CLATSOP COUNTY
COMPREHENSIVE PLAN UPDATE
CLATSOP PLAINS CITIZEN ADVISORY COMMITTEE

AUGUST 13, 2020
2:00 PM
ELECTRONIC MEETING

The Clatsop Plains Citizens Advisory Committee will host virtual meetings on GoToMeeting
During the COVID-19 pandemic, the County remains committed to broad community engagement and transparency of government. To provide an opportunity for public input while physical distancing guidelines are in effect, the County will host virtual meetings on the GoToMeeting platform.

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The full agenda package can be found here. Those wishing to provide input will need to be recognized to speak by the Chairperson. The public may also submit comments via email to be read to the Citizen Advisory Committee at the designated time. Please send submissions to comdev@co.clatsop.or.us.

TIME	TOPIC	LEAD
2:00 PM	Call to Order	CPCAC Chair
2:05 PM	Introductions	All
2:10 PM	Review of Meeting Summary -July 9, 2020	CPCAC Members
2:15 PM	Public Comment and Input	Public
2:30 PM	Review of Goal 5 Topics -Wetlands and Riparian Corridors	CPCAC Members
3:30 PM	Public Comment and Input	Public
3:45 PM	Closing comments and adjournment	CPCAC Members

All Comprehensive Plan Citizen Advisory Committee meetings are open to the public. Community members are welcome to observe and provide written comment at any time to comdev.co.clatsop.or.us. As time allows, verbal comment is welcome during the time specified on the agenda.

NOTE TO CAC MEMBERS: Please contact the Community Development Department (503-325-8611) if you are unable to attend this meeting.

ACCESSIBILITY: This meeting is accessible to persons with disabilities or wish to attend but do not have computer access or cell phone access. Please call 503-325-8611 if you require special accommodations at least 48 hours prior to the meeting in order to participate.

Summary of July 9, 2020
Clatsop Plains Citizen Advisory Committee Meeting #7
Electronic Meeting

Call to Order

The meeting was called to order at 2:00 p.m. by Mary Kemhus, CPCAC Chair.

CPCAC Members Present	CPCAC Commissioners Absent	Staff Present	Public Present
Maria Pincetich	Diane Heintz	Gail Henrikson	
Mary Kemhus	Phillip Johnson		
Devon Abing			
Don Abing			
Robert Stricklin			

Introductions

The CPCAC members and staff introduced themselves.

Review of Meeting Summaries:

There were no corrections, additions, or deletions to either the November 14, 2019, or June 11, 2020, meeting summaries.

Public Comment and Input:

None.

Review of Goal 5 Worksheets:

Mary Kemhus reminded the committee members that comments from the Department of Land Conservation and Development had been received for Goals 1, 3 and 4. She asked the committee members to review those comments and be prepared to provide additional comments at the August meeting.

Ms. Kemhus began discussion of the Goal 5 worksheet. She asked if any committee members had any comments about the goals listed on page one of the worksheets.

Robert Stricklin stated the reservoir sites have been a contentious piece over the course of time. He referenced Statewide Planning Guideline #3. He stated that historically there has been opposition to including policies that would protect the aquifer on the Clatsop Plains as it was viewed as restricting property rights.

Ms. Kemhus asked what point Mr. Stricklin was trying to make.

Mr. Stricklin attempted to clarify his point.

Ms. Kemhus asked Ms. Henrikson to verify that the County did not have any control over the state guidelines.

Ms. Henrikson stated that that was correct.

Mr. Stricklin continued to discuss the history behind attempts to protect the aquifer.

Ms. Kemhus asked Mr. Stricklin what policy changes or inclusions he would recommend. Mr. Stricklin did not have any specific policies at that time to recommend.

Ms. Kemhus asked the committee if anyone had any comments about the policies on page two of the worksheet.

Mr. Stricklin discussed previous studies which determined that there was unlimited capacity for growth and that attempts to restrict growth based on resource availability should be eschewed.

Ms. Kemhus asked about Policy 9, which states "The county shall recognize existing surface mining operations as significant resources pursuant to Goal 5, and shall allow existing operations to continue for two (2) years without conforming to the performance standards in the zoning ordinance. Expansion beyond the limits of an existing site shall be in accordance with county zoning regulations." She specifically asked why the two-year window had been established.

Ms. Henrikson stated that she did not know the answer, but would research it and report back to the committee. **[FOLLOW-UP: The two-year grace period was to allow sites adequate time to come into compliance with the performance standards. The performance standards were adopted on September 30, 1980.]**

Mr. Stricklin discussed streamflow and water levels, citing Policy 5 on page three of the worksheet. He asked whether such things should be considered. He discussed current issues related to the provision of water and the City of Warrenton.

Ms. Kemhus stated that those were important comments and that it was definitely a difficult subject.

Mr. Stricklin stated that it could go on the committee's list of things not to talk about.

Ms. Kemhus asked the committee members if there were any comments on page four of the worksheet.

No committee members had comments on the policies on page four.

Mr. Stricklin discussed how gravel mining wreaked havoc on spawning beds. He asked whether any statute had replaced ORS 541.605 as noted on Mineral and Aggregate Resource Policy #6 on page five of the worksheet. **[FOLLOW-UP: ORS 541.605 was renumbered 196.670 and subsequently renumbered 196.800 (Definitions for ORS 196.600 to 196.921) in 1989. Section 196.600-196.665 establishes regulations for wetland mitigation.]**

Mr. Stricklin questioned whether the City of Astoria was still considering building a hydroelectric dam at Youngs River Falls. **[FOLLOW-UP: Per Nathan Crater, City Engineer for the City of Astoria, the Bear Creek Watershed is expected to handle the needs of Astoria for the foreseeable future. Using Youngs River Falls is not an option at this point in time. There may possibly be a reason in the future to release those water rights, but that would likely only happen if a regional group was formed to resolve a regional problem.]**

Ms. Kemhus asked about Wetland Policy #3.

Mr. Don Abing stated that the Chinook Nation does have an interest in Driscoll Slough as it is white-tailed deer habitat.

Mr. Abing stated that the Chinook Nation would definitely be opposed to anything that would jeopardize the habitat for an endangered species such as the white-tailed deer. He stated that the members of the Chinook Nation have a traditional relationship with that species of deer.

Mr. Stricklin asked whether the deer were showing up anywhere else in the county.

Mr. Abing stated that there were some known white-tailed deer in the Clatskanie area, but that those deer have been routinely harvested along with the black-tailed deer, but have not been reported as such.

Ms. Kemhus asked if there was proposed development along Driscoll Slough. Mr. Abing stated that there was apparently some kind of proposal for a bridge or other kind of transportation facility across the slough. He asked what need the county had and why the urgency. He stated that either answers should be provided or the slough should be left alone.

Ms. Kemhus asked if he was proposing that the wording of the policy should be changed. Mr. Abing agreed that he was requested the language be revised.

Ms. Kemhus asked staff to verify that the policies in the comprehensive plan had been written 20 or 30 years ago. Ms. Henrikson confirmed that. Ms. Kemhus also asked staff whether any projects are proposed in that area. Ms. Henrikson stated that there are not proposed project at this time.

Ms. Kemhus suggested that the language be strengthened to encourage the county to prohibit development in wetlands. Mr. Abing agreed, stating that there is no gain in reducing and eliminating more wetlands every day. Mr. Abing discussed areas, including the Julia Butler Hansen National Wildlife Refuge, which were significant sites for the people of the Chinook Nation.

Mr. Abing discussed the Natural Areas Policy #3. He questioned whether it was necessary to install a radio transmission facility on Onion Peak. He added that the Oregon Department of Fish and Wildlife has for many years dedicated this area for harvesting elk with bow and arrow. He stated that if the transmission facility were absolutely necessary it should not be in that natural area. He added that he was not sure if there was a need for a transmission facility as the site was in such close proximity to other radio towers in the area.

Mr. Abing went on to discuss Natural Areas Policy #4, regarding the existing radio transmitter facility on Sugarloaf Mountain. He asked whether there was a problem with the facility that the committee members did not understand. **[FOLLOW-UP: The "Natural" designation for Sugarloaf Mountain was applied to the site as part of the 1980 comprehensive plan adoption. Goal 2 defines lands designated "Natural" as "those areas which have no been significantly altered by man and which, in their natural state, perform resource support functions including those functions vital to estuarine or riparian ecosystems. Publicly owned fragile and ecologically valuable areas, especially watersheds and groundwater resource areas, are most likely to be designated as Natural. Natural areas identified by the Oregon Natural Heritage Program, as well as fish and wildlife areas and habitats identified by the Oregon Wildlife Commission, should be considered for Natural designation." The intent of the language in Policy #4 would be been to ensure that when this new designation was applied to Sugarloaf Mountain that the existing transmission facility was not required to be removed.]**

Ms. Henrikson reminded the committee that these policies were developed 40 years ago. She stated that she was not aware of any problems with the transmitter facility on Sugarloaf Mountain. She stated that there is currently a permit application under review to construct a new tower on Sugarloaf Mountain.

Mr. Abing next discussed Water Resources Policy #1, which states that the county will cooperate and coordinate with state and federal agencies in assuring the maximum beneficial use of all water areas in the County. He asked if that would include the Skipanon River. Mr. Abing specifically cited the 8th Street dam in Warrenton, which is blocking the flow of the Skipanon River. He stated that it has been a very contentious issue and he does not understand why the issue is being tabled and not addressed. He stated that the dam has blocked the runs of salmon and chum that historically ran in the river.

Ms. Henrikson stated that the Skipanon Water District is in the process of dissolution and that the dam would be transferred to the City of Warrenton. She added that because the dam is within the incorporated limits of Warrenton, it could not be addressed in the County's comprehensive plan.

Mr. Abing asked whether anything has been done to address restoration of the tributaries on the south side of Cullaby Lake. He stated that these tributaries used to contain Coho and chum salmon and that it was a historical harvesting site for the Chinook. Mr. Abing and Mr. Stricklin continued to discuss the location of the waterways and the historical fish runs. Mr. Stricklin agreed that he also would like to protect the tributaries. Mr. Abing advocated for restoration of those wetlands and a reintroduction of the fish that historically sustained the people of the Chinook Nation.

Mr. Abing and Mr. Stricklin continued to discuss methods that could be used to restore the wetlands at Cullaby Lake.

Ms. Kemhus asked Mr. Stricklin and Mr. Abing to develop policy statements about how the comprehensive plan could support those goals. She asked that those draft policies be brought to the next meeting.

Mr. Stricklin proposed a policy that states "Provide a natural waterway between Cullaby lake and the drainage canal below the lake that does not require a fish ladder."

Mr. Abing noted that Water Resources Policy #3 was incomplete. **[FOLLOW-UP: The full policy should read: "Where municipalities or water district have identified possible conflicts between forest management practices and the maintenance of the integrity of their watershed, the County encourages these to work with the Northwest Region Forest Practices committee in the development of amendments to the Oregon Forest Practices Act that will provide needed modification and protection of state licensed water supply systems."]**

Mr. Abing asked for clarification on Water Resources Policy #4, specifically where this applied and whether there was some sort of zoning issue involved? Ms. Henrikson explained that the policy would apply to all areas of the unincorporated county, but that there are certain zoning districts that specifically call out individual docks as a permitted use.

Mr. Abing moved on to Wilderness Area Policy #1, asking where this area was located. The committee members did not seem to believe that there was a wilderness area within Clatsop County. **[FOLLOW-UP: There are no federal wilderness areas within Clatsop County. This was verified at the following website:** https://umontana.maps.arcgis.com/apps/webappviewer/index.html?id=a415bca07f0a4bee9f0e894b0db5c3b6**]**

Mr. Abing spoke about Historic Sites Policy #1. Mr. Abing stated that the Chinook Nation wants to make sure that proper recognition acknowledges the Clatsop Tribe of the Chinook Nation and their activities harvesting seafood, cedar and spruce.

Mr. Stricklin stated that proper recognition was more than just calling it "Indian Beach."

Mr. Abing addressed Historic Sites Policy #4. He asked where Falls Pulp Mill and Shepherd and Morse Sawmills were. **[FOLLOW-UP: The Falls Pulp Company was located at the base of Youngs River Falls. The Shepherd and Morse Sawmill Site was located in Westport, due east of the Crown Zellerbach pulp mill at Wauna, next to the Westport Ferry landing.]**

Ms. Kemhus asked about the asterisk and double asterisks on some of the policies and what that indicated. Ms. Henrikson stated that it was to indicate that the text had been amended at some point. She added that typically a change would be followed by the ordinance number in brackets, so that changes could be trace back.

Ms. Kemhus asked whether Historic Sites Policy #5 should be removed as it has been completed. The committee discussed whether the policy should be removed and reached a general consensus that it should be taken out of the comprehensive plan.

Mr. Abing next discussed Cultural Areas Policy #1. Ms. Kemhus stated that she also had comments on these policies. He recommended that the policy be changed to read as follows: "The County will review land use activities that will affect known archaeological sites. If it is determined that a land use activity may affect the integrity of an agricultural archaeological site the county shall consult with the Chinook Indian Nation, and then the State Historic Preservation Office, on appropriate measures to preserve or protect the site and its contents."

Mr. Abing discussed past occurrences where bones and artifacts had been dug up and removed to create a road. That incident was not in Clatsop County and Mr. Abing added that he did not want it to happen here. He stated that's why the Chinook Nation was insisting on being notified first.

Mr. Stricklin asked whether the term "archaeological" also referred to the period post-Anglo-America invaders. He provided examples of how "archaeological" could include activities of 100 years ago. Ms. Kemhus asked for a definition of "archaeological". **[FOLLOW-UP: The Society for American Archaeology states that "Archaeology is the study of the ancient and recent human past through material remains." Staff was unable to locate a specific, universally-agreed-upon timeframe that constitutes "recent human past". Typically, structures are considered "historic" when they are at least 50 years old.]**

Ms. Pincetich asked whether "cultural" sites could also be included, as a site may have cultural importance, but not necessarily archaeological importance. Mr. Abing stated that the Chinook Nation would appreciate that.

Mr. Abing referred back to the hydroelectric dams at Youngs River Falls. He stated that this was a cultural site for the Chinook as it was a fish harvest site. He stated that fish spears, arrowheads and other artifacts were taken from the site. He added that the Chinook Indian Nation would be opposed to a hydroelectric dam at that location because it is a cultural and archaeological site.

Ms. Kemhus asked if anyone had comments on Cultural Areas Policy #2. Mr. Abing stated that the term "Indian cairns" should be replaced with "Chinook Indian Nation cairns." He stated that the Chinook know of cairns and graves, but they are not in their possession at this time.

Ms. Kemhus suggested added the Chinook Indian Nation to this policy as well, so it would read: "Chinook Indian Nation cairns, graves and other significant archaeological resources uncovered during construction

or excavation shall be preserved intact until a plan for their excavation o re-internment has been development by the Chinook Indian Nation and the State Historic Preservation Office."
Mr. Abing stated that this will fall under NAGPRA, the Native American Graves Protection and Repatriation Act.

Ms. Kemhus asked if members could provide additional input between this meeting and the next. Ms. Henrikson stated that there were three months scheduled to discuss Goal 5.

Mr. Stricklin stated that he had notes regarding wildlife corridors, habitat remnants, buffer zones, complex woodlands, scenic views. He stated that he was not sure where these should be addressed. Ms. Kemhus asked whether these items could be incorporated into Goal 5 or if they would fit better in a different goal. Ms. Henrikson acknowledged that these items should be included in Goal 5. The committee continued to discuss Mr. Stricklin's remnant phrases and how they could be incorporated into Goal 5.

Public Comment and Input:
None.

Establish Regular Meeting Date and Time:
The committee agreed to continue to meet on the second Thursday of each month at 2:00 p.m.

Closing Comments and Adjournment:
None.

There being no further business the meeting was adjourned at 3:30pm.

Clatsop County
Community Development – Planning

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TO: Clatsop Plains Citizen Advisory Committee Members

FROM: Gail Henrikson, Community Development Director

DATE: August 13, 2020

RE: **GOAL 5 RESOURCE TOPIC – WETLANDS AND RIPARIAN CORRIDORS**

ACTION ITEMS FOR AUGUST 13, 2020, MEETING:

(1) The inventoried wetlands listed in the comprehensive plan must be reviewed to determine whether those wetlands should continue to be listed as wetland resources.

(2) The existing policies addressing wetlands in Goal 5 of the comprehensive plan need to be reviewed to verify whether those policies should be removed, retained, or amended.

(3) The CPCAC should recommend any wetlands within the Clatsop Plains area that are not currently included in the Goal 5 wetland inventory, but which should be.

(4) The CPCAC should identify any new issues regarding wetlands that should be addressed in the comprehensive plan and develop proposed policies designed to address those issues.

(5) The CPCAC should recommend riparian corridors that should be listed in the comprehensive plan inventory.

(6) The CPCAC should identify any issues regarding riparian corridors that should be addressed in the comprehensive plan and develop proposed policies designed to address those issues.

(**NOTE: The CPCAC should be aware of state statutes regarding right-to-farm and the Forest Practices Act that prohibit local governments from adopting regulations that would make forest practice or farm practice a nuisance or trespass (ORS 30.934-30.935).**

Overview

Statewide Planning Goal 5 – Natural Resources, Scenic and Historic Areas, and Open Spaces – ***requires*** the following inventories to be provided and reviewed in each jurisdictions' Comprehensive Plan:

- 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
- Cultural areas

Statewide Planning Goal 5 also ***encourages*** local governments and state agencies to maintain current inventories of the following resources:

- Historic Resources
- Open Space
- Scenic Views and Sites

These required and encouraged inventories were included in the original adoption of the Clatsop County Comprehensive Plan in 1980. Since the cessation of required periodic review in 2007, these inventories have not been routinely maintained or updated. As Goal 5 is a complex cornucopia of overlapping and intertwined resources, it may be easier for committee members and staff to break this vast goal into more easily-digestible pieces by focusing on one or two particular resources at a time. To that end, **the August 13, 2020, Clatsop Plains Citizen Advisory Committee meeting will be focused on Riparian Corridors and Wetlands**.

Wetlands in Oregon

Oregon's wetlands and their ecosystems are a highly diverse resource that reflects the extreme physical and biological variability of the state. Streamside wetlands in the Coast Range provide food and shelter to threatened juvenile salmon and trout. Additional examples of wetland functions and the services they provide:

- Flood storage and water supply
- Water quality improvement
- Food-web support
- Wildlife and fish habitat
- Rare and endangered species
- Aesthetics, recreation and education

Encroachments Into Wetlands

Oregon's Removal-Fill Law (ORS 196.795-990) is administered by the Department of State Lands (DSL). The law requires people who plan to remove or fill material in wetlands or waterways to obtain a permit from DSL. The law applies to all landowners, whether private individuals or public agencies. The law was enacted in 1967 to ensure protection and the best use of Oregon's water resources for home, commercial, wildlife habitat, public navigation, fishing and recreational uses.

Clatsop County Regulations

Clatsop County's Comprehensive Plan addresses estuarine wetlands in Goal 16 and coastal

shoreland wetlands in Goal 17. Goal 5 identifies nine areas of major non-coastal shoreland wetlands. Policies related to wetlands preservation are also listed in Goal 5.

Clatsop County Ad Hoc Wetlands Advisory Committee

In 2014 the County received a technical assistance grant from the State to identify possible countywide wetland policy options and to develop recommendations to ensure protection of wetlands. The Board of Commissioners appointed an ad hoc Wetlands Advisory Committee that met from 2015-2017. The committee presented four recommendations to the Board of Commissioners on March 22, 2017. Following that meeting, several key staff left the department and further action on the recommendations was postponed pending the completion of DSL's Statewide Wetland Inventory (see below).

Wetland Inventories

County staff references the Statewide Wetland Inventory (SWI) to determine whether a proposed development or use may impact a mapped wetland. The SWI map consists of the following layers:

- National Wetlands Inventory (NWI), US Fish & Wildlife Service, updated annually;
- Local Wetlands Inventories (in Clatsop County, there currently are DSL-approved LWIs for Arch Cape, Gearhart, and Warrenton);
- National Hydrography Dataset, US Geological Survey;
- Predominately Hydric Soil Map Units, USDA Natural Resources Conservation Service.

If it appears a mapped wetland may be impacted by a proposed development or use, staff is required to notify DSL by submitting a Wetland Land Use Notice (WLUN) form. DSL staff then reviews the notice and responds within 30 days. The response from DSL states whether a state permit is required, or whether more information, such as a site-specific wetland delineation, is required to make a final determination. The property owner then works with the state to determine what, if any, permits and mitigation may be required. A link to the SWI map can be found here. Clatsop County GIS staff has also added the SWI layers to Clatsop County Webmaps.

Clatsop County Goal 5 Policies Related to Wetlands

Of the 626 pages comprising Clatsop County Goal 5, 18 pages contain information or policies related to wetlands. No separate policies were included that specifically addressed riparian corridors. The adopted wetlands policies are listed below. ***Note:*** *Wetland Sites 8 and 9 are not shown on the adopted map included in the comprehensive plan.*

POLICY 1

The County will protect identified significant freshwater wetlands, for which no conflicting uses have been identified, from incompatible uses.

POLICY 2

A ten acre site within Wetland Site 6 shall be provided for gravel extraction.

POLICY 3

The following requirements shall apply to Wetland Site 7 (which also contains white-tail deer habitat).

a. All industrial development shall be located north of the railroad right-of-way. The area between the railroad right-of-way and U.S. Highway 30 shall be designated for protection of its wetland characteristics.
b. Development of land adjacent to Driscoll Slough shall be carried out in a way that will minimize the alteration of riparian vegetation, degradation of water quality and stream sedimentation. Proposed development will be evaluated against the Department of Fish and Wildlife's management objectives of maintaining vegetative cover, particularly riparian vegetation, and the maintenance of corridors that provide for deer movement between habitat areas. Construction of a bridge or other transportation access across the slough shall be the minimum necessary to accomplish the project. Piling is preferred to filling for any access corridor across Driscoll Slough.
c. Industrial development on the eastern portion of the site shall be designed to minimize or avoid the removal of riparian vegetation along Westport Slough. Riparian vegetation removal shall be permitted where direct access to the water is required.
d. Filling of the site shall not be permitted until a specific development proposal has been reviewed and approved by the County.

Goal 5 Wetlands in the Clatsop Plains Planning Area

As stated above, Goal 5 identifies nine wetland areas that are not covered by either Goal 16 (Estuarine Resources) or Goal 17 (Coastal Shorelands). Eight of those wetlands are located within the Clatsop Plains Planning Area:

Resource Description	Location	Acres
Site 1 (CP 9)	Along the Skipanon River, south of Warrenton and SE of Hwy 101	98
Site 2 (CP 13)	Taylor Lake, north of Cullaby Lake	17
Site 3 (CP 14)	Cullaby Lake	280
Site 4 (CP 15)	Between Cullaby Lake and Hwy 101	230
Site 5 (CP 16)	East of Hwy 101 from the south end of Dellmoor Loop Rd south to Palmberg Gravel Works	380
Site 6 (CP 18)	Two small lakes and adjacent wetlands on Cullaby Creek, 4000 ft south of Cullaby Lake	160
Site 7 (CP 19)	North of the road to the Crown site, up to the Palmberg Gravel Co. east of Hwy 101 and Seaside airport	130
Site 8	Southest of Seaside; south of the Millponds, east of Hwy 101	132

These wetlands were identified in the report *Significant Shoreland and Wetland Habitats in the Clatsop Plains* prepared by Duncan Thomas for CTIC and CREST in June 1982. The purpose of the report was to identify "wetland, shoreland and riparian values, and describing the significant sites in the Clatsop Plains and the Columbia River Floodplain."

SUPPORT MATRIALS

Goal 5 – Wetlands Background Materials, Attached (also sent via email from Ian Sisson, Planner, on April 13, 2020):

- A selection of relevant excerpts from the Clatsop County Comprehensive Plan
- Statewide Planning Goal 5 and Guidelines
- A selection of relevant Oregon Administrative Rules implementing Goal 5
- Two factsheets from Oregon Department of State Lands:
  - *Assessing Functions and Values of Wetlands and Waterways*
  - *Statewide Wetlands Inventory*
- Excerpts from the *Oregon State of the Environment Report*:
  - Chapter 3.4 - Summary of Current Status and Health of Oregon's Freshwater Wetlands
  - Chapter 3.5 - Summary of Current Status and Health of Oregon's Riparian Areas

Agenda and Minutes of March 22, 2017 Joint Work Session – Recommendations from the County's ad-hoc Wetlands Advisory Committee to the Planning Commission and Board of Commissioners

Additional reference materials for those interested in further research and technical information:

- *Oregon Wetland Planning Guidebook* by Oregon DSL/DLCD
- *Oregon Freshwater Assessment Methodology* by Oregon DSL
- *Significant Shoreland and Wetland Habitats in the Clatsop Plains* by Duncan Thomas, June 1982

GOAL 5: NATURAL RESOURCES, SCENIC AND HISTORIC AREAS, AND OPEN SPACES

PURPOSE: TO PROTECT NATURAL RESOURCES AND CONSERVE SCENIC AND HISTORIC AREAS AND OPEN SPACES.			
POLICY REVIEW			
CLATSOP COUNTY GOALS AND POLICIES	**GOAL MET (Y/N)**	**RETAIN GOAL (Y/N)**	**RECOMMENDED CHANGES**
WETLANDS POLICIES			
<u>POLICY 1</u> **The County will protect identified significant freshwater wetlands, for which no conflicting uses have been identified, from incompatible uses.**			
<u>POLICY 2</u> **A ten acre site within Wetland Site 6 shall be provided for gravel extraction.**			**STAFF NOTE:** Is Site 6 now under the control of the Nature Conservancy?
<u>POLICY 3</u> **The following requirements shall apply to Wetland Site 7 (which also contains white-tail deer habitat).** **a. All industrial development shall be located north of the railroad right-of-way. The area between the railroad right-of-way and U.S. Highway 30 shall be designated for protection of its wetland characteristics.** **b. Development of land adjacent to Driscoll Slough shall be carried out in a way that will minimize the alteration of riparian vegetation, degradation of water quality and stream sedimentation. Proposed development will be evaluated against the Department of Fish and Wildlife's management objectives of maintaining vegetative cover, particularly riparian vegetation, and the maintenance of corridors that provide for deer movement between habitat areas. Construction of a bridge or other transportation access across the slough shall be the minimum necessary to accomplish the project. Piling is preferred to filling for any access corridor across Driscoll Slough.** **c. Industrial development on the eastern portion of the site shall be designed to minimize or avoid the removal of riparian vegetation along Westport Slough. Riparian vegetation removal shall be permitted where direct access to the water is required.** **d. Filling of the site shall not be permitted until a specific development proposal has been reviewed and approved by the County.**			

WETLAND POLICIES	
ISSUE TO BE ADDRESSED	**PROPOSED DRAFT LANGUAGE**

Goal 5

REQUIREMENTS OF THE STATEWIDE PLANNING GOAL

The overall goal of Statewide Planning Goal #5, Open Space, Scenic and Historic Areas, and Natural Resources, is:

> "To conserve open space and protect natural and scenic resources."

To achieve this goal, Clatsop County is required to undertake an inventory of the following twelve types of resources:

a. Land needed or desirable for open space;
b. Mineral and aggregate resources;
c. Energy sources;
d. Fish and wildlife areas and habitats;
e. Ecologically and scientifically significant natural areas, including desert areas;
f. Outstanding scenic views and sites;
g. Water areas, wetlands, watersheds and groundwater resources;
h. Wilderness areas;
i. Historic areas, sites, structures and objects;
j. Cultural areas;
k. Potential and approved Oregon Recreation trails;
l. Potential and approved federal wild and scenic waterways and state scenic waterways.

These resources are to be inventoried as to their location, quality and quantity.

Upon completion of the resource inventory, a determination is to be made if there are conflicting non-open space uses for these resources or resource areas. Areas or sites for which no conflicting use has been identified are to be protected. Where conflicting uses have been determined to exist, the economic, social, enviromental and energy consequences of the conflicting uses (on the resource) shall be determined.

Based on the inventory and the analysis of conflicting uses, the County is to develop a program that will:

1) insure open space;
2) protect scenic and historic areas and natural resources for future generations; and
3) promote healthy and visually attractive environments in harmony with the natural landscape character.

Requirements of the Administrative Rule on Goal #5, OAR 660-15-000

An administrative rule clarifying the requirements of Statewide Planning Goal #5, Open Spaces, Scenic and Historic Areas, and Natural Resources was adopted by the Land Conservation and Development Commission in June of 1981. The administrative rule establishes a method to be used in applying Goal #5 to resource sites. This procedure addresses the following

elements: what is and is not required to be included in the plan inventory; how to identify conflicting uses for resource sites and determine their implacts on those resource sites; and how to protect resource sites, depending on the degree to which conflicting uses are to be allowed or limited.

The following is an outline of the three-step procedure which the Administrative Rule establishes. The first step is data collection and an evaluation of the quality, quantity, and location of the resource sites identified. Based on the information collected, one of three decisions is made: the resource is determined not to be important enough to warrant inclusion in the inventory; or the available information is inadequate to determine the value of an identified resource (in this case, the County must include policy language in its Comprehensive Plan committing the County to the development of additional information on the resource and an evaluation of the resource within a specific period of time); or there is sufficient information on the resource site's quality, quantity, and the resource site is important enough to include in the inventory.

The second step is the identification of conflicting non-open space uses for a given resource or resource site. If no conflicting uses are identified, the resource must be protected. If conflicting uses are identified, an evaluation of the environmental, social, economic and energy consequences of allowing the conflicting use is required. The level of information that the County must provide concerning possible conflicting uses should be adequate to explain why the County chose to protect, or not protect a given resource.

The third step is the development of a program to achieve the purpose of the Open Space Goal. The type of program to be developed is dependent on whether the resource site is to be protected from all conflicting uses, or identified conflicting uses to be fully allowed, or conflicting uses of the resource site are limited through plan policy and zoning ordinance provisions.

Relationshjip of Goal #5 to the Estuarine Resources Goal #16, and the Coastal Goal #17

Goal #5 lists twelve types of resources that are subject to inventory and possible protection. A number of these resources are also addressed by the Estuarine Resources Goal and the Coastal Shoreland Goal. Thus, when one of the twelve Goal #5 resources is located in either an estuarine or coastal shoreland area, the appropriate resource inventory and protection requirements of the Estuarine Resources Goal or the Coastal Shorelands Goal are applied. Therefore, these resources are not covered by this element of the Comprehensive Plan.

The following describes the scope of the Goal #5 inventory for each of the identified resources:

1) Open Spaces - all land and water areas
2) Mineral/Aggregate - all land and water areas
3) Energy Sources - all land and water areas
4) Fish/Wildlife Habitat - all land outside of the County's estuarine areas

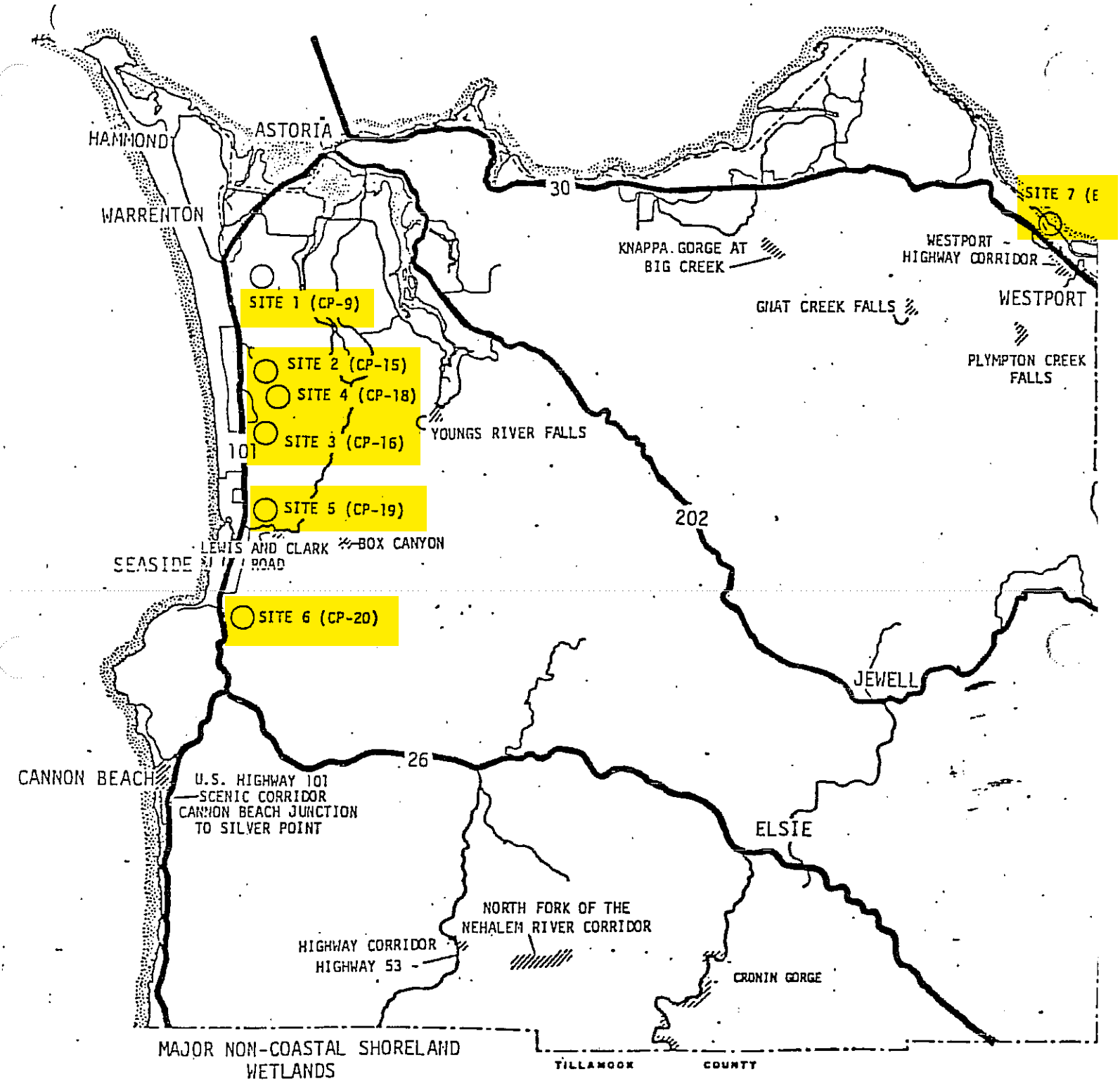
5) Ecologically significant Natural Areas - all land outside the Coastal Shoreland planning area
6) Scientifically significant Natural Areas - all land areas
7) Outstanding Scenic Views - all lands outside of the Coastal Shoreland planning area.
8) Watersheds - all land areas
9) Groundwater resources - all land areas
10) Wetlands - all lands outside of the Coastal Shoreland planning area
11) Historical/Archeological Sites - all areas
12) Wilderness - all land and water areas
13) Oregon Recreation Trails - all land areas
14) Wild and Scenic Waterways - all land areas

Methodology of the Open Space, Scenic and Historic Areas, and Natural Resources Inventory

The following procedure was used in undertaking the Clatsop County Open Space inventory and in the establishment of a program to protect identified open space sites resources:

1) Determination of the elements of each resource category to be inventoried. The completeness of each resource category to be verified with appropriate state agencies.
2) Selection of inventory sources.
3) Development of a preliminary resource list based on the inventory sources.
4) Evaluation of the elements on the preliminary resource list to determine whether their location, quality and quantity warrants inclusion in the Open Space inventory. In general, an attempt was made to gather sufficient information on the resource at this time, rather than deferring the required decisions to a later date.
5) Establishment of the final inventory lists.
6) Determination of conflicting uses, if any, for the resources on the final inventory list. Where conflicting uses were identified, an evaluation of the enviromental, social, energy and economic impacts of allowing these conflicting uses was undertaken.
7) Development of a program to achieve the objective of the Open Space goal. This includes a determination of which resources to protect and the appropriate method of resource protection. Generally, where they were found to be adequate, existing state, or federal programs and regulations were relied on to protect resources. Additional local protection was developed only for those resources for which existing regulation was found to be inadequate to meet the intent of the Goal.

Scenic Conservancy Areas and Wetlands



Information pertaining to the water areas, watersheds and groundwater resources of Clatsop County are discussed in the Air, Water, and Land Resources Quality Background Report and the Public Facilities Background Report. Where appropriate, the Community Plans element of the Comprehensive Plan also contain information on these resources.

WETLANDS

The Statewide Planning Goals define wetland as "land areas where excess water is the dominant factor determining the nature of soil development and the types of plant and animal communities living at the soil surface. Wetland soils retain sufficient moisture to support aquatic or semi-aquatic plant life. In marine and estuarine areas, wetlands are bounded at the lower extreme by extreme low water; in fresh-water areas, by a depth of six feet. The area below wetlands are submerged lands".

Clatsop County contains substantial amounts of wetlands. The majority of these wetlands are either estuarine wetlands, which are covered by the Goal #16 element of the County's Plan, or wetlands found in the Coastal Shoreland which are covered in the Goal #17 element of the County's Plan.

In addition, three other types of freshwater wetlands were identified. The first and most important group consisting of seven major non-coastal shoreland wetlands. These sites are found either immediately east of the "coastal shoreland wetlands" of the Clatsop Plains, or along the Columbia River in areas that are defined to be outside of Oregon's Coastal Zone. The following are descriptions taken from Significant Shoreland and Wetland Habitats in the Clatsop Plains, by Duncan Thomas.

SITE 1 (CP9)

Location: Along the Skipanon River, south of Warrenton and SE of Hwy. 101 realignment.

Size: About 98 acres.

Wetland Vegetation Types: 5, 8, 11 (dry var.) 9.

Riparian Vegetation: About 2,000 ft. x 50 ft. along the Skipanon, north of the wetlands.

Soils: Brallier Muck.

Site Description: This peat bog site has reverted to native wetland vegetation. The Skipanon River, which passes through this site, supports populations of warm water fish. The swamps to the east of the Skipanon are extensively used by elk. The bog area is important habitat for wetland avifauna, and probably supports populations of aquatic furbearers. The site includes an osprey nest.

SITE 2 (CP 13)

Location: Taylor Lake, north of Cullaby Lake.

Size: About 17 acres.

Wetland Vegetation Types: 1A, 1B, 9, 10, 8.

Riparian Vegetation: 2,500 feet x 50 feet wide around the lake.

Soils: Brallier muck, lake sediments.

Site Description: This fairly deep, clear lake supports populations of warm-water game fish and has some use for sport fishing. A forested swamp to the SW within 500 feet of the lake was judged to be significant wetland, and the lake is lined with a forested riparian zone. The forested wetland area is used by deer and elk, aquatic furbearing mammals, and is likely to be important habitat for breeding and feeding of wetland birds. There is also a small marshy area to the east of the lake. The lake was described as Nature Conservancy Site #15 for Clatsop County and the NC also described the surrounding hillside as part of the site. Except for the 50' riparian zone, this hillside was not included in this study, since an evaluation of the natural resources of Clatsop Ridge was beyond its scope.

SITE 3 (CP 14)

Location: Cullaby Lake.

Size: 280 acres.

Vegetation Type: 1A, 5, 8, 9, 11 (dry var.).

Riparian Vegetation: 20,000 feet x 50' wide, particularly on the eastern side of Cullaby Lake.

Soil: Brallier muck, lake sediments.

Site Description: Cullaby Lake has the largest area of any coastal lake in the Clatsop Plains: it appears to be the remnant of a much larger lake or lagoon which has been filling in with peat since its separation from the ocean. It currently has a high level of recreational usage, and supports a recreational warm-water game fishery. It has some value to overwintering and breeding waterfowl. The south end of the lake was described as having a great variety of avifauna by the Nature Conservancy (Clatsop County Site #16). In addition, peat bogs on the western side of the lake within the area were found to be significant. Some of these previously supported agriculture, probably cranberry growing, but have since reverted to scrub or emergent wetlands and are used extensively by wetland avifauna and by raptors.

Values: Warm-water game fishery; waterfowl and wetland birds.

Management: The natural values of the lake should be protected in order to maintain its high recreational value. The riparian vegetation, fringing marshes and significant bog areas should all be protected.

SITE 4 (CP15)

Location: Between Cullaby Lake and Hwy. 101.

Size: About 230 acres.

Wetland Vegetation Types: 5, 8, 9, 11 (dry var.).

Riparian Vegetation: None.

Soils: Brallier Muck.

Site Description: This large peat bog site is a westerly extension of the significant peat bog areas which line the west side of Cullaby Lake. The peat which has filled in a former lake basin has powerful water-retaining properties, and the surface is saturated for much of the year. It can, however, be used for agriculture, particularly cranberry growing, and some of this site appears to have been so-used in the past. It has now reverted to native wetland vegetation. These peat bogs are important to wetland animals, particularly avifauna, and the southern end of this site is extensively used by elk.

Values: Wetland animals, natural semi-natural peat bog wetlands.

SITE 5 (CP16)

Location: east of Hwy. 101 from the south end of the Dellmoor Loop Road south to Palmberg Gravel Works.

Size: about 380 acres (including 15 acres in Gearhart - G3).

Wetland Vegetation Types: 4, 5, 8, 9, 11 (dry var.) 12, 13.

Riparian Vegetation: None.

Soils: Brallier Muck.

Site Description: This site is the best example of a Coastal Peat Bog on Brallier Muck in the County. The northern end approaches the raised bog condition, dominated in places by the moss, Sphagnum, a rare community in this area, and also by various shrubs and stunted trees. To the south, the site becomes much wetter and considerable areas are at least seasonably inundated. The southern half in particular is used by breeding waterfowl, while the central and northern portions have heavy elk use. There is a great diversity of avifauna throughout, including many wetland species despite the scarcity of open water. The site shows evidence of former cultivation, but has since reverted to native wetland vegetation.

Values: Wetland animals, particularly avifauna and elk. The site has high scientific and educational value as a fine example of a peat bog: the past glacial vegetation history of the area is probably contained in fossils in the deep peat.

SITE 6 (CP 18)

Location: 2 small lakes and adjacent wetlands on Cullably Creek, 4000 ft. south of Cullaby Lake.

Size: 160 acres.

Wetland Vegetation Types: 1B, 4, 5, 8, 9, 2.

Riparian Vegetation: about 4,000 ft. x 50 ft. along Cullaby Creek.

Soils: Brallier Muck.

Site Description: This area has great habitat diversity, with open water, marsh and swamp habitats all well-represented. The swamp/upland boundary to the NE of this site was not accurately determined. The lakes are connected to Cullaby Lake via Cullaby Creek and support populations of warm-water game fish. The surrounding marshes and swamps are important to breeding waterfowl and other wetland birds, and have some importance to overwintering waterfowl. The swamp areas are extensively used by elk. The upper part of Cullaby Creek, south of the wetlands adjacent to Cullaby Lake, has about 40 acres of scrub and forested swamps. Since this area is adjacent to the Cullaby Lake wetlands area and shares similar natural values, it is logical to manage the 2 areas as a single unit (see quad sheet).

Values: warm-water fish, breeding wetland; birds, habitat diversity.

SITE 7 (CP19)

Location: North of the road to the Crown site, up to the Palmberg Gravel Co. east of Hwy. 101 and Seaside airport.

Size: about 130 acres (5 acres in Seaside UGB, 9 acres in Gearhart UGB-G4).

Wetland Vegetation Types: 5, 8, 9, also marshes dominated by cat-tails and reed canary grass.

Riparian Vegetation: None.

Soils: Brallier Muck.

Site Description: A system of very wet marshes lining Mill Creek with adjacent swampy areas to the east. These marshes were apparently formed in the past, but the water table has subsequently risen so that the area now supports native marsh vegetation and swamp. The site has a large area of emergent wetland, and is therefore suitable habitat for the breeding of wetland birds, including waterfowl such as mallard, while wood-duck probably nest in the swamps. The area is also extensively used by elk. Populations of aquatic furbearing mammals are probably present.

Values: A large area of emergent and forested wetland, probably an important site for wetland birds and for elk.

Location: Southeast of Seaside; south of the Millponds, east of Hwy 101.

Size: about 132 acres (27 in Seaside UGB - site #S2).

Wetland Vegetation Types: 1B, 2, 5, 8, 9.

Riparian Vegetation: None.

Soils:

Site Description: This headwater swamp on the Neawanna is disected by several small creeks, which support a small natural run of Coho salmon (Maine). The swamps, which also act as riparian zones around these creeks and the Millponds, are important elk habitat, and are important habitat for nesting and feeding wetland bird species, probably including some waterfowl breeding.

Values: Natural wetland values: wetland avifauna, fish, including salmon spawning.

SITE 9 (EC35)

Location: Driscoll Slough marshes, between Wauna Mill and Westport.

Size: about 360 acres.

Wetland Vegetation Types: tidal and non-tidal emergent marshes, blackberry swamp, spruce swamp, willow swamp.

Riparian Vegetation: about 3,500 ft. along the Columbia River.

Soils:

Site Description: These tidal swamps, supporting natural climax floodplain vegetation, are one of the last remnants of a vast system of tidal marshes and swamps which once covered many thousands of acres in Columbia County and the eastern end of Clatsop County as far as Bradley Park. The loss of these and similar floodplain areas was a major reason for the decline of the Columbia White-tail deer. In the Upper Estuary area, in which this site is included, a CREST report notes that 80% of the tidal swamps have been destroyed in the past century. The swamps are laced with tidal sloughs, except for a small area in the NE corner which is cut off from tidal circulation by fills. These tide channels, fringed by forested swamps, are productive warm-water fish habitat, and are also likely to be an important nursery area for juvenile fall Chinook salmon. The area is important to waterfowl and marsh birds and probably supports breeding populations of mallard and wood-duck. A Washington Game Department report identified this habitat type as being of primary importance to aquatic furbearers, such as muskrat, nutria, beaver, river otter, and raccoon. Disturbance at this site includes extensive filling for industrial sites and road and railroad causeways.

The second group of wetlands are those found in conjunction with rivers and lakes. These wetlands are generally identified on maps that were prepared as part of the National Wetlands Inventory undertaken by the U.S. Department of Interior. The County's definition of riparian vegetation has been defined broadly enough to include this group of wetlands. (A more detailed description is contained in the Fish and Wildlife Habitat section of this report.)

The third group of wetlands consists of isolated wetlands, not associated with either a river or lake, that are located on forested uplands. These wetlands are identified on maps that were done as part of the National Wetlands Inventory undertaken by the Department of Interior. These wetlands are few in number and are generally very small in size (one acre or less).

" No conflicting uses have been identified for sites 1 and 2. These sites are unsuitable for rural residential development because of soil characteristics which make the utilization of subsurface wastewater disposal systems infeasible." *

" Sites 3, 4, 5 and 6 (CP 14, CP 15, CP 16, CP 18) do have potential conflicting uses over portions of the sites. Cranberries have been cultivated in the Delmoor Loop Road area for some time. Cranberry cultivation potentially conflicts with wetland preservation. Specifically, such conflicts include removal of wetland vegetation at the bog site, introduction of agricultural chemicals into adjacent wetland areas, oxidation and decomposition of peat soils, alteration of water drainage patterns and water table levels, and disruption of wildlife habitat. An analysis of the economic, social, environmental and energy consequences of cranberry cultivation on these sites follows." *

"A. Economic Consequences.*

1. Benefits:

a. Cranberry production is an intensive agricultural operation which produces income for bog owners and their employees. Cranberry production is a more intensive land use than other agricultural uses found in the county.

b. Cranberry production results in a higher assessed valuation for the property than would be the case if it were left in

* Amended Ord. 84-5, April 11, 1984

wetland, or if it were in another agricultural land use, thus enhancing the County tax base. Fully productive cranberry bogs are assessed as farm land at about $1,400 per acre for the 1983 tax year, while undeveloped wetland areas in general are assessed at about $500 to $600 per acre.

c. Expanded cranberry production in the Delmoor Loop area would strengthen the cranberry sector and both strengthen and diversify the County agricultural economy.

2. Costs:

a. Conversion of wetlands to cranberry production or to other agricultural uses could result in the loss of habitat used by certain economically important species, including elk, fur-bearing animals and waterfowl. This habitat loss could result in a corresponding decline in these animal populations, thus drawing fewer hunters and trappers to Clatsop County. The result would be a slight economic loss for innkeepers, sporting goods store owners, and other merchants who serve hunters, and to individuals engaged in commercial trapping.

b. Removal of wetland vegetation and installation of drainage ditches around bogs may result in the gradual oxidation and decomposition of peat soils on the site. Decomposed peats lose their water retention capabilities, thus increasing the potential for flooding in the area. Wetland soils tend to hold water, thus lowering peak flood elevation.

c. New cranberry bogs may need to be fenced for protection from elk damage. As elk are fenced out of customary feeding areas, they may seek new feeding areas. This may result in increased elk browse damage on adjacent pastures and residential landscaping."

"B. Social Consequences.*

There do not appear to be any significant identifiable social costs or benefits associated with the conversion of wetlands to cranberry bogs."

"C. Environmental Consequences.*

1. Costs

a. Wetland area drainage patterns may be altered by converting wetlands to cranberry bogs. Because natural drainage in this

Amended Ordinance 84-5, April 11, 1984

area has been greatly altered in the past, it is not clear how further alteration will affect wetlands.

b. Water quality may be degraded as a result of contamination by agricultural chemicals associated with cranberry production (herbicides, fungicides, insecticides and fertilizers). Such contamination, if it occurs, would likely occur both on- and off-site.

c. Conflicts with elk may arise if new bogs are not properly fenced.

d. Habitat destruction may result in the decline of certain animal species dependent upon wetland areas.

e. Oxidation and decomposition of peat soils may occur over time because of drainage control in cranberry bogs.

f. The water table may be altered at the site and on adjacent lands by ditching, irrigation and drainage.

2. Benefits.

a. Cranberry production generally preserves high groundwater levels on adjacent wetlands to a greater degree than other agricultural uses.

b. If cranberry production is abandoned, as has occured before in the Delmoor Loop Road area, cranberry bogs will revert back to significant wetlands."

"D. Energy Consequences.*

Energy consequences are considered as costs if they appear to result in a net increase in energy consumption in Clatsop County. Beneficial energy consequences result in net energy conservation.

1. Costs

a. Operation of harvesting equipment consumes energy in the form of gasoline or diesel fuel.

b. Pumping water for frost and heat protection, for irrigation and for harvest flooding consumes energy in the form of electricity.

2. Benefits.

There do not appear to be any significant identifiable energy benefits associated with the conversion of wetlands to cranberry bogs."

Amended Ordinance 84-5, April 11, 1984

An additional* conflicting use has been identified for Site 6. Clatsop County has issued a permit for gravel extraction from the site. The permit did not specify where within the general area the gravel extraction would take place. Allowing the gravel extraction operation to proceed will ultimately destroy about 10 acres of wetlands; thus reducing the overall habitat value of the site. Not allowing the gravel extraction operation would limit the utilization of a resource that is in short supply in the County. The County will protect a 10 acre site for gravel extraction within Freshwater Wetland Site 6. The remainder of the wetland will be protected by a freshwater wetland zone.

" Cranberry cultivation shall be permitted in Goal 5 wetlands in the Delmoor Loop Road area only. This area is described on Map 1 in the Delmoor Loop Area Wetlands Study, adopted here by reference."*
(See Appendix 'A')

A conflicting use has been identified for Site 7. The site has a high degree of industrial development potential. The western portion of the site, adjacent to the present Crown Zellerbach Wauna Mill, represents an opportunity for plant expansion. While the eastern portion of the site, in Dant and Russell ownership, with its excellent access to the main Columbia River channel, is rated an important site for water-dependent development. The site has excellent transportation access. The Burlington Northern Railroad line transects the property and U.S. Highway 30 abuts the property to the south.

Permitting industrial development of Site 7 would result in the destruction of one of the last remnants of the system of tidal marshes that used to extend along this portion of the Columbia River. The wildlife that is dependent on this type of habitat would be displaced. Conversely, if the site is not allowed to develop for industrial purposes, the County would lose one of its prime industrial sites. The County will allow industrial development of Site 7. However, policies will be developed to protect some of the site's wetland riparian characteristics.

* Amended Ord 84-5 April 16, 1984

Conflicting uses, and the consequences of these conflicting uses, for the second group of wetlands, as well as appropriate protective measures are described in the Fish and Wildlife section discussion concerning riparian vegetation.

Forest management practices, including logging operations, have been identified as activities that may conflict with the third group of small isolated forested wetlands. Because of their size, however, these wetlands are not considered to have significant wetland values. Therefore the County is permitting forest management operations.

WILDERNESS AREAS

The Oregon Islands Wilderness is a unit of the National Wilderness Preservation System established under the Wilderness Act. The Oregon Islands Wilderness contains several islands, rock and stacks that are located off the shore of Clatsop County. These islands are: Tillamook Head Rocks, Bird Rocks, Sea Lion Rocks, Haystack Rock, and Castle Rock. In addition, the following islands are to be added to the wilderness: Unnamed Rocks located in Section 12, Township 5N, Range 10W, Jocky Cap, Tim Rock, and Gull Rock.

The primary purpose of the refuge is to provide undeveloped undisturbed nesting habitat for sea birds. Access to the islands is restricted to scientific research under special permit. Management is limited to biological study and wildlife protection.

There are no conflicting uses for these rocks. They have been designated Natural in the Comprehensive Plan and Natural Shoreland in the Land and Water Use and Development Ordinance.

There are no other wilderness areas in Clatsop County.

HISTORIC SITES

The Goal defines historic areas as "lands with sites, structures, and objects that have local, regional, statewide or national historic significance".

Three sources were used for establishing the historic resources in Clatsop County: buildings and sites listed on the National Register of Historic Places; buildings and sites listed on the State of Oregon Inventory of Historic Sites and Buildings; and buildings and sites identified as being important by the local Citizen Advisory Committees.

A total of 19 sites and buildings have been identified: one on the National Register of Historic Places; nine on the State of Oregon Inventory of Historic Sites and Buildings; and nine by the Citizen Advisory Committees.

A number of historic sites and buildings are within the Coastal Shoreland planning area. Where this is the case, a reference is made in the description of the site or building.

Wetlands

1. The County will protect identified significant freshwater wetlands, for which no conflicting uses have been identified, from incompatible uses.

2. A ten acre site within Wetland Site 6 shall be provided for gravel extraction.

3. The following requirements shall apply to Wetland Site 7 (which also contains white-tail deer habitat).
   a. All industrial development shall be located north of the railroad right-of-way. The area between the railroad right-of-way and U.S. Highway 30 shall be designated for protection of its wetland characteristics.
   b. Development of land adjacent to Driscoll Slough shall be carried out in a way that will minimize the alteration of riparian vegetation, degradation of water quality and stream sedimentation. Proposed development will be evaluated against the Department of Fish and Wildlife's management objectives of maintaining vegetative cover, particularly riparian vegetation, and the maintenance of corridors that provide for deer movement between habitat areas. Construction of a bridge or other transportation access across the slough shall be the minimum necessary to accomplish the project. Piling is preferred to filling for any access corridor across Driscoll Slough.
   c. Industrial development on the eastern portion of the site shall be designed to minimize or avoid the removal of riparian vegetation along Westport Slough. Riparian vegetation removal shall be permitted where direct access to the water is required.
   d. Filling of the site shall not be permitted until a specific development proposal has been reviewed and approved by the County.

Natural Areas

1. Significant natural and scientific areas and scenic sites should be set aside for preservation and managed so as to protect the unique characteristics of the area.

2. The County will cooperate with appropriate State and Federal agencies and private groups to ensure that examples of the full range of Oregon's natural ecosystem are preserved for future study and enjoyment.

3. A 1/4 acre site, located on the portion of Onion Peak designated Natural, shall be reserved for a potential radio transmission facility. The siting and placement of such a facility shall minimize impacts on the area's natural qualities.

4. The Natural designation for Sugar Loaf Mountain shall not affect the continued operating and maintenance of the radio transmittor facility located there.

Water Resources

1. The County will cooperate and coordinate with State and Federal agencies in assuring the maximum beneficial use of all water areas in the County.

2. The County will coordinate its actions with water quality planning and implementation activities carried out by such state agencies as the Department of Environmental Quality, the Soil and Water Conservation Commission, the Department of Forestry, and the Department of Water Resources.

3. Where municipalities or water districts have identified possible conflicts between forest management practices and the maintenance of the integrity of their watershed, the County encourages these to work with the Northwest Region Forest Practices Committee in the development of amendments to the Oregon Forest Practices Act that will provide needed modification and protection of state licensed water supply systems.

4. The County encourages the development of community dock facilities rather than individual piers or docks.

Historic Sites

1. The County encourages the State Parks Division, when developing a master program for Ecola Park, to give proper recognition to the historical activities that occurred there.

2. The County encourages the State Highway Division to relocate the Cannon Beach Cannon at a suitable new location should Highway 101 widening ever make the present site unsuitable.

3. The County Parks Department, to the extent funding permits, will continue to maintain the Lindgren House.

WATERSHEDS AND GROUNDWATER RESOURCES

INVENTORY: State-wide Planning Goal 5 requires that the County inventory its watersheds and groundwater resources, including information on the location, quality and quantity of each resource. This section provides information as to the location of the major watershed systems in the County. This information is summarized in tabular form below, and on Map _____, included by reference. Clatsop County does not presently have information on the quality and quantity of the watersheds listed below. The rest of the Goal 5 process for these watersheds will be delayed, pursuant to OAR 660-16-000(1B).

Reference Number	Major Waterway(s)	Approximate Acreage
1.	Plympton Creek/West Creek	8,900
2.	Hunt Creek	5,100
3.	Blind Slough/Grizzley Slough	24,700
4.	Big Creek/Little Creek/Fertile Valley Creek	29,000
5.	Mary's Creek/Bear Creek/Ferris Creek	14,500
6.	John Day River	4,400
7.	Young's River/Klaskanine River/ Walluski River	80,300
8.	Lewis & Clark River	42,800
9.	Neawanna Creek/Thompson Creek	4,700
10.	Canyon Creek	2,100
11.	Necanicum River	30,300
12.	Nehalem River	213,200
13.	Elk Creek	15,200
14.	Arch Cape Creek/Asbury Creek/ Shark Creek/Fall Creek/ Red Rock Creek	7,100
15.	(This drainage area is almost entirely within the City of Astoria)	
16.	Clatsop Plains — see below	

O. These small or minor watersheds are not included. They consist of small coastal creeks and small creeks draining into the Columbia River. They are not included at this time due to lack of information.

The Clatsop Plains area (Map _____, number 16) consists of two major waterways: the Skipanon River, which drains to the north, and Neacoxie Creek, which drains to the south. The Clatsop Plains area is not notable for its watersheds: it is, however, notable for its groundwater resources.

Clatsop County has complete inventory information for the Clatsop Plains groundwater resource. This information is found in two documents:

R.W. Beck and Associates. Clatsop Plains Ground Water Protection Plan: Summary Report and Environmental Assessment. March, 1982.

Sweet, Edwards and Associates. Clatsop Plains Ground Water Protection Plan: Ground Water Evaluation Report. December, 1981.

These two reports identify conflicting uses, (2) determine the economic, social, environmental and energy consequences of allowing the conflicting uses, and (3) suggest policies to restrict conflicting uses in order to protect the groundwater resource. These reports are included here by reference. The County Board of Commissioners adopted the proposals in these reports on the 24th of March, 1982. The Environmental Quality Commission adopted regulations pursuant to these recommendations on 27 August, 1982 (revised 15 October, 1982).

Oregon's Statewide Planning Goals & Guidelines

GOAL 5: NATURAL RESOURCES, SCENIC AND HISTORIC AREAS, AND OPEN SPACES

OAR 660-015-0000(5)
(Please Note: Amendments Effective 08/30/96)

To protect natural resources and conserve scenic and historic areas and open spaces.

Local governments shall adopt programs that will protect natural resources and conserve scenic, historic, and open space resources for present and future generations. These resources promote a healthy environment and natural landscape that contributes to Oregon's livability.

The following resources shall be inventoried:

a. Riparian corridors, including water and riparian areas and fish habitat;
b. Wetlands;
c. Wildlife Habitat;
d. Federal Wild and Scenic Rivers;
e. State Scenic Waterways;
f. Groundwater Resources;
g. Approved Oregon Recreation Trails;
h. Natural Areas;
i. Wilderness Areas;
j. Mineral and Aggregate Resources;
k. Energy sources;
l. Cultural areas.

Local governments and state agencies are encouraged to maintain current inventories of the following resources:

a. Historic Resources;
b. Open Space;
c. Scenic Views and Sites.

Following procedures, standards, and definitions contained in commission rules, local governments shall determine significant sites for inventoried resources and develop programs to achieve the goal.

GUIDELINES FOR GOAL 5

A. PLANNING

1. The need for open space in the planning area should be determined, and standards developed for the amount, distribution, and type of open space.

2. Criteria should be developed and utilized to determine what uses are consistent with open space values and to evaluate the effect of converting open space lands to inconsistent uses. The maintenance and development of open space in urban areas should be encouraged.

3. Natural resources and required sites for the generation of energy (i.e. natural gas, oil, coal, hydro, geothermal, uranium, solar and others) should be conserved and protected;

reservoir sites should be identified and protected against irreversible loss.

4. Plans providing for open space, scenic and historic areas and natural resources should consider as a major determinant the carrying capacity of the air, land and water resources of the planning area. The land conservation and development actions provided for by such plans should not exceed the carrying capacity of such resources.

5. The National Register of Historic Places and the recommendations of the State Advisory Committee on Historic Preservation should be utilized in designating historic sites.

6. In conjunction with the inventory of mineral and aggregate resources, sites for removal and processing of such resources should be identified and protected.

7. As a general rule, plans should prohibit outdoor advertising signs except in commercial or industrial zones. Plans should not provide for the reclassification of land for the purpose of accommodating an outdoor advertising sign. The term "outdoor advertising sign" has the meaning set forth in ORS 377.710(23).

B. IMPLEMENTATION

1. Development should be planned and directed so as to conserve the needed amount of open space.

2. The conservation of both renewable and non-renewable natural resources and physical limitations of the land should be used as the basis for determining the quantity, quality, location, rate and type of growth in the planning area.

3. The efficient consumption of energy should be considered when utilizing natural resources.

4. Fish and wildlife areas and habitats should be protected and managed in accordance with the Oregon Wildlife Commission's fish and wildlife management plans.

5. Stream flow and water levels should be protected and managed at a level adequate for fish, wildlife, pollution abatement, recreation, aesthetics and agriculture.

6. Significant natural areas that are historically, ecologically or scientifically unique, outstanding or important, including those identified by the State Natural Area Preserves Advisory Committee, should be inventoried and evaluated. Plans should provide for the preservation of natural areas consistent with an inventory of scientific, educational, ecological, and recreational needs for significant natural areas.

7. Local, regional and state governments should be encouraged to investigate and utilize fee acquisition, easements, cluster developments, preferential assessment, development rights acquisition and similar techniques to implement this goal.

8. State and federal agencies should develop statewide natural resource, open space, scenic and historic area plans and provide technical assistance to local and regional agencies. State and federal plans should be reviewed and coordinated with local and regional plans.

9. Areas identified as having non-renewable mineral and aggregate resources should be planned for interim,

transitional and "second use" utilization
as well as for the primary use.

Land Conservation and Development Department

Chapter 660

Division 16
REQUIREMENTS AND APPLICATION PROCEDURES FOR COMPLYING WITH STATEWIDE GOAL 5

660-016-0000
Inventory Goal 5 Resources

(1) The inventory process for Statewide Planning Goal 5 begins with the collection of available data from as many sources as possible including experts in the field, local citizens and landowners. The local government then analyzes and refines the data and determines whether there is sufficient information on the location, quality and quantity of each resource site to properly complete the Goal 5 process. This analysis also includes whether a particular natural area is "ecologically and scientifically significant," or an open space area is "needed," or a scenic area is "outstanding," as outlined in the Goal. Based on the evidence and local government's analysis of those data, the local government then determines which resource sites are of significance and includes those sites on the final plan inventory.

(2) A "valid" inventory of a Goal 5 resource under subsection (5)(c) of this rule must include a determination of the location, quality, and quantity of each of the resource sites. Some Goal 5 resources (e.g., natural areas, historic sites, mineral and aggregate sites, scenic waterways) are more site-specific than others (e.g., groundwater, energy sources). For site-specific resources, determination of location must include a description or map of the boundaries of the resource site and of the impact area to be affected, if different. For non-site-specific resources, determination must be as specific as possible.

(3) The determination of quality requires some consideration of the resource site's relative value, as compared to other examples of the same resource in at least the jurisdiction itself. A determination of quantity requires consideration of the relative abundance of the resource (of any given quality). The level of detail that is provided will depend on how much information is available or "obtainable."

(4) The inventory completed at the local level, including options in subsections (5)(a), (b), and (c) of this rule, will be adequate for Goal compliance unless it can be shown to be based on inaccurate data, or does not adequately address location, quality or quantity. 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.

(5) Based on data collected, analyzed and refined by the local government, as outlined above, a jurisdiction has three basic options:

(a) Do Not Include on Inventory: Based on information that is available on location, quality and quantity, the local government might deter mine that a particular resource site is not important enough to warrant inclusion on the plan inventory, or is not required to be included in the inventory based on the specific Goal standards. No further action need be taken with regard to these sites. The local government is not required to justify in its comprehensive plan a decision not to include a particular site in the plan inventory unless challenged by the Department, objectors or the Commission based upon contradictory information;

(b) Delay Goal 5 Process: When some information is available, indicating the possible existence of a resource site, but that information is not adequate to identify with particularity the location, quality and quantity of the resource site, the local government should only include the site on the comprehensive plan inventory as a special category. The local government must express its intent relative to the resource site through a plan policy to address that resource site and proceed through the Goal 5 process in the future. The plan should include a time-frame for this review. Special implementing measures are not appropriate or required for Goal 5 compliance purposes until adequate information is available to enable further review and adoption of such measures. The statement in the plan commits the local

government to address the resource site through the Goal 5 process in the post-acknowledgment period. Such future actions could require a plan amendment;

(c) Include on Plan Inventory: When information is available on location, quality and quantity, and the local government has determined a site to be significant or important as a result of the data collection and analysis process, the local government must include the site on its plan inventory and indicate the location, quality and quantity of the resource site (see above). Items included on this inventory must proceed through the remainder of the Goal 5 process.

Statutory/Other Authority: ORS 183 & 197
Statutes/Other Implemented: ORS 197.040
History:
LCDC 3-1990, f. & cert. ef. 6-6-90
LCD 7-1981, f. & ef. 6-29-81
LCD 5-1981(Temp), f. & ef. 5-8-81

660-016-0005
Identify Conflicting Uses

(1) It is the responsibility of local government to identify conflicts with inventoried Goal 5 resource sites. This is done primarily by examining the uses allowed in broad zoning districts established by the jurisdiction (e.g., forest and agricultural zones). A conflicting use is one which, if allowed, could negatively impact a Goal 5 resource site. Where conflicting uses have been identified, Goal 5 resource sites may impact those uses. These impacts must be considered in analyzing the economic, social, environmental and energy (ESEE) consequences:

(2) Preserve the Resource Site: If there are no conflicting uses for an identified resource site, the jurisdiction must adopt policies and ordinance provisions, as appropriate, which ensure preservation of the resource site.

(3) Determine the Economic, Social, Environmental, and Energy Consequences: If conflicting uses are identified, the economic, social, environmental and energy consequences of the conflicting uses must be determined. Both the impacts on the resource site and on the conflicting use must be considered in analyzing the ESEE consequences. The applicability and requirements of other Statewide Planning Goals must also be considered, where appropriate, at this stage of the process. A determination of the ESEE consequences of identified conflicting uses is adequate if it enables a jurisdiction to provide reasons to explain why decisions are made for specific sites.

Statutory/Other Authority: ORS 183 & 197
Statutes/Other Implemented: ORS 197.040
History:
LCDD 3-2004, f. & cert. ef. 5-7-04
LCD 7-1981, f. & ef. 6-29-81
LCD 5-1981(Temp), f. & ef. 5-8-81

660-016-0010
Develop Program to Achieve the Goal

Based on the determination of the economic, social, environmental and energy consequences, a jurisdiction must "develop a program to achieve the Goal." Assuming there is adequate information on the location, quality, and quantity of the resource site as well as on the nature of the conflicting use and ESEE consequences, a jurisdiction is expected to "resolve" conflicts with specific sites in any of the following three ways listed below. Compliance with Goal 5 shall also be based on the plan's overall ability to protect and conserve each Goal 5 resource. The issue of adequacy of the overall program adopted or of decisions made under sections (1), (2), and (3) of this rule may be raised by the Department or objectors, but final determination is made by the Commission, pursuant to usual procedures:

(1) Protect the Resource Site: Based on the analysis of the ESEE consequences, a jurisdiction may determine that the resource site is of such importance, relative to the conflicting uses, and the ESEE consequences of allowing conflicting uses are so great that the resource site should be protected and all conflicting uses prohibited on the site and possibly within the impact area identified in OAR 660-016-0000(5)(c). Reasons which support this decision must be presented in the comprehensive plan, and plan and zone designations must be consistent with this decision.

(2) Allow Conflicting Uses Fully: Based on the analysis of ESEE consequences and other Statewide Goals, a jurisdiction may determine that the conflicting use should be allowed fully, notwithstanding the possible impacts on the resource site. This approach may be used when the conflicting use for a particular site is of sufficient importance, relative to the resource site. Reasons which support this decision must be presented in the comprehensive plan, and plan and zone designations must be consistent with this decision.

(3) Limit Conflicting Uses: Based on the analysis of ESEE consequences, a jurisdiction may determine that both the resource site and the conflicting use are important relative to each other, and that the ESEE consequences should be balanced so as to allow the conflicting use but in a limited way so as to protect the resource site to some desired extent. To implement this decision, the jurisdiction must designate with certainty what uses and activities are allowed fully,

what uses and activities are not allowed at all and which uses are allowed conditionally, and what specific standards or limitations are placed on the permitted and conditional uses and activities for each resource site. Whatever mechanisms are used, they must be specific enough so that affected property owners are able to determine what uses and activities are allowed, not allowed, or allowed conditionally and under what clear and objective conditions or standards. Reasons which support this decision must be presented in the comprehensive plan, and plan and zone designations must be consistent with this decision.

Statutory/Other Authority: ORS 183 & 197
Statutes/Other Implemented: ORS 197.040
History:
LCDD 3-2004, f. & cert. ef. 5-7-04
LCD 7-1981, f. & ef. 6-29-81
LCD 5-1981(Temp), f. & ef. 5-8-81

660-016-0015
Post-Acknowledgment Period

(1) All data, findings, and decisions made by a local government prior to acknowledgment may be reviewed by that local government in its periodic update process. This includes decisions made as a result of OAR 660-016-0000(5)(a), 660-016-0005(1), and 660-016-0010. Any changes, additions, or deletions would be made as a plan amendment, again following all Goal 5 steps.

(2) If the local government has included in its plan items under OAR 660-016-0000(5)(b), the local government has committed itself to take certain actions within a certain time frame in the post-acknowledgment period. Within those stated time frames, the local government must address the issue as stated in its plan, and treat the action as a plan amendment.

Statutory/Other Authority: ORS 183 & 197
Statutes/Other Implemented: ORS 197.040
History:
LCD 7-1981, f. & ef. 6-29-81
LCD 5-1981(Temp), f. & ef. 5-8-81

660-016-0020
Landowner Involvement

(1) The development of inventory data, identification of conflicting uses and adoption of implementing measures must, under Statewide Planning Goals 1 and 2, provide opportunities for citizen involvement and agency coordination. In addition, the adoption of regulations or plan provisions carries with it basic legal notice requirements. (County or city legal counsel can advise the planning department and governing body of these requirements.) Depending upon the type of action involved, the form and method of landowner notification will vary. State statutes and local charter provisions contain basic notice requirements. Because of the nature of the Goal 5 process as outlined in this paper it is important to provide for notification and involvement of landowners, including public agencies, at the earliest possible opportunity. This will likely avoid problems or disagreements later in the process and improve the local decision-making process in the development of the plan and implementing measures.

(2) As the Goal 5 process progresses and more specificity about the nature of resources, identified conflicting uses, ESEE consequences and implementing measures is known, notice and involvement of affected parties will become more meaningful. Such notice and landowner involvement, although not identified as a Goal 5 requirement is in the opinion of the Commission, imperative.

Statutory/Other Authority: ORS 183 & 197
Statutes/Other Implemented: ORS 197.040
History:
LCD 7-1981, f. & ef. 6-29-81
LCD 5-1981(Temp), f. & ef. 5-8-81

660-016-0030
Mineral and Aggregate Resources

(1) When planning for and regulating the development of aggregate resources, local governments shall address ORS 517.750 to 517.900 and OAR chapter 632, divisions 1 and 30.

(2) Local governments shall coordinate with the State Department of Geology and Mineral Industries to ensure that requirements for the reclamation of surface mines are incorporated into programs to achieve the Goal developed in accordance with OAR 660-016-0010.

(3) Local governments shall establish procedures designed to ensure that comprehensive plan provisions, land use regulations, and land use permits necessary to authorize mineral and aggregate development are coordinated with the State Department of Geology and Mineral Industries. Local governments shall amend comprehensive plans and land use regulations, as necessary, no later than January 1, 1993.

(4) The provisions of this rule shall be effective immediately.

Statutory/Other Authority: ORS 183 & 197
Statutes/Other Implemented: ORS 197.040
History:
LCDC 3-1992, f. & cert. ef. 6-10-92

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Land Conservation and Development Department

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.

Statutory/Other Authority: ORS 183 & 197
Statutes/Other Implemented: ORS 197.040 & 197.225 - 197.245
History:
LCDC 2-1996, f. 8-30-96, cert. ef. 9-1-96

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Land Conservation and Development Department

Chapter 660

Division 23
PROCEDURES AND REQUIREMENTS FOR COMPLYING WITH GOAL 5

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 the 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(2)(c) 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.

Statutory/Other Authority: ORS 197.040
Statutes/Other Implemented: ORS 197.040 & 197.225 - 197.245
History:
LCDD 1-2017, f. & cert. ef. 2-10-17
LCDC 2-1996, f. 8-30-96, cert. ef. 9-1-96

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Land Conservation and Development Department

Chapter 660

Division 23
PROCEDURES AND REQUIREMENTS FOR COMPLYING WITH GOAL 5

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 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 consequences 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.

Statutory/Other Authority: ORS 183 & 197
Statutes/Other Implemented: ORS 197.040 & 197.225 - 197.245
History:
LCDC 2-1996, f. 8-30-96, cert. ef. 9-1-96

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Land Conservation and Development Department

Chapter 660

Division 23
PROCEDURES AND REQUIREMENTS FOR COMPLYING WITH GOAL 5

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).

Statutory/Other Authority: ORS 183 & 197
Statutes/Other Implemented: ORS 197.040 & 197.225 - 197.245
History:
LCDC 2-1996, f. 8-30-96, cert. ef. 9-1-96

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Land Conservation and Development Department

Chapter 660

Division 23
PROCEDURES AND REQUIREMENTS FOR COMPLYING WITH GOAL 5

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.

Statutory/Other Authority: ORS 183 & 197
Statutes/Other Implemented: ORS 197.040 & 197.225 - 197.245
History:
LCDC 2-1996, f. 8-30-96, cert. ef. 9-1-96

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Land Conservation and Development Department

Chapter 660

Division 23
PROCEDURES AND REQUIREMENTS FOR COMPLYING WITH GOAL 5

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(12).

(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.

(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 non-native 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.

Statutory/Other Authority: ORS 183 & 197
Statutes/Other Implemented: ORS 197.040 & 197.225 - 197.245
History:
LCDD 3-2004, f. & cert. ef. 5-7-04
LCDC 2-1996, f. 8-30-96, cert. ef. 9-1-96

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Land Conservation and Development Department

Chapter 660

Division 23
PROCEDURES AND REQUIREMENTS FOR COMPLYING WITH GOAL 5

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)).

Statutory/Other Authority: ORS 183 & 197
Statutes/Other Implemented: ORS 197.040 & 197.225 - 197.245
History:
LCDC 2-1996, f. 8-30-96, cert. ef. 9-1-96

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Land Conservation and Development Department

Chapter 660

Division 23
PROCEDURES AND REQUIREMENTS FOR COMPLYING WITH GOAL 5

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.

Statutory/Other Authority: ORS 183 & 197
Statutes/Other Implemented: ORS 197.040 & 197.225 - 197.245
History:
LCDC 2-1996, f. 8-30-96, cert. ef. 9-1-96

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Assessing Functions and Values of Wetlands and Waterways

Aquatic resources provide a wealth of ecological services to Oregonians that are important to our quality of life: clean and healthy streams, diverse and abundant fish and wildlife, and resilience to floods. The Aquatic Resource Management Program in the Department of State Lands is directed to conserve these resources so the functions and values are not lost.

Because the contribution of different wetlands and waterways varies, it is important to have tools to identify these qualities at different sites. Assessment methods have been developed to identify and rate the capacity and the ability of a wetland or waterway to provide important ecological functions. The methods also rate the socio-economic importance of these functions depending on their location.

Examples of Aquatic Functions and Values

Water Storage and Supply

Many wetlands capture and temporarily store stormwater flows, which otherwise may reduce flood depths and streambank erosion in downstream or downslope areas. Preserving these wetlands reduces flood damage and the need for expensive flood-control devices such as levees. These wetlands may also slowly release stored water to stream systems, augmenting flows when the water is needed the most. Seasonal wetlands—the most common in Oregon and the most easily overlooked because they are dry in the summer—have great capacity to absorb storm water as they "recharge" in the winter and spring.

Waterways provide temporary in-channel and floodplain water storage; sub-surface storage in porous substrate, and inter-flow with adjacent groundwater. Flows can vary daily with tides, in response to storms, seasonally and between years. These processes in turn provide habitat and migration pathways for fish and invertebrates, outlet for surface drainage and/or recharge of aquifers; exchange of nutrients and other chemicals; and habitat variability.

Food-web Support

Wetlands and riparian areas (areas bordering rivers and streams) are the foundation of many food chains. Ample water and nutrients allow these areas to produce diverse flora and fauna. Algae and other micro-organisms provide food for insects that feed amphibians, fish, birds and other wildlife.

Wildlife and Plant Habitat

Wetlands and waterways provide essential water, food, cover and breeding areas for many wildlife species. For example, nearly two-thirds of the commercially important fish and shellfish species are dependent on estuarine wetland habitats for food, spawning and nursery areas. Similarly, millions of waterfowl, shorebirds and other birds depend on wetlands. In semi-arid eastern region, riparian areas and springs are crucial to the survival of many birds, amphibians and mammals.

Water Quality Improvement
Wetlands and waterways help store, transfer and transform nutrients and chemicals, and help moderate water temperature. Wetlands are highly effective at removing nitrogen and phosphorus, sediment and other pollutants from the water that flows over or percolates through them. For this reason, artificial wetlands are often constructed for cleaning stormwater runoff. Natural wetlands and riparian areas bordering streams and rivers intercept runoff from roads, urban areas and farm fields, and provide this valuable service without the typical costs of engineering and infrastructure.

Aesthetics, Recreation and Education
Many wetlands and waterways provide opportunities for boating and paddling, fishing, hunting, photography and wildlife observation. They are also visually pleasing, interesting elements in the landscape, often increasing property values for nearby homes. Wetlands and waterways are also wonderful outdoor classrooms.

How Are Aquatic Functions and Values Assessed?
Because wetlands and waterways vary greatly by type and location, not all perform the same functions and not all are equally valued by society. Rapid assessment methods are based on observations and measurements of various characteristics that are known to correspond with certain functions. Some characteristics may indicate good migratory bird habitat. Another set of characteristics may indicate that a wetland is good at removing pollutants from water.

Rapid assessment methods compare the characteristics evaluated to a larger dataset or best available information to evaluate the extent to which a specific wetland or waterway may perform key functions, and the relative importance of those functions, in that location, to society (value).

DSL has developed rapid function assessment methods for wetlands and streams.

Assessment methods include the Oregon Rapid Wetland Assessment Protocol (ORWAP) that can be used for most wetland types and the Stream Functional Assessment Method (SFAM) that can be used on wadable non-tidal streams.

Functions—the ecological processes that occur in wetlands and waterways, such as nitrogen cycling

Values or Services—the benefits people receive from functions, such as water quality improvement, often dependent on location

Condition—the degree to which a wetland or waterway is altered or stressed, generally by human impacts; sometimes referred to as the "health" of a system relative to its potential

Reference site – a nearby wetland or waterway in the same landscape setting which is in the least-disturbed condition; used to identify biological communities and functions possible at a mitigation site

Statewide Wetlands Inventory (SWI) Webpage and Interactive Webmapper

Purpose

To provide one location for state-recognized wetlands and waters mapping for:

- Local government planning and the Wetland Land Use Notice (WLUN) process
- Improved communication with the public about wetlands and other water resources

Current mapping sources are in multiple forms and locations. Each mapping type has limitations. For example, the National Wetlands Inventory (NWI) has statewide coverage, but the mapping is incomplete:

- Smaller, seasonal and forested wetlands and waters may not be detectable on aerials or at the scale of the mapping. This results in unmapped wetlands and waters.
- By policy, the NWI excludes certain types of "farmed wetlands" as defined by the Food Security Act. Many farmed areas in Oregon meet wetland criteria, but these important wetlands may be unmapped.
- The wetland and waters boundaries are approximate. Conducting on-the-ground wetland delineations is the only way to verify wetland boundary locations.

What Layers are Included in the SWI?

The SWI includes both wetlands and waters mapping because that is what the Department of State Lands regulates.

US Fish and Wildlife Service NWI – The SWI web map will display annual updates to NWI mapping.

US Geological Survey National Hydrography Dataset (NHD) – will display annual updates to NHD waters mapping. NHD mapping methodology results in some of the same limitations that exist on the NWI.

USDA Natural Resources Conservation Service (NRCS) combined soil survey for Oregon. NRCS does extensive field work to support soil survey mapping. Two subsets of the NRCS soil survey are included. The first, *map units with predominantly (>50%) hydric soil components*, shows soil map units that contain predominantly components meeting NRCS hydric soil criteria. The second represents the *Agate-Winlo soil of Jackson County*. This soil is highly associated with vernal pools, an aquatic resource of conservation concern. *These two soils subsets show areas that have a high probability of containing wetlands that are not mapped on the NWI.*

To be added soon:

DSL-Approved Local Wetlands Inventories – all the LWI layers: wetlands, including details such as locally significant wetland status; probable wetlands; waters; artificial features; sample plots; watersheds; etc., will be available.

Components of the SWI that are not available in digital GIS format *may* be added to the web map in the future:

DSL-Approved Wetland Delineation Mapping – Copies of the approved mapping are provided to the local government planning/community development office and are available from DSL.

Compensatory wetland mitigation (CWM) sites – all removal and fill in CWM sites requires a DSL permit and double mitigation.

All layers will be updated regularly or when new information becomes available.

Background Information for Planners

Statewide Wetlands Inventory Statute

ORS 196.674 directs the Department of State Lands (DSL) to compile and maintain a comprehensive Statewide Wetlands Inventory (SWI) initially based on the National Wetlands Inventory (NWI), and to develop by rule a system for uniform wetland identification, delineation and comprehensive mapping.

Wetland Land Use Notice Information and Process

- Full WLUN statute language, information about the WLUN process and the WLUN online submittal form is available on the DSL Waterways & Wetlands Planning & Conservation webpage; under Local wetland planning and inventories: http://www.oregon.gov/dsl/WW/Pages/WetlandConservation.aspx
- WLUN Statutes for Cities and Counties

  ORS 227.350: Notice of proposed wetlands development; exception; approval by city

  ORS 215.418: Approval of development on wetlands; notice; approval by county

DSL recommends the following interpretation of the WLUN statutes:

Statute excerpt: *(1) "…application for the following* [list of ground disturbing activities] *that are wholly or partially within areas identified as wetlands on the State-wide Wetlands Inventory:"*

- *"…identified as wetlands…"* – interpret as, "…identified as wetlands, waters and certain soils …" because DSL (and the US Army Corps of Engineers) regulates activities in both wetlands and waters that are indicated by these features.
- *"Statewide Wetlands Inventory"* (SWI) – Many jurisdictions have additional natural resource mapping and *may* choose to refer to this mapping *in addition to* the SWI. LWIs created after 2001 have features labeled "PW." These small wetlands are potentially regulated, both by state and federal agencies, and trigger the WLUN process.

How to use the new web based SWI

Combine all the layers, with DSL-approved wetland delineation mapping, when available, to check if wetlands or waters may be present.

Landowners and interested parties may request a "wetlands and waters determination" to learn more about potential wetland and water resources on a property. Submit a request using this form:

http://www.oregon.gov/dsl/WW/Documents/wetland_determ_req.pdf

Two other data sources to be aware of:
Essential Salmonid Habitat (ESH)
http://chetco-new.dsl.state.or.us/esh2017/
and State Scenic Waterways (SSW)
http://www.oregon.gov/oprd/NATRES/scenicwaterways/Pages/waterways.aspx#Scenic_Waterway_Map

Find maps of these stream segments at the DSL website links shown. The DSL permit volume threshold in these designated stream segments is zero cubic yards. All removal and fill requires a DSL permit except for some agricultural activities.

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12/2019

3.4 Summary of Current Status and Health of Oregon's Freshwater Wetlands

Janet C. Morlan
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Report Card

Freshwater wetland health varies by ecoregion, with urbanized and agricultural regions exhibiting the most wetland losses and degradation of wetland condition. Although data on freshwater wetland health are very limited, most indicators point toward declining health. However, there are also some positive trends in recent years.

- Oregon has lost an estimated 38 percent of its original wetlands. In the Willamette Valley, approximately 57 percent of wetlands have been lost, and a recent study shows that the valley continues to lose more than 500 acres per year. The Klamath Basin has lost an estimated 75 percent of original wetlands, primarily due to government-sponsored conversion to agricultural production.
- Statewide, 29 percent of native wetland plant communities identified to date are ranked as "imperiled." Only a few have been studied in detail, like the Willamette Valley wet prairie (99 percent lost) and the Agate Desert vernal pools (more than 40 percent gone and what's left highly degraded).
- Twenty-four percent of wetland-dependent amphibians are ranked as imperiled.
- Extensive modification of rivers and streams has reduced wetland area and complexity and altered wetland types and functions.
- Water quality standards for wetlands have not been established, but wetland water quality condition and trends may roughly parallel stream condition.
- Existing regulatory programs have slowed wetland loss substantially but are not sufficient in themselves to halt the loss of wetland acreage and functions.
- New wetland restoration incentive programs are helping to reverse wetland loss trends and improve wetland ecosystem health, particularly in agricultural regions.
- Principal threats to wetland ecosystem health today include continued pressure to convert wetlands to other economic uses, and the cumulative impacts from human activities—such as pollution, sedimentation, and invasion of nuisance species—on wetland condition.

Indicators

Wetland ecosystems are healthy when:

1. The area and spatial distribution of wetlands within ecoregions and within watersheds are maintained, not at historical levels in all regions, but at a level that can sustain existing key functions and services
2. Objectives and standards of state policies and regulatory programs are being met
3. Area and spatial distribution of basic wetland types appropriate to the ecoregion are maintained
4. Native plant and animal community abundance, quality, and diversity are maintained
5. They are physically connected (not fragmented) to functionally related aquatic resources, such as rivers and their flood plains, and to high quality upland habitats
6. Hydrologic characteristics, including quantity, quality and timing, are within the historical range of variability for regional types and are sufficient to sustain the wetland resource and dependent processes over the long term.

Introduction

Freshwater wetlands are a highly diverse resource that reflect the extreme physical and biological variability of the state. Although all wetlands share many basic features, their ecological functions—and thus the services they provide—differ markedly between regions and between landscapes. For example, Willamette River floodplain sloughs temporarily store flood waters, reducing peak flows downstream. The vast Klamath Basin marshes—dubbed the "Everglades of the West"—support millions of migratory waterfowl. Cascade Mountain bogs are home to rare or peculiar plants like the carnivorous sundew. And streamside wetlands in the Coast Range provide food and shelter to threatened juvenile salmon and trout.

This great diversity of wetland types and the variety of functions they perform make it difficult to generalize about wetland resource health. No one indicator provides a suitable or sufficient measure of health for all wetlands. However, wetland area is a basic indicator that can be used to track wetland extent and trends. How much of the state's original wetlands remain? What are current loss rates? Are there disproportionate losses in some regions? These area measures are important because, to a great extent, the health of wetlands in Oregon is dependent on maintaining the remaining wetlands, a goal embodied in state and federal "no-net-loss of wetlands" policies.

However, area measures alone cannot adequately address overall wetland health. Other measures are needed—the health of native wetland plant and animal communities; the extent to which wetlands have been cut off from one another and from streams, lakes and other aquatic resources; and the degree to which water is available to sustain wetlands. These and similar "condition" indicators are needed to more fully understand the ecological health of Oregon's wetlands today and their capacity to provide valued goods and services well into the future.

What do we know about wetland resource health in Oregon today? Historical information indicates that, in highly developed urban or agricultural regions in particular, wetlands have been drastically and often irreversibly altered. Dams, levees and diversions on major rivers and their tributaries have changed hydrologic characteristics at the most fundamental landscape levels. Cities and roads have eliminated or fragmented wetland systems. Government sponsored projects have cleared and drained vast areas of former wetlands for conversion to agricultural crops. In these regions, few naturally functioning wetlands remain to serve as reference sites for evaluating current resource health. For these reasons, maintaining wetlands within a "historical" range of variability may be a reasonable measure of resource health, but is an unachievable goal. Instead, the goal is to maintain existing wetlands or increase wetland area and functions through restoration.

Definition and indicators of a healthy wetland resource

Wetland health is evaluated by assessing wetland condition and the degree to which wetlands perform certain functions. A wetland in good condition is better able to function to its potential capacity. Wetland function and condition are important to us because of the valued goods and services that wetlands provide. Most people are familiar with the importance of wetlands for waterfowl, fish and other wetland-dependent species, yet many other functions are equally important.

For example, a watershed with an intact wetland system that provides for water storage reduces winter flooding and sustains summer stream flows. Wetlands in good condition also improve water quality by recycling nitrogen and phosphorus and filtering sediments and other pollutants—in fact, wetlands are constructed specifically for this purpose. When these services are lost in the landscape, they are extremely expensive to replace. For example, a study in Washington state valued wetlands in one basin at $36,000-$51,000 per acre for flood control alone (Leschine et al., 1997).

The indicators selected to assess wetland ecosystem health are described in **Table 3.4-1** and were based on three related criteria—their significance as a measure of ecosystem health, their sensitivity for detecting change, and data availability (currently available or feasible).

Current conditions and trends

Indicator 1: Change in wetland area and spatial distribution

Until better methods to assess wetland functions and condition are developed and applied statewide, wetland areal extent and distribution will continue to be an important surrogate measure of wetland resource health. Present data sources include historical wetland loss estimates, regional studies of recent (last one to two decades) status and trends, and reviews of permitted wetland losses and gains.

In considering wetland change, it is important to distinguish between "historical" wetland extent, which establishes the context, and "current" trends. An estimated 38 percent of Oregon's historical wetlands have been lost (Dahl, 1990). Regional historical loss data are not widely available, but data for the Willamette Valley suggest a loss of approximately 57 percent of historical wetlands (Christy et al., 1998), and wetland loss in the Klamath Basin (Oregon/California) is estimated at 75 percent of original wetlands (Akins, 1970). Data on modern wetland trends show continued, gradual losses. A recent study of wetland change in the Willamette Valley shows a loss of approximately 546 acres per year.

Indicator 2: Change in wetland area due to permitted activity

Regulatory programs are a key public policy mechanism to provide protection for the wetland resource while allowing for necessary wetland alteration (Good et al., 1998). In addition to federal and state regulatory programs, the federal government and the state have adopted "no net loss of wetlands" policies and goals. Permit program outcome evaluation provides a measure of how many wetland alterations are "captured" by the permit program and how well permitted wetland losses are offset by wetland gains from compensatory mitigation.

Regulatory program evaluations indicate that small wetland losses occur through the permit process (Kentula et al., 1992; Shaich and Franklin, 1995). Losses are attributed primarily to insufficient or inadequate compensatory mitigation (wetland replacement) for permitted wetland fills. Not all wetland

Table 3.4-1. Freshwater wetland ecosystem health indicators, significance, reference condition, and data sources

Indicator and Type[1]	Significance	Reference Condition	Data Sources
1 – Change in wetland area and spatial distribution (acres/percent) Type 1 & 2	Directly measures net loss or gain of wetland acreage and indirectly measures loss or gain of wetland functions and associated goods and services	1. Pre-Euro-American settlement (~1850) as measure of historical condition 2. Modern change baseline approximately 1985-1990	Akins, 1970 Dahl, 1990 Fretwell et al., 1996 Borgias & Patterson, 1999 Christy et al., 1998 Daggett et al., 1999
2 – Permitted change in wetland area (acres/percent) Type 3	Measures outcomes of policies and programs that regulate wetland impacts	1985 (Current state & federal regulatory programs in place)	Kentula et al., 1992 Shaich & Franklin, 1995 Steve Morrow, pers. com., 1999
3 – Change in diversity and distribution of wetland types Type 1	Directly measures change in types of wetlands and indirectly measures change in structure and functions	1. Pre-Euro-American settlement 2. Mid-1980s (date of National Wetlands Inventory)	Christy et al., 1998 Daggett et al., 1998 Gwin et al., 1999 National Wetlands Inventory (NWI)
4 – Changes in native wetland plant and animal assemblages Type 1	Measures structural integrity, habitat diversity, and ecosystem stress	1. Pre-Euro-American settlement species & assemblages 2. Date community first identified and described with published data	Christy & Titus, 1997 Christy et al., 1998 Ed Alverson, pers. com., 1999 Borgias & Patterson, 1999
5 – Degree of connectivity with other aquatic resources & upland habitats Type 1 & 2	Indirect measure of aquatic ecosystem function and wetland habitat condition	1. Pre-Euro-American settlement 2. 1980s (NWI data)	National Wetlands Inventory Land Use/Land Cover mapping
6 – Changes in hydrologic characteristics Type 1 & 2	Measures change in hydrologic functions that control related wetland condition, functions & services	1. Pre-Euro-American settlement 2. Modern change baseline approx. 1985	Akins, 1970 USDA, 1977 Benner & Sedell, 1994 Fretwell, 1996 Adamus, 1998 Gwin et al., 1999 NWI

[1] Indicator Type:
1: Ecosystem structure- and function-based
2: Ecosystem goods- and services-based
3: Environmental policy-based

changes (losses or gains) are reflected in permit records because they were too small to meet the permit requirement threshold, were not subject to permit requirements, or were never permitted (Shaich, 2000).

Indicator 3: Change in diversity and distribution of basic wetland types

The diversity and areal extent of basic wetland types (such as forested, wet prairie, marsh, riverine, slope, isolated, etc.) that are appropriate to the ecoregion provide an indirect measure of wetland ecosystem health. Data sources include maps of historical wetland types in the region, regional status and trends studies, land cover/land use change analysis, and permit program outcome evaluation.

Wetlands are often classified by type based upon their landscape setting, water dynamics, and dominant vegetation. These different characteristics result in process differences. Human alteration often changes these basic characteristics, with a general observed trend of "simplification" of diverse ecosystems into more homogenous ones (Benner and Sedell, 1994). For example, many "riverine" wetlands—those directly connected to rivers—have been changed into "isolated" wetlands by road construction or levees, and many forested and prairie wetlands have been changed into farmed wetlands (Christy et al., 1998). An effort is underway in Oregon to classify wetlands by hydrogeomorphic type and relate these classes to specific functions (Adamus, 1998).

Indicator 4: Changes in assemblages of native wetland plants and animals

Changes in native wetland plant and animal communities appropriate for the wetland types in the ecoregion and the proportion of invasive, exotic species indicate the level of ecosystem stress. Data sources include sample-based field assessments correlated to reference sites, plant assemblage diversity surveys, and changes in rarity rankings.

The status of native wetland communities and wetland-dependent species varies considerably by region. As would be expected, urban and agricultural areas have been subject to the most loss of native communities and species. For example, Atlas Figure 19 shows the estimated historical extent of Willamette Valley wet prairie (Christy et al., 1998). Less than 1 percent remains today, too little to show up on the map (Christy, pers. com., 1999). The Oregon Natural Heritage Program (ONHP) has identified 518 wetland plant communities. Of these, 151 (29%) are ranked as imperiled (Christy and Titus, 1997). In the Willamette Valley, 32 of the 72 plant communities (44%) are ranked as imperiled. Some Oregon plant communities may be naturally rare, but ONHP estimates that approximately 90 percent of imperiled plant communities are imperiled due to human activities. Similarly, 24 percent of wetland-dependent amphibians are listed as imperiled.

Indicator 5: Degree of physical connectivity between wetlands and related aquatic resources, and between wetlands and upland habitats

Many of the wetland ecosystem services Oregonians value—such as water quality improvement and fish and wildlife habitat—require a physical connection between wetlands and associated aquatic resources like streams, riparian areas, and estuaries. Similarly, the availability of high quality upland habitat adjacent to wetlands is important for many species. Assessment data includes maps, reports, and observations of the extent to which wetlands are fragmented by dikes, levees, development, and similar features, and the extent to which uplands surrounding major wetland areas are "natural" rather than built, farmed, or logged.

Data on "connectivity" are not directly available, but National Wetlands Inventory maps and other sources indicate that may miles of rivers and streams have been disconnected from their floodplains and wetlands by levees, diversions, and road construction. This fragmentation alters the functions of these aquatic ecosystems. Data on the degree to which important wetlands are connected to high quality upland habitats are not available. However, studies to evaluate connectivity in priority regions could be readily conducted.

Indicator 6: Changes in hydrologic characteristics

Hydrology characteristics of wetlands include water quantity, duration and periodicity of flooding or saturation, and water quality. Hydrologic characteristics that depart from the normal range of variability indicate stress and probable impairment of the wetland's ability to provide ecosystem goods and services. Data sources to assess this indicator include maps, reports and physical evidence of drainage or diking for agricultural production, urban development patterns, hydrologic characteristics of mitigation or restoration sites compared to "naturally" occurring wetlands, and direct measurement of selected hydrologic characteristics of altered sites compared to "least disturbed" reference sites.

Hydrologic characteristics of wetlands are influenced by a multitude of factors including the stream alterations noted above, dams and diversions, agricultural drainage, groundwater or surface water withdrawals, urbanization, and pollutants (Akins, 1970; Fretwell, 1996; USDA, 1977). The extent of these alterations suggest an overall "drying out" of wetlands in agricultural or semi-arid regions, with a corresponding decline in function and increased risk. These and other activities have also changed basic wetland types in highly altered regions, for example from river-associated to isolated wetlands. Gwin et al. (1999) found that wetlands created or restored for compensatory mitigation typically have very different hydrologic characteristics than the filled wetlands they are supposed to replace. Wetland water quality trends may parallel those for streams, but water quality standards for wetlands have not

yet been established and water quality is difficult to measure, due in part to the highly variable and seasonal surface water characteristics of most wetland types.

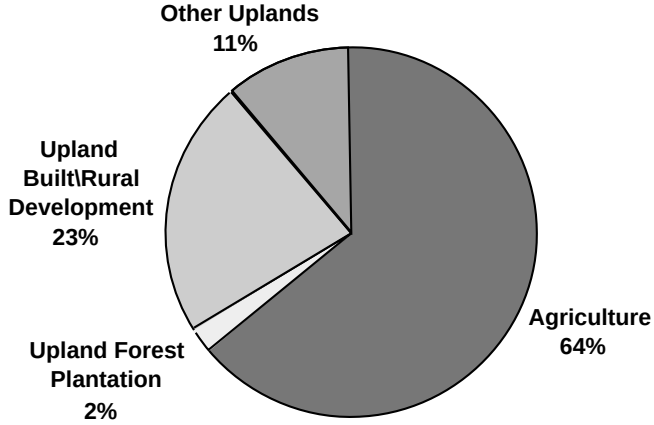
Threats, strengths, and examples

Wetland resource health can be adversely affected either directly or indirectly by human activities. Activities such as filling, draining and discharge of pollutants directly eliminate or degrade wetlands. Activities such as groundwater withdrawals or poor upland land management indirectly degrade adjacent wetlands. In highly altered regions such as the Willamette Valley or Coastal lowlands, the types, distribution, and functions of wetland ecosystems are far different than they were historically, which increases risk and also constrains management and restoration options. In addition, it is important to recognize that activities that cause wetland loss and degradation are sometimes indirectly promoted through public policies and programs intended to achieve other social or economic goals, such as economic development, increased density requirements within urban growth boundaries, waterfowl management, or protection of farmland (some of which is wetland).

Regulations and policies aimed at maintaining Oregon's wetland resource base have significantly reduced, but not prevented, wetland loss. A recent study of wetland change in the Willamette Valley ecoregion found that between 1982 and 1994, wetland loss continued to occur at an average rate of 546 acres per year (Daggett et al., 1998). A total of 6,877 acres of wetland were converted to upland land uses, representing 2.5 percent of the 1982 wetland acreage in the valley (**Figure 3.4-1**).

Although wetland condition was not directly evaluated, changes between wetland types provide indirect information about wetland degradation. For example, conversion of forested wetland to farmed or other emergent types (2,200 acres) indicates a loss of structurally complex wetland habitat, including riparian habitat. The study also revealed wetland gains, mostly from abandoned or intentionally restored agricultural land. However, losses continue to outpace gains by about three to one.

Figure 3.4-1. Causes of net wetland loss to Willamette Valley upland, 1982 to 1994.



Because impacts and trends vary considerably among regions, a similar study has been initiated for the Coast Range ecoregion. The results of this study should be available in 2002.

Threats to wetlands vary greatly by ecoregion and dominant land uses. For example, in the Great Basin ecoregion, major risks include poor grazing management and invasive species, whereas in the Willamette Valley ecoregion the major risks include fill for development, increased agricultural drainage, fragmentation, and pollution from urban and agricultural runoff.

Current threats to wetland health include:

- Loss due to unregulated (no permit required) or unpermitted (violation) urban and rural development (Shaich, 2000)
- Loss or degradation due to agricultural expansion or improved drainage on existing fields (USFWS, 1997; Morlan and Peters, 1999)
- Loss or degradation due to surface water diversion, groundwater withdrawal, ditching streams, and stormwater systems designed to move water quickly off the landscape (Boggess and Woods, this report; Oregon Division of State Lands, 1989)
- Grazing activities that damage vegetation and degrade streams, which lowers water tables, thereby drying streams and adjacent riverine wetlands (Kauffmann et al., 1985)
- Eutrophication due to nitrogen or phosphorus loading from agricultural or urban runoff and insufficient wastewater treatment (Adamus, 1998)
- Degradation by contaminants such as heavy metals, pesticides, oil and other pollutants and by sediment overloads from poor management of adjacent uplands
- Invasive, non-native plant and animal species that replace native species (Arnold and Anthony, this report)
- Fragmentation of wetlands into smaller, isolated units that become more vulnerable to eradication; fragmentation also impedes wildlife movements between habitat types and the smaller wetlands cannot support wildlife species that require large habitat units (Gibbs, 1993).

A number of wetland resource strengths can also be identified. Wetlands tend to be highly resilient, absorbing a considerable amount of abuse while still providing valued services. Also, wetlands that are degraded from a wildlife habitat standpoint, for example, may still provide a high level of flood storage. Many degraded wetlands can be restored to highly functional, if not historical, condition with minimal cost. In addition, degraded wetlands are often "self-restoring" if the actions that cause chronic degradation—such as cultivation, levees, or pollutants—are removed or minimized.

Since the late 1970s, many public policies, regulations and programs—and numerous private programs—have focused on protecting and restoring wetlands. Examples include:

- State Removal-Fill Law—requires permit for wetland alterations and compensatory mitigation for permitted wetland impacts
- Sections 404 & 401 of the federal Water Pollution Control Act—similar provisions to above law and water quality standards for receiving waters
- State and federal policies setting goal of "no-net-loss" of the wetland resource
- Statewide Land Use Planning Program—cities and counties must develop protection programs for wetland resources under Goals 5 and 17
- Acquisition of important wetland sites by land trusts and public land management agencies
- Substantial increase in public funding for voluntary wetland/aquatic system restoration

The city of Eugene provides the most prominent example of successful wetland planning by a local government in Oregon. When the city discovered that much of the industrial-zoned land in West Eugene was wetland, the city embarked on developing a Wetland Conservation Plan (WCP). WCPs are an optional approach to Goal 5 wetland protection programs—more difficult to develop but with a larger "payoff" in terms of both resource protection and development certainty.

The West Eugene Wetland Plan was adopted in 1992 and approved by the state in 1994. Plan elements include a detailed wetlands inventory and function and value assessment; plan goals; designation of wetlands for protection, restoration or development; a mitigation bank program; and an acquisition program for priority wetlands (City of Eugene and Lane Council of Governments, 1992).

The plan accomplished several wetland protection goals, including land use designations and zoning provisions that provide an additional level of protection, and public acquisition of more than 2,200 acres of wetlands and adjacent uplands from willing sellers. The plan also provided advantages for developers and the business community through plan designation of specific wetlands or portions of wetlands for development, state and federal plan approval which speeds permitting for development parcels, and a mitigation bank program operated by the city, which provides an alternative for developers to meet compensatory mitigation needs in a timely, relatively hassle-free, manner.

As was envisioned in the goals, the plan has facilitated a co-evolution of economic growth and wetland preservation in the West Eugene area (Lane Council of Governments, 1999).

Significant ant numbers of acres of drained or diked wetlands are being restored throughout the state. For example, the Klamath Basin in the East Cascades ecoregion has been subjected to massive drainage activity dating back to the Swampland Act in 1860 (Fretwell et al., 1996). During the past fifty years, approximately 30,000 acres of wetlands adjacent to Upper Klamath Lake have been diked and drained. At the same time, water quality in the lake has declined and two indigenous fish species—the Lost River and shortnose suckers—have been listed as endangered.

In response to these concerns, a local citizens group proposed federal acquisition of drained wetlands for the purpose of wetland restoration. Congress appropriated $2.4 million for the Bureau of Land Management to purchase the 3,200 acre Wood River Ranch property. Numerous partner groups helped to develop a resource management plan and fund restoration work.

Restoration was begun in 1996. Habitat restoration will include 1,600 acres of seasonal wetland, 1,200 acres of permanent marsh, and more than six miles of meandering stream channel habitat. In addition, 1.7 miles of the lower Wood River channel will be restored along with 25 acres of adjacent floodplain wetland (Wedge Watkins, pers. com., 1999).

Projections and conclusions

Data are not available for making accurate projections for wetland resource health but are sufficient to conclude that risks outweigh strengths. The best available data, from the Willamette Valley study, indicate that wetland losses will continue, though at much slower rates than estimated historical loss rates. Public awareness of wetland functions and services, and resultant policies and laws aimed at wetland protection and management, have slowed the rate of wetland loss. There are limited reliable data, however, on wetland health trends.

Certain trends can be expected to continue, even though the rates and resource health impacts cannot be accurately predicted. Continued population growth and economic development inevitably increase risk to wetland resource health. Direct losses of wetlands and degradation of wetland health will continue to occur. Wetlands most at risk will be the "drier" wetland types and those in urbanizing areas because they will be under the most pressure for conversion to other uses. Cumulative impacts—the accumulation of many individual actions that combined degrade wetlands—can be expected to increase, particularly in the most populated and rapidly-growing regions of the state like the Willamette Valley, Umpqua and Rogue River Valleys, and the Coast.

Unpredictable factors that could substantially affect wetlands include:

- Climatic fluctuations—wetlands are transitional between uplands and aquatic sites and even small changes in

groundwater levels can dramatically affect wetland persistence and health.

- Agricultural practices—changes in practices, economic conditions, or environmental policies and regulations can increase or decrease manipulation of agriculturally managed wetlands.
- Economic conditions—commercial, industrial and residential development is directly related to general economic trends.
- Public/political will to support or improve wetland protection laws and programs and to adequately fund local wetland planning and wetland resource acquisition and restoration.

Without changes in the current wetland management regime, data and trends indicate that wetland ecosystem health will continue to deteriorate. Wetland regulations alone are not sufficient for protecting wetland functions and services. Regulations are not comprehensive, it is difficult to address cumulative impacts or multiple objectives through a regulatory program, and the burden falls unevenly on wetland landowners. Wetland planning in urban areas has the potential to resolve many wetland use conflicts and protect important wetland resources through appropriate zoning and land use regulations. For it to work well, financial and technical assistance is crucial.

Wetland protection through acquisition or restrictive covenant and wetland restoration by private and public entities are also crucial and such programs have grown dramatically in the last decade. Most of the funding has been provided by federal programs. Challenges include using public funding for aquatic resource restoration strategically to ensure that landscape-scale functions and processes are restored and projects are sustainable over the long term. Effective restoration is needed not only to "hold the line" on wetland resource loss but to restore some of the state's original wetland resource base (Good & Sawyer, 1998). A "net gain goal" of wetland area by 2020 would help to move the state in that direction.

What data are available and how complete are they?

Estimates of historical wetland loss in Oregon are approximate and drawn from a variety of sources (Akins, 1970; Oregon Division of State Lands, 1989; Dahl, 1990). The Willamette Valley study of recent wetland change has a relatively high level of reliability (Bernert et al., 1999). The estimate of former extent of Willamette Valley wet prairie was derived from 1850s era General Land Office Survey notes correlated with topography and soils data (Christy et al., 1998). The Oregon Natural Heritage Program database containing wetland plant community and wetland-dependent species data is based largely upon field data but reflects uneven levels of investigation in different regions and for different groups of species (Christy and Titus, 1997). Studies of particular wetland types can provide data that are relatively complete and reliable, such as the evaluation of the extent and condition of Agate Desert vernal pools (Borgias and Patterson, 1999).

Priority information needs

The primary need is to develop and support a program for measuring and monitoring wetland ecosystem health. Pilot studies are underway in the Willamette Valley that will provide reference site data on the condition and functions of important regional wetland types. Additional studies in priority regions would add considerably to our knowledge of wetland resource health. High priority data needs include:

- National Wetlands Inventory (NWI) maps digitized statewide
- Additional Local Wetlands Inventories (more detailed than NWI) within urban areas
- Oregon Hydrogeomorphic Wetland/Riparian Assessment Project expanded beyond Willamette Valley ecoregion pilot study
- Sampling (at reference sites) of biological indicators of wetland health
- Comprehensive sampling and published description of wetland plant communities to complete the statewide wetland community classification
- Digital county soil survey data (soil series level) statewide
- Land Use/Land Cover mapping at regular intervals
- Wetland status and trends studies for additional ecoregions

Although Oregon's wetlands comprise only a small fraction of the state's land base, the ecosystem goods and services they deliver have disproportionately high value. Historical losses of wetlands due to urbanization and resource development have been huge and, despite recent protective measures, losses continue, albeit at much lower rates than historically. As Oregon's population and economy continue to grow, additional wetland conversion is inevitable. Protection remains vital, but restoration of former or degraded wetlands will also be needed to maintain or increase the valuable services these ecosystems provide.

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3.5 Summary of Current Status and Health of Oregon's Riparian Areas

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Report Card

- Riparian areas make up about 15% of the total area in the state
- Trends in riparian condition along the upper mainstem Willamette River have shown a loss of more than half the historical channel complexity and reduction of more than 85% of the total riparian forest area since the 1850s
- Riparian areas in eastern and southern Oregon have been altered extensively as a result of livestock grazing, agricultural activities, and associated water diversion projects
- Urbanization and residential development impact a much smaller portion of Oregon's land base (less than 10%) but reduce riparian functions to a much greater degree with little potential for recovery
- Non-native plants make up more than 50% of the riparian species along the mainstem Willamette
- Satellite remote sensing is one of the most powerful and cost-effective tools for tracking Oregon's riparian resources, as well as other elements of the environment

Key Indicator

1. The amount of intact or functional riparian vegetation found along streams and rivers.

Introduction

Riparian areas—transition zones between aquatic and terrestrial ecosystems—are exceptionally important components of Oregon's landscape because of their importance for aquatic ecosystems, terrestrial ecosystems, and water quality. These corridors along streams, rivers, wetlands, lake margins, and estuaries are easily altered by land use practices (Gregory and Bisson 1996) and recovery can require decades to centuries. The status of riparian areas is one of the most important indicators of the health of aquatic ecosystems throughout Oregon. Restoration of the structure and function of riparian areas is one of the primary goals of the Oregon Plan for Salmon and Watersheds and has been one of the major activities of watershed councils throughout the state.

Definition of a healthy riparian ecosystem

The perspective of ecosystem health most relevant to a discussion of riparian resources is "naturally functioning landscapes that function much as they would have without intensive land use and land conversion over the last two hundred years". Evaluation of the economic role of these landscape features is needed in the future. Riparian areas contain potentially important commodities or human uses, and their higher value in the real estate market illustrates their economic importance.

Riparian areas provide critical ecological functions and high biological diversity because they contain components of both terrestrial and aquatic ecosystems and exhibit strong gradients of environmental conditions (Gregory et al. 1991). As interfaces between land and water, riparian areas are important for both terrestrial and aquatic biota. Ecological functions of riparian areas in the Pacific Northwest have been reviewed thoroughly, but comprehensive information on the status of riparian areas is lacking (Spence et al. 1996). Riparian vegetation shades streams, contributes leaves and large wood to streams, takes up nutrients, and stabilizes streambank and floodplain soils. These streamside corridors strongly influence water quality, including stream temperature, nutrient loading, sedimentation, and contaminants from terrestrial sources. Food webs in stream ecosystems depend on terrestrial vegetation as a source of food (such as leaves, needles, wood) and habitat structure (such as large wood, pool forma-

tion, bank stabilization). Birds, mammals, amphibians and other terrestrial animals depend on riparian areas for a variety of habitat, cover, and food sources in close proximity to water. Riparian areas also serve as important corridors for the movement of terrestrial animals and plants across the landscape.

Indicators

The most critical indicator of riparian resources for the state of Oregon is the proportion of intact or functional riparian vegetation. Remote sensing can determine area and composition of riparian forests and adjacent land uses for large areas, and ground-based surveys can validate these estimates. New satellite systems permit 5-meter (16-foot) resolution for future measurement, and existing satellite data provide analysis of trends in riparian condition from 1972 to the present. Current conditions can be compared to estimates of historical or functional riparian vegetation. Historical riparian conditions could be determined for each ecoregion from 1850 General Land Office surveys and judgment of experts in the state. Experts also could identify functional communities that would be considered healthy (e.g., hybrid cottonwood plantations, parks). The proposed measure of health is the proportion of the number of miles of riparian vegetation that are consistent with designated functional plant communities, as defined by ecologists and land-use experts. This indicator simply measures the fraction of Oregon's riparian areas composed of native vegetation types that are considered ecologically appropriate for their location. In addition, several other indicators could be derived from the same data, including number of large native trees in riparian areas, total area of riparian forests, and wet community types. The Pacific Northwest Ecosystem Research Consortium is currently conducting a pilot study for the Willamette basin and could be expanded statewide.

Current conditions and trends

Oregon contains approximately 184,633 kilometers (114,475 miles) of rivers and streams (Oregon Water Resources Department). Even based on an overly simple measure of riparian areas as 100-meter (330-foot) bands on either side of the stream, the estimated total area of riparian habitat for flowing waters in Oregon is 36,927 km2, or about 15 % of the total area in the state. However, this percentage does not include the riparian areas along the vast networks of small headwater streams throughout the state that flow during only part of the year. Additionally, a 100-meter buffer may be less than the actual riparian zone for the floodplains and low flow channels of large rivers, so this estimate of total riparian area is extremely conservative. Though riparian areas may represent a lower proportion of the land base in the dry, less dissected basins of eastern Oregon, their ecological significance may be greater than their area alone would suggest in portions of the state where the climate is hot and water is scarce.

Most studies of riparian resources have focused on documenting effects of land-use practices for specific sites or short reaches of stream. Large-scale or regional assessments of the status of riparian plant communities are scarce. Classification of satellite spectral data is an important tool with outstanding potential for analysis of riparian resources of the state. In this report, we illustrate its application through an analysis of riparian areas within 100 meters of streams (1:100,000 scale) in western Cascades, Willamette Valley, Coast Range, and Klamath Mountains, based on data from Purnell (1994), H.J. Andrews Long-Term Ecological Research Program, and the CLAMS Project.

Riparian areas on privately-owned forest lands are dominated by early-successional vegetation with relatively few large conifers, as a result of timber harvest. Riparian areas in public lands have greater area of mature conifers (**Figure 3.5-1**). Old coniferous forests comprised approximately 20% of the riparian areas in the Cascades in contrast to only 3% in the Coast Range. The Klamath Mountain ecoregion exhibits a more even distribution of stand types, reflecting the drier landscape and more patchy plant communities. Timber harvest was the dominant land use type in riparian areas of the Cascades, Coast Range, and Klamath Mountains, but agriculture was the dominant land use in the Willamette Valley (**Figure 3.5-2**).

Land use activities frequently reduce 1) numbers of large trees, 2) amounts of closed-canopy stands, and 3) proportion of older forests or late successional stages. In agricultural lands and the drier regions of eastern Oregon, woody riparian vegetation is likely to be eliminated completely, with little or no regeneration of young broadleaf tree species, especially in the presence of grazing by livestock (Quigley and Arbelbide, 1997).

In western Oregon, riparian plant communities have been altered along almost all streams and rivers. In managed and reference sites throughout the Coast Range, number of large conifers is a useful indicator of human impacts on riparian condition in forested ecosystems, and is consistently higher in relatively unaltered reference sites (Oregon Plan for Salmon and Watersheds, 1999). In some streams within the Coast Range, landslides and debris flows knock down riparian stands along valley bottoms so that young vegetation cannot shade streams and maintain lower stream temperatures (Ryan and Grant, 1991). Trends in riparian condition along the upper mainstem Willamette River have shown a 50% reduction in channel complexity and reduction of more than 85% of the total riparian forest area since the 1850s (Sedell and Froggatt. 1984; Benner and Sedell, 1994; Hulse 1998). Downstream portions of the Willamette experienced little channel change, but lost almost 85% of the historical riparian forest. Late-suc-

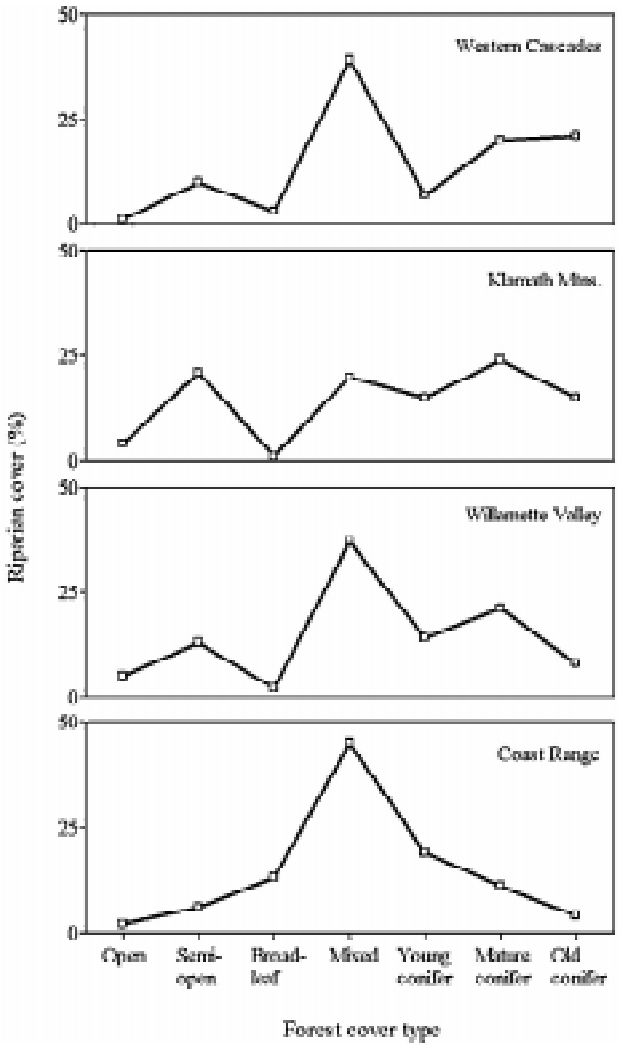
cessional forests historically occurred along most of the length of the McKenzie River but now account for less than 15% of its riparian forest (Minear, 1995).

Riparian areas in eastern and southern Oregon have been altered even more extensively as a result of livestock grazing, agricultural activities, and associated water diversion projects (Kauffman and Krueger, 1984; Kovalchik, 1992; Skovlin and Thomas, 1995). Very little of the once extensive shoreline vegetation exists to maintain water quality and provide habitat for threatened fish species (Matthews and Barnard, 1996). Dams have affected flow, sediment, and gravel patterns, which in turn have diminished the regeneration and natural succession of riparian vegetation along downstream rivers. Diversity and productivity of riparian landscapes of eastern Oregon have led to their exploitation and alteration since the early 1800s (Wissmar et al., 1994). Riparian conditions remain degraded throughout the region, particularly in the middle and lower reaches of large river valleys such as the Grande Ronde, John Day, and Umatilla rivers (Oregon Water Resources Department, 1986; Wissmar et al., 1994; Lichatowich and Mobrand, 1995). In many eastside basins, the only riparian areas that are not highly altered are those situated in steep, narrow valleys inaccessible to cattle (Evenden, 1990).

Threats to riparian resources

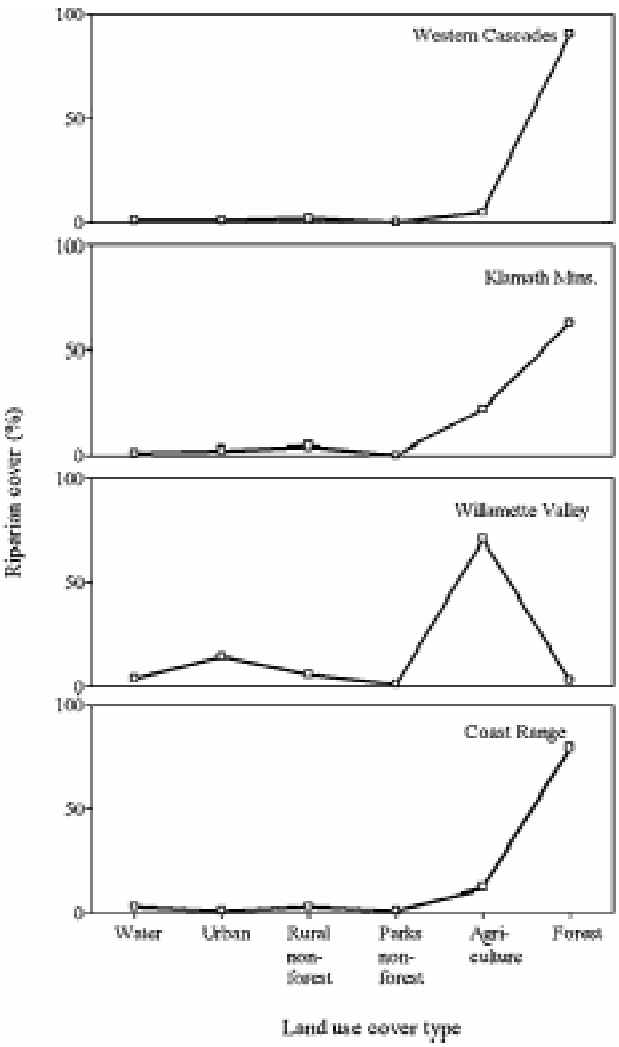
Human settlement, land development, and resource use have altered riparian areas in Oregon. Human activities have focused on riparian areas because of their proximity to water, productivity in natural resources, utility for transportation as

Figure 3.5-1. Percent of riparian area in major vegetation classes for the western Cascades, Klamath Mountians, Willamette Valley, and Coast Range of Oregon.



Estimates were calculated by Christian Torgeson from Purnell 1994 and spatial data provid by Warren Cohen.

Figure 3.5-2. Percent of riparian area in major land use classes for the western Cascades, Klamath Mountians, Willamette Valley, and Coast Range of Oregon.



Estimates were calculated by Christian Torgeson from Purnell 1994 and spatial data provid by Warren Cohen.

waterways and sites for railways and highways, as well as their aesthetic appeal (Gregory and Bisson, 1998; Hulse 1998). This intensive use diminishes the capacity of riparian areas to perform important ecological functions that originally made riparian areas attractive for human settlement and exploitation. As human pressures on natural landscapes of Oregon increase, riparian conditions and management become increasingly important to the public and regional decision makers.

Riparian resources have been reduced or altered by a host of land uses, including timber harvest, livestock grazing, agriculture, water withdrawal, flow modification, channelization, mining, urbanization, and residential development. Several of these land use practices—timber harvest, livestock grazing, water withdrawal, flow modification, mining—alter the composition, age and size, and distribution of the riparian plant communities but allow for some form of revegetation by natural communities. Other land uses—agriculture, urbanization, residential development—either eliminate or convert riparian plant communities to structure and composition that differ greatly from native plant communities. Timber harvest, livestock grazing, and agriculture affect a large proportion of the state's riparian areas, but provide for some periods of recovery or partial function. Urbanization and residential development impact a much smaller portion of Oregon's land base (less than 10%) but reduce riparian functions to a much greater degree with little potential for recovery (Booth, 1991).

Exotic plant species represent another major threat to future riparian resources in Oregon. Although there have been no documented extinctions of native riparian species from competition with introduced species, invasive species—Himalayan blackberry, reed canary grass, and scotch broom—dominate many riparian sites and locally reduce the diversity of native species. In a transect from the upper McKenzie River to the mid-section of the Willamette River, non-native species increased from 10% of the observed species in headwater riparian zones to more than 50% of the riparian species in the mainstem riparian forest (Tabacchi et al., 1996).

Strengths of riparian resources

Two basic strengths of riparian resources offer potential for recovery in the 21st century; they are the intact remnants of historical riparian forests on public lands and the rapid regeneration processes in riparian plants. Recovery of riparian communities is more likely if 1) human impacts are eliminated or reduced, 2) natural disturbance processes are reestablished, 3) natural hydrologic regimes are restored, and 4) processes that create and maintain river channels and floodplains are protected or reestablished. Conservation or restoration strategies can build on intact remnants of historical riparian corridors in many rivers of the state.

The Oregon Plan and many watershed councils are working to improve land uses and riparian conditions for river basins and regional landscapes. Through the Oregon Plan for Salmon and Watersheds, funds are available to local groups through the Oregon Watershed Enhancement Board. Forest practices on private lands are being strengthened to provide greater protection of riparian resources. Senate Bill 1010 calls for the Department of Agriculture to work with farmers and ranchers to develop basin plans to improve water quality in impaired streams. The Natural Resources Conservation Service is providing both technical and financial assistance to landowners through a variety of Farm Bill programs. The Bureau of Land Management, Forest Service, and Natural Resource Conservation Service are developing demonstration areas throughout the west, such as the Trout Creek Mountains in southeast Oregon, to illustrate successful approaches. These efforts under the Oregon Plan include a mix of voluntary and regulatory approaches, and future conditions of riparian resources in Oregon will depend on their collective success.

What data are available and how complete are they?

Detailed maps of current riparian conditions have been constructed from aerial photographs for individual sections of streams in selected basins throughout Oregon. Specific stream sections for which riparian data have been collected are useful as reference areas to which future riparian conditions may be compared. The U.S. Fish and Wildlife Service has mapped riparian vegetation structure in selected reaches in the Willamette and the Grande Ronde basins of western and eastern Oregon through the National Wetlands Inventory program. Other more extensive assessments of historic and current riparian conditions have been conducted on national forest lands throughout the state of Oregon as part of the Forest Service Watershed Analysis Program. Researchers in the Pacific Northwest Ecosystem Research Consortium are documenting changes in the historical channels and riparian vegetation for the Willamette River and its tributaries. Case studies of riparian status and trends in stream reaches on agricultural and other private lands have been conducted by researchers and watershed councils throughout Oregon. These studies of riparian conditions provide a preliminary assessment of the status of Oregon's resources, but a more extensive and credible assessment of riparian conditions is essential for effective analysis of the state of the environment.

What more do we need to understand?

A complete assessment of the condition of riparian areas has never been conducted for the state of Oregon. This lack of comprehensive information makes it difficult to determine

quantitatively the extent to which riparian areas have changed throughout the state as a whole. Information on status and trends of riparian condition is available only as qualitative reports for selected river reaches or watersheds. More comprehensive assessments of riparian condition are needed to determine statewide status and trends.

One of the most powerful and cost-effective tools for tracking Oregon's environment and resources—satellite remote sensing—has emerged within the last decade. Satellite imagery has made it possible to assess vegetation type and extent over large areas in Oregon. Extensive data provided by satellite images can be used both to examine current status of forest resources and to identify trends in vegetation change through time. Satellite imagery has been classified into vegetation types for most of western Oregon (Cohen et al., 1995a; Cohen et al. 1995b). Techniques for using satellite imagery to analyze riparian condition are still in development and are currently limited by the coarse resolution of the imagery (25-meter pixel size) and the coarse scale of river and stream maps (1:100,000 scale) used to locate riparian areas (Congalton et al. 1999). However, this imagery constitutes the only extensive data set on riparian condition over large areas of the state and may prove effective for interpreting large-scale change over time. New satellite technology will provide fine resolution (less than 5-meter pixel size), and new digital maps of the state (1:24,000 scale) will provide accurate locations of streams.

Important riparian characteristics such as canopy closure and vegetation structure can be quantified for streamside buffers over large areas and analyzed as baseline information in estimating trends in resource condition. The Oregon GAP Project of Oregon Department of Fish and Wildlife is currently using satellite imagery from 1991-1993 to develop vegetation classifications for the entire state. Resolution of this state-wide vegetation inventory (200-meter pixel size) will not be sufficient for assessing status and trends in riparian vegetation but will allow resource managers to identify areas that require more detailed assessment of riparian conditions. Future development of finer scale remote sensing data will greatly enhance Oregon's ability to determine the status and trends of its riparian resources.

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CLATSOP COUNTY BOARD OF COMMISSIONERS

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Work Session/Regular Meeting

March, 22, 2017

Judge Guy Boyington Building, 857 Commercial, Astoria

Work Session: 5:00pm

Work Sessions are an opportunity for Board members to discuss issues informally with staff and invited guests. The Board encourages members of the public to attend Work Sessions and listen to the discussion, but there is generally no opportunity for public comment. Members of the public wishing to address the Board are welcome to do so during the Board's regularly scheduled meetings held twice monthly.

Topic:

a. Joint Work Session with Planning Commission - Wetlands.....{Page 1}

Regular Meeting: 6:00pm

The Board of Commissioners, as the Governing Body of Clatsop County, all County Service Districts for which this body so acts, and as the Clatsop County Local Contract Review Board, is now meeting in Regular Session.

1. **FLAG SALUTE**

2. **ROLL CALL**

3. **AGENDA APPROVAL**

4. **BUSINESS FROM THE PUBLIC** - *This is an opportunity for anyone to give a 3 minute presentation about any item on the agenda (except public hearings) OR any topic of county concern that is not on the agenda. People wishing to speak during Business From The Public must fill out and sign a Public Comment Sign-in Card.*

5. **CONSENT CALENDAR**
   a. Approval of Design-Build Contract for Household Hazardous Waste Project.....{Page 9}
   b. Real Property Lease for Road Division Fill Site.....{Page 43}
   c. Board of Commissioners Regular Meeting Minutes 2-8-17 .....{Page 53}

6. **BUSINESS AGENDA**
   a. Management Agreement Approval with Clatsop Behavioral Healthcare .....{Page 57}
   b. Participation in the North Coast Blue Sky Community Challenge .....{Page 71}
   c. Preschool Feasibility Study Personal/Professional Services Contract .....{Page 73}

7. **COMMISSIONERS' REPORTS**

8. **COUNTY MANAGER'S REPORT**

9. **ADJOURNMENT**

Complete copies of the current Board of Commissioners meeting agenda packets can be viewed at:
Astoria Public Library - Seaside Public Library - Board of Commissioners Office

Agenda packets also available online at www.co.clatsop.or.us

This meeting is accessible to persons with disabilities. Please call 325-1000 if you require special accommodations to participate in this meeting.

Board of Commissioners
Clatsop County

AGENDA ITEM SUMMARY

March 22, 2017

Issue/Agenda Title: Recommendations from the County's ad hoc Wetlands Advisory Committee

Category: Joint Work Session with Planning Commission

Prepared By: Heather Hansen, Community Development Director; Patrick Wingard (WAC Chair)

Presented By: Heather Hansen, Community Development Director; Patrick Wingard

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Issue before the Commission: The Board-appointed ad hoc Wetland Advisory Committee (WAC) met intermittently over the last two years to discuss and recommend possible local regulations for wetlands and riparian areas in unincorporated areas of the county (See summary in Attachment A). We will discuss their recommendations and seek direction on next steps.

Informational Summary: The last WAC meeting was held on December 6th. The following is a summary of the WAC's recommendations:

1. **Develop a Countywide Transfer of Development Rights (TDR) program.** Using the existing program in Clatsop Plains as a model, focus on wetlands and streamline ("fix") the program so it's less difficult to implement. This would enable a non-resource zoned property with wetlands to transfer the development right to another non-resource zoned property within the same Residential Community or, if outside of a Rural Community, within the same Planning Area. (Attachment B)
2. **Implement an Enhanced Local Wetland Notification Program using Wetland Indicators.** Currently, only wetlands that are shown on the National or Local Wetlands inventories require that notice be sent to the Oregon Department of State Lands (DSL). We all know that there are more wetlands than reflected in those maps, so we are inadvertently allowing wetlands to be impacted without compensatory mitigation. Wetland indicators, such as hydric soils, floodplains, and LiDAR will be used to identify where wetlands are likely to be found and notice will also be sent to DSL in those instances. And we would also have a local option to hire a wetland specialist to visit the site and do a determination regarding whether there are wetlands present on the development site. If not, then no notice will be sent to DSL. (Attachment C)
3. **Take the Arch Cape-Cove Beach Local Wetland and Riparian Corridor Inventories through the adoption process.** The inventories would be adopted along with local regulations consistent with the Goal 5-Safe Harbor approach. This would enable more local regulations for development that impacts wetlands. (Attachment D)
4. **Other** development standards added to the Development Code to lessen or avoid development impact on wetlands, such as use of low impact development methods if development is to occur in a significant wetland through the variance process, and loosening standards for setback to avoid impacting a wetland. (See Attachment A)

WAC Members: Scott Lee (ex officio), Patrick Wingard (Chair), Cary Johnson, Tom Merrill, Mike Manzulli, Jason Palmberg, Tess Scheller

Options to Consider:

1. Staff will draft code revisions for review
2. Schedule an Open House/Public discussion prior to adoption hearings
3. Schedule another Joint Work Session prior to adoption hearings
4. Other

Direction to Staff: *Any or all of the abovementioned options*

Attachment List:

A. Summary of Options Discussed by WAC
B. Proposed Expanded Transfer of Development Rights Program
C. Proposed "Enhanced Notice" Program
D. Proposed Adoption of the Arch Cape/Cove Beach Local Wetland Inventory

ATTACHMENT A.

LOCAL WETLAND PROGRAM OPTIONS CONSIDERED

THE FOLLOWING IS A LIST OF OPTIONS THAT THE COMMITTEE DISCUSSED.

Program Options	Intent/Context	Keep on List?
Clustering of structures	Enables some development, but allows for wetland avoidance; Limited potential on smaller lots	YES
Density transfer		YES-but only within same planning area
Low Impact Development (LID), e.g., structures on pilings, restore/enhance native vegetation, permeable pavement, green roofs	Enables some development, but has lower impact on wetland functions and values; LID standards could be required through Variance process.	YES
Mitigation	Allows some impact, but enhances other areas – net zero or net gain; Could target mitigation to areas such as fish-bearing streams, water quality limited streams, etc	NO-too complicated to manage
Wetland determinations conducted by locally trained personnel	Decreases turnaround time and cost; On-site vs. Off-site	YES-or another method for decreasing time and cost
Use of LiDAR	Develop procedure for estimating potential location of wetlands	YES-still need methodology for id'ing potential wetlands using LiDAR
Conduct LWIs in other areas of the county	Better quality data than NWI; Cost?	MAYBE-is there another way to get better data?
Focus on areas with most development potential, e.g., rural communities; small lot sizes, zoning	These are areas with the most potential for wetland impacts	YES
Watershed approach	Consider cumulative impacts, connectivity; Ecosystem services	YES
Acquisition – Purchase outright, development easement	Enables protection and enhancement of wetlands; Funding? *(NOTE: Property should cost less per acre than similar property without development constraints)*	YES
Buffers	Protect functions and values by having setbacks from development or stricter development standards in the buffer areas.	YES
Focus on wetlands of the highest value	Protect highest value wetlands; defer to DSL/ACE's existing program for the rest	MAYBE-Discuss further
Wetland Conservation Plan	Similar to watershed approach – look at a large area holistically, decide which wetlands need to be protected, which can be impacts, which enhanced, etc.	MAYBE-Want to know more about it
Flexible development standards, e.g., setbacks	Allow for variances to some development standards to avoid wetlands.	YES-added to list 7/26

ATTACHMENT A.

B. PROPERTY/WETLAND FACTORS

THERE ARE SOME FACTORS THAT NEED TO BE CONSIDERED WHEN DISCUSSING A LOCAL WETLAND PROGRAM FOR CLATSOP COUNTY. NOT ALL WETLANDS ARE CREATED EQUAL; NOT ALL APPROACHES ARE APPROPRIATE IN ALL CIRCUMSTANCES.

Factors	Relevance
PROPERTY CHARACTERISTICS	
Size of buildable lot	Small lots – difficult to avoid wetlands
Zoning	Affects the type of development and density allowed
Ownership	Adjacent properties under the same ownership offer greater flexibility
Resource lands	Regulations protecting farm and forest uses limit options for local wetland protection
WETLAND QUALITY	
Type (e.g., Inland/Riparian; Coastal/Estuarine; Forested)	Wetland functions and values vary by type; Different approaches may be needed by type
Size (isolated, complexes)	Impacting a portion of a large wetland or wetland complex may be different than impacting an isolated wetland.
Data quality	Areas of the county are either unmapped or the quality of the existing wetland data is poor

C. WETLAND BENEFITS & SERVICES ("Ecosystem Services")

THE FOLLOWING IS A LIST OF BENEFITS THAT HEALTHY FUNCTIONING WETLAND PROVIDE. THIS IS WHY A LOCAL WETLAND PROGRAM CAN HELP ACHIEVE MULTIPLE OBJECTIVES, AND WHY GOAL 5 ISN'T THE ONLY STATEWIDE PLANNING GOAL THAT COMES INTO PLAY.

Services	Description
Reduces flood damage (sponge)	Trap and slowly release water, rain, groundwater, and flood waters. Wetland vegetation slows the speed of flood waters.
Improves water quality (kidney)	Filters sediments, excess nutrients, chemicals
Groundwater recharge/ Discharge	Collects surface water and allows it to percolate to the groundwater. Can be a discharge area when water table is high
Erosion control	Wetland plants hold soil in place. Coastal wetlands buffer shorelines against wave action produced by storms.
Fish & wildlife habitat	Provides food, shelter, breeding and resting places for a variety of species. Critical habitat for more than 1/3 of endangered species in US.
Recreation, aesthetics, science, culture, education	Hiking, fishing, hunting, boating, photography, relaxation, environmental education
Resilience – tsunami, climate change	Wetlands help buffer the built environment from storm surges and other chronic and catastrophic events
Climate control	Evapotranspiration
Commercial benefits	Fish, shellfish, cranberries, tourism

MIKE MANZULI: Under C. Groundwater Recharge/ Discharge I would like to see mention of water quantity (implied by recharge) and drinking water. Wetlands slow discharge for wells and surface water and slow runoff to allow capture year long, not just in the winter.

ATTACHMENT B.

PROPOSED EXPANDED TRANSFER OF DEVELOPMENT RIGHTS (TDR) PROGRAM: BALANCING THE NEED TO PROTECT WETLANDS WITH THE NEED TO PROTECT PROPERTY RIGHTS

Intent:	To guide development away from wetlands while still achieving development objectives.
Assumption:	Clatsop County will continue to see development pressures. Achieving a fair and easily implementable TDR Program will help to advance local and regional ecological and economic objectives.
Background:	Clatsop County has a decades-long history of administering a TDR Program in the Clatsop Plains planning area. While not perfect, the TDR Program has had some success guiding development away from wetland resources and into areas better suited for development. The Clatsop County Wetlands Advisory Committee recommends moving forward with a countywide TDR Program. To execute a countywide TDR Program, it's likely that Clatsop County must adopt Goal Exceptions (OAR 660, Division 4) and amendments to its Comprehensive Plan and Development Code. Other options are being discussed with the State Department of Land Conservation and Development.
Proposal:	Adopt a countywide Transfer of Development Rights Program.
Next Steps:	Upon direction from the BOCC: 1. Establish Work Group: Include stakeholders. Focus on goal exception, plan amendment and LWDUO amendments and findings. Funding: In-house, consultant-led or hybrid? 2. Provide Regular Reports to Planning Commission and BOCC 3. Initiate Public Hearings for Comp Plan and Code Amendments
Data Sources:	• Spatial: Clatsop County GIS Maps (for transfer area boundaries, zoning, wetlands, floodplains, landslides, tsunami, transportation, parcelization, etc.) • Policy/Regulatory: Clatsop Plains TDR Program (as a template to start with) and other TDR Programs within Oregon or elsewhere • Policy/Regulatory: Statewide Planning Goals 5 & 17, ODFW, DEQ, EPA, USFW, FEMA, www.orwap-lp; many others
Triggers:	• Voluntary or mandatory? • Development proposal wholly or partially within a mapped or known wetland resource • Development proposal wholly or partially within a river, stream or creek riparian area • Development proposal that would encumber essential storm water conveyance for a neighborhood or region
Other:	• Potential density bonus for protecting significant wetlands and larger wetland complexes

ATTACHMENT C.

PROPOSED "ENHANCED NOTICE" PROGRAM:

USING WETLAND INDICATORS TO IDENTIFY POTENTIAL WETLANDS

Intent:	To protect and/or mitigate for impacts to wetlands that are not identified in the State Wetland Inventory.
Assumption:	We can't protect wetlands or mitigate for impacts of their development if we don't know where they are!
Background:	Oregon has a "No Net Loss" of wetlands goal and is required to "maintain a stable resource base of wetlands," to "encourage wetland restoration and creation," and to require compensation for "functions and values for the waters of the state." ORS 215.418 requires counties to provide notice to the Department of State Lands for any proposed development that is wholly or partially within areas identified as wetlands on the State Wetland Inventory. Per DSL's website, the State Wetland Inventory (SWI) consists of two types of inventories: (1) National Wetlands Inventory (NWI) developed by the U.S. Fish and Wildlife Service; and (2) Local Wetlands Inventories (LWI) developed by cities according to standards (rules) set by the Department. The NWI is available statewide. Only those wetlands and other waters that are visible on high altitude aerial photographs are mapped, and most maps date to the mid-1980s. LWIs are comprehensive maps and information about wetlands throughout a city. An LWI provides information a city needs to incorporate wetlands and streams into their comprehensive plans for the community. The LWIs replace the National Wetlands Inventory (NWI) in urban areas. In 1990, DSL adopted guidelines and rules for conducting LWIs within urban growth boundaries. The LWI rules were updated in 2001 and 2009. LWIs are conducted by wetlands consultants for cities completing wetlands planning under Statewide Goals 5 (Natural Resources) or 17 (Coastal Shorelands). LWIs or other resource inventories for areas outside of Urban Growth Boundaries (UGBs) have been completed for other planning goals or purposes. Wetlands program staff work closely with cities and consultants to ensure that the LWIs are thorough and conducted according to standards.
Proposal:	Develop and implement a local "enhanced" notice program that uses available data to identify areas of potential wetlands. These potential wetlands would be included in a GIS layer that staff would use to determine if notice should be sent to DSL. The DSL notice would also include a site plan and the data that was used to "trigger" the notice.
Next Steps:	1. Technical Peer Review: Conduct a peer review with wetland scientists, watershed councils, DSL staff 2. Develop guidelines for Local Program: These would be the basis for the future code amendments 3. Discuss with Board and PC in Joint Work Session 4. Begin Code Amendment Process
Data Sources:	• Hydric Soils (any or choose specific ones?) • Floodplains • Stream layers (check on quality of existing data) • Lidar (to id depressions and unmapped streams)

Triggers:	• Within floodplain • Presence of intermittent or ephemeral streams • Adjacency to fish-bearing streams (distance?) • Adjacency to Essential Salmon Habitat (distance?) • Adjacency to Water Quality-Limited Streams (distance?)
Other:	• Require a delineation when proposed area of ground disturbance is greater than X acres • Add local option to hire a wetland specialist to visit the site and do a determination

Link: The following is a similar concept that uses wetland indicators to identify potential wetlands:

http://wetlandprotection.org/update-wetland-maps/17/18-using-wetland-indicator-layers-to-map-potential-wetlands.html

ATTACHMENT D.

ARCH CAPE-COVE BEACH LOCAL WETLAND INVENTORY: MOVING FORWARD WITH SAFE HARBOR PROTECTIONS

Intent:	To adopt the Arch Cape/Cove Beach Local Wetland and Riparian Corridor inventories so resources classified as "significant" have a local protection program.
Assumption:	Wetlands classified as significant should have a higher level of protection than the current wetland regulations.
Background:	Local Wetland and Riparian Corridor inventories were completed in 2011 for the Arch Cape and Cove Beach communities. The goal of the study was to address the wetland requirements of Statewide Planning Goal 5 *(Natural Resources, Scenic and Historic Areas, and Open Spaces)* and Goal 17 *(Coastal Shorelands).* The inventories were conducted using color or infrared aerial photos at a minimum scale of 1"=400'. Wetlands were located using on-site determinations where access to property with landowner permission and off-site when access was denied. The quality of wetlands was determined by applying the Oregon Freshwater Assessment Methodology and then determining whether they are locally significant by applying criteria contained in Oregon Administrative Rules. Any wetland regulations must have at least one option that is "clear and objective." Clear and objective criteria are performance standards that describe an outcome. The "Safe Harbor" approach is a standard set of protection measures that ensures limited future impacts to significant resources. A safe harbor ordinance would restrict development within the significant wetlands, but must include a variance procedure that allows reasonable economic use when restrictions would otherwise preclude the use of a particular parcel. The Safe Harbor approach can only be applied to significant wetlands and riparian corridors. Other wetlands would be regulated through existing and proposed options.
Proposal:	Begin the code amendment process to adopt the inventories and regulations that address how development can occur within significant wetlands and riparian corridors. If adopted, development within the boundaries of the identified wetlands and riparian corridors would need to meet
Next Steps:	1. Develop draft guidelines for Local Program: Staff will use model code to develop a draft for public review. 2. Discuss at Open House: Present and discuss preliminary draft of code amendments. 3. Initiate Public Hearings for Comp Plan and Code Amendment Process: Develop final draft of code amendments and begin public hearing process.
Data Sources:	• Existing Local Wetland Inventory and Riparian Corridor Inventory
Triggers:	• Any development proposed within the boundaries of the identified wetlands and riparian corridors.
Other:	• Require a delineation when proposed development is within 50 feet of wetland or riparian boundaries as shown on the LWI

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Clatsop County Board of Commissioners
Work Session
March 22, 2017

Chair Scott Lee called the work session to order at 5:00p.m., at the Judge Guy Boyington Building, 857 Commercial Street, Astoria, Oregon. Also present were Commissioners Sarah Nebeker, Lisa Clemente and Kathleen Sullivan. Lianne Thompson was excused.

Cameron Moore, County Manager
Heather Hansen, Community Development Director
Patrick Wingard, Oregon Department of Land Conservation and Development Representative and Wetlands Advisory Committee Chair
Bruce Francis, Planning Commission Chair
Myrna Patrick, Planning Commission
Robin Risley, Planning Commission
Thomas Merrell, Planning Commission
Christopher Farrar, Planning Commission

a. Wetlands

Hansen said the Wetlands Advisory Committee (WAC) was formed to recommend possible local regulations for wetlands and riparian areas in unincorporated areas of the county. Hansen said the state has a policy or goal of no net loss of wetlands. If someone was going to get rid of a wetland for development, that person would also have to create or enhance to protect wetlands elsewhere. The state has an inventory of wetlands which include the national wetland inventory. There is also a local wetland inventory. The county does what is required by the state which is if a wetland is shown on a property, the county has to give notice to the Department of State Lands (DSL). The property owner then works with the state, and the county has minimal involvement. This causes problems because the national wetland inventory does not include all the wetlands and the county could be issuing development permits where wetlands do exist. The WAC committee looked at other ways to protect the wetlands. The recommendations strongly balance the protection of wetlands and property rights. Hansen referred to a list of options that the committee discussed and narrowed it down to four recommendations.

1. Wingard said the first recommendation is to develop a countywide Transfer of Development Rights (TDR) program. Using the existing program in Clatsop Plains as a model, the program should focus on the wetlands which would create less difficulty to implement. This would enable a non-resource zoned property with wetlands to transfer the development right to another non-resource zoned property within the same residential community or within the same planning area. Wingard said the challenges are very time consuming; cost a lot of money; and would create multiple public hearings. The county may be able to streamline the TDR program in the Clatsop Plains such as not requiring a rezone. The TDR program would require some fairly lengthy plan amendments. Wingard said he will help with those amendments. Francis asked why a hearing would be required and Wingard said because it is also a plan map amendment. Francis asked if it could be preapproved and Wingard said that could be looked at.

2. Hansen said another recommendation is to implement an Enhanced Local Wetland Notification Program using Wetland Indicators. Currently, only wetlands that are shown on the National or Local Wetlands inventories require that notice be sent to the Oregon DSL. Hansen said the owner is responsible to notify DSL if they know there is a wetland there and the county doesn't. The notification program is intended to protect or mitigate for impacts to wetlands that are not identified in the state wetland inventory. Wetland indicators, such as hydric soils, floodplains and LiDAR would be used to identify where wetlands are likely to be found and notice would also be sent to DSL in those instances. Hansen said another option would be to hire a wetland specialist to visit the site and determine whether or not there are wetlands present on the development site. Francis asked why this hasn't been instigated before and Hansen said there is nothing in the code that requires it and the state doesn't require it.

3. Hansen said the county could adopt the local wetland and riparian corridor inventories with the Safe Harbor approach. This would enable more local regulations for development that impacts wetlands. Hansen said there are specific guidelines for the Safe Harbor approach. The other option is to look at the wetlands individually and decide which ones should be protected.

4. Hansen said they could add development standards to the Development Code to lessen or avoid development impact on wetlands, such as use of low impact development methods.

Hansen asked how the group would like staff to engage with the public. Lee thinks it is important to have public discussion such as an open house. Sullivan is concerned about the changes ahead and would like to see the work that has been done in the last couple of years. Lee said the goal for the Board is to make the rules fair for the entire county.

Adjournment 5:55p.m.

Approved by

Scott Lee, Chairperson