portland's Watershed Health Goals

It is not realistic or feasible to re-create the environmental conditions that existed before Portland's development. Yet this is not a reason to avoid attempting – through natural, technological or institutional means – to reestablish the ecological conditions and functions needed to achieve and maintain healthy watersheds.

The definition of watershed health presented above points to the importance of ecological conditions and functions, particularly conditions and functions related to hydrology, habitat, water quality and biological communities. These four areas represent the primary domains of the natural environment on which the City's watershed management process is based, and for which the *Framework* establishes four citywide watershed health goals<sup>8</sup>:

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**Although the City of Portland does not seek to re-create predevelopment conditions, it is attempting—through natural, technological or institutional means—to reestablish the functions and conditions needed to achieve and maintain healthy watersheds.**

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- **Hydrology:** Move toward normative<sup>9</sup> flow conditions to protect and improve watershed and stream health, channel functions, and public health and safety.
- **Physical Habitat:** Protect, enhance and restore aquatic and terrestrial habitat conditions to support key ecological functions and improved productivity, diversity, capacity and distribution of native fish and wildlife populations and biological communities.
- **Water Quality:** Protect and improve surface water and groundwater quality to protect public health and support native fish and wildlife populations and biological communities.
- **Biological Communities:** Protect, enhance, manage and restore native aquatic and terrestrial species and biological communities to improve and maintain biodiversity in Portland's watersheds.

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<sup>8</sup> The rationale for these goals and the reasons they are presented in this particular order are discussed in more detail under Restoration Guideline 3.4, in Chapter 2, "Scientific Foundation."

<sup>9</sup> A normative flow regime provides characteristics of flow magnitude, frequency, duration and timing essential to support diverse and productive salmonids and all native aquatic species and other flow-dependent resources.

The four watershed health goals are ordered along a continuum of influence, with hydrology playing a major role in shaping elements of physical habitat, such as the amount of large wood in a waterway, the type of substrate (coarse gravel or fine sediment) and the amount of native vegetation in floodplains. Physical habitat, in turn, affects stream temperature and other aspects of water quality. And water quality and physical habitat together help determine which species are present within a watershed and the abundance, productivity and diversity of those species.

## Measuring Success

**Objectives.** The *Framework* process involves setting watershed-specific objectives consisting of measurable desired outcomes that the City intends to achieve to reach each of the four watershed health goals presented in this chapter. Objectives will be developed following completion of detailed characterizations of current and historical conditions in each of the City's watersheds. The objectives will be tailored to the specific conditions in each watershed and will take into consideration the unique physical conditions, limitations and constraints within each watershed as documented by the characterizations.

**Indicators and Benchmarks.** Being able to measure and demonstrate progress in achieving objectives and goals over time will be vital. Therefore, a set of environmental indicators and target values or desired conditions for each objective will be established. Benchmarks for achieving the target values or desired conditions will guide the prioritization and timing of protection or restoration actions.

Success will be defined as achieving objectives, benchmarks and targets, not simply implementing actions. The outcome of actions—that is, actual change in environmental conditions—is what ultimately counts.

There is one important caveat to this understanding of success. As the City implements its watershed management process, it is inevitable that new information about watershed ecology and management will emerge. Therefore, the objectives, indicators, target values and benchmarks will be revised as needed to reflect this new information and improved understanding.

The processes described in this *Framework* are not onetime undertakings. Rather, they are iterative and ongoing, and the City of Portland will use them over the coming decades to assess and manage watersheds. The processes described in this document incorporate

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**What ultimately counts is actual change in environmental conditions. Thus, success will be defined as achieving objectives, benchmarks and targets, not simply implementing a set of actions.**

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### What is adaptive management?

- It is a dynamic process of improving management activities incrementally, as decision makers learn from experience and better information and analytical tools become available.
- It entails clearly defining goals and objectives.
- It involves measuring progress made in achieving watershed goals and objectives, adjusting the management decisions accordingly, rechecking and readjusting—all the while incorporating new data and scientific knowledge.
- It sometimes requires modification of objectives in recognition of the fact that the future cannot be predicted perfectly.

adaptive management, which provides a means of implementing protection and restoration actions while at the same time testing, revising and retesting hypotheses about how the scientific principles can best be applied. The result will be that new data and improved scientific understanding of watershed ecology and management will continually be applied to a wide range of decision making – from broad policy-level decisions to ongoing, on-the-ground actions.

## Salmon as Key Indicators of Watershed Health

As expressed in the watershed health goals, aquatic *and* terrestrial species are important to the City. If biological communities are healthy, it can be assumed that watershed functions and conditions are healthy. Similarly, if salmonid populations are healthy, it can generally be assumed that watershed conditions and functions are healthy. In that sense, salmon are akin to canaries in coal mines.

Because the health, abundance and productivity of salmonids are a good reflection of many key watershed processes, this *Framework* pays special attention to the health of riverine/riparian ecosystems, in particular to the health of salmonids and their habitats. Salmon are highly sensitive to all components of watershed health (hydrology, habitat, water quality and biological communities). They are considered a keystone species, meaning that their presence (or absence) is central to many other physical, chemical and biological processes in an ecosystem. They have cultural, economic and regulatory importance. Finally, more is known about the life histories of salmonids and the relationships between stream conditions and salmonids' population abundance and productivity than is known about most other species in the Pacific Northwest.

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**The health of salmon is an important focus of the *Framework* because the health, abundance and productivity of salmon reflect many key watershed processes. This is not to say, however, that there are not other important indicators of watershed health.**

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This is not to say, however, that there are not other important indicators of watershed health. Indeed, this *Framework* presents a number of other potential indicators (see Appendix G), and additional indicators will be identified in the future. As more research on other species of concern is done, the City will update its indicators of watershed health. Similarly, the City will actively monitor information about other species to ensure that the latest information is incorporated into management decisions. It is expected that improvements in hydrology, water quality and aquatic and riparian habitat made to benefit salmonids also will aid some terrestrial wildlife species and help protect and improve their habitats. However, the City of Portland recognizes the need for specific consideration and comprehensive analysis of terrestrial wildlife habitats in order to reach its watershed health goals, particularly its goals for physical habitat and biological communities. The scientific foundation of the *Framework* (see Chapter 2) presents ecological principles that apply to terrestrial components of the ecosystem. In the future, additional analytical tools that more explicitly address terrestrial wildlife habitats will be developed and objectives, indicators, benchmarks, protection and restoration priorities and necessary implementation actions will be identified.

## How Is This Watershed Approach Different?

The City of Portland has undertaken many projects and actions that are already improving the condition of its rivers and watersheds (see Appendix C). The approach to watershed management described in the *Framework* builds upon those efforts but differs in several key aspects:

- Unlike past efforts, which have focused on water quality, this approach applies principles that recognize how hydrology shapes physical habitat and water quality, and how habitat and water quality, in turn, influence the location and health of biological communities. This scientifically based approach has been reviewed and validated by a team of independent scientists.<sup>10</sup>
- It has clear goals. It calls for establishing sound and measurable objectives, targets and benchmarks and implementing the actions needed to achieve them. It calls for monitoring the result of actions so the City can measure progress toward its goals.
- It is watershed-based, meaning that it provides a way to view everything the City does from a watershed perspective and at multiple watershed scales, from the level of the entire Columbia Basin down to individual subwatersheds.
- It is comprehensive and coordinated, meaning that the City will consider multiple components of physical and biological systems simultaneously, rather than individually.
- It focuses first and foremost on restoring and maintaining healthy watershed conditions, rather than on complying with individual regulatory requirements, one at a time. Improving overall watershed health will improve the effectiveness and efficiency of the City's compliance efforts.
- It integrates efforts across bureaus and programs to create a shared, effective watershed management process, and it stresses the importance of partnering with multiple jurisdictions and stakeholders in the region. The City acknowledges that its actions affect watershed conditions across the Columbia Basin and that the City cannot achieve its watershed health goals acting alone.
- It is ongoing, iterative and applies the principles of adaptive management. It seeks to avoid planting the seeds of future environmental problems.

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<sup>10</sup> James Lichatowich, salmon biologist and consultant (Chair of the Independent Science Team); Dr. William Liss, Professor of Fisheries, Oregon State University (retired); Dr. Derek Booth, Co-Director of the Center for Water and Watershed Studies, University of Washington; Dr. Kathleen Kavanagh, Assistant Professor of Forestry, University of Idaho; and Dr. Alan Yeakley, Associate Professor of Environmental Science, Portland State University.

## Why Take an Integrated Approach to Achieving Healthy Watersheds?

The City of Portland must simultaneously address multiple City watershed health goals and objectives and comply with the requirements of regional regulations and state and federal laws designed to protect human health, water quality, threatened and endangered species and other natural resources. The traditional approach, in which individual bureaus and programs address these topics separately, would result in multiple separate efforts and actions that may be in conflict and that collectively might not achieve the City's watershed health goals and objectives.

The *Framework* offers an alternative: an integrated approach that goes beyond merely sharing information and avoiding conflicts. This approach involves working toward a single set of watershed health goals and values; coordinating work plans and timelines across City bureaus; using commonly agreed-upon information and methods; and prioritizing actions to maximize success. The *Framework* approach provides a common “lens” through which many City activities can be viewed and their impacts on watershed health understood. The result will be actions that complement one another, are designed to move toward healthy watersheds and are mutually important to all programs. Additionally, an integrated approach increases the likelihood that City actions will result in net improvements in watershed health over time, while also meeting various regulations and other City goals. And integration fosters the coordination of budgets, grant requests and projects that accomplish multiple City goals in the most timely and cost-effective manner.

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**The *Framework* process will create opportunities to coordinate work plans, reduce conflicts and duplication of effort, minimize costs and increase the effectiveness of watershed restoration actions.**

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There are still other reasons for taking an integrated management approach to achieving healthy watersheds:

- Achieving a citywide vision requires citywide efforts; it is increasingly difficult for individual bureaus to achieve their respective goals and objectives acting alone.
- Much of what Portland does – or regulates – affects river and watershed health.
- Integrated management helps Portland monitor progress by focusing efforts on measurable watershed health results, not simply on compliance with the law.<sup>11</sup> Nevertheless, this approach will move Portland more rapidly toward compliance with various laws and standards, and therefore toward approved or “permitted” activities.
- Consistency and efficiency are greater with an integrated approach, with less duplication of effort and fewer conflicts. It is possible to share resources, which leads to cost savings and wiser expenditure of public resources.

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<sup>11</sup> This is consistent with the National Performance Review, which, in its September 7, 1993, report *From Red Tape to Results: Creating a Government That Works Better and Costs Less*, states, “Federal, state, and local government attention should focus on mutually agreed-upon measurable outcomes for public service delivery.”

- Integrated management results in a common information base and shared science to inform all decisions.
- An integrated approach assists the City of Portland in cooperating with other jurisdictions in conducting restoration efforts in watersheds that cross jurisdictional boundaries.
- Integrated management will provide opportunities to coordinate public involvement and attract outside funding.

## Relationship of the *Framework* to Other City Plans and Activities

Integrated watershed management as described in the *Framework* is the basis for the following:

- Development and implementation of comprehensive watershed management plans for Portland's watersheds. Each watershed plan and its associated documents will identify – and lead to the implementation of – a variety of protection, restoration and monitoring actions needed to achieve the goals for healthy watersheds.
- Provision of guidance to all City activities and programs that could affect watershed health. Many activities within the City can affect watershed health. Both the *Framework* and the watershed management plans will provide guidance so that negative impacts are minimized or – better yet – so that City activities actually enhance watershed health.

Clearly, the City's efforts to achieve healthy watersheds will need to take economic and social factors into consideration and be integrated with a host of City plans, programs and projects. Characterization information and recommended actions in the watershed management plans will inform and provide direction to many different City plans, programs and policies. For example, information regarding watershed conditions will be used in many other City efforts, such as parks and neighborhood master planning. It may also be the case that existing City plans will need to be amended to further carry out or accommodate projects that emerge from the watershed management plans. This could include amendments to the City's Comprehensive Plan and codes, the City's stormwater management manual, transportation plans or other documents.

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**Because transportation, capital, urban renewal, land use and other activities affect watershed health, they need to be as compatible as possible with the City's watershed health goals.**

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It also is likely that the watershed management process will lead to changes in the way the City of Portland conducts various day-to-day activities, such as land use reviews, vegetation management and road operations and maintenance, because all of these activities have the potential to affect watershed health. Therefore, they must be as compatible as possible with the City's watershed health goals, objectives, benchmarks and approved watershed management plans and actions.

To ensure – to the extent possible – that City plans, programs and activities are compatible with the *Framework* and the watershed management plans, the City's natural resources staff

will provide technical and permitting guidance on future City projects so that those projects are planned, designed and implemented in ways that are compatible with watershed health goals and objectives. Guidance will take many forms, including technical memoranda, day-to-day technical assistance, training sessions and policy manuals. More information about ensuring the compatibility of City programs with watershed health goals is provided in Chapter 3.

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**The guidance provided by the *Framework* and watershed management plans will help ensure that future projects are compatible with watershed health goals.**

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In essence, the *Framework* and the watershed management plans will be the foundation for guiding, reviewing, planning and implementing many actions within the City of Portland.

## Portland Within the Region: What We Do Matters

Portland's watershed management activities will be taking place at the local level but within the context of larger, interconnected natural and built systems that extend through much of the Pacific Northwest. Portland is situated at the confluence of two major rivers, the Willamette and the Columbia. The cumulative effects of land use decisions and on-the-ground actions, hydropower and flood control systems, agriculture and other human activities throughout the Willamette and Columbia watersheds are evident in Portland.

The conditions of Portland's watersheds affect the watershed health of other communities throughout the region as well. For example, every salmonid migrating from every Willamette River tributary and from many Columbia River tributaries must pass through the Portland metropolitan area. Portland's watershed conditions affect aquatic ecosystems, including salmonids, all the way from the McKenzie River to the upper Columbia.

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**Every salmonid migrating from every tributary to the Willamette River and many Columbia River tributaries must pass through the Portland metropolitan area.**

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Terrestrial species in the Pacific Northwest also rely on Portland's natural systems during all – or key – life stages.

For example, four percent of Oregon's known peregrine falcon population nests within the city limits. Additionally, the largest known Vaux's swift roost in the world occurs in Northwest Portland, and Portland sits on important north-south and east-west migratory corridors used by many species of neotropical songbirds whose populations are in decline.

Portland has a very large "ecological footprint," meaning that what Portland does and how its citizens consume resources affect areas far beyond the City's geographic boundaries. For example, homes are built with timber logged from lands far from the City. The food Portland's citizens consume is grown on farms and ranches beyond the City limits or harvested from the ocean. Dams generate much of the energy Portland requires. The hydropower, timber, agriculture, livestock and other industries that support Portland's activities and economy already have undergone wrenching changes caused by the growing understanding of human effects on natural systems. The Superfund listing, ESA listings and Clean Water Act enforcement actions currently affecting Portland are testaments to the fact that the City needs to be part of the solution to what are actually regional problems.

Planning at the regional or “ecological footprint” scale traditionally is left to federal and state agencies. However, for watershed conditions to be improved and maintained, that tradition will need to be augmented by actions of local governments and communities, who play key roles in land use planning, supplying and consuming energy and clean water, building and maintaining infrastructure, treating solid and liquid waste, and so on. For these reasons, Portland will attempt to consider the effects of its actions at the broadest possible scale while keeping in mind its local focus and obligations. In this, the City hopes to set a positive example. It is only when all entities – at the municipal, state and regional levels – are working toward similar goals that success can be achieved. Given this regional context, the City of Portland is active in many local, state and regional planning efforts related to the Willamette and Columbia rivers (see Appendix D). By participating in these efforts, Portland hopes to increase the chances that upstream, downstream and watershed-wide activities outside the City’s jurisdiction will foster watershed health in the Portland area, and that Portland does its part to contribute to regionwide restoration and maintenance of watershed health.