APPENDIX B

Regulations Protecting Watershed and River Health

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More than 150 years of development and human activity in and around Portland have degraded water quality and habitat in the Willamette River, its tributaries and its watersheds. Alterations of stream and river flows, increases in impervious area, and degradation and loss of habitat have occurred in much of the urban area. Populations of steelhead trout and Chinook, coho and chum salmon that use Portland's waterways currently are listed as threatened under the federal Endangered Species Act (ESA).

In 2000, a six-mile stretch of the Lower Willamette River—the Portland Harbor—was listed as a federal Superfund site because of contamination in sediments discovered in a joint U.S. Environmental Protection Agency (EPA)/Oregon Department of Environmental Quality (DEQ) study. This makes the Portland Harbor subject to cleanup as required by the Comprehensive Environmental Response, Compensation and Liability Act, or CERCLA. Furthermore, water quality standards for water temperature, bacteria and toxics, including mercury, often are not met in the Willamette River. Therefore, as required under the federal Clean Water Act (CWA), DEQ is preparing total maximum daily load (TMDL) and water quality management plan (WQMP) documents for the Willamette River Basin, including the lower Willamette River and tributaries in the Portland area, for submittal to EPA in early 2006.

A fundamental purpose of the watershed management process in the *Framework* is to ensure a coordinated, systematic approach to achieving the City's watershed health goals.

The ESA, CERCLA and CWA are only some of the environmental laws and regulations pertaining to water quality and management with which the City of Portland must comply. Others include the Safe Drinking Water Act (SDWA), which affects how the City manages its sumps and stormwater wells; Oregon's statewide land use goals, which guide streamside and other development throughout the City; and Title 3 of Metro's *Urban Growth Management Functional Plan*, which requires the City to meet performance standards for protecting streams, rivers, wetlands and floodplains.

These separate laws and regulations each have their own requirements and stipulations that affect a host of City programs and activities, and they have given rise to specific City programs and projects concerned with compliance. The watershed management process presented in the *Framework* document is an opportunity to coordinate and integrate some of these efforts to address the City's obligations under federal, state and regional laws and regulations. By focusing on improving overall watershed

By improving overall watershed health, the City can improve habitat for ESA-listed fish, control stream temperatures and pollutant loadings, reduce the impact of development and protect wetlands. All of these help the City meet its various legal obligations in an integrated way.

health, as described in the *Framework*, the City can expect to alter the physical structure of waterways for the benefit of threatened fish, help control temperatures and pollutant loadings in streams, reduce the impact of development on natural resources and protect existing wetlands, all of which help the City meet its various obligations in an integrated way.

This appendix summarizes the key federal, state and regional regulations pertaining to watershed health and the obligations that the City has under those statues. Federal regulations—the ESA, CWA, SDWA and CERCLA—are addressed first, followed by state and regional regulations.

Federal Regulations

The City of Portland is required to comply with the ESA, CWA, SDWA and CERCLA—key federal statutes and regulations aimed at protecting watershed and river health. Failures to comply can lead to restrictions on business operations, increased costs for cleanup and penalties, detrimental impacts to the environment and other problems. A fundamental purpose of the *Framework* is to present a process that provides for coordination and integration of City actions aimed at compliance with the ESA, CWA, SDWA and CERCLA.

Improving watershed and river health will go a long way toward satisfying multiple federal requirements.

Some of these actions are already occurring: the City is taking a proactive leadership role in the Portland Harbor cleanup efforts and is implementing a massive public works project to remove stormwater from the combined sewer system and control combined sewer overflows. With respect to the ESA, the City is committed to going beyond avoidance of a "take"[1] of a listed species by contributing to recovery of the listed species. Recently, issuance of a permit for underground injection control under the Safe Drinking Water Act, the first of its kind in the country for municipalities, has added the dimension of groundwater protection to the range of integrated elements of overall watershed health. A coordinated, systematic approach that improves overall watershed and river health will be the most efficient and effective way of both addressing multiple regulatory requirements and achieving citywide goals and objectives. The process described in this *Framework* is designed to enable the City to achieve its watershed health goals in the most scientifically sound, cost-effective way.

Coordination and integration of the City's compliance efforts make sense because of the important technical and policy links among these regulations. For example, the CWA and ESA share an important and significant technical link in ensuring that water quality is adequate to protect cold water biota, including ESA-listed salmonid species (such as steelhead, Chinook and chum salmon).[2] Similarly, the City's program to comply with state

[1] "Take" is defined as to "harm, harass, kill, injure, or modify essential breeding, feeding, and sheltering behavior" (per ESA Section 9 (a)(1) "take" prohibitions).

[2] Many of Oregon's state water quality standards are derived from water quality criteria developed from research on salmonids. Oregon's standards also already require that water quality conditions protect species listed under the ESA. For instance, the Willamette River's designated beneficial uses include anadromous fish passage, salmonid fish rearing, salmonid fish spawning, resident fish and aquatic life and fishing (Oregon Administrative Rule [OAR] 340-041-0042).

land use planning and Metro requirements limits development that affects streams and riparian areas that are needed to protect these cold water biota.

Each of the key statutes or regulations applies to a certain geographic area, all of which are encompassed by the watershed management plans that will be generated via the watershed management process presented in Chapter 3. Thus, the watershed management process has the potential to coordinate and integrate various compliance activities, in essence targeting multiple regulations with a single process—or a single action, project or group of projects that are fully coordinated.

Federal Regulatory Coordination and Integration

The federal statutes and regulations discussed in this chapter—ESA, CWA, SDWA and CERCLA—apply to many important City of Portland programs and activities, from land use and watershed planning to road construction and wastewater management. The relationships between the statutes and various City programs or activities are shown in Table B-1. The fact that a single environmental statute can apply directly or indirectly to so many City programs, and that individual programs or activities are governed by multiple federal statutes, points to the value of the coordination and integration of City efforts to comply with these regulations.

Regulatory coordination and integration are roles that the *Framework* intends to guide, by presenting a watershed management process that incorporates considerations—and generates solutions—related to all the key federal regulations.

By coordinating and integrating actions aimed at achieving watershed health, the City of Portland expects the following benefits:

- A proactive rather than reactive approach to achieving compliance with regulations aimed at protecting watershed and river health
- More timely, efficient and effective responses to regulatory requirements
- A more comprehensive, watershed-based approach to meeting the mandates of the regulations
- Improved coordination with various agencies responsible for implementing and enforcing the regulations
- Better linkages to regional processes
- Improved accountability for results

For efficiency, the watershed management process involves identifying relevant regulatory requirements and permitting processes and then "packaging" multiple restoration activities for consultation with—and permitting by—the regulatory agencies.

In addition, the City of Portland expects that an integrated approach will allow improved coordination with various agencies responsible for implementing and enforcing federal regulations. For example, as alternatives are evaluated and selected to fulfill watershed and river health objectives (as described in Chapter 3), the City will identify the regulatory requirements and permitting processes for implementing the associated actions, which then can be organized and grouped according to possible linkages among these regulatory

processes. In so doing, the City envisions that an important outcome of the *Framework* process may be a "packaging" of City actions for consultation with, and permitting by, the regulatory agencies.

TABLE B-1
Matrix of Major City Programs or Activities and Relevant Federal Regulations

Program or Activity	Environmental Statutes			
	ESA	CWA	CERCLA	SDWA
Development Standards and Codes	●	●	○	●
Development Reviews and Approvals	●	●	○	●
Land Use Planning	●	●	○	●
Land Conservation	●	●	○	○
Watershed Planning	●	●	●	●
Water Treatment and Delivery	○	●	○	●
Stormwater Management	●	●	●	●
Sanitary Wastewater Management	●	●	●	○
Solid Waste Management	○	○	●	○
Road/Bridge Construction and Maintenance	●	●	○	○
Building Construction and Maintenance	●	●	○	●
Environmental Enhancement Activities	●	●	○	○
Park, Natural Area and Landscape Activities	●	●	○	○

● = Program directly assists in meeting regulatory requirements.
○ = Program indirectly assists in meeting regulatory requirements depending on the details of the program or activity.
ESA = Endangered Species Act
CWA = Clean Water Act
SDWA = Safe Drinking Water Act
CERCLA = Comprehensive Environmental Response, Compensation and Liability Act

A systematic, coordinated, integrated way of managing watersheds, such as the process presented in Chapter 3, is critical because it provides a means of identifying those actions that will improve watershed and river health most efficiently. And, as previously discussed, improved watershed and river health will go a long way toward satisfying federal requirements and meeting the City's own goals for a clean and healthy river, and Portland's livability and economic vitality.

The coordination and integration of compliance activities is an important outcome of the watershed management process, which is designed to identify the most efficient way for the City to improve watershed health.

The key federal statutes and regulations and their implications for Portland are discussed below.

Federal Endangered Species Act

Key Salmon and Steelhead Listings

In November 1991, Snake River sockeye salmon (*Oncorhynchus nerka*) became the first salmon listed by the National Marine Fisheries Service in the National Oceanic and Atmospheric Administration (NOAA Fisheries) under the federal ESA[3]. In 2000 the Oregon Department of Fish and Wildlife listed Lower Columbia River coho as endangered under the state's Endangered Species Act. By March 1999, NOAA Fisheries issued final rules to list 25 additional populations, called "evolutionarily significant units" (ESUs), of Pacific salmon and steelhead. In addition, in March 1999 the U.S. Fish and Wildlife Service (USFWS) proposed the Southwest Washington/Columbia River ESU of coastal cutthroat trout (*O. clarki*) for listing as threatened under the federal ESA. The USFWS decided not to list this cutthroat ESU, but the Service announced its intent to conduct a status review of the species and that review may result in a federal listing. In June 2005, NOAA Fisheries designated the Lower Columbia River coho salmon *(O. kisutch)* as threatened. And, in the spring of 2003, Pacific and brook lamprey were petitioned for listing under the federal ESA. The U.S. Fish and Wildlife Service denied the petition. However, litigation over the agency's decision is pending.

In February 2002, NOAA Fisheries announced that it would reconsider its ESA listing determinations for the 27 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 (Table B-2). 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 (*O. 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 current ESA listing status for the 13 ESUs of salmon and steelhead found in the Portland area are summarized in Table B-2.

[3] The State of Oregon has listed some salmonids under the state Endangered Species Act. However, that law applies only to actions of state agencies on state-owned or state-leased lands.

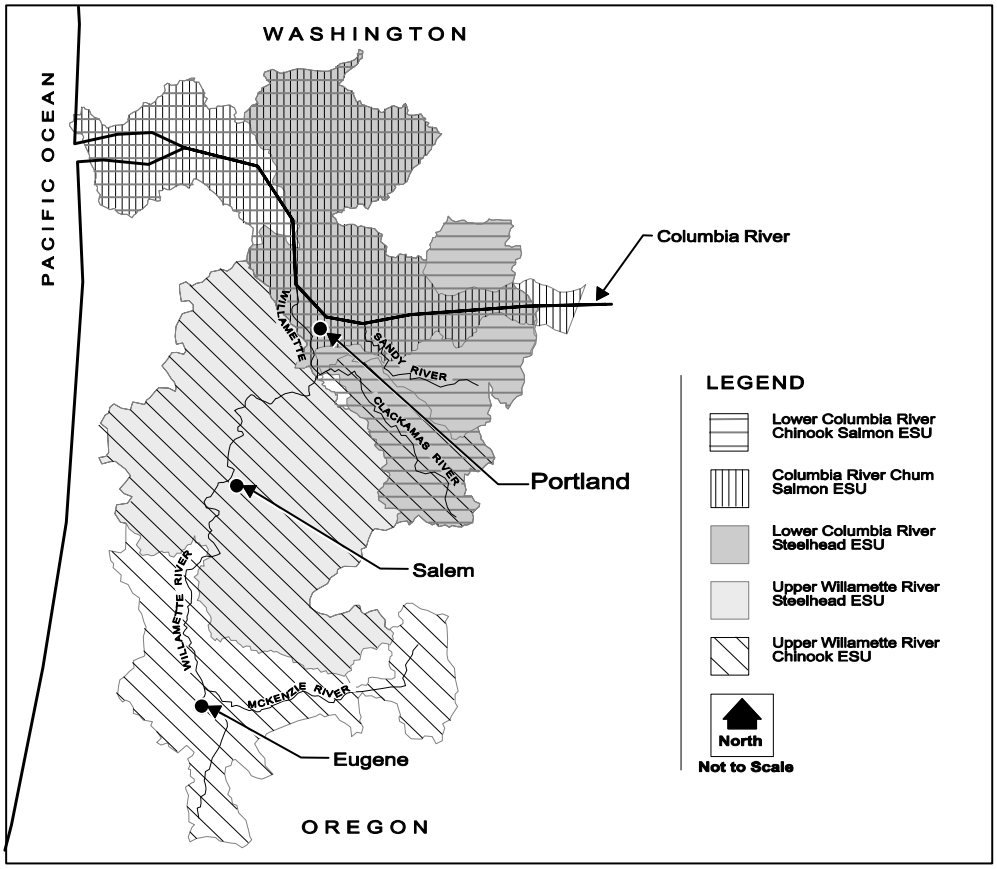
TABLE B-2
ESA Status of Key Salmonid Species Found in the Vicinity of the City of Portland

Species	Scientific Name	ESU	Current (March 1999) ESA Listing Status	Proposed (March 2005) ESA Listing Status
Steelhead trout	*Oncorhynchus mykiss*	Lower Columbia River	Threatened	Threatened
Steelhead trout	*Oncorhynchus mykiss*	Middle Columbia River	Threatened	Threatened
Steelhead trout	*Oncorhynchus mykiss*	Upper Columbia River	Endangered	Endangered
Steelhead trout	*Oncorhynchus mykiss*	Upper Willamette River	Threatened	Threatened
Steelhead trout	*Oncorhynchus mykiss*	Snake River	Threatened	Threatened
Chinook salmon	*Oncorhynchus tshawytscha*	Lower Columbia River	Threatened	Threatened
Chinook salmon	*Oncorhynchus tshawytscha*	Upper Columbia Spring-run	Endangered	Endangered
Chinook salmon	*Oncorhynchus tshawytscha*	Upper Willamette River	Threatened	Threatened
Chinook salmon	*Oncorhynchus tshawytscha*	Snake River Spring/summer-run	Threatened	Threatened
Chinook salmon	*Oncorhynchus tshawytscha*	Snake River Fall-run	Threatened	Threatened
Chum salmon	*Oncorhynchus keta*	Columbia River	Threatened	Threatened
Coho salmon	*Oncorhynchus kisutch*	Lower Columbia River/Southwest Washington	Threatened	Threatened
Sockeye salmon	*Oncorhynchus nerka*	Snake River	Endangered	Endangered

As shown in Figure B-1, Portland's watersheds and waterways are within six of these 13 salmonid ESUs. The salmonids from these six ESUs use various watercourses in the Portland area, including the Columbia River, Columbia Slough, Willamette River, Johnson Creek, Tryon Creek, Fanno Creek and several other smaller westside streams. The other seven ESUs include salmon and steelhead that migrate past Portland on the way to and from ESU areas in the upper and middle Columbia River and Snake River.

Maps showing the distribution of salmon and steelhead in Portland's watersheds and waterways are shown in Appendix E, "The City's Natural Environment " (see Figures E-2 and E-3).

FIGURE B-1
Portland-Area Salmonid ESUs Listed Under the Federal ESA



Source: Adapted from 1999 NOAA Fisheries information.

The listing of these ESUs prompted the City of Portland to take proactive steps toward the protection and ultimate recovery of these species. Adding urgency to the City of Portland's actions is the fact that NOAA Fisheries enacted regulations under Section 4(d) of the ESA to apply the "take" prohibitions contained in Section 9(a) of the ESA to these ESUs. These prohibitions make it unlawful to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect the listed species, or even to attempt to engage in such conduct. For the purposes of the ESA, NOAA Fisheries has defined "harm" to include habitat modification if the modification kills or injures fish by significantly impairing essential behavioral patterns such as feeding, sheltering, rearing, migrating, breeding and spawning (per ESA Section 9(a)(1) "take" prohibitions).

City Response to Federal Listings

Following the listing of the Lower Columbia ESU of steelhead in March 1998, the City of Portland began developing a comprehensive, citywide response to the listing. Agreement among the City Council on the following four-pronged approach to responding to the listing was achieved on May 23, 1998, and the Council adopted the approach on July 22 of that year (Resolution No. 35715):

- Involve all City of Portland bureaus, to maximize effectiveness and efficiency.
- Collaborate with NOAA Fisheries to prepare a program that not only complies with the requirements of the ESA but also assists in salmonid recovery.
- Because the listed fish species use watersheds that cross political boundaries, integrate the City of Portland's response with regional and state responses, to the extent possible.
- Enlist the help of the citizenry at a number of levels in developing the response to the listing.

The *Framework* and the watershed management process are the most efficient and effective way of achieving directives of the City Council and getting at the root of watershed problems.

The City's Endangered Species Act Program [4] was charged with coordinating the City's response to listings under the federal ESA. The City's response is basically twofold. It involves both ESA compliance (meaning avoiding "take" of a listed species) and assisting with recovery of listed salmonids. This is a choice the City has made to go beyond simply avoiding "take" of listed species.

ESA Compliance. The City of Portland has a variety of options to ensure ESA compliance:

- Avoiding "take" altogether
- Adhering to Section 4(d) rules
- Obtaining incidental "take" authorization under Section 7
- Obtaining an incidental "take" permit under Section 10
- Assisting with recovery

Avoiding "Take" Altogether. Avoiding "take" altogether is the clearest and most direct way of meeting the ESA's fundamental objective of protecting and conserving listed species. For example, the City may determine that certain activities do not cause "take" for various reasons, such as that no species or suitable habitat is present in areas affected by the activity or that no link exists between the activity and a species or habitat effect. The City is free to plan and conduct activities that avoid "take" altogether, without needing to have an ESA consultation or agreement with the federal government.

The City's Endangered Species Act Program plays a key role in seeing that City actions do not result in an unlawful "take" of a listed species, by doing the following:

- Evaluating City of Portland activities, programs and practices for their potential to affect fish and wildlife and their habitats
- Identifying and prioritizing City of Portland activities, programs and projects for Endangered Species Act Program attention, assessment and guidance (with the assistance of other bureaus and programs)
- Providing technical support to all bureaus regarding individual proposed projects that involve ESA-related activities

[4] The City's Endangered Species Act Program is part of the Bureau of Environmental Service's Science, Fish and Wildlife Division within the Watershed Services Group.

- Providing oversight for activities that involve federal permitting, funding or oversight that will involve NOAA Fisheries or USFWS under Section 7
- Reviewing draft requests for proposals to hire consultants to address ESA-related issues
- Communicating criteria and processes to City of Portland bureaus and programs to address ESA-related issues
- Monitoring the implementation of projects and actions taken to ensure that City activities, programs and projects comply with permit conditions, avoid or minimize "take", and assist in recovery of species
- Ensuring that watershed management plans are adequate to address ESA obligations

This *Framework* and the watershed management process that it presents (see Chapter 3) are, in part, efforts to ensure that City of Portland actions do not result in an unlawful "take" of a listed species. The *Framework* and watershed management process also will help the City of Portland determine which of the other federal ESA compliance options, discussed below, will make sense for the City over the long term.

Adhering to Section 4(d) Rules. Section 4(d) of the ESA authorizes NOAA Fisheries or the USFWS to issue special rules that regulate "take" of threatened species. The rules can provide exceptions from the "take" prohibition for incidental "take" of threatened species if specific City programs provide for the conservation of those species or promote their overall recovery. In July 2000, NOAA Fisheries issued special 4(d) rules for the steelhead and Chinook salmon ESUs in Table B-2. These rules allow specific lawful activities that otherwise would be considered incidental or direct "take". Examples of activities allowed under the 4(d) rules include certain restoration activities and properly screened water diversion devices. There also is an approved 4(d) limit for Portland Parks Bureau's Integrated Pest Management (IPM) Program, which manages vegetation through mechanical treatment, the use of herbicides and other means. The 4(d) protection granted to the IPM Program requires annual reporting, which includes testing of water quality.

The City also has an approved 4(d) limitation for the its routine road maintenance activities. The current effort requires the City to review its practices and conduct its road maintenance activities in accordance with the Oregon Department of Transportation's (ODOT) *Routine Road Maintenance Water Quality and Habitat Guide* with appropriate additions and changes to reflect Portland's unique characteristics (June 1999). Other efforts under way include seeking approval of the City's *Stormwater Management Manual* (City of Portland Bureau of Environmental Services 2004) under the 4(d) Section 12 limit.

The City's ESA Program has received a 4(d) limit for ongoing scientific research for the past several years. The limit allows the City to conduct regular surveys of its waterbodies, including specific sites where future capital improvement projects are planned. The overall goal of the research efforts is to build baseline information on fish use in all of the waterbodies. Over time the City will be able to document changes in fish use as restoration efforts are undertaken, as well conservation measures taken by the City bureaus to minimize or eliminate the effects of their action throughout the watersheds. In addition, the

information will be used for Section 7 consultations and preparation of biological assessments.

Obtaining Incidental "Take" Authorization under Section 7. Section 7 of the federal ESA applies when a project must obtain federal approval or federal funding, such as roadway improvement projects that use Federal Highway Administration (FHWA) funds. If a federal agency permits, authorizes or funds a certain City activity, the agency must consult with NOAA Fisheries and USFWS to ensure that the action taken by the federal agency on the activity does not jeopardize a listed species or detrimentally affect critical habitat. Obtaining Section 7 incidental "take" authorization usually involves preparing a biological assessment and consulting with NOAA Fisheries and/or USFWS, which then issues a biological opinion and incidental "take" statement.

In October 2002, the City entered into a federal ESA Section 7 streamlining agreement with NOAA Fisheries, the U.S. Army Corps of Engineers and USFWS. This agreement establishes a cooperative process for streamlining ESA Section 7 consultations among the four parties to the agreement. Streamlined consultations will provide a number of benefits, including increased coordination of the review, analysis and documentation of City projects, programs and activities, so that they proceed in a timely manner. The agreement is one of the first of its kind involving a municipality and federal agencies.

Through the streamlining agreement, efforts will be made to provide for coordination among the City and federal agencies early in the planning process for projects, programs and activities that require or would benefit from federal agency review. It is expected that such early consultation will result in the identification of potential impacts to listed species and critical habitat and the means to address such impacts. Early cooperation also is expected to speed the conservation of listed species while at the same time minimizing delay of proposed City projects, programs and activities.

The City and federal agencies have convened a team made up of their employees to meet on a quarterly basis to work toward the following:

- Expediting Section 7 consultations by batching similar projects or projects with similar timing needs, combining multiple agency consultations, etc.
- Development of information, documentation, formats and timeframes for biological evaluations/assessments (BE/BA) and biological opinions
- Agreement on the use of the programmatic biological opinion for Standard Local Operating Procedures for Endangered Species (SLOPES) for certain activities requiring U.S. Army Corps of Engineers permits in Oregon
- Development of additional compliance strategies in addition to Section 7 (for example, 4(d) rule limit and programmatic opportunities) as needed for City projects, programs and activities
- Better coordination of strategies to comply with the ESA and additional regulatory requirements with other state and federal regulatory programs

Obtaining an Incidental "Take" Permit under Section 10. Section 10 of the ESA allows NOAA Fisheries and USFWS to permit the incidental "take" of listed species by private parties and nonfederal jurisdictions as long as the "take" is incidental to otherwise lawful activities. In order to obtain an incidental "take" permit (ITP) under Section 10, a habitat conservation plan (HCP) must be prepared. An HCP details, among other things, the activities that will be covered by the ITP, the impacts that are likely to result from the incidental "take" and the mitigation measures that will be implemented. An implementation agreement that spells out the terms and conditions associated with the HCP and ITP also must be prepared. In addition, NOAA Fisheries and USFWS must comply with the National Environmental Policy Act (NEPA) by issuing an environmental assessment or environmental impact statement.

Improving overall watershed health will move watersheds closer to recovery than would merely aiming to comply with federal regulations.

Assisting with Recovery. Although the City Council did not specifically define "assisting with recovery" of listed species in Resolution 35715 (July 1998), the phrase clearly indicates more than simply avoiding "take" of listed species. The watershed management process described in the *Framework* provides the basis for both defining and achieving the City Council's directive.

Federal Clean Water Act

The federal Water Pollution Control Act Amendments of 1972 and subsequent amendments, now known as the Clean Water Act, regulate discharges of pollutants to waters of the United States from both point sources (such as discharges from pipes) and nonpoint sources (such as stormwater runoff).[5] The CWA calls for the "restoration and maintenance of the chemical, physical and biological integrity of the Nation's water." The CWA also states the intent, "where attainable, to achieve water quality that promotes protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water."

The City of Portland has responsibilities related to four sections of the CWA:

- Permits for stormwater and wastewater discharges as required under the National Pollutant Discharge Elimination System (NPDES) permitting program (Section 402 of the CWA)
- Water quality management planning to comply with established water quality standards and TMDL programs, which specify the maximum amounts of certain pollutants that a particular body of water is allowed to receive from all sources (Section 303 of the CWA)
- Permits for sediment removal and fill in waterways, such as construction activities in streams, wetlands and floodways (Section 404 of the CWA)

[5] Point sources are confined and discrete conveyances, such as a pipe, tunnel or conduit from which effluents containing pollutants are discharged. CWA compliance standards for point source discharges are usually in the form of specific numeric effluent limitations. Nonpoint sources are more diffuse, unconfined pollutant discharges without a specific discharge point. CWA compliance standards for nonpoint source discharges are usually in the form of best management practices (BMPs) that are implemented to be effective to the "maximum extent practicable" (MEP).

- Water quality certifications (Section 401 of the CWA) to demonstrate compliance with water quality standards for federal actions, such as U.S. Army Corps of Engineers removal/fill permits (Section 404 of the CWA)

These primary obligations under the CWA are described below.

CWA Section 402: NPDES Stormwater Program

The National Pollutant Discharge Elimination System permitting program was developed to control the discharge of point and certain nonpoint sources of pollution to the nation's waters. Although federally mandated, the NPDES program is administered in Oregon by DEQ. Under Section 402 of the CWA, the City of Portland has regulatory obligations for general municipal stormwater and treated municipal wastewater discharges from the Columbia Boulevard Wastewater Treatment Plant (WWTP) and Tryon Creek WWTP.

Requirements. In response to the 1987 amendments to the CWA, which included regulation of stormwater discharges under the NPDES permitting program, EPA developed Phase I of the NPDES Stormwater Program in 1990. This phase addressed sources of stormwater runoff that had the greatest potential to adversely affect water quality. Under Phase I, EPA required NPDES permit coverage for stormwater discharges from either of the following:

- "Medium" and "large" municipal separate storm sewer systems (MS4s) located in incorporated places or counties with populations of 100,000 or more
- Eleven categories of industrial activity, one of which includes stormwater runoff at treatment facility sites

Because the City of Portland falls into both of these categories, it has an MS4 stormwater permit for stormwater generated throughout the City and NPDES general industrial permits for stormwater discharges at each of its two WWTP facilities. The permits are issued and administered by DEQ, which administers both municipal and industrial NPDES permits and is responsible for enforcing NPDES regulations statewide.

The MS4 NPDES stormwater permit is the primary regulatory vehicle for management of stormwater quantity and quality (40 Code of Federal Regulations [CFR] 122.26(d)). Although the permit requirements apply only to areas where the sewer and stormwater conveyance systems are separate, the City Council has agreed with the City's Stormwater Advisory Committee's recommendation that minimum requirements be exceeded and that stormwater best management practices (BMPs) be implemented throughout Portland. The City has developed and maintains a comprehensive stormwater management program that addresses the following management practices:

- Development standards
- Industrial/commercial controls
- Illicit discharge controls
- Structural controls
- Operations and maintenance requirements
- Preservation and restoration of natural areas
- Public education and outreach

CWA Section 402: NPDES Wastewater Program

Under Section 402 of the CWA, point source discharges of pollutants into waters of the United States are regulated under the NPDES program.

The City of Portland has NPDES discharge permits for its municipal wastewater treatment facilities, the Columbia Boulevard and Tryon Creek WWTPs. The permits, which regulate the discharge of total suspended solids (TSS), biochemical oxygen demand (BOD) and *E. coli* to the Columbia and Willamette rivers, specify both technology-based and water quality-based effluent limits. Technology-based effluent limits are based on the technology available to control the pollutants, while water quality-based effluent limits specify numerical criteria that discharges must meet.

CWA Section 402: NPDES Stormwater Permits for Construction Projects

Under Section 402 of the CWA, stormwater permits for construction projects are required for any projects larger than one acre. They are required for City of Portland construction activities such as those undertaken as part of the combined sewer overflow (CSO) program, as well as public construction activities that discharge to the City's system.

CWA Section 303: TMDL Program

Section 303 established the water quality standards and total maximum daily load programs, which specify the maximum amounts of certain pollutants that a particular body of water is allowed to receive from all sources. Waters with pollutant levels above this maximum amount are considered water quality limited. The aim of the TMDL program is to manage water resources so that parameters or attributes that limit water quality in a specific stream reach (such as temperature, total suspended solids and pesticides) do not exceed standards and so that "beneficial uses" (such as recreation, cold water fisheries, municipal and industrial water supply and navigation) are attained and maintained. Beneficial uses are determined by the state and differ by water body and reach. Although federally mandated, the TMDL program is administered in Oregon by DEQ, which develops TMDLs on a basinwide level. EPA must approve the TMDLs developed by DEQ, and it consults with USFWS or NOAA Fisheries before doing so. TMDL allocations are typically implemented through NPDES permits for point source discharges and through water quality management plans for nonpoint sources.

Under Section 303(d) of the CWA, states are required to develop lists of impaired waters that do not meet water quality standards set by the state. DEQ places waterbodies that are "water quality limited" for certain parameters on its 303(d) list; this means that the waterbodies do not meet state-designated standards for such parameters as temperature, dissolved oxygen, bacteria, metals, pesticides and other pollutants. Oregon administrative rules generally prohibit new or increased discharges of the specified parameters to the listed waterbodies. In the Portland area, every river and stream except Balch Creek is water quality limited.

After a waterbody is placed on the 303(d) list, DEQ is required to develop TMDLs for the listed parameter(s). A TMDL provides the following:

- Specifications for the maximum amount of the pollutant that a waterbody can receive from all point and nonpoint sources and still meet water quality standards

- Allocations of pollutant loadings among point and nonpoint sources
- A Water Quality Management Plan that specifies the agencies and individuals responsible for implementing the TMDLs and the timelines for implementation.

Once TMDLs have been established for a stream or other body of water, the affected jurisdictions must develop implementation plans to achieve the identified requirements. Table B-3 shows the status of TMDL and load allocation development for waterways in the Portland area.

CWA Section 404: Removal/Fill Permits

CWA Section 404 establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Activities regulated under this program include placing fill or excavating in a wetland; building in a wetland; construction of boat ramps; construction of dams, dikes or bridges; stream channelization; and stream diversion. CWA Section 404 removal/fill permits are jointly administered by the U.S. Army Corps of Engineers and the Oregon Division of State Lands. The City of Portland occasionally obtains Section 404 removal/fill permits for projects associated with removal and fill activities in waterways, such as construction or restoration activities in streams, wetlands and floodways.

As described below, a Section 401 certification is typically required from DEQ. If threatened or endangered species may be affected by the proposed activity, the U.S. Army Corps of Engineers will consult with the appropriate federal agency (NOAA Fisheries or USFWS) to obtain a biological opinion on the effects to the species (as required under ESA Section 7). If the proposed activity will have significant impacts on the human environment, an environmental impact statement is required by the U.S. Army Corps of Engineers.

CWA Section 401: Water Quality Certifications

CWA Section 401 water quality certifications are administered by DEQ. These certify compliance with state water quality standards for a variety of federal actions with which the City of Portland might be involved. The major federal licenses and permits subject to Section 401 are Section 402 and 404 permits, Federal Energy Regulatory Commission (FERC) hydropower licenses and Rivers and Harbors Act Section 9 and 10 permits. DEQ makes its decisions to deny, certify or add conditions to permits or licenses primarily by ensuring that the activity will comply with state water quality standards. The Section 404 Corps permit is by far the most common federal permit issued that requires 401 certification. Examples of activities that may require a Section 404 permit and Section 401 water quality certification include placing fill or excavating in a wetland; building in a wetland; construction of boat ramps; construction of dams, dikes or bridges; stream channelization; and stream diversion.

ESA and CWA Procedural Links

The CWA shares some important procedural links with the ESA. The most prominent example is Section 404 permits issued by the U.S. Army Corps of Engineers, which are required to undergo an ESA Section 7 consultation if the action to be permitted may affect ESA-listed species. The process must ensure that the action is not likely to jeopardize listed species or adversely modify critical habitat.

In Oregon, EPA has delegated authority for administering many CWA permits to DEQ. The issuance of CWA permits by DEQ is not a federal action, and thus DEQ is not required to consult with NOAA Fisheries and USFWS before issuing a permit. However, EPA must now consult with NOAA Fisheries and USFWS under Section 7 of the ESA on EPA's approval of Oregon's water quality standards and state NPDES programs. NOAA Fisheries and USFWS recently developed a memorandum of agreement (MOA) with EPA to enhance interagency coordination of the ESA on NPDES programs and development of water quality standards (see 64 *Federal Register* 2742, January 15, 1999).

TABLE B-3
TMDL and Load Allocation Development for Water Quality-Limited Waterways in and around Portland

Waterway on the 303(d) List	Parameter(s)	TMDL and Load Allocation Established by DEQ?
Columbia Slough	Phosphorus Chlorophyll *a* pH Dissolved oxygen Bacteria Lead Dieldrin DDT/DDE Dioxin PCBs	Yes
Columbia Slough	Temperature	Under development (completion projected in early 2006)
Willamette River mainstem	Bacteria Mercury Temperature	Under development (completion projected in early 2006)
Fanno Creek	Chlorophyll *a*/phosphorus Dissolved oxygen Temperature Bacteria	Yes
All Willamette River tributaries	Mercury	Under development (completion projected in early 2006)
Johnson Creek	Temperature Bacteria DDT Dieldrin	Under development (completion projected in early 2006)
Tryon Creek	Temperature	Under development (completion projected in early 2006)
PCBs = polychlorinated biphenyls.		

The MOA seeks to enhance the efficiency and effectiveness of these consultations by providing specific procedures for coordination and prompt resolution of issues that may arise. Of particular interest is the fact that the MOA describes the Section 7 consultation process, noting that EPA must ensure that its actions are not likely to jeopardize listed species or adversely modify critical habitat. The MOA states that, "since NPDES permits are established to achieve water quality standards, they will account for point source effects [on listed species] insofar as water quality is concerned" (*Federal Register* 2001). Formal consultation would occur only if adverse effects were found to be likely, following preparation of a biological evaluation.

The MOA outlines a procedure in which ESA compliance would be reviewed only after DEQ issues a draft NPDES permit. At that point, EPA would make sure that USFWS and NOAA Fisheries were notified of the draft permit and that they would provide DEQ with information on species and habitats of concern. EPA would coordinate with NOAA Fisheries, USFWS and DEQ to ensure that ESA requirements are met. If they are not, EPA would exercise its right to deny the permit.

Oregon's state water quality standards already require that water quality conditions protect species listed under the ESA. For instance, the Columbia River is designated for all beneficial uses, including anadromous fish passage, salmonid fish rearing, salmonid fish spawning, resident fish and aquatic life and fishing (Oregon Administrative Rule [OAR] 340-041-0042, Table 6). In addition, narrative standards have been adopted that are specific to protection of sensitive aquatic life (see, for example, OAR 340-41-445(2)(i)(p)). Given such designated beneficial uses and narrative standards, DEQ can issue an NPDES permit or 401 certification only upon ensuring that the authorized action will not harm the listed species in the river, regardless of ESA requirements. Thus, DEQ may still end up relying on NOAA Fisheries, USFWS and the Oregon Department of Fish and Wildlife, even though DEQ does not formally engage in a Section 7 consultation process.

Although Oregon's state water quality standards require that water quality be adequate to protect listed species, NOAA Fisheries and USFWS have indicated that certain of the state's standards may not be adequate. For example, in July 1999, NOAA Fisheries issued a biological opinion on EPA's review of Oregon's standards for temperature, dissolved oxygen and pH and concluded that application of these standards could adversely affect certain life stages of listed anadromous salmonid species. A key outcome of these consultations is that NOAA Fisheries and USFWS worked with EPA, DEQ and other affected states on a regional temperature criteria development project to develop regional temperature criteria that will meet the biological requirements of listed salmonids for survival and recovery. As a result of those discussions, DEQ reissued its temperature water quality standards for the State of Oregon in December 2003 with final approval from EPA coming in March 2004. In December of 2005 those standards again came under legal challenge from third parties.

Safe Drinking Water Act

The SDWA (42 USC § 300f *et seq.*) created a comprehensive national framework designed to ensure the quality and safety of drinking water supplies. The main focus of the SDWA is on ensuring the quality of drinking water at the time it reaches consumers, rather than ensuring the (pretreatment) quality of the source supply. In Oregon, the SDWA involves

some provisions for groundwater source protection. These provisions include prohibitions and management standards for underground injection control (UIC) wells, which include sumps, French drains and stormwater disposal wells. The City of Portland has conducted an inventory and evaluation of its UICs, particularly stormwater wells, and consulted with DEQ about permitting and registration options for the wells. The SDWA is not considered a primary regulatory driver for the assessment of watershed health as outlined in this *Framework*, but it may have indirect significance to the degree that groundwater source protection provisions benefit the quantity and quality of groundwater that discharges to the City's surface waterways. Protection of groundwater recharge, and encouraging natural hydrology in watersheds, involves the use of infiltrating methods of stormwater management. A key linkage to meeting other regulatory requirements is inclusion of best management practices using infiltration.

CERCLA

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, commonly known as Superfund) was enacted by Congress in 1980 and amended by the Superfund Amendments and Reauthorization Act (SARA) in 1986. CERCLA provides broad federal authority to respond to releases or threatened releases of hazardous substances that may endanger public health or the environment. The act authorizes two kinds of response actions:

- Short-term removals where a prompt response is required
- Long-term remedial actions to permanently and significantly reduce dangers that are serious but not immediately life threatening

Portland Harbor NPL Listing

In 2000, EPA added the Portland Harbor site to its National Priorities List (NPL) for investigation and cleanup to be addressed under CERCLA. Elevated levels of polychlorinated biphenyls (PCBs), heavy metals, polycyclic aromatic hydrocarbons (PAHs), pesticides such as DDT and other contaminants are present in some sediments along a six-mile stretch of the lower Willamette River, from the southern tip of Sauvie Island (about 3.5 miles upstream from the mouth of the Columbia River) to Swan Island (about 9.2 miles upstream from the Columbia).

In September 2001, EPA completed negotiations that culminated in an "Administrative Order On Consent" with the Lower Willamette Group, a coalition of businesses and public agencies—including the City of Portland—that have voluntarily agreed to fund and participate in the investigation and cleanup of the site. This legal agreement designates DEQ as the lead agency for upland work along the banks of the river (where many of the historical contamination sources are located) and EPA as the lead agency for the in-water work on contaminated sediments. It also establishes guidance for conducting a remedial investigation and feasibility study (RI/FS), which will determine the nature and extent of contamination; and potential risks to humans, fish and wildlife.

The ultimate boundaries of the site will be determined at the conclusion of the RI/FS, when EPA documents the findings of the RI/FS in a Record of Decision and selects a preferred cleanup alternative.

Natural Resources Damage Assessment

In addition to the activities to evaluate contamination and implement cleanup, CERCLA also grants authority for federal and state agencies and tribal governments to act as Natural Resource Trustees and conduct a natural resources damage assessment (NRDA) at a Superfund site. The purpose of the NRDA process is to determine the extent of injuries to natural resources such as fish and wildlife as a result of the release of hazardous substances at the site since 1980, the date CERCLA was enacted; continuing damages from pollutants released prior to 1980 also are covered by CERCLA. The trustees can recover damages from the parties who have caused the injury, as well as mandate restoration actions as mitigation for those damages. These damage assessments and mitigation actions are paid by the parties responsible for releasing the hazardous substances and are in addition to those needed for site cleanup under CERCLA.

CERCLA Activities

DEQ is working on the cleanup of approximately 70 upland sites along the banks of the Willamette River. The work ranges from early stages of investigation to cleanup activities and includes identifying and controlling sources of harbor sediment contamination. Identified sources of contamination include numerous former and current operations, such as hazardous waste and petroleum product storage; marine construction (including World War II Liberty Ships); oil gasification operations; wood treating and pulp and paper production; agricultural chemical production; chlorine production; ship loading, maintenance, painting and repair; rail car manufacturing; and stormwater discharges. The City of Portland is working closely with DEQ to determine if the City stormwater outfalls within the Superfund site are conveying contamination to the river.

The *Framework* provide a process for identifying the highest priority projects to serve as early restoration projects—essentially, those projects that will provide the most important biological benefits. The *Framework* also will help ensure that actions taken to comply with the ESA and CWA do not conflict with CERCLA-related actions, and vice versa. For example, the watershed management process presented in Chapter 3 will help identify natural resource protection and restoration opportunities that will assist the City of Portland in meeting various regulatory requirements and will clearly describe which project would address which requirement.

Key State, Regional and Local Regulations

Oregon/EPA Performance Partnership Agreement (PPA) and Performance Partnership Grant (PPG)

In 2004, DEQ entered into a two-year Performance Partnership Agreement (PPA) with EPA Region 10 that promotes joint strategic planning and priority-setting processes for environmental protection in the state and supports the use of innovative strategies to solve environmental problems. PPAs are intended to strengthen protection of the environment by focusing attention on specific environmental goals and actual results, rather than government programs and the number of actions they take.

For the first time, much of the work DEQ is performing under the PPA is funded by an EPA Performance Partnership Grant (PPG), which combines several grants into a single, flexible grant package, thus streamlining grant administration and increasing DEQ's ability to shift resources to the highest environmental priorities. Grants related to the Clean Air Act, CWA, RCRA, Safe Drinking Water Act and Pollution Prevention Act have been incorporated into the Oregon/EPA PPG.

The Oregon/EPA PPA has components related to air quality, hazardous waste and water quality, including TMDL implementation in the Willamette River, permitting of the City of Portland's UIC wells, ongoing work in the Columbia River to reduce temperature and toxics, and a pilot project to prevent potential recontamination of Portland Harbor sediments via urban stormwater runoff. Also noteworthy in the context of this *Framework* document is DEQ's gradual shift to an integrated, cross-media, watershed-based approach to resolving environmental problems. This effort, which began in 2003, eventually will involve collaboration and coordination by multiple media offices (land, air and water) to develop and implement comprehensive watershed plans that could, for example, include TMDL development and implementation, cleanup of contaminated sites, removal of underground storage tanks, protection of groundwater, and minimization of airborne pollution within a single basin or subbasin. As of this writing, air quality and land quality had yet to be incorporated into the watershed-based approach but DEQ envisioned implementing the watershed approach in five basins, including the Willamette, by the conclusion of the PPA in 2006.

Oregon's Statewide Planning Goals and Guidelines

Since 1973, Oregon has maintained a strong statewide program for land use planning. The foundation of that program is a set of 19 statewide planning goals that express the state's policies on land use and related topics, such as citizen involvement, housing and natural resources. Most of the goals are accompanied by guidelines, which are suggestions about how a goal may be applied. As noted in Goal 2, guidelines are not mandatory.

Oregon's statewide goals are achieved through local comprehensive planning. State law requires each city and county to adopt a comprehensive plan and the zoning and land-division ordinances needed to put the plan into effect. The local comprehensive plans must be consistent with the statewide planning goals. Plans are reviewed for such consistency by the state's Land Conservation and Development Commission (LCDC). When LCDC officially approves a local government's plan, the plan is said to be "acknowledged." It then becomes the controlling document for land use in the area covered by that plan.

Following is a summary of the 19 statewide planning goals. Of these, Goals 5, 6, 7 and 15 relate directly to natural resources in Portland, and several other goals have ties or potential implications to watershed management planning and actions by the City. The 19 statewide planning goals are as follows:

- ***Goal 1: Citizen Involvement***. Goal 1 calls for "the opportunity for citizens to be involved in all phases of the planning process." It requires each city and county to have a citizen involvement program with six components specified in the goal. It also requires local governments to have a committee for citizen involvement (CCI) to monitor and encourage public participation in planning.

- ***Goal 2: Land Use Planning.*** Goal 2 outlines the basic procedures of Oregon's statewide planning program. It states that land use decisions are to be made in accordance with a comprehensive plan, and that suitable "implementation ordinances" to put the plan's policies into effect must be adopted. It requires that plans be based on "factual information"; that local plans and ordinances be coordinated with those of other jurisdictions and agencies; and that plans be reviewed periodically and amended as needed.
- ***Goal 3: Agricultural Lands.*** Goal 3 defines agricultural lands. It then requires counties to inventory such lands and to "preserve and maintain" them through exclusive farm use (EFU) zoning (per Oregon Revised Statute [ORS] Chapter 215).
- ***Goal 4: Forest Lands.*** This goal defines forest lands and requires counties to inventory them and adopt policies and ordinances that will "conserve forest lands for forest uses."
- ***Goal 5: Open Spaces, Scenic and Historic Areas, and Natural Resources.*** Goal 5 encompasses 12 different types of resources, including wildlife habitats, mineral resources, wetlands and waterways. It establishes a process through which resources must be inventoried and evaluated. If a resource or site is found to be important, the local government has three policy choices: to preserve the resource, to allow the proposed uses that conflict with it or to establish some sort of a balance between the resource and those uses that would conflict with it.
- ***Goal 6: Air, Water and Land Resources Quality.*** This goal requires local comprehensive plans and implementing measures to be consistent with state and federal regulations on matters such as stream quality and groundwater pollution.
- ***Goal 7: Areas Subject to Natural Disasters and Hazards.*** Goal 7 deals with development in places subject to natural hazards such as floods or landslides. It requires that jurisdictions apply "appropriate safeguards" (floodplain zoning, for example) when planning for development there.
- ***Goal 8: Recreation Needs.*** This goal calls for each community to evaluate its areas and facilities for recreation and develop plans to deal with the projected demand for them. It also sets forth detailed standards for expedited citing of destination resorts.
- ***Goal 9: Economy of the State.*** Goal 9 calls for diversification and improvement of the economy. It asks communities to inventory commercial and industrial lands, project future needs for such lands, and plan and zone enough land to meet those needs.
- ***Goal 10: Housing.*** This goal specifies that each city must plan for and accommodate needed housing types (typically, multifamily and manufactured housing). It requires each city to inventory its buildable residential lands, project future needs for such lands, and plan and zone enough buildable land to meet those needs. It also prohibits local plans from discriminating against needed housing types.
- ***Goal 11: Public Facilities and Services.*** Goal 11 calls for efficient planning of public services such as sewers, water, law enforcement and fire protection. The goal's central concept is that public services should to be planned in accordance with a community's needs and capacities rather than be forced to respond to development as it occurs.

- ***Goal 12: Transportation.*** The goal aims to provide "a safe, convenient and economic transportation system." It asks for communities to address the needs of the "transportation disadvantaged."
- ***Goal 13: Energy.*** Goal 13 declares that "land and uses developed on the land shall be managed and controlled so as to maximize the conservation of all forms of energy, based upon sound economic principles."
- ***Goal 14: Urbanization.*** This goal requires all cities to estimate future growth and needs for land and then plan and zone enough land to meet those needs. It calls for each city to establish an urban growth boundary (UGB) to "identify and separate urbanizable land from rural land." It specifies seven factors that must be considered in drawing up a UGB. It also lists four criteria to be applied when undeveloped land within a UGB is to be converted to urban uses.
- ***Goal 15: Willamette Greenway.*** Goal 15 sets forth procedures for administering the 300 miles of land along the Willamette River.
- ***Goal 16: Estuarine Resources***. This goal requires local governments to classify Oregon's 22 major estuaries in four categories: natural, conservation, shallow-draft development and deep-draft development. It then describes types of land uses and activities that are permissible in those "management units."
- ***Goals 17, 18 and 19: Coastal Shorelands, Beaches and Dunes, and Ocean Resources.*** These goals, which specify how certain coastal and ocean resources should be managed and conserved, are not related to the City of Portland's watershed planning and management activities.

Title 3 of Metro's *Urban Growth Management Functional Plan*

Origin and Purpose of Title 3

Metro's *Urban Growth Management Functional Plan* (Section 3.07 of the Metro Code, Metro 2003) provides tools for local governments in the Portland metropolitan area to help meet goals in the 2040 Growth Concept, Metro's long-range growth management plan. Title 3 (Metro Code Sections 3.07.310 - 3.07.370) of the *Urban Growth Management Functional Plan* is intended to address water quality, floodplain management, and fish and wildlife conservation in the region through the development of performance standards for the protection of streams, rivers, wetlands and floodplains. Title 3 specifically implements Oregon Statewide Planning Goals 6 and 7 by limiting encroachment into vegetated "water quality resource areas," and by requiring special provisions to prevent erosion and impacts on flood hazards. In addition to adopting performance standards, Metro also adopted a model ordinance that local governments can use to be in compliance with the Title 3 standards.

Title 3 implements Oregon Statewide Land Use Goals 6 and 7 by limiting encroachment into vegetated "water quality resource areas" and by preventing erosion and flood hazards.

The purpose of Title 3's water quality performance standards is to protect and allow enhancement of water quality. The key water quality provision requires a vegetated corridor along streams and around wetlands, with the corridor width based on the area drained by the stream and the topography of the area. For primary water features (which include perennial streams draining more than 100 acres, wetlands, natural lakes and ponds), the corridor ranges from 50 to 200 feet, depending on the slope. For secondary water features (which include intermittent streams) draining more than 50 acres, the corridor ranges from 15 to 50 feet. Metro's standards do not apply to perennial streams draining less than 100 acres or intermittent streams draining less than 50 acres. The performance standards require erosion and sediment control, planting of native vegetation on the streambanks when new development occurs and prohibition of the storage of uncontained hazardous material—for new uses—in water quality areas.

Title 3's performance standards to protect against flooding are aimed at limiting development in a manner that requires balanced cut and fill[6] and requires floor elevations of buildings and structures to be at least one foot above the flood hazard standard. The areas subject to these requirements are the Federal Emergency Management Agency (FEMA) 100-year floodplain and the area of inundation for the February 1996 flood; these areas have been mapped and adopted by the Metro Council. Metro also developed a *Water Quality and Floodplain Protection Plan* (Metro 2002b) that requires local jurisdictions to meet regional performance standards relating to water quality and floodplain management. The water quality and floodplain protection requirements apply only to new development and large redevelopment projects. The plan was adopted in November 1996 by the Metro Council but did not go into effect until a model ordinance and set of maps were adopted in June 1998.

Under the *Water Quality and Floodplain Protection Plan* (Metro 2002b), only native vegetation can be used to enhance or restore the health of vegetated corridors along the region's streams, wetlands and other water features. Metro's Native Plant List identifies the species of plants that are native to the metropolitan area and also those that are nonnative and considered nuisance species. The plant list is designed to do the following:

- Ensure the continued viability and diversity of native plant communities
- Promote the use of plants naturally adapted to local conditions
- Educate citizens about the region's natural heritage and the values and uses of native plants

The City's Response to Title 3

The foundation of the City's compliance with the water quality portion of Title 3 is found in overlay zones that protect Title 3 Water Quality Resource Areas along the Willamette River and tributary streams. The major components of this compliance package are

[6] Balanced cut and fill requires that any floodplain area that is filled with permanent material (such as emplacement of a bridge abutment) must be offset by an equal excavated area such that the net amount of floodplain storage is unchanged.

Environmental Overlay Zone Regulations and Greenway Overlay Zone Regulations, which are described below. The compliance package also includes other key City programs for stormwater management, the reduction of sewer overflows into the Willamette River and Columbia Slough, cleanup of the Portland Harbor, revegetation of degraded areas with native trees and plants, and funding of community stewardship projects. Together, these programs meet, and in many cases exceed, Title 3 performance standards.

Title 13 of Metro's *Urban Growth Management Functional Plan*

Metro recently adopted the Nature in Neighborhoods Program—Title 13 of the *Urban Growth Management Functional Plan*—to protect, conserve, and restore the Portland metropolitan region's fish and wildlife habitat. The program was developed in stages as follows:

- Step 1: An inventory was completed of regionally significant fish and wildlife habitat, which included conducting scientific research, listing criteria, mapping and ranking natural resources that provide riparian functions and riparian and upland wildlife habitat. Metro's inventory methodology was reviewed by an independent team of scientists.
- Step 2: The economic, social, environmental and energy (ESEE) impacts were analyzed. Metro's analysis identified the consequences and tradeoffs of protecting—or not protecting—inventoried natural resources.
- Step 3: Metro developed, adopted, and is implementing a program to achieve the goals of the planning effort. It emphasizes the balance of resource protections and economy and focuses on protecting, conserving and restoring high value riparian resources. The plan emphasizes strategies such as incentives, public education programs, acquisition, and stewardship, in addition to regulations.

Metro submitted Title 13 to the Oregon Department of Land Conservation and Development for acknowledgement in accordance with Oregon Administrative Rules pertaining to Goal 5. The City has applied environmental overlay zones that provide some level of protection for many of the resource areas that Metro included in the Title 13 Program. Portland and other Metro area cities and counties will be required to demonstrate substantial compliance with Title 13 requirements within two years from acknowledgement by the Oregon Department of Land Conservation and Development (estimated to be required by mid-2008).

The City's Natural Resource Inventory Update

The City of Portland has initiated an update to its existing natural resource inventories of streams, riparian areas and wildlife habitat within the watersheds of Johnson, Tryon and Fanno creeks, the Columbia Slough and the West Hills. This project is part of the City's River Renaissance vision for a clean and healthy Willamette River and tributary watersheds. The products of this work will be used to inform various activities to protect and restore natural resources and advance the City's compliance with regional, state and federal regulations, including setting land acquisition and restoration priorities, updating City regulations, and targeting public education efforts.

The City's Environmental Overlay Zone Regulations

Chapter 33.430 of Portland's Zoning Code governs proposed development in the environmental overlay zones. Environmental overlay zones apply to almost 20,000 acres of significant natural resources in Portland and urbanizing Multnomah County. The Environmental Protection Zone regulations restrict most types of development to protect the highest value resources. The Environmental Conservation Zone allows development that meets specific standards to reduce impacts on natural resources. Development standards include the following:

- Limits on disturbance in resource areas
- Setbacks from streams, wetlands and high-value resource areas
- Requirements for tree removal and replacement
- Native plant requirements
- Standards for land divisions

Together, the environmental zone development standards and approval criteria work to ensure that impacts on significant natural resources are avoided where possible or are mitigated where encroachment is unavoidable. The environmental zoning program is the City's primary tool for compliance with Goal 5 and serves the purposes of Goals 6 and 7. This program is also a significant component of the City's compliance with Metro Title 3 and will be central to the City's compliance with Title 13. The environmental zoning program is also a component of the City's Stormwater Plan and MS4 permit.

The City's Greenway Overlay Zone Regulations

Within the Willamette Greenway, the City has established the "n" and "q" overlay zones to protect natural resources and meet Metro's Title 3 water quality requirements. Applicants for development in these areas must go through special review procedures to avoid, limit and/or mitigate impacts on natural resources and water quality. The City has initiated a project called the River Plan that will result in an update to the Greenway Plan and codes. The new plan will also continue to serve as the City's program to comply with Goal 15 and Metro's Titles 3 and 13.

Other City Programs

A number of other City programs operate in concert with above-mentioned regulatory programs, including the City's Environmental and Greenway Overlay Zones. These include the City's Stormwater Management Program, water quality protection in the Columbia South Shore area, CSO reductions and the Portland Harbor cleanup.

Stormwater Management Program. The City's Stormwater Management Program requires all new and redevelopment projects to comply with a comprehensive set of regulations. Stormwater systems are required to remove pollutants, and in most parts of the City, ensure that flows are managed onsite. The program also encourages retention and enhancement of tree canopy through established "best management practices," and through regulations that

allot stormwater management credit for trees on properties and parking strips. Tree canopy is important for stormwater management because it intercepts precipitation and reduces or delays runoff to streets and storm sewers.

The City's stormwater management regulations apply to development in Title 3 Water Quality Resource Areas. Thus, these regulations help meet the intent and performance standards for providing a vegetated corridor; maintaining and reducing stream temperatures; minimizing erosion, nutrient and pollutant loading into water; enhancing infiltration; and providing natural water purification.

Columbia South Shore Water Quality Protection. The City of Portland regulates development to protect groundwater and surface water quality in the Columbia South Shore area. City code regulates land uses that typically involve the use of hazardous materials. The regulations are designed to prevent spills that would contaminate the City's backup drinking water wells. In so doing, the regulations also help meet Title 3 standards for protection of Water Quality Resource Areas in the Columbia Slough Watershed.

CSO Reduction and Portland Harbor Cleanup. The City's investments in reducing combined sewer overflows into the Willamette River and Columbia Slough also contribute to removal of pollutants from entering Protected Water Features. Portland's participation in the Portland Harbor cleanup will help identify sources of pollution that is conveyed to the Willamette through the stormwater system within the Superfund site.

Additional Programs. Voluntary programs such as the City of Portland's Watershed Revegetation, Community Stewardship, and Naturescaping for Clean Rivers programs support Title 3 standards that call for restoration of degraded Water Quality Resource Areas. These programs are managed by Portland's Bureau of Environmental Services and provide financial incentives and technical support to the community for proactive restoration of degraded areas.