Oregon Wetland Planning Guidebook



Oregon Department of State Lands
Oregon Department of Land Conservation and Development

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A Letter of Introduction

We are pleased to provide you with the *Oregon Wetland Planning Guidebook.* This guidebook will help city planners, planning commissioners, and citizens interested in coordinated planning for land uses in or near wetland and riparian areas in Oregon communities. Oregon has a policy to promote the protection, conservation, and best use of wetland resources. To assist local efforts, our two agencies have cooperated to integrate and coordinate the statewide land use planning program and state and federal wetland regulatory programs. The Department of State Lands provides technical assistance for identification and mapping of wetlands. The Department of Land Conservation and Development provides guidance for local comprehensive plan updates that inventory, and where appropriate, protect wetland and riparian areas. When incorporated into local comprehensive land use plans, the wetland and riparian inventories and local protection mechanisms provide reliable information and certainty for landowners interested in developing their property.

Wetlands perform many important functions in urban areas and are valued for the services they provide. Wetlands act as natural water purifiers by absorbing excess nutrients, bacteria, sediments, and other pollutants from water. Many wetlands can reduce the damages caused by flooding by absorbing and storing floodwater, and releasing it slowly after a storm. Some wetlands provide food or resting areas important to fish. Wetland protection can be coordinated with parks and open space to provide city dwellers with pleasant green spaces, where they can observe birds and other wildlife.

No new policies or requirements are created by this guidebook. Rather, it presents a thorough explanation of existing state administrative rules related to wetland planning. We hope you will find it to be helpful as you plan for conservation of the most important wetlands in your community.

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1.0 Introduction

1.1 Purpose

Oregon's wetland regulatory agency, the Division of State Lands (DSL), and Oregon's land use planning agency, the Department of Land Conservation and Development (DLCD), developed this guidebook to help you prepare a plan for your community's wetlands, while meeting the requirements of Statewide Planning Goal 5. The guidebook also provides guidance for addressing the wetland planning requirements in Goal 17, and describes the Wetland Conservation Plan (WCP) option.

Wetlands can be found in communities across the state of Oregon—from the relatively wet coastal environments of Astoria and Brookings to the dry rangeland of Burns and Pendleton. Regardless of the location, wetlands are valuable resources that provide a range of benefits including water quality protection and enhancement, flood control, groundwater recharge, and wildlife habitat. As wetlands are degraded or filled for development, their beneficial functions and values are greatly compromised or lost.

This guidebook is intended to serve as a reference to help local governments plan for the protection of wetlands and meeting the requirements of statewide planning goals, particularly Goal 5. This guidebook does not create any new policy; it only seeks to explain existing statutes and administrative rules. Background and reference information is provided as well as "how-to" tips to assist local government planners in developing inventories and protection ordinances. The guidebook will also be useful in explaining wetland planning requirements to elected and appointed officials, property owners, developers, and concerned citizens. This guidebook represents perspectives of the state agencies and of those that apply state policies and regulations. The contents have been shaped by DSL, DLCD, and municipal planners, in collaboration with a private-sector environmental consulting company (Shapiro and Associates, Inc.) with experience in wetland assessment, permitting, and community wetland planning.

Navigating Wetland Planning

This guidebook is a reference document designed to help local governments meet the requirements of Statewide Planning Goal 5. Goal 5 requires communities to develop a wetland protection plan.

Community wetland planning begins with a wetlands inventory and progresses through an assessment of the relative values of the mapped wetlands and a determination of significance. It then moves to an evaluation of the consequences of allowing impacts to significant resources, and results in development of protective measures. This guidebook will help you navigate through this process in your community.

1.2 Content and Organization

The guidebook consists of five chapters. Chapters 1 and 2 provide introduction and background information regarding the environmental and community benefits of wetlands, the state and federal requirements for wetland protection, and the state land use planning framework. Chapter 3 describes the process and requirements to complete a Local Wetland Inventory (LWI) and identify significant wetlands. Chapters 4 and 5 describe the steps and

City versus County Requirements

To complete the Goal 5 process, **cities** must conduct local wetlands inventories within the Urban Growth Boundary (UGB) and adopt appropriate protection programs. For urban areas that are under county jurisdiction (that is, parts of UGBs and any urban unincorporated communities, or UUCs), **counties** must do likewise. Other than that, Goal 5 does not require counties to conduct much wetland planning. However, if a county chooses to engage in wetland planning outside the UGBs and UUCs, it must follow the same procedures (see OAR 660-23-0100(b)).

choices involved in addressing the significant wetlands once identified. These chapters include an extensive discussion of the Goal 5 "standard process" including the Economic, Social, Environmental, and Energy (ESEE) analysis process; the "safe harbor" option; and program implementation strategies. The Appendices include examples from various stages in the process of wetland inventory and analysis, as well as a model wetland protection ordinance.

1.3 Why Plan for Wetlands?

Various benefits flow from a community-based plan to protect local wetland resources. Wetlands, like a community's forested areas or upland open spaces, benefit all residents. Wetlands hold at least as much value as these other natural resources, but their values are often underappreciated. This is why wetland conservation is emphasized in statewide planning rules and in state and federal permitting regulations. Without a community-wide plan for wetlands, decisions about each potential impact lack perspective and risk permanently losing a wetland function on the local landscape. Some of these losses have costly consequences. The following points are key reasons why your local government should have a wetland management plan. Details of the plan will depend on the unique needs of your community.

Point 1 — Wetland planning reduces uncertainty for future development

Wetland planning provides valuable information to landowners and the development community. Knowing in advance the location, size, and condition of wetlands in a community, and understanding the community's wetland protection program, will help developers identify and avoid sites that would require wetland permitting and/or higher development costs. Likewise, public works departments can use wetland inventories and protection plans to avoid or reduce impacts and costs for civic infrastructure projects such as roads and utilities.



Point 2 — Wetland planning provides adequate amounts of buildable land within the Urban Growth Boundary

Wetland planning plays an important role in the Oregon land use planning process. Planning Goal 14 requires that Oregon cities maintain a 20-year supply of buildable land within their urban growth boundaries (UGBs). It is critical that cities remove protected wetland areas from inventories of buildable lands. By maintaining an accurate and realistic inventory of buildable

land, communities can ensure that sufficient amounts of land will be available for development. If a city has adopted measures that permanently restrict development in a significant wetland, then the city may need to provide additional buildable lands to offset the reduction in the developable land supply (OAR 660-23-070).

Point 3 — Wetland planning enhances economic benefits from wetlands



The "quality of life" or amenity values provided by wetlands are reflected in residential market prices. The market value of properties near or with views of wetlands are often greater than the value of similar properties without wetlands. For example, developers in Corvallis have noted that residential lots adjacent to open space and/or wetlands have sold for as much as $40,000 more than lots without similar nearby amenities.

Point 4 — Wetland planning optimizes recreational, educational, and aesthetic values

Wetlands can provide valuable recreational and educational benefits. Many people enjoy passive or "non-consumptive" recreation such as bird watching and photography, and wetlands provide some of the best opportunities for these activities. Education groups use wetlands for a variety of outdoor learning activities that stimulate interest in sciences, literature, art, and other disciplines. Wetlands provide tranquil open space that contributes to individuals' sense of well-being. Wetland planning can protect these values for the community.

Point 5 — Wetland planning retains flood control and other hydrologic functions of wetlands



Many wetlands are situated where they can absorb stormwater, slowing runoff and reducing flooding. This function is easy to see in floodplains, where floodwaters spread over a broad area, often including wetlands. Where the water is slowed, it has less energy to damage stream banks or structures. It is harder to envision stormwater storage when wetlands are scattered throughout a watershed, but together many small sites can significantly reduce the total water volume—or peak flow—that a stream must carry during a storm. Thus even small sites far from a stream can help reduce flood damage. This function becomes relatively more important in urban areas, where large areas of impervious surface (rooftops and pavement) cause rapid runoff and high peak flows. In urban areas, repair of flood damages can

be very expensive, whereas wetland protection can be a relatively low-cost preventive measure.

Many wetlands are groundwater recharge sites. They absorb and hold surface water like a sponge and allow it to percolate slowly into the groundwater. The groundwater, in turn, is slowly released into streams, where it supports late summer base flows important to municipal, industrial, and agricultural users. In late summer, the base flow from groundwater is often critical to the survival of fish and other aquatic life in streams.

Point 6 — Wetland planning maintains or improves water quality of streams and lakes

Wetlands can help maintain water quality by filtering sediment and other pollutants from surface water. As much as 90 percent of solids suspended in water can be removed as the water flows through wetlands, resulting in cleaner water entering streams, lakes, and estuaries. Also, the soil chemistry of wetlands has a unique ability to transform certain nutrients and pollutants into forms that are less harmful to the water quality of adjacent streams or groundwater. Specifically, nitrogen and phosphorus are nutrients that, if not removed, can cause algae to grow abundantly in streams or lakes. Decomposition of excessive algae in turn reduces the dissolved oxygen in these waters, causing fish kills. Consequently, protection of wetlands is very important in areas where stream water quality is already poor.

The unique ability of wetlands to purify water has been used by various industries to treat their wastes. In many places, artificial wetlands have been specifically designed and constructed to treat wastewater polluted with heavy metals or hydrocarbons. Communities such as Arcata, California, have used constructed, artificial wetlands for wastewater treatment for decades.

Wetland plants and animals have evolved over time to accommodate natural rates of sediment deposition and nutrient inputs. In urban settings, runoff containing large amounts of sediment, fertilizers, pesticides, or other pollutants may overwhelm these organisms. In urban settings, therefore, some pretreatment of runoff may be necessary to protect the ability of wetlands to continue to provide good water quality functions. Fortunately, wetlands and streams are very resilient and can heal themselves over time if excessive sediment or pollutants can be controlled.

Point 7 — Wetland planning conserves aquatic and terrestrial plants and animals

The setting of a wetland in the landscape combines components from both upland and aquatic ecosystems, resulting in biological productivity and diversity that is potentially greater than that in

either of the other two systems alone. The abundance of water and fertile soils in wetlands creates ideal growing conditions for plants, the foundation of all food chains. The total production in pounds (or tons!) of plant matter per acre is higher in wetlands than in any other natural ecosystem. In turn, the high plant production supports an abundance of other organisms that move out into other areas.



Some wetlands provide year-round or seasonal habitat for wildlife and plant species that are completely dependent on the wetland habitat for all or part of their life cycle. These species, in turn, support other species, both terrestrial and aquatic, that would be diminished by loss of the wetland habitat. For example, nearly two-thirds of the commercially important fish and shellfish species are dependent upon estuarine wetland habitats for food, spawning, and/or nursery areas. Wetlands support a crucial stage of development for most of the fish species in Oregon that are currently listed as Threatened or Endangered under the federal Endangered Species Act (ESA). Without adequate wetland resources, these populations cannot recover in the wild. Similarly, millions of waterfowl, shorebirds, and other birds depend on wetlands. In semiarid eastern Oregon, riparian wetlands and springs are crucial to the survival of many birds, amphibians, and mammals, even if they spend most of their time elsewhere. Thirty-five percent of the federally listed Threatened or Endangered plants in Oregon are either dependent on or usually found in wetlands. The proportion is the same nationally, even though wetlands comprise only about 5 percent of the land area.

Biologically, wetland loss results in the loss of both wetland species and upland species. The abundance and diversity of plant and animal life makes wetlands and other natural open spaces in our towns and cities more rich and more interesting for educational, scientific, recreational, and aesthetic pursuits.

Point 8 — Wetland planning yields better protection of wetlands than regulations

When a new project poses a major impact to a wetland, state and federal wetland regulations are implemented. Regulators, however, do not have authority to coordinate between several unrelated impacts to a wetland that may take place over time. When a permit is issued, the mitigation of those losses may occur at a different location. It is often hard to recognize the contribution of small, fringe wetlands to the function of the overall site, giving rise to piecemeal losses.

With city-wide wetland planning, on the other hand, the community has an opportunity to recognize the functions and values of the larger wetland resource within the watershed. The LWI provides information in advance of development about the location and values of wetlands that may be important to local quality of life. Watershed councils, neighborhood groups, and individual citizens may participate in the Goal 5 planning process to identify the potential long-term benefits and trade-offs of protecting individual wetlands where they live. These may be the same citizens engaged in future stewardship or acquisition of protected wetland sites. Through local protection ordinances, local voices have more say in fill permit decisions—the DSL will not issue a permit for fill that is not allowed by the local comprehensive plan. In addition, making the LWI map available raises awareness of the wetland resource, so that there are fewer inadvertent wetland fill violations.



1.4 How to Select an Approach — Objectives and Strategies

The process of developing a wetland planning program includes sociological, political, and scientific components, which can be a challenge to juggle. With this in mind, it is important for a community to establish an overall strategy for development of the program. This section provides suggestions on scoping your options for various parts of the process.

1.4.1 Scoping the Public Involvement Needs

Before you begin the wetland planning process, think about the values and level of support for wetland protection in your community. The results of this analysis will have a direct influence on what strategy you select. Building a base of stakeholders and community leaders that supports the wetland planning effort will contribute greatly to the success of your program. The following items may help you determine the appropriate public involvement approach for your community:

- How many wetlands have already been impacted?
- How controversial were proposed wetland fills?
- Have wetland issues set back county or city public works projects in recent years?
- Which groups opposed or supported wetland alteration?
- What is the level of local awareness of wetland values (for example, in flood prevention)?

- Has there been resistance to land inventory or inspection activities by public staff on private property?
- How much does the community know about where its wetlands are?
- What amount of funding and staff can the community commit to a wetland planning process?
- How much support is there presently for wetland planning from the City Council, County Commissioners, Planning Commission, etc.?
- What kind of public involvement process might work for this community? How extensive should it be? Should you consider establishing a new citizen committee or a technical advisory committee?
- What materials are available to assist with public outreach for this process (e.g., handouts, workshop materials)?
- Are there watershed councils, "friends of the stream" groups, land trusts, or other parties or individuals who may assist in the wetland planning process by serving as an information clearinghouse or by providing outreach to affected stakeholders?

The public involvement process will provide information pertinent to later choices. Many communities begin their Goal 5 wetland planning task expecting to apply the safe harbor provisions across the board (safe harbor is a "short cut" option under Goal 5) Public feedback, however, may bring difficult spots to light, leading the community to use the more-thorough "standard" Goal 5 approach where needed. These options will be explained in Chapter 4.

1.4.2 Scoping the Inventory

The local wetlands inventory process and the determination of wetland significance are relatively straightforward procedures that are set forth in the Oregon Administrative Rules (OAR), 141-086-0180 through 0240, and 141-086-0300 through 0350. Key questions include:

- How much land will be inventoried? Ideally the whole UGB or urban unincorporated community (UUC) will be inventoried at once.
- Do lands *outside the city limits but within the UGB* need to be inventoried? If so, city planners will need to coordinate this effort with county planners or planners from adjoining jurisdictions.
- What staff resources are available to conduct the inventory? Do they have the required technical expertise? Will you need to hire consultants?

- What funding sources are there for the project? Are grants available? Does the grant require a local match?
- Would a WCP be a better match for your community's needs? (There are different inventory requirements; see Section 5.7.)
- Are there efficiencies to be gained by working concurrently on other Goal 5, 6, 7, or 17 tasks?

1.4.3 Scoping the Goal 5 Wetland Planning Process

Prior to initiating an inventory, consider what approach you will use to develop and implement your Goal 5 program. Statewide Planning Goal 5 requires that the community make decisions about protection of the inventoried wetlands. These decisions lead to a "program" to carry out the intent of Goal 5. The Goal 5 administrative rule (Chapter 660, Division 23, see Appendix B) provides choices for how a program is developed.

Chapters 4 and 5 of this guidebook describe the steps involved once the wetland inventory is complete. In brief, the **standard** Goal 5 approach requires an analysis to identify land uses that conflict with the wetland values, and to determine the Environmental, Social, Economic, and Energy consequences of resource protection options (ESEE analysis) and of allowing the conflicting uses. The protection program must resolve the identified conflicts. Usually this analysis results in a zoning ordinance that protects most significant wetlands, and may include wetland protection setbacks or buffers. The ESEE analysis may also identify certain wetlands where the benefits of development clearly outweigh the benefits of protection. In this instance, a comprehensive plan and zoning provisions may specifically allow the conflicting use for that wetland unit. The ESEE analysis has the potential to be time consuming and costly as individual ESEE findings are developed for each wetland or group of associated wetlands.

A second option under the Goal 5 rule is the **safe harbor** approach. This avoids the ESEE analysis but generally requires that all significant wetland resources be protected. Because the safe harbor approach is more prescriptive and does not involve extensive weighing of community values, it is usually a much cheaper way for local governments to meet Goal 5 requirements, but it is also less flexible.

A third option **combines** the safe harbor and standard Goal 5 processes. Under this approach, the safe harbor is generally used as much as possible because it is simpler or cheaper, and the standard process is used selectively as needed to resolve conflicts with particular wetland units. When combining approaches, it is important that the same approach—safe harbor or standard—be applied uniformly across any distinct wetland unit, or group of associated wetlands. See Section 4.6 for further details.

1.4.4 Flexible Approach

It is important to maintain flexibility in developing an approach to wetland planning. Many communities may want to use the safe harbor approach but may later find that an ESEE analysis is needed for some resource sites. Other communities may want to initiate ESEE analyses for all sites. The approach will depend on the extent of significant wetlands present, community values, public involvement, amount of controversy, and the amount of funding and staff time available for the study. The approach you take for satisfying the requirements of other statewide planning goals (e.g., 6, 7, or 17), and/or planning undertaken to address endangered species in your community (such as the ESA 4(d) rule) may also influence the selection of your Goal 5 approach. By maintaining some degree of flexibility throughout the process, a community can make necessary adjustments to address key issues or problems.

For Further Information

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2.0 Planning and Regulatory Framework

2.1 Introduction

This section describes the statewide land use planning framework for wetlands, including the administrative rules that define the process and the roles of state agencies and local governments. Unlike most other natural resources, wetlands are the subject of very specific regulations at both state and federal levels. Even though this guidebook focuses on the Oregon rules requiring local governments to plan for protection of significant wetlands, planners also need to be aware of the regulations that control wetland filling in Oregon. This chapter gives an overview of both sets of wetland-related regulations.

The regulations of two state agencies—DLCD and DSL—guide wetland planning in Oregon, and these are summarized below. Next, this chapter provides an overview of the major federal (U.S. Army Corps of Engineers) and state (DSL) wetland fill permit regulations. It also describes the other state and federal agency roles and responsibilities in wetland planning and permitting activities, including comments on endangered species. Citations for the various statutes and administrative rules that authorize each of these elements are provided in Tables 2-1 and 2-2.

Regulations Terminology

Oregon Revised Statutes or **ORS**s—these are laws passed by the state legislature.

Oregon Administrative Rules or **OAR**s—these are the more detailed procedures by which state agencies implement the laws. Agencies develop and adopt these rules through formal procedures that include public review.

A list of acronyms for various agencies is in Appendix A.

2.2 Oregon Planning System

Planning in Oregon is based on a set of 19 statewide land use planning goals adopted by the Land Conservation and Development Commission (LCDC). The statewide planning program was established by Senate Bill 100 in 1973. It requires that each local government adopt a comprehensive plan and implementing ordinances that are consistent with the statewide goals. Planning for wetlands and other natural resources is required by Statewide Planning Goal 5 (as well as by other goals; see below). The comprehensive plans of local governments must be updated through the state's periodic review process. This section describes the framework established by the statewide planning program and how it pertains to wetlands.

More than One Guidebook?

DLCD and the Oregon Department of Environmental Quality (DEQ) recently developed the Water Quality Model Code and Guidebook* (WQMC), which also addresses wetlands as elements essential to sustaining good water quality. A word of distinction: the WQMC was intended to present the current understanding of protection levels needed to meet federal Clean Water Act and ESA standards, in addition to satisfying statewide planning Goal 6 (Air, Water and Land Resources) and Goal 5. By contrast, the current guidebook is intended to explain the Goal 5 requirements pertaining to wetland planning. This specific objective has produced a model wetland protection ordinance (Appendix G) better tailored to the requirements of Goal 5. Communities should consider that the wetland ordinance in the WQMC and that in Appendix G represent similar and complementary tools to help craft local wetland and water quality protection programs.

**Produced by DLCD and DEQ, rev. April 2001. Available in hard copy and CD, as well as on the DLCD Web site: http://www.lcd.state.or.us/coast/waterguidebook/watergb.html.*

2.2.1 Statewide Planning Goals and Natural Resources

The 19 statewide planning goals reflect Oregonians' desire to provide orderly urban and rural development and to conserve the state's natural resources. The goals reflect five general themes:

- planning for people (Goals 1, 2);
- protecting farm and forest lands (Goals 3, 4);
- managing urban and rural development (Goals 7 through 12, 14);
- protecting natural resources (Goals 5, 6, 13, 15); and
- managing coastal and ocean resources (Goals 16 through 19).

A summary of the statewide planning goals is provided in Appendix C. Additional information may be found at the DLCD Web site (http://www.lcd.state.or.us).

As noted in the groupings above, various goals address conservation of natural resources. Goal 5 addresses wetlands (along with riparian areas, wildlife habitat, and cultural resources), and the Goal 5 administrative rules establish the procedures for wetland planning. Other statewide goals may intersect with wetland protection issues. For example, a number of communities have established protective setbacks along streams and drainageways to protect water quality (Goal 6) and to avoid natural hazards (Goal 7). These setbacks may have the added benefit of wetland protection. However, any wetland protection provided via Goal 6 or Goal 7 may overlap with, but does not necessarily satisfy, a local government's obligation to address Goal 5 planning requirements.

Two coastal goals also address wetlands. Goal 16 requires a management plan for coastal estuaries. The Goal states that local governments "shall protect" estuarine wetlands within the boundaries of the estuary. Goal 17, the coastal shorelands resources goal, lists wetlands among shoreland resources that must be considered for conservation. The Goal states that local governments "shall protect" wetlands within the shoreline boundary (generally west of Highway 101) that are considered significant (also known as "major marshes" under Goal 17 terminology). Goal 17 does not provide a process to choose between resource conservation and conflicting uses; it requires protection for all significant wetlands in the shorelands area. Sections 4.9 and 5.6 of this manual go into more detail on how to satisfy the coastal goals as well as the Goal 5 wetland planning requirements.

Statewide planning Goal 1 requires local governments to adopt a program to involve citizens in the planning process. It is impor-

tant to provide the opportunity for citizens to be involved throughout wetland planning efforts from the initial inventory to the adoption of a protection program. Depending on the level of public interest, this may include formation of a citizen advisory committee, development of a project newsletter or Web site, or sponsorship of informational open houses. Public involvement requirements and suggested input points in the process are discussed in chapters 3 through 5.

Incidentally, Goal 2 (OAR Chapter 660, Division 4) provides an exception procedure for most statewide goals that allows goal requirements to be waived for special circumstances. However, this exception process does not apply to Goal 5 resources. The ESEE process provides for the consideration of exceptional circumstances.

2.2.2 The Goal 5 Administrative Rule

The Goal 5 administrative rule is central to wetland planning across the state. It provides three different routes to satisfy the wetland planning requirement:

(1) the standard approach, which includes an analysis of conflicting uses of each significant wetland and allows flexible decisions based on this analysis;

(2) a "safe harbor" approach, which shortcuts the analysis step and protects all significant wetlands; and

(3) an intensive, integrated approach called a Wetland Conservation Plan (WCP) (see Section 5.7).

The rule establishes specific procedures to complete the standard approach, including the Environmental, Social, Economic, and Energy consequences (ESEE) analysis. The rule likewise outlines the minimum inventory and protection requirements for wetlands under safe harbor provisions. Chapters 4 and 5 provide detailed guidance for following the rules for standard and safe harbor wetland planning. The WCP option is addressed in separate rules (see discussion in Section 5.7). Due to the detailed inventory, analysis, and ordinances developed in a WCP, this option is deemed to satisfy Goal 5 requirements (per OAR 660-23-0100(8)).

The authors of the Goal 5 language split the rule into discrete elements or resource types. These related natural resources can be addressed as part of a single or coordinated planning effort. The applicability section of the rule requires cities to address three Goal 5 categories at periodic review: wetlands, riparian corridors, and wildlife habitat. This manual deals primarily with wetland planning requirements. However, DLCD and DSL recommend that local governments address wetland planning issues at the

same time as related issues, especially riparian resources and wildlife habitat.

2.2.3 Local Comprehensive Plans

Under the statewide planning goals, local governments are responsible for inventorying wetlands and developing a Goal 5 program to protect wetlands. As a first step, cities and counties conduct natural resource inventories to document existing conditions. These inventories become adopted as part of the comprehensive plan. (Chapter 3 will go beyond the following overview to provide detailed guidance on conducting wetland inventories and determining significance.)

The foundation of wetland planning is the LWI, which includes a comprehensive survey and map of all wetlands in the study area, usually the entire UGB or UUC, and a document compiling key information about each site. The inventory must provide sufficient information to support local wetland planning decisions, and present the information in a manner accessible to citizens. For these reasons, a set of specifications for LWI products was established as a state administrative rule. (Table 2-1 cites the rules referenced in this section.)

In addition to the wetland locations and descriptions, local planners will need information on what functions and values each wetland provides. This assessment of wetland qualities is conducted concurrently with, and is part of, the inventory. To determine which wetlands are "significant" for local planning purposes, the 1995 legislature directed DSL to establish criteria, and these also were adopted as administrative rules.

To complete the Goal 5 process, the local government must adopt wetland protection policies into the comprehensive plan and the implementing ordinances. These policies and ordinances will guide development and resource protection in the community. It is possible that the resulting local protection program may include features (for example, setbacks) that provide greater wetland protection than that afforded by the state or federal permitting regulations (discussed in next section).

Under the statewide planning program, municipalities with populations over 2,500 must periodically review their plans for lands inside the urban growth boundaries. Smaller cities may also choose to do so. Before beginning the "periodic review" process, local governments work with DLCD to develop and adopt a work program that specifies which planning tasks must be completed in the course of the review. The periodic review work tasks may be supported by grants available from DLCD (see Appendix H) or other sources.

Table 2-1. Wetland Planning (Proactive, Long Range, Broad Scale)

Agency Responsibilities and Legal Authorities		
Local Government	**State**	**Federal**
■ City and county planning requirements under Goal 5: for wetland inventories (OAR Chapter 141, Division 86), and for comprehensive plan policies & implementation ordinances (Chapter 660, Division 23) ■ Public involvement program (Goal 1 – OAR Chapter 660, Division 15) ■ Specific authorities for Metro (OAR 660-23-0080, also section 4.11 of this guidebook) ■ City versus county wetland planning requirements (OAR 660-23-100(5) and (6)) ■ Administer and enforce Goal 5 wetland program once adopted into local comprehensive plan (Authority of local comprehensive plan)	**DSL** – Provides: ■ Technical assistance with the LWI process; ■ Assistance with public information meetings on wetland planning; ■ Formal review and approval of LWIs to ensure compliance with OAR 141-86-180 through -240. **DLCD**: ■ Provides technical assistance to planners, possibly including grants; ■ Reviews local comprehensive ■ Administers periodic review; ■ Reviews local ordinance language. **ODFW** – Advisory role on wetland planning. **DEQ** – May provide Section 319 grants to help restore and protect wetlands.	**EPA** – Occasionally provides wetland planning grants to state, local, or tribal governments. **Corps** – May authorize a special area management plan (SAMP) in concert with a WCP. **NOAA** – May occasionally include funds to support coastal communities' wetland planning efforts as part of its annual grant to the Oregon Ocean-Coastal Management Program (within DLCD).

Corps—U.S. Army Corps of Engineers

DEQ—Oregon Department of Environmental Quality

DLCD—Department of Land Conservation and Development (**http://www.lcd.state.or.us**)

DSL—Division of State Lands (**http://www.oregonstatelands.us**)

EPA—Environmental Protection Agency

NOAA—National Oceanic and Atmospheric Administration

ODFW—Oregon Department of Fish and Wildlife

See DSL & DLCD Web page addresses above for copies of their cited ORS and OARs.

The 1996 Goal 5 rules mandate that local governments conduct wetland planning tasks at or before the time of the next periodic review. Thus, the wetland inventory and planning steps described in this manual are typically undertaken as a part of the periodic review process for a local comprehensive plan, though these plans may also be amended outside of periodic review.

2.3 Wetland Fill Regulations

In addition to the statewide planning requirements described above, certain activities in wetlands are regulated at federal, state, and local levels. These regulations minimize and control the loss of wetlands and associated functions on a project-by-project basis. Those applying for a wetland fill permit must provide details to the state and federal regulatory agencies (DSL and Corps) describing how the project will affect a wetland, how the project design has minimized the impacts, and how any remaining wetland impacts will be mitigated. In Oregon, there is one application form—called the "Joint Permit Application"—to apply for both a state and a federal permit for activities in wetlands. The state and federal agencies share a goal of no net loss of wetlands, and must determine that each permit issued is consistent with the specific requirements of the respective laws they administer. Local governments must review and sign off on these permit applications to ensure the proposals are consistent with the locally adopted comprehensive plans.

2.3.1 Federal Wetland Regulations

Several federal agencies have a role in wetland regulation, including the Environmental Protection Agency (EPA), Corps, U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) Fisheries, and Natural Resources Conservation Service (NRCS).

The EPA administers the Clean Water Act. Section 404 of the Clean Water Act regulates discharges into Waters of the United States, which includes discharge (placement) of fill into many, but not all, wetlands. The EPA has delegated implementation of Section 404 permitting to the Corps, but retains oversight of the program.

In Oregon, the Corps' permit program is substantially parallel to the state permit program. Efforts are underway to further streamline the federal-state coordination, and reduce duplication of permit handling. The Corps also has regulatory authority over dredge and fill activities in navigable waterways from Section 10 of the Rivers and Harbors Act of 1899.

When reviewing applications to permit activity in federally regulated wetlands, the Corps circulates copies of the application

Table 2-2. Regulating Activities in Wetlands (Reactive, Short Range, Project Specific)

Agency Responsibilities and Legal Authorities

Local Government	State	Federal
■ Reviews DSL/Corps wetland fill permit applications provided by applicants and certifies consistency of project with local comprehensive plan. If inconsistent, neither DSL nor the Corps can issue the permit. ■ Sends wetland land use notification to DSL (ORS 227.350 for cities, ORS 215.418 for counties, and OAR 660-23 -100(7)). ■ May condition local development approvals on applicant securing all necessary state/fed permits.	**DSL** – Administers state permitting program regulating removal and fill in wetlands (ORS 196.800, OAR 141-85-005 et seq.), and responds to wetland land-use notifications from local governments. **DLCD** – Reviews wetland fill and removal permit applications in the coastal zone for both state (DSL) and federal (Corps) permits (ORS 196.825; Coastal Zone Management Act of 1972). Without a coastal consistency determination from DLCD, the Corps (federal agency) cannot issue a fill permit. **ODFW** — May comment on proposed state and federal wetland permits (ORS 196.825, and the federal Fish and Wildlife Coordination Act). **DEQ** – Reviews state and federal wetland fill and removal permits; provides Water Quality Certifications (Section 401 of Clean Water Act).	**Corps** – Responsible for Clean Water Act Section 404 permits (discharge into wetlands) and Rivers and Harbors Act Section 10 permits (navigational impacts in waterways). Must consult with NOAA Fisheries or USFWS on any Corps permit application that might affect an ESA-listed species (Section 7, ESA). **NOAA Fisheries & USFWS** – Conduct ESA consultations when a proposed activity with a federal "nexus" could affect a federally listed threatened and endangered species or habitat (Section 7, ESA). A federal wetland permit may trigger this consultation. (See also USFWS/NOAA Fisheries ESA Consultation Handbook at USFWS Web site.) **EPA, USFWS, NOAA Fisheries** – Aside from ESA issues, these may comment on any Corps permit applications (circulated to them under the federal Fish and Wildlife Coordination Act, 16 U.S.C. 661 et seq.). EPA enforces Clean Water Act in absence of a Corps permit. **NRCS** – Administers farm bill programs affecting agricultural use of wetlands (National Food Security Act).

Corps—U.S. Army Corps of Engineers
DEQ—Oregon Department of Environmental Quality
DLCD—Department of Land Conservation and Development
DSL—Division of State Lands
EPA—Environmental Protection Agency
ESA—Endangered Species Act
NOAA Fisheries—National Marine Fisheries Service
NRCS—Natural Resources Conservation Service
ODFW—Oregon Department of Fish and Wildlife
USFWS—U.S. Fish and Wildlife Service

to commenting parties. This review is required under the federal Fish and Wildlife Coordination Act. Both USFWS and NOAA Fisheries can comment on a proposed wetland activity during this phase of application review. These agency comments are not binding, but the Corps may consider them when deciding whether or how to permit a wetland activity. The Corps will often require a modification of project design or place special conditions on permit approval.

Another element of the Clean Water Act, Section 401 (water quality certification), is administered by the Oregon Department of Environmental Quality (DEQ) for wetland activities that require a Corps permit. The Corps circulates the permit application to DEQ and DLCD as it does to USFWS and NOAA Fisheries. The Corps must gain concurrence from DEQ (a Section 401 Water Quality Certification) and in coastal areas, from DLCD (a coastal consistency determination) prior to issuing a permit.

Another federal agency, the NRCS, administers wetland programs on agricultural land according to provisions in the National Food Security Act (also known as the "swampbuster" provisions of the Farm Bill) and through agreements with the Corps. However, the NRCS is rarely involved with urban wetlands. When a nonagricultural use is proposed for agricultural wetlands, the Corps usually handles permitting and enforcement.

Federal ESA – Links to Wetland Regulations

The ESA's purpose is to conserve "the ecosystems upon which endangered and threatened species depend" as well as the listed species.

Listed species are protected against "take" and "harm" (defined in Section 9 of ESA). These terms are interpreted to include harassment or kill of individuals, as well as *harm to their habitat.* Many listed species are dependent on wetland habitats.

Any project for which there is federal involvement must be evaluated for its potential to take or harm listed species (under Section 7 of ESA). Examples include issuing a federal permit such as a Section 404 (wetland fill) permit, or using federal funding for a project. Civil or criminal penalties may result from take or harm to listed species, and the ESA has provisions for third-party lawsuits (Section 11, ESA).

2.3.2 Federal Endangered Species Act (ESA) and Wetland Regulations

The possible linkages between wetland planning activities and the ESA are addressed in Section 4.10 of this document. Here, however, we point out that ESA requirements may also come up in the course of applying for a wetland permit.

Section 7 of the ESA says that if any federal agency proposes to conduct, fund, or issue a permit for an activity that may involve habitat for a listed threatened or endangered species, a federal "nexus" is established, and the USFWS and/or NOAA Fisheries (depending on the listed species involved) must review the project. The trigger for this "Section 7" review by NOAA Fisheries or USFWS can be a federal wetland permit (e.g., Corps 404 permit discussed in previous section). NOAA Fisheries conducts Section 7 consultations if the potentially affected species is a marine or anadromous fish or a marine mammal. USFWS conducts the Section 7 consultations for all other federally listed threatened or endangered species, including plants. (See USFWS Web site listed at end of chapter for more information on Section 7 consultations).

2.3.3 The State Endangered Species Act and Wetland Regulations

The State of Oregon may list a species as endangered that does not occur on the federal threatened or endangered list. The Oregon Department of Fish and Wildlife (ODFW) and the Oregon Department of Agriculture (ODA) administer the State ESA and the State Sensitive Species List. ODFW is responsible for animals (except freshwater invertebrates, insects); ODA is responsible for plants. The Oregon Natural Heritage Program tracks the location of rare, threatened, or endangered federal and state listed species.

Protections for species listed only by the state ESA apply only to state-owned lands and waters. However, DSL must review permit applications for both state and federally listed species to ensure that permitted projects won't harm listed species.

2.3.4 State Regulations for Wetland Permits

Oregon's Removal-Fill Law directs DSL to regulate removal or placement of fill in "Waters of the State." These are defined in statute as "natural waterways including all tidal and nontidal bays, intermittent streams, constantly flowing streams, lakes, wetlands and other bodies of water in this state, navigable and nonnavigable..." (ORS 196.800).

State and federal agencies use the same definition of what constitutes a wetland, but there are some differences in jurisdiction. For example, the federal Corps may not regulate certain isolated wetlands under Section 404 of the Clean Water Act, but DSL does regulate them under the Removal-Fill Law. Conversely, DSL may not regulate removal or fill in wetlands if the total material is less than 50 cubic yards and exempts certain artificial wetlands. But the Corps may have jurisdiction in these instances.

ODFW and DEQ do not have direct permitting authority on wetland fills, but review and provide technical advice on wetland applications. The Oregon DSL gives notice of the permit applications to ODFW and DEQ, among other agencies, for suggestions on reducing impacts to fish, wildlife, and water quality. DLCD also reviews state wetland permits to determine that they are consistent with the land use planning goals and local comprehensive plans in coastal areas. DSL considers these agency responses when deciding whether or how to permit a project in a wetland. A project is usually permitted with design modifications and/or special conditions. As long as a project proposal can be modified to meet regulatory criteria, the permit is generally issued. Less than 2 percent of state wetland fill permit applications are denied.

2.3.5 Wetland Permit Coordination with Local Governments

In Oregon, there are two coordination mechanisms between local governments (usually the planning office) and wetland permitting (See Table 2-2). The first, called Wetland Land Use Notification, requires cities and counties to check their LWI map, or the National Wetlands Inventory (NWI) map (if an LWI is not available), and notify DSL of any applications received locally for activities that might impact a mapped wetland. DSL reviews the information and additional maps, and within 30 days notifies the local government, the applicant, and the landowner, if different, if a state removal-fill permit may be required. DSL has further information about this process in the wetlands section of their Web site (http://statelands.dsl.state.or.us).

The second coordination mechanism is built into the Joint Permit Application for a wetland permit. The joint application includes a signature block where the local planner must certify that the proposed project is consistent with the local comprehensive plan, or that consistency cannot be determined until a stated local approval is obtained. Local governments may issue local approvals contingent on the applicant securing any necessary state or federal permits. However, in practice, applicants often seek both local and state approvals simultaneously, and they may modify the proposed project in response to initial review comments. In the context of wetland planning, this signature block would help signal a situation where a project is proposed in a location with a wetland protection overlay zone. Although federal, state, and local government approvals of permits affecting wetlands are not always perfectly coordinated, it remains the applicant's responsibility to ensure that the final project design is in compliance with both local codes and state and federal regulations.

2.3.6 Conclusion

In summary, the various agencies responsible for processing permits for individual projects have limited ability to consider larger scale community needs or values. Only through an adopted Goal 5 wetlands plan can a community impose its local control and tell the agencies not to issue a fill permit that is contrary to its plan. The wetland planning rules described in this guidebook will help ensure that the community's wetlands plan is well designed and defensible.

For Further Information

Elder, Don et al. 1999. *The Clean Water Act: An owner's manual*. Portland, Ore. URL http://www.rivernetwork.org/

Metro Growth Management Services Department. 1999. *Development of measures to conserve, protect and restore riparian corridors in the metro region: "Streamside CPR."* Portland, Ore. URL http://www.metro-region.org/habitat/habitat_goals5.html

National Oceanic and Atmospheric Administration (NOAA) Fisheries Northwest Regional Office URL http://www.nwr.noaa.gov/. Info on salmon listing status and maps, and "Pacific Salmon and the ESA" may be found at URL http://www.nwr.noaa.gov/1salmon/salmesa/index.htm.

Natural Resources Defense Council (NRDC). 1999. *Stormwater strategies: community responses to runoff pollution*. Washington, D.C. URL http://www.nrdc.org/nrdcpro/

Oregon Department of Agriculture. "Agriculture water quality management program." URL http://www.oda.state.or.us/Natural_Resources/sb1010.htm

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Oregon Division of State Lands. *Fact Sheets.* URL http://statelands.dsl.state.or.us/wetlandfacts.htm
- "Choosing and using a wetlands consultant" (to develop a wetland permit application)
- "About compensatory mitigation for wetland impacts"
- "How to identify wetlands"
- "How are wetlands and waterways regulated?"

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U.S. Fish & Wildlife Service. "Consultations with Federal Agencies." URL http://endangered.fws.gov/consultations/index.html

Water Resources Department. 1997. *Water Rights in Oregon*. Salem, Ore. URL http://www.wrd.state.or.us/

Watershed Professionals Network. 1999. *Oregon watershed assessment manual*. Salem, Ore. Prepared for the Oregon Watershed Enhancement Board. URL http://www.oregon-plan.org/status.html

3.0 Conducting Local Wetland Inventories and Determining Significant Wetlands

State administrative rules standardize these steps for wetland planning in Oregon. The technical requirements of an LWI are found in OAR 141-086-180 through 141-086-240 and are described briefly in the section below. The criteria for identifying locally significant wetlands (LSWs) are in OAR 141-086-0300 through 141-086-0350, and are discussed in Section 3.2. A separate and lesser used option to meet Goal 5 wetland planning requirements is the WCP, addressed in Section 5.7 of this document.

3.1 Local Wetland Inventories



The initial step a city must take to begin the process of wetland planning is to conduct a detailed inventory of its wetlands. Without knowledge of the resource itself, planning for its protection would be impossible. The LWI must identify three things: the location, quantity, and qualities of the wetlands. The inventory can be used immediately after approval by DSL for advanced identification of potential development conflicts, as is required by the wetland land-use notification process described in the previous chapter.

The LWI provides the factual basis for determining significant wetlands. After completing the inventory and assessing wetland functions and conditions with the Oregon Freshwater Assessment Methodology (OFWAM), communities must determine the significance of local wetlands using specified criteria. Only those inventoried wetlands determined to be significant will be considered in the next step of the process, the planning analysis stage.

3.1.1 Getting Started

To begin your wetland planning effort, you'll need to assess the scope of the project in terms of time, skills, staffing, and funding. Review the technical specifications in the LWI rules, consider your strategy for the subsequent planning steps described in the next

two chapters, and consider your public involvement strategy. Determine whether the necessary skills and time are available using existing staff and decide which elements of the project may need to be contracted out.

Grants may be available for wetland inventory and planning efforts. Appendix H provides funding suggestions, but is not an exhaustive list. Occasionally, wetland consultants will be willing to help you develop a scope and budget for the LWI proposal as a *pro bono* service to your community. DSL can also provide assistance with work scope and product definition.

If you are successful in obtaining additional funding, or choose to fund this work with city or county revenues, you will likely need to select a consultant to perform the scientific inventory and assessment of wetland functions and conditions. DSL maintains a list of these consulting firms. You may also choose to contract for assistance with the Goal 5 planning tasks, which could be with the same or a different consulting firm.

For the wetland inventory component, it is important to employ a specialist with wetland delineation experience. DSL recommends that the request for proposals (RFP) and the contracts for the work specify that the products meet the LWI rule specifications. Timing of the LWI is important, with the preferred inventory season being spring or early summer when wetlands are easier to identify. A meeting between the local planner, the selected consultant, and DSL staff is recommended to clarify responsibilities for each step of the inventory, to get any policy updates, and to answer any questions. Additional meetings with elected officials or key interest groups may be beneficial at this step. The following steps will generally involve local staff and the consultants contracted to perform specific work.

Typical LWI Process

- Secure funding
- Write RFP and select contractor(s)
- Prepare reference materials, notification, for public meetings. Hold public meeting
- Conduct field inventory, mapping, OFWAM
- Analyze and synthesize data
- Produce maps
- Arrange DSL review and second public meeting
- Revise LWI
- Obtain final DSL approval
- Adopt LWI into comprehensive plan
- Notify affected landowners

3.1.2 Gathering Existing Information and Preliminary Mapping

An initial step in the wetland mapping process is to review whatever data exists that may indicate the probable location of wetlands. Required sources include: NWI maps, NRCS soil survey maps, Federal Emergency Management Agency floodplain maps, recent aerial photographs, and wetland determinations and delineations from DSL files. A base map is prepared, which should include roads, streams, and parcel lines. Field maps are then prepared by plotting the location of wetlands from the NWI maps and DSL files onto the base map, as well as the location of other potential wetland sites that have been identified through analysis of aerial photos, the soil survey, and other materials. The goal for LWIs is to identify every wetland over 0.5 acre in size.

3.1.3 First Public LWI Informational Meeting



A notice letter/flier should be mailed directly to owners of potential wetlands. The identification of property owners with potential wetland sites requires use of the preliminary wetland base map and local ownership maps. A simple overlay of transparencies of each map at the same scale will provide the basis for mailing lists. Jurisdictions with Geographical Information System (GIS) capability will be able to produce the listing and begin building a project file for the program with the preliminary wetland map as an initial theme.

The letter/flier to property owners should: (1) inform them about the wetland planning inventory and its purposes and benefits to individuals and the community; (2) request access permission to determine whether wetlands are present; and (3) invite them to attend a public meeting on the project. Appendix D includes sample access request letters. Response sheets or postcards for the access request should be prepaid. Similar information about the inventory and public meetings should be published in local media and mailed to key interest groups. At the public meeting, the local planner should explain the purpose of the inventory and subsequent planning tasks, a DSL staff person might explain the state's roles and responsibilities, and the consultant or staff scientist should explain how data will be collected and mapped. Presenters should be available to answer all questions. Note that these procedural steps are suggestions, not rules. A sample agenda is provided in Appendix D.

Obtaining permission to access properties for the inventory may be difficult due to widespread resistance to wetland regulation. Local planners should use this first public meeting as an opportunity to encourage owners to take advantage of project funding to find out about their property from the consulting scientist. The inventory process provides opportunity for the owners to review findings before completion of the inventory map. When access to property is not granted, the consultant will use the "best available information" (e.g., aerial photos) to define the extent of wetlands on properties. These inexact methods may result in over- or underestimates that could make it more difficult for an owner to make realistic plans for use of their property.

LWI Product Examples

Appendix E contains examples of required data for a sample wetland site inventoried under the LWI process. These examples include:

1. Wetland Data Sheet documenting wetland conditions;
2. Wetland Summary Sheet;
3. OFWAM worksheet characterizing nine wetland functions and conditions;
4. OFWAM summary sheet;
5. LSW worksheet used to determine the significance of the wetland in the community; and
6. Excerpt of an LWI map.

3.1.4 Field Determination and Description of Wetlands

Once access permission has been secured and location data transferred to the working field map, the wetland scientist will verify the location of wetlands by direct observation in the field.



If a wetland is suspected on a parcel for which access is available, data on soil, hydrology, and vegetation will be collected to document conditions in the wetland and to verify the wetland boundary. Example sets of wetland data forms and summary sheets from the Gresham LWI are included in Appendix E.

If access to a possible wetland is not granted by the property owner, the wetland determination will be made by consulting aerial photographs, soil maps, and other reference materials, and by viewing the site from public rights-of-way, where possible. The site will be mapped as wetland if it appears to have positive wetland indicators, but map accuracy will be less than for those wetlands where access was granted.

Data on wetland functions and conditions will also be collected during the fieldwork. Field observations help to identify the connections between nearby wetlands or streams, which affect how they function.

The LWI rules also require a separate map sheet showing all vacant hydric soil parcels of 5 acres or larger. The intent of this requirement is to identify potential sites for future wetland mitigation activities (i.e., wetland restoration). This element of the LWI will benefit future permit applicants, including city projects that may need wetland mitigation. This element was added to the LWI rules in 2001.

Tips for a Successful LWI Project

- Define community needs and objectives.
- Obtain support of the City Council and/or Board of County Commissioners.
- If the area to be inventoried is very large, consider breaking the study area into two or three phases.
- Educate the public about wetland identification, values to the community, and the LWI process.
- Dedicate staff and time to compile background information so that fieldwork can be conducted in spring to mid-summer.
- Encourage citizen cooperation and site access.
- Get the public informed and involved early. Poor communication can cause irreversible damage.
- Employ experienced wetland consultants to conduct the LWI. Hiring a firm with broad experience will save time and assure you of a good product; they may also help with subsequent planning tasks.

3.1.5 Oregon Freshwater Wetland Assessment Methodology

The OFWAM (Roth et al. 1996) is a protocol for assessing the functions and conditions of wetlands. It was developed to assess the relative qualities of wetlands in a community-planning context, and is suitable for a citizen audience. The method provides a repeatable, qualitative basis for determining which wetlands exhibit high, medium, or low ratings for nine functions and conditions (see box, and DSL's *Wetland functions and assessment* fact sheet on the Web site listed at the end of this chapter).

Each of the nine wetland characteristics is assessed by answering a series of questions. Responses to the questions are tallied to determine whether each assessed wetland characteristic is (1) intact, (2) impacted or degraded, or (3) lost or absent. The LWI will include a summary table showing the rating for each of the nine characteristics for each wetland. The method does not "average" the nine functional scores, as that would be inappropriate. It

also does not speculate as to future functions or conditions if a wetland were to be restored. An example OFWAM score sheet is included in Appendix E. Note that while conducting OFWAM fieldwork it may be efficient to collect information on impact areas and conflicting uses at the same time (refer to Section 4.4.1).

Wetland Functions and Conditions in OFWAM

1. Wildlife habitat
2. Fish habitat
3. Water quality
4. Hydrologic control
5. Sensitivity to impact
6. Enhancement potential
7. Educational potential
8. Recreational potential
9. Aesthetic quality

3.1.6 Review of the Draft LWI and Functional Assessment, Second Public Meeting

When the fieldwork is completed, the wetland consultant will generate a draft map with a unique label on each wetland that corresponds to data forms and a summary sheet in the inventory notebook. The inventory map and notebook must meet a number of technical content requirements, leading to a comprehensive picture of all the wetlands within the UGB or UUC boundary. The wetland consultant normally submits one copy of the draft products to the local planner. A second copy is sent to DSL, which must review the draft documents to ensure that the requirements of OAR 141-86-180 are met.

A second public meeting during this review step is recommended and should include the same speakers as the first meeting. At this second meeting, affected landowners and the community at large are invited to review the draft maps and documentation for accuracy. The wetland consultant and/or the DSL reviewer will resolve any accuracy concerns that are raised, including field verification, if accessible. Normally, citizens at these meetings will have many questions regarding both wetland regulations and future local planning for wetlands. This meeting also can be a good time to request input on potential conflicting uses. Following this meeting, DSL will prepare a review letter to address the sufficiency of the draft products and specify any changes or corrections needed.

3.1.7 Completing the LWI, Follow-up Tasks

DSL will review the revised products to ensure they meet the specifications in rule. The agency will then send an approval letter to the community. The approved LWI is then made part of the statewide wetland inventory (SWI) and should be adopted into the local comprehensive plan. The LWI must now be used in place of the NWI for the wetland land-use notification process to screen site-development applications for potential wetland conflicts. The local jurisdiction must notify all affected landowners within 120 days of the date of the agency approval letter.

Wetland inventory maps are designed to be accurate enough for planning purposes, but more precise delineations of wetland boundaries generally are needed to obtain development permits. When DSL approves a wetland delineation report, a copy of the concurrence letter and wetland boundary map is sent to the local

planning department. The community's copy of the inventory map should be updated; an easy method is to mark a file number on the map that will cross-reference the site to the more accurate new data.

3.2 Locally Significant Wetland Determination

The 1995 legislature directed DSL to develop criteria for determining which wetlands in a Local Wetlands Inventory should be considered "significant." The Land Board adopted the resulting rules (OAR 141-86-300 through 141-86-350) in January 1997. The criteria rely heavily on the results of OFWAM.

The criteria for determining LSWs are arranged as a checklist. First, certain types of wetlands are excluded from being significant, primarily because local protections would be inappropriate. For example, created stormwater treatment ponds or hazardous waste sites are specifically excluded. Wetlands not excluded by these standards are evaluated using the criteria below. An example of a LSW determination worksheet is included in Appendix E.

A wetland must be considered significant if it meets one or more of the following criteria:

- It has the highest OFWAM rank for any of the four ecological functions (wildlife habitat, fish habitat, water quality, or hydrologic control).
- It is (1) rated in the highest OFWAM category for water quality, or (2) rated in the second-highest category for water quality AND is within 0.25 mile of a water-quality-limited stream, as listed by DEQ.
- It contains one or more rare wetland plant communities, as defined in the rule.
- It is inhabited by any species listed by the federal or state government as threatened or endangered in Oregon (unless consultation with an appropriate agency deems the site not important for the maintenance of the species).
- It has a direct surface-water connection to a stream segment mapped by the ODFW as habitat for indigenous anadromous salmonids, and "intact" or "impacted or degraded" fish habitat function using OFWAM.

Statutes and Rules for Wetland Inventories

Statutes:

Wetland Inventory and Wetland Conservation Plans — ORS 196.668 to 196.692

Significance Criteria — ORS 197.279

Administrative Rules:

Local Wetland Inventories — OAR 141-86 – 180 to 240

Significance Criteria — OAR 141-86 – 300 to 350

The final two criteria are optional, at the discretion of the local government:

- The wetland is or contains the only representative within the UGB of a particular recognized native plant community and meets other qualifications detailed in the rule.
- The wetland is publicly owned, scores the highest rank for educational potential, and a school or organization has a documented educational use for the wetland.

If a wetland does not meet any of the criteria above, it is not significant and may not be included in Goal 5 wetland planning. The list of significant wetlands must be adopted into the local comprehensive plan. Those wetlands that do not meet the significance criteria may still be subject to state and/or federal jurisdiction, and DSL and Corps fill permits may still be required. **Because of these regulatory implications for landowners, it is very important that both significant and nonsignificant wetlands be shown on the LWI map.** Appendix E contains a sample map showing distinctive labeling for significant and nonsignificant wetlands.

Pick the right tool for the job. Some interest groups may be disappointed that a particular wetland was determined not to be significant and therefore cannot be addressed in a Goal 5 wetland program. In some cases, a wetland may be primarily valuable for open space or wildlife, rather than for wetland functions. Protection programs based on these other Goal 5 resources, or on Goal 6 or 7, may be more appropriate for protecting a non-wetland function or value. Also consider whether non-regulatory protection mechanisms might meet local needs.

Applying the LSW criteria results in a list of significant wetlands that must be addressed through the Goal 5 process. This list must be adopted as part of the comprehensive plan or as a land use regulation (OAR 660-23-030(5)). The list is often adopted with the LWI or as a supporting element of the plan.

3.3 County Responsibilities

Except for UUCs and areas within UGBs, counties are not required to conduct local wetland inventories or adopt new plans or regulations to complete the Goal 5 process for wetlands (OAR 660-23-100(5) and (6)). For rural areas, the OARs require counties to use current acknowledged inventories and regulations or adopt the SWI as part of their plan or regulations.

However, if a county chooses to prepare a new inventory or institute wetland protections in the areas outside UGBs and urban unincorporated communities, then Goal 5 specifies that *the county*

must follow the same wetland planning procedures as those required for areas inside urban boundaries (see OAR 660-23-0100(6)). This means that the county cannot use a wetland map for planning purposes that does not meet the mapping standards prescribed for LWIs. Likewise, if a county opts to identify significant wetland resources, they must use the same criteria described for LSWs in the rule. Finally, counties seeking to protect significant wetlands must also choose between the safe harbor and standard/ESEE approaches as described in this document.

For Further Information

Oregon Department of Land Conservation and Development (DLCD). 2000. *Planning for natural hazards: Oregon technical resource guide*. Salem, Ore. URL http://www.lcd.state.or.us/hazhtml/Guidehome.htm

Oregon Division of State Lands (DSL). 1998. *Urban riparian inventory & assessment guide. A tool for Oregon land use planning*. Prepared by Pacific Habitat Services, Inc., Salem, Ore.

Oregon Division of State Lands. *Fact Sheets.* http://statelands.dsl.state.or.us/wetlandfacts.htm
- "About the local wetlands inventory"
- "About the national wetlands inventory"
- "Wetland functions and assessment"

Reed, Porter B. 1988. *National list of plant species that occur in wetlands*. U.S. Fish and Wildlife Service, Washington, D.C. Check the Web site for the *Northwest Regional Supplement* (1993) as well as upcoming revisions to the 1998 list. URL http://www.nwi.fws.gov/bha/lists.html

Roth, Emily, Richard Olsen, Patty Snow, and Richard Sumner. 1996. *Oregon freshwater wetland assessment methodology* (OFWAM), revised edition. Oregon Division of State Lands (DSL), Salem, Ore. (Order form at URL http://statelands.dsl.state.or.us/ofwam_order.htm)

U.S. Army Corps of Engineers (Corps). 1987. *Corps of Engineers wetland delineation manual*. Environmental Laboratory, Technical Report Y-87-1.

U.S. Department of Agriculture (USDA) Soil Conservation Service. 1989. *Oregon hydric soils by counties*. URL http://www.or.nrcs.usda.gov/soil/oregon/or_hydric.htm

U.S. Fish and Wildlife Service (USFWS), National Wetlands Inventory (NWI). Aerial photograph interpretation overlaid on U.S. Geological Survey 7.5-minute quadrangle. URL http://www.nwi.fws.gov/ (These maps may be ordered from the Oregon DSL office.)

4.0 Oregon's Wetland Planning Process — Using Goal 5

4.1 Introduction

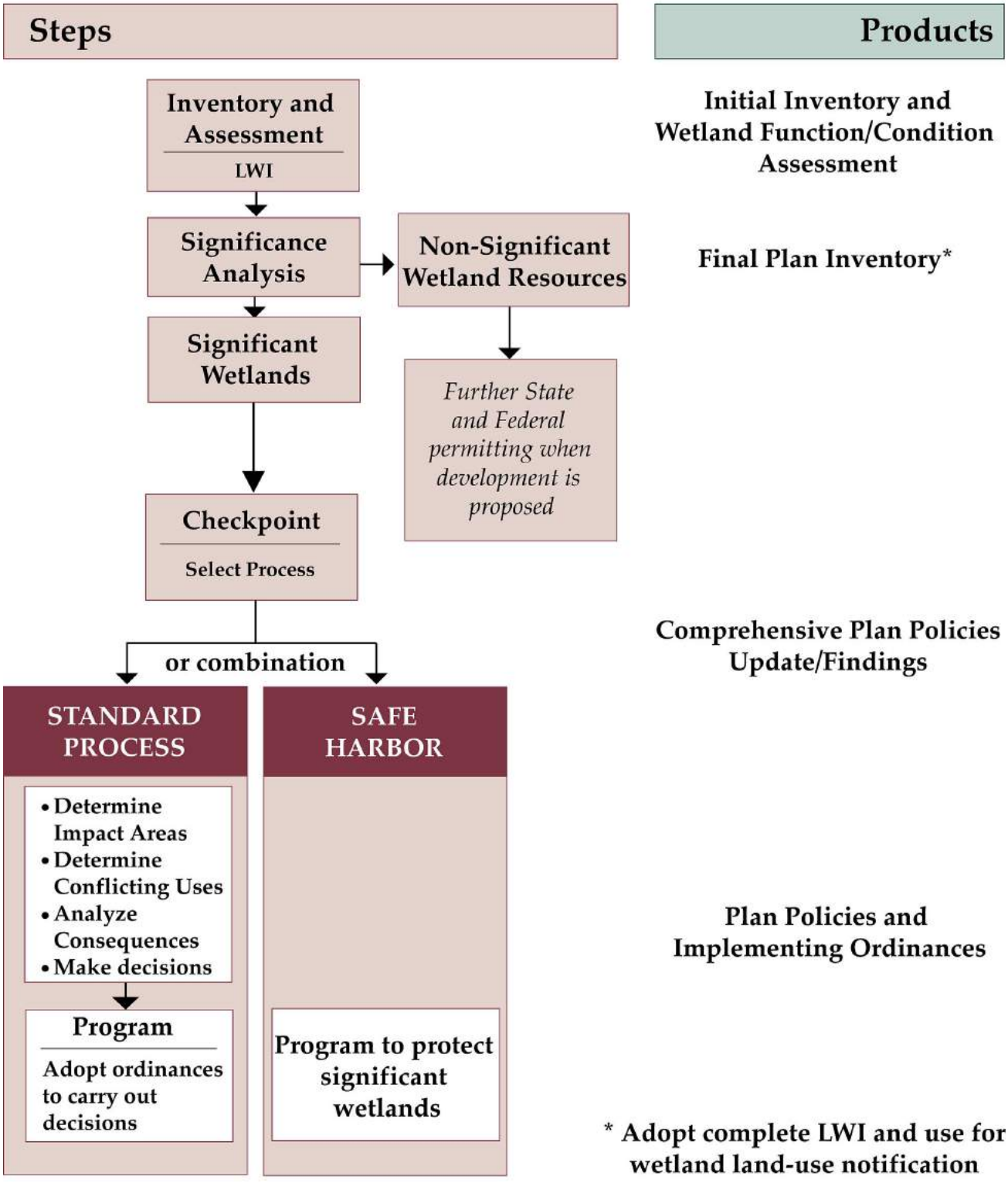
This chapter describes the requirements of Oregon's Goal 5 process for wetland planning. The section provides general background and then describes three options for applying the goal: standard method, safe harbor, and a combination of the two.

4.2 Planning Context and History

The framework for wetland planning in Oregon is established by the statewide planning goals and the administrative rules that guide implementation of the goals. Two sets of Oregon administrative rules have been adopted to implement Goal 5 since its original adoption in 1974.

In 1981, the LCDC adopted the original Goal 5 rule—OAR Chapter 660, Division 16. The 1981 rule provided a standard process under which local inventories, analyses, and protection programs were to be completed. Division 16 required that wetlands be inventoried and that the location, quantity, and quality of each resource be evaluated to determine its significance. Significant wetlands were required to be described as part of the comprehensive plan inventory and were then subject to further analysis. If adequate information was not available to determine significance, the wetland was placed in a special plan category that delayed analysis until sufficient information was available. For each significant wetland site, a conflicting use analysis was required. This involved identifying uses that conflicted with the resource values of the site and evaluating the economic, social, environmental, and energy consequences of either allowing, limiting, or prohibiting the conflicting uses. The rule required that, following the analysis, a program be adopted to resolve the conflicts and implement the goal. This "program" was to include adoption of a special wetlands zoning ordinance. In practice, most communities concluded that they did not have sufficient information to determine significance, and as a result, very few completed any Goal 5 wetland protection.

Figure 4-1: Wetland Goal 5 Process (1996 Rules)



In 1996, LCDC amended the original Goal 5 rules relating to wetlands (Division 16) and replaced them with the new procedures in OAR Chapter 660, Division 23. The 1996 rule clarifies and simplifies a number of Goal 5 provisions. The 1996 rule makes Goal 5 wetland planning mandatory when a city goes through periodic review of its comprehensive plan. Some smaller communities are now exempt from mandatory periodic review but they are still subject to the Goal 5 wetland planning requirements, particularly if they make a plan amendment involving wetlands. This could include any of the following:

- a new or amended wetland resource list;
- a land use regulation protecting a wetland;
- an amendment that allows new conflicting uses; or
- a UGB amendment including a wetland resource site.

An important new feature of the 1996 rule is the inclusion of the "safe harbor" option, which allows a more streamlined process and specifies basic standards for wetland resource protection.

The 1996 revised Goal 5 process (OAR 660, Division 023) is described in more detail in the following sections. Incidentally, if you hear references to case law, keep in mind that any case law decided under the old Goal 5 rules (Division 16) is likely to have limited relevance to current planning efforts because the new Goal 5 rules (Division 23) have since made several clarifications. Division 23 supersedes the provisions of Division 16 in all cases except for archeological and cultural resources.

4.3 Analysis Options — Standard or Safe Harbor

To plan for wetland resources under Goal 5, local governments may choose from two different sets of procedures. (Recall that a third option, the WCP, is not detailed in the Goal 5 rules themselves, but was deemed to comply with Goal 5 wetland planning requirements per OAR 660-23-0100(8). See discussion of WCPs in Section 5.7.)

The "standard" Goal 5 option is a precise but sometimes time-consuming method for reviewing the importance of each individual wetland in a community and for developing protection measures appropriate to each wetland. Alternatively, the "safe harbor" provisions of Goal 5 allow communities to follow a shorter process using a prescribed, one-size-fits-all set of protection standards. Either the standard or the safe harbor approach—or a combination of the two—will satisfy state requirements under Goal 5. Which path a community should take depends on the

community's objectives, the degree of wetland/development conflict, and the staff and financial resources available. Before beginning the wetland planning process, a community should think about its overall wetland protection strategy and the land development objectives of the comprehensive plan.

Using either approach, a community must first gather the information about the location, quality, and quantity of the resource sites (as described in the previous chapter). After the LWI is completed and the significant wetland resources have been identified, the Goal 5 pathways diverge, depending on whether the community chooses to follow the standard or the safe harbor approach (see Figure 4-1). The next steps under the standard approach involve analyzing conflicts and the various consequences of wetland protection or non-protection; making decisions about the level of protection appropriate for each wetland; and creating and adopting a plan and regulations to carry out the decisions. The safe harbor approach offers a "short cut" in that it specifies a level of protection for all significant wetlands. It thereby circumvents the difficult weighing of options of the standard approach, but at the same time it precludes flexibility in the outcome. Eventually, either pathway leads to a protection program, which is usually implemented via zoning regulations that restrict the types of uses allowed in specified wetland areas.

4.4 Standard Approach

The standard approach requires that communities conduct a thoughtful analysis prior to determining whether or how to protect the identified significant wetlands. This analysis process has three steps (see Figure 4-1). First, the community identifies the "impact areas" around the wetlands. Then conflicting uses—any land uses or activities in the "impact area" that, if allowed, "could adversely affect" a wetland—are identified. The third step requires the community to consider the relationships between each wetland and the consequences of allowing, prohibiting, or limiting conflicting uses on each wetland. This third part of the process is called the ESEE analysis, an acronym for the four primary categories that must be considered when looking at conflicting uses: economic, social, environmental, and energy consequences. Using this analysis, communities must reach a decision as to whether a resource should be protected or whether conflicting uses should be allowed or limited. These conclusions must be incorporated into the comprehensive plan. The community may then establish local regulations for its wetlands, using standards that are "clear and objective," in order to carry out the decisions in the plan.

4.4.1 Impact Areas

Under the standard approach, communities must identify the impact area (Figure 4-2) for each significant wetland being analyzed. An impact area is defined by the Goal 5 rule as "the geographic area within which conflicting uses could adversely affect a significant wetland" (OAR 660-023-0010(3)).

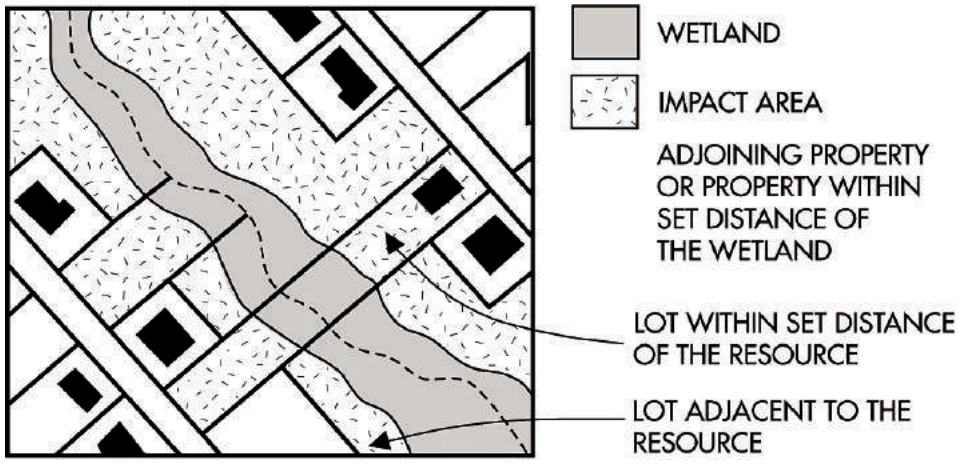


Figure 4-2. Impact Area — Example

The definition of an impact area for a wetland is not precise. Local governments must demonstrate that the impact area is sufficient to include use and activities that could affect the wetlands. As long as the reasoning is clear, consistent, and well documented, choosing a guideline to determine impact areas may reflect individual circumstances (e.g., topographic considerations). In many Oregon cities and towns, impact areas have been defined as either a uniform distance buffer, or an area bordered by identifiable topographic features, or in some cases the adjacent properties. The impact area must be specific enough to be measured and mapped. If a set distance is used, it should be justified by facts such as soil type, slope, and vegetation. The setting of the wetland resources may influence how impact areas are defined. For example, impact areas in developed areas may be limited to adjoining properties within a certain distance. In a floodplain, the impact area may extend across many properties.

Ultimately, the analysis process might lead a community to offer one level of protection for the wetland itself, another for lands immediately adjacent to the wetland, and yet another for lands farther away that still influence the ecological health of the resource. It is important to note that the conflicting use and ESEE analyses, which are the next steps in this process, must consider the wetland resource site *and* its impact area. A larger impact area may generate more complicated analyses, so the size of the impact area should be chosen carefully.

The community should develop a list or map of the wetland sites and accompanying impact areas, including the information shown in Table 4-1. This type of list can be easily generated using a Geographic Information System database.

Options for Defining Impact Areas: (all must be justified)

1. Set distances—for example, 50 feet
2. Adjoining/abutting properties, including any that occur within a set distance
3. Topographic features, such as floodplain or riparian edge
4. Drainage basins or sub-basins
5. The area around a wetland that would have overlay zoning for environmental protection
6. A combination of methods

Table 4-1. Impact Areas

Wetland Site	Tax Lot Number(s)	Zoning	Impact Area	Tax Lot Number(s)	Zoning
A					
B					
C					

4.4.2 Conflicting Use Analysis

Conflicting use is a term that describes a land use or other activity that, if allowed, "could adversely affect" a significant wetland (OAR 660-023-0010(1)). The conflicting use analysis identifies threats to a wetland's functions from currently and potentially allowed land uses. The most common example of a conflicting use with a wetland resource site is zoning that allows new development. Building a house or constructing a street on a wetland site will very likely adversely affect the functions of the wetland—i.e., the two uses are in conflict. Development land use categories represent the bulk of conflicting uses, but the Goal 5 rule more broadly defines conflicting use as any activity reasonably and customarily subject to land use regulations. For instance, excavating and filling to change the slope on a site, while not actually a land use, can affect a wetland and would be subject to the rule as a conflicting use. Other examples include any site alteration that may change the quantity or quality of water that affects the wetland site. The creation of new impervious surfaces; changes to drainageways, discharges, and shading; and removal of vegetation are all land management activities that may present conflicts.

Possible Conflicting Uses

1. Uses permitted outright by current zoning
2. Conditional uses permitted by current zoning
3. Land management activities:
   - Construction
   - Grading/filling
   - Impervious surfaces
   - Drainage alteration
   - Discharges
   - Vegetation removal
   - Shading

To simplify the conflicting use analysis, communities should begin with the current zoning applied to the wetland/impact area, and also determine whether the wetlands are already protected by other regulations. Any state-approved (i.e., "acknowledged") comprehensive plan or local regulation in effect that already protects some wetlands could reduce the number of possible conflicting uses. If a use is already prohibited by existing, acknowledged regulations, then it need not be defined as "conflicting" with the wetland functions. These may include zoning ordinances that were instituted independently or to comply with other statewide planning goal standards such as Goals 6, 7, or 15 through 18. In the Portland region, many jurisdictions have adopted Metro Title III protection measures for water quality and other resources. Local protections that respond to federal regulations, such as the NOAA Fisheries 4(d) rule, may also be in place and have the effect of protecting wetlands. Thus the conflicting use analysis must document conflicting uses still allowed within the resource site and its impact area(s).

Conflicting Uses and Land Management Activities

The first step in the analysis process is to review local planning and zoning codes to identify all potential land uses that would conflict with resource protection. Such a review will identify uses allowed by the zoning district or overlay districts that affect the resource site and its impact area. The review of local codes should identify uses allowed outright and uses that may be permitted subject to a conditional use process. The analysis also should look broadly at other land management activities related to those land uses that, although not regulated by existing codes, could harm identified resource values. Examples of these activities include filling, grading, and removing vegetation.

Planned Capital Improvements

Next, local jurisdictions should review other related plans for possible conflicting uses. Public facilities plans, transportation system plans, capital improvement plans, park and recreation master plans, and other related public plans may reveal projects that are conflicting uses for particular resource sites and/or their impact areas. For example, a road or sewer line that appears on a capital improvement plan may pass through a significant wetland. In fact, even new trails or active recreation facilities may compromise wetland functions. Conflicting uses may occur even if a site is publicly owned, though this is less likely if an agency or organization owns and manages a wetland resource as a natural area. Regardless of ownership, conflicting uses are possible in the impact area if a plan or zoning ordinance allows them.

Specific Plans for Property Development

Planners may learn more detailed information about possible conflicting uses than that obtained from the current zoning categories alone. In the public review process, communities also can determine whether specific development plans exist (for significant wetlands and impact areas) that might be classed as conflicting uses. Ownership records may be used to notify property owners early on so they can help identify conflicting uses as well as wetland resource values. Early citizen involvement at the inventory and analysis stage will yield a more efficient process, better public acceptance, and better long-term results.

Conflicting Use Matrix

In order to organize the list of wetland sites, impact areas, and conflicting uses, communities may want to create a conflicting use matrix or table, as illustrated below. The actual design or format of the table will vary in different communities, but the purpose of the table is the same: to summarize conflicting uses within the significant wetland resource sites and their impact areas. A conflicting use matrix could look like Table 4-2. As explained further in the next section, it may be appropriate to group a set of wetlands for the conflicting use and ESEE analyses.

Tip — Document Impact Areas and Conflicting Uses during LWI Fieldwork

If a local government intends to follow the standard Goal 5 process, it is a good idea to collect information on conflicting uses and impact areas during the wetland inventory. This documentation will help the ESEE analysis and may eliminate the need to do additional fieldwork later in the analysis process. While in the field, the initial wetland field crew may also record surrounding land uses and topographic factors for the ESEE analysis. An additional form should be used for this documentation.

Table 4-2. Wetland Resource Sites: Conflicting Use Matrix

Conflicting Uses	Zoned Uses (Outright or Conditional)			Public Improvements	Specific Development Plans	Land Management Activities*
	Residential	Commercial	Industrial			
Significant Wetland Site A						
Impact Area A						
Significant Wetland Site B						
Impact Area B						
Wetland C & D						
Impact Areas C&D						

*Grading, herbicides/pesticides, vegetation removal, and groundwater or surface water flow disturbance

Having organized the information into categories, the next step is to fill in the boxes by describing, in written form, the nature of the conflicting use for the wetland and the impact area. Not every wetland will be affected by all possible conflicting uses, but the structure of the table will give all options careful consideration.

For the wetland itself, most "development" uses and activities will be considered conflicting. Public facilities and services, as well as private development, are considered conflicting uses for the wetland resource *per se*. The handful of uses that do not conflict may include wetland enhancement, removal of nonnative vegetation, low-impact recreation trails, or similar natural resource restoration and improvement efforts.

Outside the wetland, in the impact area, many uses and activities associated with development may also be considered conflicting uses. Pedestrian and bicycle trails, wildlife viewing stations, public facilities and services, as well as some private development may or may not be considered conflicting uses for the area adjoining a wetland. However, with appropriate design considerations, the conflict often can be reduced to an acceptable level.

For impact areas farther from the resource site, the degree of conflict is greatly reduced for most private and public uses. Correspondingly, the level of analysis can be more generalized. Implementing measures that would preserve wetland function can often reduce potential conflicts. Such measures would include reducing impervious surface area, controlling erosion, and maintaining groundwater and surface water flows to the wetland.

Appendix F includes examples of various approaches to conflicting use and ESEE analyses.

4.4.3 Economic, Social, Environmental, and Energy (ESEE) Analysis

Once a conflicting use analysis has identified the specific uses that would conflict with significant wetland resource sites, the next step is to conduct the ESEE analysis. This analysis provides an understanding of the trade-offs between protecting or not protecting the wetland.

An ESEE analysis considers the consequences of interactions between: 1) the wetland itself, 2) its impact area, and 3) conflicting uses or activities.

Before beginning an ESEE analysis, communities should understand that an ESEE analysis is not required in every instance and may not always be the most efficient or effective way to decide how to manage a natural resource. While ESEE analyses are thorough, they may be long, repetitive, and demanding of time and resources. An ESEE analysis is not necessary in situations where the wetland resource and its impact area are already fully protected. However, in urban settings, usually some conflicting uses or activities exist.

Through the ESEE analysis, a city or county may find that some wetlands do not merit full protection. The ESEE consequences of protecting a wetland from these conflicting uses may be so great that they outweigh the environmental benefits. In such a case, the community may decide to allow some conflicting uses. Regardless of local planning decisions, existing state and federal wetland regulations may still require some level of protection to wetlands and streams. However, the regulatory programs rarely deny fill permits outright, and mitigation measures are not infallible.

Weighing the Decision

The ESEE analysis should clarify what factors must be weighed into a program decision. Local officials may then make informed decisions about the actual impacts of conflicting uses and proposed Goal 5 programs on the wetland and impact area resource values, as well as on private property values, open space, and the availability of buildable land necessary to meet long-term growth needs for housing and employment. The ESEE analysis must support these decisions.

The ESEE analysis itself explores the interaction between significant wetland resource sites, their impact areas, and conflicting uses—how each affects the other. A key component of the ESEE analysis is that it leads to three possibilities—full, limited, or no local protection—that must be derived from a clear description and consideration of consequences. The "full protection" alternative allows no conflicting uses, "limited protection" allows one or more conflicting uses on a limited basis, and "no protection" allows any conflicting uses permitted under current zoning. Under OAR 660-023-0040(5)(c), local governments cannot decide to provide "no protection" without thoroughly exploring methods to provide some protection and still allow the conflicting use to some extent.

Using the ESEE framework, a resource site analysis should explain the economic, social, environmental, and energy consequences of allowing—or not allowing—each conflicting use. The evaluation should address all the ESEE consequences, both those perceived as positive and those perceived as negative. Table 4-3 illustrates the line of questioning to arrive at a list of potential costs and benefits.

For example, the "allow all conflicting uses" option for the residential use category of a wetland site would likely include the following consequences:

Economic:

- Brings higher return on investment for the landowner;
- Provides employment opportunities during construction;
- Provides new housing opportunities;
- Generates greater tax revenue for local governments;
- Negative economic consequences may result from any flood damage caused by a loss of flood storage capacity, or replacing the lost water quality functions of that wetland.

Social:

- New building may lead to improved community services (by increasing the tax base);
- Increase in amount or variety of housing opportunities;
- New structures may cause loss of aesthetic views;
- Wetland fill may result in the loss of educational opportunities.

Environmental:

- New impervious surfaces may accelerate runoff and harm water quality;
- Smaller natural wetland area may cause loss of flood control or other wetland functions;
- Loss of aesthetic amenity;
- May reduce need to expand UGB for development.

Energy:

- Engineered water-quality fixes may be energy-intensive.
- Alternative transportation routes around rather than across a wetland may be inefficient.

Table 4-3. Potential Benefits and Costs of Protecting Wetland Resources Versus Allowing Conflicting Uses.

Note: This table contains ideas for consideration in an ESEE analysis. It is not a comprehensive list nor is it intended to be used as a checklist.

Potential Benefits	Potential Costs
	Economic
■ *Strong economy.* Could the economy be improved through the attraction and retention of desirable economic development based on a higher quality of life enhanced by natural resources?	■ *Restoration costs.* What are the short- and long-term costs and benefits of restoration efforts? In the long term, does it cost less to protect now than to restore in the future?
■ *Goods and services provided by wetlands.* What are some of the services provided by wetlands (clean water, reduced sedimentation, fish and wildlife habitat, stormwater attenuation, etc.)? What are some of the general economic consequences of the goods and services provided by the wetlands? What would it cost to engineer and create facilities to provide these services?	■ *Reduced land supply.* Could there be a reduction in the amount of land available for urban development within the current urban growth boundary? If so, would the corresponding UGB expansion offset such costs?
■ *Development costs avoided.* What are the potential building, operation, and maintenance costs and property losses due to stormwater and flooding problems? How can wetland protection help avoid these losses?	■ *Devaluation of real property.* Could the existing value of land parcels decline due to a reduction in: the amount of the parcel available for development; potential income; or potential jobs at that site?
■ *Increased value of urban land.* Would the protection of additional land within the urban growth boundary increase the value of the remaining urban land (after any UGB adjustments)?	■ *Infrastructure effects.* To what extent would wetland protection result in inefficient use of existing infrastructure capacity?
■ *Increased real property values.* Could there be an increase in property values and revenues from properties in close proximity to wetlands in your area?	■ *Effects on property tax revenues.* After any UGB adjustments to maintain the buildable land supply, would there be a net change in local property tax revenues resulting from resource protection or compensatory tax breaks?
■ *Tax benefits.* What tax benefits are available for wetland landowners who donate easements or provide other types of protection?	
■ *Meeting Endangered Species mandates.* What are the relative costs of alternative methods to maintain habitat and avoid "taking" listed fish or other species?	

Potential Benefits	Potential Costs
Environmental	
■ *Reduced species decline*. Would protecting land around wetlands provide additional habitat for fish and wildlife? Could this help reduce further declines in native species populations? Could protection of wetlands that retard and store stormwater help to reduce damage to fish habitat from flooding?	■ *Expansion of the UGB*. Could the protection of resources within the UGB result in the need to expand the UGB into farm or forest land?
■ *Improved water quality*. Could protection of wetlands maintain or improve water quality through filtration, ground-water recharge, and thermoregulation? Could protection also reduce pollution of drinking water sources?	■ *Negative impacts of concentrating development to protect wetlands*. Does higher-density development create new environmental impacts, such as raising the ambient air temperature, changing wind currents, etc.?
■ *Reduce impacts of urban heating*. Could the preservation of wetlands contribute to the cooling of microclimates and possibly contribute to maintaining healthy aquatic habitats or watersheds?	
Social	
■ *Increased quality of life*. Could the protection of more natural resource areas result in an improved quality of life, including improved health and psychological well being through community, recreational, and aesthetic values?	■ *Decreased housing opportunities*. Could land set aside for wetland protection result in less affordable housing by impacting the amount of developable land, even after UGB adjustments?
■ *Increased opportunities for recreation and aesthetic enjoyment*. Could the protection of significant wetlands have recreational value? Aesthetic value? Provide an additional sense of community?	■ *Reduced access to natural areas*. Could protection result in reduced access to natural areas by restricting parking lots and roads?
■ *Increased opportunities for education*. Could the wetland protection provide opportunities to educate children and adults about our natural environment?	■ *Fairness*. Are the locations of protected areas distributed equitably among socioeconomic strata?
Energy	
■ *Reduced energy consumption for cooling*. Could protection result in reduced energy consumption (air conditioning) because of cooler temperatures during the summer season for structures adjacent to wetlands and forested areas (shading of roofs and walls)?	■ *Increased energy needs for development*. Could protection of additional land increase energy needs to develop farther from existing urban areas if the UGB must be expanded to provide sufficient buildable land?
■ *Reduced consumption for travel*. Could protection of green spaces in urban areas reduce the traffic to distant recreation areas?	■ *Increased travel distances*. Could protections increase travel distances by requiring fewer wetland crossings for roads?

Some consequences are more important than others. In practice, where wetlands are concerned, the focus of the ESEE analysis most often has been on the interaction between economic and environmental consequences, though there may be exceptions.

As with the conflicting use analysis, the sheer volume of information and analysis for all the sites requires that inputs to the ESEE analysis be systematically organized. A series of matrices, or tables, that contain sites with the decision options and ESEE consequences can be organized to show the trade-offs. Each table can summarize the range of alternatives and the consequences. A simplified version of an ESEE Matrix is included as Table 4-4.

Table 4-4. ESEE Analysis, Wetland A — Conflicting Use: Residential Development

Decision Option		Economic Consequences	Social Consequences	Environmental Consequences	Energy Consequences
Full Protection	Effect on the wetland				
	Effect on the conflicting use				
Limited Protection	Effect on the wetland				
	Effect on the conflicting use				
No Protection	Effect on the wetland				
	Effect on the conflicting use				

By their nature, ESEE analyses are repetitive and lengthy. One efficient way to analyze ESEE consequences is to divide the study into two parts: begin with a "generic" ESEE analysis, then proceed with a site-specific ESEE analysis as needed. The generic ESEE analysis looks carefully at the consequences of the three options (full, limited, or no protection) in terms of uses allowed by zoning categories. For similar wetlands subject to the same set of zoning restrictions, this establishes an ESEE framework and reduces the repetition of work. Conflicting use categories in a generic ESEE analysis should include, at a minimum: residential, commercial, industrial, and public facilities. For example, the generic analysis would include a thorough discussion of the economic, social, environmental, and energy consequences of allowing industrial uses in a wetland area. This general analysis of impacts and trade-offs then will be sufficient to cover most, if not all, of those identified wetlands located within industrial zones.

Some wetland sites, however, will merit a more site-specific analysis. These include wetland sites that have overlapping environmental issues, that are subject to multiple or unusual regulation, or that otherwise have been incompletely covered by the issues raised in the generic ESEE analysis. Choosing which sites receive individual analysis allows local governments to set priorities. Rather than drafting lengthy ESEE analyses that cover every eventuality, it can be more efficient to prepare generic

How Much Detail Is Needed for the Analysis?

The level of detail needed in the ESEE analysis is dependent primarily on local issues and concerns. There are no statewide standards outlining what is required, except that Oregon case law (Columbia Steel Castings v. City of Portland [314 Or 422 9(1992)]*) indicates that enough detail is needed to allow meaningful analysis in regard to a particular site. In assessing the level of detail needed, consider the following:

1. Are property owners objecting?
2. Is public concern organized?
3. Is there a threat of appeal? Have parties raised issues in hearings? (If not, they cannot appeal later.)
4. Is the decision highly complex? Does it require a trade-off of community objectives and values?

**Note: This case was evaluated under the previous Goal 5 Rule.*

analyses for most resource sites, and more detailed site-specific analyses where greater scrutiny is needed. Communities should try to anticipate property owner concerns and commit to a full site-specific analysis on those sites that might be controversial. Note that the state and federal regulatory agencies rarely, but occasionally, deny wetland fill permits; so the decision to allow conflicting uses does not guarantee that a project will be built.

Finally, local governments sometimes make the mistake of leaving out information gleaned from the public review. When property owners or others contribute useful information at a public workshop or hearing, it is critical that this information be included in the analysis. The ESEE process should include a feedback loop with new findings that respond to issues related to conflicting uses and ESEE consequences raised during the public outreach and hearings.

4.4.4 Program Decision

As discussed above, there are three program possibilities that may emerge from an ESEE analysis under Goal 5: prohibit conflicting uses, allow conflicting uses on a limited basis, or allow conflicting uses fully. Historically, most jurisdictions have followed the middle path for most of their wetlands. The ESEE analysis gives decision makers the information they need to set policies about which wetlands to protect, and under what conditions. While some wetlands may be fragile enough or have such valuable functions that they require full protection, others may be maintained with a careful mix of protection, development, and mitigation measures. Remember that this decision pertains to the mapped wetland unit, which is defined by the resource, not the parcel lines.

Similar program decisions must be made about the wetland impact areas. Most jurisdictions use a varied approach—allowing development within the impact areas of some wetlands and forbidding it in others. For example, if a wetland's impact area lies within a highly developed area, the city may decide the economic consequences of full or limited protection are too great, and that local zoning should continue to allow development that further enhances urban- and pedestrian-oriented amenities. Conversely, at another wetland, the same community could decide that the environmental consequences of potential resource degradation are too severe, and thus may limit development in that impact area.

Regardless of the policy direction a community takes, zoning ordinance standards for limiting conflicting uses must be "clear

and objective" (OAR 660-023-050(2)). A clear and objective standard can be of three kinds:

1. Most simply, the standards for protecting a wetland can be a *fixed numerical standard*, such as prohibiting development within 50 feet of the wetland edge.
2. The standard can be a *non-discretionary requirement*. For example, if a community decided through the ESEE process to allow at least some conflicting uses within a wetland, a non-discretionary standard might be: "The wetland acreage affected by the excavation, fill, or removal shall not exceed 30 percent of the subject property's delineated wetlands acreage" (Tualatin Development Code 72.040(2)c(i)).
3. The regulation can be a *performance standard that describes the outcome* and *specifies objective evaluation criteria*. For example, a community could allow certain types of development if specified measurements show that particular wetland functions are maintained. A jurisdiction might say, "The excavation, fill, or removal shall not reduce or block water features such as springs, drainage courses, or streams." However, it would be difficult to demonstrate meeting such a standard without evaluation criteria.

Most Goal 5 programs protect the resource on a limited basis. This usually means that some conflicting uses are allowed if mitigation measures are included.

In addition to the required clear and objective standards, Goal 5 also allows an option for a regulatory path that is not clear and objective, giving landowners a choice. OAR 660-23-050(3)(a) allows communities to develop alternative, more subjective rules, provided that both options are adopted as part of the zoning ordinance (see model ordinances, Appendix G) and: 1) landowners have a choice to proceed either through the alternative rules or the clear and objective standards, and 2) the alternative rules provide a level of resource protection that meets or exceeds the level provided under the clear and objective standards. For example, a subjective rule may state that development may be permitted if wetland impacts are offset by an approved mitigation plan. These possible alternative regulations (discretionary criteria) are explained further in Section 5.3.4.

Finally, it is helpful to have an idea of the type of protection program a city or county is likely to adopt before moving ahead with the standard approach. If a jurisdiction knows it is likely to protect LSWs plus a 50-foot buffer area but allow public facilities on a limited basis, it makes sense to analyze the consequences of such a program. However, if the program changes through public review, it is important to adjust the ESEE analysis to reflect the actual policy choice made by the council or board of commissioners. The feedback loop is critical, both for responding to citizen input and for changing priorities of the governing body. In the end, the ESEE analysis must provide the information and rationale to guide the governing body's action. Likewise, the policy

Standard Goal 5 Analysis — Shortcuts and Tips

The following techniques may help streamline conflicting use and ESEE analyses:

Narrowly Define Impact Areas – The scope and scale of the analysis can be reduced if impact areas are defined narrowly. Two such options include: a set distance from the resource, or properties that adjoin the resource. However, the jurisdiction cannot arbitrarily establish the impact area; it must be justified in the analysis and must include all potential conflicts. If you define a set distance or adjoining properties as the impact area, the rationale would be that these areas directly influence the resource in both positive and negative ways. Pollutants and runoff must cross them to reach the resource, so these properties provide the opportunity to interrupt any flow of pollutants into the wetland.

Categorize Conflicting Uses – Rather than create a long list of conflicting uses based on the list of uses in the zoning ordinance, categorize uses by type. For example, "land development" combines residential, commercial, industrial, and institutional uses into one category for the ESEE analysis. "Public improvements" consolidates streets, utilities, trails, and parks as one category. When categorizing conflicting uses, it is important to describe the nature of the conflicts that result. For these conflicting use categories, it also may be appropriate to categorize the types of conflict that may result. For example, you might simply say "water quality impacts" when conflicts would include pollution, runoff, impervious surfaces; "development impacts" might cover activities such as filling, removal of vegetation; "water storage impacts" likely would also result from filling, removal of vegetation; etc.

Code the ESEE Analysis – Instead of developing a unique response for each site, create a generic response that can be used repeatedly and give the response a code or symbol for use in a matrix. For example, for many wetland sites, an environmental consequence resulting from allowing land development as a conflicting use would be a loss of wetland functions due to filling and removing wetland vegetation. This environmental consequence could be given the code "ENV1" and used in a matrix to represent the full text response. A variety of generic responses can be developed, coded, and used in this manner. Obviously, a key explaining the codes also must be provided. This approach can greatly reduce the length of an ESEE analysis matrix. Appendix F includes such examples. Because different sites potentially would receive different combinations of response codes, this approach ensures that every site is addressed appropriately. Also, if the generic coding process is used, it is important to provide an additional text-based response for any site where individual property owners or public facility plans provide more information about planned conflicts.

Group Similar Sites – It is possible to group wetland units with similar characteristics and to develop generic findings that apply to a category of uses. Strategies to consolidate resource sites for analysis could include groupings by general location in the community, by the same zoning district or by similar natural features such as a floodplain or drainage basin. In any case, the responses can be incorporated in a matrix format and should allow for additional text-based responses that capture unique consequences related to public facilities plans or information provided by individual property owners.

Cautionary Note – Balance the level of detail in the ESEE with the expected level of scrutiny on controversial sites. The shortcut tips provided above might not provide enough detail for the higher level of scrutiny an appeal may bring.

choice regarding the wetland must be clearly supported by the ESEE analysis.

4.5 Safe Harbor Approach

The 1996 Goal 5 administrative rule (OAR Chapter 660, Division 23) established a series of safe harbor provisions that allow local governments to protect certain resources without going through the standard approach's exercise of analyzing conflicts and ESEE consequences. Separate safe harbor provisions were established for wetlands, riparian areas, and wildlife habitat areas. In general, the provisions set fixed inventory requirements and standards for resource protection.

Using the safe harbor approach shortens the Goal 5 process, but many of the same initial steps must be followed. The key difference is that under the safe harbor approach, the conflicting use and ESEE analysis steps are eliminated. Also, note that the safe harbor approach requires protection of all significant resources, while the standard approach includes procedures under which a local government may determine that a conflicting use should be allowed to some extent, rather than fully protecting the resource. Therefore the safe harbor can provide *more* protection than the standard process.

As described in Chapter 3, for both approaches, the community must first complete an LWI and a function and condition assessment, and identify the LSWs. Then the local government must use the standard or the safe harbor approach to complete the Goal 5 process to address the significant wetlands.

The Goal 5 administrative rule (OAR 660-23-100) states that a safe harbor ordinance shall protect significant wetlands by restricting (prohibiting) certain activities. These include grading, excavation, placement of fill, and vegetation removal (other than perimeter mowing or other cutting necessary for hazard prevention). A variance procedure is required for hardships and mapping errors.

The safe harbor wetland protection ordinance is considered a minimum and a maximum provision (i.e., the significant wetlands must be protected, but only to the extent prescribed under the wetland safe harbor provisions). This option has two key limitations: 1) no flexibility is permitted in terms of allowing a conflicting use while still limiting impacts to the resource; and 2) no upland buffers can be protected adjacent to the wetland unit (to enhance and protect wetland functions) unless such buffers are justified under something other than the Goal 5 wetland element—for example, the Goal 5 wildlife habitat element, Goal 6, or another state or federal rule. Under the Goal 5 wetland rules, only the standard approach (not the safe harbor) provides a local

jurisdiction with flexibility to specify the degree of protection for a particular wetland significant wetland, or allows justification of wetland buffers. Types of protection programs are discussed in more detail in Chapter 5, and a sample protection ordinance is provided in Appendix G.

4.5.1 Coordination with Riparian Goal 5 Planning

The Goal 5 rules for setbacks overlap with those for wetland planning when it comes to wetlands that occur in a riparian environment (i.e., those adjacent to a river, lake, or stream). However, the safe harbor provisions for setbacks are different from those for wetlands. It is easy to confuse the two different safe harbors, so this distinction is emphasized here. The primary difference is that the required protection under the riparian safe harbor includes a fixed setback from the water's edge, and the wetland safe harbor has no setback.

Safe harbor inventory standards prescribe the widths of the riparian setbacks. For lakes and fish-bearing streams with an average annual stream flow of less than 1,000 cubic feet per second (cfs), the required setback is 50 feet from the top of the bank. For streams with average annual flows greater than 1,000 cfs (generally the major rivers of the state, including the Willamette, Rogue, Tillamook, Klamath, McKenzie, Deschutes, etc.), the required setback is 75 feet. Whether the stream or lake is fish bearing may be based on Oregon Department of Forestry stream classification maps or ODFW maps indicating fish habitat. Field investigations are encouraged but not required. Safe harbor setbacks for riparian areas are to be measured from the top of the bank. OAR 660-23-090(5)(d) states that if the top of the bank is not clearly defined, or the setback is illogical because of steep cliffs, the standard riparian approach (as opposed to the safe harbor) must be applied. Non-fish-bearing streams may be protected only by a standard riparian inventory; they are not afforded any protection by the safe harbor option.

Section (5)(c) of the riparian safe harbor rule (OAR 660-23-0090) also states that when a *significant wetland* (defined using the LSW criteria) is fully or partially within a setback boundary, it must be protected by inclusion within the riparian setback as measured from the upland edge of the wetland (see Figure 4-3). This means that if a significant wetland is within 50 feet of a stream or lake (or 75 feet along major rivers), the setback must extend 50 or 75 feet out from the upland edge of the wetland. The riparian protections apply to the 50- or 75-foot setback from the upland edge of a significant wetland occurring within a riparian area. The riparian safe harbor rule does not address isolated wetlands that fall entirely outside a riparian boundary.

Within the setback, the safe harbor standards require that conflicting uses be limited by adoption of an ordinance that prevents permanent alteration of the riparian area by grading or placement of structures or impervious surfaces (see Section 5.4.2). Exceptions may be granted for streets, roads, paths, drainage facilities, utilities, irrigation pumps, water-related or water-dependent uses, and replacement of existing structures, provided intrusion into the riparian area is minimized. There is no similar exception provision under the wetlands safe harbor.

Note that if a jurisdiction decides to use the safe harbor approach for both the riparian and wetland Goal 5 resources, there will be some overlap, and in that case, the more stringent standard will apply to any one site. In other words, wetlands subject to the setback protections of the riparian safe harbor also must meet the protection standards required under the wetland safe harbor (which does not provide for "exceptions"). For example, if a jurisdiction has imposed the wetland safe harbor protection for a site, they cannot then grant an

Step 1: Determine the "riparian corridor boundary" along the river or stream.

Step 2: Determine whether any "significant wetlands" fall wholly or partially within the boundary. In this diagram, wetlands A and B do.

Definitions (per OAR 660-23-0090):
Riparian corridor boundary = equivalent to an initial planning *boundary.*
Riparian corridor = the final riparian resource determined to be significant under Goal 5.

Step 3: Adjust the "riparian corridor boundary" to measure from the upland or outer edge of the wetland rather than from the stream or riverbank.

Result: The entire area within the adjusted "riparian corridor boundary" equals the significant riparian resource, or what is then referred to as the "riparian corridor."

Figure 4-3. Establishing Riparian Safe Harbor Setbacks

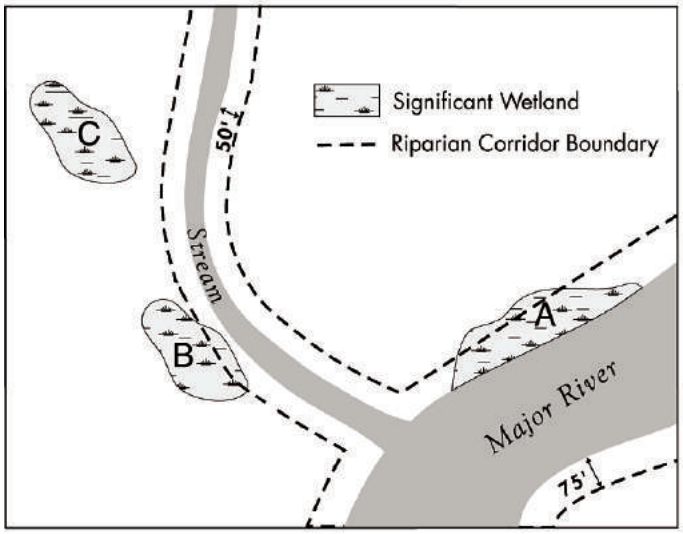


Figure 4-3 A: Initial Steps

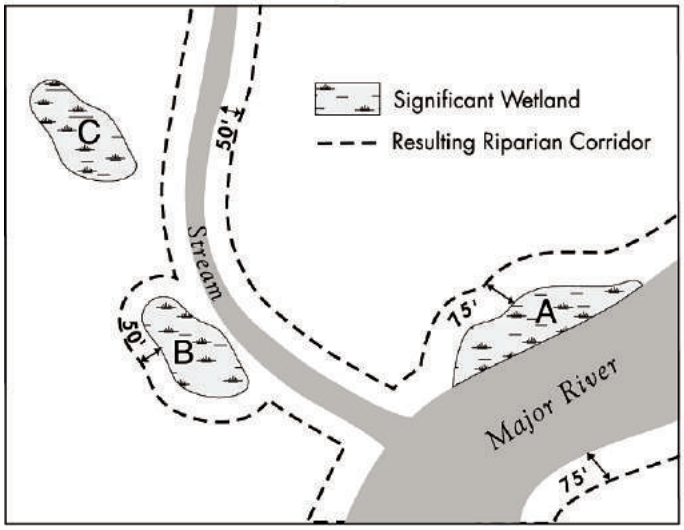


Figure 4-3 B: Resulting Setback

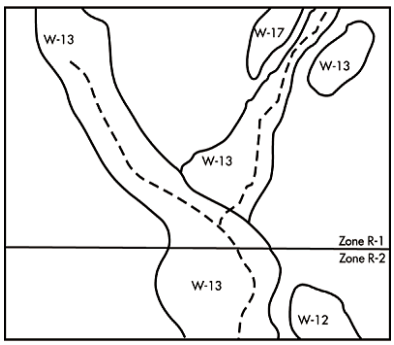
exception allowing a street or utility at that site via the riparian safe harbor provisions. Coordination between riparian and wetland programs is recommended.

Note that the safe harbor option is not the only way to complete Goal 5 planning requirements for riparian resources (see Section 5.3.5). The standard inventory approach for setbacks allows communities to develop their own definition of corridor width after consulting key information sources listed in the rule. In the standard approach, a jurisdiction need not include setbacks on significant wetlands in the setback. However, in fish-bearing zones, it would be difficult to justify a lack of setbacks around riparian wetlands.

4.6 Combined Approach — Standard and Safe Harbor

Many communities, especially smaller jurisdictions with limited resources, prefer the simplicity of the safe harbor approach and the protection offered for wetlands and riparian areas. Frequently, however, these communities also need flexibility in applying Goal 5 protection to wetland resources to either allow a conflicting use in a critical location or to provide additional protection for an especially sensitive resource site. Combining the safe harbor and standard approaches can provide this flexibility.

Figure 4-4. Wetland Units



Wetland units must be defined by hydrologic or geomorphic relationships, as shown for wetland 13—not by political, regulatory, or ownership boundaries.

Once a local jurisdiction has determined which wetland sites are locally significant, it must make an initial determination of which sites are to be protected under the safe harbor approach and which sites will go through the standard approach's ESEE process. Until adoption, any site can be added or subtracted from the list of sites subject to the standard approach. If this occurs, it is important to collect adequate information and make findings to justify the decisions.

Typically, the "wetland unit" for analysis includes hydrologically connected wetlands and is not defined by regulatory or ownership boundaries. The LWI identifies wetland units by individual codes that link the map, the wetland description, and the function/condition assessment. These same units should be used as the basis of analysis for the protection program. In applying a combined approach, a wetland unit should not be split, with part of the site given safe harbor protections and another part given the standard analysis. This is an important concept because wetlands often cross property lines, zone boundaries, or city limits. For example, if the standard approach is applied to a site to allow a conflicting use on a particular industrially zoned property, it is important to apply the standard approach to the entire wetland. However, because a local government generally does not have

planning authority outside its jurisdictional boundaries, it is possible to have two different programs apply to a wetland that straddles these boundaries. Similarly it is possible to have a wetland protection program apply *only* to the portion of the wetland unit that falls within the jurisdiction's boundary.

4.7 Choosing an Approach — a Decision Checklist

The standard and safe harbor approaches have some distinct differences, and it is important that a local government select the one that best fits local needs and community values. Differences are summarized in the Goal 5 Options Comparison Tables (Tables 4-5 and 4-6).

The following checklist is designed to help local governments decide which approach best fits the needs of their community. The questions address a range of issues that should help a community decide whether to follow the standard, safe harbor, or combined approach.

One Process per Wetland Unit

A single approach, either safe harbor or the standard ESEE process, must be applied to a single (i.e., contiguous) wetland site. Goal 5 does not allow one approach for part of a resource site and another for the remaining portion of the site.

Table 4-5. Goal 5 WETLAND Planning Options Comparison

Local Regulatory Program	Standard	Safe Harbor
Prohibit conflicts – protect wetlands	Yes[1] – Optional	Yes – Mandatory
Fully allow conflicts	Yes[1] – Optional	No
Partially allow conflicts – limit impacts	Yes[1] – Optional	No
Provide protective buffers on wetlands	Yes[1] – Optional	No, see table below for Riparian.
Requires Conflicting Use Analysis	Yes	No
Requires ESEE Analysis	Yes	No

[1] Optional choices based on ESEE analysis

Table 4-6. RIPARIAN CORRIDOR Planning Options Comparison

Local Regulatory Program	Standard	Safe Harbor
Prohibit conflicts – protect corridor with setback including significant wetlands	Yes[1] – Optional	Yes – Mandatory
Allow conflicts	Yes[1] – Optional	Limited to those specified in rule
Apply setbacks on non-fish-bearing streams	Yes[1] – Optional	No
Requires Conflicting Use Analysis	Yes	No
Requires ESEE Analysis	Yes	No

[1] Optional choices based on ESEE analysis

Goal 5 Approach Decision Checklist

Is there broad-based public support for a high level of wetland protection?

Yes — Consider using the standard approach to provide additional levels of wetland protection such as wetland buffers.

No — The combination approach may offer the best protection—basic safe harbor protection for many sites, but a standard approach allowing for special attention/more flexibility to deal with specific controversial sites.

Does the community have a high level of staff resources and/or financial resources that can be assigned to the project?

Yes — Consider using the standard approach to provide a more in-depth analysis of each site and a more detailed justification for individual program decisions.

No — The safe harbor is the most efficient route to meet the statewide planning requirements. The safe harbor was developed for communities that do not have the resources to complete the standard process.

Are there many potential conflicts? Are there numerous wetlands on sites planned and zoned for development or where infrastructure improvements are planned?

Yes — The standard approach is designed to resolve these types of conflicts and should be used.

No — The safe harbor approach generally will meet community needs in situations with few identified conflicts.

Are there many wetlands that have been identified as significant?

Yes — The combination approach or safe harbor may be a good fit in communities where there are many wetland sites to be addressed.

No — If only a few sites are identified as significant, it may be feasible to apply the standard approach to all.

Does the community have a lot of wetland conflicts, and does it desire a high degree of certainty for future development?

Yes — A WCP may be the best choice for complying with Goal 5. (See detailed discussion of WCPs in Section 5.7). A WCP requires a greater up-front investment in analyses, but can deliver the greatest certainty in outcomes by integrating the Goal 5 wetland planning decisions with the assessments the state and federal agencies must make to complete fill permits.

No —The safe harbor approach is the quickest process to achieve compliance with Goal 5. It provides clear outcomes yet no flexibility in protection levels. The standard process takes longer but may result in more or less wetland areas available for development than the safe harbor would. In either case, securing state and federal fill permits would still be necessary for any wetland activities.

Continued on next page

Goal 5 Approach Decision Checklist (continued from previous page)

Are many wetlands subject to coastal goals 16 or 17?

Yes — Planning requirements for **estuarine** wetlands are specified in Goal 16; the Goal 5 process does not apply there. For those wetlands subject to Goal 17 (**coastal shorelands**), the resulting protection provisions must be at least as restrictive as those specified in the Goal 5 safe harbor requirements for wetlands (see Sections 4.9 and 5.6). Thus, taking the safe harbor route would be most expedient, but a community could still choose to add to those restrictions via the standard analysis.

No — These issues are not relevant.

4.8 Integrating Goal 5 with Other Statewide Planning Goals

A number of other statewide planning goals address wetlands either directly or indirectly. Communities must address Goal 5 consistent with the "applicability" section of OAR 660-023-0250, even though other Goals also apply. However, in coastal communities, some requirements of Goals 16 and 17 supercede Goal 5 requirements (OAR 660-23-0240) in sites where both apply (see further discussion below in Section 4.X).

In general, adopted plans for the other resource components of Goal 5 or other Goals may have the effect of reducing the number of potential conflicting uses identified for wetlands using the standard approach. For example, if existing water quality buffers adopted under Goal 6 prevent placement of structures and the removal of riparian vegetation within 75 feet of a streamside wetland, the number of potential conflicting uses will have been greatly reduced, simplifying the ESEE analysis.

Goal 5 wetland planning coordination with other Goal 5 resources and other goals are discussed below.

Goal 5 – Natural Resources, Scenic and Historic Areas, and Open Space/Goal 8 – Recreation — The riparian and wildlife elements of Goal 5 can be addressed separately at an earlier time, but also must be examined at the time of periodic review, along with wetlands. (See riparian discussion in Section 4.5.1.) The other Goal 5 elements are optional and may or may not be addressed at the same time, though some of these resource areas also may overlap with wetland resources. The open space element is one example—local governments might enact an open space protection program under Goal 5 that encompasses wetland areas, but an open space program is voluntary. It is important to coordinate protection with recreation and park planning efforts. In addition, coordination may be needed with nonprofit organizations such as land trusts dedicated to permanent open space protection. Other

Goal 5 protection programs addressing resources such as groundwater, natural areas, wilderness areas, federal wild and scenic rivers, or recreational trails also may indirectly protect wetlands.

Goal 6 – Water, Air, and Land Resources Quality/Goal 7 – Areas Subject to Natural Disasters and Hazards — Some communities within Metro, the regional government in the Portland area, have developed water quality protection programs under Goal 6 that may protect certain wetlands and riparian areas. Likewise, other communities have developed floodplain protection measures under Goal 7 that indirectly protect wetlands. For example, Goal 7 protection regulations that limit development within the 100-year floodplain are likely to limit uses that would conflict with wetland resources in the area.

Generally, any protection programs developed under Goal 6 or 7 may have an influence on the Goal 5 wetland planning approach but will not change the basic process: Goal 5 inventories and significance analysis steps are still required. If a community follows the safe harbor approach for wetlands, it is important to make sure that the safe harbor protection standards will still be satisfied for all significant wetlands, despite any overlapping protection measures that may result from different goal requirements. This is an important precaution to keep in mind if a community pursues a more comprehensive approach to several water resource issues at one time, such as that presented in the Water Quality Model Code (see boxed discussion in Section 2.2.1). Under Goal 5 safe harbor rules for wetlands, the end result must provide the "safe harbor level" of protection to significant wetlands.

It is possible that protections afforded under the various goals could provide redundant protections for a given wetland. For instance, it is possible to use the safe harbor approach for Goal 5 wetlands and also establish water quality buffers as the result of Goal 6 planning efforts. Such buffer protection must be clearly substantiated on the merit of the Goal 6/water quality planning process alone.

Goals 9, 10, and 14 – Economy, Housing, and Urbanization — The economy, housing, and urbanization goals are intended to ensure that adequate land is provided within UGBs to meet employment and housing needs. Goal 14 (Urbanization) addresses the amount of buildable land provided within the UGB. The Goal 5 administrative rule states that local governments, or Metro in the Portland region, shall amend UGBs to compensate for actions (such as adopting a wetland protection program) that affect the buildable land supply (OAR 660-23-070).

Goal 15 – Willamette River Greenway — Communities along the Willamette River that are seeking additional wetland protection

options should consider the provisions pertaining to Goal 15 (the Willamette Greenway Goal). Goal 15 requires that local governments develop programs for greenway protection, which might include protection of wetlands and wetland buffers and/or associated riparian vegetation in the greenway. Once again, check OAR 660-23-0240 to discern the interrelationships of applying these goals.

Goals 16 through 19 – Coastal Goals — Coastal communities must consider the coastal goals, which focus on estuarine resources, coastal shorelands, beaches and dunes, and ocean resources. Goal 17 requires protection of significant resources within the coastal shorelands boundary. The other coastal goals may offer protection that complements Goal 5 protection. The inventory requirements of Goal 5 satisfy the inventory requirements of Goal 17 (OAR 660-23-240(2)). (See below and discussion in Section 5.6).

4.9 Goal 17 — Coastal Communities

Coastal communities must comply with the coastal goals in addition to Goal 5. Goal 17 is the coastal shorelands goal and it specifically addresses the protection of wetlands and other resources within the coastal shorelands boundary. The coastal shorelands planning area is located west of Highway 101, within 1,000 feet of estuaries, and within 500 feet of coastal lakes. In Tillamook and Coos counties, the Goal 17 planning area is farther west than Highway 101 in certain places.

Within the planning area, local governments are to conduct inventories of coastal shorelands resources, including wetlands. As previously noted, local governments may use the Goal 5 inventory process to satisfy Goal 17 requirements for wetland resources covered by both goals (OAR 660-23-240(2)). This means that the LWI, OFWAM, and LSW processes can be used to identify significant wetlands. (Note: The wetlands in the coastal shorelands that are considered to be significant Goal 17 resources are called "major marshes." Goal 17 significance criteria are more selective than those used for wetlands under Goal 5 because Goal 17 requires association with coastal water bodies. Hence, Goal 17's major marshes can be a subset of the Goal 5 significant wetlands.) Like the safe harbor approach, Goal 17 requires protection of resources that are determined to be significant. Goal 17 states that the "natural values" of the sites shall be "protected." LCDC has determined that the minimum level of protection for significant wetlands that is established under the safe harbor requirements of Goal 5 also will satisfy the Goal 17 protection requirements for major marshes. (Goal 17 does not include an ESEE analysis or other process to manage conflicts. Any decision **not** to protect a Goal 17 resource would have to be justified through the Goal 2 "Exceptions" process.)

4.10 Wetland Planning and the Federal Endangered Species Act (ESA)

The federal government has listed several species in the Pacific Northwest as threatened or endangered under the Endangered Species Act of 1973, as amended. Several of these protected species may overlap geographically with Goal 5 resources, thus local governments may want to consider ongoing ESA issues when engaging in regional natural-resource planning efforts.

The two federal agencies with ESA responsibilities, NOAA Fisheries and USFWS, have listed a number of species of plants and animals in Oregon as threatened or endangered under the federal law. These include the high-profile coho, chinook, steelhead, bull trout, and Klamath sucker fish, but also some lesser-known plants and insects. These listings affect communities throughout Oregon, but particularly in the Klamath, Columbia, and Willamette drainage basins, and along the coast. NOAA Fisheries is the responsible agency if the listed species in question is a marine or anadromous fish or marine mammal; whereas USFWS is responsible for all other federally listed threatened or endangered species, including plants.

When an activity may affect a federally listed species, compliance with the Endangered Species Act can be obtained: a) under Section 7 for projects that have federal agency involvement, known as a federal "nexus"[1]; b) under Section 10 (Habitat Conservation Plans); or c) under Section 4 (d). When there is a federal nexus, the Section 7 consultations are required by statute; the other two approaches are optional ways to comply with the ESA.

- *Sections 7 and 10*. These sections of the ESA allow for incidental "take" of threatened species through the issuance of an incidental take statement. This statement describes the terms and conditions for the take, as well as any required mitigation. (*Take* means to "harass, harm, pursue, hunt, shoot, wound, kill, capture, or collect, or attempts to engage in these activities," as defined in Section 9 of ESA). In the case of Section 7 compliance, the federal agencies consult with each other as to the terms and conditions of compliance, although the local jurisdiction may provide input. Section 10 consultation takes the form of a negotiated contract (often a "habitat conservation plan") between the jurisdiction and the federal regulatory agency (USFWS or NOAA Fisheries, depending on which listed species is involved). Local Goal 5 plans for wetlands may need to be coordinated with these ongoing efforts, including recovery plans for rare species.

[1] Section 7 consultation is triggered when a federal agency will either conduct, fund, or authorize/permit an activity on an area supporting species listed under the ESA. This linkage with a federal agency is called a federal "nexus."

- *Section 4(d).* In contrast, the 4(d) rule introduces the concept of "limits" or exemptions to the *take* provisions for listed species. In other words, the 4(d) rule can "limit" the situations to which the take prohibitions would apply. In the Pacific Northwest, NOAA Fisheries has been developing specific limits to the ESA prohibitions on the taking of threatened fish species. The July 2000 NOAA Fisheries 4(d) rules for listed salmon and steelhead offer routes to voluntarily meet the criteria that would limit "take" applications. (There are different "limits" for different types of activities). The way this might apply to a local government is that if NOAA Fisheries agrees ahead of time that a jurisdiction has taken the precautions to qualify for one of those 4(d) "limits," and if those precautions are followed, then that jurisdiction would be shielded from prosecution for a "take" violation. (See the NOAA Fisheries Web site, listed at end of this chapter, for further information on the 4(d) topic.)



In sum, communities developing any ESA compliance plans, whether under Section 4, 7, or 10, must identify the programmatic or project-specific changes to local activities, practices, programs, plans, and policies that will be necessary to comply with the ESA. To get started, a community would identify the types of activities they permit or carry out, and then which of these may have an effect on habitat for federally listed species. The local compliance plans can take many forms, including riparian and wetland protections and stormwater management. Jurisdictions should meet with NOAA Fisheries and/or USFWS staff to determine their best course of action to ensure that government activities comply with the ESA.

If a local government engages in planning efforts to achieve ESA compliance for listed fish species, the objective sought is to have NOAA Fisheries accept the local compliance program and allow the possibility of take under either the 4(d) rules, Section 7, or Section 10. This ensures that the local government will not be subject to enforcement action by NOAA Fisheries, as long as the local government has complied with its NOAA Fisheries-approved plan. Further, NOAA Fisheries will assist in defending the local government in the event a third-party lawsuit challenges the local government's actions under the 4(d) rule.

In the July 2000 4 (d) rules, NOAA Fisheries specifically states that wetlands and riparian areas provide important functions in maintaining fish habitat; protection of these areas is likely part of an approved compliance plan. The buffer widths that NOAA Fisheries considers adequate are variable and may in some in-

stances exceed the 50- to 75-foot-wide buffers required under Goal 5 safe harbor provisions for riparian areas and their associated wetlands. The Goal 5 safe harbors were drafted prior to the 4(d) rule, and though they will increase protection of vital habitat for listed fish species, compliance with the Goal 5 safe harbors alone probably will not meet NOAA Fisheries' expectations for 4(d) limits. Communities that attempt to comply with 4(d) rules for listed fish at the same time as their Goal 5 wetland planning work therefore may consider using the standard approach (rather than safe harbor for wetlands) so that they may apply the NOAA Fisheries-recommended buffer widths in a comprehensive Goal 5/ESA package.

There are pros and cons to the order in which a local government may address these related resource-planning issues. Many jurisdictions are already involved in some stage of Goal 5 wetland planning work. NOAA Fisheries encourages them to continue with their statewide planning tasks under Goal 5 regardless of their ESA questions. While a Goal 5 protection program alone is not likely to meet all of NOAA Fisheries' expectations for ESA compliance, it is clearly a step in the right direction. On the other hand, a local jurisdiction with an ESA protection program already established has likely eliminated many possible conflicting uses in wetlands, thus simplifying the standard Goal 5 ESEE analysis. Therefore, as with programs related to Goals 6 or 7 that may affix wetland protections, implementing an ESA program in advance of the Goal 5 standard process would expedite the conflicting use and ESEE analyses. In reality, the order in which a local government addresses these related issues is likely dependent on availability of staff and funding resources.

This is a brief overview of the ESA and recent NOAA Fisheries rules for anadromous fish in the Pacific Northwest. For more information on the ESA, see either the NOAA Fisheries Web site (regarding salmon or steelhead) at URL http://www.nwr.noaa.gov, or the USFWS Web site (for other species) at URL http://endangered.fws.gov. The NOAA Fisheries publication, *A Citizen's Guide to the 4(d) Rule for Threatened Salmon and Steelhead on the West Coast*, explains the 4(d) criteria. Likewise, their *4(d) Rule Implementation Binder* provides specific 4(d) submittal instructions. Both these publications are available on the NOAA Fisheries regional Web site, URL http://www.nwr.noaa.gov.

4.11 Metro Area Communities

Communities in the Portland Metro region (Washington, Multnomah, and Clackamas counties) not only must meet statewide goals, they also must meet certain requirements adopted by the Metro regional government. In 1997, Metro adopted the Region 2040 Functional Plan, which established a series of require-

ments intended to guide development in the region in a manner consistent with the objectives of the "2040 vision" for the region. Title III of the functional plan addresses water quality, among other issues, and establishes setbacks and riparian buffers for wetlands, rivers, lakes, and streams in the region. The wetland and riparian buffer width requirements vary with the slope. The required setback distance surrounding wetlands is 50 feet where adjoining slopes are less than 25 percent. The Title III water quality protection buffers were established to be consistent with the requirements of statewide planning Goal 6. Local governments are required to adopt water quality protection standards consistent with the Metro requirements. If a local government later amends its Goal 5 wetland inventory or wetland protection standards, the local measures that were adopted to meet Title III water quality protection standards may have the effect of reducing or eliminating conflicting uses for Goal 5 wetland ESEE analysis.

In addition to the Title III standards, Metro is also in the process of developing regional wetland and riparian planning programs. These programs were not yet finalized at the time of this document. Local planners in the Metro area will need to check these program developments in order to be consistent with the Metro regional framework plan when developing Goal 5 protection programs.

4.12 Public Involvement

Public involvement is an important part of any wetland planning project. It is especially important during an ESEE analysis. This section describes public involvement requirements and offers techniques for developing a successful and productive public involvement program.

4.12.1 Public Involvement Requirements



Statewide planning Goal 1 is the public involvement goal, which requires that local governments adopt a citizen involvement program and make periodic updates. Goal 1 addresses land use planning efforts overall, but does not specifically address wetland planning issues. The Goal 5 administrative rule (OAR 660-23-0060), in turn, requires that local governments provide notice to landowners and opportunities for citizen involvement during the inventory and ESEE process. The rule states that notification and involvement should occur at the earliest possible opportunity whenever a Goal 5 task is undertaken. In addition, a new state law (Ballot Measure

56, which became effective in late 1998) requires that property owners be mailed a notice when new local regulations will change the zoning classification or allowable uses of their property.

Whom to Include

A broad range of interests should be included in the planning process. Representatives from the following categories should be invited to attend workshops or be part of an advisory committee:

1. affected property owners,
2. real estate industry/development community,
3. environmental interest groups,
4. neighborhood associations,
5. watershed councils,
6. state and federal agency representatives,
7. parks department staff or commission members, and
8. planning commission and city council members.

4.12.2 A Typical Public Involvement Program for Wetland Planning

It is important to include the public throughout wetland planning. The most common form of public involvement is a notification letter to affected property owners. Notification letters usually inform property owners of the process and provide an access permission form to allow wetland inventory staff to gain access to the property (see Appendix D for sample forms). Notice letters also announce opportunities for public involvement activities such as public workshops or advisory committee meetings.

Most communities that have begun wetland planning have used public workshops or meetings to distribute information about the wetland planning process. These workshops generally include information about the overall process and the types of data collected. Key decision points at which the public should be involved include the following:

- **Project Initiation** — Conduct a workshop to inform people about the process and to distribute and collect access permission forms for the wetland inventory.
- **Draft Inventory/OFWAM** — Conduct a workshop when the draft inventory is completed and the draft OFWAM analysis has been conducted. This allows participants to identify potential problems with the inventory data before it is finalized, and to understand wetland functions and values. This second public meeting is often concurrent with DSL's review of the draft inventory.
- **Final Inventory/Significance Analysis/Draft Goal 5 Strategy** — Conduct an informational meeting to present the final inventory and significance analysis, and to collect public comment on a draft strategy for completing the Goal 5 process.
- **Impact Areas/Conflicting Use Identification/Draft ESEE** — Conduct a workshop to present the draft ESEE analysis. This provides an opportunity for property owners to comment on private development plans.
- **Final ESEE Analysis/Draft Implementation Program** — Conduct a workshop to present implementation options based on conclusions of the ESEE analysis. Depending on how complex the issues are, it may be possible to incorporate these tasks into the workshop addressing the Draft ESEE program.
- **Final Implementation Program** — Conduct a workshop to present the final implementation program prior to adoption

hearings. The intent of this workshop is to minimize misunderstandings about the program prior to the hearings.



In addition to notice letters and workshops, many communities have formed citizen advisory committees to provide guidance through the process. The role of the advisory committee may vary depending on local needs and practice. In some communities, it may serve purely as a sounding board for ideas; in other communities, the committee may make formal recommendations to appointed and elected officials. In either case, it is important to have an open process in which members of the public and owners of affected property may attend meetings.

As support to an advisory committee and the overall process, technical experts often are invited to key meetings or workshops. These technical experts may include federal, state, or local agency staff with special knowledge about wetland planning. Typically, representatives from the following agencies may be invited to participate:

1. Oregon Division of State Lands
2. Oregon Department of Land Conservation and Development
3. Oregon Department of Fish and Wildlife
4. Oregon Department of Environmental Quality
5. U.S. Army Corps of Engineers
6. U.S. Fish and Wildlife Service
7. National Marine Fisheries Service (when anadromous fish are present).

Tips for a Successful Public Involvement Program

1. Maintain an open process.
2. Be inclusive—err on the side of over-noticing.
3. Strive for no surprises—minimize the likelihood of a property owner appearing at the final hearing and saying, "This is the first I've heard of this."
4. Partner with watershed councils and neighborhood associations to distribute information.
5. Keep maps current. Good maps are very important. Map errors diminish credibility with the public.

For Further Information

City of Tualatin. 1997. Tualatin Development Code. (The ordinance quoted in the text is TDC 72.040 (2) c (i), located on page 15 of Ordinance No. 979-97, adopted 7/14/97.)

Metro Council. 1997 plus revisions. Urban Growth Management Functional Plan. URL http://www.metro.dst.or.us/glance/metcode/metcode307.pdf (Note: Title 3 — Water Quality, Flood Management And Fish And Wildlife Conservation, starts on page 16 of the plan.)

National Oceanic and Atmospheric Administration (NOAA) Fisheries, Northwest and Southwest Regions:
• June 20, 2000. *A Citizen's Guide to the 4(d) Rule for Threatened Salmon and Steelhead on the West Coast*. URL http://www.nwr.noaa.gov/1salmon/salmesa/4ddocs/citguide.htm

• September 22, 2000. *4(d) Rule Implementation Binder.* URL http://www.nwr.noaa.gov/1salmon/salmesa/4ddocs/4dwsbinder.htm
• Information on the Endangered Species Act regarding salmon or steelhead at URL http://www.nwr.noaa.gov, as well as links to both the publications listed above.

U.S. Fish and Wildlife Service (USFWS) Web site for information on the Endangered Species Act (species other than salmon or steelhead): http://endangered.fws.gov.

Oregon Department of Land Conservation and Development (DLCD) and Oregon Department of Environmental Quality (DEQ). October 2000, rev. April 2001. *Water quality model code and guidebook*. Salem, Ore. Also available at URL http://www.lcd.state.or.us/coast/waterguidebook/watergb.html

5.0 Developing a Program to Meet the Goal — Options

5.1 Introduction

Development of a local "program" to implement Goal 5 is the main purpose of the wetland planning process. The implementation program is primarily a set of policies and implementing measures that clearly describe the plan for protection (or non-protection) of wetlands during future development decisions. A program may contain multiple elements, including regulatory protection of wetlands and incentive programs such as transfer of development rights and mitigation banks. This section of the Guidebook describes various options and approaches for implementation of wetland protection.

5.2 What Is Required?

Goal 5 requires that local governments adopt a program to achieve the goal of wetland protection. Under Goal 5, a community must either adopt a safe harbor ordinance consistent with OAR 660-23-100 (4), or follow the "standard approach" (OAR 660-23-050) and adopt comprehensive plan provisions and land use regulations derived from the ESEE analysis. The requirements under each of these approaches are described below. Section 5.7 addresses the option of the WCP as an alternative method that also will comply with Goal 5 wetland planning requirements.

5.3 The Standard Approach — Implementation Program Options

At the conclusion of the ESEE analysis, a local government must determine whether to allow, limit, or prohibit uses that would conflict with significant wetland sites. The implementation program must carry out these decisions. In practice, few governments will either completely allow or completely limit all conflicting uses. Most local implementation programs provide a balance between conflicting uses and wetlands protection.

5.3.1 Allowing a Conflicting Use

As discussed in Section 4.4, "conflicting use" is a term that describes a land use or other activity that "could adversely affect" a significant wetland (OAR 660-23-0010(1)). In theory, a local gov-

Tips — Manage the Process

1. Keep the connection between the inventory, analysis, and implementation steps in your process. If there are major time breaks between the steps, it can lead to inconsistencies in application and public misunderstandings.
2. The Goal 5 process can be both technical and political. Solid technical information helps to discourage decisions that are made for political reasons only.
3. Monitor your progress and make adjustments as needed.
4. Be aware of your schedule and planned milestones.
5. Work closely with any consultants to monitor their progress.
6. Identify and work with citizens who have concerns about the process.
7. Provide regular progress reports to your local government administration and elected officials.

ernment may determine that a conflicting use is of such importance to the community that it should be allowed fully, regardless of its effects on the resource site. For example, a street may need to be widened or extended through a significant wetland. During the ESEE analysis, the local government may determine that the street project is of such importance that the street should be allowed even though it harms the significant wetland. For these types of decisions, OAR 660-23-040 (5)(c) requires the local government to demonstrate that it cannot provide any measures to protect the wetland resource to some extent. For example, even in the case of the street scenario above, a jurisdiction would have to examine options to mitigate the impacts of the street project on the significant wetland resource, such as restoration or enhancement of other wetlands.

If a local government determines that certain conflicting uses should be fully allowed on a resource site, that decision must be documented and described in the comprehensive plan. The plan and associated implementing ordinance must specifically list the conflicting uses that are allowed, the locations where they are permitted, and any specific standards or limitations that apply (OAR 660-23-050 (1)). If there are several such situations, a simple way to meet this requirement is to include the conflicting use within an exemption section in the wetland protection ordinance.

If a local government chooses to allow a conflicting use, the use may still require a removal/fill permit from DSL or the Corps. These agencies regulate only activities that directly impact the wetland and, depending on the action, may not have authority over activities on adjoining impact areas.

"Takings"

If you have a question about "takings" issues, you should consult with your city attorney before enacting limitations or prohibitions on land use. Be aware that a local government can put many restrictions in place without crossing the line to a "taking." Also, a variety of mechanisms are available to compensate a landowner for partial losses of economic value, including alternative development options for development of the non-wetland portions of the site.

5.3.2 Prohibiting Conflicting Uses

Often a local wetland is of such high quality that the local government decides to prohibit all conflicting uses. This is usually accomplished through land use regulation but may include a combination of regulation, transfer or purchase of development rights, or purchase of the property. If the wetland site is privately owned and currently zoned for development, the decision to fully prohibit conflicting uses may have a substantial impact on the real estate's value, depending on the owner's plans and expectations. Traditionally, legal interpretation of the concept of regulatory taking without compensation has been limited to situations when ALL economic use is taken, and there was a reasonable expectation of development at the time of land purchase. An ordinance should include a variance provision to either avoid such "takings" situations, or implement an acquisition plan for affected parcels. In addition, the regulatory program for the resource site should prevent conflicting uses, likely by prohibiting any structure, fill, or grading in the wetland, and restricting the removal of native

vegetation or the alteration of natural drainage patterns. To implement the decision to "fully protect" a wetland under the standard Goal 5 approach, a local government likely would require a protective buffer and perhaps extend some form of protection to the surrounding impact area. These techniques are described in more detail in the following sections.

5.3.3 Limiting Conflicting Uses

Most standard approaches to wetland planning result in decisions to limit conflicting uses while allowing some flexibility with appropriate mitigation or other protection. An implementation program to limit conflicting uses generally will include a wetland protection ordinance that specifically lists the types of uses that are prohibited, the uses that are allowed, and under which conditions (using "clear and objective" language). Generally, protection ordinances are written broadly to apply to many different sites in a community. To cover the different situations, many communities will allow certain conflicting uses on a limited basis or subject to review procedures such as a conditional use or design review. For example, a community might prohibit recreational trails through wetlands but allow trails in adjoining impact areas or buffers subject to specific design standards and procedures, or encourage innovative site design that minimize or mitigate resource impacts. Comprehensive plan policies also must be adopted to support the implementation program.

5.3.4 Protection Measures under the Standard Approach

OAR 660-23-050 (2) requires that regulation of conflicting uses on the resource site and impact area be accomplished through *clear and objective standards*. These can be numerical standards, measurable performance standards, or non-discretionary requirements. The local government must adopt a program to apply these standards, such as conditional use or design review.

In addition to the required clear and objective regulations, a local government also may adopt an alternative approval process that includes standards that are discretionary. The discretionary standards are to be used only if the landowner agrees to follow them rather than the clear and objective standards. If a discretionary process is adopted, it must state that it is an alternative path to the clear and objective standards. Any discretionary standards must require a level of protection that meets or exceeds the level of protection intended under the clear and objective standards (OAR 660-23-0050 [3][b]). If discretionary criteria are used, a review process, such as a design review or planned unit development review, is usually adopted to implement the regulations.

Discretionary Criteria

Discretionary criteria are by their nature less precise. They offer the reviewing authority a great amount of latitude in determining whether the criterion is satisfied. Examples include:

1. impact-related criteria, such as "impacts to the wetland shall be minimized and shall be designed in such a way that there is no loss of wetland function"; and
2. criteria that balance different objectives, such as "consideration of economic benefits."

Under an approach that relies on discretionary criteria, Goal 5 requires that such criteria will result in a project that will meet or exceed the level of protection that would have been afforded the wetland site under the clear and objective standards (OAR 660-23-0050 (3)(b)).

Clear and Objective Standards

Clear and objective standards are precise and specific requirements that provide little opportunity for interpretation by the reviewing authority. Examples include:

1. numeric standards, such as requiring a 50-foot setback from the edge of the wetland;
2. nondiscretionary requirements, such as prohibiting the removal of native vegetation within the resource site for other than hazard reduction; and
3. performance standards that describe a clear, measurable outcome to be achieved, such as maintaining 80 percent vegetative cover in the wetland to maintain the water-quality filtration function. It is the responsibility of the applicant to show that the performance standard has been met.

Wetland protection regulations developed under the standard Goal 5 process usually provide a specific list of the uses that are: allowed outright, prohibited, or those allowed subject to special conditions. The list must address uses within the wetland itself, as well as uses that may occur within the impact area. The standard process might lead to a two-tiered set of regulations, i.e., with certain regulations attached to the significant wetland itself and other regulations attached to its impact area. Most often, impact areas are regulated by applying protective measures to wetland buffers or to specific setbacks. The standard approach for wetlands allows discretion over buffer sizes and locations. The width of buffers should be related to the functions to be protected, sensitivity of the resource, and intensity of adjacent land uses.

5.3.5 Linking the Standard Process with Riparian Protection

Just as there are two options for wetland planning, there are both standard and safe harbor options for a Goal 5 program for riparian corridors. A community may select either option for the two types of resources or mix and match to best meet their needs. If a community desires maximum flexibility in both wetland and riparian protection programs, they may choose to pursue the standard (ESEE) analysis process for both wetland resources and riparian resources. The standard process includes the same steps for riparian resources as it does for wetlands: after inventorying riparian corridors and assessing their significance, the local jurisdiction must identify land uses that conflict with protection of riparian corridors, analyze the conflicts, make decisions about the appropriate level of protection, and adopt a program implementing the decisions made. However, the standard approach allows a local jurisdiction to adjust the width of the riparian area that will be affected by a protection ordinance. The individual definition of corridor width could be based on the locally dominant riparian vegetation (potential tree height, see the *Urban Riparian Inventory and Assessment Guide* DSL, 1998) or other criteria. Using the standard (ESEE) approach, a jurisdiction need not include setbacks on wetlands in the riparian area. However, omitting buffers around riparian wetlands likely would be hard to justify for fish-bearing streams.

5.4 Safe Harbor Implementation Options

5.4.1 Safe Harbor for Wetlands under Goal 5

OAR 660-23-100 (4)(b) requires that local governments following the safe harbor approach adopt a safe harbor ordinance that protects significant wetlands. The administrative rules require ordinances that restrict grading, excavation, placement of fill, and vegetation removal other than perimeter mowing and other

cutting necessary for hazard prevention. Wetland restoration or enhancement activities usually are allowed. The safe harbor rule also requires inclusion of a variance procedure to address hardships, map errors, and reduction or removal of restrictions when land is rendered not buildable by the ordinance.

5.4.2 Safe Harbor for Riparian Resources under Goal 5

A related Goal 5 administrative rule sets forth safe harbor requirements for wetlands that occur within riparian corridors. These were discussed in Section 4.5. Basically, the riparian safe harbor rule (OAR 660-23-090 (5)) specifies the standard setback distances for riparian corridors and states that where the corridor includes all or portions of a *significant wetland*, the distance to the riparian corridor boundary shall be measured from, and include the upland edge of, the wetland (illustrated in Figure 4-3). The riparian safe harbor rule establishes these corridor boundaries only for "fish-bearing" streams; the resource inventory must document whether or not the streams meet that definition in the rule.

The safe harbor protection requirements for riparian corridors are listed in OAR 660-23-090 (8), and excerpted below. These protections would apply to a significant wetland if all or a part of the wetland fell within the riparian corridor boundary.

"(a) The ordinance shall prevent permanent alteration of the riparian area by grading or by the placement of structures or impervious surfaces, except for the following uses provided they are designed to minimize intrusion into the riparian area:
(A) Streets, roads, and paths;
(B) Drainage facilities, utilities, and irrigation pumps;
(C) Water-related and water-dependent uses;
(D) Replacement of existing structures with structures in the same location that do not disturb additional riparian surface area.

(b) The ordinance shall contain provisions to control the removal of riparian vegetation, except that the ordinance shall allow:
(A) Removal of nonnative vegetation and replacement with native plant species;
(B) Removal of vegetation necessary for the development of water-related or water dependent uses."

NOTE: The *riparian* safe harbor rule allows for the type of uses listed above, if mitigated (per OAR 660-23-090 (8)(e)). However, the *wetland* safe harbor rule is more restrictive and does not allow those uses. Thus, if these uses (under 660.23-090(8)(a)) were proposed in a riparian corridor and would affect a significant wetland, a Goal 5 ESEE analysis and corresponding program decision would be necessary to support such conflicting land uses

Coordination with Riparian Planning

- Advocate simultaneous riparian and wetland inventory and assessment work.
- See OAR 660-23-0090 for different riparian inventory options.
- Note that the riparian and wetland safe harbor provisions are somewhat different.
- Consider that following the standard process for riparian and wetland resources simultaneously will allow the most flexibility to customize local protections.
- Coordinate riparian corridor safe harbor protections with significant wetlands.

in that wetland (see DLCD Order #001382 to City of Toledo, March 28, 2002).

The safe harbor standards for wetlands and riparian areas are considered as both the maximum and minimum allowed under the administrative rules (i.e., one cannot use the safe harbor to protect more, not protect less than the specified standards). Given this, if a local government decides to use the safe harbor approach, they will have little discretion regarding the form and extent of their regulations. Remember also that the wetland and riparian safe harbors under Goal 5 were not designed to satisfy new federal standards under the 4(d) rule of the ESA (see related discussion in Section 4.9).

5.5 Protection Ordinances — Safe Harbor and the Standard Process

Whether developed in response to the standard or the safe harbor process, a wetland protection ordinance generally will include similar procedures and standards. This subsection highlights some common features and choices pertaining to wetland ordinances.

5.5.1 Ordinance Structure — General Regulations or Overlay Zone

Zoning ordinances provide two basic methods for protecting wetlands. The ordinance can be developed as (1) a general regulation that applies to identified wetland sites, or (2) a zoning overlay district that is used in conjunction with the underlying zoning. The primary distinction between the two methods is in how sites are identified and mapped. If applied as a general regulation, the wetland protection must be tied to a list of significant sites. For the second option, the overlay zone is also displayed on official zoning maps that will serve as a notice for developers and property owners. This is similar to the way floodplain and hillside overlay districts are used. For wetlands, a disadvantage of the latter method is that if new information becomes available for a site following a wetland delineation procedure (i.e., a more intensive field inspection), the wetland boundaries may need to be redrawn and the zoning map amended or annotated accordingly. The LWI maps (and the wetland overlays on which they are based) must include a disclaimer informing users that exact boundaries are subject to field verification. Such map adjustments are often slight and need not trigger a formal plan amendment.

The basic elements of a wetland protection ordinance are presented below. These elements may be combined or reorganized but are generally found in most ordinances. The model ordinance (Appendix G) incorporates many of these elements.

5.5.2 Purpose

A wetland protection ordinance should begin with a statement of purpose, which sets forth the reasons why the ordinance has been adopted. It should state that the ordinance is intended to implement the policies of the comprehensive plan and meet the requirements of Goal 5, as well as any other purposes the local government has determined.

5.5.3 Applicability

The applicability section explains how the zoning ordinance is to be applied, which properties (in general) are affected, and the effective date of the ordinance. The applicability section should refer to the list of significant wetlands that are protected by the ordinance as illustrated on the jurisdiction's LWI map. This list must be adopted as a supporting element of the comprehensive plan.

Often the same ordinance that protects significant wetlands may include the provisions for riparian protection as well. This dual purpose makes sense because similar regulations (buffers and use restrictions) may be applied for both resource types. If combining protection of these resources into one ordinance, make sure that it meets the Goal 5 standards for both resource types.

5.5.4 General Provisions

This section of the zoning ordinance outlines the general provisions and requirements for obtaining a development permit, in this case affecting a significant wetland. The section should require coordination with the Corps and DSL as part of the permitting process.

5.5.5 Resource Areas and Buffers

This section describes the wetland resources and any surrounding protective buffers if the standard Goal 5 approach justified or required such buffers. This section would likely explain the buffer purpose and rationale for the buffer sizes selected. (If this will be a combination ordinance, the riparian areas and/or buffers also would be described here.)

5.5.6 Permitted Uses and Conditional Uses

The heart of a wetland protection ordinance specifies land uses and activities that may or may not occur. This section lists the uses allowed outright under the ordinance and those that are permitted through a conditional-use procedure. Allowable uses require an objective or non-discretionary permit approval process. Conditional uses are subject to review criteria, with decisions made by the planning commission or a hearings officer. Conditional use criteria also must be clear and objective under Goal 5 rules.

Buildable Lands

Remember that local governments (or Metro) may amend UGBs to compensate for the loss of any land that, due to local protections, has been determined to be unbuildable through the wetland planning process (OAR 660-23-070).

For those local governments opting to follow the wetland safe harbor requirements, grading, fill, excavation, and vegetation removal must be prohibited within significant wetlands. Note that the safe harbor requirements for riparian buffers are slightly more permissive: they allow streets, utilities, and water-related and water-dependent uses, provided intrusions are minimized. Limiting the area disturbed within the buffer may further restrict such uses. As an example, disturbance for utilities could be limited to a width of 16 feet.

5.5.7 Prohibited Uses

Typically, zoning ordinances list only those uses that are permitted outright and those permitted conditionally—all other uses are presumed "prohibited." Sometimes it is necessary to specifically list prohibited uses, especially those that are not normally referred to or otherwise listed in such an ordinance. By specifically prohibiting certain types of uses and activities in wetlands and buffers, a community can provide greater protection for the wetland resource and greater certainty for property owners. Examples of uses that may be prohibited include: removing native plant species; enlarging lawn area; or dumping garbage or yard debris. Consider the enforceability of each proposed prohibition.

5.5.8 Establishing the Decision Process

The decision process section establishes the process for local government approval of applications affecting a wetland resource. The section describes the decision body that has the responsibility for approval (e.g., planning commission, hearings officer, planning director). A decision by a planning director must be based on clear and objective criteria. Decisions by a planning commission or a hearings officer may be based on discretionary criteria, but according to the Goal 5 administrative rule, discretionary criteria can be used only if an applicant chooses such a process (see below) in place of the process based on clear and objective criteria.

The decision process section must specifically list the decision criteria on which the approval authority will base its decision. The criteria must include compliance with development standards.

5.5.9 Development Standards

Development standards resulting from the standard Goal 5 approach must provide clear and objective guidance on how specific types of uses and activities are permitted. Standards may address a variety of topics, including transportation facilities, utilities, buffers, vegetation management, and wetland enhancement (see sample ordinance in Appendix G). Development standards for buffers can be used to establish the width of the buffer area adjacent to the wetland. If buffer averaging is allowed, clear and objective standards must describe how the averaging is to be

About Buffers

Wetland buffers are upland areas immediately adjacent to a wetland. They may serve to enhance water quality by filtering stormwater before it enters a wetland. Buffers also may preserve the level of other wetland functions such as wildlife habitat and flood storage. The width of a buffer should be related to the functions it is intended to protect, the sensitivity of the resource, and the intensity of adjacent land uses.

The wetland safe harbor rule does not include protection of buffers. However, a local government may establish a buffer by following the *standard* Goal 5 process for wetlands, or by applying other Goal 5 resource protection requirements (for example, riparian, wildlife habitat, or open space). Many communities have adopted Goal 6 or 7 water-quality buffers along wetlands and streams. In Washington County, Clean Water Services, the regional storm- and wastewater utility, requires such wetland buffers.

See also these items in the "For Further Information" section at the end of the chapter: the Water Quality Model Code (DLCD and DEQ), and the scientific report supporting Metro's Goal 5 work (Metro 2002).

accomplished. Sometimes an absolute minimum buffer will be listed.

As illustrated in the "Approval Criteria" section of the model ordinance, a landowner may choose to follow a parallel process using standards that are not clear and objective (i.e., discretionary, such as those that might be described for planned unit developments), if the local government has shown that the alternative standards will result in the same level of wetland protection as the clear and objective standards. This alternative approval process was described in Section 5.3.4.

5.5.10 Enforcement

Usually, the enforcement provisions that pertain to a local government's entire set of zoning ordinances also could serve to enforce wetland regulations. It is probably not desirable to create a separate enforcement section for wetland regulation, so as to avoid redundancy and assure that code enforcement occurs in a consistent, established manner.

5.5.11 Variances

The wetland safe harbor rules under Goal 5 require that the ordinance contain a variance process. Variance procedures generally are used to vary measurable dimensional standards; they are not intended to vary the uses allowed. Typically, ordinances will require that the applicant demonstrate a "hardship" exists for approval of a variance. To prove a "hardship," an applicant may need to demonstrate that there is no reasonable use for the property assuming that other similarly situated properties are being put to use. A "hardship" typically will be based on physical characteristics of the property over which the applicant has no control (for example, application of the setback distance is complicated by a physical constraint such as a cliff or exceptionally steep slope on the property). Goal 5 also states that variances or exceptions may be granted for verified mapping errors.

Variance Criteria

Typical criteria for a hardship variance include:

- The variance is necessary to allow some reasonable economic use of the subject parcel of land, consistent with neighboring properties. The subject parcel must be owned by the applicant, and must not have been created after the effective date of this chapter;
- The applicant has exhausted all options available under this chapter to relieve the hardship;
- The variance is the minimum necessary to afford relief, considering the potential for increased flood and erosion hazard and potential adverse impacts on native vegetation, fish and wildlife habitat, and water quality;
- No measurable adverse impacts on water quality, flood passage capacity, or slope stability will result from approval of this hardship variance, or these impacts have been fully mitigated; and
- Loss of vegetative cover shall be minimized. Any lost vegetative cover shall be replaced on the site by native vegetation to achieve equivalent vegetative cover for stream shading or erosion control.
- The granting of a variance that allows wetlands or waterways to be impacted is contingent on the owner securing any applicable state or federal permits.

5.6 Implementing Goal 17 Wetland Protections

Goal 17 requires protection of significant wetlands within the Coastal Shorelands Area. The goal is specific in its language and, unlike Goal 5, does not allow conflicting uses based on an ESEE analysis.

The same types of implementation tools needed for Goal 5 protection generally are appropriate for Goal 17 protection. In most coastal communities, it is possible to use one wetland protection ordinance to protect wetlands subject to both Goal 17 or Goal 5. Goal 17 allows local governments the option to include wetland

buffers as part of the wetland protection program, but they are not required. Basically, any Goal 5 program that is as restrictive or more so than the wetlands safe harbor will satisfy Goal 17 requirements.

5.7 The Wetland Conservation Plan Option

In lieu of the Goal 5 planning procedures for wetlands profiled in this manual, local governments may choose to develop a WCP to take a more comprehensive and direct approach to protecting wetlands and resolving development conflicts. This option is best suited to areas with high levels of wetland-development conflict, where there is a strong incentive for the multiple landowners to work together for an overall solution. Compared to the standard or safe harbor Goal 5 approaches, a WCP achieves a more comprehensive result with a higher degree of certainty. At the same time, a WCP requires considerably more effort. The decision to use this alternative (rather than the Goal 5 planning process) needs to be made at the beginning, because the WCP requires a more detailed field inventory.

In short, a WCP is an alternative to the Goal 5 or 17 wetland planning provisions and is deemed to comply with Goal 5 wetland planning requirements per OAR 660-23-0100(8). It is a voluntary program developed by a city or county, and includes detailed plans for filling select wetlands and for providing mitigation. The WCP differs from the other options in that the WCP designates specific wetlands or portions of wetlands that may be developed and, once approved by DSL, both local and state permitting will proceed according to the plan. A WCP also may be submitted to the Corps of Engineers for approval as a Special Area Management Plan or for a Regional General Permit; either process may provide for expedited federal and state permitting of future wetland development permits.

The major components of a WCP include (ORS 196.678):

- a local wetlands inventory that identifies wetlands as small as 1/10 acre in size (rather than ½ acre minimum under the regular inventory requirements of Goal 5);
- assessment of wetland functions;
- evaluation of historical wetland types and changes;
- designation of wetlands that will be protected, conserved, or developed (these requirements are detailed in OAR Chapter 141, Division 120);
- a mitigation plan that is site-specific and adequately compensates for all wetlands designated for development; and
- adoption of ordinances to implement the plan.

There are two major differences between the methods for inventorying and assessing wetland functions for a WCP and the methods for an LWI. First, the minimum wetland mapping size for WCPs is 0.1 acre, compared to 0.5 acre for LWIs. Second, wetlands identified for development in the WCP must be delineated to establish the jurisdictional wetland boundaries; this level of accuracy and documentation is not required in LWIs.

A WCP protection program requires the following elements (from ORS 196.678 (2)):

(d) Designation of wetland areas for protection, conservation or development. Wetlands within areas designated for development shall be delineated to determine regulatory boundaries;

(e) A mitigation plan, including a program for replacement of planned wetland losses and restoration of lost functions and values through creation of new wetlands or enhancement of existing wetland areas which designates specific sites within the plan area and actions for restoration and enhancement;

(f) Policies and implementing measures establishing protection, conservation and best use of the wetlands in the plan area;

(g) Specification of sites for fill or removal, or both, and the conditions and procedures under which fill or removal, or both, may occur;

(h) Monitoring provisions that insure the wetland mitigation measures are implemented and mitigation goals are achieved;

(i) Identification of public uses of the wetlands and waters and conflicting planned uses; and

(j) Specification of buffer areas and uses allowed on lands which are adjacent to wetlands and which are necessary to maintain, protect or restore wetland functions and values.

An approved WCP can provide significant benefits to a community and the wetland resource:

- it allows for analyzing and addressing wetlands as part of the aquatic system at the landscape scale;
- it allows for maximizing wetland protection where most needed and appropriate, and also for developing in wetlands where needed;
- strategic wetland and aquatic system restoration can be achieved through the wetland mitigation plan;
- a plan may incorporate and help to resolve rare species issues through a habitat recovery plan; and
- perhaps most significant for some communities and landowners, an approved plan provides for **regulatory certainty**.

The WCP achieves this regulatory certainty by designating some wetlands for protection and some for development. It is therefore a much more challenging planning option than that provided under Goal 5 or 17. Several WCP efforts have hit impasses and the communities have later returned to the Goal 5 wetland planning process. One reason a WCP is more difficult is that a WCP must comply with the same wetland fill standards that DSL must address for individual fill permits. If federal approval is sought, it also must comply with federal permit standards.

Specific requirements and procedures for the approval of WCPs are in ORS 196.681 and in OAR Chapter 141, Division 86 (e.g., OAR 141-86-05 through -100), and Division 120 (OAR 141-120-00 through -230). A technical advisory committee that includes representatives of pertinent state and federal agencies generally helps guide WCP development to ensure all requirements are met, and DSL must issue a public notice and provide for public comment prior to approving a WCP.

Once approved by DSL, the local government must submit an annual report to DSL, and the WCP is reviewed by DSL every 5 years. The local government may opt to issue wetland fill permits themselves along with other development permits, or they may choose for DSL to continue to issue Removal/Fill permits. In the latter case, DSL will issue permits in conformance with the approved plan.

To summarize, an adopted and approved WCP gives a local jurisdiction a thoughtful, cohesive strategy for managing wetland resources to maximize their contribution to the community and reduce adverse economic impacts. WCPs also hold promise for better coordination with rare-species recovery plans. Their substantial benefits are the fruit of the weighty deliberations, tough decisions, and consensus building that are a part of every successful WCP effort.

5.8 Non-Regulatory Approaches to Wetland Protection

A wide variety of non-regulatory approaches can be used to promote wetland protection, including acquisition. Generally, non-regulatory programs are not mandated or required but are incentive-driven. Incentive-based protection programs alone cannot satisfy Goal 5 requirements for significant wetlands, but they can help. Incentives often are used in combination with regulations to achieve local planning objectives. Often, assembling a package of compensation tools that might offset perceived losses in uses will better incline the public and elected officials to sup-

port a strong Goal 5 program. A variety of incentive strategies and programs is described below.

5.8.1 Property Acquisition

Property acquisition by a local government or conservancy group is perhaps the most effective form of wetland protection. Acquisition allows control over use, maintenance, and enhancement. Acquisition by a public agency may require that an ongoing program be established to care for the wetland, often provided through a local government parks department. Other options for protection include acquisition by nonprofit organizations dedicated to natural resource conservation, such as land trusts or similar organizations.

To achieve protection, an organization (e.g., a land trust) or local government does not need fee-title to the property. Rather, partial title or a deed restriction can maintain control over development rights through instruments such as conservation easements. Certain donations of land or easements can benefit some property owners by reducing their federal tax liabilities. If a local government or nonprofit agency acquires land by donation, they should consider the costs associated with its maintenance. Ownership by a local government or protection group is not sufficient to meet Goal 5 requirements (OAR 660-023-0040(2)(a)). Zoning ordinances must protect the wetland regardless of ownership.

5.8.2 Park Dedications and System Development Charges

As part of the local land-development process, many local governments require dedication of park land or a fee in lieu of land dedication. Alternatively, many communities require payment of a parks "system development charge" (SDC). Developers often pass SDCs through to builders or home buyers since SDCs often are collected at the time a building permit is issued. Park land dedications and SDCs are tools local governments can use to negotiate for acquisition or other protection of wetlands. Developers often are willing to dedicate wetlands to the public since these sites are more difficult to develop and require complex permitting. Your city or county attorney, manager, and/or finance director may be able to discuss the appropriateness of this strategy in your community.

5.8.3 Density Transfer

Some local governments include provisions in development ordinances to allow transfer of development density from one portion of a property to another. For example, if a 2-acre site is zoned for 5 dwellings per acre, a total of 10 dwellings is permitted. If 1 of the 2 acres is a wetland, full-density-transfer provisions would allow all 10 dwellings to be located on the 1 remaining

buildable acre. This type of provision generally is easy to implement since the density transfer is within a single parcel. It can be accomplished through the development review process or through a planned unit development (PUD). The wetland that remains must be protected through regulation.

In contrast, transfer of development rights (TDR) between different parcels is difficult and often requires a complex set of implementing ordinances. Although complex, a TDR program has the advantage of ensuring that property owners maintain the development rights that they perceived prior to a wetland protection program. TDR programs generally require a large amount of up-front work to identify properties that are eligible to transfer densities and those that are eligible to receive the increase in density that results from the transfer. Few, if any, such programs exist in Oregon. Deschutes County has been working to establish a TDR program in the La Pine area. A simplified version of a TDR program may be possible through the use of paired PUDs. Under this type of program, PUDs provide the means of transferring density from one property to another. PUD applications would be necessary for both the sending and the receiving properties. Local ordinances need to include enabling language for such a transfer to occur. This type of program is in use in Boulder County, Colorado. (For more information, see *Section 6-700, Transferred Development Rights Planned Unit Development,* of the Boulder County, Colorado Land Use Code (URL http://www.co.boulder.co.us/lu/lucode/article6.htm).

5.8.4 Mitigation Banks

Many municipalities and regional governments are interested in mitigation banks because a large, multi-project mitigation area may better serve local needs for open space and watershed function.

Mitigation is wetland restoration, creation, or enhancement undertaken expressly for compensating unavoidable wetland losses due to development actions. Mitigation banks typically result in the consolidation of what otherwise would be small, fragmented wetland mitigation projects into one or more larger contiguous area(s) protected from development in perpetuity. Wetland mitigation projects performed within the context of an overall strategy for a region (such as the "bank" properties) are likely to render better functional results than isolated projects. The bank approach also provides economies of scale relating to the planning, implementation, monitoring, and management of mitigation projects.

In Oregon, mitigation banks are created prior to the actual need for compensatory mitigation and approved by DSL, the Corps, and a Mitigation Bank Review Team. The bank sponsor may be a

municipality or a private entrepreneur. When a plan for a new mitigation bank plan is approved, the bank's sponsor develops the bank by enhancing, restoring, or creating wetlands usually over several acres. When the mitigation bank is operational, developers may purchase its wetland values, called credits, to mitigate for development impacts that take place outside of the bank area itself, but usually within a predetermined service area, such as a watershed or other specified local region. The permittee (incurring the wetland impacts) compensates the sponsor of the mitigation bank at a negotiated rate; in this way, the bank sponsor recovers the cost of developing the bank and may profit from the sale of wetland credits. Mitigation banks are seen as a way of reducing ecological uncertainty by demonstrating achievement of successful performance standards in advance of credit withdrawals.

A key difference between a wetland mitigation bank (or wetland mitigation in general) and other types of local wetland programs is that the operation of wetland mitigation banks is always tied to the permitting requirements of Oregon's Removal-Fill law and the federal Clean Water Act. In other words, the bank allows a developer an efficient means of "mitigating," or compensating, for quantified wetland losses resulting from a specific development project.

For more information, see DSL's *Wetland Mitigation Banking Guidebook for Oregon* (October 2000, available in hardcopy or on DSL's Web site at URL http://statelands.dsl.state.or.us/mit_guidebook_intro.htm).

5.8.5 Public Education Programs

Public education is another non-regulatory approach to promoting wetland protection. Many property owners are quite willing to protect their own wetlands once they learn about their public and environmental benefits. Many communities provide signs at the edges of wetlands to let visitors know they should stay out of the wetland. Walking trails near wetlands often include interpretative signage that provides information about wetland functions and benefits. Flyers and other types of educational brochures can provide similar educational benefits. In addition, the city, school district, or local advocacy groups such as watershed councils, adopt-a-stream programs, or homeowner associations may sponsor more active educational efforts such as site tours, work day projects, special events, guest speakers, etc. Likewise, these groups might recruit local monitors to make regular surveys of the property. While public education by itself is not a sufficient tool to protect wetlands under Goal 5, it helps build public acceptance of wetland protection ordinances.

5.9 Program Adoption

The ultimate purpose of the Goal 5 wetland planning process is to adopt an implementation program that will carry out the decisions made from the resource inventory and analysis. Program adoption steps include public outreach, required public notice, preparation of official findings, and adoption of the resource inventory and protective ordinances.

5.9.1 Public Outreach

Public involvement is as important at the end of the Goal 5 process as it is in the beginning. Adoption of a Goal 5 implementation program will require amendments to a local comprehensive plan and the development code. As "legislative actions," these amendments require public hearings before the planning commission and city council or board of county commissioners. Hearings provide excellent opportunities for citizen outreach, but the public hearing should not be the first time a citizen is informed about a Goal 5 program. As described in Section 4.11, local governments should provide several opportunities for citizens to become informed and/or involved in the Goal 5 planning tasks.



Prior to beginning the hearing process, it is usually a good idea to hold an informational workshop. This type of workshop often will eliminate the concerns of many property owners. For those who will testify at the hearings, the workshops help them better understand the issues so that their testimony is more meaningful and appropriate.

5.9.2 Notice Requirements

As with any plan amendment or code amendment, the local government must provide notice to DLCD 45 days in advance of the first evidentiary hearing regarding a wetlands protection program. These notice forms are available from DLCD.

Local governments also must provide notice to property owners who may be affected by the program. First of all, your local plan amendment process may require specific newspaper or media notices. In addition, Ballot Measure 56 (ORS 215.503) requires that property owners be mailed a notice when new local regulations will reduce the zoning classification or allowable uses of their property. Measure 56 sets minimum standards for what to include in the public notice, such as the decision-making criteria. Local governments should provide notice of the ordinance adoption hearing to owners of all properties with identified wetland re-

sources, and to owners of any property identified as part of an impact area, thereby informing all affected property owners.

In some cases, Ballot Measure 56 provides for the state to reimburse the costs of these mailed notices. Specifically, if the local rezoning is initiated "by a requirement of periodic review" OR by a new or amendment to a state administrative rule or statute, then DLCD "shall reimburse the local government for all actual and reasonable costs of providing notice" (ORS 215.503 Section 3(12)). By contrast, if the local government initiates the rezoning outside of these circumstances, the local government pays for it.

5.9.3 Findings

As part of adoption, local government also must adopt findings that address the criteria for plan amendments and code amendments. If the standard Goal 5 approach was followed, findings should include scientific data generated during the inventory and ESEE steps, as well as the ESEE analysis and conclusions. If the wetland protection program is adopted as a post-acknowledgment plan amendment (PAPA), these findings also must address all other statewide planning goals (ORS 197.225).

5.9.4 Inventory Adoption

The local government also must adopt the Goal 5 wetland inventory either before or at the same time as it adopts the implementation program. Usually, the wetland inventory is finalized long before the local government has developed and is ready to adopt the implementation program/wetland protection ordinances (particularly if following the standard process and conducting ESEEs, etc.). Consequently, it is a good idea to adopt the wetland inventory as soon as it is approved by DSL. Adopting the inventory should not be a controversial step; this does not alter any regulations pertaining to the mapped sites. However, early adoption does have the following advantages: 1) it gives developers advance notice of existing state and federal permit needs; 2) it reduces inadvertent wetland fill violations; and 3) it provides information for better community advocacy and involvement with subsequent ordinance development.

Tips for Implementation

- Adopt the wetland inventory as soon as it has been approved by DSL.
- Use multiple approaches for implementation; include incentives as well as regulations.
- Include a public education program as part of the implementation program.
- If adopting a safe harbor ordinance for wetlands, consider combining the implementation ordinance with riparian protection.
- Conduct an informational workshop prior to beginning public hearings.

For Further Information

Boulder County, Colorado, Land Use Code, Article 6, Section 700: *Transferred Development Rights Planned Unit Development* URL http://www.co.boulder.co.us/lu/lucode/article6.htm.

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Hargett, T., and J. Ward, "Local ordinances that aren't all wet." American City and County, February 2001, Vol. 116, No. 3.

Metro Council. 2002. Metro's Technical Report for Goal 5. July 2002 version. Metro, Portland, OR.

Oregon Department of Land Conservation and Development (DLCD) and Oregon Department of Environmental Quality (DEQ). October 2000, rev. April 2001. *Water quality model code and guidebook*. Salem, Ore. Also available at URL http://www.lcd.state.or.us/coast/waterguidebook/watergb.html

Oregon Division of State Lands (DSL), October 2000. *Wetland Mitigation Banking Guidebook for Oregon* URL http://statelands.dsl.state.or.us/mit_guidebook_intro.htm.

Appendix A

Glossary
Acronyms

Glossary

Buffer: An area maintained with natural vegetation between a pollutant source and a water body that provides habitat corridor functions, natural filtration, and other forms of water quality protection.

Buffer Zone: A designated transitional area around a stream, lake, or wetland left in a natural state, usually with vegetation. Buffer zones function as habitat corridors and help protect the water body from runoff pollution. Development is often restricted or prohibited in a buffer zone.[1]

Conflicting Use: A land use or other activity reasonably and customarily subject to land use regulations that could adversely affect a significant Goal 5 resource.[2]

Conserve: To manage in a manner that avoids wasteful or destructive uses and provides for future availability.[3]

ESA: Endangered Species Act — A 1973 law passed by Congress with the stated purpose of conserving both the ecosystems upon which endangered and threatened species depend, and the endangered and threatened species themselves.

ESEE Analysis: An analysis of economic, social, environmental, and energy consequences, positive or negative, that could result from a decision to allow, limit, or prohibit a conflicting use.[2]

Field-Verify, or Field Verification: To walk over and/or visually check an area to make a wetland determination and a wetlands map. This may or may not include collecting sample plot data.[4]

Floodplain: Either a natural feature or a statistically-derived area adjacent to a stream or river where water from the stream or river overflows its banks at some frequency during extreme storms.[1] Also, the area adjoining a stream, tidal estuary, or coast that is subject to regional flooding.[3]

Flood, Regional (100-Year): A standard statistical calculation used by engineers to determine the probability of severe flooding. It represents the largest flood that has a 1% chance of occurring in an area in any one year as a result of periods of higher-than-normal rainfall or stream flows, extremely high tides, high winds, rapid snowmelt, natural stream blockages, tsunamis, or combinations thereof.[3]

Floodway: The normal stream channel and that adjoining area of the natural floodplain needed to convey the waters of a regional flood while causing less than one foot increase in upstream flood elevations.[3]

Function: A characteristic action or role provided by a resource. Wetland functions include such things as fish and wildlife habitat, a water quality improvement, hydrologic controls, and flood damage reduction.[5] Riparian functions include water quality, thermal regulation, flood management, and wildlife habitat.[6]

Goal 5 Resources: Goal 5 requires that the following resources be inventoried: Riparian Corridors, including water and riparian areas and fish habitat; Wetlands; Wildlife Habitat;

Federal Wild and Scenic Rivers; State Scenic Waterways; Groundwater Resources; Approved Oregon Recreation Trails; Natural Areas; Wilderness Areas; Mineral and Aggregate Resources; Energy Sources; and Cultural Areas. The Goal encourages inventories of the following resources: Historic Resources, Open Space, Scenic Views and Sites.[2]

Hydrologic: Relating to the occurrence and properties of water. Hydrologic hazards include flooding (the rise of water) as well as hydraulic hazards associated with the movement of water such as bank erosion.[3]

Hydrology: The science addressing the properties, distribution, and circulation of water across the landscape, through the ground, and in the atmosphere.[1]

Impact area: A geographic area within which conflicting uses could adversely affect a significant Goal 5 resource.[3]

Impervious surface: A surface that cannot be penetrated by water, such as pavement, rock, or a rooftop, and thereby prevents infiltration and generates runoff.[1]

Indicator: The soil, vegetation, and hydrologic characteristics or other field evidence that indicate wetlands are present.[4]

Inventory: A survey, map, or description of one or more resource sites that is prepared by a local government, state or federal agency, private citizen, or other organization and that includes information about the resource values and features associated with such sites. As a verb, "inventory" means to collect, prepare, compile, or refine information about one or more resource sites.[2] For certain resources, specific inventory standards apply.

Local Wetland Inventory (LWI): A systematic survey of an area to identify, classify, and map the approximate boundaries of wetlands, and that includes the supporting documentation required by OAR 141-086-0200.[4]

Mitigation, compensatory: The creation, restoration, or enhancement of a resource area to compensate for resource functions impacted by development.

Offsite Determination: A wetland determination conducted without field verification using NWI maps, soils maps, and aerial photographs.[4]

Post-acknowledgment plan amendment ("PAPA"): A term that encompasses actions taken in accordance with ORS 197.610 through 197.625, including amendments to an acknowledged comprehensive plan or land use regulation and the adoption of any new plan or land use regulation. The term does not include periodic review actions taken in accordance with ORS 197.628 through 197.650.[2]

Potential Tree Height (PTH): The potential height of a mature tree for a particular location, determined by climate, geology, hydrology, and landscape position.

Perennial Stream: A stream that flows continuously throughout the year.

Planning Area: The air, land, and water resources within the jurisdiction of a governmental agency.[3]

Preserve: To save from change or loss and reserve for a special purpose.[3]

Program, or Program to Achieve the Goal: A plan or course of proceedings and action either to prohibit, limit, or allow uses that conflict with significant Goal 5 resources, adopted as part of the comprehensive plan and land use regulations (e.g., zoning standards, easements, cluster developments, preferential assessments, and/or acquisition of land or development rights).[2]

Protect: When applied to an individual resource site, protect means to limit or prohibit uses that conflict with a significant resource. When applied to a resource category, protect means to

develop a program consistent with this division.[2]

Resource List: The description, maps, and other information about significant Goal 5 resource sites within a jurisdiction adopted by a local government as a part of the comprehensive plan or as a land use regulation. An adopted "plan inventory" is a resource list.[2]

Riparian Area: The area adjacent to a river, lake, or stream, consisting of the area of transition from an aquatic ecosystem to a terrestrial ecosystem.[7]

Riparian Corridor: A Goal 5 resource that includes the water areas, fish habitat, adjacent riparian areas, and wetlands within the riparian area boundary.[7]

Riparian corridor boundary: An imaginary line that is a certain distance upland from the top of bank, as specified in Goal 5 rules for riparian areas.[7]

Runoff: Water from rainfall or snowmelt or otherwise discharged that flows across the ground surface instead of infiltrating the ground.[1]

Safe Harbor: An optional course of action that satisfies certain requirements under the standard Goal 5 process. For example, a jurisdiction may choose to identify "significant" riparian corridors using the safe harbor criteria under OAR 660-023-0090(5) rather than follow the general requirements for determining "significance" in the standard Goal 5 process under OAR 660-023-0030(4). Similarly, a jurisdiction may adopt wetlands a safe harbor ordinance that meets the requirements of OAR 660-023-0100(4)(b) in lieu of following the ESEE decision process.[2]

Sample Plot: A specific area on the ground where soils, vegetation, and hydrologic data are recorded on a field data form in order to make a wetland determination.[4]

Significant Habitat Areas: A land or water area where sustaining the natural resource characteristics is important or essential to the production and maintenance of aquatic life or wildlife populations.[3]

Significant Wetland: An inventoried wetland that meets the criteria in OAR 141-86-300.[4]

Statewide Wetlands Inventory (SWI): An inventory which contains the location, wetland types, and approximate boundaries of wetlands in the State of Oregon. This inventory is continually revised as additional information is received or obtained by the Oregon Division of State Lands.[4]

Stormwater: Water derived from a storm or conveyed through a storm sewer system.[1]

Stream: A watercourse created by natural processes, or one that would be in a natural state if it were not for human-caused alterations.[4]

Surface Water: Water that flows across the land surface or in channels, or that is contained in depressions on the land surface (e.g., runoff, ponds, lakes, rivers, and streams).[1]

Take: A term in the Endangered Species Act that means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct" for an endangered or threatened species.[8]

Threatened: A species in danger of becoming endangered within the foreseeable future throughout all or a significant portion of its range.

Threatened and Endangered Species: Those species that have undergone the petition and review process and have been deemed necessary for listing under the ESA.

Top of Bank: Topographical break at the top of the streambank; point at which floodwater leaves the channel.[6] For state regulatory juris-

diction, this is equivalent to the typical 2-year high flow elevation.

Urban Growth Boundary: A line that indicates the outermost limit of a city's planned expansion[9]. The mapped boundary must be adopted by the city it surrounds and the appropriate county.

Urban Unincorporated Community: An unincorporated community which has the following characteristics: (a) Include at least 150 permanent residential dwellings units; (b) Contains a mixture of land uses, including three or more public, commercial or industrial land uses; (c) Includes areas served by a community sewer system; and (d) Includes areas served by a community water system.[10]

Watershed: The land area, or catchment, that contributes water to a specific water body. All the rain or snow that falls within this area flows to the water bodies as surface runoff, in tributary streams, or as groundwater.[1]

Wetland Boundary: A line marked on a map that identifies the approximate wetland/non-wetland boundary. This line is determined by field verification of soil, hydrology, and vegetation indicators.[4]

Wetland Delineation: A determination of wetland presence that includes marking the wetland boundaries on the ground and/or on a detailed map prepared by professional land survey or similar accurate methods.[4]

Wetland Determination: The identification of an area as wetland or non-wetland.[4]

Wetlands: Those areas that are inundated or saturated by surface or ground water at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.[11]

Wetland Unit: A contiguous wetland or group of connected wetlands mapped on a local wetland inventory, regardless of land ownership lines.

Acronyms

BA — Biological Assessment

COE — U.S. Army Corps of Engineers

DEQ — Oregon Department of Environmental Quality

DLCD — Oregon Department of Land Conservation and Development

DOGAMI — Oregon Department of Geology and Mineral Industries

DSL — Oregon Division of State Lands

EPA — U.S. Environmental Protection Agency

ESEE — Economic, Social, Environmental, and Energy

ESA — Endangered Species Act

FEMA — Federal Emergency Management Agency

HCP — Habitat Conservation Plan

LCDC — Land Conservation and Development Commission

LSW — Locally Significant Wetlands

LWD — Large Woody Debris

LWI — Local Wetlands Inventory

MRCI — Municipal, Residential, Commercial, and Industrial

NEPA — National Environmental Protection Act

NRCS — National Resource Conservation Service

NMFS — National Marine Fisheries Service

NOAA Fisheries — National Oceanic and Atmospheric Administration, Fisheries section = NMFS

NWI — National Wetlands Inventory

OAR — Oregon Administrative Rules

ODF — Oregon Department of Forestry

ODFW — Oregon Department of Fish and Wildlife

OFWAM — Oregon Freshwater Wetlands Assessment Methodology

ONHP — Oregon Natural Heritage Program

ORS — Oregon Revised Statutes

OWEB — Oregon Watershed Enhancement Board

OWRC — Oregon Water Resources Commission

PTH — Potential Tree Height

PUD — Planned Unit Development

SDC — Systems Development Charge

SHPO — Oregon State Historic Preservation Office

SWI — Statewide Wetland Inventory

T&E — Threatened and Endangered

TDR — Transfer of Development Rights

UGB — Urban Growth Boundary

USFWS — U.S. Fish and Wildlife Service

USGS — U.S. Geological Service

UUC — Urban Unincorporated Community

WCP — Wetland Conservation Plan

WRD — Oregon Water Resources Department

Endnotes

[1] Oregon Department of Land Conservation and Development; Department of Environmental Quality. 2000. *Water quality model code and guidebook*.

[2] Oregon Administrative Rules Chapter 660, Division 23 (Revised Goal 5 Rules) from Oregon State Archives web site, http://arcweb.sos.state.or.us/rules/OARS_600/OAR_660/660_023.html

[3]Oregon Statewide Planning Goals, from Oregon Department of Land Conservation and Development web site, http://www.lcd.state.or.us/goalhtml/goals.html

[4] Oregon Administrative Rules 141-086-0200 through 0300 from Oregon State Archives web site, http://arcweb.sos.state.or.us/rules/OARS_100/OAR_141/141_086.html. See OAR 141-90-005 for specific details on wetland delineation.

[5] Roth, Emily, Richard Olsen, Patty Snow, and Richard Sumner. 1996. *Oregon freshwater wetland assessment methodology* (OFWAM), Revised edition. Oregon Division of State Lands, Salem, Ore.

[6] Oregon Division of State Lands, 1998. *Urban riparian inventory and assessment guide.*

[7] Oregon Administrative Rules 660-023-090. (The riparian subsection of the Goal 5 rules).

[8] Endangered Species Act of 1973, Section 3[19].

[9] Rohse, Mitch. 1987. *Land-Use Planning in Oregon*. Self-published. [Rohse notes that it is curious this important term was never defined in Oregon's goals, statutes, or administrative rules, yet every city is required to have one.]

[10] Oregon Administrative Rules 660-022-0010 (9).

[11] Oregon Revised Statute 196.800[16], from Oregon State Legislature web site, http://landru.leg.state.or.us/ors/

Appendix B

The 1996 Goal 5 Rule: OAR Chapter 660, Division 23

OAR Chapter 660, Division 23: Procedures and Requirements for Complying with Goal 5

660-023-0000: Purpose and Intent

This division establishes procedures and criteria for inventorying and evaluating Goal 5 resources and for developing land use programs to conserve and protect significant Goal 5 resources. This division explains how local governments apply Goal 5 when conducting periodic review and when amending acknowledged comprehensive plans and land use regulations.

660-023-0010: Definitions

As used in this division, unless the context requires otherwise:

(1) "Conflicting use" is a land use, or other activity reasonably and customarily subject to land use regulations, that could adversely affect a significant Goal 5 resource (except as provided in OAR 660-023-0180(1)(b)). Local governments are not required to regard agricultural practices as conflicting uses.

(2) "ESEE consequences" are the positive and negative economic, social, environmental, and energy (ESEE) consequences that could result from a decision to allow, limit, or prohibit a conflicting use.

(3) "Impact area" is a geographic area within which conflicting uses could adversely affect a significant Goal 5 resource.

(4) "Inventory" is a survey, map, or description of one or more resource sites that is prepared by a local government, state or federal agency, private citizen, or other organization and that includes information about the resource values and features associated with such sites. As a verb, "inventory" means to collect, prepare, compile, or refine information about one or more resource sites. (See *resource list*.)

(5) "PAPA" is a **"post-acknowledgment plan amendment."** The term encompasses actions taken in accordance with ORS 197.610 through 197.625, including amendments to an acknowledged comprehensive plan or land use regulation and the adoption of any new plan or land use regulation. The term does not include periodic review actions taken in accordance with ORS 197.628 through 197.650.

(6) "Program" or **"program to achieve the goal"** is a plan or course of proceedings and action either to prohibit, limit, or allow uses that conflict with significant Goal 5 resources, adopted as part of the comprehensive plan and land use regulations (e.g., zoning standards, easements, cluster developments, preferential assessments, or acquisition of land or development rights).

(7) "Protect," when applied to an individual resource site, means to limit or prohibit uses that conflict with a significant resource site (except as provided in OAR 660-023-0140, 660-023-0180, and 660-023-0190). When applied to a resource category, "protect" means to develop a program consistent with this division.

(8) "Resource category" is any one of the cultural or natural resource groups listed in Goal 5.

(9) "Resource list" includes the description, maps, and other information about significant Goal 5 resource sites within a jurisdiction, adopted by a local government as a part of the comprehensive plan or as a land use regulation. A "plan inventory" adopted under OAR 660-016-0000(5)© shall be considered to be a resource list.

(10) "Resource site" or **"site"** is a particular area where resources are located. A site may consist of a parcel or lot or portion thereof or may include an area consisting of two or more contiguous lots or parcels.

(11) "Safe harbor" has the meaning given to it in OAR 660-023-0020(2).

660-023-0020: Standard and Specific Rules and Safe Harbors

(1) The standard Goal 5 process, OAR 660-023-0030 through 660-023-0050, consists of procedures and requirements to guide local planning for all Goal 5 resource categories. This division also provides specific rules for each of the fifteen Goal 5 resource categories (see OAR 660-023-0090 through 660-023-0230). In some cases this division indicates that both the standard and the specific rules apply to Goal 5 decisions. In other cases, this division indicates that the specific rules supersede parts or all of the standard process rules (i.e., local governments must follow the specific rules rather than the standard Goal 5 process). In case of conflict, the resource-specific rules set forth in OAR 660-023-0090 through 660-023-0230 shall supersede the standard provisions in OAR 660-023-0030 through 660-023-0050.

(2) A "safe harbor" consists of an optional course of action that satisfies certain requirements under the standard process. Local governments may follow safe harbor requirements rather than addressing certain requirements in the standard Goal 5 process. For example, a jurisdiction may choose to identify "significant" riparian corridors using the safe harbor criteria under OAR 660-023-0090(5) rather than follow the general requirements for determining "significance" in the standard Goal 5 process under OAR 660-023-0030(4). Similarly, a jurisdiction may adopt a wetlands ordinance that meets the requirements of OAR 660-023-0100(4)(b) in lieu of following the ESEE decision process in OAR 660-023-0040.

660-023-0030: Inventory Process

(1) Inventories provide the information necessary to locate and evaluate resources and develop programs to protect such resources. The purpose of the inventory process is to compile or update a list of significant Goal 5 resources in a jurisdiction. This rule divides the inventory process into four steps. However, all four steps are not necessarily applicable, depending on the type of Goal 5 resource and the scope of a particular PAPA or periodic review work task. For example, when proceeding under a quasi-judicial PAPA for a particular site, the initial inventory step in section (2) of this rule is not applicable in that a local government may rely on information submitted by applicants and other participants in the local process. The inventory process may be followed for a single site, for sites in a particular geographical area, or for the entire jurisdiction or urban growth boundary (UGB), and a single inventory process may be followed for multiple resource categories that are being considered simultaneously. The standard Goal 5 inventory process consists of the following steps, which are set out in detail in sections (2) through (5) of this rule and further explained in sections (6) and (7) of this rule:

- **(a)** Collect information about Goal 5 resource sites;
- **(b)** Determine the adequacy of the information;
- **(c)** Determine significance of resource sites; and
- **(d)** Adopt a list of significant resource sites.

(2) Collect information about Goal 5 resource sites: The inventory process begins with the collection of existing and available information, including inventories, surveys, and other applicable data about potential Goal 5 resource sites. If a PAPA or periodic review work task pertains to certain specified sites, the local government is not required to collect information regarding other resource sites in the jurisdiction. When collecting information about potential Goal 5 sites, local governments shall, at a minimum:

(a) Notify state and federal resource management agencies and request current resource information; and

(b) Consider other information submitted in the local process.

(3) Determine the adequacy of the information: In order to conduct the Goal 5 process, information about each potential site must be adequate. A local government may determine that the information about a site is inadequate to complete the Goal 5 process based on the criteria in this section. This determination shall be clearly indicated in the record of proceedings. The issue of adequacy may be raised by the department or objectors, but final determination is made by the commission or the Land Use Board of Appeals, as provided by law. When local governments determine that information about a site is inadequate, they shall not proceed with the Goal 5 process for such sites unless adequate information is obtained, and they shall not regulate land uses in order to protect such sites. The information about a particular Goal 5 resource site shall be deemed adequate if it provides the location, quality and quantity of the resource, as follows:

(a) Information about location shall include a description or map of the resource area for each site. The information must be sufficient to determine whether a resource exists on a particular site. However, a precise location of the resource for a particular site, such as would be required for building permits, is not necessary at this stage in the process.

(b) Information on quality shall indicate a resource site's value relative to other known examples of the same resource. While a regional comparison is recommended, a comparison with resource sites within the jurisdiction itself is sufficient unless there are no other local examples of the resource. Local governments shall consider any determinations about resource quality provided in available state or federal inventories.

(c) Information on quantity shall include an estimate of the relative abundance or scarcity of the resource.

(4) Determine the significance of resource sites: For sites where information is adequate, local governments shall determine whether the site is significant. This determination shall be adequate if based on the criteria in subsections (a) through (c) of this section, unless challenged by the department, objectors, or the commission based upon contradictory information. The determination of significance shall be based on:

(a) The quality, quantity, and location information;

(b) Supplemental or superseding significance criteria set out in OAR 660-023-0090 through 660-023-0230; and

(c) Any additional criteria adopted by the local government, provided these criteria do not conflict with the requirements of OAR 660-023-0090 through 660-023-0230.

(5) Adopt a list of significant resource sites: When a local government determines that a particular resource site is significant, the local government shall include the site on a list of significant Goal 5 resources adopted as a part of the comprehensive plan or as a land use regulation. Local governments shall complete the Goal 5 process for all sites included on the resource list except as provided in OAR 660-023-0200(7) for historic resources, and OAR 660-023-0220(3) for open space acquisition areas.

(6) Local governments may determine that a particular resource site is not significant, provided they maintain a record of that determination. Local governments shall not proceed with the Goal 5 process for such sites and shall not regulate land uses in order to protect such sites under Goal 5.

(7) Local governments may adopt limited interim protection measures for those sites that are determined to be significant, provided:

(a) The measures are determined to be necessary because existing development regulations are inadequate to prevent irrevocable harm to the resources on the site during the time necessary to complete the ESEE process and adopt a permanent program to achieve Goal 5; and

(b) The measures shall remain effective only for 120 days from the date they are adopted, or until adoption of a program to achieve Goal 5, whichever occurs first.

660-023-0040: ESEE Decision Process

(1) Local governments shall develop a program to achieve Goal 5 for all significant resource sites based on an analysis of the economic, social, environmental, and energy (ESEE) consequences that could result from a decision to allow, limit, or prohibit a conflicting use. This rule describes four steps to be followed in conducting an ESEE analysis, as set out in detail in sections (2) through (5) of this rule. Local governments are not required to follow these steps sequentially, and some steps anticipate a return to a previous step. However, findings shall demonstrate that requirements under each of the steps have been met, regardless of the sequence followed by the local government. The ESEE analysis need not be lengthy or complex, but should enable reviewers to gain a clear understanding of the conflicts and the consequences to be expected. The steps in the standard ESEE process are as follows:

(a) Identify conflicting uses;
(b) Determine the impact area;
(c) Analyze the ESEE consequences; and
(d) Develop a program to achieve Goal 5.

(2) Identify conflicting uses. Local governments shall identify conflicting uses that exist, or could occur, with regard to significant Goal 5 resource sites. To identify these uses, local governments shall examine land uses allowed outright or conditionally within the zones applied to the resource site and in its impact area. Local governments are not required to consider allowed uses that would be unlikely to occur in the impact area because existing permanent uses occupy the site. The following shall also apply in the identification of conflicting uses:

(a) If no uses conflict with a significant resource site, acknowledged policies and land use regulations may be considered sufficient to protect the resource site. The determination that there are no conflicting uses must be based on the applicable zoning rather than ownership of the site. (Therefore, public ownership of a site does not by itself support a conclusion that there are no conflicting uses.)

(b) A local government may determine that one or more significant Goal 5 resource sites are conflicting uses with another significant resource site. The local government shall determine the level of protection for each significant site using the ESEE process and/or the requirements in OAR 660-023-0090 through 660-023-0230 (see OAR 660-023-0020(1)).

(3) Determine the impact area. Local governments shall determine an impact area for each significant resource site. The impact area shall be drawn to include only the area in which allowed uses could adversely affect the identified resource. The impact area defines the geographic limits within which to conduct an ESEE analysis for the identified significant resource site.

(4) Analyze the ESEE consequences. Local governments shall analyze the ESEE conse-

quences that could result from decisions to allow, limit, or prohibit a conflicting use. The analysis may address each of the identified conflicting uses, or it may address a group of similar conflicting uses. A local government may conduct a single analysis for two or more resource sites that are within the same area or that are similarly situated and subject to the same zoning. The local government may establish a matrix of commonly occurring conflicting uses and apply the matrix to particular resource sites in order to facilitate the analysis. A local government may conduct a single analysis for a site containing more than one significant Goal 5 resource. The ESEE analysis must consider any applicable statewide goal or acknowledged plan requirements, including the requirements of Goal 5. The analyses of the ESEE consequences shall be adopted either as part of the plan or as a land use regulation.

(5) Develop a program to achieve Goal 5. Local governments shall determine whether to allow, limit, or prohibit identified conflicting uses for significant resource sites. This decision shall be based upon and supported by the ESEE analysis. A decision to prohibit or limit conflicting uses protects a resource site. A decision to allow some or all conflicting uses for a particular site may also be consistent with Goal 5, provided it is supported by the ESEE analysis. One of the following determinations shall be reached with regard to conflicting uses for a significant resource site:

(a) A local government may decide that a significant resource site is of such importance compared to the conflicting uses, and the ESEE consequences of allowing the conflicting uses are so detrimental to the resource, that the conflicting uses should be prohibited.

(b) A local government may decide that both the resource site and the conflicting uses are important compared to each other, and, based on the ESEE analysis, the conflicting uses should be allowed in a limited way that protects the resource site to a desired extent.

(c) A local government may decide that the conflicting use should be allowed fully, notwithstanding the possible impacts on the resource site. The ESEE analysis must demonstrate that the conflicting use is of sufficient importance relative to the resource site, and must indicate why measures to protect the resource to some extent should not be provided, as per subsection (b) of this section.

660-023-0050: Programs to Achieve Goal 5

(1) For each resource site, local governments shall adopt comprehensive plan provisions and land use regulations to implement the decisions made pursuant to OAR 660-023-0040(5). The plan shall describe the degree of protection intended for each significant resource site. The plan and implementing ordinances shall clearly identify those conflicting uses that are allowed and the specific standards or limitations that apply to the allowed uses. A program to achieve Goal 5 may include zoning measures that partially or fully allow conflicting uses (see OAR 660-023-0040(5)(b) and (c)).

(2) When a local government has decided to protect a resource site under OAR 660-023-0040(5)(b), implementing measures applied to conflicting uses on the resource site and within its impact area shall contain clear and objective standards. For purposes of this division, a standard shall be considered clear and objective if it meets any one of the following criteria:

(a) It is a fixed numerical standard, such as a height limitation of 35 feet or a setback of 50 feet;

(b) It is a nondiscretionary requirement, such as a requirement that grading not occur beneath the dripline of a protected tree; or

(c) It is a performance standard that describes the outcome to be achieved by the design, siting, construction, or

operation of the conflicting use, and specifies the objective criteria to be used in evaluating outcome or performance. Different performance standards may be needed for different resource sites. If performance standards are adopted, the local government shall at the same time adopt a process for their application (such as a conditional use, or design review ordinance provision).

(3) In addition to the clear and objective regulations required by section (2) of this rule, except for aggregate resources, local governments may adopt an alternative approval process that includes land use regulations that are not clear and objective (such as a planned unit development ordinance with discretionary performance standards), provided such regulations:

(a) Specify that landowners have the choice of proceeding under either the clear and objective approval process or the alternative regulations; and

(b) Require a level of protection for the resource that meets or exceeds the intended level determined under OAR 660-023-0040(5) and 660-023-0050(1).

660-023-0060: Notice and Land Owner Involvement

Local governments shall provide timely notice to landowners and opportunities for citizen involvement during the inventory and ESEE process. Notification and involvement of landowners, citizens, and public agencies should occur at the earliest possible opportunity whenever a Goal 5 task is undertaken in the periodic review or plan amendment process. A local government shall comply with its acknowledged citizen involvement program, with statewide goal requirements for citizen involvement and coordination, and with other applicable procedures in statutes, rules, or local ordinances.

660-023-0070: Buildable Lands Affected by Goal 5 Measures

(1) If measures to protect significant resource sites inside urban growth boundaries affect the inventory of buildable lands in acknowledged plans required by Goals 9, 10 and 14, a local government outside of the Metro UGB, and Metro inside the Metro UGB, prior to or at the next periodic review, shall:

(a) Amend its urban growth boundary to provide additional buildable lands sufficient to compensate for the loss of buildable lands caused by the application of Goal 5;

(b) Redesignate other land to replace identified land needs under Goals 9, 10, and 14 provided such action does not take the plan out of compliance with other statewide goals; or

(c) Adopt a combination of the actions described in subsections (a) and (b) of this section.

(2) If a local government redesignates land for higher density under subsections (1)(b) or (c) of this rule in order to meet identified housing needs, the local government shall ensure that the redesignated land is in locations appropriate for the housing types, and is zoned at density ranges that are likely to be achieved by the housing market.

(3) Where applicable, the requirements of ORS 197.296 shall supersede the requirements of sections (1) and (2) of this rule.

660-023-0080: Metro Regional Resources

(1) For purposes of this rule, the following definitions apply:

(a) "Metro" is the Metropolitan Service District organized under ORS Chapter 268, and operating under the 1992 Metro Charter, for 24 cities and certain urban portions of Multnomah, Clackamas, and Washington counties.

(b) "Regional resource" is a site containing a significant Goal 5 resource, including but not limited to a riparian corridor,

wetland, or open space area, which is identified as a regional resource on a map adopted by Metro ordinance.

(2) Local governments shall complete the Goal 5 process in this division for all regional resources prior to or during the first periodic review following Metro's adoption of a regional resources map, unless Metro adopts a regional functional plan by ordinance to establish a uniform time for all local governments to complete the Goal 5 process for particular regional resource sites.

(3) Metro may adopt one or more regional functional plans to address all applicable requirements of Goal 5 and this division for one or more resource categories and to provide time limits for local governments to implement the plan. Such functional plans shall be submitted for acknowledgment under the provisions of ORS 197.251 and 197.274. Upon acknowledgment of Metro's regional resource functional plan, local governments within Metro's jurisdiction shall apply the requirements of the functional plan for regional resources rather than the requirements of this division.

660-023-0090: Riparian Corridors

(1) For the purposes of this rule, the following definitions apply:

(a) "Fish habitat" means those areas upon which fish depend in order to meet their requirements for spawning, rearing, food supply, and migration.

(b) "Riparian area" is the area adjacent to a river, lake, or stream, consisting of the area of transition from an aquatic ecosystem to a terrestrial ecosystem.

(c) "Riparian corridor" is a Goal 5 resource that includes the water areas, fish habitat, adjacent riparian areas, and wetlands within the riparian area boundary.

(d) "Riparian corridor boundary" is an imaginary line that is a certain distance upland from the top bank, for example, as specified in section (5) of this rule.

(e) "Stream" is a channel such as a river or creek that carries flowing surface water, including perennial streams and intermittent streams with defined channels, and excluding man-made irrigation and drainage channels.

(f) "Structure" is a building or other major improvement that is built, constructed, or installed, not including minor improvements, such as fences, utility poles, flagpoles, or irrigation system components, that are not customarily regulated through zoning ordinances.

(g) "Top of bank" shall have the same meaning as "bankfull stage" defined in OAR 141-085-0010(2).

(h) "Water area" is the area between the banks of a lake, pond, river, perennial or fish-bearing intermittent stream, excluding man-made farm ponds.

(2) Local governments shall amend acknowledged plans in order to inventory riparian corridors and provide programs to achieve Goal 5 prior to or at the first periodic review following the effective date of this rule, except as provided in OAR 660-023-0250(5).

(3) Local governments shall inventory and determine significant riparian corridors by following either the safe harbor methodology described in section (5) of this rule or the standard inventory process described in OAR 660-023-0030 as modified by the requirements in section (4) of this rule. The local government may divide the riparian corridor into a series of stream sections (or reaches) and regard these as individual resource sites.

(4) When following the standard inventory process in OAR 660-023-0030, local governments shall collect information regarding all water areas, fish habitat, riparian areas, and wetlands within riparian corridors. Local governments may postpone determination of the precise location of the riparian area on lands designated for farm or forest use until receipt of applications for local permits for uses that would conflict with these resources. Local governments are encouraged, but not required, to conduct field

investigations to verify the location, quality, and quantity of resources within the riparian corridor. At a minimum, local governments shall consult the following sources, where available, in order to inventory riparian corridors along rivers, lakes, and streams within the jurisdiction:

(a) Oregon Department of Forestry stream classification maps;
(b) United States Geological Service (USGS) 7.5 minute quadrangle maps;
(c) National Wetlands Inventory maps;
(d) Oregon Department of Fish and Wildlife (ODFW) maps indicating fish habitat;
(e) Federal Emergency Management Agency (FEMA) flood maps; and
(f) Aerial photographs.

(5) As a safe harbor in order to address the requirements under OAR 660-023-0030, a local government may determine the boundaries of significant riparian corridors within its jurisdiction using a standard setback distance from all fish-bearing lakes and streams shown on the documents listed in subsections (a) through (f) of section (4) of this rule, as follows:

(a) Along all streams with average annual stream flow greater than 1,000 cubic feet per second (cfs) the riparian corridor boundary shall be 75 feet upland from the top of each bank.
(b) Along all lakes, and fish-bearing streams with average annual stream flow less than 1,000 cfs, the riparian corridor boundary shall be 50 feet from the top of bank.
(c) Where the riparian corridor includes all or portions of a significant wetland as set out in OAR 660-023-0100, the standard distance to the riparian corridor boundary shall be measured from, and include, the upland edge of the wetland.
(d) In areas where the top of each bank is not clearly defined, or where the predominant terrain consists of steep cliffs, local governments shall apply OAR 660-023-0030 rather than apply the safe harbor provisions of this section.

(6) Local governments shall develop a program to achieve Goal 5 using either the safe harbor described in section (8) of this rule or the standard Goal 5 ESEE process in OAR 660-023-0040 and 660-023-0050 as modified by section (7) of this rule.

(7) When following the standard ESEE process in OAR 660-023-0040 and 660-023-0050, a local government shall comply with Goal 5 if it identifies at least the following activities as conflicting uses in riparian corridors:

(a) The permanent alteration of the riparian corridor by placement of structures or impervious surfaces, except for:
(A) Water-dependent or water-related uses; and
(B) Replacement of existing structures with structures in the same location that do not disturb additional riparian surface area; and
(b) Removal of vegetation in the riparian area, except:
(A) As necessary for restoration activities, such as replacement of vegetation with native riparian species;
(B) As necessary for the development of water-related or water-dependent uses; and
(C) On lands designated for agricultural or forest use outside UGBs.

(8) As a safe harbor in lieu of following the ESEE process requirements of OAR 660-023-0040 and 660-023-0050, a local government may adopt an ordinance to protect a significant riparian corridor as follows:

(a) The ordinance shall prevent permanent alteration of the riparian area by grading or by the placement of structures or impervious surfaces, except for the following uses, provided they are designed and constructed to minimize intrusion into the riparian area:
(A) Streets, roads, and paths;
(B) Drainage facilities, utilities, and irrigation pumps;
(C) Water-related and water-dependent uses; and
(D) Replacement of existing structures with structures in the same location

that do not disturb additional riparian surface area.

(b) The ordinance shall contain provisions to control the removal of riparian vegetation, except that the ordinance shall allow:

(A) Removal of nonnative vegetation and replacement with native plant species; and

(B) Removal of vegetation necessary for the development of water-related or water-dependent uses;

(C) Notwithstanding subsection (b) of this section, the ordinance need not regulate the removal of vegetation in areas zoned for farm or forest uses pursuant to statewide Goals 3 or 4;

(d) The ordinance shall include a procedure to consider hardship variances, claims of map error, and reduction or removal of the restrictions under subsections (a) and (b) of this section for any existing lot or parcel demonstrated to have been rendered not buildable by application of the ordinance; and

(e) The ordinance may authorize the permanent alteration of the riparian area by placement of structures or impervious surfaces within the riparian corridor boundary established under subsection (5)(a) of this rule upon a demonstration that equal or better protection for identified resources will be ensured through restoration of riparian areas, enhanced buffer treatment, or similar measures. In no case shall such alterations occupy more than 50 percent of the width of the riparian area measured from the upland edge of the corridor.

660-023-0100: Wetlands

(1) For purposes of this rule, a "wetland" is an area that is inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

(2) Local governments shall amend acknowledged plans and land use regulations prior to or at periodic review to address the requirements of this division, as set out in OAR 660-023-0250(5) through (7). The standard inventory process requirements in OAR 660-023-0030 do not apply to wetlands. Instead, local governments shall follow the requirements of section (3) of this rule in order to inventory and determine significant wetlands.

(3) For areas inside urban growth boundaries (UGBs) and urban unincorporated communities (UUCs), local governments shall:

(a) Conduct a local wetlands inventory (LWI) using the standards and procedures of OAR 141-086-0110 through 141-086-0240 and adopt the LWI as part of the comprehensive plan or as a land use regulation; and

(b) Determine which wetlands on the LWI are "significant wetlands" using the criteria adopted by the Division of State Lands (DSL) pursuant to ORS 197.279(3)(b) and adopt the list of significant wetlands as part of the comprehensive plan or as a land use regulation.

(4) For significant wetlands inside UGBs and UUCs, a local government shall:

(a) Complete the Goal 5 process and adopt a program to achieve the goal following the requirements of OAR 660-023-0040 and 660-023-0050; or

(b) Adopt a safe harbor ordinance to protect significant wetlands consistent with this subsection, as follows:

(A) The protection ordinance shall place restrictions on grading, excavation, placement of fill, and vegetation removal other than perimeter mowing and other cutting necessary for hazard prevention; and

(B) The ordinance shall include a variance procedure to consider hardship variances, claims of map error verified by DSL, and reduction or removal of the restrictions under paragraph (A) of this subsection for

any lands demonstrated to have been rendered not buildable by application of the ordinance.

(5) For areas outside UGBs and UUCs, local governments shall either adopt the statewide wetland inventory (SWI; see ORS 196.674) as part of the local comprehensive plan or as a land use regulation, or shall use a current version for the purpose of section (7) of this rule.

(6) For areas outside UGBs and UUCs, local governments are not required to amend acknowledged plans and land use regulations in order to determine significant wetlands and complete the Goal 5 process. Local governments that choose to amend acknowledged plans for areas outside UGBs and UUCs in order to inventory and protect significant wetlands shall follow the requirements of sections (3) and (4) of this rule.

(7) All local governments shall adopt land use regulations that require notification of DSL concerning applications for development permits or other land use decisions affecting wetlands on the inventory, as per ORS 227.350 and 215.418, or on the SWI as provided in section (5) of this rule.

(8) All jurisdictions may inventory and protect wetlands under the procedures and requirements for wetland conservation plans adopted pursuant to ORS 196.668 et seq. A wetlands conservation plan approved by the director of DSL shall be deemed to comply with Goal 5 (ORS 197.279(1)).

660-023-0110: Wildlife Habitat

(1) For purposes of this rule, the following definitions apply:

(a) "Documented" means that an area is shown on a map published or issued by a state or federal agency or by a professional with demonstrated expertise in habitat identification.

(b) "Wildlife habitat" is an area upon which wildlife depend in order to meet their requirements for food, water, shelter, and reproduction. Examples include wildlife migration corridors, big game winter range, and nesting and roosting sites.

(2) Local governments shall conduct the inventory process and determine significant wildlife habitat as set forth in OAR 660-023-0250(5) by following either the safe harbor methodology described in section (4) of this rule or the standard inventory process described in OAR 660-023-0030.

(3) When gathering information regarding wildlife habitat under the standard inventory process in OAR 660-023-0030(2), local governments shall obtain current habitat inventory information from the Oregon Department of Fish and Wildlife (ODFW), and other state and federal agencies. These inventories shall include at least the following:

(a) Threatened, endangered, and sensitive wildlife species habitat information;

(b) Sensitive bird site inventories; and

(c) Wildlife species of concern and/or habitats of concern identified and mapped by ODFW (e.g., big game winter range and migration corridors, golden eagle and prairie falcon nest sites, and pigeon springs).

(4) Local governments may determine wildlife habitat significance under OAR 660-023-0040 or apply the safe harbor criteria in this section. Under the safe harbor, local governments may determine that "wildlife" does not include fish, and that significant wildlife habitat is only those sites where one or more of the following conditions exist:

(a) The habitat has been documented to perform a life support function for a wildlife species listed by the federal government as a threatened or endangered species or by the state of Oregon as a threatened, endangered, or sensitive species;

(b) The habitat has documented occurrences of more than incidental use by a species described in subsection (a) of this section;

(c) The habitat has been documented as a sensitive bird nesting, roosting, or

watering resource site for osprey or great blue herons pursuant to ORS 527.710 (Oregon Forest Practices Act) and OAR 629-024-0700 (Forest Practices Rules);

(d) The habitat has been documented to be essential to achieving policies or population objectives specified in a wildlife species management plan adopted by the Oregon Fish and Wildlife Commission pursuant to ORS Chapter 496; or

(e) The area is identified and mapped by ODFW as habitat for a wildlife species of concern and/or as a habitat of concern (e.g., big game winter range and migration corridors, golden eagle and prairie falcon nest sites, or pigeon springs).

(5) For certain threatened or endangered species sites, publication of location information may increase the threat of habitat or species loss. Pursuant to ORS 192.501(13), local governments may limit publication, display, and availability of location information for such sites. Local governments may adopt inventory maps of these areas, with procedures to allow limited availability to property owners or other specified parties.

(6) As set out in OAR 660-023-0250(5), local governments shall develop programs to protect wildlife habitat following the standard procedures and requirements of OAR 660-023-0040 and 660-023-0050. Local governments shall coordinate with appropriate state and federal agencies when adopting programs intended to protect threatened, endangered, or sensitive species habitat areas.

660-023-0120: Federal Wild and Scenic Rivers

[*This section omitted because it does not directly relate to wetland planning requirements.*]

660-023-0130: Oregon Scenic Waterways

[*This section omitted because it does not directly relate to wetland planning requirements.*]

660-023-0140: Groundwater Resources

[*This section omitted because it does not directly relate to wetland planning requirements.*]

660-023-0150: Approved Oregon Recreation Trails

[*This section omitted because it does not directly relate to wetland planning requirements.*]

660-023-0160: Natural Areas

(1) For purposes of this rule, "natural areas" are areas listed in the Oregon State Register of Natural Heritage Resources.

(2) At periodic review, local governments shall consider information about natural areas not addressed at acknowledgment or in previous periodic reviews. Local governments shall inventory such areas as significant and develop a program to achieve the goal following the standard Goal 5 process in OAR 660-023-0040 and 660-023-0050.

660-023-0170: Wilderness Areas

[*This section omitted because it does not directly relate to wetland planning requirements.*]

660-023-0180: Mineral and Aggregate Resources

[*This section omitted because it does not directly relate to wetland planning requirements.*]

660-023-0190: Energy Sources

[*This section omitted because it does not directly relate to wetland planning requirements.*]

660-023-0200: Historic Resources

[*This section omitted because it does not directly relate to wetland planning requirements.*]

660-023-0220: Open Space

(1) For purposes of this rule, "open space" includes parks, forests, wildlife preserves, nature reservations or sanctuaries, and public or private golf courses.

(2) Local governments are not required to amend acknowledged comprehensive plans in order to identify new open space resources. If local governments decide to amend acknowledged plans in order to provide or amend open space inventories, the requirements of OAR 660-023-0030 through 660-023-0050 shall apply, except as set forth in section (3) of this rule.

(3) Local governments may adopt a list of significant open space resource sites as an open space acquisition program. Local governments are not required to apply the requirements of OAR 660-023-0030 through 660-023-0050 to such sites unless land use regulations are adopted to protect such sites prior to acquisition.

660-023-0230: Scenic Views and Sites

(1) For purposes of this rule, "scenic views and sites" and lands that are valued for their aesthetic appearance.

(2) Local governments are not required to amend acknowledged comprehensive plans in order to identify scenic views and sites. If local governments decide to amend acknowledged plans in order to provide or amend inventories of scenic resources, the requirements of OAR 660-023-0030 through 660-023-0050 shall apply.

660-023-0240: Relationship of Goal 5 to Other Goals

(1) The requirements of Goal 5 do not apply to the adoption of measures required by Goals 6 and 7. However, to the extent that such measures exceed the requirements of Goals 6 or 7 and affect a Goal 5 resource site, the local government shall follow all applicable steps of the Goal 5 process.

(2) The requirements of Goals 15, 16, 17, and 19 shall supersede requirements of this division for natural resources that are also subject to and regulated under one or more of those goals. However, local governments may rely on a Goal 5 inventory produced under OAR 660-023-0030 and other applicable inventory requirements of this division to satisfy the inventory requirements under Goal 17 for resource sites subject to Goal 17.

660-023-0250: Applicability

(1) This division replaces OAR 660, Division 16, except with regard to cultural resources, and certain PAPAs and periodic review work tasks described in sections (2) and (4) of this rule. Local governments shall follow the procedures and requirements of this division or OAR 660, Division 16, whichever is applicable, in the adoption or amendment of all plan or land use regulations pertaining to Goal 5 resources. The requirements of Goal 5 do not apply to land use decisions made pursuant to acknowledged comprehensive plans and land use regulations.

(2) The requirements of this division are applicable to PAPAs initiated on or after September 1, 1996. OAR 660, Division 16 applies to PAPAs initiated prior to September 1, 1996. For purposes of this section "initiated" means that the local government has deemed the PAPA application to be complete.

(3) Local governments are not required to apply Goal 5 in consideration of a PAPA unless the PAPA affects a Goal 5 resource. For purposes of this section, a PAPA would affect a Goal 5 resource only if:

(a) The PAPA creates or amends a resource list or a portion of an acknowledged plan or land use regulation adopted in order to protect a significant Goal 5

resource or to address specific requirements of Goal 5;

(b) The PAPA allows new uses that could be conflicting uses with a particular significant Goal 5 resource site on an acknowledged resource list; or

(c) The PAPA amends an acknowledged UGB and factual information is submitted demonstrating that a resource site, or the impact areas of such a site, is included in the amended UGB area.

(4) Consideration of a PAPA regarding a specific resource site, or regarding a specific provision of a Goal 5 implementing measure, does not require a local government to revise acknowledged inventories or other implementing measures, for the resource site or for other Goal 5 sites, that are not affected by the PAPA, regardless of whether such inventories or provisions were acknowledged under this rule or under OAR 660, Division 16.

(5) Local governments are required to amend acknowledged plan or land use regulations at periodic review to address Goal 5 and the requirements of this division only if one or more of the following conditions apply, unless exempted by the director under section (7) of this rule:

(a) The plan was acknowledged to comply with Goal 5 prior to the applicability of OAR 660, Division 16, and has not subsequently been amended in order to comply with that division;

(b) The jurisdiction includes riparian corridors, wetlands, or wildlife habitat as provided under OAR 660-023-0090 through 660-023-0110, or aggregate resources as provided under OAR 660-023-0180; or

(c) New information is submitted at the time of periodic review concerning resource sites not addressed by the plan at the time of acknowledgment or in previous periodic reviews, except for historic, open space, or scenic resources.

(6) If a local government undertakes a Goal 5 periodic review task that concerns specific resource sites or specific Goal 5 plan or implementing measures, this action shall not by itself require a local government to conduct a new inventory of the affected Goal 5 resource category, or revise acknowledged plans or implementing measures for resource categories or sites that are not affected by the work task.

(7) The director may exempt a local government from a work task for a resource category required under section (5) of this rule. The director shall consider the following factors in this decision:

(a) Whether the plan and implementing ordinances for the resource category substantially comply with the requirements of this division; and

(b) The resources of the local government or state agencies available for periodic review, as set forth in ORS 197.633(3)(g).

(8) Local governments shall apply the requirements of this division to work tasks in periodic review work programs approved or amended under ORS 197.633(3)(g) after September 1, 1996. Local governments shall apply OAR 660, Division 16, to work tasks in periodic review work programs approved before September 1, 1996, unless the local government chooses to apply this division to one or more resource categories, and provided:

(a) The same division is applied to all work tasks concerning any particular resource category;

(b) All the participating local governments agree to apply this division for work tasks under the jurisdiction of more than one local government; and

(c) The local government provides written notice to the department. If application of this division will extend the time necessary to complete a work task, the director or the commission may consider extending the time for completing the work task as provided in OAR 660-025-0170.

Appendix C

Summary of Statewide Planning Goals

Summary of Oregon Statewide Planning Goals[1]

The 19 Statewide Planning Goals reflect Oregonians' desire to protect the state's landscape and to provide orderly planning for urban and rural development. The goals reflect five general themes:

- Planning for People
- Protecting Farm and Forest Lands
- Managing Urban and Rural Development
- Protecting Natural Resources
- Managing Coastal and Ocean Resources

Planning for People

Goal 1

Goal 1 calls for "the opportunity for citizens to be involved in all phases of the planning process." It requires each community to have a citizen involvement program that includes an officially recognized committee for citizen involvement and opportunities for citizens to be involved in all phases of the planning process.

Goal 2

Goal 2 outlines the basic procedures for Oregon's statewide planning program. It requires that each city and county in Oregon have a comprehensive plan that includes factual information, policies and implementing measures. Goal 2 contains procedures for reviewing and amending comprehensive plans.

Protecting Farm and Forest Lands

Goal 3

Goal 3 reflects Oregonians' desire to protect agricultural land from development. The goal defines "agricultural land" and requires counties to inventory such lands and to "preserve and maintain" agricultural land through exclusive farm use zoning. The goal recognizes that not all agricultural land has the same value or needs the same level of protection. Details on the uses allowed in farm zones are found in Oregon Revised Statute (ORS) Chapter 215 and in Oregon Administrative Rules (OAR) Chapter 660, Division 033.

Goal 4

Goal 4 defines forest lands and requires counties to inventory them and adopt policies and ordinances that will "conserve forest lands for forest uses." It reflects the importance of forestry to Oregon's economy. Details on the uses allowed in forest zones are found in ORS Chapter 215 and in OAR Chapter 660, Division 006.

Managing Urban and Rural Development

There are several Statewide Planning Goals that help local governments plan and manage the growth of Oregon's cities and unincorporated communities.

Goal 14

Goal 14 requires cities to estimate future growth and to plan and zone enough land to meet those needs. It calls for each city and surrounding county to establish an "urban growth boundary" to identify and separate urbanizable land from rural land. The land inside the boundary is where a city will grow over the next 20 years.

Goal 9

Goal 9 requires communities to inventory commercial and industrial lands, project future needs for such lands and plan and zone enough land to meet those needs. As a result, every city

in Oregon will have a supply of land to sustain a healthy local economy.

Goal 10
Goal 10 specifies that each city must plan for and accommodate a variety of housing types, locations and densities. It requires communities to inventory their buildable residential lands, project future needs for such lands, and plan and zone enough buildable land to meet housing needs. Goal 11 Goal 11 requires that cities of more than 2,500 have a public facility plan to guide development. Efficient planning of public services such as sewer, water, law enforcement and fire protection promotes cost effective and efficient provision of urban and rural services.

Goal 12
Goal 12 requires communities to adopt transportation system plans to provide for "a safe, convenient and economic transportation system." It requires land use decisions and local transportation planning be closely coordinated with the Oregon Department of Transportation.

Protecting Natural Resources

Goal 5
Goal 5 is designed to protect Oregon's natural and cultural resources. Local governments are required to inventory resources such as wetlands, riparian corridors and wildlife habitat. Communities use the inventories to determine which resources are most significant and to protect such resources in a manner that complies with Goal 5 and applicable administrative rules.

Goal 6
Goal 6 requires that all comprehensive plans and implementing measures comply with state and federal environmental laws.

Goal 7
Goal 7 is designed to protect people and property from natural hazards. It requires that local governments apply "appropriate safeguards" when planning for development in areas of natural hazards, such as floodplains and areas subject to landslides.

Goal 8
Goal 8 calls for each community to evaluate its recreational areas and facilities and develop plans to deal with the projected demand for new recreational opportunities

Goal 13
Goal 13 requires communities to manage and control their local land uses in ways that promote energy conservation.

Goal 15
Goal 15 establishes procedures to guide urban and rural development along the Willamette River.

Managing Coastal and Ocean Resources

Goal 16
Under Goal 16, LCDC classified Oregon's 22 major estuaries into three broad categories: natural, conservation and development. Coastal communities have adopted estuary plans to comply with Goal 16.

Goal 17
Goal 17 specifies how coastal shorelands and resources are to be managed and protected.

Goal 18
Goal 18 regulates development on beaches and dunes.

Goal 19
Goal 19 is designed to "conserve the long-term values, benefits and natural resources of the near-shore ocean and the continental shelf." It addresses issues such as dumping dredge spoils and discharging waste products into the open sea.

Footnote
[1] Source: Department of Land Conservation and Development

Appendix D

LWI Process Examples:

Sample Work Plan for Contract

Agendas for Public Workshops 1 and 2

Access Permission Letter

LWI Fact Sheet

Post-Inventory Notification Letter

Example Attachment to Contract

Work Program

for

Local Wetland Inventory, Functional Assessment, and Designation of Significant Wetlands

Work Program Objective:
Develop a Local Wetlands Inventory (LWI) and functional assessment of wetlands within the UGB (or other specified study area) and designate significant wetlands as required by statewide land-use planning Goal 5. Also, conduct a riparian inventory and assessment. A riparian inventory may be prepared concurrently with the LWI and mapped separately, or the Goal 5 "safe harbor" option for riparian inventory may be selected. The work program below is an outline of the tasks necessary to meet this objective, and includes who will conduct each task and the approximate timeline for each.

Specifications:
Standards and guidelines for local wetland inventories appear in OAR 141-86-180 through 141-86-240; rules for designation of significant wetlands appear in OAR 141-86-300 through 141-86-350. The *Oregon Freshwater Wetland Assessment Methodology* (OFWAM) will be used to evaluate the functions and condition of each wetland. Existing wetland determinations and delineations on file with DSL will be identified in the inventory and incorporated in the final product. Once the inventory is reviewed and approved by DSL, it will be incorporated as a part of the Statewide Wetlands Inventory. In addition to the specifications in current rule, a GIS-compatible digital product will be required.

Task I: Project Orientation & Planning
DSL staff will meet with the local planner to finalize the workplan including selection of riparian inventory method, answer any questions, and finalize an agreement between DSL and the city that specifies roles and responsibilities for conducting the LWI. DSL can provide samples of various working documents and provide other technical assistance as needed. DSL will finalize a contract with a consulting firm to conduct the LWI and associated tasks in coordination with the city.

Subtask A: Hold a meeting between local planner, DSL, wetland consultant and others, as applicable, to review work program, allocation of tasks, DSL review procedures, etc. City planner will brief elected officials as necessary.

Responsible Party: City, Consultant
Timeline: January–February

Subtask B: Provide resource maps and air photos to the consultant.

Responsible party: City
Timeline: February

Subtask C: Prepare base maps showing all potential wetland areas that will need field Verification, provide this product to the city.

Responsible Party: Consultant
Timeline: February–March

Subtask D: Correlate potential wetlands map with ownership records and prepare mailing list for access permission requests.

Responsible Party: City
Timeline: March–April

Task II: Initial Public Information & Landowner Notification

Subtask A: Optional Information work session with City Council
Orientation to project; outline of first public information meeting in advance of access permission letter mail-out. Address questions & concerns.

Responsible parties: City, DSL
Timeline: February–March

Subtask B: Landowner Access Request. Publish notice about public information meeting in local newspaper. Compose and mail a flyer to identified landowners to provide information and request access permission for field verification of wetlands.

Responsible Party: City
Timeline: April–May

Subtask C: First Public Meeting. Conduct public meeting to review wetland planning requirements and process, introduce community to uses and benefits of LWI; what wetlands are and how they function; answer questions, and solicit property access permission.

Responsible Party: City (plan & conduct meeting); Consultant (present information)
DSL (answer regulatory & LWI application questions).
Timeline: April–May

Task III: Develop LWI and OFWAM assessments

Subtask A: Conduct LWI, and OFWAM field work; conduct riparian inventory and assessment. If property access is denied, inventory wetlands using off-site methods. Field map wetland boundaries on air photos and rectify on base maps.

Responsible Party: Consultant
Timeline: May–June

Subtask B: Complete draft inventory report. This includes: narrative summary of inventory and assessment methodologies and results, digitized inventory maps, field inventory work including data sheets, individual wetland unit summary sheets, and documentation of OFWAM assessment, per state administrative rules. Summarize OFWAM results and screen through significance criteria. Prepare list of significant wetlands, code significant wetlands on inventory maps and wetland summary sheets. Submit to DSL for review.

Responsible Party: Consultant
Timeline: July–August

Subtask C: DSL will review products for accuracy and conformance with rules, including information from field review and input from second public meeting, and prepare written reply. City may review and comment if desired.

Responsible Party: DSL

Timeline: August–September

Subtask D: Conduct Second Public Meeting. Present draft products and solicit input.
Responsible Party: City (organize, advertise, and conduct meeting),
Consultant (present methods and results),
DSL (answer regulatory questions)
Timeline: September

Subtask E: The consultant will respond to DSL review and make revisions and/or adjustments to meet specifications in rule. Prepare final products and submit to DSL for final review and approval.
Responsible Party: Consultant
Timeline: October

Task IV: Public Notification and Project Close-out

Subtask A: After LWI approval by DSL, notify affected landowners of results. Prepare close-out report documenting city expenditures and submit to granting agency as necessary.
Responsible Party: City
Timeline: November–December
(Required within 120 days of DSL approval.)

Subtask B. Present final products to elected officials for adoption into Comprehensive Plan and outline remaining Goal 5 planning steps.
Responsible Party: City
Timeline: Maintain momentum!

Sample Letter

Sample Agenda

First Public Information Workshop on Local Wetland Inventory

Introductions — by local elected official or planner
- Set tone for meeting
- Outline agenda, introduce speakers
- There will be time for questions after each presentation
- Take fact sheets or business cards if you need to leave early

Purpose of meeting, purpose of project — by Planner
- Purpose of this meeting is to explain project, & answer questions & concerns
- Explain purpose of inventory, objective is accurate map & foundation for future planning decisions
- Benefits to community and to individuals from Inventory (from Q & A fact sheet)
- Describe advantages of access permission
- Describe Public Works Dept interest in project, esp. if listed fish are a concern
- Context is Goal 5 (/17) planning, required by state law
- Describe future planning options, timing of next steps, & future opportunities for public involvement.
- Questions?

How will the inventory be prepared? — by consultant
- Describe info gathering steps, pre-mapping
- Legal definition of a wetland, distinguish from riparian or floodplain
- Describe on-site procedures, off-site procedures
- Please give phone # on access postcard if you want to be contacted for site visit.
- Limitations of maps — less than Ω acre may not be mapped, but still regulated
- Brief explanation of wetland functions assessment
- Functions used to decide which wetland are most important to community
- Questions?

What does it mean if a wetland is on your property? — by DSL staff
- First: DSL's role in wetland planning — review inventory to meet specs
- Purposes of LWI — plan ahead, avoid violations, allow for local regulation
- Brief outline of future wetland planning steps —
- Significant wetlands may get local protection too, can tell DSL not to allow fill

Second: DSL's regulatory role:
- Brief explanation of state wetland law, describe exemptions from regulations
- Process to verify wetland boundaries
- Advantages of more accurate inventory
- Process to get a permit to fill, both state & Corps.
- Questions?

General questions for any speaker

Invitation for audience to view base maps or photos posted on walls/tables
Final access permission request — please turn in by _____ deadline.

Sample Agenda

Second Public Information Workshop on Local Wetland Inventory

(this meeting takes place after draft LWI completed, initial DSL review OK)

Introductions — by local elected official or planner
- Set tone for meeting — constructive review of draft inventory
- There will be time for all questions after presentations
- Take fact sheets or business cards if you need to leave early

Purpose of project, purpose of meeting — by planner
- Purpose of this meeting is to explain process, get feedback on map accuracy, & answer questions & concerns
- Context is Goal 5 /Goal17 planning, required by state law
- Describe future planning options, timing of next steps
- Describe Public Works Dept interest in project (esp. if ESA issues)
- Questions?

How was the inventory prepared? — by consultant
- Describe info gathering steps, pre-mapping
- Legal definition of a wetland, distinguish from riparian / floodplain
- Describe onsite procedures, offsite too
- Limitations of maps — may need delineation too
- Brief explanation of significance criteria — based on functions
- Invite audience to scrutinize draft maps
- How to seek verification or correction of maps — map location, phone #
- Questions?

What does it mean if a wetland is mapped on my property? — by DSL staff
- Brief explanation of state wetland law, describe exemptions from regulations
- Process to verify wetland boundaries, when is delineation needed
- Process to get a permit to fill from DSL/Corps
- If local comp plan protects a wetland, DSL cannot issue fill permit
- Agency responsibility to review and approve LWI
- Local / state coordination — city notifies DSL of site development application
- Outline of options for city to consider in goal 5 planning
- Questions?

General questions for any speaker?
For questions about specific sites — break and move to maps
Invite audience to review maps posted on walls/tables
City, consultant, and state staff will be stationed around the room near maps to answer specific questions
(Possible opportunity for field inspections next day if DSL /consultant available)

Sample Access Permission Request and Invitation to 1st Public Meeting

Date City Letterhead

Planning Dept.
w/ contact numbers

Dear Property Owner:

LOCAL WETLAND INVENTORY INFORMATION WORKSHOP
Date, Time
Location

The City of _____ is about to conduct a Local Wetlands Inventory (LWI). The LWI project will provide useful planning information both for property owners and for the city. _____, an environmental/planning consulting firm, will provide the technical expertise for this inventory project.

The City is requesting your participation in order to gather the most accurate information possible about the location and quality of wetlands within City___ and its urban growth area. From preliminary information, part of your property may have wetland characteristics or contain part of a stream or drainage, or may be located next to such a feature. While aerial photography, soil maps and other information will also be used in this study to locate and map wetlands, for the best accuracy we would like our consultant to be able to walk on a property and briefly study the vegetation and soils.

The City is required by Oregon law (Statewide Planning Goal 5) to identify and assess wetlands in order to update its comprehensive plan. The identification and protection of significant wetlands may help the city to meet certain state and federal laws, including federal Endangered Species Act requirements for the protection of threatened salmon (/steelhead /other local listed species).

The state has shown its support for this effort by awarding the City a grant to help pay for the wetlands inventory. There is no dollar cost to you for this effort. This study could save you time and money should you ever wish to develop your property. Your permission to access your property is all we ask. **The consultant will not come onto your property without your consent. Therefore, we request that you please sign the enclosed postage paid and pre-addressed "Property Owner Consent For Access" post card and mail it to the City.** Please return the post card by Date or bring it to the public information workshop.

If you consent, the site visit will occur sometime between Dates of this year. It would take place on a weekday and in most cases would not last longer than 30 minutes. When the consultant visits your property, he/she may dig a few small test holes (1 ft. wide by 1.5 ft. deep) to help identify wetland soils. The consultant will fill these holes back in when finished. No gardens or lawns will be disturbed. Although your presence is not necessary, the consultant will be very flexible in working with you on any special arrangements that you may require in order to accommodate schedules, pets/animals, etc.

For more information about the wetlands inventory, you are encouraged to attend the public information workshop noted below. Staff from the Oregon Division of State Lands (the state agency that sets wetland inventory standards), Consultant , and the City will be at the meeting to answer questions. Also see the enclosed fact sheet "Frequently Asked Questions about Local Wetland Inventories." Or if you prefer, you may contact Planner at # if you have questions about the project. Thank you very much for your cooperation.

Note: There will also be a public meeting in the fall when the preliminary results of the inventory are available. All affected property owners will be sent a notice of this meeting, too. In addition, after the inventory map is finally approved by the Division of State Lands, all owners of properties with wetlands that are shown on the map will be notified.

Sincerely,

__planner name__, Planning Dept.

City of _____

Enclosures

Sample Access Permission Postcard

Front side — Pre-addressed back to city planner

Property Owner Consent for Access

I understand that Consultant , a planning/environmental consulting firm, has been contracted by the City of City to conduct a Local Wetlands Inventory (LWI). In order to accurately determine the presence or location of a wetland, staff from Consultant need to enter onto my property. By signing this form, I grant the consultant permission to access my property for the purposes of this inventory.

Signed: _____ Date: _____

Printed name _____

Tax lots # _____ -or- Street Address _____

Should the consultant call fist to make any special arrangements for access?

Yes_____ No_____ Phone:_____ Best time to call_____

Please return this card by date or bring with you to the public meeting . Thank you.

Frequently Asked Questions About Local Wetlands Inventories

Your city has just begun a local wetlands inventory (LWI) as the first step in a required wetland planning process. The city has hired a wetland consulting firm to conduct the technical parts of the LWI. City staff, citizens, and wetland scientists from the consulting firm and the Division of State Lands (DSL) will all have a role in the inventory process. This fact sheet will help answer questions you might have about this process, the products and their uses.

What is a Local Wetlands Inventory?

A LWI is a systematic survey of an area (usually a city) to locate, map and describe the wetlands. The inventory is prepared using information sources such as aerial photos and soils maps and by conducting field observations. Where needed and where property access is permitted, the wetland scientists collect data on the vegetation and soils to confirm that an area is or is not a wetland. The final LWI consists of a set of maps that show the location of wetlands and streams, and descriptive information about the wetlands and the main functions they provide. Functions that are evaluated include wildlife habitat quality, contribution to fish habitat or water quality improvement, and floodwater retention capability.

Why is the LWI being conducted?

The main reason is that cities are required by the statewide land use planning law to include protection for "significant wetlands" in their comprehensive plan. The LWI and functional assessment of wetlands is the information-gathering step needed as the foundation for the remaining wetland planning steps. Once the LWI is completed, the city will identify the significant wetlands and work with citizens to develop appropriate ordinances that apply to those wetlands.

How will the community benefit from the LWI?

The LWI provides the information the city needs to incorporate wetlands and streams into the comprehensive plan for the community. For example, the LWI helps the city incorporate wetlands into planning for parks and greenbelts. It also provides information on each wetland's ability to improve water quality or reduce flooding—both of which are important to stormwater management planning. These wetland functions would be difficult and expensive to replace by other means. Also, advance knowledge about wetland locations helps reduce costs and conflicts when planning new infrastructure such as streets and water and sewer lines.

What about landowners? Is there any benefit for them?

Problems frequently occur when a landowner or developer is unaware that a parcel contains wetlands. When the LWI is completed, the city will notify all landowners who have wetlands mapped on their property. Information about the presence of wetlands reduces the uncertainty that can slow down real estate transactions and development plans. A person wishing to develop a site that contains a mapped wetland will know in advance to design the project to avoid the wetland and to allow sufficient time to obtain any necessary wetland fill permits.

If I don't allow property access, will my land be left off the wetlands map?

The entire planning area will be covered by the LWI. If you choose to deny property access to the wetland consultants, they will not go on your property. For those areas where access is denied, the wetland information will be compiled from the aerial photos, soils maps and observations from nearby roads. This information is generally adequate, but may be less accurate than for field-verified sites.

Oregon Division of State Lands
775 Summer Street NE
Salem, Oregon 97310
(503) 378-3805

Wetlands Program
April 1999

If a wetland is missed by the LWI is it still regulated?
Yes, the state and federal regulations apply to all wetlands regardless of whether or not they are mapped on the LWI. The consultants will attempt to include on the LWI all wetlands that are at least _ acre in size.

Can I comment on the wetland map before it is adopted by the city?
Local knowledge is important to making the LWI as accurate as possible, so public comment is encouraged. The city will host a public meeting when the draft LWI is ready for review. Watch your local newspaper for an announcement or contact the planning department to be sure you are notified of the meeting date.

How accurate is the LWI map?
The LWI is developed according to standards adopted by DSL. The standards help to ensure accurate and complete maps, but perfection is not possible. Every attempt is made to map wetlands correctly on parcels and to map wetland boundaries to an accuracy of at least 25 feet. There may be areas where the boundary is less accurate, especially on large tracts with few geographic reference points, and areas where property access was denied. Keep in mind that the primary purposes of the LWI are to provide information for long-range planning by the city and to alert landowners to the probable wetlands on their property.

I heard that I might still need to hire a wetland consultant to delineate the wetland on my property before I can develop the site. Why?
Because the LWI maps the approximate wetland boundary and may miss small wetlands, much more detailed field work is usually needed prior to site development. It's important to know and mark on the ground the precise wetland boundary of areas subject to state and federal permit requirements prior to site alteration. The wetland consultant will not only provide the detailed delineation, but can assist in preparing a fill permit application and mitigation plan for any wetland impacts that cannot be avoided.

What exactly is a wetland?
Wetlands mapped on the LWI meet state and federal wetland criteria. In general terms, wetlands are areas that are subject to long periods of inundation or saturation that create an oxygen deficit in the soil. As a result, they are characterized by plant species called "hydrophytes" that are adapted to these saturated soil conditions. Most wetlands are seasonal—they are very wet for several months but dry out in the summer and fall. Also, some wetlands are disturbed in a way that obscures one or more of the wetland criteria. For example, some wetlands are regularly farmed or grazed and may be planted to species that tolerate wet conditions (like ryegrass) or "worked" later in the Spring than adjacent non-wetland fields. If not maintained, wetland vegetation will return.

Are wetlands the same as floodplains?
No. Many wetlands do occur in floodplains but they are not the same. A floodplain can be expected to flood following heavy rains and snowmelt. However, many floodplain areas are not flooded long enough or often enough to meet the wetland criteria described above.

What about riparian areas?
Riparian areas are the vegetated corridors along streams. Although they perform many of the same functions as wetlands, they do not necessarily meet wetland criteria. Many riparian areas have coarse, well drained soils that do not remain saturated for prolonged time periods. Because riparian areas are so important to the health of streams, to fish and to water quality, cities are required to map and provide protection for riparian areas as well as for wetlands. Frequently, the riparian inventory is conducted at the same time as the wetland inventory.

Oregon Division of State Lands
775 Summer Street NE
Salem, Oregon 97310
(503) 378-3805

Wetlands Program
April 1999

Post-Inventory Notification to affected Landowners

Date City Letterhead

Landowner
Mailing address

Dear ___city__ Property Owner:

Why are we contacting you? The city recently completed the (city) Local Wetland Inventory. Property that you own at Map / tax lot #(s) was included on this inventory and found to contain a wetland or waterway. State regulations at OAR 141-86-0240 require us to notify you of this determination.

Purpose of the inventory: The inventory was done primarily for the city's comprehensive plan update, as required by OAR 660-23-0100, and to achieve better coordination between land use planning and wetland regulations. The inventory identified, described, and mapped the approximate boundaries of wetlands within the city and the urban growth boundary. Where access permission was granted, the wetland inventory map should be accurate to within approximately 25 feet of the actual wetland boundary. Where access was not granted, the map may be less accurate, and field verification will be necessary to determine where various regulations may apply. There may be unmapped wetlands that are also subject to state and federal regulation.

The inventory as approved by the Division of State Lands (DSL) will be included in the Statewide Wetland Inventory and will be used by the city to notify DSL if site development is proposed on affected parcels. The inventory will help both the community and individual landowners by providing advance notice about wetland regulations so that we can plan ahead for necessary permits and avoid potential fill violation liability.

Does the inventory create new regulations? Compliance with state and federal wetland regulations is the responsibility of every landowner, regardless of whether the wetlands have yet been identified on any map. For further information on wetland regulations, contact DSL at 503-378-3805 or via their web page at http://statelands.dsl.state.or.us; or contact the Army Corps of Engineers at 503-808-4373. (Insert reminder on existing city grading permits or related codes here). Based on the recently completed inventory and evaluation of wetlands, the city may choose to adopt new ordinances to protect the functions and values of certain wetlands that are important to the community.

For more information about the inventory: You may view the Inventory map and documentation at the city planning department (or at the public library or other location). The Inventory project was described in the __local paper/date__ and public information meetings were held on _dates__ to explain the project. Additional information meetings are anticipated during _timeframe_ to encourage citizen participation in future wetland planning steps.

If you have further questions, please contact __city planner__ at ___#_____.

Appendix E

LWI Technical Examples:

Sample Wetland Summary Sheet

Sample OFWAM Worksheet

Sample OFWAM Summary Sheets

Sample LSW Worksheet

Sample Wetland Determination Data Sheet

Excerpt of LWI Map

GRESHAM LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 06/12/01 **Wetland Mapping Code:** BU01

Investigator(s): Ed Strohmaier **Size (acres):** 0.56

Data Sheet Numbers: KU01-1,2

Location

Legal: T1S R3E S17

Other: South of SW 27th Dr.

Basin: Butler Creek

Soils

Mapped Series: 55-Wapato silt loam

Hydrology

Hydrologic Source: Surface

Wetland Classification(s): Cowardin: PEM, PSS, POWKZH HGM: RI

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
Red alder	*Sitka willow*	*Himalayan blackberry*	*Soft rush*
Weeping willow	*Pacific willow*		*American brooklime*
Domestic cherry	*Red-osier dogwood*		*Creeping buttercup*
Big-leaf maple	*Pacific ninebark*		*Reed canarygrass*
	Black twinberry		*Small-fruited bulrush*
	Douglas' spiraea		*Sawbeak sedge*
	Vine maple		*Colonial bentgrass*
	Salmonberry		*Mannagrass*
	Nootka rose		*Yellow iris*
	Clustered rose		

Comments:

This wetland is a dammed portion of the stream that may have been partially created long before the subdivision. Weeping willow trees are very large and old and weeping willow stumps are in the water. The roadway creates the dam with a brush-guarded inlet on culvert. Two islands were created with extensive Pacific willow plantings. Banks are steep with only a fringe emergent wetland with some scrub shrub in places, though there are some emergent wetlands on north end of island.

Wetland Classification Codes:

PFO = palustrine forested	PSS = palustrine scrub-shrub	RSB = riverine streambed (intermittent)
PEM = palustrine emergent	POW = palustrine open water	RUB = riverine unconsolidated bottom

SHAPIRO Project Number: 2015002

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLOGY

Date(s):	02/13/02	**Investigator(s):**	Ed Strohmaier
Project Name:	Gresham LWI		
WetlandCode:	BU-01	**ProjectNumber:**	2015002.2

Wildlife Habitat		Fish Habitat Streams		Fish Habitat Lakes/Ponds		Water Quality		Hydrologic Control		Sensitivity to Impact	
Q1:	A	Q1:		Q1:	B	Q1:	A	Q1:	A	Q1:	A
Q2:	A	Q2:		Q2:	C	Q2:	A	Q2:	A	Q2:	B
Q3:	C	Q3:		Q3:	B	Q3:	A	Q3:	B	Q3:	C
Q4:	C	Q4:		Q4:	A	Q4:	B	Q4:	A	Q4:	A
Q5:	A	Q5:		Q5:	C	Q5:	A	Q5:	A	Q5:	A
Q6:	A	Q6:		Q6:	B	Q6:	C	Q6:	A	Q6:	A
Q7:	A							Q7:	A		
Q8:	C										
Q9a:											
Q9b:	B										

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Q1:	B	Q1:	A	Q1:	A	Q1:	A
Q2:	A	Q2:	A	Q2:	C	Q2:	A
Q3:	A	Q3:	B	Q3:	A	Q3:	A
Q4:	B	Q4:	A	Q4:	B	Q4:	B
Q5a:		Q5:	A	Q5:	A	Q5:	A
Q5b:	B	Q6:	A	Q6:	B	Q6:	A
Q6:	B						

Wildlife Habitat:	The wetland provides habitat for some wildlife species.
Fish Habitat - Streams:	N/A
Fish Habitat - Lakes/Ponds:	The wetland's fish habitat function is impacted or degraded.
Water Quality:	The wetland's water quality function is intact.
Hydrologic Control:	The wetland's hydrologic control function is intact.
Sensitivity to Impact:	The wetland is potentially sensitive to future impacts.
Enhancement Potential:	The wetland has moderate potential for enhancement.
Education:	The wetland has educational uses.
Recreation:	The wetland provides recreational opportunities.
Aesthetic Quality:	The wetland is considered to be pleasing.

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	BU-01	ProjectNumber:	2015002.2

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	The wetland provides habitat for some wildlife species.	Two or more Cowardin wetland classes. Woody vegetation is dominant vegetation cover. Low degree of Cowardin class interspersion. Less than 0.5 acre of unvegetated open water present. Wetland connected to another body of water by surface water. Wetland connected to other wetlands within a 3 mile radius. Upstream not listed as water quality limited. Residential/Industrial land use within 500 feet of wetland edge.
Fish Habitat - Streams	N/A	
Fish Habitat - Lakes/Ponds	The wetland's fish habitat function is impacted or degraded.	Between 50 and 75% of stream shaded by riparian vegetation. Physical character of stream channel extensively modified/piped. Stream contains between 10 and 25% of instream structures. Upstream not listed as water quality limited. Residential/Industrial land use within 500 feet of wetland edge. Non-Salmonid, non-sensitive fish species present sometime during the year.
Water Quality	The wetland's water quality function is intact.	Surface flow (including streams and ditches) is wetland's primary source of water. Evidence of flooding or ponding during part of the growing season. High (>60%) degree of wetland vegetation cover. Between 0.5 and 5 acres of wetland connected to other wetlands within a 3 mile radius. Residential/Industrial land use within 500 feet of wetland edge. Upstream not listed as water quality limited in watershed or adjacent to the wetland.
Hydrologic Control	The wetland's hydrologic control function is intact.	All or part of wetland located within 100-year floodplain or enclosed basin. Evidence of flooding or ponding during the growing season. Area is between 0.5 and 5 acres. Waterflow out of wetland is restricted or no outlet. Woody vegetation is dominant cover type. Residential/Industrial land use within 500 ft of wetland on downstream or down-slope edge of wetland. Urban or Urbanizing land use in watershed upstream from area.
Sensitivity to Impact	The wetland is potentially sensitive to future impacts	Stream flow or bank has been modified by human activities within 1 mile above wetland. Water is not being taken out of streams through active diking, drainage, or irrigation districts upstream. Upstream not listed as water quality limited in watershed upstream of the or adjacent to the wetland. Residential/industrial (developed) land use within 500 feet of wetland's edge. Dominant Residential/Industrial (developed) land use within 500 feet of wetland's edge. Woody

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	BU-01	ProjectNumber:	2015002.2

Function	Evaluation Descriptor	Rationale
		vegetation is the dominant cover.
Enhancement Potential	The wetland has moderate potential for enhancement.	Wetland has lost one or more functions or one or more functions is not present in assessment results for wildlife habitat, fish habitat, water quality and hydrologic control. Wetland's primary source of water is surface flow, including streams and ditches. Water flow into wetland is not restricted, but if blocked, obstruction can be removed easily. Wetland's area is between 0.5 and 5 acres. Between 10 and 40 % of wetland's edge is bordered by a vegetative buffer 25 or more feet wide. Wetland is potentially sensitive to future impacts.
Education	The wetland has educational uses.	Wetland site is open to the public for direct access or observation. There are no visible hazards to the public at the wetland site. Provides wildlife habitat for some species, or fish habitat is impacted or degraded. There is existing physical public access to other features or it can be created easily and other habitats can be observed from this site. There is a maintained public access point within 250 feet of the wetland's edge. Access is available for limited mobility.
Recreation	The wetland provides recreational opportunities.	There is a maintained public access point within 250 feet of wetland's edge. Wetland not accessible by boat-no boat launch within 1 mile/ cannot develop. Existing developed and maintained trails and viewing areas to guide user. Wetland provides habitat for some species. Fishing is allowed at wetland or adjacent water body. Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be pleasing.	More than two Cowardin classes are visible from primary viewing area(s). More than 50% of wetland is visible from viewing area(s). General appearance of wetland has no visual detractors. Visual character with surrounding area is landscaped or manipulated by people. Natural, pleasant odors are present at primary viewing location. Some traffic and other similar sounds and natural sounds are audible at primary viewing locations.

Gresham
Local Wetland Significance Assessment

WetlandCode: BU01

A. "OUT" Test

No Wetlands artificially CREATED ENTIRELY FROM UPLAND that are:

(a) created for the purpose of controlling, storing, or maintaining stormwater;
(b) active surface mining ponds;
(c) ditches without free and open connection to waters of the state AND without fish;
(d) <1 acre and unintentionally created from irrigation leak or construction activity;
(e) of any size and created for the purpose of wastewater treatment, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.

No Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites").

This wetland MEETS the criteria for identification as a Local Significant Wetland

B. "IN"

Yes Wetlands that score the highest rank for ANY of the four ecological functions addressed by OFWAM or equivalent methodology:

- **No** wildlife habitat,
- **No** fish habitat,
- **Yes** water quality,
- **Yes** hydrologic control.

No Wetlands that (1) are rated in either the highest or second highest category for water quality (in OFWAM or equivalent) AND that (2) the wetland is within one-quarter mile from a water quality-limited stream as listed by DEQ.

No Contains one or more rare wetland plant communities including those listed in the Oregon Natural Heritage Program's CLASSIFICATION AND CATALOG OF NATIVE WETLAND PLANT COMMUNITIES IN OREGON as G1-G3 and S1-S3.

No Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site not important for the maintenance of the species.

No Wetland rates in either the highest or second highest category for Fish Habitat in OFWAM and is located adjacent to a stream segment that is mapped by ODFW as habitat for "Indigenous anadromous salmonids."

No OPTIONAL CRITERION (at discretion of local government): Wetland represents a LOCALLY unique plant community.

No OPTIONAL CRITERION (at discretion of local government): Wetland is publicly owned, rates highest rank for education potential, and there is documented use for educational purposes by a school or organization.

Shapiro and Associates, Inc., 1650 N.W. Naito Parkway, Suite 302, Portland, Oregon 97215
Project Number: 2015002.2

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Gresham Site: Gresham LWI Plot: BU-01-01

T 1S R 3E S 17 City: Gresham County: Multnomah State: OR

Plot Location; Topography: Wetland located south of SW 27th Drive between SW Lillyben and SW Mawrcrest

Project #: 2015002.2 Determined by: Ed Strohmaier Date: 6/12/01

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION ☑ ***Indicates Dominant Plant Species within Stratum***

Herb Stratum - % total cover: 70	Ind.	% Cover:
☑ *Agrostis stolonifera*	FAC	25
☑ *Ranunculus repens*	FACW	20
☑ *Carex stipata*	OBL	15
☑ *Juncus effusus*	FACW	15
☐ *Geranium robertianum*	UPL	10
☐ *Glyceria sp.*	OBL	10
☐ *Epilobium watsonii*	FACW	5
☐ *Rumex occidentalis*	FACW	5

Shrub/Sapling Stratum - % total cover: 30	Ind.	% Cover:
☑ *Spiraea douglasii*	FACW	50
☑ *Salix sitchensis*	FACW	50

Woody Vine Stratum - % total cover: 0 Tree Stratum - % total cover: 0

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC- 6 of 6 = 100 % (50/20 Rule)

Remarks: Many red alder and black cottonwood trees shade the pond. Most of these species are upslope of the wetland fringe.

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: 55-Wapato silt loam

Drainage Class: Poorly drained

Taxonomy: Fluvaguentic Haplaquolls

FIELD SOIL CHARACTERISTICS:

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-8"	10YR3/2	10YR4/6 many, coarse, prominent	sand
	8-16"	10YR3/1	NA	silt loam, high organic content

☐ Histosol ☐ Prob. Aquic moisture regime ☑ Redox features ☑ Organic streaking

☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan

☐ Sulfidic odor ☑ Gleyed or Low Chroma ☐ Highly organic surface layer ☑ On hydric soils list

Remarks: Gleyed bands present within matrix

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: 6" Depth to saturation: 0"

Primary Indicators:

☐ Inundated

☑ Saturated in upper 12"

☐ Water marks

☐ Drift lines

☐ Sediment deposits

☐ Drainage patterns

Secondary Indicators (2 or more required):

☐ Oxidized rhizospheres ☐ Local soil survey data

☐ Water-stained leaves ☐ FAC-Neutral test

☐ Recorded data (aerials, groundwater data)

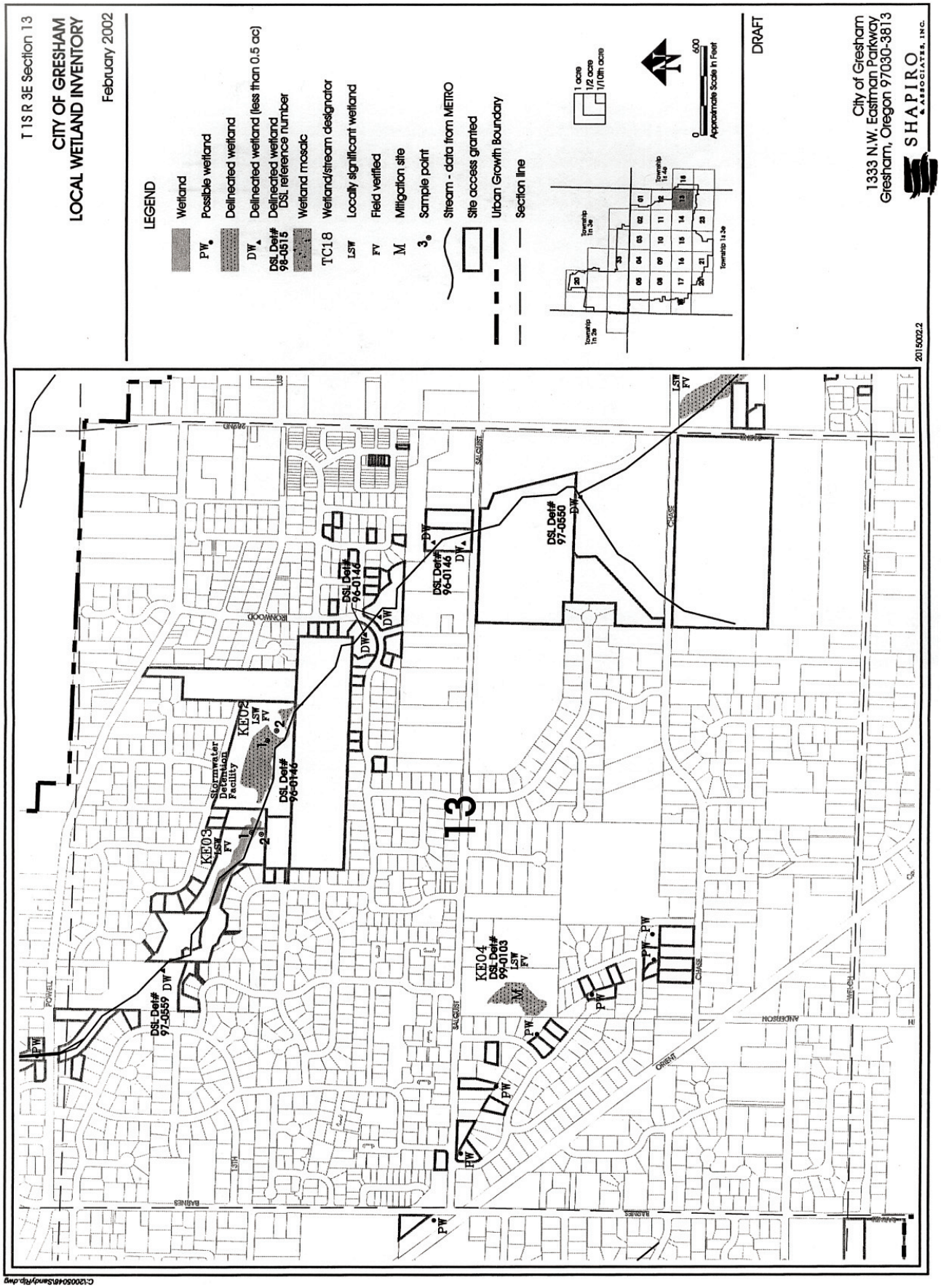
Explain:

☐ Other

Explain:

Remarks: BU-01-01 located approximately 6" above water level and approximately 7' from edge of water

Shapiro and Associates, Inc. 1650 N.W. Naito Parkway, Suite 302 Portland, OR 97209 (503) 274-9000


T 1S R 3E Section 13
CITY OF GRESHAM
LOCAL WETLAND INVENTORY
February 2002
LEGEND
Wetland
PW Possible wetland
Delineated wetland
DW Delineated wetland (less than 0.5 ac)
DSL Def# 98-0515 Delineated wetland DSL reference number
Wetland mosaic
TC18 Wetland/stream designator
LSW Locally significant wetland
FV Field verified
M Mitigation site
3 Sample point
Stream - data from METRO
Site access granted
Urban Growth Boundary
Section line
1 acre
1/2 acre
1/10th acre
600
Approximate Scale in Feet
DRAFT
City of Gresham
1333 N.W. Eastman Parkway
Gresham, Oregon 97030-3813
SHAPIRO
& ASSOCIATES, INC.
2015002.2
KE02
KE03
KE04
DSL Def# 96-0146
DSL Def# 97-0550
DSL Def# 97-0559
DSL Def# 99-0103
Stormwater Detention Facility
13
POWELL
BOMMOOD
SALQUIST
CHASE
ORIENT
ANDERSON
BARNES
C:\2005\0405\andyRp.dwg

Appendix F

Examples of Conflicting Use/ESEE Analyses

North Clackamas Urban Area Wetland Inventory and Goal 5 ESEE Analysis

Pages F-2 to F-12

Prepared by Greg Winterowd, now with Winterbrook Planning; collaborative project with Lynn Putnam, then on contract to Clackamas County. 1994.

Howard Canyon Impact Area and ESEE Analysis

Pages F-13 to F-28

Prepared by SRI/Shapiro for Multnomah County gravel quarry. 1994.

Beaverton Goal 5 Update ESEE Analysis of Significant Tree Groves

Pages F-29 to F-32

Prepared by Shapiro. 1998.

Examples of Conflicting Use/ESEE Analyses

North Clackamas Urban Area Wetland Inventory and Goal 5 ESEE Analysis
(generic discussion of impacts and ESEE analysis of individual wetlands)
Pages F-1 through F-12

Economic Consequences of Allowing Commercial and Industrial Development

The economic consequences of replacing significant wetland resource sites are different, depending on the level of analysis. For the property owner, the economic impacts of allowing the full industrial development of the site usually are extremely positive. If the wetland is developed, approximately 10[4] additional employees per acre of wetland could be provided for on a property. Assessor's records show that commercial land values vary widely. For example, Site B16 shows tax lot values from as low as $6,087 an acre to a high of $180,000 per acre. Industrial land values have a somewhat lesser range of values. Using Site B20 as an example, assessed values range from $46,750 to $130,000 per acre. It is unclear from the above what affect the presence of a wetland may have had on assessed values. What is clear is that full protection of wetlands located on commercial and industrial sites would result in considerable lost property value to property owners.

However, these costs needs to be balanced against the cost of off-site mitigation, which was estimated by the Division of State Lands at Technical Advisory Group sessions at approximately $80,000 to $120,000 an acre. Thus, the off-site mitigation costs (in the event that off-site mitigation were to be approved by DSL and the Army Corps) may be considerable.

Economic consequences vary considerably based on individual site conditions, as noted in the discussion of the economic consequences of conserving the wetland, below.

From the industrial or commercial developer's point of view, the lack of local regulations would mean decreased uncertainty and design costs. The costs of additional consultant time would be avoided, the thought and energy required to design the project may be reduced, and there would be less local government discretion and perhaps greater certainty in the review process.

On the other hand, there are a number of less obvious economic consequences that need to be considered. First, wetlands can add amenity value to developments -- especially business and campus industrial parks. It is less likely that conservation of wetlands would benefit standard commercial or industrial developments, except as a method of storm water control. Development over a wetland could have the effect of decreasing neighboring property values.

Second, local governments and property owners face potential increases in storm water management, flood control and federally-mandated water quality improvement costs as wetlands are developed. Wetlands should be viewed as part of the storm water management system; often, when wetlands are destroyed, their functions must be re-created as sumps, or artificial detention and water quality ponds, at considerable private and public expense. Clackamas County and industrial/commercial property owners are facing major costs in meeting federal NPDES permitting requirements, costs which could increase wetland water

[4] See the Clackamas County Industrial Lands Study.

North Clackamas Urban Area Wetland Inventory and Goal 5 ESEE Analysis
Page 6-32

quality functions are lost. Flood insurance rates may also increase in the future, based on flood studies that may have to be revised because they under-estimated urban run-off rates.

Third, there may be a negative economic value by not providing a clear and objective *local* process for resolving development/wetland conflicts. If the local, state and federal review process is not clearly spelled out in the ZDO, the uncertainty and delay costs could increase for everyone involved.

Social Consequences of Allowing Commercial and Industrial Development

The social consequences of allowing unrestricted commercial/industrial development of significant wetland resource sites would be mixed. On the positive side, needed employment opportunities and convenient shopping and service opportunities in the North Urban Area would be maintained. By maintaining the amount of buildable commercial/industrial land inside the regional Urban Growth Boundary, expansion of the UGB to farm and forest land might be delayed in other urban counties.

The social value of providing employment within the North Urban Area is significant. If employment, commerce and services are concentrated inside the existing regional UGB, commuter travel will be minimized, which has positive social impacts. Pollution will be reduced, there will be more disposal income for other consumer wants, productivity will increase and there will be more leisure time to spend on non-work/non-shopping activities. In addition, development costs might be reduced, assuming that the wetland would not be protected otherwise under state and federal regulations.

There are also negative social consequences. If development were to occur on wetlands covering commercial/industrial land, urban setting and water based recreational functions and values, among others, would be lost. Open space views for travellers along the Sunrise Corridor would be adversely affected. Workers would not have the advantage of open space views or places to spend off-time.

Wetlands usually add some amenity value to commercial/industrial developed land, and would only marginally reduce the amount of buildable land. Social consequences (lost open space and views) would be adverse as a result of developing the wetland area, which could otherwise be used as open space for the residential development. Wetlands provide educational opportunities for those working near them, which would be lost. Wetlands also provide opportunities for urban quiet and solitude, the lack of which has adverse social consequences.

The SRI/Shapiro Wetland Functions and Values report describes and analyzes the social qualities of each wetland in this category which would be compromised by unrestricted residential development. The SRI/Shapiro report includes specific measures for educational potential, visual/aesthetic quality, and water based recreational opportunities. The social consequences of allowing full development over the wetland would mean that the qualities which help make each wetland *significant* would be lost.

Energy Consequences of Allowing Commercial and Industrial Development

Energy consequences of unrestricted commercial/industrial development of wetlands are also mixed. Assuming standard development practices, the results of building over the wetland could be more efficient use of commercial/industrial land, which could prevent premature expansion of the regional UGB, higher urban densities, more efficient use of infrastructure, shorter travel distances and less out-of-direction travel. From a solar perspective, it is possible that vegetation from forested wetlands could shade south-facing windows of houses, thus reducing solar access. In summary, the adverse energy consequences could be significant.

On the negative side, wetland vegetation has a moderating effect on climate. Trees provide shade which can cool buildings in the summer and serve as a wind break in the winter. At a macro level, plants absorb sunlight and transpire during the growing season, slightly reducing ambient air temperatures. Wetlands also provide local recreational opportunities, thus reducing the need to drive for outdoor experiences. Thus, loss of wetland vegetation would have some adverse energy consequences.

6.5.3 Consequences of Limiting or Prohibiting Conflicting Commercial/Industrial Development

This portion of the ESEE analysis looks at the impacts of conserving a significant wetland resource site on the conflicting use -- in this case, commercial/industrial development.

Environmental Consequences of Conserving the WRS

The environmental values that would be retained by conservation of wetlands are described in II.1 above. The SRI/Shapiro Wetland Functions and Values report describes and analyzes the environmental qualities of each wetland in this category which would be largely retained by prohibiting development on and near wetlands, or partially retained by prohibiting residential development on wetlands, and restricting commercial/industrial development within the 100' impact area. Even with "full protection" of significant wetland resource sites, activities associated with commercial/industrial development (increased human activity, run-off, toxic spills, noise, glare, trespass, pets, etc.), which cannot be fully controlled by land use regulations, will probably degrade wetland values over time.

The SRI/Shapiro report includes specific measures for ecological integrity, wetland wildlife habitat, flood control potential, sediment trapping and nutrient attenuation. The environmental consequences of conserving wetlands are that these qualities which make each wetland *significant* would be conserved.

Economic Consequences of Conserving the WRS

It is useful to look at the economic consequences of conserving the significant wetland resource site from different points of view. Impacts are often different at the study area level than from the point of view of the individual property owner. The ESEE analysis for each *individual*

significant wetland resource site will address the special characteristics of that site in relation to property owner interests.

Study Area Level

At the study area level, the economic consequences of *avoiding* wetlands on commercial/industrial properties are significant. In 1993, the North Urban Area included an estimated 113 acres of unrestricted commercial land area, of which an estimated 2.3 acres (2 percent) are wetlands. More significantly, there are 652 acres of unrestricted industrial land, of which 44 acres (7 percent) are wetlands.

Assuming an average commercial employment-to-acre ratio of 30, there is the lost capacity for an additional 69 commercial jobs. Assuming an industrial employment-to-acre ratio of 10, there is the lost capacity to accommodate an additional 440 industrial sector jobs.

In the worst case scenario, if all wetland acres on commercially-zoned land were fully preserved, then the North Urban Area could still accommodate 3,325 new commercial jobs at 30 employees per acre. If all wetland acres on industrially-zoned land were fully preserved, then the North Urban Area could still accommodate 6,076 new industrial jobs at 10 employees per acre. In this unlikely case, the supply of industrial and commercial land within the North Urban Area portion of the 20-year regional UGB would be used up about one- to two years earlier than to accommodate commercial and industrial growth needs.[5]

Clackamas County has also invested considerable public dollars in providing infrastructure (transportation, sewer, water, storm drainage, utilities) to commercial and industrial land in the North Urban Area. The return on public investment will be reduced in proportion to the amount of industrial land which cannot be developed due to wetland or other constraints.

At the regional level, the economic impacts are less significant. Based on METRO estimates, the metropolitan urban growth area includes enough vacant industrial land to meet long-term regional employment needs. Although no inventoried wetlands are likely to be regulated by state and federal agencies in any event. However, *local* regulatory costs would likely increase -- both for the developer and the County.

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[5] In 1987, Clackamas County conducted a study to determine the adequacy of its industrial and commercial land supply. The *Clackamas County Target Industries Study* (1987), documents an existing shortage of commercial and industrial land within the Clackamas County portion of the regional UGB. Using 1987 data, it was concluded that the Unincorporated East Urban Area *needs* 1,150 industrial acres, and 961 commercial acres, through the Year 2010. Yet there are only 802 industrial acres, and 772 commercial acres, available. Thus, even discounting the effects of wetlands on the industrial lands supply, the County cannot meet its long-term industrial and commercial land needs within the existing UGB.

These long-term shortages are compounded by topographical and service constraints, which make it difficult for Clackamas County to allocated new industrial and commercial sites outside the present UGB.

The worst case scenario described above is somewhat unrealistic, in that it assumes: (a) *no* state or federal wetlands protection program; and (b) that all 46 acres of inventoried wetlands will be fully protected, when this study has determined that only nine (9) wetlands, 41 acres, are significant. Thus, a more reasonable scenario would be to assume that about 500 which otherwise would have occurred on land within the North Urban Area, will be located elsewhere due to local wetlands conservation programs.

Location of Wetland on Property

This issue will be examined more closely in the site-specific ESEE analysis. In general, wetlands often serve as effective boundaries separating property ownerships. In many cases, wetlands are associated with streams, and may be in close proximity to an Open Space overlay. In such cases, wetland conservation has a less adverse economic impact. In situations where the wetland covers most of a small property, or blocks all access to a property, the economic consequences are extremely adverse, and make it impossible to completely avoid the wetland. Such situations will be noted on ESEE analyses associated with individual properties.

Unlike residential properties, commercial and industrial properties often do not have required setbacks, unless they abut residential land. One method open to property owners to alleviate adverse economic consequences resulting from wetlands is the variance process, which would allow dimensional standards of the applicable zoning district to be modified to allow siting outside the wetland.

Developer Impact

From the developer's point of view, the local wetland conservation regulations could mean increased uncertainty and design costs. It is often easier and less time-consuming to develop over a wetland, rather than around it, especially where large, rectangular buildings are required. The costs of additional consultant time would increase, as would the level of thought and energy required to design the project. There could be greater local government discretion and perhaps greater uncertainty in the review process.

However, as noted above, it is highly probable that all locally *significant* wetlands will be regulated by state and federal standards anyway, so that local regulation does not necessarily pose an additional hurdle for the land developer.

Positive Economic Consequences of WRC Conservation

On the other hand, there are a positive economic consequences associated with wetland conservation. First, many studies have demonstrated that wetlands can add value to developments -- both for neighbors and for commercial/industrial developments. Conserving wetlands through thoughtful design probably will increase neighboring property values and may, depending on the nature of the proposed commercial/industrial use, increase lease or sales price of space or lots.

Second, potential costs for storm water management, flood control and federally-mandated water quality improvement program may decrease if wetlands are not developed. Wetlands should be viewed as part of the storm water management system; often, when wetlands are destroyed, their functions must be re-created as sumps, or artificial detention and water quality ponds, at considerable public expense. Clackamas County is facing major costs in meeting federal NPDES permitting requirements, costs which could increase if wetland water quality functions are lost. Flood insurance rates may also increase in the future, based on flood studies that may have to be revised because they underestimated urban run-off rates.

Third, there may be a positive economic value by providing a clear and objective *local* process for resolving development/wetland conflicts. If the local, state and federal review process is clearly spelled out in the ZDO, the uncertainty and delay costs could decrease for everyone involved.

Social Consequences of Conserving the WRS

The social consequences of allowing conserving significant wetland resource sites would be mixed. Unlike residential development, however, the County's planned unit development process is not a major mitigation tool in terms of lost jobs.

In order to conserve significant wetland resource sites that are zoned for industrial and commercial uses, the opportunity for jobs close to urban housing is diminished. If all significant wetland resource sites are conserved, then approximately 46 acres and 1100 jobs would be displaced to agricultural and forest land outside the existing UGB. The importance of close-in employment opportunities needs to be balanced against the clear benefits of wetland conservation.

On the positive side, wetlands may add some amenity value to developed land. The social consequences (open space and views) would be positive as a result of conserving the significant wetland areas, which can be used as open space for the employees and the general shopping public. Wetlands provide educational opportunities for those working near them, which would be maintained. Wetlands also provide opportunities for urban quiet and solitude, which has positive social consequences.

The SRI/Shapiro Wetland Functions and Values report describes and analyzes the social qualities of each wetland in this category which would be conserved through planned residential development and density transfer. The SRI/Shapiro report includes specific measures for educational potential, visual/aesthetic quality, and water based recreational opportunities. The social consequences of conserving the wetland would retain the qualities which help make each wetland *significant*. Out-of-direction travel to avoid the wetland, and associated pollution and traffic impacts might be slightly increased, although thoughtful design can usually avoid this problem.

Energy Consequences of Conserving the WRS

Energy consequences of wetland conservation are also mixed, but in this case again are largely negative. Unlike housing, all wetlands cannot be preserved on industrial land without significant impacts on the regional UGB. Urban jobs will be displaced to more distant areas, increasing travel time, congestion, and stress. Especially along the Sunrise and I-205 Corridors, where transportation access is a key locational factor, the energy consequences of wetland conservation are significant and adverse.

It is less likely that vegetation from forested wetlands would shade large industrial or commercial users, or significantly impair solar access.

However, wetland vegetation has a moderating effect on climate. Trees provide shade which can cool buildings in the summer and serve as a wind break in the winter. At a macro level, plants absorb sunlight and transpire during the growing season, slightly reducing ambient air temperatures. Wetlands also provide local recreational opportunities, thus reducing the need to drive for outdoor experiences. Thus, conservation of wetland vegetation would have additional positive energy consequences.

North Clackamas Urban Area Wetland Inventory and Goal 5 ESEE Analysis
Page 6-38

ESEE ANALYSIS **WETLAND RESOURCE SITE: A3**

This Environmental, Social, Energy, and Economic (ESEE) analysis addresses how conflicting uses, if allowed, could negatively impact this wetland resource site as well as how the resource site may impact those uses.

Size: .6 acre
Type: Palustrine Open Water/ Forested
Watershed: Sieben Creek
Number of parcels affected: 4
Acreage of parcels affected: 30.6
Impacted area affected: 100 feet from resource site boundary

Distinguishing Environmental Characteristics The pond located on tax lot D700 provides partial impoundment of the intermittent stream to which it is the headwaters providing some flood control. The remaining wetlands along the stream corridor help to trap sediment and reduce nutrient loads which improve water quality. The corridor is deeply incised and heavily forested.
This site scored in the top 50% in the following environmental categories for wetland only and does not include the associated stream corridor:

_X_ Ecological integrity
___ Wildlife habitat
___ Flood control potential
___ Sediment trapping
___ Nutrient attenuation

Distinguishing Social Characteristics Because this corridor has had only minor disturbances, it has high open space and recreational value.
This site scored in the top 50% in the following social categories for wetland only and does not include the associated stream corridor:

___ Educational potential
___ Visual aesthetic quality
_X_ Urban setting
_X_ Recreational opportunities

Affected Parcels Information

Tax Lot/ Owner	Size (acres)	Wetland Area	Plan Des/ Zoning	Resource Conser-vation	Current Land Use/ Asessed Values	Dev Plans	WL Xing Reqd
22E2D 700 Gannon	5.0	.13	ULDR VR-5/7	No	SFR L: 19k; I: 89k*	NOF**	No
22E2DC 200 Tatom	9.5	.1 ac and stream	ULDR FU-10	No	L: 4k	NOF	No
22E2D 704 Pfeifer	15	.34 ac and stream	ULDR VR-5/7	Yes@	SFR L: 118k; I: 169k	NOF	No
22E2DC 301 Reilly	1.1	.01 ac and stream	ULDR FU-10	No	SFR L: 43k; I: 115k	NOF	No

*L = land value; I = Improvements value; k = $1,000

**NOF = none on file
@RC = Open Space/Resource Conservation (Sunnyside Village plan)

Conflicting Uses

Refer to Appendix A for a list of potential conflicting uses for each applicable zoning district. Consequences of conflicting uses and activities for each applicable land use category are covered in detail in the Supplemental ESEE analyses (referenced in this section) and Appendix B at the end of this document. Refer to the Regulatory Context section in the Supplemental Analysis for a description of applicable ordinances.

The X identifies the conflicting use categories identified for the A3 wetland:

- X 1A -- Residential with Open Space Designation
- X 1B -- ULDR without Open Space Designation
- ___ 1C -- MDR, MHDR, and HDR without Open Space Designation
- ___ 2 -- Commercial and Industrial
- X 3A -- Parks and Recreation
- ___ 3B -- Institutional
- X 4A -- Public Facilities on the PFP or CIP
- ___ 4B -- Public Facilities not on the PFP or CIP
- X 5A -- Native Vegetation Removal or Excavation
- X 5B -- Commercial Forestry or Farming

1. Once Summers Lane is extended across the A3 wetland chain, there will be no identified need for additional local street or utility crossings to serve affected parcels.

2. The Sunnyside/Rock Creek Neighborhood Plan proposes an east-west recreation trail through the central portion of the site. The consequences of this type of land use are addressed in the Supplemental ESEE Analysis Number 3A.

3. Only the wetland portion of tax lot D704 is in the Resource Conservation zone in the Sunnyside Village planning area. Consequences of residential development are addressed in the Supplemental ESEE Analysis Number 1A. For the remaining tax lots, the consequences of residential development are addressed in the Supplemental ESEE Analysis Number 1B.

4. Native vegetation on this site includes rushes and adjacent cottonwood trees near the pond and larger cedars in the stream corridor. These native plants are important for maintaining the integrity of the site. Excavation would have the effect of vegetation removal whether a Fill/Removal permit was issued by the regulatory agencies or not. The consequences of vegetation removal and excavation are addressed in the Supplemental ESEE Analysis Number 5A.

5. Commercial timber harvesting could potentially occur on tax lots DC 200, 301 and D704. The consequences of commercial forestry are addressed in Supplemental ESEE Analysis Number 5B.

Site-Specific ESEE Analysis for Summers Lane Extension

Both Summers Lane alternative alignments cross a portion of A3 in an east-west direction. Consequences of public facilities are addressed in the Supplemental ESEE Analysis Number 4A, and consequences of native vegetation removal and excavation are addressed in Supplemental ESEE Analysis Number 5A. However, because there are two alternative alignments, an additional evaluation is provided below.

This ESEE analysis deals only with a comparison of the two alignments (1-A and 1-B as shown on the conceptual engineering drawings available from the County), rather than to build or not build the road. Both alignments provide the necessary through connection at SE 132nd Avenue as provided for when the road was approved as part of the Transportation Plan adopted in 1989. In addition, this analysis addresses only the impacts the proposed alignments have on the A3 wetland resource site and not the associated stream riparian areas. Both alignments would allow the conflicting use on a limited basis at approximately the same location along the stream/wetland corridor. However, because 1-A curves north and 1-B curves south, the impacts are different as outlined here.

The proposed alignments have not been surveyed. Therefore, the following numbers are very rough estimates taken from the conceptual engineering drawings.

Environmental Consequences

The 1-A alignment requires approximately 45,000 cubic yards of fill while 1-B requires 30,000. The greater the amount of fill, the larger area of disturbance in terms of vegetation removal and excavation. Depending on the condition of the fill and its slope, native vegetation may be difficult to re-establish. Erosion may result. Since both alignments will probably have the same type of bridge construction (box culvert) the impacts to wildlife passage would be about the same.

Looking merely at the A3 wetland crossing, alignment 1-A looks less environmentally damaging than 1-B. However, looking at the entire alignments, the 1-A alignment traverses fewer heavily-treed areas and impacts the main stem of Sieben Creek much less than 1-B (see Wetland Resource site A8).

Economic Consequences

When comparing the toe of the slopes on the two engineering drawings, it appear that the 1-A alignment impacts less area (in square feet, top/down view) because it turns north on to more level terrain than does 1-B by turning south into more steep terrain. Thus the 1-A alignment would require less land area to be dedicated for road right of way. It would also mean that more land would be available for residential use than if the 1-B alignment was chosen. This residential land is currently assessed at an average cost of $6,000 per acre. However, the 1-A alignment does require more fill at the stream crossing which would increase construction costs.

Social Consequences

The same property owners are affected regardless of which alignment is chosen. However, the property owner of tax lot D705 would be more impacted with the 1-A alignment rather than 1-B because 1-A would parallel the entire parcel while 1-B turns south away from the parcel.

Energy Consequences

The energy consequences are about the same for both alignments since both allow motorists to travel from point A to point B in an east-west direction in about the same length of time.

Tentative Goal 5 Decision: Conserve wetland resource site A3.

Clackamas County has considered the Supplemental ESEE analyses in the following categories:

Residential with Open Space Designation
ULDR without Open Space Designation
Parks and Recreation
Public Facilities on the PFP or CIP
Native Vegetation Removal or Excavation
Commercial Forestry or Farming

and has determined that the following conflicting uses will be allowed on a limited basis in accordance with provisions in the Clackamas County Comprehensive Plan and zoning ordinances.

Land Uses and Activities Allowed on Limited Basis Through Zoning

Conflicting Use	Land Use	Related Secondary Activities[1]
Residential with open space des.	No	Yes
Residential without open space designation	No	Yes
Parks & Recreation	High Impact - No Low Impact - Yes	Yes
Public facilities on PFP/CIP	Alignment 1-A	Those related to road construction only
Native vegetation/excavation	Only if necessary for land uses listed above	NA
Forestry and farming	Commercial forestry not allowed in wetland areas	NA

[1] Secondary activities are regulated in a number of ways. Refer to Appendix B.

Public Testimony/Other Site-Specific Considerations

Final Goal 5 Decision

Examples of Conflicting Use/ESEE Analyses

Howard Canyon Impact Area and ESEE Analysis
(Use of matrices to group conflicting use and ESEE analysis of riparian zones for three streams)
Pages F-13 through F-28

RESOURCE ANALYSIS REPORT

1. INTRODUCTION

The analysis of significant streams is an element of the broader analysis of water resources as required by Goal 5. The stream analysis is focused on stream channels and the riparian zone along stream channels. This analysis does not directly address associated wetlands or the watershed outside the riparian zone. It is recognized that other Goal 5 studies including the Wildlife Habitat analysis and the analysis of Scenic Resources will address resource protection on a broad scale and will discuss impacts similar to those that will affect the watershed as a whole.

As part of the Goal 5 process, streams were inventoried to determine location, quantity, and quality. The qualitative aspect of each stream was examined using a modified "streamwalk" methodology and a wildlife habitat assessment process. Field inventory data sheets were prepared for two-tenths mile segments. The "streamwalk" data forms included the collection of information related to the stream channel, streambank stability, the width of the riparian corridor, streamside vegetation, stream conditions, and adjacent land use. The wildlife habitat assessment forms addressed habitat in terms of the presence of water, food, and cover. The inventory was valuable in assessing the significance of each stream. It was also valuable in providing information on riparian zone width, wetlands, and adjacent uses. This data is important in addressing impact areas and conflicting uses.

The Goal 5 analysis is designed to meet the requirements of the Goal 5 Administrative Rule (OAR Chapter 660, Division 16). The report will address impact areas, conflicting uses, and the economic, social, environmental, and energy (ESEE) consequences of conflicting uses. Each component of the analysis is organized by county study area.

2. DESCRIPTION OF RESOURCE

This report discusses three significant streams in the Howard Canyon, sub-region of the West Hills Rural Area. These streams drain westward from Ross Mountain to the Sandy River. They lie between the Sandy River and Louden Road to the south, and Larch Mountain Road and the rural community of Corbett to the north. A map of the sites is contained within the Technical Appendix relating to significance at the back of this report.

The significant streams discussed in this Resource Analysis Report are as follows:

STREAM	LENGTH (feet)	DRAINAGE AREA (acres)
"Big" Creek	5,125	4,135*
"Knieriem" Creek	12,670	1,185
"Howard Canyon" Creek	15,840	1,575

* includes drainage area for Howard Canyon and Knieriem Creeks.

The rationale for determining that these streams are significant is contained within the attached Appendix relating to significance at the back of this report.

3. IMPACT AREAS

The impact area for this study is the riparian zone along each stream. The riparian zone influences the quality and health of the stream and varies in width. It is affected by adjacent slope and the size of the vegetation along the stream. Generally, wider riparian zones have steep slopes with large trees, which shade the stream and contribute woody debris to the stream channel.

For streams that flow through or contribute water to public parks or to recreation areas used by the public, the impact area includes the downstream park or recreational facility.

Each stream is examined in terms of the number of properties abutting the stream and the zoning of the adjacent properties. The property/land use data provided is based on County study area maps.

Streams in the Howard Canyon area include: Big Creek, Knieriem Creek, and Howard Canyon Creek. All three streams met the County's significance criteria.

HOWARD CANYON
LAND USE DATA

Stream	Number of Adjacent Properties	Zoning of Adjacent Properties	
		#	Zoning
Big	11	1 6 4	EFU - Exclusive Farm Use CFU - Commercial Forestry Use RR - Rural Residential
Knieriem	18	7 11	EFU - Exclusive Farm Use CFU - Commercial Forestry Use
Howard Canyon	19	7 11	EFU - Exclusive Farm Use CFU - Commercial Forestry Use

The impact area and land use adjacent to each stream is discussed below. Land uses were inventoried and documented by field survey crews. It was noted if uses were "present" and whether the use was "clearly impacting" the stream.

Big Creek - The width of the riparian zone along Big Creek averages 126 feet with a range of 80-200 feet. Adjacent land uses which clearly impact the stream include logging, housing, roads and culverts, and agriculture (pasture land). The stream drains to the Sandy River.

Knieriem Creek - The width of the riparian zone along Knieriem Creek averages 107 feet with a range of 0-160 feet. Adjacent land uses which clearly impact the stream include housing, roads and culverts, and agriculture (pasture land). The stream drains to Big Creek and then to the Sandy River.

Howard Canyon Creek - The width of the riparian zone along Howard Canyon Creek averages 150 feet with a range of 10-200 feet. Adjacent land uses which clearly impact the stream include roads and culverts, housing, and agriculture (pasture land). The stream drains to Big Creek and then to the Sandy River.

4. CONFLICTING USE ANALYSIS

a. Planned Uses

Conflicting uses include those uses which conflict or interfere with the protection of the significant streams. To identify conflicting uses, the uses permitted under the zoning ordinance and comprehensive plan were examined. In addition, other known conflicts are noted. Conflicting uses which "clearly impact" the stream were identified in the field by survey crews and have been referred in the previous section.

The analysis is based primarily on uses outlined in the zoning ordinance. The zoning districts that affect the relevant sites include the following:

- Exclusive Farm Use - EFU
- Commercial Forestry Use - CFU
- Rural Residential - RR

Uses that represent potential conflicts with streams include any use that results in the removal of vegetation along the riparian zone. The removal of vegetation and trees will reduce shade along the stream, eliminate wildlife cover, and decrease the amount of woody debris that enters the stream channel. When this occurs, the stream will fail to provide economic, social, and environmental benefits. When healthy, streams and the associated riparian zone provide water for domestic use and irrigation, fish and wildlife habitat, and flood storage capacity. A stream on which the riparian zone has been eliminated or severely damaged poses a threat by the increased amount of run-off and turbidity and by the increased potential for flooding.

The generic uses permitted in each zone are described in the following table:

USE BY ZONING DISTRICT

Use	EFU	CFU	RR
Forestry/Timber	P	P	P
Wood Processing (limited)	CU	P/C	NP
Farm Use: crops/livestock	P	P	P

USE (continued)	EFU	CFU	RR
Resource Conservation	P	P	P
Single Family Residential Use on > 80 acres	P/C	CU	P
Single Family Residential Use on < 80 acres in conjunction with a Farm/Forest Use	P/C	CU	P
Two-Family Dwelling	NP	NP	NP
Farm/Forest Worker Housing	CU	NP	P/C
Wholesale/retail for farm/forest products	CU	NP	P/C
Play Grounds, Churches and Schools	CU	NP	CU
Parks/Golf Courses	CU	CU	CU
Other Community Service Uses	CU	CU	CU
Mining/Geothermal	CU	CU	CU
Agricultural Processing	NP	NP	CU
Wood Processing (sawmills, etc.)	CU	CU	NP
Fowl, feed lot, swine, fur farming	P	CU	CU
Dog Kennels	CU	NP	CU
Aircraft Landing Area	CU	CU	NP
Single Family Residential Use (Non Farm/Forest)	CU	CU	P
Home Occupations	CU	P	P
Planned Developments	NP	NP	CU
Cottage Industries	NP	NP	CU
Rural Service/Commercial	NP	NP	CU

KEY: P - Permitted
P/C - Permitted with conditions
CU - Conditional Use
NP - Not Permitted

Resource Analysis Report
SRI/SHAPIRO Project #7935258 *Page - 4 -* *May 13, 1994*

b. Conflicting Use Impacts

For purposes of further analysis, uses are grouped into general categories. The categories and a brief discussion of the nature of the conflicts follow.

Forestry Use - Forestry uses have significant conflicts with stream resources. The standard process of clear cutting increases run-off and turbidity in the streams. This results in a reduction in water quality and a loss of fish habitat. Logging roads that cross streams result in extensive stream damage. Field teams conducting the stream survey in the west hills noted numerous instances where logging roads and clear cutting had significantly damaged the streams. Wood processing facilities and whole/retail sales of forest products will result in the increase in stormwater run-off from impervious surfaces. Housing in connection with forest use may be located near streams and have impacts similar to those listed below under residential use. Forestry use includes the following uses permitted under the zoning ordinance: forestry/timber; wood processing (limited); wood processing (sawmills, etc.); forest worker housing; single family residential in conjunction with a forest use; wholesale/retail for forest products.

Agricultural Use - Agricultural use conflicts with stream resources in a variety of ways. Agricultural chemicals, including pesticides and fertilizers, may enter the stream and destroy or alter wildlife habitat. Farm livestock may graze near and enter the stream thereby destroying riparian vegetation and depositing excrement, which can affect water quality. Riparian vegetation may be removed to maximize cultivated area. Agricultural processing, housing, and wholesale/retail use will result in the increase of stormwater run-off from impervious surfaces. Housing will also have impacts similar to those listed below under residential use. Agricultural use includes the following uses permitted under the zoning ordinance: farm use crops/livestock; agricultural processing; fowl, feed lot, and swine for farming; farm worker housing; single family residential housing in conjunction with a farm use; wholesale/retail for farm products.

Residential Use - Streams provide an amenity for a residential dwelling. According to Rick Walker, a residential appraiser with Palmer Groth and Pietka, a stream will generally increase the value of any nearby dwelling. For this reason, pressure exists for new dwellings to be located near streams. Riparian vegetation may need to be removed to site the dwelling near the stream. Often residents living along streams clear the native vegetation adjacent to the stream and install lawn up to the stream bank, which results in a significant loss of habitat. Residential development adjacent to the stream increases impervious surface, which can result in increased run-off to the stream. Residential use includes the following uses permitted under the zoning ordinance: single family residential on > 80 ac; two family dwellings; single family residential (non farm/forest); home occupations; and planned developments.

Community Service Use/Commercial Use - Community service and commercial uses conflict with streams due to the potential for increased storm water run-off from structures and parking areas. The increase in storm water run-off from hard surfaces will increase the rate of flow and result in erosion and a deterioration of water quality. Parks or recreation facilities, including golf courses, may result in the removal of vegetation along the stream and the use of pesticides and fertilizer. Community service/commercial uses include the following uses from the zoning ordinance: play grounds, churches, schools; parks; other community service uses; dog kennels; cottage industries; and rural service/commercial.

Mining - Aggregate mining is a potential conflict for stream in the study areas. Aggregate mining will result in alteration of the land contours and the diversion of the stream. Until full restoration of the stream following the mining operation, the stream resource will be impacted. The time period of this impact will vary depending on the restoration plans filed with the Department of Geology and Mineral Industries (DOGAMI). Following restoration the stream may return to health, but it will no longer follow the original natural stream bed. Aggregate mining operations located away from the channel can have water quality impacts related to siltation and increased turbidity from mine run-off. Mining uses include the following uses from the zoning ordinance: mining/geothermal.

The Howard Canyon Quarry, which comprises the ridge between the canyons of Knieriem Creek on the north and Howard Canyon Creek on the south, is identified as a Goal 5 Mineral and Aggregate resource site (site #8). The Howard Canyon Quarry is located upslope from both Knieriem Creek and Howard Canyon Creek.

The site geology and potential as a mineral and aggregate resource was evaluated by Schlicker and Associates in 1989. Schlicker and Associates concluded that the ridge rock deposit is more than 4,200 feet long and 350 feet wide and contains at least 33 acres of ground, and that the volume of rock in place is about 2.2 million cubic yards, which will produce more than 2.7 million tons of crushed basalt. In 1994, as part of the County's ESEE analysis, Squier Associates were hired as independent consulting geologists to review and verify information regarding quantity and quality of the resource.

Based upon Squier's review of available data and experience in Multnomah County, it was concluded that the Howard Canyon Quarry contains a substantial aggregate resource.

Transportation/Public Improvements - Transportation systems create conflicts with streams. Fill is often necessary to cross a stream. Culverts generally increase erosion. Field teams found that private logging roads have severe impacts on streams in the Howard Canyon Area. Public improvements, such as utility extensions, can result in alteration and conflict of streams. No planned public improvements were identified.

Other Uses - Aircraft landing areas are likely to locate in this area due to topography constraints. If a landing area were to be sited, it would most likely be located away from a stream channel due to slope and vegetation constraints.

Resource conservation is a permitted use and does not present a conflict with the stream resource. No other uses allowed outright, conditionally, or under prescribed conditions have been noted within the impact area for these streams.

c. Conflicting Use By Study Area

Conflicting uses are examined by study area and stream. Known conflicts are described based on field observations. No other uses allowed outright, conditionally, or under prescribed conditions have been noted within the impact area for these streams.

i. Howard Canyon Study Area

Big Creek: This watershed is affected primarily by use of adjacent properties as pasture land and by rural residential development in its upper reach (below the confluence of Howard Canyon Creek and Knieriem Creek). The lower stream segments, west of Gordon Creek Road, are more protected by vegetation and steep topography. The creek does not flow into a wildlife habitat area or any other sensitive area.

Knieriem Creek: This watershed is affected by logging in its upper reach, mining in its middle reach, and use of adjacent property as pasture land in its lower reach where it joins Howard Canyon Creek. Rural residential uses associated with exclusive farm use also impact the watershed, primarily along the lower stream segments. The creek flows into Big Creek.

Howard Canyon Creek: This watershed, like the Knieriem Creek watershed, is affected by logging in its upper reach, mining in its middle reach, and adjacent pasture land uses in its lower segments; where it joins Knieriem Creek. A small segment of the creek, near its confluence with Knieriem Creek, is affected by rural residential use associated with the exclusive farm use zone.

5. ESEE ANALYSIS

The ESEE consequences analysis includes a general discussion of impacts by conflicting use category. The initial section examines impacts on the stream if the conflicting uses are allowed. The second section addresses impacts on the conflicting uses if the stream is protected. Each section includes a listing of impacts that are keyed to matrices that specifically tie the impacts to each stream. The matrices are organized by County study area.

a. ESEE Consequences of Allowing Conflicting Uses - Impacts on Streams

i. Economic Consequences of Allowing Conflicting Uses

Negative economic impacts result from conflicting uses which lower water quality and reduce the usefulness of water withdrawn from the stream. The reduction of water quality has a direct economic impact on those properties and streams where water rights exist for domestic and irrigation purposes. If water quality is lowered to a point that water is no longer useful, alternative sources will need to identified. An economic consequence is noted only in those instances where water rights exist along the stream. Conflicting uses that have the potential of lowering water quality include uses which increase run-off, erosion, turbidity, and pollutants.

A negative economic consequence also will result if water quantity is reduced or increased due to stream or riparian alteration. Streamside vegetation has the effect of moderating the flow and transport of water through the drainage. Removal of vegetation increases the rate of run-off and reduces water storage capacity. This results in higher peak flows and lower flows during drought periods.

Development of paved parking areas or roadways associated with transportation facilities, community service commercial uses, and residential uses will generally increase the rate of run-off and increase the potential for erosion unless storm water detention facilities are planned in conjunction with the improvement. Detention facilities or special designs are generally addressed on a case by case basis depending on the scale of the proposed development or improvement.

Forestry practices that result in clear cut areas near a stream will have the effect of increasing run-off, turbidity, and water temperature, thus lowering water quality and storage capacity. Logging roads and yarding disrupt the terrain and result in increased erosion. Field observation indicates that vegetation buffers in the West Hills are inconsistent and sometimes destroyed by roads and yarding.

Agricultural use adjacent to streams also may have the effect of lowering water quality due to uncontrolled use of fertilizers and pesticides. Livestock with access to stream banks have negative effects on the streams. Impacts included run-off due to overgrazing, increased turbidity from trampled streamside vegetation, and increased pollutants from animal excrement.

MATRIX KEY:

ECON 1: Negative economic impacts result from reduced water quality for domestic or irrigation use due to increased run-off, erosion, turbidity, water temperature, or pollutants.

ECON 2: Negative economic impacts result from changes in water quantity that can affect availability for domestic or irrigation use due to loss of storage capacity and increased run-off.

ii. Social Consequences of Allowing Conflicting Uses

Conflicting uses adjacent to a stream may have a social impact if removal of riparian vegetation has occurred and there has been a significant loss of wildlife habitat. The social impact results in the loss of opportunities for nature study and recreational activities if vegetation and wildlife habitat are removed. Streams that flow through public parks or publicly-accessed recreation facilities have the greatest potential to be negatively affected in this manner. Although none of the study area streams flow into publically-owned parks or recreation facilities, they do drain to the Sandy River, which flows past state parks and private recreation facilities (e.g. Camp Collins).

Social consequences also result from impacts on the aesthetic quality of a stream if riparian vegetation is removed and a stream is degraded. This has an overall impact on the livability of the area.

The removal of riparian vegetation will also reduce water storage capacity and increase the rate of run-off. This has the potential of increasing the capacity for flooding, especially where wetlands are associated with the stream. For those streams with wetlands, negative social consequences may occur if vegetation is removed and the wetlands flood storage capacity is reduced.

MATRIX KEY:

SOC 1: Negative social impacts result from the loss of educational and recreational opportunities associated with wildlife habitat and riparian vegetation.

SOC 2: Negative social impacts result from the loss of flood storage capacity and increases in the rate of run-off.

SOC 3: Negative social impacts result from a loss in aesthetic quality and livability

iii. Environmental Consequences of Allowing Conflicting Uses

Environmental consequences of allowing conflicting uses vary by the type of conflicting use. As noted above, forestry practices that include clear cut areas result in increased run-off, turbidity, water temperature, and sedimentation. The removal of vegetation reduces food and cover for wildlife. The loss of wildlife habitat directly impacts wildlife diversity. During the stream inventory, field teams observed a wide range of wildlife from amphibians and rodents to elk and eagles. As one would expect, clear cut areas contained less habitat and less wildlife.

Consequences of agricultural use include water quality and wildlife habitat impacts. Agricultural use adjacent to the stream may result in damage to the stream through the use of chemical pesticides and fertilizers. Livestock along a stream will negatively impact the water quality by trampling streamside vegetation, overgrazing, and through the deposition of animal excrement. Removal of streamside vegetation either by livestock or to increase cultivated area will reduce wildlife cover and habitat. Pastures where streams are not fenced have the greatest potential for negative impact.

Residential, community service, and commercial uses negatively impact the environmental quality of streams. The primary impact is the loss of wildlife habitat that results from nearby human activity. For example, it is rare when elk wander into residentially developed areas. Domestic animals are a major source of conflict with wildlife and often drive animals from their natural habitat. New residential dwellings often include residential lawns which replace riparian vegetation along streams and the wildlife cover that it provides. As noted previously, parking areas associated with community service or commercial uses may increase run-off. These areas may also result in water quality deterioration due to oils and materials that are washed into the streams and drainageways.

Transportation and public improvements have negative environmental consequences. Road that cross streams often are culverted. Culverts increase the rate of flow and result in a narrowing of the stream channel. Culverts and roads also create a barrier for wildlife migration. Roads also result in wildlife mortality when animals are hit by vehicles.

Allowing mining will result in temporary adverse stream impacts including rerouting and stream channel destruction. Reclamation would include stream channel restorations. Environmental compliance issues for quarry operations are regulated by the Oregon Department of Geology and Mineral Industries and the Oregon Department of Environmental Quality.

MATRIX KEY:

ENV 1: Negative environmental impacts result from the loss of wildlife habitat when riparian vegetation is removed or destroyed.

ENV 2: Negative environmental impacts result from deterioration in water quality due to increased run-off, turbidity, water temperature, and pollutants.

ENV 3: Negative environmental impacts result from increased disturbance or mortality of wildlife, or by limiting the mobility of wildlife.

iv. Energy Consequence of Allowing Conflicting Uses

Energy consequence of allowing conflicting uses are less clear than other impacts. When streams are used for small hydro-electric or mill purposes a negative impact may occur if the flow of the stream is interrupted. No negative energy impacts were found for any of the streams in the Howard Canyon Area.

MATRIX KEY:

ENRGY 1: Negative energy impacts would result from decreased water flow.

v. Summary of ESEE Consequences - Impacts on Streams

A summary of ESEE consequences describing impacts on streams is included in Matrix 1. The matrix lists ESEE impacts by stream and conflicting use category.

b. ESEE Consequences of Prohibiting Conflicting Uses - Impacts on Uses

i. Economic Consequences of Prohibiting Conflicting Uses

Prohibiting natural resource based activities, including forestry, agriculture and mining, can result in substantial economic impacts by causing loss in jobs, preventing creation of new jobs, reducing tax revenues, and reducing revenues from the sale of raw materials or finished products.

The economic value of a resource-based operation is increased when it is located relatively close to markets or potential consumers, since the cost of transporting the raw materials is reduced. For example, construction projects, such as major public road projects, benefit from having a rock source nearby and the cost of such projects can increase when a nearby mining activity is prohibited.

Similarly, prohibiting transportation or other public improvements projects, particularly utility projects, can increase the cost of providing a service to consumers. For example, if development of a electric substation is not allowed, it may cost more to provide electricity to residents in the county or region, because the power must be obtained from a more distant source or purchased from another utility with excess supply.

MATRIX 1.

HOWARD CANYON
ESEE CONSEQUENCES
Allowing Conflicting Uses - Impacts On Streams

Stream	Forestry	Agriculture	Residential	Community Service	Mining	Transportation /Public Improvements
Big	-	ENV 1,2,3 ECON 1,2	ENV 1,2,3	ENV 2,3	EVN 2	SOC 1,2 ENV 1,2,3
Knieriem Canyon	SOC 2,3 ENV 1,2 ECON 1,2	ENV 1,2,3 ECON 1,2	ENV 1,2,3	ENV 2,3	ENV 1,2 SOC 1,3	SOC 1 ENV 1,2,3
Howard Canyon	SOC 2,3 ENV 1,2 ECON 1,2	ENV 1,2,3 ECON 1,2	ENV 1,2,3	ENV 2,3	ENV 1,2 SOC 1,2,3	SOC 1,2 ENV 1,2,3

MATRIX KEY:

ECON 1: Reduced water quality for domestic or irrigation use.

ECON 2: Reduced or increased water quantity for domestic or irrigation use.

SOC 1: Loss of educational and recreational opportunities associated with the loss of wildlife habitat.

SOC 2: Loss of flood storage capacity.

SOC 3: Negative social impacts result from a loss in aesthetic quality and livability.

ENV 1: Loss of wildlife habitat when riparian vegetation is removed or destroyed.

ENV 2: Deterioration of water quality.

ENV 3: Increased disturbance or mortality of wildlife, or limitation in the mobility of wildlife.

ENRGY 1: Decreased water flow for energy use.

Note: 1) For Forestry, Community Service, and Mining uses the listed impacts represent potential for the impact to result. Forestry and mining impacts are not likely on Big Creek due to the location of the resources at the upper reaches of the streams. For Agriculture, Residential, and Transportation/Public Improvements uses the listed impacts represent actual impacts that are currently occurring along the creek.

2) Refer to previous section for a description of the impacts.

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Prohibiting residential development to protect streams can negatively affect the value (purchase price and tax assessment) of a lot, thus affecting the property owner. A reduction in value can affect the potential tax revenue to the county.

With any use, the economic costs of carrying on an activity (whether extraction, construction, or residential development) can increase when regulations or standards are enacted to specify conditions under which the activity can occur. For example, regulations that limit the size of the working face, specify the timing of reclamation activities, or require extensive screening of mining activities can increase the economic cost to the operator of carrying on the mining business.

In regard to the Howard Canyon Quarry, it is one of a very limited number of known aggregate sources in Multnomah County. Limitations on site development to preserve significant streams will result in a shortened life span of the facility, with economic impacts on the owners, and on employees and suppliers.

MATRIX KEY:

ECON 1: Negative economic impacts result from lost jobs, reduced tax revenues, or reduced revenue from the sale of goods and services.

ECON 2: Negative economic impacts result from increased cost of transporting raw materials to markets or consumers, and providing services.

ECON 3: Negative economic impacts result from decreased property value (for residential uses).

ECON 4: Negative economic impacts result from regulations and standards that specify conditions under which an activity or use can occur.

ECON 5: Negative economic impacts result from increased cost due to practices or construction techniques.

ii. Social Consequences of Prohibiting Conflicting Uses

Prohibiting natural resource based activities, such as forestry, agriculture and mining, can affect property owners who depend on revenue from the activity as an income source. Reduced income from prohibiting these activities can affect the way of life of families that may have carried on the operation (e.g., timber production, farming, or mining) for several generations. These families, who have a heritage of being involved with these activities, would consider a change in their way of life a negative social impact. In regard to quarry operations, once resources are depleted, social impacts result from attendant relocation or dislocation of employees.

Another social impact of prohibiting resource based activities is reducing or eliminating access to a local source of a needed material. For example, mining provides a social benefit by providing a needed supply of rock and aggregate material for construction projects in the county and region. This social benefit would be negatively affected by prohibiting mining activities because access to these materials would become more difficult. In addition, longer haul distances increase traffic loads with resultant social impacts.

Prohibiting certain uses can affect the amenities available to local residents, whether these are natural or man-made. For example, residential lots located along a stream often are sought by buyers, since the stream is considered a positive natural amenity. Not allowing residential development on lots with stream access would prevent this social benefit. Similarly, community services and commercial facilities provide a social benefit to local residents by providing needed goods and services near where they live and work. Prohibiting these uses would negatively affect this social benefit by causing residents to drive further to obtain the goods and services.

MATRIX KEY:

SOC 1: Negative social impacts result from reduced income (from natural resource based activities).

SOC 2: Negative social impacts result from affecting or changing the way of life of families involved in natural resource based activities and industries.

SOC 3: Negative social impacts result from reduced or eliminated access to local sources of needed materials.

SOC 4: Negative social impacts result from reduced availability of amenities (both natural and man-made).

iii. Environmental Consequences of Prohibiting Conflicting Uses

Not allowing uses that involves construction of buildings or public improvements, can result in the use occurring elsewhere. Transfer of the use to a new location can result in the same or even greater environmental impacts on site, depending on the natural features of the new site, its location, and the type of development or activity that is proposed. It is possible that the new site would require more infrastructure or improvements to service, thus resulting in greater impacts from construction of roads, utilities, and services.

MATRIX KEY:

ENV 1: Negative environmental impacts result from transferring development (and associated impacts) from a site where a conflicting use is prohibited to one where it is allowed.

iv. Energy Consequences of Prohibiting Conflicting Uses

One energy consequence of prohibiting natural resource based uses is increased use of energy for transporting raw materials to markets and consumers. For example, it requires less energy to transport logs from a harvesting site near a mill than from a site farther away. Similarly, transporting rock and aggregate materials to Portland from more distant locations requires more energy than from a source within the county.

Prohibiting resource based uses can result in a shortage of goods and services, such as lumber or produce, for construction or processing. Particularly with lumber and forestry products, limited availability can result in use of alternative, less energy-efficient building materials.

Prohibiting residential uses and development of community services and commercial areas can result in greater distances between local residents and the places where they work and purchase goods and services. If community services or commercial amenities are located farther from residents, they must drive greater distances to obtain these goods and services. Increased travel results in increased use of energy for transportation.

Greater distances between raw materials and processing, products and markets, and consumers and goods and services, can result in additional energy expenditure to construct needed roads, transportation facilities (such as transit centers), and infrastructure that may not be necessary if conflicting uses were allowed to occur.

MATRIX KEY:

ENRGY 1: Negative energy impacts result from increased use of energy for transporting raw materials to markets and consumers.

ENRGY 2: Negative energy impacts result from shortage of goods and services, such as lumber or produce, for construction or processing.

ENRGY 3: Negative energy impacts result from greater distances between local residents and the places where they work and purchase goods and services.

ENRGY 4: Negative energy impacts result from increased energy expenditure to construct additional roads, transportation facilities, and infrastructure to accommodate greater distance between products and consumers.

v. Summary of ESEE Consequences - Impacts on Conflicting Uses

A summary of ESEE consequences describing impacts on conflicting uses is included in Matrix 2. The matrix lists ESEE impacts by stream and conflicting use category.

c. Other Applicable Statewide Planning Goals

OAR 660-16-005(2) states: "The applicability and requirements of other Statewide Planning Goals must also be considered, where appropriate, at this stage of the process." The following additional Statewide Planning Goals apply to this ESEE analysis:

i. Goal 3 - Agricultural Lands

Goal 3 applies to those lands designated and zoned for Exclusive Farm Use. Portions of the three streams in the Howard Canyon area run through lands designated and zoned for Exclusive Farm Use. This designation is intended to preserve and maintain agricultural lands. Limitations of agricultural uses in order to protect streams would result in a direct conflict between implementation of Goal 4 and Goal 5 of the Statewide Planning Program.

MATRIX 2.

HOWARD CANYON
ESEE CONSEQUENCES
Prohibiting Conflicting Uses - Impacts on Conflicting Uses

Stream	Forestry	Agriculture	Residential	Community Service	Mining	Transportation /Public Improvements
Big	-	ECON 1,2,4 SOC 1,2,3 ENRGY 1,2,4	ECON 3,4,5 SOC 4 ENV 1 ENRGY 3,4	ECON 4,5 SOC 4 ENV 1 ENRGY 3,4	-	ECON 2,4,5 ENRGY 4
Knieriem	ECON 1,2,4 SOC 1,2,3 ENRGY 1,2,4	ECON 1,2,4 SOC 1,2,3 ENV 1 ENRGY 1,2,4	ECON 3,4,5 SOC 4 ENV 1 ENRGY 3,4	ECON 4,5 SOC 4 ENV 1 ENRGY 3,4	ECON 1,2,4 SOC 1,2,3 ENRGY 1,2,4	ECON 2,4,5 ENRGY 4
Howard Canyon	ECON 1,2,4 SOC 1,2,3 ENRGY 1,2,4	ECON 1,2,4 SOC 1,2,3 ENV 1 ENRGY 1,2,4	ECON 3,4,5 SOC 4 ENV 1 ENRGY 3,4	ECON 4,5 SOC 4 ENV 1 ENRGY 3,4	ECON 1,2,4 SOC 1,2,3 ENRGY 1,2,4	ECON 2,4,5 ENRGY 4

MATRIX KEY:

ECON 1: Lost jobs, reduced tax revenues, and reduced revenue from the sale of goods and services.

ECON 2: Increased cost of transporting raw materials to markets or consumers, and providing services.

ECON 3: Decreased property value (for residential uses).

ECON 4: Increased cost resulting from regulations and standards that specify conditions under which an activity or use can occur.

ECON 5: Increased cost due to changes in customary practices or construction techniques.

SOC 1: Reduced income (from natural resource based activities) and possible "taking" of private property for public benefit.

SOC 2: Affecting or changing the way of life of families involved in natural resource based activities and industries.

SOC 3: Reduced or eliminated access to local sources of needed materials.

SOC 4: Reduced availability of amenities (both natural and man-made).

ENV 1: Transferring development (and associated impacts) from a site where a conflicting use is prohibited to one where it is allowed.

ENRGY 1: Increased use of energy for transporting raw materials to markets and consumers.

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ENRGY 2: Shortage of goods and services, such as lumber or produce, for construction or processing.

ENRGY 3: Greater distances between local residents and the places where they work and purchase goods and services.

ENRGY 4: Increased energy expenditure to construct additional roads, transportation facilities, and infrastructure to accommodate greater distance between products and consumers.

Note: For forestry, community service, and mining uses, the listed impacts represent potential for the impact to result. It is unlikely that forestry and mining uses will impact Big Creek due to the location of the potential resources at the upper reaches of the streams. For Agriculture, Residential, and Transportation/Public Improvement uses, the listed impacts represent actual impacts that are currently occurring along the creek.

Examples of Conflicting Use/ESEE Analyses

Beaverton Goal 5 Update ESEE Analysis of Significant Tree Groves
(Matrix of conflicting uses, summary ESEE table, plus ESEE analysis of an individual site)
Pages F-29 through F-32

Table 2. Beaverton Goal 5 ESEE Analysis: Urban Forest Sites

Site Number	Size (acres)	Significance Rating	Ownership (No. of Owners)	Zoning	Impact Area Land Uses	Conflicting Uses Permitted
NX-1	27	39	private (23)	R5	residential	residential recreation transportation forestry
NX-3	21	32	private (14) public (1)	R7 Institutional/ R7	residential campus vacant park	residential recreation transportation forestry
NX-4	13	26	private (3) public (1)	R2 Campus Industrial	residential commercial	residential recreation transportation forestry commercial
NX-5	5	26	private (2)	R7	residential	residential recreation transportation forestry
NX-6	11	31	private (8) public (1)	R5 Institutional/ R7	residential park	residential recreation transportation forestry
NX-8	10	23	private (20)	R7	residential	residential recreation transportation forestry
NX-9	5	26	private (1)	R7	residential open space	residential recreation transportation forestry
NX-10	5	21	private (5)	R5	residential park	residential recreation transportation forestry
NX-13	2	12	private (8)	R7	residential	residential recreation transportation forestry

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ESEE Analysis: Significant Tree Groves
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Table 3. Impact Summary

Impacts	Potential Impacts on the Resource of Fully Permitting Conflicting Uses	Potential Impacts Resulting from Not Permitting Development
Economic	1. direct income from extraction of resources (forestry; ECON 1) 2. increased value of properties adjacent to open space (recreation; ECON 2) 3. reduced value of properties adjacent to open space (transportation, forestry, commercial; ECON 3) 4. provide employment (residential, transportation, recreation, forestry, commercial; ECON 4) 5. loss of open space and related economic value offered to adjoining property and community (residential; ECON 5)	1. increased housing costs resulting from the loss of available residential land (residential; ECON 1) 2. loss of development income for property owners (residential, forestry, commercial; ECON 2) 3. loss of employment resulting from construction or ongoing activity (residential, transportation, recreation, forestry, commercial; ECON 3)
Social	1. reduced livability from loss of aesthetic value (residential, transportation, forestry, commercial; SOC 1) 2. increased traffic and human activity (residential, transportation; SOC 2) 3. increased livability from use of recreational facilities (recreation; SOC 3) 4. increased employment (forestry, commercial; SOC 4) 5. provide materials, goods, and services (forestry, commercial, recreation; SOC 5) 6. increased study, observation, and valuing of natural resources (recreation; (SOC 6)	1. maintenance of livability and aesthetic quality for adjacent properties (residential, transportation, forestry, commercial; SOC 1) 2. increased residential density elsewhere to meet 2040 density requirements (residential; SOC 2) 3. reduced livability from lack of recreational opportunities (recreation; SOC 3) 4. decreased employment resulting from construction and ongoing activity (recreation, forestry, commercial; SOC 4) 5. loss of goods and services (commercial; SOC 5) 6. lack of access to and through site (transportation; SOC 6)

Table 3. Impact Summary, continued

Impacts	Potential Impacts on the Resource of Fully Permitting Conflicting Uses	Potential Impacts Resulting from Not Permitting Development
Environmental	1. loss of habitat for wildlife (residential, transportation, recreation, forestry, commercial; ENV 1) 2. reduced water quality because of runoff (residential, transportation, forestry, commercial; ENV 2) 3. increased potential for flooding (residential, transportation, forestry, commercial; ENV 3) 4. degradation of air quality because of development (residential, transportation, forestry, commercial; ENV 4) 5. increased use of petrochemicals and other resources (transportation, commercial; ENV 5) 6. increased potential for water quality improvement (recreation; ENV 6) 7. increased potential for flood control (recreation; ENV 7) 8. noise pollution (transportation) (ENV 8)	1. habitat is maintained (residential, transportation, recreation, forestry, commercial; ENV 1) 2. water quality is maintained (residential, transportation, recreation, forestry, commercial; ENV 2) 3. flood control potential is maintained (residential, transportation, recreation, forestry, commercial; ENV 3)
Energy	1. energy consumed directly in development (residential, transportation, recreation, forestry, commercial; EN 1) 2. continuous energy consumption for operation of facilities or housing (residential, forestry, commercial; EN 2) 3. increased energy consumption for travel (transportation; EN 3)	1. increased fuel consumption based on restricted connectivity through resource sites (residential, transportation, recreation, forestry, commercial; EN 1)

Site-by-Site ESEE Analysis

Appendix 2 includes a table for each site, with a listing of relevant impacts for each ESEE category and the category of conflicting use.

Site NX-1

The position of this tree grove in a headwater area of a tributary of Johnson Creek (South), and connection with the semi-rural conditions southwest of the site, magnify the importance of maintaining the site's environmental attributes. Loss of the resource by further residential development or forestry would result in potential water quality and quantity issues along the creek. Currently, a portion of the site exists as the back yards of residential development. Minimal development of recreational facilities, such as interpretive trails, could be accomplished without significant degradation of the resource.

Appendix 2 - ESEE Analysis

Appendix 2 includes a table for each site, with a listing of relevant impacts for each ESEE category and the category of conflicting use. Table 3 of the ESEE Analysis report provides a key to identify each impact.

Site N X-1

Conflicting Uses: residential, recreation, transportation, forestry

ESEE Category	Potential Impacts to Resource of Fully Permitting Conflicting Uses	Potential Impacts Of Not Permitting Conflicting Uses
Economic	ECON 1, forestry ECON 2, recreation ECON 3, transportation, forestry ECON 4, residential, transportation, recreation, forestry ECON 5, residential	ECON 1, residential ECON 2, residential, forestry ECON 3, residential, transportation, forestry
Social	SOC 1, residential, transportation, forestry SOC 2, residential, transportation SOC 3, recreation SOC 4, forestry SOC 5, forestry SOC 6, recreation	SOC 1, residential, transportation, forestry SOC 2, residential SOC 3, recreation SOC 4, recreation, forestry SOC 6, transportation
Environmental	ENV 1, residential, transportation, recreation, forestry ENV 2, residential, transportation, forestry ENV 3, residential, transportation, forestry ENV 4, residential, transportation, forestry ENV 5, transportation ENV 6, recreation ENV 7, recreation ENV 8, transportation	ENV 1, residential, transportation, recreation, forestry ENV 2, residential, transportation, recreation, forestry ENV 3, residential, transportation, recreation, forestry
Energy	EN 1, residential, transportation, recreation, forestry EN 2, residential, forestry EN 3, transportation	EN 1, residential, transportation, recreation, forestry

Appendix G

Model Wetland Protection Ordinances

Model 1: Safe Harbor Ordinance for Wetland Protection Areas

(Note: The following model ordinance for wetland protection is designed to serve as a "safe harbor" ordinance consistent with Oregon Statewide Planning Goal 5 and OAR 660-23-100(4)(b). A second model ordinance offers language that may be appropriate for results of the "standard" Goal 5 analysis for significant wetlands (See Model Ordinance 2 in this Appendix).

This safe harbor protection ordinance will meet the requirements for coastal shorelands protection under Goal 17. Goal 17 requires protection of coastal shoreland resources and does not provide for conflicting uses such as may be allowed under a standard Goal 5 ESEE process (see model ordinance #2).

Although Goal 5 requires program decisions for all wetlands that meet the significance criteria, local governments are advised to retain the nonsignificant wetlands on their LWI map, in order to alert property owners and others that DSL and COE fill permits may still be required for actions that affect these wetlands.

Note regarding buffers: As described in the accompanying Guidebook, a local government may establish wetland protection buffer areas in one of three ways: a) via an ESEE analysis and the standard Goal 5 process for wetlands; b) in the Metro area, via Title 3 of the Metro Functional Plan; and c) using protection measures that are established under either Goal 6, Goal 7, or the riparian element of Goal 5. The Goal 5 Safe Harbor process for wetlands does not otherwise allow for the use of wetland protection buffers.]

Wetland Protection Areas

I. Wetland Protection Areas, Purposes

The purposes of establishing wetland protection areas are:

A. To implement the goals and policies of the [jurisdiction] Comprehensive Plan;

B. To satisfy the requirements of Statewide Planning Goal 5;

C. To protect [jurisdiction's] wetland areas, thereby protecting the hydrologic and ecologic functions these areas provide for the community;

D. To protect fish and wildlife habitat;

E. To protect water quality and natural hydrology, to control erosion and sedimentation, and to reduce the adverse effects of flooding;

F. To protect the amenity values and educational opportunities of [jurisdiction's] wetlands as community assets;

G. To improve and promote coordination among local, state, and federal agencies regarding development activities near wetlands.

II. Wetland Protection Areas, Definitions

The following definitions shall apply to Sections I through X, "Wetland Protection Areas:"

Jurisdictional delineation — A delineation of the wetland boundaries that is approved by the Oregon Division of State Lands (DSL). A delineation is a precise map and documentation of actual wetland boundaries on a parcel, whereas a determination may only be a rough map or a presence/absence finding. [See OAR 141-90-005

et seq. for specifications for wetland delineation or determination reports.]

Locally significant wetland — A wetland that is determined to be significant under the criteria of OAR 141-86-0300 et seq. These criteria include those wetlands that score a high rating for fish or wildlife habitat, hydrologic control, or water quality improvement functions.

Local Wetlands Inventory (LWI) — Maps and report adopted by [jurisdiction] entitled [list report that inventories wetlands] and any subsequent revisions as approved by the Oregon Division of State Lands. The LWI is a comprehensive survey of all wetlands over ½ acre in size within the urbanizing area.

Oregon Freshwater Wetland Assessment Methodology (OFWAM) — A wetland function and quality assessment methodology developed by the Oregon Division of State Lands.

Wetland — An area inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and which, under normal circumstances, does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wetland protection area — An area subject to the provisions of this chapter that includes all wetlands determined to be locally significant.

Wetland resource map — The locally adopted map used as the basis for this ordinance, which incorporates the DSL-approved LWI map and identifies locally significant wetlands.

III. Determination of Locally Significant Wetlands

The [jurisdiction] determines which wetlands are locally significant in accordance with rules adopted by Division of State Lands (OAR 141-086-3000). Locally significant wetlands are identified on the [jurisdiction] wetland resource map.

IV. Wetland Protection Areas, Applicability, and Application Submittal Requirements

A. Wetland protection areas consist of locally significant wetlands.

B. Unless otherwise stated, the [jurisdiction] shall apply the provisions of Sections I through X in conjunction and concurrently with the requirements of any other development permit being sought by an applicant. If no other permit is being sought the [Planning Director or designee] shall serve as the approving authority.

C. Applications for plan approvals, development permits, building permits, or plans for proposed public facilities on parcels containing a wetland protection area or a portion thereof, shall include the following:

   1) A delineation of the wetland boundary completed by a professional wetland scientist, or similar expert, qualified to delineate wetlands in accordance with Oregon Division of State Lands rules. If the proposed project is designed to avoid wetlands, a wetland determination report may be provided in place of the delineation.

   2) A scale drawing that clearly depicts the wetland boundary, the surface water source, existing trees and vegetation, property boundaries, and proposed site alterations including proposed excavation, fill, structures, and paved areas.

   3) Verification that the application packet has been submitted to the Oregon Department of Fish and Wildlife for review and comment.

D. No delineation is required under C)1 above if the proposed development is located 25 feet or more from a wetland identified on the LWI map or a determination, but not an approved delineation. (Please note that compliance with state and federal wetland regulations for all

wetlands, mapped or unmapped, remains the legal responsibility of the landowner.)

[Note: This is not a buffer or setback, it is an allowance for LWI map inaccuracy when the expense of a precise delineation may not be warranted.]

V. Approval Criteria

The approving authority shall base its decision on the following criteria in addition to the required criteria for any other permit or approval that is being sought. Approvals shall be based on compliance with all of the following criteria:

A. The proposed project complies with the provisions of Sections VI through IX of this Chapter.

B. Except as otherwise allowed in Section VI, the proposed project will not result in excavation or filling of a wetland or reduction of wetland area on a parcel that has been identified as containing a wetland.

C. Except as otherwise allowed in Section VI, the proposed project will not result in development or filling of land within 25 feet of the boundary of wetland that has been identified only on the LWI map or by a determination, but not an approved delineation.

VI. Allowed Activities within Wetland Protection Areas

A. Any use, sign, or structure, and the maintenance thereof, that was lawfully existing on the date of adoption of this ordinance [insert date], is allowed to continue within a wetland protection area. Such use, sign, or structure may continue at a similar level and manner as existed on the date of adoption of this ordinance. The maintenance and alteration of preexisting ornamental landscaping is permitted within a wetland protection area so long as no additional native vegetation is disturbed. The provisions of this section shall not be affected by any change in ownership of properties containing a wetland protection area.

B. The following activities and maintenance thereof are allowed within a wetland protection area, provided that any applicable state or federal permits are secured:

1) Wetland restoration and rehabilitation activities;

2) Restoration and enhancement of native vegetation;

3) Cutting and removal of trees which pose a hazard to life or property due to threat of falling;

4) Removal of nonnative vegetation, if replaced with native plant species at similar coverage or density, so that natives are dominant;

5) Normal farm practices such as grazing, plowing, planting, cultivating and harvesting, that meet the following criteria and limitations:

a. The land is zoned for Exclusive Farm Use.

b. The farm practices were in existence or occurring on the property on the date of adoption of the provisions herein,

c. The farm practices are of no greater scope or intensity than the operations that were in existence on the date of adoption of the provisions herein, and

d. Normal farm practices do not include new or expanded structures, roads, or other facilities involving placement of fill material, excavation, or new drainage measures; and

e. In designated coastal shoreland areas, normal farm practices, such as propagation and selective harvesting of forest products consistent with the Forest Practices Act, grazing, and harvesting of wild crops, must be consistent with protection of the wetland's natural values.

6) Maintenance of existing drainage ways, ditches, or other structures, to maintain flow at original design capacity and mitigate upstream flooding, provided that management practices avoid sedimentation and impact to native vegetation, and any spoils are placed in uplands;

7) Replacement of a permanent, legal, nonconforming structure in existence on the date of adoption of this ordinance with a structure on the same building footprint, if it does not disturb additional area, and in accordance with the provisions of Sections [list sections of code related to nonconforming uses]; and

8) Expansion of a permanent, legal, nonconforming structure in existence on the date of adoption of this ordinance, if the expansion area is not within and does not disturb the wetland protection area, and in accordance with the provisions of Sections [list sections of code related to nonconforming uses].

9) Emergency stream bank stabilization to remedy immediate threats to life or property.

10) Maintenance and repair of existing roads and streets, including repaving and repair of existing bridges, and culverts, provided that such practices avoid sedimentation and other discharges into the wetland or waterway.

C. New fencing may be permitted by the [Planning Director or designee] where the applicant demonstrates that the following criteria are satisfied:

1) The fencing does not affect the hydrology of the site;

2) The fencing does not present an obstruction that would increase flood velocity or intensity;

3) Fish habitat is not adversely affected by the fencing;

4) The fencing is the minimum necessary to achieve the applicant's purpose.

Applications for new fencing within a wetland protection area shall contain a scale drawing that clearly depicts the wetland area boundary.

VII. Prohibited Activities within Wetland Protection Areas

Except as allowed in Sections VI "Allowed Activities Within Wetland Protection Areas", the following activities are prohibited within a wetland protection area.

A. Placement of new structures or impervious surfaces.

B. Excavation, drainage, grading, fill, or removal of vegetation except for fire protection purposes or removing hazard trees.

C. Expansion of areas of landscaping with nonnative species, such as a lawn or garden, into the wetland protection area.

D. Disposal or temporary storage of refuse, yard debris, or other material.

E. Discharge or direct runoff of untreated stormwater.

F. Uses not allowed in the list of permitted uses for the underlying zone.

G. Any use not specifically allowed in Section VI.

VIII. Conservation and Maintenance of Wetland Protection Areas

[Note: This is an optional section that outlines non-regulatory protection strategies. These provisions are not sufficient protection in themselves. Zoning protection must also be employed.]

When approving applications for Land Divisions, Planned Unit Developments, Conditional Use Permits, and Exceptions, or for development permits for properties containing a wetland protection area or portion thereof, the approving authority shall assure long term conservation and maintenance of the wetland

protection area through one or more of the following methods:

A. The area shall be protected in perpetuity by a conservation easement recorded on deeds and plats prescribing the conditions and restrictions set forth in Sections I through X, "Wetland Protection Areas," and any imposed by state or federal permits; or

B. The area shall be protected in perpetuity through ownership and maintenance by a private nonprofit association through a conservation easement or through conditions, covenants, or restrictions (CC&Rs), prescribing the conditions and restrictions set forth in Sections I through X, "Wetland Protection Areas," and any imposed by state or federal permits; or

C. The area shall be transferred by deed to a willing public agency or private conservation organization with a recorded conservation easement prescribing the conditions and restrictions set forth in Sections I through X, "Wetland Protection Areas, " and any imposed by state or federal permits.

[Note: Other mechanisms for long-term protection and maintenance as deemed appropriate and acceptable by the [jurisdiction] attorney, that are clear and objective standards, could be added to this list. Such mechanisms shall be consistent with the purposes and requirements of this ordinance.

IX. Notification and Coordination with State Agencies

A. The [jurisdiction] shall notify the Oregon Division of State Lands in writing of all applications to the [jurisdiction] for development activities—including development applications, building permits, and other development proposals—that may affect any wetland identified in the Local Wetlands Inventory. This applies for both significant and nonsignificant wetlands. The Division provides a Wetland Land Use Notification form for this purpose. [See OAR 660-23-100(7); ORS 227.350 for cities and ORS 215.418 for counties].

B. When reviewing wetland development permits authorized under this Chapter, the approving authority shall consider recommendations from the Oregon Department of Fish and Wildlife regarding OAR 635-415 "Fish and Wildlife Habitat Mitigation Policy." [Note: Recommendations from ODFW are advisory only.]

X. Variances

A. The [Planning Commission or Hearings Officer] shall be the approving authority for applications for variances to the Wetland Protection Area provisions. The procedures of chapter [insert appropriate reference to the variance chapter] shall be followed for approval of a variance except that the variance criteria of this section shall apply.

B. Mapping Error Variances and Corrections. The [Planning Director or the Director's designee] may correct the location of the wetland protection overlay zone when the applicant has shown that a mapping error has occurred and the error has been verified by the DSL. Delineations verified by DSL shall be used to automatically update and replace LWI mapping. No formal variance application or plan amendment is needed for map corrections where approved delineations are provided.

C. Hardship Variances. The [Planning Commission or Hearings Officer] may grant a variance to the provisions of this ordinance only when the applicant has shown that all of the following conditions exist:

1) Through application of this ordinance, the property has been rendered not buildable;

2) The applicant has exhausted all other options available under this chapter to relieve the hardship;

3) The variance is the minimum necessary to afford relief;

4) No significant adverse impacts on water quality, erosion, or slope stability will result from approval of this hardship variance, or these impacts have been mitigated to the greatest extent possible; and

5) Loss of vegetative cover shall be minimized.

Model 2: Ordinance for Wetland Protection Areas Resulting from Standard Goal 5 Analysis

[Note: The following model ordinance for wetland protection is designed to carry out the "standard process" requirements under Oregon Statewide Planning Goal 5 and OAR 660-23-100(4)(a). This ordinance implements many typical decisions for that process, but not all. Under the standard process, many decisions are based on a case-by-case analysis, so it is not possible to provide a model ordinance that reflects all possible measures that may result from that process.

Goal 5 requires an ordinance that implements local government decisions for all wetlands that meet the significance criteria on the Local Wetland Inventory. However, local governments are advised to retain the nonsignificant wetlands on their LWI map, in order to alert property owners and others that DSL and COE fill permits may still be required for actions that affect these wetlands.

This model ordinance has been prepared to meet the requirements of Goal 5 and may not be adequate to meet the requirements of Goal 17. Goal 17 requires protection of coastal shoreland resources and does not provide for decisions based on an ESEE analysis.

Please recheck the referenced section numbers in the resulting ordinance for your jurisdiction, as several of the later sections in this model ordinance are optional. Additional notes appear in brackets below.]

Wetland Protection Areas

I. Wetland Protection Areas, Purposes

The purposes of establishing wetland protection areas are:

A. To implement the goals and policies of the [jurisdiction] Comprehensive Plan;

B. To satisfy the requirements of Statewide Planning Goal 5;

C. To protect [jurisdiction's] wetland areas, thereby protecting the hydrologic and ecologic functions these areas provide for the community;

D. To protect fish and wildlife habitat;

E. To protect water quality and natural hydrology, to control erosion and sedimentation, and to reduce the adverse effects of flooding;

F. To protect the amenity values and educational opportunities of [jurisdiction's] wetland for the community; and

G. To improve and promote coordination among local, state, and federal agencies regarding development activities near wetlands.

II. Wetland Protection Areas, Definitions

The following definitions shall apply to Sections I through XV, "Wetland Protection Areas:"

Jurisdictional delineation — A delineation of the wetland boundaries that is approved by the Oregon Division of State Lands (DSL). A delineation is a precise map and documentation of actual wetland boundaries on a parcel that are subject to regulation, whereas a determination may be only a rough map or a presence/absence finding. [See OAR 141-90-005 et seq. for specifications for wetland delineation or determination reports.]

Locally significant wetland — A wetland that is determined to be significant under the crite-

ria of OAR 141-86-0300 et seq. These criteria include those wetlands that score a high rating for fish or wildlife habitat, hydrologic control, or water quality improvement functions.

Local Wetlands Inventory (LWI) — Maps and report adopted by [jurisdiction] entitled [list report that inventories wetlands] and any subsequent revisions as approved by the Oregon Division of State Lands. The LWI is a comprehensive survey of all wetlands over ½ acre within the urbanizing area.

Oregon Freshwater Wetland Assessment Methodology (OFWAM) — A wetland function and quality assessment method developed by the Oregon Division of State Lands.

Wetland — An area inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and which, under normal circumstances, does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wetland buffer area — An area surrounding or adjacent to a locally significant wetland that serves to reduce the adverse effects of adjacent land uses on water quality and habitat functions of the wetland. Sometimes called a "setback." [For use with the standard Goal 5 process only, not the wetland safe harbor].

Wetland protection area — An area subject to the provisions of this chapter that includes all wetlands determined to be locally significant plus any wetland buffer areas justified under the ESEE process.

Wetland resource map — The locally adopted map used as a basis for this ordinance, that is based on the DSL-approved LWI map and identifies locally significant wetlands and wetland buffer areas. Any significant wetland or portion of a wetland determined under an ESEE process to be available for conflicting uses should be clearly labeled as such.

III. Determination of Locally Significant Wetlands

The [jurisdiction] determines which wetlands are "locally significant" in accordance with rules adopted by Division of State Lands (OAR 141-086-3000). Locally significant wetlands are identified on the [jurisdiction] wetland resource map.

IV. Wetland Buffer Areas

The [jurisdiction] determines wetland buffer areas through an ESEE decision process described in OAR 660-02-0040. The wetland buffer areas and locally significant wetlands are identified on the [jurisdiction] wetland resource map. The map is available at the [jurisdiction] for reference. The provisions of Sections V through XV of this ordinance apply to all locally significant wetlands and their respective wetland buffer areas, excepting those wetlands or portions of wetlands which have been specifically identified under an ESEE process as available for conflicting uses.

V. Wetland Protection Areas, Applicability, and Application Submittal Requirements

A. Wetland protection areas consist of locally significant wetlands plus any wetland buffer areas identified on the wetland resource map.

B. Unless otherwise stated, the [jurisdiction] shall apply the provisions of Sections V through XV in conjunction and concurrently with the requirements of any other development permit being sought by an applicant. If no other permit is being sought, then the [Planning Director or designee] shall serve as the approving authority.

C. Applications for plan approvals, development permits, building permits, or plans for proposed public facilities on parcels containing a wetland protection area or a portion thereof, shall include the following:

   1) A delineation of the wetland boundary completed by a professional wetland scientist, or similar expert, qualified to delineate wetlands in

accordance with Oregon Division of State Lands rules. If the proposed project is designed to avoid wetlands, a wetland determination report may be provided in place of the delineation.

2) A scale drawing that clearly depicts the wetland boundary, any wetland buffer area [if applicable], the surface water source, existing trees and vegetation, property boundaries, and proposed site alterations including proposed excavation, fill, structures, and paved areas.

3) Verification that the application packet has been submitted to the Oregon Department of Fish and Wildlife for review and comment.

D. No delineation is required under C)1 above if the proposed development is located 25 feet or more from a wetland identified and depicted on the LWI map. (Please note that compliance with state and federal regulations on wetlands, whether they are mapped or unmapped, remains the legal responsibility of the landowner.)

[Note: The LWI and/or determination map, unlike a precise wetland delineation, is generally accurate within approximately 25 +/- feet of the actual wetland. By requiring that no development or fill occur within 25 feet of the boundary, the local government can assure that the actual wetland will likely be avoided. This is NOT to be confused with a buffer. It is an allowance for map error in a situation where the expense of a more accurate delineation is not warranted.]

VI. Approval Criteria

A. Alternative Review Tracks

An applicant for a permit in a wetland protection area may request that the local government use one of two alternative review processes. Track 1 contains clear and objective approval criteria, and track 2 uses discretionary criteria. The two sets of criteria are listed below. The track and criteria preferred by the applicant shall be noted on the permit application. [Examples of clear and objective and discretionary criteria may be found in the guidebook text in Section 5.3.4. Standards for "clear and objective" may be found at OAR 660-23-050 (2), and for "discretionary" at OAR 660-23-050 (3).]

The approving authority shall base its decision on the approval criteria of this section in addition to the required criteria for any other permit or approval that is being sought.

B. Track 1 — Clear and Objective Approval Criteria.

Approvals require compliance with all of the following criteria:

1) The proposed project complies with the provisions of Sections VII through XV of this Chapter.

2) Except as otherwise permitted by Section VI.B.4 or Section VII, the proposed project will not result in the filling or excavation of a wetland or reduction of wetland area on a parcel that has been identified as containing a wetland.

3) Except as otherwise permitted by Section VI.B.4 or Section VII, the proposed project will not result in the development, excavation, or filling of land within 25 feet of the boundary of wetland that has only been mapped approximately through the wetland inventory or determination, but not an approved delineation.

4) The proposed project is consistent with the particular requirements adopted as part of the ESEE decisions set forth in the Comprehensive Plan, as follows. [Note: The requirements adopted as part of the ESEE decision in the plan must be stated in a clear and objective manner. The pertinent requirements adopted as part of ESEE decisions must be included in the plan and may also be included in the

ordinance. If included in the ordinance, this criterion should refer directly to the pertinent section of the plan. Depending on the ESEE analysis, the pertinent requirements may be unique for each use. For example, an ordinance may state that for a particular site, a roadway or pathway is allowed as long as it meets a specific set of requirements. Sample requirements for transportation facilities, utilities, and vegetation management are included in sections XIII, XIV, and XV. These have been written to apply to broad categories of use but could be modified to apply to particular sites.]

C. Track 2 — Discretionary Criteria.

Approvals shall be based on compliance with all of the following criteria. [Note: Examples of discretionary criteria are included below. In preparing discretionary criteria, it will be necessary to refer to the ESEE decision made in the Comprehensive Plan, because the Goal 5 rule states that these requirements will meet or exceed the level of protection specified by the ESEE decision.]

1) The proposed project complies with the provisions of Sections VII through XV of this Chapter.

2) The proposed project will not degrade the hydrologic, ecologic, or land conservation functions of wetlands in the community, or the sustainability of these functions; or

3) The proposed project includes design features that will enhance, protect, or restore fish and wildlife habitat, water quality, and natural hydrologic functions and processes, and will control erosion and sedimentation, and will not increase the effects of flooding.

4) The proposed project is consistent with the ESEE decisions set forth in the Comprehensive Plan. [Note: As noted in Section B.4. above, the list of ESEE decisions and related standards may be included in the ordinance.]

VII. Allowed Activities within Wetland Protection Areas

A. Any use, sign, or structure, and the maintenance thereof, that was lawfully existing on the date of adoption of this ordinance [insert date], is allowed to continue within a wetland protection area. Such use, sign, or structure may continue at a similar level and manner as existed on the date of adoption of this ordinance. The maintenance and alteration of preexisting ornamental landscaping is allowed within a wetland protection area so long as no additional native vegetation is disturbed. The provisions of this section shall not be affected by any change in ownership of properties containing a wetland protection area.

B. The following activities and maintenance thereof are allowed within a wetland protection area, provided that any applicable state or federal permits are secured:

1) Wetland restoration and rehabilitation activities.

2) Restoration and enhancement of native vegetation.

3) Cutting and removal of trees that pose a hazard to life or property due to threat of falling.

4) Removal of nonnative vegetation, if replaced with native plant species at a similar coverage or density so that native species dominate.

5) Normal farm practices such as grazing, plowing, planting, cultivating and harvesting, that meet the following criteria and limitations:

a. The land is zoned for Exclusive Farm Use.

b. The farm practices were in existence or occurring on the property on the date of adoption of the provisions herein,

c. The farm practices are of no greater scope or intensity than the operations that were in existence on the date of adoption of the provisions herein, and

f. Normal farm practices do not include new or expanded structures, roads, or other facilities involving placement of fill material, excavation, or new drainage measures; and

g. In designated coastal shoreland areas, normal farm practices, such as propagation and selective harvesting of forest products consistent with the Forest Practices Act, grazing, and harvesting of wild crops, must be consistent with protection of the wetland's natural values.

6) Maintenance of existing drainage ways, ditches, or other structures, to maintain flow at original design capacity and mitigate upstream flooding, provided that management practices avoid sedimentation and impact to native vegetation and any spoils are placed in uplands.

7) Replacement of a permanent, legal, nonconforming structure in existence on the date of adoption of this ordinance with a structure on the same building footprint, if it does not disturb additional area, and in accordance with the provisions of Sections [list sections of code related to nonconforming uses].

8) Expansion of a permanent, legal, nonconforming structure in existence on the date of adoption of this ordinance, if the expansion area is not within and does not disturb the wetland protection area, and in accordance with the provisions of Sections [list sections of code related to nonconforming uses].

9) Emergency stream bank stabilization to remedy immediate threats to life or property. (State or federal emergency authorization may be needed for in-stream work.)

10) Maintenance and repair of existing roads and streets, including repaving and repair of existing bridges, and culverts, provided that such practices avoid sedimentation and other discharges into the wetland or waterway.

C. New fencing may be allowed by the [Planning Director or designee] where the applicant demonstrates that the following criteria are satisfied:

1) The fencing does not affect the hydrology of the site;

2) The fencing does not present an obstruction that would increase flood velocity or intensity;

3) Fish habitat is not adversely affected by the fencing;

4) The fencing is the minimum necessary to achieve the applicant's purpose;

Applications for new fencing within a wetland protection area shall contain a scale drawing that clearly depicts the wetland and wetland buffer area boundary.

VIII. Allowed Activities within Wetland Buffer Areas

[Note: As described in the accompanying Guidebook, a local government may establish wetland protection buffer areas in one of three ways: 1) as decisions justified through an ESEE analysis under the standard Goal 5 process for wetlands; 2) in the Metro area, via Title 3 of the Metro Functional Plan; or 3) in programs developed to comply with requirements of either Goal 6, Goal 7, or the riparian element of Goal 5. If a wetland buffer area is established by the first method, and the program decision (and supporting rationale) allows the same uses in the wetland buffer area as in the significant wetland area, then a separate section addressing buffer uses may be unnecessary. If, however, the program decisions (and supporting rationale) allow uses in wetland buffer areas

that are different from those allowed in significant wetlands, then the following section applies. The following uses are examples of the types of uses that a jurisdiction may want to allow within a buffer area.]

Provided any required state or federal permits are secured, the following uses are allowed within the wetland buffers authorized in the Comprehensive Plan:

A. Docks, boat shelters, piers, boat ramps, and similar water dependent uses;

B. Utilities or other public improvements;

C. Streets, roads, or bridges where necessary for access or crossings;

D. Bioswales or similar water quality improvement projects;

E. Public multiuse paths, access ways, trails, picnic areas, or interpretive and educational displays and overlooks, including benches and outdoor furniture;

F. Wetland restoration.

[Note: A community may want to specify how different types of transportation facilities will be addressed. For example, it may be appropriate to allow some minor projects such as trails as an outright use, while requiring major projects such as a new bridge or major road widening to follow the conditional use process.]

IX. Prohibited Activities within Wetland Protection Areas

The following activities are prohibited within a wetland protection area, except as allowed in Sections VII "Allowed Activities Within Wetland Protection Areas" and VIII "Allowed Activities within Wetland Buffer Areas":

A. Placement of new structures or impervious surfaces.

B. Excavation, drainage, grading, fill, or removal of vegetation except for fire protection purposes or removing hazard trees.

C. Expansion of areas of landscaping with nonnative species, such as a lawn or garden, into the wetland protection area.

D. Disposal or temporary storage of refuse, yard debris, or other material.

E. Discharge or direct runoff of untreated stormwater.

F. Uses not allowed in the list of permitted uses for the underlying zone.

G. Any other activities not identified in Section VII and VIII.

X. Conservation and Maintenance of Wetland Protection Areas

[Note: This is an optional section that outlines non-regulatory protection strategies. These provisions are not sufficient in themselves. Zoning protection must also be employed.]

When approving applications for Land Divisions, Planned Unit Developments, Conditional Use Permits, and Exceptions, or for development permits for properties containing a wetland protection area or portion thereof, the approving authority shall assure long term conservation and maintenance of the wetland protection area through one or more of the following methods:

A. The area shall be protected in perpetuity by a conservation easement recorded on deeds and plats prescribing the conditions and restrictions set forth in Sections I through XV, "Wetland Protection Areas," and any imposed by state or federal permits; or

B. The area shall be protected in perpetuity through ownership and maintenance by a private nonprofit association and through a conservation easement or through conditions, covenants, or restrictions (CC&Rs), prescribing the conditions and restrictions set forth in Sections I through XV, "Wetland Protection Areas," and any conditions imposed by state or federal permits; or

C. The area shall be transferred by deed to a willing public agency or private conservation organization with a recorded conservation easement prescribing the conditions and restrictions set forth in Sections I through XV, "Wetland Protection Areas,"

and any conditions imposed by state or federal permits; or

[Note: Other mechanisms for long-term protection and maintenance as deemed appropriate and acceptable by the [jurisdiction] attorney, that are clear and objective standards, could be added to this list. Such mechanisms should be consistent with the purposes and requirements of this ordinance.]

XI. Notification and Coordination with State Agencies

A. The [jurisdiction] shall notify the Oregon Division of State Lands in writing of all applications to the [jurisdiction] for development activities—including development applications, building permits, and other development proposals—that may affect any wetland identified in the Local Wetlands Inventory. This applies for both significant and nonsignificant wetlands. The Division provides a Wetland Land Use Notification form for this purpose. [See OAR 660-23-100(7); ORS 227.350 for cities and ORS 215.418 for counties.]

B. When reviewing wetland development permits authorized under this Chapter, the approving authority shall consider recommendations from the Oregon Department of Fish and Wildlife regarding OAR 635-415 "Fish and Wildlife Habitat Mitigation Policy." [Note: recommendations from ODFW are advisory only.]

XII. Variances

A. The [Planning Commission or Hearings Officer] shall be the approving authority for applications for variances to the Wetland Protection Area provisions. The procedures of chapter [insert appropriate reference to the variance chapter] shall be followed for approval of a variance except that the variance criteria of this section shall also apply.

B. Mapping Error Variances and Corrections. The [Planning Director or the Director's designee] may correct the location of the wetland protection overlay zone when the applicant has shown that a mapping error has occurred and the error has been verified by the DSL. Delineations verified by DSL shall be used to automatically update and replace LWI mapping. No formal variance application or plan amendment is needed for map corrections where approved delineations are provided. [If the map correction alters the significance or ESEE findings, a plan amendment may be necessary.]

C. Hardship Variances. The [Planning Commission or Hearings Officer] may grant a variance to the provisions of this ordinance only when the applicant has shown that all of the following conditions exist:

1) Through application of this ordinance, the property has been rendered not buildable ;

2) The applicant has exhausted all other options available under this chapter to relieve the hardship;

3) The variance is the minimum necessary to afford relief;

4) No significant adverse impacts on water quality, erosion, or slope stability will result from approval of this hardship variance, or these impacts have been mitigated to the greatest extent possible; and

5) Loss of native vegetative cover shall be minimized.

D. Reduction or Deviation of Wetland Buffer Areas. A request to vary the wetland buffer area, such as averaging of buffer width, may be submitted for consideration by the [Planning Director or designee]. Such a request may be approved only if equal or better protection of the wetland will be ensured through a plan for restoration, enhancement, or similar means. Such a plan shall be submitted to the Oregon Department of Fish and Wildlife for a mitigation recommendation pursuant to OAR 635-415 "Fish and

Wildlife Habitat Mitigation Policy". In no case shall activities prohibited in Section IX "Prohibited Activities Within Wetland Protection Areas" subsections A through C occupy the wetland or more than [50]% of the wetland buffer area[1]. The [same authority as above] shall be the approving authority for applications to alter the buffer area.

To determine the average buffer width, measurements shall be made at no greater than [50 foot] intervals over the distance the property abuts the wetland[1].

[Note: The following sections are optional and should be used only when: 1) an ESEE analysis has been completed; and 2) that analysis demonstrates that the following uses are of such necessity that wetland values must be compromised. All of the standards from this point to the end of the model ordinance are examples.]

XIII. Transportation Facilities and Structures Development Standards

A. General. The following standards shall apply to transportation facilities and structures within wetland protection areas, including roads and driveways, bridges, bridge crossing support structures, culverts, and pedestrian and bike paths.

B. Standards for review of conditional uses include the following:

1) Wetland protection areas shall be crossed only where there are no practicable alternatives to avoid the resource [as demonstrated by the ESEE analysis in the comprehensive plan];

2) Transportation facilities and structures crossing wetland protection areas shall be no wider than necessary to serve their intended purposes; and

3) Within buffer areas, new roads, driveways, and pedestrian and bike paths shall be located or constructed so as not to alter the hydrology of the adjacent wetland.

XIV. Utility Development Standards

A. General. The following standards shall apply to permitted crossing, trenching, or boring for the purpose of developing a corridor for communication, energy, or other utility lines within or crossing parcels in wetland protection areas.

B. Standards for review of all utility uses include the following:

1) Utility maintenance roads in or crossing protected resources shall meet applicable standards for transportation facilities and structures in protected resources; and

2) For underground utilities, the following additional standards shall apply:

a. Boring under the waterway, directional drilling, or aerial crossing is preferable to trenching. If trenching is the only alternative, it shall be conducted in a dry or dewatered area with stream flow diverted around the construction area to prevent turbidity;

b. Common trenches, to the extent allowed by the building code, shall be required in order to minimize disturbance of the protected resource;

c. Materials removed or excavated during trenching, boring, or drilling shall be deposited away from the protected resource, and either returned to the trench as back-fill, or if other material is to be used as back-fill in the trench, excess materials shall be immediately removed from the protected resource and its associated buffer. Side-casting of removed material into a protected resource shall not be permitted;

d. The ground elevation of a protected resource shall not be altered as a result of utility trench construction or maintenance. Finish

elevation shall be the same as starting elevation; and

e. Topsoil and sod shall be conserved during trench construction or maintenance, and replaced on top of the trench.

C. In addition to the other conditional use criteria, conditional use approval of utility corridor routes shall be based on evidence that:

1) Hydraulic impacts on protected resources are minimized; and

2) Removal of native vegetation is minimized.

Where feasible, crossings of wetland protection areas shall be perpendicular to minimize impact area.

XV. Vegetation Management Standards

A. General. The following standards shall apply to vegetation in wetland protection areas:

B. Standards for review of conditional uses include the following:

1) Vegetation removal, pruning, or mowing in a significant wetland or riparian corridor shall be the minimum necessary and in no case shall substantially impair any wetland functions and values. Vegetation removal, pruning, or mowing in the wetland buffer shall be the minimum necessary. Removal, pruning, or mowing of vegetation shall be allowed if the applicant demonstrates one of the following:

a. The action is necessary for the placement of a structure or other allowed use for which a building permit has been issued;

b. The action is necessary for maintenance of an existing structure or transportation facility;

c. The action is necessary for correction or prevention of a hazardous situation;

d. The action is necessary for completion of a land survey;

e. The action involves the maintenance of a landscaped area that existed prior to the date of this ordinance;

f. The action is part of an approved restoration, enhancement, mitigation, or erosion control plan, including, but not limited to, invasive or noxious species removal and replacement with native species, and wetland area restoration, mitigation, or enhancement;

g. The action is part of a landscape plan approved by the City, and any other appropriate agencies, in conjunction with a building permit that minimizes adverse impacts on protected resources; or

2) Planting shall be permitted in accordance with the following standards:

a. The planting is part of an approved restoration, enhancement, mitigation, or erosion control plan;

b. The planting is part of a landscape plan using appropriate native plant species, and the plan is approved by the City in conjunction with approval of a building permit; or

c. The planting is to replace dead or damaged plants that were either part of a maintained landscape or part of the existing native plant community.

Footnote

[1] The dimensions in these sentences are listed as examples; the actual standards must be determined locally and may depend on the local ESEE analysis.

Appendix H

Funding Sources

Outside funding sources for wetland Goal 5 planning work (for inventories through ordinances) are limited. Staff from a variety of agencies helped us compile the following list. As always, the amounts available and priorities of funding sources may change over time.

Oregon Department of Land Conservation and Development (DLCD) — Periodic review and technical assistance grants are available from DLCD each biennium and could be used for Goal 5 wetland planning tasks. Periodic review grants are given a higher priority; projects funded under a periodic review grant must be listed in the periodic review work program. Periodic review grants come from the state General Funds that DLCD receives, and are subject to budget cutbacks. From 1995 to 2001, there has been $1 million each biennium for these grants statewide. That amount could be jeopardized by a downturn in state budget projections.

These grant funds become available in the late summer or early fall of the first year of the biennium. For example, in 2001, grant announcement letters were mailed in August. Grants are made until all available funds are used. These grants usually range in size from $3,000 to $50,000.

Oregon's coastal cities and counties may use DLCD's coastal management grants for Goal 5 and Goal 17 planning activities. Depending on the annual federal allocations to Oregon's coastal management program, DLCD hopes to make some additional funding available specifically for coastal cities and counties to do Goal 5/Goal 17 wetland inventory and ordinance development work. These federal funds will be distributed as DLCD technical assistance grants. Contact DLCD's coastal program to see whether these funds are currently available.

Oregon Division of State Lands (DSL) — DSL has provided pass-through funding for many LWIs and riparian inventories using federal funds, when available. Although one major federal funding source (EPA) has dried up, DSL continually looks for new sources. In limited situations (very small towns with few wetlands), DSL may be able to provide direct technical assistance with LWI development. A variety of communities have been awarded wetland grants from DSL in amounts ranging from $15,000 to $50,000. Jurisdictions seeking funding for wetland planning work should contact DSL each year to learn whether this funding is available.

Oregon Economic and Community Development Department (OECDD) — The state economic development agency may have relevant grant funds, such as environmental clearance work for industrial sites, that may dovetail with local wetland inventory work.

Oregon Watershed Enhancement Board (OWEB) — OWEB has an active grant program that is designed to restore and enhance watersheds. OWEB receives state lottery funding for this purpose. The types of projects that can be funded include:

- assessments and action plan projects (including watershed mapping),
- watershed monitoring projects (including monitoring of aquatic conditions, riparian conditions, and upland conditions),
- watershed restoration projects, and
- watershed education/outreach projects.

The program funds watershed councils throughout the state, and also distributes federal salmon recovery money. Wetland inventories have been funded by DSL using

OWEB grant money. Watershed councils, special districts, and local governments have used OWEB money to fund a variety of improvement, assessment, and monitoring projects. Grant amounts vary widely. As an example, in 2002, deadlines for submitting these grant applications to OWEB were February 1, June 3, and October 1.

Self-funding — Several cities have been creative in finding ways to fund their own inventories, or combine several funding sources. For example, the wetland mapping work in West Eugene was funded through a combination of City funds (including stormwater utility funds), grant funds from the EPA District office, and DSL wetland planning assistance funds. Beaverton used internal funds to complete their wetland planning work as they had secured Transportation and Growth Management (TGM) and Periodic Review grants from DLCD to work on other aspects of their Periodic Review Work Program.

Albany completed their wetland planning in four different inventory efforts, to break up the large expensive task into manageable pieces. Two inventories were funded by EPA pass-through dollars, and two inventories were paid out of their department's Contractual Services line item. Breaking it up this way meant they could get started on a bite-sized piece that much earlier, but it took several years to complete all four inventories. Also, they directed their first inventory efforts on the undeveloped areas that were more likely to benefit from a protection program than the highly impacted wetlands. Their Goal 5 policy work is funded through a periodic review grant. It will have a significant bearing on their buildable land supply because a high percentage of their undeveloped land was inventoried as jurisdictional wetland.

Other local funding options to keep in mind:

- System development charges.
- Stormwater management program funds.
- Parks and open space funding.
- Private or semi-governmental business community partnerships. These groups sometimes have enough interest in "resolving" wetland maps and reducing uncertainty that they will contribute funds to these planning efforts.

Appendix I

Contacts

The following sources may provide useful information for the wetland planning process:

State

State Government Agencies
State and Regional Offices of Federal Agencies
Regional Councils of Government
Nonprofit Organizations and Conservation Groups

State Government Agencies

Department of Agriculture, Natural Resources Division
635 Capital Street NE
Salem, OR 97301-2532
503-986-4700
503-986-4730 fax
http://www.oda.state.or.us/nrd/index.html

Department of Geology and Minerals Industries (DOGAMI)
800 NE Oregon Street, Suite 965
Portland, OR 97232
503-731-4100
503-731-4066 fax
http://www.OregonGeology.com

Department of Land Conservation and Development (DLCD) HQ
635 Capitol Street NE, Suite 150
Salem, OR 97301-2540
503-373-0050
http://www.lcd.state.or.us

Department of Land Conservation and Development–Portland
800 NE Oregon Street, Suite 18
Portland, OR 97232
503-731-4065
503-731-4068 fax
http://www.lcd.state.or.us

Department of Land Conservation and Development—Bend
Empire Corporate Park
20300 Empire Avenue, Suite 1
Bend, OR 97701
541-388-6157
541-388-6480 fax
http://www.lcd.state.or.us

Department of Land Conservation and Development–Central Point
155 N. First Street
Central Point, OR 97502
541-858-3152
541-858-3142 fax
http://www.lcd.state.or.us

Department of Parks and Recreation
1115 Commercial Street NE
Salem, OR 97301
503 378 6305
http://www.prd.state.or.us/

Division of State Lands (DSL)
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
503 378 3805
503 378 4844 fax
http://www.oregonstatelands.us

Oregon Department of Environmental Quality (ODEQ)
811 SW 6th Avenue
Portland, OR 97204-1390
503-229-5696
503-229-6124 fax
http://www.deq.state.or.us/

Oregon Department of Fish and Wildlife (ODFW)
2501 SW First Avenue
Portland, OR 97207
503-872-5263
www.dfw.state.or.us

Oregon Department of Forestry (ODOF)
2600 State Street
Salem, OR 97310
503-945-7200
503-945-7212 fax
http://www.odf.state.or.us

Oregon Natural Heritage Program (ONHP)
1322 SE Morrison Street
Portland, OR 97214-2531
503-731-3070
http://oregonstate.edu/ornhic/index.html

Oregon Watershed Enhancement board (OWEB)
775 Summer Street NE, Suite 360
Salem, OR 97301-1290
503-986-0178
503-986-0199 fax
www.oweb.state.or.us

State Historic Preservation Office (SHPO)
Oregon Parks and Recreation Department
1115 Commercial Street NE
Salem, OR 97310
503-378-6508
http://www.shpo.state.or.us/index.php

Water Resource Department (WRD)
Commerce Building
152 12th Street NE
Salem, OR 97310-4172
503-378-8455
503-378-2496 fax
http://www.wrd.state.or.us

State and Regional Offices of Federal Agencies

These agencies can be contacted for information on federal land use, permits, and technical assistance.

National Marine Fisheries Service (NMFS)
(NOAA FIsheries)
Pacific Fishery Management Council
525 NE Oregon Street
Portland, OR 97232
503-230-5400
www.nmfs.noaa.gov

Natural Resources Conservation Service (NRCS)
West National Technical Center
USDA, NRCS
101 SW Main Street, Suite 1300
Portland, OR 97204
503-414-3200
503-414-3277 fax
http://www.or.nrcs.usda.gov

U.S. Army Corps of Engineers (Corps) Portland District
Box 2946
Portland OR 97208-2946
503-808-5150
PHYSICAL ADDRESS:
Robert Duncan Plaza
333 SW First Avenue
Portland, OR 97204
http://www.usace.army.mil/

U.S. Environmental Protection Agency (EPA)
811 SW 6th Avenue
Portland, OR 97204
503-326-2715
http://www.epa.gov/

U.S. Fish and Wildlife Services (USFWS)
Ecological Services Division
911 NE 11th Avenue
Portland, OR 97232-4181
503-231-6170
http://pacific.fws.gov/ecoservices/

U.S. Geological Survey (USGS) Earth Science Information Center
(formerly National Cartographic Information Center)
Box 25286
Mail Stop 306
Denver, CO 80225
303-202-4700 or
1-888-275-8747
http://ask.usgs.gov/

Regional Government

In Oregon, councils of government (COGs) have been formed to promote greater cooperation between all levels of government. Councils of government usually are voluntary associations of local governments cooperating on issues and problems that cross city, county, and sometimes state boundaries. They are multi-jurisdictional and multipurpose organizations, with an emphasis on economic development and development of regional planning strategies.

Columbia River Estuary Study Taskforce (CREST)
750 Commercial Street, Room 205
Astoria, OR 97103
503-325-0435
503-325-0459 fax
crest@columbiaestuary.org
http://www.columbiaestuary.org

Lane Council of Governments
99 East Broadway, Suite 400
Eugene, OR 97401-3111
541-682-4283
http://www.lcog.org

Metropolitan Service District (Metro)
600 NE Grande Avenue
Portland, OR 97232-2736
503-797-1700
http://www.metro-region.org

Mid-Willamette Valley Council of Governments
105 High Street SE
Salem, OR 97301
503-588-6177
503-588-6094 fax
mwvcog@open.org
http://www.mwvcog.org

Rogue Valley Council of Governments
P.O. Box 3275
Central Point, OR 97502
541-664-6674
541-664-7927 fax
admin@rvcog.org
http://www.rvcog.org

Umpqua Regional Council of Governments
Douglas County Courthouse
1036 SE Douglas, Room 8
Roseburg, OR 97470
541-440-4231
http://www.ur-cog.cog.or.us/

Nonprofit Organizations and Conservation Groups

The following groups are state chapters of some well-known public interest and conservation organizations, as well as some Oregon-only groups. They often can provide information on other local citizen-activist organizations involved in environmental and governmental issues. Other similar groups and organizations exist which are not on this list. For a list of local land trusts, please see the following web site: http://www.lta.org/findlandtrust.OR.htm.

Adopt-A-Stream Foundation
Northwest Stream Center
600 128th Street SE
Everett, WA 98208-6353
425-316-8592
425-316-1423 fax
http://www.streamkeeper.org/

Audubon Society of Portland
5151 NW Cornell Road
Portland, OR 97210
503-292-6855
http://www.audubonportland.org

Center for Watershed Protection
8391 Main Street
Ellicott City, MD 21043-4605
410-461-8323
410-461-8324 fax
http://www.cwp.org

For the Sake of the Salmon
319 SW Washington Street
Portland, OR 97204
503-223-8511
503-223-8544 fax
http://4sos.org

National Land Trust Alliance
1331 H Street NW, Suite 400
Washington, DC 20005-4734
202-638-4725
http://www.lta.org/index.shtml

The Nature Conservancy–Oregon
821 SE 14th Avenue
Portland, OR 97214-2531
503-230-1221
http://www.nature.org/wherewework/northamerica/states/oregon/

North Coast Land Conservancy
5107 Highway 101N
Seaside, OR 97138
503-738-4021
nmaine@transport.com

1000 Friends of Oregon
534 SW Third Avenue, Suite 300
Portland, OR 97204
503-497-1000
503-223-0073 fax
http://www.friends/org/

Oregon Coastal Zone Management Association (OCZMA)
P.O. Box 1033
Newport, OR 97365
541-265-8918

The Trust for Public Land
1211 SW 6th Avenue
Portland, OR 97204
503-228-6620
http://www.tpl.org

The Wetland Conservancy/Urban Streams Council
P.O Box 1195
Tualatin, OR 97026
503-691-1394
503-885-1084 fax
info@wetlandsconservancy.org
http://www.wetlandsconservancy.org

MODEL WETLAND PROTECTION ORDINANCES

MODEL 1: SAFE HARBOR ORDINANCE FOR WETLAND PROTECTION AREAS

[Note: The following model ordinance for wetland protection is designed to serve as a "safe harbor" ordinance consistent with Oregon Statewide Planning Goal 5 and OAR 660-23-100(4)(b). A second model ordinance offers language that may be appropriate for results of the "standard" Goal 5 analysis for significant wetlands (See Model Ordinance 2 in this Appendix).

This safe harbor protection ordinance will meet the requirements for coastal shorelands protection under Goal 17. Goal 17 requires protection of coastal shoreland resources and does not provide for conflicting uses such as may be allowed under a standard Goal 5 ESEE process (see model ordinance #2).

Although Goal 5 requires program decisions for all wetlands that meet the significance criteria, local governments are advised to retain the non-significant wetlands on their LWI map, in order to alert property owners and others that DSL and COE fill permits may still be required for actions that affect these wetlands.

Note regarding buffers: As described in the accompanying Guidebook, a local government may establish wetland protection buffer areas in one of three ways: a) via an ESEE analysis and the standard Goal 5 process for wetlands; b) in the Metro area, via Title 3 of the Metro Functional Plan; and c) using protection measures that are established under either Goal 6, Goal 7, or the riparian element of Goal 5. The Goal 5 Safe Harbor process for wetlands does not otherwise allow for the use of wetland protection buffers.]

WETLAND PROTECTION AREAS

I. Wetland Protection Areas, Purposes

The purposes of establishing wetland protection areas are:

A. To implement the goals and policies of the [jurisdiction] Comprehensive Plan;
B. To satisfy the requirements of Statewide Planning Goal 5;
C. To protect [jurisdiction's] wetland areas, thereby protecting the hydrologic and ecologic functions these areas provide for the community;
D. To protect fish and wildlife habitat;
E. To protect water quality and natural hydrology, to control erosion and sedimentation, and to reduce the adverse effects of flooding;
F. To protect the amenity values and educational opportunities of [jurisdiction's] wetlands as community assets;

G. To improve and promote coordination among local, state, and federal agencies regarding development activities near wetlands.

II. Wetland Protection Areas, Definitions

The following definitions shall apply to Sections I through X, "Wetland Protection Areas:"

Jurisdictional delineation - A delineation of the wetland boundaries that is approved by the Oregon Division of State Lands (DSL). A delineation is a precise map and documentation of actual wetland boundaries on a parcel, whereas a determination may only be a rough map or a presence/absence finding. [See OAR 141-90-005 et seq. for specifications for wetland delineation or determination reports.]

Locally significant wetland - A wetland that is determined to be significant under the criteria of OAR 141-86-0300 et seq. These criteria include those wetlands that score a high rating for fish or wildlife habitat, hydrologic control, or water quality improvement functions.

Local Wetlands Inventory (LWI) - Maps and report adopted by[jurisdiction] entitled [list report that inventories wetlands] and any subsequent revisions as approved by the Oregon Division of State Lands. The LWI is a comprehensive survey of all wetlands over ½ acre in size within the urbanizing area.

Oregon Freshwater Wetland Assessment Methodology (OFWAM) - A wetland function and quality assessment methodology developed by the Oregon Division of State Lands.

Wetland - An area inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and which, under normal circumstances, does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wetland protection area - An area subject to the provisions of this chapter that includes all wetlands determined to be locally significant.

Wetland resource map - The locally adopted map used as the basis for this ordinance, which incorporates the DSL-approved LWI map and identifies locally significant wetlands.

III. Determination of Locally Significant Wetlands

The [jurisdiction] determines which wetlands are locally significant in accordance with rules adopted by Division of State Lands (OAR 141-086-3000). Locally significant wetlands are identified on the [jurisdiction] wetland resource map.

IV. Wetland Protection Areas, Applicability, and Application Submittal Requirements

A. Wetland protection areas consist of locally significant wetlands.

B. Unless otherwise stated, the [jurisdiction] shall apply the provisions of Sections I through X in conjunction and concurrently with the requirements of any other development permit being sought by an applicant. If no other permit is being sought the [Planning Director or designee] shall serve as the approving authority.

C. Applications for plan approvals, development permits, building permits, or plans for proposed public facilities on parcels containing a wetland protection area or a portion thereof, shall include the following:

1) A delineation of the wetland boundary completed by a professional wetland scientist, or similar expert, qualified to delineate wetlands in accordance with Oregon Division of State Lands rules. If the proposed project is designed to avoid wetlands, a wetland determination report may be provided in place of the delineation.
2) A scale drawing that clearly depicts the wetland boundary, the surface water source, existing trees and vegetation, property boundaries, and proposed site alterations including proposed excavation, fill, structures, and paved areas.
3) Verification that the application packet has been submitted to the Oregon Department of Fish and Wildlife for review and comment.

D. No delineation is required under C)1 above if the proposed development is located 25 feet or more from a wetland identified on the LWI map or a determination, but not an approved delineation. (Please note that compliance with state and federal wetland regulations for all wetlands, mapped or unmapped, remains the legal responsibility of the landowner.)

[Note: This is not a buffer or setback, it is an allowance for LWI map inaccuracy when the expense of a precise delineation may not be warranted.]

V. Approval Criteria

The approving authority shall base its decision on the following criteria in addition to the required criteria for any other permit or approval that is being sought. Approvals shall be based on compliance with all of the following criteria:

A. The proposed project complies with the provisions of Sections VI through IX of this Chapter.

B. Except as otherwise allowed in Section VI, the proposed project will not result in excavation or filling of a wetland or reduction of wetland area on a parcel that has been identified as containing a wetland.

C. Except as otherwise allowed in Section VI, the proposed project will not result in development or filling of land within 25 feet of the boundary of wetland that has been identified only on the LWI map or by a determination, but not an approved delineation.

VI. Allowed Activities within Wetland Protection Areas

A. Any use, sign, or structure, and the maintenance thereof, that was lawfully existing on the date of adoption of this ordinance [insert date], is allowed to continue within a wetland protection area. Such use, sign, or structure may continue at a similar level and manner as existed on the date of adoption of this ordinance. The maintenance and alteration of pre-existing ornamental landscaping is permitted within a wetland protection area so long as no additional native vegetation is disturbed. The provisions of this section shall not be affected by any change in ownership of properties containing a wetland protection area.

B. The following activities and maintenance thereof are allowed within a wetland protection area, provided that any applicable state or federal permits are secured:

1) Wetland restoration and rehabilitation activities;
2) Restoration and enhancement of native vegetation;
3) Cutting and removal of trees which pose a hazard to life or property due to threat of falling;
4) Removal of non-native vegetation, if replaced with native plant species at similar coverage or density, so that natives are dominant;
5) Normal farm practices such as grazing, plowing, planting, cultivating and harvesting, that meet the following criteria and limitations:

    a. The land is zoned for Exclusive Farm Use.
    b. The farm practices were in existence or occurring on the property on the date of adoption of the provisions herein,
    c. The farm practices are of no greater scope or intensity than the operations that were in existence on the date of adoption of the provisions herein, and
    d. Normal farm practices do not include new or expanded structures, roads, or other facilities involving placement of fill material, excavation, or new drainage measures; and
    e. In designated coastal shoreland areas, normal farm practices, such as propagation and selective harvesting of forest products consistent with

the Forest Practices Act, grazing, and harvesting of wild crops, must be consistent with protection of the wetland's natural values.

6) Maintenance of existing drainage ways, ditches, or other structures, to maintain flow at original design capacity and mitigate upstream flooding, provided that management practices avoid sedimentation and impact to native vegetation, and any spoils are placed in uplands;
7) Replacement of a permanent, legal, nonconforming structure in existence on the date of adoption of this ordinance with a structure on the same building footprint, if it does not disturb additional area, and in accordance with the provisions of Sections [list sections of code related to nonconforming uses]; and
8) Expansion of a permanent, legal, nonconforming structure in existence on the date of adoption of this ordinance, if the expansion area is not within and does not disturb the wetland protection area, and in accordance with the provisions of Sections [list sections of code related to nonconforming uses].
9) Emergency stream bank stabilization to remedy immediate threats to life or property.
10) Maintenance and repair of existing roads and streets, including repaving and repair of existing bridges, and culverts, provided that such practices avoid sedimentation and other discharges into the wetland or waterway.

C. New fencing may be permitted by the [Planning Director or designee] where the applicant demonstrates that the following criteria are satisfied:

1) The fencing does not affect the hydrology of the site;
2) The fencing does not present an obstruction that would increase flood velocity or intensity;
3) Fish habitat is not adversely affected by the fencing;
4) The fencing is the minimum necessary to achieve the applicant's purpose.

Applications for new fencing within a wetland protection area shall contain a scale drawing that clearly depicts the wetland area boundary.

VII. Prohibited Activities within Wetland Protection Areas

Except as allowed in Sections VI "Allowed Activities Within Wetland Protection Areas", the following activities are prohibited within a wetland protection area.

A. Placement of new structures or impervious surfaces.
B. Excavation, drainage, grading, fill, or removal of vegetation except for fire protection purposes or removing hazard trees.
C. Expansion of areas of landscaping with non-native species, such as a lawn or garden, into the wetland protection area.
D. Disposal or temporary storage of refuse, yard debris, or other material.
E. Discharge or direct runoff of untreated stormwater.
F. Uses not allowed in the list of permitted uses for the underlying zone.

G. Any use not specifically allowed in Section VI.

VIII. Conservation and Maintenance of Wetland Protection Areas

[Note: This is an optional section that outlines non-regulatory protection strategies. These provisions are not sufficient protection in themselves. Zoning protection must also be employed.]

When approving applications for Land Divisions, Planned Unit Developments, Conditional Use Permits, and Exceptions, or for development permits for properties containing a wetland protection area or portion thereof, the approving authority shall assure long term conservation and maintenance of the wetland protection area through one or more of the following methods:

A. The area shall be protected in perpetuity by a conservation easement recorded on deeds and plats prescribing the conditions and restrictions set forth in Sections I through X, "Wetland Protection Areas," and any imposed by state or federal permits; or

B. The area shall be protected in perpetuity through ownership and maintenance by a private nonprofit association through a conservation easement or through conditions, covenants, or restrictions (CC&Rs), prescribing the conditions and restrictions set forth in Sections I through X, "Wetland Protection Areas," and any imposed by state or federal permits; or

C. The area shall be transferred by deed to a willing public agency or private conservation organization with a recorded conservation easement prescribing the conditions and restrictions set forth in Sections I through X, "Wetland Protection Areas, " and any imposed by state or federal permits.

[Note: Other mechanisms for long-term protection and maintenance as deemed appropriate and acceptable by the [jurisdiction] attorney, that are clear and objective standards, could be added to this list. Such mechanisms shall be consistent with the purposes and requirements of this ordinance.

IX. Notification and Coordination with State Agencies

A. The [jurisdiction] shall notify the Oregon Division of State Lands in writing of all applications to the [jurisdiction] for development activities - including development applications, building permits, and other development proposals - that may affect any wetland identified in the Local Wetlands Inventory. This applies for both significant and non-significant wetlands. The Division provides a Wetland Land Use Notification form for this purpose. [See OAR 660-23-100(7); ORS 227.350 for cities and ORS 215.418 for counties].

B. When reviewing wetland development permits authorized under this Chapter, the approving authority shall consider recommendations from the Oregon Department of Fish and Wildlife regarding OAR 635-415 "Fish and Wildlife Habitat Mitigation Policy." [Note: Recommendations from ODFW are advisory only.]

X. Variances

A. The [Planning Commission or Hearings Officer] shall be the approving authority for applications for variances to the Wetland Protection Area provisions. The procedures of chapter [insert appropriate reference to the variance chapter] shall be followed for approval of a variance except that the variance criteria of this section shall apply.

B. Mapping Error Variances and Corrections. The [Planning Director or the Director's designee] may correct the location of the wetland protection overlay zone when the applicant has shown that a mapping error has occurred and the error has been verified by the DSL. Delineations verified by DSL shall be used to automatically update and replace LWI mapping. No formal variance application or plan amendment is needed for map corrections where approved delineations are provided.

C. Hardship Variances. The [Planning Commission or Hearings Officer] may grant a variance to the provisions of this ordinance only when the applicant has shown that all of the following conditions exist:

1) Through application of this ordinance, the property has been rendered not buildable;
2) The applicant has exhausted all other options available under this chapter to relieve the hardship;
3) The variance is the minimum necessary to afford relief;
4) No significant adverse impacts on water quality, erosion, or slope stability will result from approval of this hardship variance, or these impacts have been mitigated to the greatest extent possible; and
5) Loss of vegetative cover shall be minimized.

* * *

MODEL 2: ORDINANCE FOR WETLAND PROTECTION AREAS RESULTING FROM STANDARD GOAL 5 ANALYSIS

[Note: The following model ordinance for wetland protection is designed to carry out the "standard process" requirements under Oregon Statewide Planning Goal 5 and OAR 660-23-100(4)(a). This ordinance implements many typical decisions for that process, but not all. Under the standard process, many decisions are based on a case-by-case analysis, so it is not possible to provide a model ordinance that reflects all possible measures that may result from that process.

Goal 5 requires an ordinance that implements local government decisions for all wetlands that meet the significance criteria on the Local Wetland Inventory. However, local governments are advised to retain the non-significant wetlands on their LWI map, in order to alert property owners and others that DSL and COE fill permits may still be required for actions that affect these wetlands.

This model ordinance has been prepared to meet the requirements of Goal 5 and may not be adequate to meet the requirements of Goal 17. Goal 17 requires protection of coastal shoreland resources and does not provide for decisions based on an ESEE analysis.

Please re-check the referenced section numbers in the resulting ordinance for your jurisdiction, as several of the later sections in this model ordinance are optional. Additional notes appear in brackets below.]

WETLAND PROTECTION AREAS

I. Wetland Protection Areas, Purposes

The purposes of establishing wetland protection areas are:

A. To implement the goals and policies of the [jurisdiction] Comprehensive Plan;
B. To satisfy the requirements of Statewide Planning Goal 5;
C. To protect [jurisdiction's] wetland areas, thereby protecting the hydrologic and ecologic functions these areas provide for the community;
D. To protect fish and wildlife habitat;
E. To protect water quality and natural hydrology, to control erosion and sedimentation, and to reduce the adverse effects of flooding;
F. To protect the amenity values and educational opportunities of [jurisdiction's] wetland for the community; and
G. To improve and promote coordination among local, state, and federal agencies regarding development activities near wetlands.

II. Wetland Protection Areas, Definitions

The following definitions shall apply to Sections I through XV, "Wetland Protection Areas:"

Jurisdictional delineation - A delineation of the wetland boundaries that is approved by the Oregon Division of State Lands (DSL). A delineation is a precise map and documentation of actual wetland boundaries on a parcel that are subject to regulation, whereas a determination may be only a rough map or a presence/absence finding. [See OAR 141-90-005 et seq. for specifications for wetland delineation or determination reports.]

Locally significant wetland - A wetland that is determined to be significant under the criteria of OAR 141-86-0300 et seq. These criteria include those wetlands that score a high rating for fish or wildlife habitat, hydrologic control, or water quality improvement functions.

Local Wetlands Inventory (LWI) - Maps and report adopted by [jurisdiction] entitled [list report that inventories wetlands] and any subsequent revisions as approved by the Oregon Division of State Lands. The LWI is a comprehensive survey of all wetlands over ½ acre within the urbanizing area.

Oregon Freshwater Wetland Assessment Methodology (OFWAM) - A wetland function and quality assessment method developed by the Oregon Division of State Lands.

Wetland - An area inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and which, under normal circumstances, does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wetland buffer area - An area surrounding or adjacent to a locally significant wetland that serves to reduce the adverse effects of adjacent land uses on water quality and habitat functions of the wetland. Sometimes called a “setback.” [For use with the standard Goal 5 process only, not the wetland safe harbor].

Wetland protection area - An area subject to the provisions of this chapter that includes all wetlands determined to be locally significant plus any wetland buffer areas justified under the ESEE process.

Wetland resource map - The locally adopted map used as a basis for this ordinance, that is based on the DSL-approved LWI map and identifies locally significant wetlands and wetland buffer areas. Any significant wetland or portion of a wetland determined under an ESEE process to be available for conflicting uses should be clearly labeled as such.

III. Determination of Locally Significant Wetlands

The [jurisdiction] determines which wetlands are "locally significant" in accordance with rules adopted by Division of State Lands (OAR 141-086-3000). Locally significant wetlands are identified on the [jurisdiction] wetland resource map.

IV. Wetland Buffer Areas

The [jurisdiction] determines wetland buffer areas through an ESEE decision process described in OAR 660-02-0040. The wetland buffer areas and locally significant wetlands are identified on the [jurisdiction] wetland resource map. The map is available at the [jurisdiction] for reference. The provisions of Sections V through XV of this ordinance apply to all locally significant wetlands and their respective wetland buffer areas, excepting those wetlands or portions of wetlands which have been specifically identified under an ESEE process as available for conflicting uses.

V. Wetland Protection Areas, Applicability, and Application Submittal Requirements

A. Wetland protection areas consist of locally significant wetlands plus any wetland buffer areas identified on the wetland resource map.

B. Unless otherwise stated, the [jurisdiction] shall apply the provisions of Sections V through XV in conjunction and concurrently with the requirements of any other development permit being sought by an applicant. If no other permit is being sought, then the [Planning Director or designee] shall serve as the approving authority.

C. Applications for plan approvals, development permits, building permits, or plans for proposed public facilities on parcels containing a wetland protection area or a portion thereof, shall include the following:

1) A delineation of the wetland boundary completed by a professional wetland scientist, or similar expert, qualified to delineate wetlands in accordance with Oregon Division of State Lands rules. If the proposed project is designed to avoid wetlands, a wetland determination report may be provided in place of the delineation.
2) A scale drawing that clearly depicts the wetland boundary, any wetland buffer area [if applicable], the surface water source, existing trees and vegetation, property boundaries, and proposed site alterations including proposed excavation, fill, structures, and paved areas.
3) Verification that the application packet has been submitted to the Oregon Department of Fish and Wildlife for review and comment.

D. No delineation is required under C)1 above if the proposed development is located 25 feet or more from a wetland identified and depicted on the LWI map. (Please note that compliance with state and federal regulations on

wetlands, whether they are mapped or unmapped, remains the legal responsibility of the landowner.)

[Note: The LWI and/or determination map, unlike a precise wetland delineation, is generally accurate within approximately 25 +/- feet of the actual wetland. By requiring that no development or fill occur within 25 feet of the boundary, the local government can assure that the actual wetland will likely be avoided. This is NOT to be confused with a buffer. It is an allowance for map error in a situation where the expense of a more accurate delineation is not warranted.]

VI. Approval Criteria

A. Alternative Review Tracks

An applicant for a permit in a wetland protection area may request that the local government use one of two alternative review processes. Track 1 contains clear and objective approval criteria, and track 2 uses discretionary criteria. The two sets of criteria are listed below. The track and criteria preferred by the applicant shall be noted on the permit application. [Examples of clear and objective and discretionary criteria may be found in the guidebook text in Section 5.3.4. Standards for "clear and objective" may be found at OAR 660-23-050 (2), and for "discretionary" at OAR 660-23-050 (3).]

The approving authority shall base its decision on the approval criteria of this section in addition to the required criteria for any other permit or approval that is being sought.

B. Track 1 - Clear and Objective Approval Criteria.

Approvals require compliance with all of the following criteria:

1) The proposed project complies with the provisions of Sections VII through XV of this Chapter.
2) Except as otherwise permitted by Section VI.B.4 or Section VII, the proposed project will not result in the filling or excavation of a wetland or reduction of wetland area on a parcel that has been identified as containing a wetland.
3) Except as otherwise permitted by Section VI.B.4 or Section VII, the proposed project will not result in the development, excavation, or filling of land within 25 feet of the boundary of wetland that has only been mapped approximately through the wetland inventory or determination, but not an approved delineation.
4) The proposed project is consistent with the particular requirements adopted as part of the ESEE decisions set forth in the Comprehensive Plan, as follows. [Note: The requirements adopted as part of the ESEE decision in the plan must be stated in a clear and objective manner. The

pertinent requirements adopted as part of ESEE decisions must be included in the plan and may also be included in the ordinance. If included in the ordinance, this criterion should refer directly to the pertinent section of the plan. Depending on the ESEE analysis, the pertinent requirements may be unique for each use. For example, an ordinance may state that for a particular site, a roadway or pathway is allowed as long as it meets a specific set of requirements. Sample requirements for transportation facilities, utilities, and vegetation management are included in sections XIII, XIV, and XV. These have been written to apply to broad categories of use but could be modified to apply to particular sites.]

C. Track 2 - Discretionary Criteria.

Approvals shall be based on compliance with all of the following criteria. [Note: Examples of discretionary criteria are included below. In preparing discretionary criteria, it will be necessary to refer to the ESEE decision made in the Comprehensive Plan, because the Goal 5 rule states that these requirements will meet or exceed the level of protection specified by the ESEE decision.]

1) The proposed project complies with the provisions of Sections VII through XV of this Chapter.
2) The proposed project will not degrade the hydrologic, ecologic, or land conservation functions of wetlands in the community, or the sustainability of these functions; or
3) The proposed project includes design features that will enhance, protect, or restore fish and wildlife habitat, water quality, and natural hydrologic functions and processes, and will control erosion and sedimentation, and will not increase the effects of flooding.
4) The proposed project is consistent with the ESEE decisions set forth in the Comprehensive Plan. [Note: As noted in Section B.4. above, the list of ESEE decisions and related standards may be included in the ordinance.]

VII. Allowed Activities within Wetland Protection Areas

A. Any use, sign, or structure, and the maintenance thereof, that was lawfully existing on the date of adoption of this ordinance [insert date], is allowed to continue within a wetland protection area. Such use, sign, or structure may continue at a similar level and manner as existed on the date of adoption of this ordinance. The maintenance and alteration of pre-existing ornamental landscaping is allowed within a wetland protection area so long as no additional native vegetation is disturbed. The provisions of this section shall not be affected by any change in ownership of properties containing a wetland protection area.

B. The following activities and maintenance thereof are allowed within a wetland protection area, provided that any applicable state or federal permits are secured:

1) Wetland restoration and rehabilitation activities.
2) Restoration and enhancement of native vegetation.
3) Cutting and removal of trees that pose a hazard to life or property due to threat of falling.
4) Removal of non-native vegetation, if replaced with native plant species at a similar coverage or density so that native species dominate.
5) Normal farm practices such as grazing, plowing, planting, cultivating and harvesting, that meet the following criteria and limitations:

    a. The land is zoned for Exclusive Farm Use.
    b. The farm practices were in existence or occurring on the property on the date of adoption of the provisions herein,
    c. The farm practices are of no greater scope or intensity than the operations that were in existence on the date of adoption of the provisions herein, and
    d. Normal farm practices do not include new or expanded structures, roads, or other facilities involving placement of fill material, excavation, or new drainage measures; and
    e. In designated coastal shoreland areas, normal farm practices, such as propagation and selective harvesting of forest products consistent with the Forest Practices Act, grazing, and harvesting of wild crops, must be consistent with protection of the wetland's natural values.

6) Maintenance of existing drainage ways, ditches, or other structures, to maintain flow at original design capacity and mitigate upstream flooding, provided that management practices avoid sedimentation and impact to native vegetation and any spoils are placed in uplands.
7) Replacement of a permanent, legal, nonconforming structure in existence on the date of adoption of this ordinance with a structure on the same building footprint, if it does not disturb additional area, and in accordance with the provisions of Sections [list sections of code related to nonconforming uses].
8) Expansion of a permanent, legal, nonconforming structure in existence on the date of adoption of this ordinance, if the expansion area is not within and does not disturb the wetland protection area, and in accordance with the provisions of Sections [list sections of code related to nonconforming uses].
9) Emergency stream bank stabilization to remedy immediate threats to life or property. (State or federal emergency authorization may be needed for in-stream work.)

10) Maintenance and repair of existing roads and streets, including repaving and repair of existing bridges, and culverts, provided that such practices avoid sedimentation and other discharges into the wetland or waterway.

C. New fencing may be allowed by the [Planning Director or designee] where the applicant demonstrates that the following criteria are satisfied:

1) The fencing does not affect the hydrology of the site;
2) The fencing does not present an obstruction that would increase flood velocity or intensity;
3) Fish habitat is not adversely affected by the fencing;
4) The fencing is the minimum necessary to achieve the applicant's purpose;

Applications for new fencing within a wetland protection area shall contain a scale drawing that clearly depicts the wetland and wetland buffer area boundary.

VIII. Allowed Activities within Wetland Buffer Areas

[Note: As described in the accompanying Guidebook, a local government may establish wetland protection buffer areas in one of three ways: 1) as decisions justified through an ESEE analysis under the standard Goal 5 process for wetlands; 2) in the Metro area, via Title 3 of the Metro Functional Plan; or 3) in programs developed to comply with requirements of either Goal 6, Goal 7, or the riparian element of Goal 5. If a wetland buffer area is established by the first method, and the program decision (and supporting rationale) allows the same uses in the wetland buffer area as in the significant wetland area, then a separate section addressing buffer uses may be unnecessary. If, however, the program decisions (and supporting rationale) allow uses in wetland buffer areas that are different from those allowed in significant wetlands, then the following section applies. The following uses are examples of the types of uses that a jurisdiction may want to allow within a buffer area.]

Provided any required state or federal permits are secured, the following uses are allowed within the wetland buffers authorized in the Comprehensive Plan:

A. Docks, boat shelters, piers, boat ramps, and similar water dependent uses;
B. Utilities or other public improvements;
C. Streets, roads, or bridges where necessary for access or crossings;
D. Bioswales or similar water quality improvement projects;
E. Public multi-use paths, access ways, trails, picnic areas, or interpretive and educational displays and overlooks, including benches and outdoor furniture;
F. Wetland restoration.

[Note: A community may want to specify how different types of transportation facilities will be addressed. For example, it may be appropriate to allow some minor projects such

as trails as an outright use, while requiring major projects such as a new bridge or major road widening to follow the conditional use process.]

IX. Prohibited Activities within Wetland Protection Areas

The following activities are prohibited within a wetland protection area, except as allowed in Sections VII "Allowed Activities Within Wetland Protection Areas" and VIII "Allowed Activities within Wetland Buffer Areas":

A. Placement of new structures or impervious surfaces.
B. Excavation, drainage, grading, fill, or removal of vegetation except for fire protection purposes or removing hazard trees.
C. Expansion of areas of landscaping with non-native species, such as a lawn or garden, into the wetland protection area.
D. Disposal or temporary storage of refuse, yard debris, or other material.
E. Discharge or direct runoff of untreated stormwater.
F. Uses not allowed in the list of permitted uses for the underlying zone.
G. Any other activities not identified in Section VII and VIII.

X. Conservation and Maintenance of Wetland Protection Areas

[Note: This is an optional section that outlines non-regulatory protection strategies. These provisions are not sufficient in themselves. Zoning protection must also be employed.]

When approving applications for Land Divisions, Planned Unit Developments, Conditional Use Permits, and Exceptions, or for development permits for properties containing a wetland protection area or portion thereof, the approving authority shall assure long term conservation and maintenance of the wetland protection area through one or more of the following methods:

A. The area shall be protected in perpetuity by a conservation easement recorded on deeds and plats prescribing the conditions and restrictions set forth in Sections I through XV, "Wetland Protection Areas," and any imposed by state or federal permits; or

B. The area shall be protected in perpetuity through ownership and maintenance by a private nonprofit association and through a conservation easement or through conditions, covenants, or restrictions (CC&Rs), prescribing the conditions and restrictions set forth in Sections I through XV, "Wetland Protection Areas," and any conditions imposed by state or federal permits; or

C. The area shall be transferred by deed to a willing public agency or private conservation organization with a recorded conservation easement prescribing the conditions and restrictions set forth in Sections I through XV, "Wetland Protection Areas," and any conditions imposed by state or federal permits; or

[Note: Other mechanisms for long-term protection and maintenance as deemed appropriate and acceptable by the [jurisdiction] attorney, that are clear and objective standards, could be added to this list. Such mechanisms should be consistent with the purposes and requirements of this ordinance.]

XI. Notification and Coordination with State Agencies

A. The [jurisdiction] shall notify the Oregon Division of State Lands in writing of all applications to the [jurisdiction] for development activities - including development applications, building permits, and other development proposals - that may affect any wetland identified in the Local Wetlands Inventory. This applies for both significant and non-significant wetlands. The Division provides a Wetland Land Use Notification form for this purpose. [See OAR 660-23-100(7); ORS 227.350 for cities and ORS 215.418 for counties.]

B. When reviewing wetland development permits authorized under this Chapter, the approving authority shall consider recommendations from the Oregon Department of Fish and Wildlife regarding OAR 635-415 "Fish and Wildlife Habitat Mitigation Policy." [Note: recommendations from ODFW are advisory only.]

XII. Variances

A. The [Planning Commission or Hearings Officer] shall be the approving authority for applications for variances to the Wetland Protection Area provisions. The procedures of chapter [insert appropriate reference to the variance chapter] shall be followed for approval of a variance except that the variance criteria of this section shall also apply.

B. Mapping Error Variances and Corrections. The [Planning Director or the Director's designee] may correct the location of the wetland protection overlay zone when the applicant has shown that a mapping error has occurred and the error has been verified by the DSL. Delineations verified by DSL shall be used to automatically update and replace LWI mapping. No formal variance application or plan amendment is needed for map corrections where approved delineations are provided. [If the map correction alters the significance or ESEE findings, a plan amendment may be necessary.]

C. Hardship Variances. The [Planning Commission or Hearings Officer] may grant a variance to the provisions of this ordinance only when the applicant has shown that all of the following conditions exist:

1) Through application of this ordinance, the property has been rendered not buildable ;
2) The applicant has exhausted all other options available under this chapter to relieve the hardship;

3) The variance is the minimum necessary to afford relief;
4) No significant adverse impacts on water quality, erosion, or slope stability will result from approval of this hardship variance, or these impacts have been mitigated to the greatest extent possible; and
5) Loss of native vegetative cover shall be minimized.

D. Reduction or Deviation of Wetland Buffer Areas. A request to vary the wetland buffer area, such as averaging of buffer width, may be submitted for consideration by the [Planning Director or designee]. Such a request may be approved only if equal or better protection of the wetland will be ensured through a plan for restoration, enhancement, or similar means. Such a plan shall be submitted to the Oregon Department of Fish and Wildlife for a mitigation recommendation pursuant to OAR 635-415 "Fish and Wildlife Habitat Mitigation Policy". In no case shall activities prohibited in Section IX "Prohibited Activities Within Wetland Protection Areas" subsections A through C occupy the wetland or more than [50]% of the wetland buffer area[1]. The [same authority as above] shall be the approving authority for applications to alter the buffer area.

To determine the average buffer width, measurements shall be made at no greater than [50 foot] intervals over the distance the property abuts the wetland[1].

[Note: The following sections are optional and should be used only when: 1) an ESEE analysis has been completed; and 2) that analysis demonstrates that the following uses are of such necessity that wetland values must be compromised. All of the standards from this point to the end of the model ordinance are examples.]

XIII. Transportation Facilities and Structures Development Standards

A. General. The following standards shall apply to transportation facilities and structures within wetland protection areas, including roads and driveways, bridges, bridge crossing support structures, culverts, and pedestrian and bike paths.

B. Standards for review of conditional uses include the following:

1) Wetland protection areas shall be crossed only where there are no practicable alternatives to avoid the resource [as demonstrated by the ESEE analysis in the comprehensive plan];
2) Transportation facilities and structures crossing wetland protection areas shall be no wider than necessary to serve their intended purposes; and

[1] The dimensions in these sentences are listed as examples; the actual standards must be determined locally and may depend on the local ESEE analysis.

3) Within buffer areas, new roads, driveways, and pedestrian and bike paths shall be located or constructed so as not to alter the hydrology of the adjacent wetland.

XIV. Utility Development Standards

A. General. The following standards shall apply to permitted crossing, trenching, or boring for the purpose of developing a corridor for communication, energy, or other utility lines within or crossing parcels in wetland protection areas.

B. Standards for review of all utility uses include the following:

1) Utility maintenance roads in or crossing protected resources shall meet applicable standards for transportation facilities and structures in protected resources; and
2) For underground utilities, the following additional standards shall apply:

a. Boring under the waterway, directional drilling, or aerial crossing is preferable to trenching. If trenching is the only alternative, it shall be conducted in a dry or dewatered area with stream flow diverted around the construction area to prevent turbidity;
b. Common trenches, to the extent allowed by the building code, shall be required in order to minimize disturbance of the protected resource;
c. Materials removed or excavated during trenching, boring, or drilling shall be deposited away from the protected resource, and either returned to the trench as back-fill, or if other material is to be used as back-fill in the trench, excess materials shall be immediately removed from the protected resource and its associated buffer. Side-casting of removed material into a protected resource shall not be permitted;
d. The ground elevation of a protected resource shall not be altered as a result of utility trench construction or maintenance. Finish elevation shall be the same as starting elevation; and
e. Topsoil and sod shall be conserved during trench construction or maintenance, and replaced on top of the trench.

C. In addition to the other conditional use criteria, conditional use approval of utility corridor routes shall be based on evidence that:

1) Hydraulic impacts on protected resources are minimized; and
2) Removal of native vegetation is minimized.

Where feasible, crossings of wetland protection areas shall be perpendicular to minimize impact area.

XV. Vegetation Management Standards

A. General. The following standards shall apply to vegetation in wetland protection areas:

B. Standards for review of conditional uses include the following:

1) Vegetation removal, pruning, or mowing in a significant wetland or riparian corridor shall be the minimum necessary and in no case shall substantially impair any wetland functions and values. Vegetation removal, pruning, or mowing in the wetland buffer shall be the minimum necessary. Removal, pruning, or mowing of vegetation shall be allowed if the applicant demonstrates one of the following:

a. The action is necessary for the placement of a structure or other allowed use for which a building permit has been issued;
b. The action is necessary for maintenance of an existing structure or transportation facility;
c. The action is necessary for correction or prevention of a hazardous situation;
d. The action is necessary for completion of a land survey;
e. The action involves the maintenance of a landscaped area that existed prior to the date of this ordinance;
f. The action is part of an approved restoration, enhancement, mitigation, or erosion control plan, including, but not limited to, invasive or noxious species removal and replacement with native species, and wetland area restoration, mitigation, or enhancement;
g. The action is part of a landscape plan approved by the City, and any other appropriate agencies, in conjunction with a building permit that minimizes adverse impacts on protected resources; or

2) Planting shall be permitted in accordance with the following standards:

a. The planting is part of an approved restoration, enhancement, mitigation, or erosion control plan;
b. The planting is part of a landscape plan using appropriate native plant species, and the plan is approved by the City in conjunction with approval of a building permit; or
c. The planting is to replace dead or damaged plants that were either part of a maintained landscape or part of the existing native plant community.

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