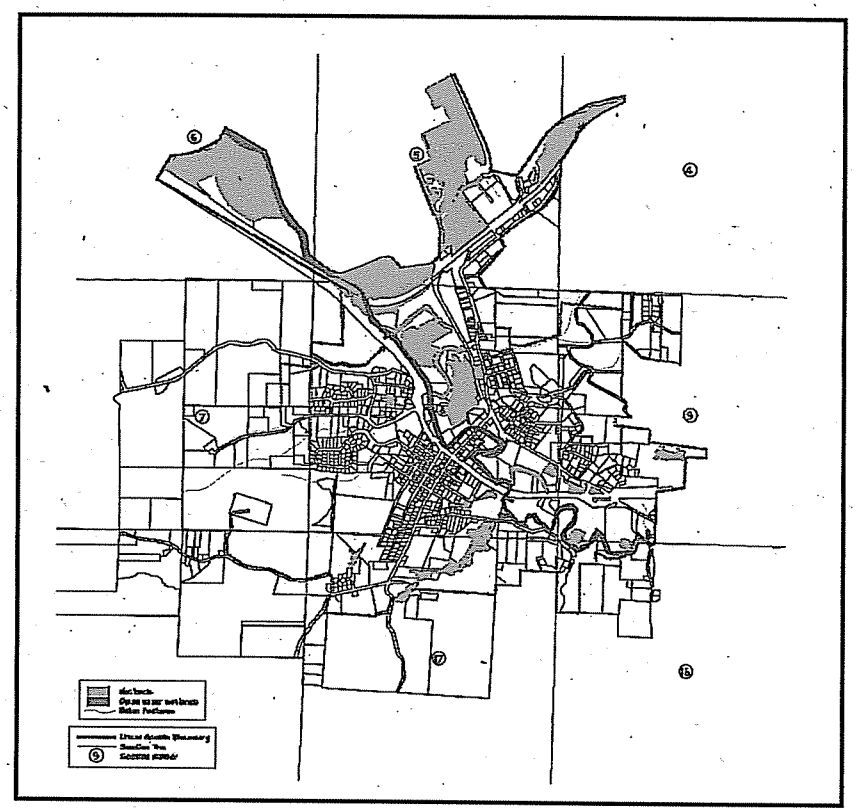
DIVISION OF STATE LANDS
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City of Clatskanie
Local Wetland Inventory and Riparian Assessment



Prepared for

The City of Clatskanie

Prepared by

Shapiro and Associates, Inc.

July 22, 1999

APPROVED WETLANDS INVENTORY
Oregon Divisi e Lands
Meets LWI standards
Date 11/99 Approved by Dana Field

Clatskanie Local Wetland Inventory

ERRATA

A few minor errors were found in the final draft document and are listed below. Please attach this sheet to your copy of the inventory document and annotate the corrections on the affected pages. Thank you.

Page 8. Strike out the second and third paragraphs at the top of the page. These two items were in an early working draft of the criteria for locally significant wetlands, but they were dropped before the final Administrative Rule for locally significant wetlands (OAR 141-86-300) was adopted and became effective in January, 1997. This revision does not change the outcome of any of the significance findings for Clatskanie.

corrected

Table 2 (following page 17). Add CR 18 to the bottom of the table, after CR 17. The acreage for CR 18 is 1.7 acres, and the Cowardin classes are PUBF and PSS. The total acreage is now 209.73.

Page 20, 5th paragraph: Add CR 18 to the list of units that scored the highest rank for water quality function.

Page 21, 2nd paragraph: Twelve, not eleven wetlands satisfy significance criteria.

Page 21, 4th paragraph: Add CR 18 to the list of units that qualify as significant because of high water quality function.

Page 21, 7th paragraph: Replace existing paragraph with this one:
"Wetlands CR 4, CR 7, and CR 17 do not meet any of the criteria for designation as significant wetlands. These non-significant wetlands will not be subject to local wetland protection ordinances, however, they are still subject to state and federal wetland fill permit requirements."

City of Clatskanie
Local Wetland Inventory and
Riparian Assessment

Prepared for

The City of Clatskanie

Prepared by

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July 22, 1999

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Wetland and Riparian Inventory Section Maps are separate.

1.0 INTRODUCTION

This report documents the methods and results of the City of Clatskanie's (City's) Local Wetland Inventory. The City hired Shapiro and Associates, Inc. (SHAPIRO) to conduct the wetland inventory, wetland function assessment, and riparian assessment inside the City's Urban Growth Boundary (UGB; Figure 1). The cartographic products and supporting documentation of this Local Wetland Inventory (LWI) have been prepared to satisfy requirements of Oregon Administrative Rule (OAR) 141-86-180. The City is located at the confluence of the Clatskanie River valley and the Columbia River floodplain in Columbia County, Oregon. The City was incorporated in 1891, taking its name from the Tlats-Kani, a small local tribe of Native Americans. In 1997, the City's population was 1,810 (Levine, 1996).

The LWI was funded with a grant from the Governor's Watershed Enhancement Board, administered through the Department of Land Conservation and Development's Healthy Streams Partnership Grant Program. The City is required to complete the LWI as part of the requirements of the periodic land use planning review process established by state land use planning Goal 5. Further, the City suspected wetlands existed on large areas zoned for development. The City also wanted to locate opportunities for wetland habitat restoration or enhancement. A public meeting was held August 3, 1999, to inform citizens about the LWI process. A follow-up public meeting was held May 10, 1999, to discuss the findings of the LWI.

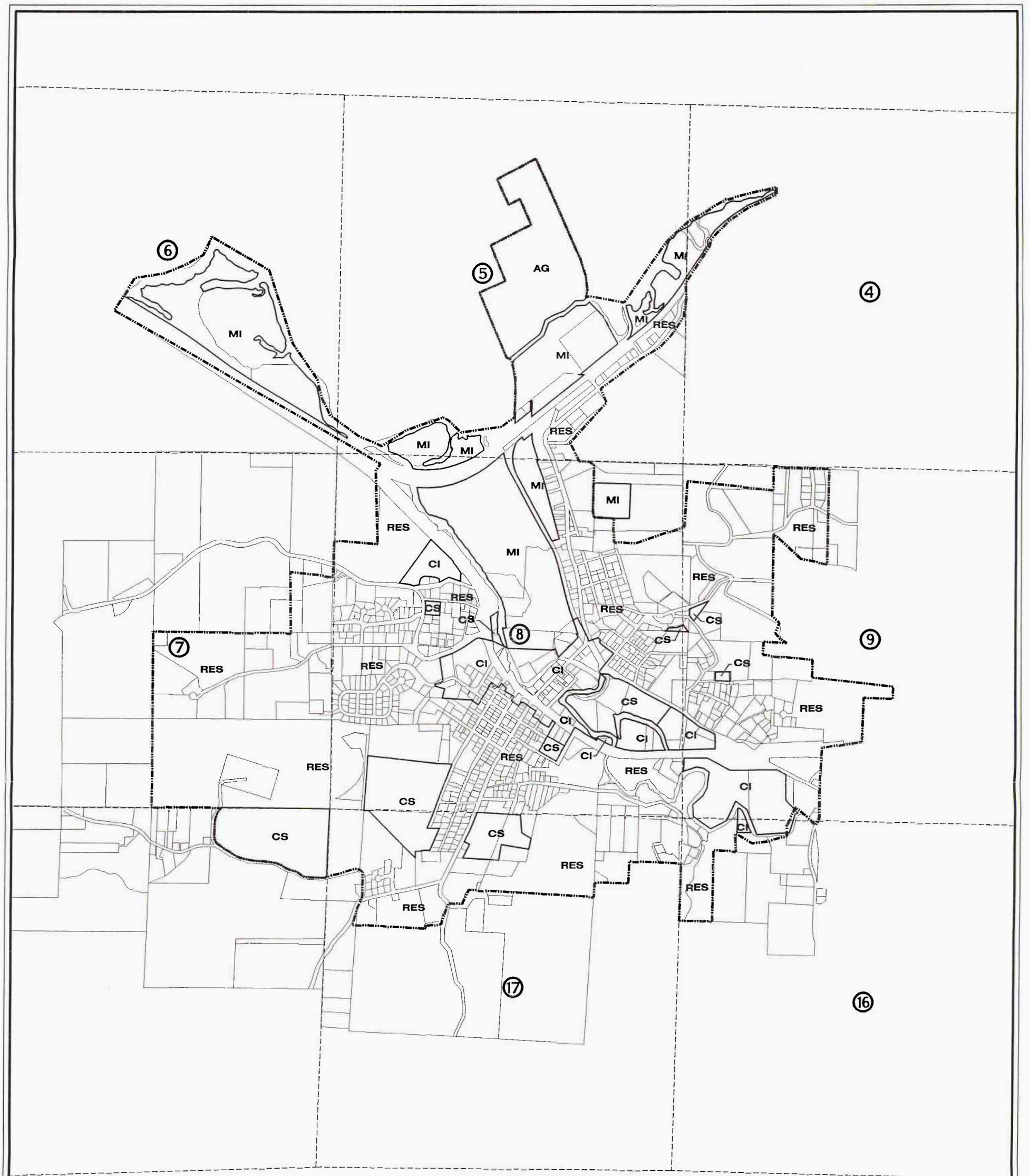
The relative quality of wetlands in the study area also was assessed. This information was used to identify locally significant wetlands to facilitate meeting Goal 5 requirements for wetland protection. Riparian assessments were conducted to provide additional information to meet Goal 5 requirements.

When approved and accepted by the Oregon Division of State Lands (DSL), this inventory and assessment of wetland and riparian resources will replace the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps and other data sources the City currently uses to provide information on the location and size of wetlands. The LWI also will be incorporated into the statewide wetland inventory and used for the wetland – land use notification program. This means that applicants for City development permits will be referred to the DSL for any necessary wetland clearance if their lot has a mapped wetland or waterway.

SHAPIRO conducted the inventory using experienced LWI staff. Dan Cary, a wetland delineator certified by the U.S. Army Corps of Engineers (COE), was Project Manager. Dale Graff, also a COE-certified delineator; John Gordon, trained wetland delineator; and biologist Adam Roberts assisted on the project. The cartographer for the project was Sylvia Jung, who has performed cartographic work for several LWIs and numerous wetland delineations. The base map for the inventory was prepared in the Oregon Lambert Projection by Alsea Geospatial, subcontractor to SHAPIRO.

Table 4. Summary of Oregon Freshwater Wetland Assessment Methodology (OFWAM) Results For Clatskanie LWI

Wetland Code	OFWAM Assessment Elements: Functions (F) and Conditions (C)									
	Wildlife Habitat (F)	Fish Habitat Streams (F)	Fish Habitat Lakes/Ponds (F)	Water Quality (F)	Hydrologic Control (F)	Education (F)	Recreation (F)	Enhancement Potential (C)	Aesthetic Quality (C)	Impact Sensitivity (C)
CR-01	Not Assessed; Not Wetland									
CR-02	Provides Limited	N/A	N/A	Intact	Intact	Inappropriate	Inappropriate	Low	Moderately Pleasing	Moderate
CR-03	Provides Limited	N/A	Affected	Intact	Affected	Potential	Can Provide	Moderate	Not Pleasing	Moderate
CR-04	Provides Limited	N/A	N/A	Affected	Affected	Potential	Potential	Moderate	Moderately Pleasing	Moderate
CR-05	Provides Diverse	Affected	N/A	Intact	Intact	Potential	Potential	N/A	Pleasing	Moderate
CR-06	Provides Limited	N/A	N/A	Affected	Intact	Potential	Potential	Moderate	Moderately Pleasing	Moderate
CR-07	Provides Limited	N/A	N/A	Affected	Affected	Inappropriate	Inappropriate	Moderate	Moderately Pleasing	Moderate
CR-08	Provides Limited	N/A	Affected	Affected	Intact ~~Affected~~	Inappropriate	Inappropriate	Moderate	Moderately Pleasing	Moderate
CR-09	Provides Limited	N/A	Affected	Affected	Intact	Inappropriate	Potential	Moderate	Moderately Pleasing	Moderate
CR-10	Provides Limited	N/A	N/A	Intact	Intact	Inappropriate	Potential	Moderate	Moderately Pleasing	Moderate
CR-11	Provides Limited	Affected	N/A	Intact	Intact	Potential	Potential	Moderate	Moderately Pleasing	Moderate
CR-12	Provides Limited	N/A	N/A	Affected	Intact	Potential	Potential	Moderate	Pleasing	Moderate
CR-13	Provides Diverse	Affected	N/A	Intact	Intact	Inappropriate	Potential	N/A	Moderately Pleasing	High
CR-14	Provides Diverse	Affected	N/A	Intact	Affected	Inappropriate	Potential	N/A	Moderately Pleasing	Moderate
CR-15	Not Assessed; Not Wetland									
CR-16	Not Assessed; Not Wetland									
CR-17	Provides Limited	N/A	N/A	Not Present	Not Present	Inappropriate	Potential	Moderate	Pleasing	Moderate
CR-18	Provides Limited	N/A	N/A	Intact	Affected	Inappropriate	Inappropriate	Moderate	Moderately Pleasing	Moderate



Base map from Alsea Geospatial, Inc., 1998

2981046 7/22/99

FIGURE 1

Zoning and study area boundary for the City of Clatskanie Local Wetland Inventory study area, Oregon.

SHAPIRO & ASSOCIATES, INC.

2.0 SOURCE MATERIALS AND METHODS

2.1 Source Materials

Available information was compiled and reviewed before field work was conducted. Soil information was compiled from data in *Soil Survey of Columbia County, Oregon* (U.S. Department of Agriculture [USDA], 1986). Preliminary wetland information was obtained from the Clatskanie, Oregon and Oak Point, Washington NWI maps (USFWS, 1981). Floodplain information was obtained from City of Clatskanie, Oregon, and Columbia County, Oregon Federal Emergency Management Agency (FEMA) *Flood Insurance Rate Maps* (FEMA, 1988).

A digitized base map of the study area that included layers for tax lot lines, street names, rights-of-way, and section boundaries was prepared by Alsea Geospatial. Tax assessor maps were used as the information source for this base map. Zoning information was obtained from the City and Columbia County. A series of recent color aerial photographs at the same scale as the base map were obtained from Spencer B. Gross, Inc.

Other source materials included the Oregon Rivers Information System (ORIS; Baker and Forsberg, 1994) fish presence database; Oregon Department of Forestry (ODF) and Oregon Department of Fish and Wildlife (ODFW) *Forest Stream Classification and Fish Presence/Absence Maps* (1998); Oregon's 1998 Section 303(d) List of Water Quality Limited Waterbodies (Oregon Department of Environmental Quality [DEQ], 1998); *Classification and Catalog of Native Wetland Plant Communities in Oregon* (Christy, 1993); and a current data search from the Oregon Natural Heritage Program (ONHP, 1998). This information was used to develop a preliminary indication of the location and possible quality of wetlands, facilitate on-site gathering of data, and complete the assessments.

The City, with assistance from SHAPIRO, identified properties likely to contain wetlands. The owners of the identified properties then were sent an access permission letter. Properties to which access was granted were located on tax assessor maps, marked on the aerial photograph, and later noted on inventory maps.

2.2 Local Wetlands Inventory

2.2.1 Overview of the Local Wetlands Inventory

The 1989 Oregon State Legislature authorized the DSL to develop a statewide wetlands inventory suitable for planning and regulatory purposes. Pursuant to ORS 196.674, in 1994 the DSL established LWI standards and guidelines, which are located in OAR 141-86-180 through 141-86-240. The purpose of an LWI is to locate, map, and classify wetlands over a relatively large geographic area. In accordance with LWI standards, wetlands at least 0.5 acre in size are identified in the inventory. Their boundaries are mapped within an accuracy of 25 feet.

This LWI also includes one wetland delineation approved by the DSL and COE. This wetland delineation was confirmed by the DSL on February 7, 1996.

2.2.2 Overview of Local Wetlands Inventory Methods

A LWI is conducted using color or color infrared, aerial photographs taken within five years of inventory initiation and at a minimum scale of 1" = 800' (1:9600). In general, wetlands are located using aerial photographs. Site visits are conducted as described in the LWI standards and guidelines. If access to a parcel is not obtained, wetlands can be mapped off-site using information like topographic maps and aerial photographs. The product of a LWI is a parcel-based map showing the approximate location of wetlands at a minimum scale of 1" = 800'. The parcel-based map allows the property owner, local jurisdiction, and DSL to know which tax lots may contain wetlands.

Aerial photographs used for the Clatskanie LWI were taken on May 10, 1994, and printed at a scale of 1" = 200'. Map products for the inventory are at the same scale.

2.2.3 On-site Wetland Determination

Where property access permission had been granted, on-site wetland determinations were made using the *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1* (Manual; Environmental Laboratory, 1987). The COE and DSL recognize the use of the 1987 Manual for delineation of wetlands.

The Manual provides technical criteria, field indicators, and recommended procedures to be used in determining whether an area has wetland characteristics that qualify it as a jurisdictional wetland subject to regulation by federal and/or state agencies. The Manual requires that three criteria be met in undisturbed situations before areas can be considered wetland under federal or state regulations. These criteria are the presence of wetland hydrology, hydrophytic vegetation, and hydric soils, under normal circumstances. If one of these criteria cannot be determined because of disturbance caused by recent natural events or human activities, an alternative method must be used in making a wetland determination.

Observations of soils, vegetation, and hydrology were made using a modification of the Manual's "Routine Onsite" method. On parcels to which access was obtained, plot locations were selected to provide a valid representation of site conditions. Data were collected from representative sample plots to characterize the wetland and determine the approximate location of the wetland boundary.

Hydrologic Assessment

The Manual defines wetland hydrology as saturation within a major portion of the root zone (usually above 12 inches), typically for at least 12.5% of the growing season. The growing season for any given site or location is determined from Soil Conservation Service (SCS) or Natural Resource Conservation Service (NRCS) data. The growing season is defined as the frost-free period recorded at the nearest recording station five years out of ten. Wetland hydrology field indicators were recorded for each excavated soil pit. Data typically recorded

include depth of inundation, water table, and soil saturation. Primary indicators, such as sediment deposits, watermarks, drift lines, and drainage patterns, or secondary indicators, such as oxidized rhizospheres (root zones), also were recorded.

Soils Assessment

Hydric soils are those that have formed exclusively under wet conditions (soils that characteristically have high water tables, are ponded or frequently flooded, or are otherwise saturated for extended periods during the growing season). The possible locations of hydric soils in the study area were obtained from the SCS or NRCS county soil survey. Soil pits were excavated to a depth of 18 inches or more at sample plot locations. Soil profiles were examined for hydric soil indicators. Soil characteristics (matrix color, mottling, texture, and other features) were recorded.

Vegetation Assessment

Hydrophytic vegetation is plant species that have adapted to growing in substrates that are periodically deficient of oxygen because of saturated soil conditions. The *Regional List of Plant Species That Occur in Wetlands: Northwest (Region 9)* (Reed, 1988 with 1993 supplement) lists commonly encountered plant species and their wetland status. Nomenclature in this report follows this regional list.

The wetland indicator status of a species is the estimated probability that any individual plant of that species is growing in a wetland. Five basic groups of vegetation are recognized in the USFWS plant list based on the probability of their occurrence in wetlands. These categories, referred to as the "wetland indicator status" (from the wettest to driest habitats), are as follows: obligate wetland (OBL) plants; facultative wetland (FACW) plants; facultative (FAC) plants; facultative upland (FACU) plants; and obligate upland (UPL) plants. Further resolution of wetland status is possible with a "-" or "+" sign after the status indicator. The "-" indicates plant species that prefer slightly drier conditions on average. A "+" indicates plant species that prefer slightly wetter conditions on average. The wetland indicators of plants found in this inventory are included on the data sheets in Appendix A.

Many plants are found in transitional areas between wetlands and uplands. These areas are usually characterized by flat to gradually sloping terrain where the species composition may not reflect true wetland boundaries. In such areas, a species with a status of FACU may extend into the wetland areas, just as FACW species may be present in upland areas.

A visual percent-cover estimate of the plant community's dominant species was performed for key sample sites. A 30-foot-radius area was investigated for dominant tree and shrub species, and a 10-foot-radius area for dominant herbaceous species, using soil pit locations as a center of reference. Dominance of plant species was determined by estimating their percent areal cover per stratum (herbaceous, shrubs, woody vines, and trees). Species from each stratum were listed together in descending order of percent cover.

A determination as to predominance of hydrophytic vegetation was made using the 50-20 technique. The most abundant plant species (when ranked in descending order of abundance and cumulatively totaled) that, when totaled, immediately exceed 50% cover, plus any species comprising more than 20% cover, represent the dominant species (Federal Interagency Committee for Wetland Delineation, 1989). If more than 50% of the dominant species included by the above criteria are FAC or wetter (FAC- species are excluded and are considered non-hydrophytic vegetation), the vegetation community is considered hydrophytic.

2.2.4 Off-site Wetland Determination

No on-site sampling could be conducted where property access permission had been denied or not explicitly approved. Therefore, off-site determinations were made on the basis of aerial photograph inspection, review of all available mapped resources (e.g., SCS soil surveys and NWI maps, confirmed determinations and delineations), and, where possible, a reconnaissance from nearby public or approved private vantage points. Observations from vantage points included documentation of dominant vegetative communities (forested, scrub/shrub, or emergent) and water regimes (such as ponded areas and obviously wet meadows). Approximate wetland boundaries were drawn on aerial photographs. Where views into properties from vantage points were not possible or otherwise restricted, and where aerial photographs and mapped information were inconclusive, some wetland areas may have been missed and were not inventoried. Data sheets were not completed for sites where access was not obtained.

2.2.5 Classification of Wetlands

The Cowardin wetland classification system (Cowardin, 1979) was used to classify the wetlands mapped in the inventory. The NWI maps also use the Cowardin classification system for mapped wetland habitats. The Cowardin system classifies wetlands according to general systems, structure, vegetation types, water regime, and other modifiers. For example, wetlands within the Clatskanie study area are classified as palustrine and riverine wetlands. The palustrine class combines vegetated freshwater wetlands (traditionally called marshes, swamps, bogs, fens, and wet prairies) and small, shallow, permanent, or intermittent water bodies called ponds that are less than 2 meters (6.6 feet) deep. This classification applies to emergent, scrub/shrub, and forested wetland areas.

Wetlands dominated by grasses and other herbaceous plants are classified as Palustrine Emergent (PEM). Wetlands dominated by woody species less than 30 feet high are classified as Palustrine Scrub/Shrub (PSS). A site dominated by woody species over 30 feet high is classed as Palustrine Forested (PFO). The riverine classification is used to describe unvegetated stream channels.

2.2.6 Data Compilation and Interpretation

Data were recorded in the field and subsequently transferred to computerized standard wetland delineation data sheets. Sampling site locations were recorded on the aerial photographs. The approximate wetland boundaries and sample site locations were drafted on the aerial photograph in the field. These boundaries subsequently were digitized onto AutoCAD maps. All wetlands received a unique code to aid in their identification. The code was based on the drainage basin

the wetland was located in and the number of wetlands within each basin. In general, parts of wetlands received separate codes where major roads or distinct breaks in wetland character occurred. Some wetlands were grouped and coded as one unit where they were adjacent, hydrologically linked, or similar in character, thus functioning as a unit. The wetland delineation boundary confirmed by the DSL in 1996 was digitized from photocopies of maps in the delineation report submitted to the DSL.

2.2.7 Confirmation of LWI

A draft report and set of maps is provided to the DSL for its assessment and confirmation. Once the DSL has reviewed the documents, SHAPIRO reviews the comments and makes modifications to the draft wetland maps and report. The products are then resubmitted for final approval. The status of the report as draft or final is indicated on the report cover and maps.

2.3 Wetland Quality Assessment

2.3.1 Overview of the Oregon Freshwater Wetland Assessment Methodology

The Oregon Freshwater Wetland Assessment Methodology (OFWAM; Roth et al., 1996) was developed by an interagency committee to assess the relative quality of wetlands. The methodology is intended for use by planners, public officials, and community members for planning and educational purposes. Completion of this methodology provides basic information, which is not intended for evaluation of detailed, site-specific impacts on individual wetlands.

OFWAM is based on the idea that an understanding of the wetland system functions and conditions at local, state, and federal levels is necessary to make management decisions. Recommended uses of OFWAM include collection of basic information about wetlands in an assessment area, creation of a database of functions and conditions and other wetland data, support of decision making and planning within a jurisdiction, and education. OFWAM requires that the same functions and conditions be evaluated for each wetland within a study area. There are, in addition, other considerations noted in the following sections that determine the wetland's overall value.

2.3.2 Application of OFWAM

OFWAM assessments were partially completed during field work using data gathered in the field. Other source materials were used to complete the assessments. The methodology provides qualitative information on the relative value of wetlands based on a series of questions related to wetland functions. The following functions are assessed: wildlife habitat, fish habitat, water quality, hydrologic control, sensitivity to impact, enhancement potential, education, recreation, and aesthetic quality. Each function is assessed by criteria that give an indication of whether a wetland function is (1) intact, (2) affected or degraded, or (3) lost or not present. OFWAM is designed to be open-ended; therefore, other functions and conditions may be added later, or some may be dropped if not important to the user.

OFWAM results and a summary of the functions and conditions for each wetland are included in Appendix A. The OFWAM document, which includes detailed information about assessing the functions and conditions of wetlands, is provided in Appendix C.

2.3.3 Wetlands of Special Interest for Protection

A subset of questions within OFWAM provides a method to assess whether any wetlands within the study area should be considered Wetlands of Special Interest for Protection (WSIP). WSIP assesses whether the wetland is currently in a management plan, is protected by regulatory rules or statutes, or is uncommon in Oregon. The presence of rare, threatened, or sensitive species within an area makes the wetland a potential WSIP. An affirmative answer to any one of these questions also will place the wetland in a category for protection. This information can be used in management decisions for a site. The use of OFWAM and WSIP screening questions assists in providing an overall evaluation of wetlands in the assessment area. Many of these WSIP questions are repeated in the locally significant criteria questionnaire (see next section), so the results are combined in Table 5.

2.3.4 Locally Significant Wetland Assessment

The term "significant wetlands" has meaning in the context of Statewide Planning Goal 5. Under this Goal, local governments are instructed to identify their significant resources, including wetlands, so those resources serving significant functions in the local community are given proper consideration in planning decisions. The DSL established a technical advisory committee to develop the locally significant wetlands (LSW) criteria. The DSL adopted the Oregon Administrative Rules for Identifying Significant Wetlands in January 1997 (141-86-300 through 141-86-350). The criteria rely heavily on the results of OFWAM. Only wetlands with the characteristics defined in the Manual are assessed with OFWAM.

Locally Significant Wetland Criteria

- A wetland is considered significant if it meets one or more of the following criteria: It has the highest rank for any of the four ecological functions addressed by OFWAM or an equivalent methodology (see Appendix A for more details on the ranking), including:

    - wildlife habitat,
    - fish habitat,
    - water quality, or
    - hydrologic control.

- It (1) is rated either in the highest or second highest category for water quality (in OFWAM or equivalent) AND (2) borders a water quality limited stream, as listed by the DEQ. Dedicated stormwater detention swales are not included.

- It contains one or more uncommon wetland plant community, including those listed in the OHNP's *Classification and Catalog of Native Wetland Plant Communities in Oregon* (Christy, 1993) as G1-G3 and S1-S3.

- It is inhabited by any species listed by the federal or state government as sensitive, threatened, or endangered in Oregon (unless consultation with an appropriate agency deems the site not important for the maintenance of the species).
- It is a dedicated or proposed Registered Natural Area or Area of Critical Environmental Concern, State Natural Heritage Conservation Area, Federal Research Natural Area, or Land Trust.
- It is specifically protected as a wetland resource in a recognized federal, state, or local management plan (e.g., for park, refuge, or scenic river).
- It has a direct surface water connection to a stream segment mapped by the ODFW as habitat for indigenous anadromous salmonids, and it has "intact" or "impacted or degraded" fish habitat function using OFWAM.

From old draft LSW rules, never adopted.

No change in outcome

The final two criteria are at the discretion of the local government, but have direct connections to OFWAM results.

Optional Criterion (at discretion of local government): The wetland represents a *locally* unique plant community. The wetland is or contains the only representative within the UGB of a particular native plant community (listed in the ONHP's *Classification and Catalog of Native Wetland Plant Communities in Oregon)*. To be identified as a LSW, such a wetland also must score the highest or second highest rank for any of the four ecological functions addressed by OFWAM or an equivalent methodology.

Optional Criterion (at discretion of local government): The wetland scores the highest rank for educational potential, and a school or organization has a documented educational use for the wetland.

The City will be required to prepare local wetland protection ordinances to apply to locally significant wetlands. Additional wetlands may be protected based on other information, such as the results of the WSIP. Any wetlands not protected by local ordinances may still be under the jurisdiction of the DSL and COE.

2.4 Riparian Assessment

2.4.1 Overview of Riparian Assessment

In accordance with Goal 5 requirements, a riparian inventory and assessment was performed for limited areas within Clatskanie's UGB. Goal 5 requires local governments to inventory and protect riparian corridors. Riparian areas are zones of transition between aquatic ecosystems and terrestrial ecosystems. Goal 5 includes definitions that establish a riparian area adjacent to every river, lake, or stream, including intermittent streams with a defined channel. Human-made irrigation or drainage ditches are specifically excluded. Riparian areas can enhance water

quality, reduce erosion, moderate water temperatures and flood flows, and provide important fish and wildlife habitat. Riparian areas are particularly important for anadromous salmonids, which rely on cold, clean water and the habitat created by large woody debris (LWD).

Local governments have two options that can be implemented to protect riparian areas. One option is to inventory and assess all riparian areas as described above, establishing the width of the riparian corridor on the basis of riparian vegetation. The inventoried sites are then analyzed to determine their significance, and ordinances are implemented to provide appropriate protection.

The other option is to implement the "safe harbors" provision. Under this plan, only riparian areas adjacent to fish-bearing water resources are included for protection, and their width is based on the average stream flow of the water resource. Local governments may use either of these options, or some combination of them, to manage their riparian resources.

The riparian inventory and assessment was conducted using the methods contained in the Urban Riparian Inventory and Assessment Guide (Riparian Guide; Oregon Division of State Lands, 1998), which is included in Appendix D. The Riparian Guide is a rapid inventory and assessment method for defining the location and quality of riparian areas. It is intended as a tool to provide consistent riparian inventory results. This document provides guidance for determining the width and length of riparian areas, and for assessing their water quality, flood management, thermal regulation, and wildlife habitat functions.

2.4.2 Riparian Assessment Methods

The Riparian Guide includes a field inventory component, during which information is gathered on the width and other physical characteristics of the riparian areas. The riparian areas on each side of the water resources are divided into reaches based on various characteristics, primarily the type of development (or lack thereof) adjacent to the stream, and the dominant vegetation. Each riparian reach is coded as to the side of the stream (looking downstream; right side [R] and left side [L]) and its sequential number, with number 1 being the farthest upstream. The ends of the riparian reaches are shown on the inventory maps.

The width of the riparian study areas are determined by the potential tree height (PTH) as listed in the Riparian Guide for the tree species determined by the investigators to be the dominant tree in the riparian area. The PTH of the dominant tree species determines the width of the riparian area. The actual width of existing riparian vegetation varies widely depending on the degree of development and other factors. It may, therefore, be different from the PTH-determined riparian width.

Based on field observations, the following functions of the riparian area are assessed: (1) Water Quality, (2) Flood Management, (3) Thermal Regulation, and (4) Wildlife Habitat. The functional rank of a riparian area increases as more of the following criteria are met:

- surface water is present throughout the year;
- the developed area is less than 25%;

- the slope is less than 10%;
- impervious surfaces constitute less than 10% of the area;
- the water resource is shaded at midday during the summer;
- flood prone areas dominated by woody vegetation are present ;
- the stream or water resource is not in an excavated or lined channel;
- more than one type of water resource is in or adjacent to the riparian reach; and
- the water resource is bordered by a vegetated riparian area at least 30 feet wide.

Where these factors are present or developing, the riparian area provides for water quality, flood management, thermal regulation of the water resource, and wildlife habitat. The factors listed here are an incomplete, synthesized list. For details, consult the Riparian Guide in Appendix D.

2.5 Cartographic Products

Wetland boundaries were drawn on aerial photographs. Aerial photographs can have distortion at the edges, so digitized boundaries were adjusted. The inventory was mapped at a scale larger than the scale required in the LWI rules to allow for more resolution. Wetland field staff reviewed early draft maps and made corrections where necessary to increase the accuracy of the maps. Sample sites were identified within properties to which access was permitted. Ditches and other narrow, linear features located on the edge of a property were occasionally drawn slightly to the side of the property line for graphic clarity. A map was prepared for each section within the UGB (see Figure 1). Each section map includes a small portion of the adjoining sections. The overlap allows for ease in viewing a wetland that may cross section boundaries.

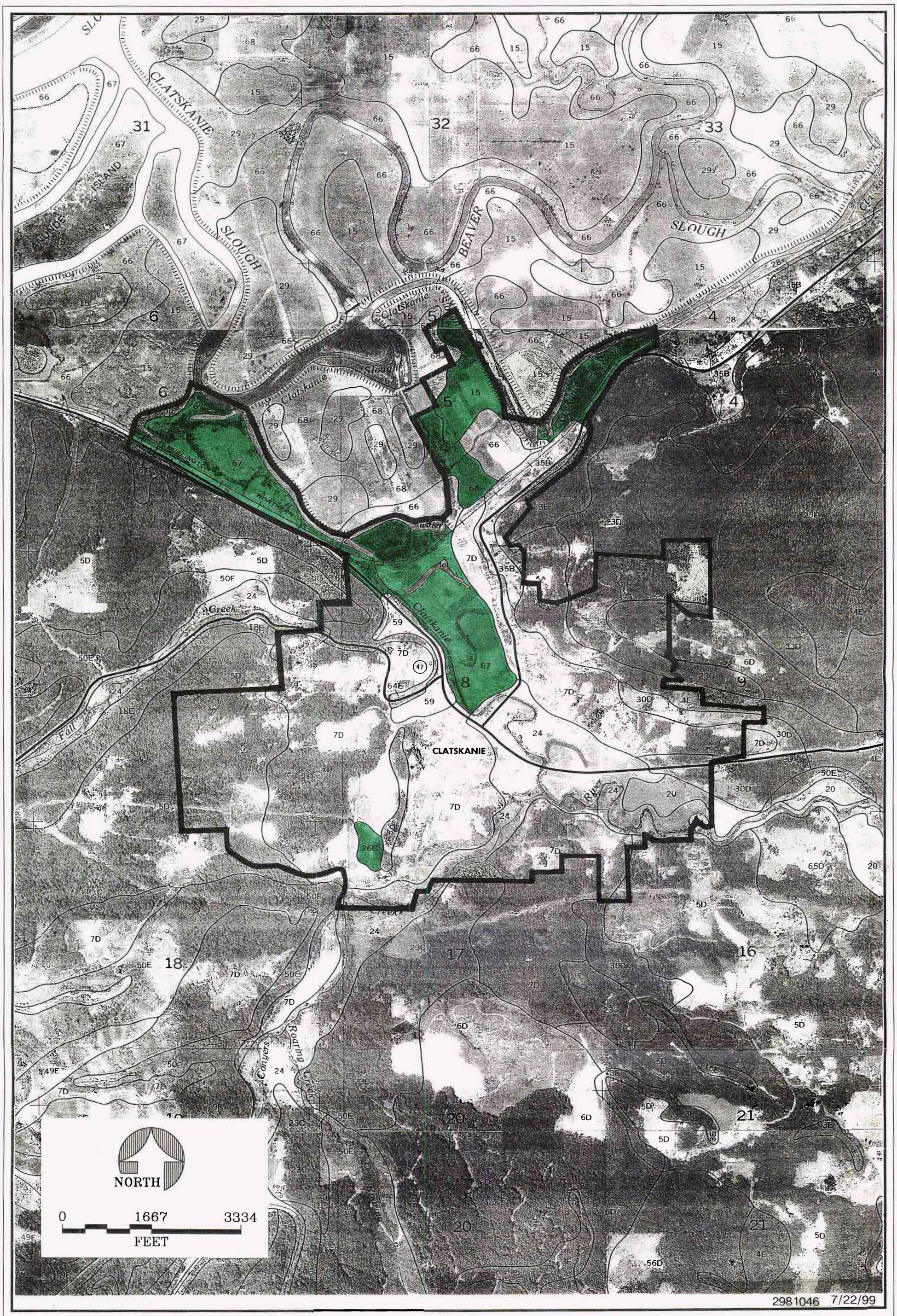
Riparian study areas included in the project are mapped by reach endpoints only.

3.0 PROJECT AREA CHARACTERISTICS

3.1 Setting

The Clatskanie LWI study area is at the confluence of the Clatskanie River valley and the Columbia River floodplain, at approximately Columbia River mile 50 (Figure 2). The study area includes 1,445 acres. Elevations within the study area vary from approximately 10 to 300 feet National Geodetic Vertical Datum (NGVD). Water levels in both rivers are affected by tidal action.

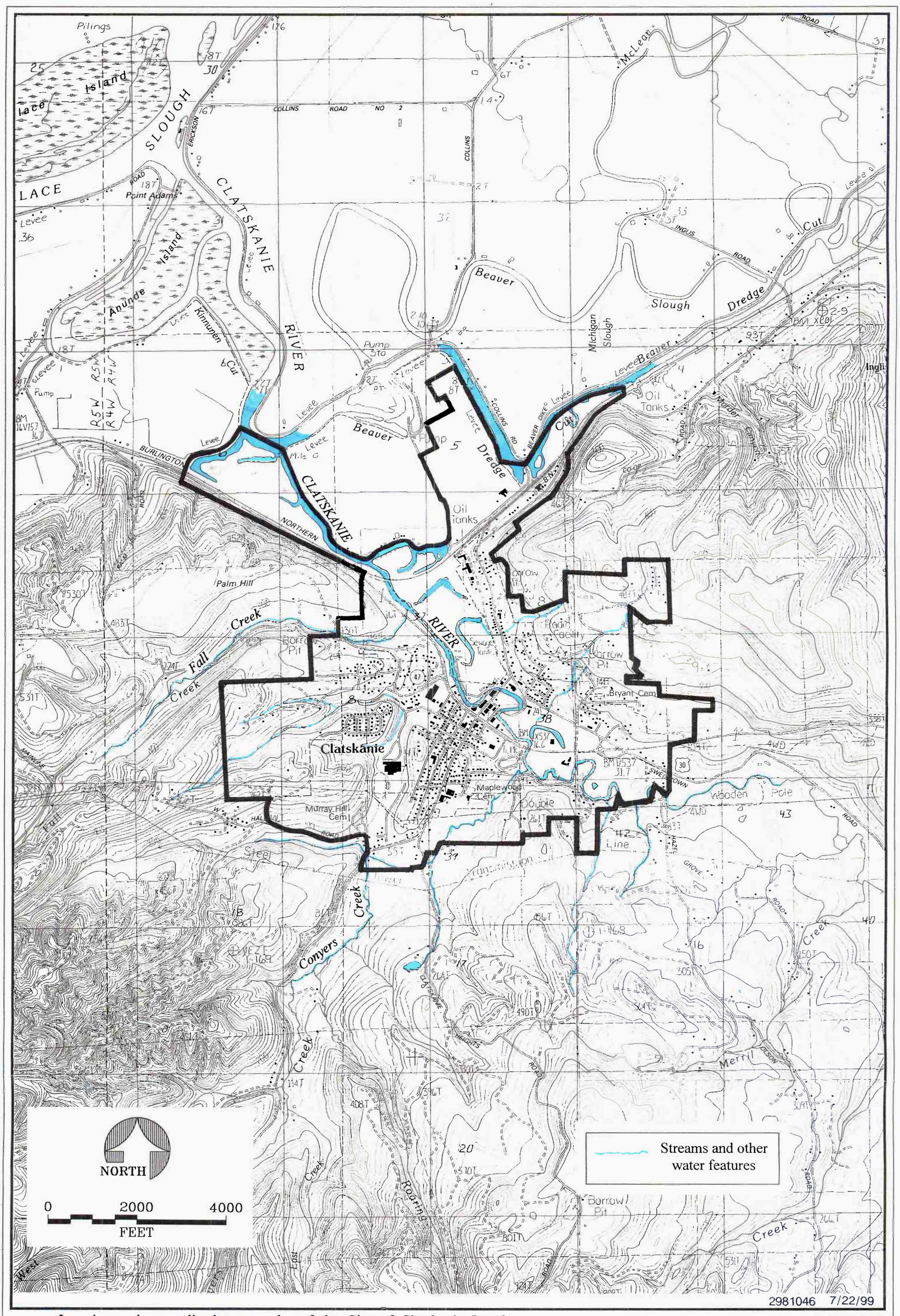
The study area includes low, flat ground in the Columbia River floodplain. Some of this land is protected by dikes against 1%-chance-per-year (100-year) flood events. Some of this land is used for pasture or hay, and some is planted in poplar tree plantations. Systems of excavated ditches, tide gates, and pumps have been used to manipulate water on these protected lands. Land in the floodplain that is not protected by dikes is frequently inundated by high water. These flood-prone sites are not cultivated, and support a mix of herbaceous, shrub, and forest vegetation.



Soil mapping units with hydric soils within the City of Clatskanie Local Wetland Inventory study area, Oregon (Soil Conservation Service, *Soil Survey of Columbia County, Oregon*, 1:20000, 1986.)

FIGURE 3

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Location and generalized topography of the City of Clatskanie Local Wetland Inventory study area, Oregon (U.S.G.S. 7.5-minute quadrangles, 1:24000, Oak Point, Washington-Oregon and Clatskanie, Oregon, provisional editions 1985.)

FIGURE 2

SHAPIRO & ASSOCIATES, INC.

The bottom of the Clatskanie River valley is also flat floodplain, which is contiguous with the floodplain of the Columbia River. The commercial and industrial core of Clatskanie is on this floodplain. The majority of the valley floor is undeveloped and used for low-intensity agriculture similar to the Columbia River floodplain, except there are no poplar plantations in the valley.

The sides of the Clatskanie River valley and bluffs on the southern edge of the Columbia River floodplain rise steeply. These uplands are forested with a mix of Douglas-fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*), western red cedar (*Thuja plicata*), red alder (*Alnus rubra*), and bigleaf maple (*Acer macrophyllum*).

Highway 30, which roughly parallels the Columbia River, is the main transportation route in the study area. The highway connects Clatskanie to Astoria, 40 miles to the west, and to several communities upstream along the Columbia River.

The growing season for the study area is from February 21 to November 30.

3.2 Hydrology and Drainage Basins

The Clatskanie River and small, unnamed tributaries are important water sources in the study area. Within the study area, the Clatskanie River is a tidally influenced, very low-gradient stream, falling less than 10 feet in the lower 2 river miles. The river channel has several meanders within the study area, and relic oxbows remain in the floodplain. The channel is deep enough to contain most peak river flows, but the valley floor is within the mapped 100-year floodplain, and is occasionally flooded. A dredging project conducted in the Clatskanie River in 1998 is expected to reduce the frequency of flooding in the floodplain. The primary water sources for wetlands mapped in the floodplain are precipitation, water draining from upslope, and groundwater, not floodwater.

Conyers Creek is a major tributary of the Clatskanie River. Within the study area, it is a low-gradient stream with a well-developed floodplain, and apparently tops its banks more frequently than the Clatskanie River does.

Fall Creek and several smaller, unnamed tributaries descend to the Clatskanie valley in steep ravines in the valley walls. These streams are confined to defined channels and lack floodplains. Fall Creek enters the Clatskanie River near the lower end of the Clatskanie valley, without flowing through the floodplain. Other small streams, some of them intermittent, empty onto the floodplain and support wetlands mapped in the Clatskanie River valley.

Beaver Dredge Cut is a large, meandering, excavated waterway that forms parts of the northern boundary of the study area. Dikes have been built along parts of it to protect adjacent lands from flooding. Unprotected adjacent lands are frequently inundated. Beaver Dredge Cut connects with the Clatskanie River in the northwestern corner of the study area.

Precipitation is a significant source of water in the study area. Average annual precipitation at Clatskanie is 61.10 inches. Monthly precipitation for February, March, and April, the first three months of the growing season, averages 6.62 inches, 6.30 inches, and 3.85 inches, respectively. These amounts combined are 27% of the annual total. Total precipitation during the growing season averages 39.5 inches, 65% of the annual total (SCS, 1986).

3.3 Soils

3.3.1 Overview

Five major soil associations are present in the study area. Most of the soils in the study area were formed in alluvium, in silty material, and in colluvium derived from sedimentary rock. Alluvium is unconsolidated sediment deposited by streams. Colluvium is soil material, rock fragments, or both moved by creep, slide, or local wash and deposited at the base of steep slopes. All soil descriptions in this section are excerpted from *Soil Survey of Columbia County, Oregon* (SCS, 1986).

The Wauna-Locoda association consists of deep, nearly level, poorly drained and very poorly drained silt loams that formed in recent alluvial deposits on broad, nearly level floodplains of the Columbia River. It is mapped in the northern portions of the study area. Wauna and Locoda soils are the main components of this unit, with lesser amounts of Udipsamments and Crims soils. Most areas of this unit are protected from flooding by dikes, while unprotected areas are subject to frequent flooding. Most of the wetlands mapped on the inventory are in the Wauna-Locoda soil association.

The Eilertsen-Treharne-McNulty association consists of deep, nearly level, well drained and moderately well drained silt loams that formed in old and recent alluvial deposits on long, narrow floodplains and terraces. The association is mapped along lower Conyers Creek and the lower Clatskanie River. Eilertsen, Treharne, and McNulty soils are the main components, with lesser amounts of Natal, Hapludalfs, Dystrochrepts, and Udifluvents soils. McNulty soils are subject to frequent flooding, while Treharne soils experience a seasonal high water table and moderately slow permeability.

The Goble association consists of moderately deep, gently sloping to moderately steep, moderately well drained silt loams that formed in silty material on rolling hills adjacent to the Columbia River. The association is generally mapped in the northeastern portion of the study area. Goble soils are the main component, with lesser amounts of Delena, Bacona, Wauld, and Multnomah Variant soils.

The Scaponia-Braun-Anunde association consists of deep and moderately deep, gently sloping to very steep, well drained silt loams that formed in colluvium derived from sedimentary rock. This map unit is on broad, stable ridgetops and side slopes of mountains. It is mapped on the slopes of Palm Hill, Murray Hill, and Clatskanie Heights on the southwestern margins of the study area.

The Bacona-Alstony association consists of deep, gently sloping to very steep, well drained silt loams and gravelly loams that formed in colluvium derived from sedimentary and igneous rock. This map unit is on broad ridgetops and side slopes of mountains. In the study area, it is mapped in a small area on the northwestern slope of Clatskanie Heights, above Conyers Creek.

3.3.2 Hydric Soils

Twenty-one soils are mapped within the Clatskanie UGB. These soils are shown with their mapping codes in Table 1. Hydric soils and soils with hydric inclusions and wet spots also are indicated in the table. Soil mapping units and hydric soils are shown in Figure 3. Hydric soils mapped in the study area are described below.

Crims silt loam, protected (15), is a very poorly drained organic soil that formed in partially decomposed plant material underlain by silty alluvium. It is found in concave areas of low Columbia River floodplains. The surface layer is typically black silt loam about 9 inches thick. The subsurface layer extending from 9 inches to a depth of about 40 inches consists of black or very dark grayish brown peaty muck. The subsoil is dark gray silt loam with lenses of muck or fine sand about 20 inches thick. The soil is classified as loamy, mixed, dysic, mesic Terric Medihemists. Permeability is moderate.

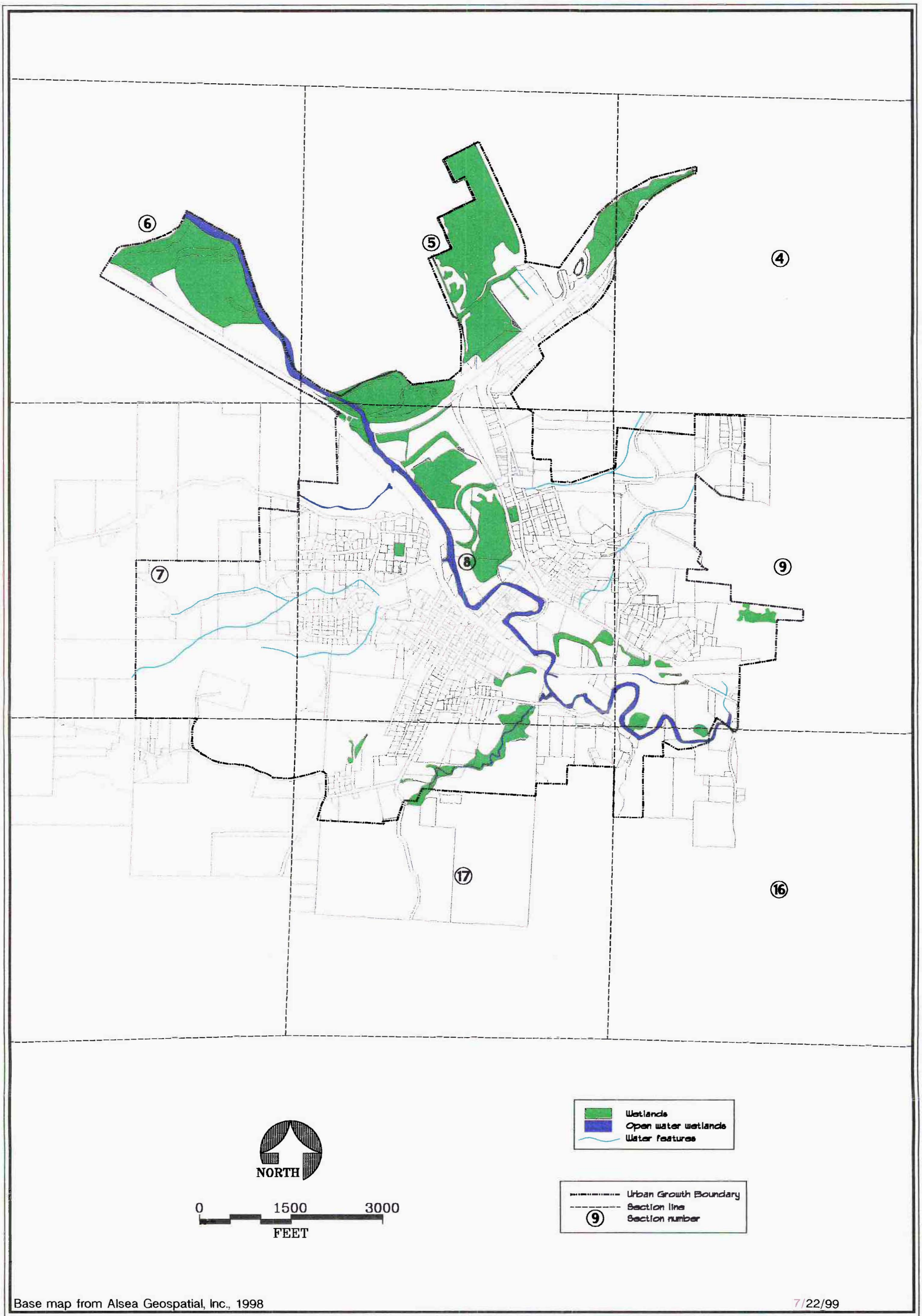
Crims silt loam, protected, is the mapped soil unit on one wetland mapped in the inventory. The soil in this unit is protected from flooding by dikes along Beaver Dredge Cut and the Clatskanie River.

Kenusky silty clay loam (26C) is a poorly drained soil formed in clayey material and found in concave areas on mountain ridgetops. The surface layer is typically black, mottled, silty clay loam and silty clay about 13 inches thick. The subsoil consists of an upper layer about 6 inches thick of dark gray, mottled silty clay loam, and a lower layer of dark gray, mottled clay about 25 inches thick. The substratum extending to a depth of 60 inches or more is grayish brown, distinctly mottled clay. The soil is classified as clayey, mixed, mesic Typic Umbraquults. Permeability is slow to a depth of 19 inches and very slow below this depth.

Only one small unit of Kenusky silty clay loam is mapped in the inventory area, south of Clatskanie High School along Canyon Road.

Locoda silt loam (28) is a very poorly drained soil formed in silty alluvium derived from mixed sources and found on concave, low floodplains of the Columbia River. In a typical profile, the surface layer is mottled, dark grayish brown silt loam about 10 inches thick. The substratum is mottled, gray silt loam or silty clay loam with thin lenses of peat or muck, extending to a depth of 60 inches or more. The soil is classified as fine-silty, mixed, acid, mesic Typic Fluvaquents. Permeability is moderately slow.

Only one unit of Locoda silt loam is mapped in the inventory area, between the Old Columbia River Highway and the Beaver Dredge Cut in the northeastern corner of the inventory area.



Base map from Alsea Geospatial, Inc., 1998

7/22/99

Wetlands, open water wetlands, and water features identified within the City of Clatskanie's Local Wetland Inventory study area. (See Attachment A for section maps with wetland locations.)

FIGURE 4

SHAPIRO & ASSOCIATES, INC.

Wauna-Locoda silt loams (67) is about 40% Wauna silt loam and about 40% Locoda silt loam, with the components so intricately intermingled that it was not practical to map them separately at the scale used. The soil unit is found on floodplains of the Columbia River. Wauna silt loam is poorly drained and formed in silty alluvium derived from mixed sources. The surface layer typically is very dark gray silt loam about 8 inches thick. The subsoil is mottled, gray silt loam about 18 inches thick. The substratum is mottled, gray silt loam stratified with sandy loam or muck, extending to a depth of 60 inches or more. The Wauna component is classified as fine-silty, mixed, acid, mesic Aeric Fluvaquents. Permeability is moderately slow. The Locoda component is a very poorly drained soil formed in silty alluvium derived from mixed sources. In a typical profile, the surface layer is mottled, dark grayish brown silt loam about 10 inches thick. The substratum is mottled, gray silt loam or silty clay loam with thin lenses of peat or muck, extending to a depth of 60 inches or more. It is classified as fine-silty, mixed, acid, mesic Typic Fluvaquents. Permeability is moderately slow.

Wauna-Locoda silt loams are mapped on the floor of the Clatskanie River valley from Nehalem Street to north of the railroad, and from the railroad to the northeastern corner of the inventory area on the southern side of the Clatskanie River.

Wauna-Locoda silt loams, protected (68), is composed of the same soils and characteristics as Wauna-Locoda silt loams, protected (67). The distinctions between the units are that unit (68) is protected from flooding by dikes. Drainage ditches and pumps are used to lower the water table in winter and in spring, when low-lying areas of this unit are subject to ponding.

A unit of Wauna-Locoda silt loams, protected, is mapped north of the railroad and east of Boat Club Road in the north-central part of the inventory area. The soil in this wetland is protected by the same dikes along the Clatskanie River and Beaver Dredge Cut that protect the Crims silt loam.

3.4 Vegetation

3.4.1 Historic Vegetation Communities

Vegetation in the study area has been affected significantly by recent human disturbance. The vegetation communities and conditions described below, taken from Franklin and Dyrness (1973), refer to conditions that existed before removal and disturbance of the native communities, and which would be expected, in time, to be reestablished in the Clatskanie area. This vegetation information is general in nature and refers primarily to upland vegetation.

Clatskanie is in the western hemlock zone of the Coast Ranges Province. This Province stretches from the southern end of the Olympic Peninsula to the northern end of the Klamath Mountains. The northeastern side is bordered by the Puget Trough, which extends south to the northern bank of the Columbia River. The southeastern side of the Province is bordered by the Willamette Valley.

Parts of the western hemlock zone are dominated by Douglas-fir, but western hemlock is the climax species. Franklin and Dyrness subdivide the hemlock zone into six vegetation associations based on dominant vegetation, which is indicative of relative site moisture. From wettest to driest, the associations are *Tsuga/Polystichum/Oxalis* (hemlock/sword fern/oxalis); *Tsuga/Polystichum* (hemlock/sword fern); *Tsuga/Rhododendron/Berberis* (hemlock/rhododendron/Oregon grape); *Tsuga/Rhododendron/Gaultheria* (hemlock/rhododendron/salal); *Tsuga/Castanopsis* (hemlock/chinkapin); and *Pseudotsuga/Holodiscus* (Douglas-fir/ocean spray). All of these associations may have existed in the study area before disturbance.

Most, if not all, of the components of these associations still exist in the inventory area. Activities like agriculture, logging, and construction have created conditions that re-sort the species, making the original associations difficult to locate or identify. Forested upland areas in the inventory area are dominated by Douglas-fir, with a mixed understory that contains several of the species named above.

Before human disturbance, deciduous tree species (primarily red alder and bigleaf maple) historically were limited to riparian or naturally disturbed sites. Forest management practices, agriculture, construction, and other activities probably make both species more abundant and widespread now than they were before Euroamerican settlement.

3.4.2 Riparian Vegetation

Vegetation associations discussed in this section are in and adjacent to wetlands or other water resources present in direct response the water source. (Note that this use of "riparian" differs from the use elsewhere in this report. The use in other sections of this report refers to any site adjacent to a water resource, regardless of the presence or absence of vegetation, or the type of vegetation.)

Before Euroamerican settlement, riparian vegetation probably was widely distributed on the floodplains of the Columbia and Clatskanie Rivers, and possibly in narrow corridors along larger tributaries of the Clatskanie River. Riparian vegetation along the tributaries probably was dominated by red alder and western red cedar. Shrubs may have included devil's club (*Oplopanax horridus*), thimbleberry (*Rubus parviflorus*), and salmonberry (*R. spectabilis*).

Lowland riparian sites in the floodplains of the rivers probably supported stands of cottonwood (*Populus balsamifera*), Oregon ash (*Fraxinus latifolia*), willow species (*Salix* spp.), hawthorn (*Crataegus douglasii*), red-osier dogwood (*Cornus stolonifera*), roses (*Rosa* spp.), and a variety of herbaceous species.

Riparian vegetation in the study area currently is restricted to a narrow, intermittent band along the Clatskanie River, undiked lands or uncultivated land on the Columbia River floodplain, and other small, incidental, isolated sites with sufficient water. Riparian sites adjacent to the Clatskanie River have occasional cottonwood trees, with greater populations of willows, red-osier dogwood, and roses.

On the Columbia River floodplain, the lowest riparian sites have dense growths of willows. Higher sites have stands of mature cottonwood trees, with willow, red-osier dogwood, and roses as an understory and on the margins of the cottonwood stands.

Himalayan blackberry (*Rubus discolor*), an invasive, introduced species, is a common plant in riparian areas throughout the study area. On some sites, it is the most common riparian vegetation. It grows in dense thickets, as well as intermixed with other species.

3.4.3 Wetland Vegetation

Wetland vegetation in the Clatskanie LWI study area is made up of herbaceous, shrub, and tree species. Most of the wetland acreage mapped in the inventory supports herbaceous, or emergent, vegetation.

Reed canarygrass (*Phalaris arundinacea*) is ubiquitous in Clatskanie's wetlands. It grows in near-monocultural conditions on several wetlands, and as a co-dominant species in nearly all other wetlands.

Rushes (*Juncus* spp.) and sedges (*Carex* spp.) were found infrequently in Clatskanie's wetlands. The greatest concentration of rushes observed was in the upper parts of the wetland along Conyers Creek. Rushes, sedges, and small-fruit bulrush (*Scirpus microcarpus*) were observed in various wetlands on the Columbia River floodplain. Birds-foot trefoil (*Lotus corniculatus*) and creeping buttercup (*Ranunculus repens*) were common in the wetlands.

Willows, red-osier dogwood, roses, and Douglas' spiraea (*Spiraea douglasii*) were the most common wetland shrubs. The floodplain along Conyer's Creek and unprotected (undiked) wetlands on the Columbia River floodplain supported dense growths of wetland shrubs. Red-osier dogwood generally was found to be concentrated in the wetland margins. Rose species and spiraea were found in numerous locations. The roses generally were growing individually or in small groups. The spiraea typically was found growing in small, dense stands.

Oregon ash, black cottonwood, and red alder were the three most common wetland tree species encountered in the inventory area. Cottonwoods were concentrated on wetlands in the Columbia River floodplain. Oregon ash was the dominant tree in one wetland and was found at low frequency in several other wetlands. Alder generally was found on the margins of wetlands, occupying the transitional zone between wetland and upland.

4.0 WETLAND FINDINGS

4.1 Total Wetland Acreage

The LWI mapped fifteen palustrine wetlands and three riverine wetlands regulated as Waters of the State (Figure 4). The total acreage of palustrine wetlands mapped in the LWI is approximately 208.03 acres. The total acreage of riverine wetlands mapped in the LWI is approximately 41.75 acres. Acreage was calculated digitally from the AutoCAD inventory

maps. A summary of the wetland acreage and classes is shown in Table 2. Wetland summary sheets and data sheets documenting the characteristics of the wetlands to which access was permitted are arranged by wetland in Appendix A.

4.2 Distribution and Character of Wetlands

Each feature mapped in the inventory was assigned a unique alphanumeric identification code. All wetlands were assigned "CR," for Clatskanie River, as the alphabetical portion of the code, because all wetlands in the inventory are within the Clatskanie River drainage basin. The wetlands were assigned numbers generally corresponding to their position in the basin, with the lowest numbers being the highest in the basin.

Five wetlands were mapped in the Clatskanie River valley. Three of them, CR03, CR08, and CR09, are palustrine emergent (PEM) wetlands. Each also has more than 0.5 acre of open water. The predominant vegetation on these wetlands is grasses, with reed canarygrass the single predominant species. CR08 and CR09 are protected from floodwaters by the Clatskanie River dike. Both of these wetlands also have excavated drainage ditches and were used recently for low-intensity agricultural activity, possibly hay production and grazing. Sections "a," "b," and "c" of CR03 are in the easement for Highway 30 and Swedetown Road. Sections "d," "e," and "f" are adjacent to light industrial and commercial development. The sections of CR03 are connected to each other by culverts.

The open water portion in each of these three wetlands is an isolated oxbow of the Clatskanie River. These oxbows are classified as palustrine open water (POW) wetland or, if greater than 6.6 feet deep, as deepwater habitat. For regulatory purposes, if the bottoms of the oxbows are unvegetated, they may be regulated as Waters of the State instead of wetlands.

Wetlands CR02, CR06, and CR18 are palustrine scrub/shrub (PSS) wetlands that lack open hydrologic connection to other water resources. Willows are the predominant shrubs in each wetland. Wetlands CR02 and CR18 are in and around shallow depressions on the floodplain of the Clatskanie River. Both wetlands are 100 to 200 feet north of the river and 200 feet in diameter. The depression in wetland CR02 is about 3 feet deep and was ponded to approximately 18 inches at the time of the inventory. No open inlet (such as a storm drain) was observed that would discharge water into the wetland, nor was any drain observed. The wetland may be supplied primarily by groundwater, possibly augmented by surface runoff from a manufactured home park near the northern side of the wetland and from the surrounding field. Reed canarygrass is the predominant herbaceous vegetation in wetland CR02.

CR18 was mapped as palustrine, unconsolidated bottom, semi-permanently flooded (PUBF) by the NWI. It was delineated (DSL Det 99-0197) and described as an "ephemeral wetland pond" by EnviroScience, Inc. in 1997. The character of the wetland was described as "moderate to high quality," with "a relatively high level of plant diversity." An aerial photograph accompanying the delineation depicts significant shrub development around the wetland. The delineation report describes a "dense ring of shrubs" surrounding the wetland. Inventory staff were unable to observe the described wetland conditions from an adjacent parcel to which access was granted, or from elevated vantage points on the southern side of the Clatskanie River. The

Table 1. Soils Types Mapped in the City of Clatskanie LWI*

Soil Type	Map Code	Hydric*	Drainage Class	Erosion Hazard
Alston gravelly loam, 30 to 60% north slopes	3E	No	Well drained	High
Alston gravelly loam, 30 to 60% south slopes	4E	No	Well drained	Very high
Anunde silt loam, 3 to 30% slopes	5D	No	Well drained	Moderate to high
Bacona silt loam, 3 to 30% slopes	6D	No	Well drained	Moderate to high
Braun-Scaponia silt loam, 5 to 30% slopes	7D	No	Well drained	High
Crims silt loam, protected	**15**	**Yes**	**Very poorly drained**	**Slight**
Dowde silt loam, 30 to 60% slopes	18E	No	Well drained	High
Eilertsen silt loam	20	No[1]	Well drained	Slight
Goble silt loam, warm, 3 to 15% slopes	23C	No[1]	Moderately well drained	Slight to moderate
Goble silt loam, warm, 15 to 30% slopes	23D	No[1]	Moderately well drained	High
Hapludalfs-Udifluvents complex	24	No[1]	Well drained to poorly drained	Slight to moderate
Kenusky silty clay loam, 0 to 15% slopes	**26C**	**Yes**	**Poorly drained**	**Slight to moderate**
Locoda silt loam	**28**	**Yes**	**Very poorly drained**	**Slight**
Mayger silt loam, 3 to 30% slopes	30D	No[1]	Somewhat poorly drained	Moderate
Multnomah Variant loam, 0 to 8% slopes	35B	No	Well drained	Moderate to high
Scaponia-Braun silt loams, 30 to 60% south slopes	50E	No	Well drained	High
Udifluvents-Dystrochrepts complex	59	No[1]	Well drained to poorly drained	Slight to moderate
Wauld very gravelly loam, 30 to 70% slopes	64E	No	Well drained	High
Wauna silt loam, protected	66	No[1]	Poorly drained	Slight
Wauna-Locoda silt loams	**67**	**Yes**	**Poorly drained**	**Slight**
Wauna-Locoda silt loams, protected	**68**	**Yes**	**Poorly drained**	**Slight**

*Notes: ***Hydric soils are in bold**

[1]May have inclusions of hydric soils

Sources: USDA SCS, 1986. *Soil Survey of Columbia County, Oregon*

USDA SCS, 1989. *Hydric Soils of Oregon by County*

Table 2. Wetlands and Sizes Mapped in the City of Clatskanie LWI

Wetland Code	Size (acres)	Cowardin Classes*
Palustrine Wetlands		
CR02	0.81	PEM, PSS
CR03	5.59	PEM, POW
CR04	0.82	PFO
CR05	11.62	PEM, PSS
CR06	1.15	PSS
CR07	0.77	PEM
CR08	31.05	POW, PEM
CR09	5.10	PEM
CR10	3.50	PEM
CR11	15.72	PSS
CR12	59.22	PEM
CR13	22.19	POW, PFO
CR14	48.14	PEM, PSS
CR17**	2.35	PEM
CR 18	1.7	PUBF/PSS
Total	**209.73**	

PSS

Riverine Wetlands (Waters of the State)		
CR01	29.49	R1UB
CR15	.98	R3UB
CR16	11.28	R1UB
Total	**41.75**	

*Wetlands may have small areas of several Cowardin classes. The listed classes are the major classes only.

**Wetland with verified delineation.

site was observed to be essentially level, with no apparent low-lying area that would pond significantly. All assessment of this wetland was based on NWI mapping, interpretation of aerial photographs, and information in the delineation report.

One wetland, CR04, was mapped on a small unit of hydric soil in the saddle between two low ridges above Conyers Creek. S.W. Canyon Road bisects this wetland at the southern edge of the Clatskanie High School campus. The wetland is palustrine forested (PFO), with a small lobe of emergent wetland on the southeastern end. The predominant tree species is Oregon ash, and red alder is a minor constituent.

Wetland CR05 was mapped on the floodplain of Conyers Creek. This wetland contains substantial amounts of palustrine emergent, scrub/shrub, and forested wetland. Soil sampled at Sample Site 20 revealed the soil is depositional, the most recent deposition occurring since the last growing season, as evidenced by sediment deposits on and around last year's growth. The creek is well-connected with the floodplain and apparently tops its banks frequently. The streambed is unvegetated and probably would be regulated as Water of the State, not wetland.Wetland CR06 consists of two lobes of wetland connected by an isthmus. The southwestern lobe is at the base of a slope below Belleflower Road, and is supported by water from numerous seeps at the base of the slope. The shrub character of this lobe is of fairly recent origin. The aerial photographs used in the inventory show trees, probably by red alder, on the site in 1994. Herbaceous vegetation includes a diverse mix of grasses, rushes, sedges, and cattail (*Typha latifolia*). The northeastern lobe of this wetland is adjacent to commercial properties and streets.

Wetland CR07 is an isolated, palustrine emergent wetland in a residential neighborhood. It is in a slight concavity on a hillside. No surface water was observed draining into or out of the wetland. Vegetation on the site is hydrophytic, but the mapped soil is not hydrophytic.

Five wetlands were mapped on the southern edge of the Columbia River floodplain. Four (CR10, CR11, CR13, and CR14) of the five are unprotected from flooding; two of these (CR11 and CR14) appear to be flooded frequently. The fifth, CR12, is protected from flooding by dikes along Beaver Dredge Cut.

CR10 and CR13 are on the western and eastern banks, respectively, of the Clatskanie River, where it flows onto the Columbia River floodplain. These PSS wetlands are high enough that they apparently flood only during peak high-water events. Willows are the predominant shrubs. Cottonwood, Oregon ash, and red alder are also present in localized areas. CR10 is divided into several small sections by the Burlington Northern railroad tracks and two road crossings. The sections of the wetland are connected by culverts.

CR11 is a PSS wetland between the southern bank of Beaver Dredge Cut and the bluffs that rise abruptly on the southern edge of the floodplain. Willows, cottonwoods, and ash trees are the main woody species, with shrubby willows predominating. Reed canarygrass is the principal herbaceous species under the willows. This wetland is not protected from Beaver Dredge Cut floodwaters, and the well-developed drainage channels indicate that it is inundated on a frequent basis, possibly by tidal flux during some seasons.

CR12 is on a peninsula surrounded on three sides by Beaver Dredge Cut. The wetland and some adjacent land are protected from floodwaters by a dike. Drainage ditches that periodically contain substantial amounts of water have been excavated in the wetland. The predominant wetland vegetation is reed canarygrass. The site is, or has been, used for low-intensity agriculture, possibly hay production and grazing.

CR13 is surrounded on three sides by the Clatskanie River and an old oxbow, a branch of which penetrates the interior of the wetland. It is connected to the mainland along a 400-foot segment of the Burlington Northern tracks. The high ratio of shoreline to area, species and structural diversity of the vegetation, and relative isolation give this wetland significantly greater habitat value than most of the other wetlands.

CR14 is mostly PEM, with substantial amounts of PSS, PFO, and POW wetlands. The Clatskanie River forms the northern edge of the wetland. A shallow slough, the POW wetland, curves around the western and southwestern edges. Reed canarygrass is the predominant plant in the central, emergent part of the wetland. This area also has well-developed drainage channels, indicating it is inundated on a frequent basis, possibly by tidal flux. The predominant woody species are willow, red-osier dogwood, Oregon ash, and black cottonwood.

CR17 is the only wetland in the study area with a delineation that has been verified by the DSL (DSL #96-0006). This wetland is north of Highway 30 and east of Bryant Cemetery. Complete information about this wetland can be found in the delineation report, which is available from the DSL (A.G. Crook Company, 1995).

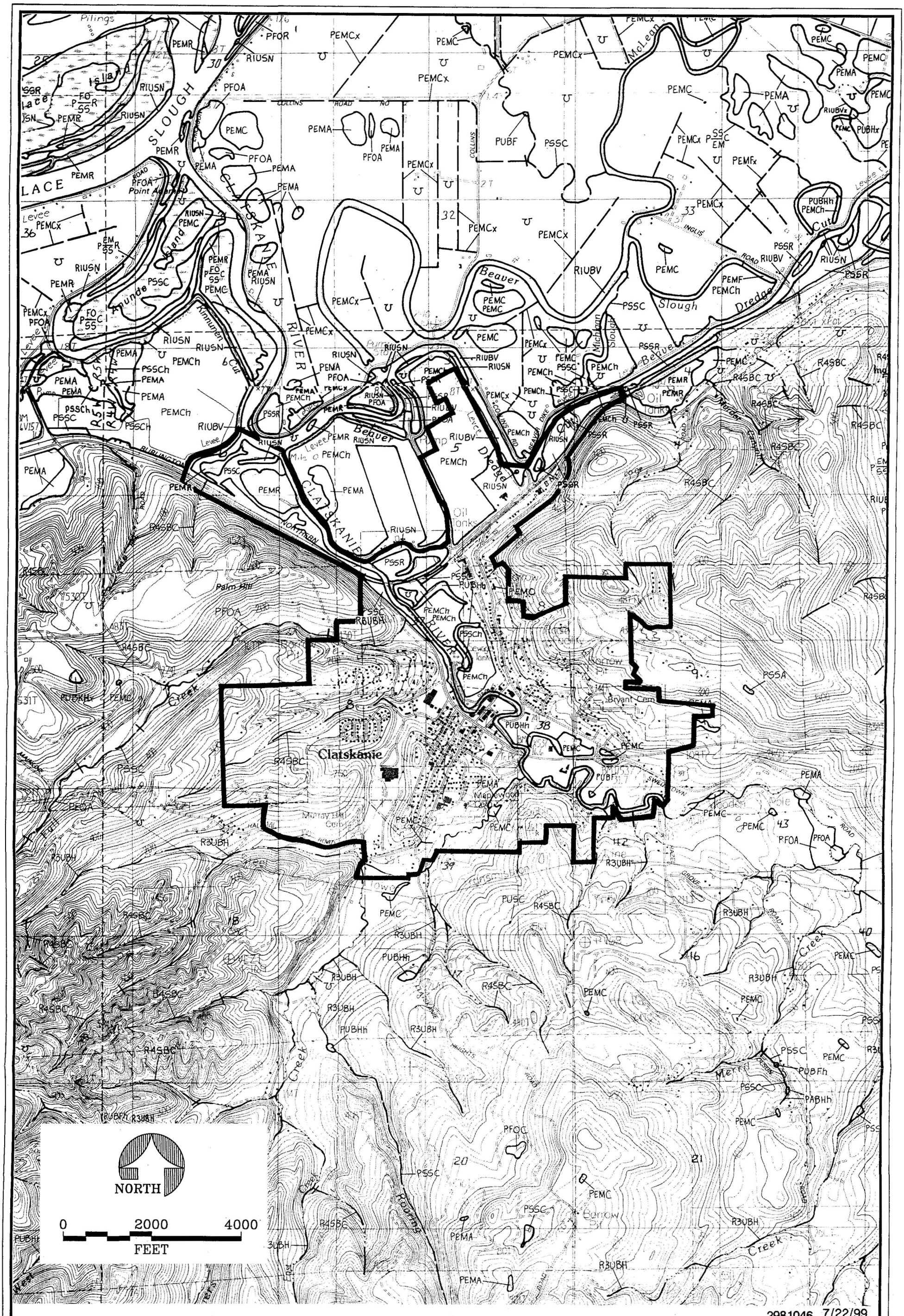
Three features on the inventory map, the Clatskanie River (CR01), Fall Creek (CR15), and part of the Beaver Dredge Cut (CR16), are riverine wetlands regulated as Waters of the State because they are unvegetated, and therefore do not have all of the wetland characteristics required by the Manual. They can, however, be classified in the Cowardin classification system. Fall Creek is classified as riverine, upper perennial, unconsolidated bottom (R3UB). The Clatskanie River and Beaver Dredge Cut are classified as riverine, tidal, unconsolidated bottom (R1UB).

The NWI mapped 35 wetlands in the study area (Figure 5).. These wetlands were classified into 14 types according to the Cowardin classification system (Cowardin, 1979). The number of each type of wetland mapped by the NWI is in Table 3. All sites mapped by the NWI also were mapped by the LWI, with one exception. The NWI mapped an intermittent, riverine streambed north of Clatskanie High School. This feature is mapped by the LWI as an intermittent stream, not wetland.

The LWI mapped wetlands in two places where they were not mapped by the NWI. Wetlands CR02 and CR07 are both isolated, palustrine emergent wetlands. They are both small, and could be of recent origin.

Table 3. NWI Wetlands in the City of Clatskanie LWI

Code	Cowardin Classification of NWI Mapped Wetlands within the Clatskanie UGB	Number Mapped
PEMA	palustrine, emergent, temporary	1
PEMC	palustrine, emergent, seasonal	7
PEMR	palustrine, emergent, seasonal tidal	2
PEMCh	palustrine, emergent, seasonal, diked/impounded	4
PSSC	palustrine, scrub/shrub, seasonal	3
PSSCh	palustrine scrub/shrub, seasonal, diked/impounded	1
PSSR	palustrine, scrub/shrub, seasonal tidal	4
PUBF	palustrine, unconsolidated bottom, semi-permanently flooded	1
PUBHh	palustrine, unconsolidated bottom, permanent, diked/impounded	3
R1UBV	riverine, tidal, unconsolidated bottom, permanent tidal	1
R1USN	riverine, tidal, unconsolidated shore, regular	3
R3UBH	riverine, upper perennial, unconsolidated bottom, permanent	2
R4SBC	riverine, intermittent, streambed, seasonal	2



National Wetlands Inventory designations within the City of Clatskanie Local Wetland Inventory study area, Oregon (U.S. Fish and Wildlife Service, Oak Point, Washington-Oregon and Clatskanie, Oregon, 7.5-minute quadrangles, 1:24000 based on 1981 and 1980 color infrared photography.)

FIGURE 5

SHAPIRO & ASSOCIATES, INC.

Note that the number of wetlands mapped by the NWI is greater than the number mapped by the LWI. The primary reason for the difference is a cartographic protocol. The NWI maps a site with several wetland classes as separate wetlands, while the LWI combines several NWI wetlands into a single wetland unit.

4.3 Oregon Freshwater Wetland Assessment Methodology Results

The OFWAM results are summarized in Table 4. This table is useful primarily for obtaining an overview of the current and potential functional level of each wetland. The functional level of each assessed characteristic is shown for each wetland. These functional levels are derived directly from the assessment summary forms. Expanded information about wetlands that scored in the highest category for any of the assessed functions is provided below.

More detailed information (individual OFWAM data sheets) should be consulted before making decisions regarding any wetland. Detailed responses used to generate the summary results are available on the data forms for each wetland, which are arranged by alphanumeric code in Appendix A.

Wetlands CR02, CR05, CR06, CR09, CR10, CR11, CR12, and CR13 score the highest rank for hydrologic control. This implies that these wetlands serve valuable functions related to the control of surface water during heavy precipitation or high water events. To rank the highest category for hydrologic control, a wetland must meet at least four of the following criteria: location in the 100-year floodplain; evidence of flooding or ponding; unrestricted flow of water out of the wetland; woody vegetation as the dominant vegetation cover type; residential/industrial development as the dominant land use within 500 feet of the wetland on the downstream edge; and urban/urbanizing as the dominant existing land use in the watershed upstream from the area.

and CR18

→ Wetlands CR02, CR03, CR05, CR10, CR11, CR13, and CR14 score the highest rank for water quality. This implies that the wetlands have valuable and effective water quality functions, such as trapping sediments or absorbing contaminants from floodwaters.

Wetlands CR05, CR12, and CR17 score the highest rank for aesthetic quality. This indicates that the wetlands are easily observed from accessible viewing points, blend well with the surrounding landscape, and are not excessively degraded by objectionable sounds, odors, or visual detractors.

Wetland CR05, CR13, and CR14 score the highest rank for wildlife habitat quality. At least four of the following criteria must be met to be given a high rank for this category: dominated by woody vegetation; presence of open water; connection to other wetlands or other bodies of water; no water quality limited streams adjacent to or above the wetland; and an unmaintained vegetated buffer greater than 25 feet wide bordering more than 40% of the wetland.

Wetland CR03 scores the highest rank for its ability to provide recreation. This rating is associated with fishing opportunities provided by the open water portion of the wetland, unit "f." Wetlands also can provide important non-consumptive recreation that may not be reflected in the analysis.

Wetland CR13 scores the highest rank for sensitivity to future impacts. The position of the wetland in the landscape, surrounding land use zones, and existing characteristics in the watershed above the wetland make it susceptible to degradation from future development activity.

4.4 Locally Significant Wetlands

Twelve
Eleven wetlands meet OFWAM requirements for LSW (Table 5). Four of these wetlands also have characteristics that qualify them as Wetlands of Special Interest for Protection (WSIP).

Wetlands CR02, CR05, CR06, CR09, CR10, CR11, CR12, and CR13 qualify as LSW because they score the highest OFWAM rank for hydrologic control (described above).

Wetlands CR02, CR03, CR05, CR10, CR11, CR13, and CR14 qualify as LSW because they score the highest OFWAM rank for water quality. Wetlands CR08, CR09, and CR12 are considered LSW because they score the second-highest rank for water quality and border a water quality limited stream. This implies that compromising the water quality functions of these wetlands by filling or draining them, or degrading their vegetation, could have adverse effects on a stream that already has water quality problems.

Also CR 18

Wetland CR05, CR13, and CR14 qualify as LSW because they score the highest OFWAM rank for wildlife habitat quality, implying that these wetlands provide important opportunities for foraging, hiding, breeding, or other essential wildlife needs. These characteristics are based on the wetlands' position in the landscape relative to development and surface water resources, and diversity of plant species and structure.

Wetlands CR05, CR11, CR13, and CR14 are considered LSW because they score the second-highest OFWAM rank for fish habitat and are adjacent to stream segments mapped as habitat for indigenous anadromous salmonids. These wetlands also qualify as WSIP, because they have open water portions that contain sensitive, threatened, or endangered fish species, or are designated as critical or essential habitat for threatened or endangered fish species.

4, 7, and 17 are non-significant
Wetland CR07 does not meet any criteria for identification as a LSW. Its position in the landscape, vegetation, and hydrologic and spatial characteristics prevent it from being ranked high enough to qualify as a LSW in any category.

yet are still regulated

5.0 Riparian Findings

5.1 Riparian Assessment Scope

The riparian inventory and assessment was performed adjacent to waters listed by the ODFW as containing fish. These waters are the Clatskanie River, Conyers Creek, Fall Creek, and Beaver Dredge Cut. Four tree species were found to be dominant in the riparian areas. The four tree

Table 5. Locally Significant Wetlands and Wetlands of Special Interest for Protection

Wetland Code	Size (acres)	Results of Local Wetland Significance Assessment	Results of Wetlands of Special Interest for Protection Assessment
CR2	0.81	• Wetland scores the highest rank for hydrologic control. • Wetland scores the highest rank for water quality.	• Does not meet significance criteria.
CR3	5.59	• Wetland scores the highest rank for water quality.	• Does not meet significance criteria.
CR4	0.82	• Does not meet significance criteria.	• Does not meet significance criteria.
CR5	11.62	• Wetland scores the highest rank for hydrologic control. • Wetland scores the highest rank for water quality. • Wetland scores the highest rank for quality of wildlife habitat. • Wetland scores the second-highest rank for fish habitat and is adjacent to a stream segment mapped as habitat for indigenous anadromous salmonids.	• Wetland contains sensitive, threatened, or endangered species of fish. • Wetland is designated as critical or essential habitat for threatened or endangered species of fish.
CR6	1.15	• Wetland scores the highest rank for hydrologic control.	• Does not meet significance criteria.
CR7	0.77	• Does not meet significance criteria.	• Does not meet significance criteria.
CR8	31.05	• Wetland scores the highest rank for hydrologic control and the second-highest rank for water quality and borders a water quality-limited stream.	• Does not meet significance criteria.
CR9	5.10	• Wetland scores the highest rank for hydrologic control. • Wetland scores the second-highest rank for water quality and borders a water quality-limited stream.	• Does not meet significance criteria.

Table 5. Locally Significant Wetlands and Wetlands of Special Interest for Protection, continued

Wetland Code	Size (acres)	Results of Local Wetland Significance Assessment	Results of Wetlands of Special Interest for Protection Assessment
CR10	3.50	• Wetland scores the highest rank for hydrologic control. • Wetland scores the highest rank for water quality.	• Does not meet significance criteria.
CR11	15.72	• Wetland scores the highest rank for hydrologic control. • Wetland scores the highest rank for water quality.	• Wetland contains sensitive, threatened, or endangered species of fish. • Wetland is designated as critical or essential habitat for threatened or endangered species of fish.
CR12	59.22	• Wetland scores the highest rank for hydrologic control. • Wetland scores the second-highest rank for water quality and borders a water quality-limited stream.	• Does not meet significance criteria.
CR13	22.19	• Wetland scores the highest rank for hydrologic control. • Wetland scores the highest rank for quality of wildlife habitat. • Wetland scores the highest rank for water quality.	• Wetland contains sensitive, threatened, or endangered species of fish. • Wetland is designated as critical or essential habitat for threatened or endangered species of fish.
CR14	48.14	• Wetland scores the highest rank for water quality. • Wetland scores the highest rank for quality of wildlife habitat. • Wetland scores the second-highest rank for fish habitat and is adjacent to a stream segment mapped as habitat for indigenous anadromous salmonids.	• Wetland contains sensitive, threatened, or endangered species of fish. • Wetland is designated as critical or essential habitat for threatened or endangered species of fish.
CR17	2.35	• Does not meet significance criteria.	• Does not meet significance criteria.
CR18	1.70	• Wetland scores the highest rank for water quality.	• Does not meet significance criteria.

species, along with their PTH (which is equivalent to the width of the riparian area), are Douglas-fir (120 feet), black cottonwood (120 feet), bigleaf maple (90 feet), and red alder (65 feet).

5.2 Riparian Characterization and Results

Twelve riparian reaches were evaluated. Findings are summarized in Table 6. Data characterizing them, and their functional assessments, are presented in Appendix B.

Riparian study areas along the Clatskanie River were divided into six reaches, three on each side. The upper reaches on both sides are open space, with fields on the right side and forested uplands on the left side. The center reaches on each side are developed residential and commercial areas in Clatskanie. The downstream reaches on each side are from the developed areas to the river's confluence with Beaver Dredge Cut, the boundary of the study area.

One reach was assessed on each side of Conyers Creek, from the study area boundary on the upstream end to the crossing of Belleflower Road on the downstream end. Both of these reaches are open space, with open fields and forested uplands.

One reach also was assessed on each side of Fall Creek, from the study area boundary downstream to the confluence with the Clatskanie River. Both of these reaches are forested open space.

Two reaches were assessed on the southern side of Beaver Dredge Cut. The upper reach is adjacent to wetland along the slough, on a reach of the slough that is not diked. The majority of this reach is occupied by the Burlington Northern railroad and the Old Columbia River Highway, which run the entire length of the reach. The lower reach is along a diked section of the slough. The footprint of the dike occupies most of the riparian area in this reach.

Three riparian study areas have been altered significantly by development. CRR2 and CRL2 have been affected by development of commercial and industrial enterprises and lack meaningful amounts of riparian vegetation. Study area CRR3 has been affected by a dike that forms the bank of the Clatskanie River. The dike is vegetated primarily with herbaceous species. The remainder of the riparian study areas support healthy vegetation, including a variety of herbaceous species, woody vines, shrubs, and trees.

6.0 SUMMARY

Clatskanie's Goal 5 wetland resource inventory has been completed in compliance with guidance from the DSL that governs LWIs. The resulting maps are more complete and of greater resolution and accuracy than the data that have been used by the City to determine the location of possible wetlands. The inventory is a tool that can be used by the City to make informed planning decisions.

Table 6. Urban Riparian Inventory and Assessment Summary

				Riparian Guide Assessment Criteria			
Code	Length (feet)	Salmonids	303 (d) Temp	Water Quality	Flood Management	Thermal Regulation	Wildlife Habitat
BSL1	2,900	Yes	No	Medium	High	High	High
BSL2	2,600	Yes	No	Medium	Medium	Low	Medium
CCL1	2,900	Yes	No	Medium	Medium	Low	High
CCR1	2,900	Yes	No	High	High	Medium	High
CRL1	5,700	Yes	No	High	High	High	High
CRL2	5,700	Yes	No	Medium	Medium	Low	Medium
CRL3	4,600	Yes	No	High	Medium	Medium	High
CRR1	5,700	Yes	No	High	Medium	Medium	Medium
CRR2	3,300	Yes	No	Medium	Medium	Low	Medium
CRR3	7,000	Yes	No	High	Low	Medium	Medium
FCL1	1,600	Yes	No	High	Medium	High	High
FCR1	1,600	Yes	No	High	Medium	High	High

The study are includes 1,445 acres. Fourteen palustrine wetlands totaling 208.03 acres were identified and mapped by the LWI. Ten of these wetlands have open hydrologic connections with the main drainages in Clatskanie, while the remaining three are isolated wetlands. Many of the wetlands experience some degree of inundation during high flow events on the Clatskanie and Columbia Rivers and Conyers Creek.

Three riverine wetlands totaling approximately 41.75 acres were included in the inventory. The Clatskanie River, Fall Creek, and part of the Beaver Dredge Cut are regulated as Waters of the State because they do not meet all the criteria to be regulated as wetlands. They were not included in the OFWAM analysis.

Wetlands in the Clatskanie LWI study area generally have one of three types of buffer that insulates their borders from surrounding activities. Some, like CR05, have an intact vegetative buffer that includes woody species. Some, like CR12, are surrounded at least partially by dikes. The dikes provide an herbaceous vegetative buffer as wide as the footprint of the dike. Some of the wetlands, like CR13, are partially protected by a permanent water body.

Clatskanie's wetlands and riparian areas have been affected to some degree by a variety of activities, including agriculture, construction, forest products processing, dredging, and diking. Each of the wetlands and riparian areas within the study area continues to serve important functions associated with fish and wildlife habitat, water quality, hydrologic control, and quality of life.

7.0 REFERENCES

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GLOSSARY OF ACRONYMS USED IN TEXT

UGB:	Urban Growth Boundary
LWI:	Local Wetland Inventory
USFWS:	U.S. Fish and Wildlife Service
OAR:	Oregon Administrative Rule
EPA:	Environmental Protection Agency
DSL:	Oregon Division of State Lands
NWI:	National Wetlands Inventory
COE:	U.S. Army Corps of Engineers
USDA:	U.S. Department of Agriculture
FEMA:	Federal Emergency Management Agency
ORIS:	Oregon Rivers Information System
ODF:	Oregon Department of Forestry
ODFW:	Oregon Department of Fish and Wildlife
DEQ:	Oregon Department of Environmental Quality
ONHP:	Oregon Natural Heritage Program
SCS:	Soil Conservation Service
NRCS:	Natural Resource Conservation Service
OBL:	obligate wetland
FACW:	facultative wetland
FAC:	facultative
FACU:	facultative upland
UPL:	obligate upland
OFWAM:	Oregon Freshwater Wetland Assessment Methodology
WSIP:	wetlands of special interest for protection
LSW:	locally significant wetlands
PTH:	potential tree height
NGVD:	National Geodetic Vertical Datum

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 1-6-99 **Wetland Mapping Code:** CR01

Investigator(s): JG/AR **Size (acres):** 29.49

Location

Legal: T 7N R 4W S 5, 6, 8, 9, 16 N/A

Other:

Basin: Clatskanie River

Soils

Mapped Series: N/A

Hydrology

Hydrologic Source: Surface runoff, groundwater

Wetland Classification(s): R1UB

Dominant Vegetation

Trees	Shrubs	Vines	Herbs

Comments:

Wetland CR1 is the Clatskanie River, from the project boundary on Olson Road to the mouth of the river at the Beaver Dredge Cut. The river channel in the project area is unvegetated. This precludes the river from being regulated as a wetland, as it does not meet the hydrophytic vegetation criterion. It is regulated as a Water of the State. Despite not being regulated as a wetland, the Cowardin wetland classification system used in the Local Wetland Inventory uses the wetland classification "riverine" to describe unvegetated river channels. The sinuous channel is approximately 50 feet wide. The streambed is approximately 10 feet below the top of the bank and is flat or shallowly concave. The river banks are generally steep and break sharply at the top. The northern bank of the river downstream from the Nehalem Street bridge is mostly a dike.

Wetland Classification Codes:

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

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-01 Plot: 12

T 7N R 4W S 9 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located in the field to the W of the Swedetown Road mobile home park.

Project #: 2981046 Determined by: JG/AR Date: 1/6/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: No

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:
Herb Stratum - % total cover:		**100**
Festuca arundinacea	FAC-	60
Agrostis sp.	FAC	20
Agrostis stolonifera	FAC	20
Woody Vine Stratum - % total cover:		**0**

	Ind.	%Cover:
Shrub/Sapling Stratum - % total cover:		**0**
Tree Stratum - % total cover:		**0**

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 2 of 3 = 67 % (50/20 Rule)

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Eilertsen silt loam
Drainage Class: well drained
Taxonomy: Fine-silty, mixed, mesic Ultic Hapludalfs

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-5"	10YR 3/3		loam
	5-16"	10YR 3/4-3/3		loam

☐ Histosol ☐ Prob. Aquic moisture regime ☐ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☐ On hydric soils list

Soil Criterion Met? No

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: >16"

Primary Indicators:
☐ Inundated
☐ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☐ Oxidized rhizospheres ☐ Local soil survey data
☐ Water-stained leaves ☐ FAC-Neutral test
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:

Hydrology Criterion Met? No

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-01 Plot: 13

T 7N R 4W S 9 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located 50' from the top of the bank of the Clatskanie River in S end of field to the W of Swedetown Road mobile home park.

Project #: 2981046 Determined by: JG/AR Date: 1/6/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: No

Comments: Plot area is approximately 4' below level of field to the N.

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

Herb Stratum - % total cover:		Ind. %Cover: 100	Shrub/Sapling Stratum - % total cover:		Ind. %Cover: 10
Phalaris arundinacea	FACW	80	*Salix sitchensis*	FACW	90
Cirsium arvense	FACU	20	*Rosa nutkana*	FAC	10
Woody Vine Stratum - % total cover:		**35**	**Tree Stratum** - % total cover:		**0**
Rubus discolor	FACU	95			
Rubus ursinus	FACU	5			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 2 of 4 = 50 % (50/20 Rule)

Vegetation Criterion Met? No

SOILS Mapped Unit Name: Hapludalfs-Udifluvents complex
Drainage Class: Moderately well drained and well drained
Taxonomy: Hapludalfs/Udifluvents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-4"	10YR 4/2		very fine sandy loam
	4-12"	10YR 3/3		loam
	12-16"	10YR 4/3		loam

☐ Histosol ☐ Prob. Aquic moisture regime ☐ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☐ On hydric soils list

Soil Criterion Met? No

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: 0"

Primary Indicators:
☐ Inundated
☑ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☑ Oxidized rhizospheres
☐ Water-stained leaves
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:
☐ Local soil survey data
☐ FAC-Neutral test

Remarks: Hydrology is borderline. Soil saturation could have been the result of recent heavy rains.

Hydrology Criterion Met? Yes

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 1-6-99 **Wetland Mapping Code:** CR02

Investigator(s): JG/AR **Size (acres):** 0.81

Location

Legal: T 7N R 4W S 9, 16 1001

Other: South of Swedetown Rd. mobile home pk.

Basin: Clatskanie River

Soils

Mapped Series: 24

Hydrology

Hydrologic Source: Precipitation

Wetland Classification(s): PEM, PSS

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
Alnus rubra	*Salix sp.*		*Phalaris arundinacea*
	Alnus rubra		*Carex obnupta*
			Juncus effusus

Comments:

Wetland CR2 is an isolated palustrine scrub/shrub wetland. The site was ponded to a depth of approximately 18 inches when field work was conducted. Vegetation visible beneath the surface was primarily reed canarygrass. CR2 is adjacent to a manufactured home residential area. A worn footpath between the residences and the wetland indicates that the site is visited with some frequency by occupants of the homes. No inlet or outlet for surface water was observed.

Wetland Classification Codes:

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

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-02 Plot: 14

T 7N R 4W S 9 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located in a low, bowl-shaped depression just to the S of the Swedetown Road mobile home park.

Project #: 2981046 Determined by: JG/AR Date: 1/6/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Comments: Average depth of the ponded area is 18".

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

Herb Stratum - % total cover:		60
Phalaris arundinacea	FACW	80
Juncus effusus	FACW	10
Carex obnupta	OBL	10

Shrub/Sapling Stratum - % total cover:		60
Salix sitchensis	FACW	80
Alnus rubra	FAC	20
Rosa nutkana	FAC	5

Woody Vine Stratum - % total cover:		0

Tree Stratum - % total cover:		20
Alnus rubra	FAC	100

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 4 of 4 = 100 % (50/20 Rule)

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Hapludalfs-Udifluvents complex
Drainage Class: Moderately well drained and well drained
Taxonomy: Hapludalfs/Udifluvents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-4"	10YR 4/1		sandy loam
	4-16"	10YR 3/2	mottles common, medium 10R 3/4	loam

☐ Histosol ☐ Prob. Aquic moisture regime ☑ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☐ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 3" Depth to water table: 0" Depth to saturation: 0"

Primary Indicators:
- ☑ Inundated
- ☑ Saturated in upper 12"
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns

Secondary Indicators (2 or more required):
- ☐ Oxidized rhizospheres
- ☐ Water-stained leaves
- ☐ Recorded data (aerials, groundwater data)
  Explain:
- ☐ Other
  Explain:
- ☐ Local soil survey data
- ☐ FAC-Neutral test

Hydrology Criterion Met? Yes

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	01/06/99	Investigator(s):	JG/AR
Project Name:	Clatskanie LWI		
WetlandCode:	CR-02	ProjectNumber:	2981046

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

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

Wildlife Habitat:	The wetland provides habitat for some wildlife species.
Fish Habitat - Streams:	N/A
Fish Habitat - Lakes/Ponds:	N/A
Water Quality:	The wetland's water quality function is intact.
Hydrologic Control:	The wetland's hydrologic control function is intact.
Sensitivity to Impact:	The wetland is potentially sensitive to future impacts.
Enhancement Potential:	The wetland has little enhancement potential.
Education:	The wetland site is not appropriate for educational use.
Recreation:	The wetland is not appropriate for or does not provide recreational opport
Aesthetic Quality:	The wetland is considered to be moderately pleasing.

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-02	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	The wetland provides habitat for some wildlife species.	One Cowardin wetland class with more than 5 plant species. Woody vegetation is dominant vegetation cover. Low degree of Cowardin class interspersion. Less than 0.5 acre of unvegetated open water present. Wetland not connected to another body of water, but water within 1 mile. Wetland not connected to other wetlands, but within 3 mile radius of other wetlands. Upstream not listed as water quality limited. Exclusive Forest use or Open Space within 500 feet of wetland edge.
Fish Habitat - Streams	N/A	
Fish Habitat - Lakes/Ponds	N/A	
Water Quality	The wetland's water quality function is intact.	Precipitation or sheet flow is wetland's primary source of water. Evidence of flooding or ponding during part of the growing season. High (>60%) degree of wetland vegetation cover. Between 0.5 and 5 acres of wetland connected to other wetlands within a 3 mile radius. Exclusive Forest use or Open Space within 500 feet of wetland edge. Upstream not listed as water quality limited in watershed or adjacent to the wetland.
Hydrologic Control	The wetland's hydrologic control function is intact.	All or part of wetland located within 100-year floodplain or enclosed basin. Evidence of flooding or ponding during the growing season. Area is between 0.5 and 5 acres. Waterflow out of wetland is restricted or no outlet. Woody vegetation is dominant cover type. Exclusive Forest Use or Open Space within 500 ft of wetland on downstream or down-slope edge of wetland. Forested or natural area land use upstream.
Sensitivity to Impact	The wetland is potentially sensitive to future impacts.	Stream flow or bank has been modified by human activities within 1 mile above wetland. Water is being taken out of stream(s) through active diking, drainage, or irrigation districts upstream. Upstream not listed as water quality limited in watershed upstream of the or adjacent to the wetland. Exclusive Forest use or Open Space within 500 feet of wetland's edge. Dominant Residential/Industrial (developed) land use within 500 feet of wetland's edge. Woody vegetation is the dominant cover.
Enhancement Potential	The wetland has little enhancement potential.	Wetland has lost one or more functions or one or more functions is not present in assessment results for wildlife habitat, fish habitat, water quality and hydrologic control.

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-02	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
		Wetland's primary source of water is precipitation or sheet flow. Wetland's area is between 0.5 and 5 acres. Less than 10% of wetland's edge is bordered by a vegetative buffer 25 or more feet wide. Wetland is potentially sensitive to future impacts.
Education	The wetland site is not appropriate for educational use.	Wetland site is not open to the public for direct access or observation. There are no visible hazards to the public at the wetland site. Provides wildlife habitat for some species, or fish habitat is impacted or degraded. There is no existing physical public access to other features, and observation of other features cannot be made. There is not an existing access point within 250 feet of the wetland's edge (if existing-hazardous). Access is not available for limited mobility.
Recreation	The wetland is not appropriate for or does not provide recreational opportunities.	There is not an existing access point within 250 feet of the wetland's edge (if existing-hazardous). Wetland not accessible by boat-no boat launch within 1 mile/ cannot develop. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides habitat for some species. Fishing is not allowed at wetland or adjacent water body (or not applicable). Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be moderately pleasing.	One Cowardin class is visible from primary viewing area(s). More than 50% of wetland is visible from viewing area(s). General appearance of wetland has visual detractors, which can be removed easily. Visual character with surrounding area is developed with no landscaping. At certain times, unpleasant odors are present at the primary viewing location. Continuous traffic and other intrusive noise and natural sounds are audible at primary viewing location.

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 1-6-99

Wetland Mapping Code: CR03

Investigator(s): JG/AR

Size (acres): 5.59

Location

Legal: T 7N R 4W S 8, 9

100, 101, 200, 201, 300, 400, 2601, 5500, 5600

Other: Highway 30 and Swedetown Road interchange

Basin: Clatskanie River

Soils

Mapped Series: 24

Hydrology

Hydrologic Source: Surface flow

Wetland Classification(s): PEM, POW

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
	Spiraea douglasii	*Rubus discolor*	*Phalaris arundinacea*
			Festuca arundinacea

Comments:

Wetland CR3 is composed of six units. CR3a, b, c, and d are associated with the interchange at Highway 30 and Swedetown Road. Units "a" and "b" are on the southern side of Highway 30, "c" and "d" are on the northern side. Water collects in unit "a" and flows west in a drainage ditch on the southern side of Swedetown Road. Water leaves unit "b" through a culvert in the southwestern corner and joins water from unit "a." This flow continues west to a culvert that conveys it to the northern side of Highway 30, into unit "d." Water from unit "c" flows through a culvert on the western side, into unit "d." All water from "d" flows into a ditch in the northwestern corner and is conveyed through a culvert into unit "e," and finally "f." Units "a" through "e" are palustrine emergent wetlands; unit "b" has a small amount of shrub vegetation. Unit "f" is an isolated oxbow of the Clatskanie River. It is unvegetated palustrine open water wetland.

Wetland Classification Codes:

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

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-03b Plot: 15

T 7N R 4W S 9 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located inside the S cloverleaf of the Hwy. 30 interchange at Swedetown Rd.

Project #: 2981046 Determined by: JG/AR Date: 1/6/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Comments: The western end of the unit is inundated. The plot was determined to be wetland despite lack of hydric soil indicators, based on possibility of soil disturbance, presence of water, and hydrophytic vegetation.

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:		Ind.	%Cover:
Herb Stratum - % total cover:		60	**Shrub/Sapling Stratum** - % total cover:		50
Phalaris arundinacea	FACW	90	*Spiraea douglasii*	FACW	100
Festuca arundinacea	FAC-	10			
Woody Vine Stratum - % total cover:		10	**Tree Stratum** - % total cover:		0
Rubus discolor	FACU	100			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 2 of 3 = 67 % (50/20 Rule)

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Hapludalfs-Udifluvents complex
Drainage Class: Moderately well drained and well drained
Taxonomy: Hapludalfs/Udifluvents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-3"	10YR 3/3		silty loam
	3-16"	10YR 4/4	mixed matrix; stains on ped. faces 10YR 2/1	some angular gravel and hard sandy clay nodules

☐ Histosol ☐ Prob. Aquic moisture regime ☐ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☐ On hydric soils list

Remarks: Lower layer appears to be fill material with cobbles.

Soil Criterion Met? No

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: 6"

Primary Indicators:
☐ Inundated
☑ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☑ Drainage patterns

Secondary Indicators (2 or more required):
☐ Oxidized rhizospheres ☐ Local soil survey data
☐ Water-stained leaves ☐ FAC-Neutral test
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:

Hydrology Criterion Met? Yes

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-03b Plot: 16

T 7N R 4W S 9 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located inside the S cloverleaf of the Hwy. 30 interchange at Swedetown Rd.

Project #: 2981046 Determined by: JG/AR Date: 1/6/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: No

Comments: The western end of the unit is inundated.

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:
Herb Stratum - % total cover:		**100**
Festuca arundinacea	FAC-	40
Cirsium arvense	FACU	20
Lotus corniculatus	FAC	20
Agrostis sp.	FAC	20
Woody Vine Stratum - % total cover:		**15**
Rubus ursinus	FACU	100

	Ind.	%Cover:
Shrub/Sapling Stratum - % total cover:		**0**
Tree Stratum - % total cover:		**0**

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 2 of 5 = 40 % (50/20 Rule)

Vegetation Criterion Met? No

SOILS Mapped Unit Name: Hapludalfs-Udifluvents complex
Drainage Class: Moderately well drained and well drained
Taxonomy: Hapludalfs/Udifluvents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-4"	10YR 3/2		loam
	4-16"	10YR 4/4	angular gravel to 2" diameter	gritty clayey loam

☐ Histosol ☐ Prob. Aquic moisture regime ☐ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☐ On hydric soils list

Remarks: Lower layer appears to be fill material.

Soil Criterion Met? No

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: >16"

Primary Indicators:
☐ Inundated
☐ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☐ Oxidized rhizospheres ☐ Local soil survey data
☐ Water-stained leaves ☐ FAC-Neutral test
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:

Hydrology Criterion Met? No

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-03c Plot: 17

T 7N R 4W S 9 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located inside the N cloverleaf of the Hwy. 30 interchange at Swedetown Rd.

Project #: 2981046 Determined by: JG/AR Date: 1/6/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Comments: The unit drains to the W side of the interchange on/off ramp through an 18" concrete culvert.

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:
Herb Stratum - % total cover:		**100**
Phalaris arundinacea	FACW	100
Woody Vine Stratum - % total cover:		**0**

	Ind.	%Cover:
Shrub/Sapling Stratum - % total cover:		**0**
Tree Stratum - % total cover:		**0**

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 1 of 1 = **100** % (50/20 Rule)

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Hapludalfs-Udifluvents complex
Drainage Class: Moderately well drained and well drained
Taxonomy: Hapludalfs/Udifluvents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-4"	10YR 4/2		silt
	4-12"	10YR 4/1	mottles abundant, medium 10YR 4/6 5/6	clayey silt
	12-16"	10YR 4/1	mottles common, small 10YR 4/4	clayey silt

☐ Histosol ☐ Prob. Aquic moisture regime ☑ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☐ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 2" Depth to water table: 0" Depth to saturation: 0"

Primary Indicators:
- ☑ Inundated
- ☑ Saturated in upper 12"
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns

Secondary Indicators (2 or more required):
- ☐ Oxidized rhizospheres
- ☐ Water-stained leaves
- ☐ Recorded data (aerials, groundwater data)
  Explain:
- ☐ Other
  Explain:
- ☐ Local soil survey data
- ☐ FAC-Neutral test

Hydrology Criterion Met? Yes

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	JG/AR	Investigator(s):	01/06/99
Project Name:	Clatskanie LWI		
WetlandCode:	CR-03	ProjectNumber:	2981046

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

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

Wildlife Habitat:	The wetland provides habitat for some wildlife species.
Fish Habitat - Streams:	N/A
Fish Habitat - Lakes/Ponds:	The wetland's fish habitat function is impacted or degraded.
Water Quality:	The wetland's water quality function is intact.
Hydrologic Control:	The wetland's hydrologic control function is impacted or degraded.
Sensitivity to Impact:	The wetland is potentially sensitive to future impacts.
Enhancement Potential:	The wetland has moderate potential for enhancement.
Education:	The wetland has potential for educational use.
Recreation:	The wetland provides recreational opportunities.
Aesthetic Quality:	The wetland is not pleasing.

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-03	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	The wetland provides habitat for some wildlife species.	Two or more Cowardin wetland classes. Emergent veg. & ponding or open water only. Low degree of Cowardin class interspersion. Between 0.5 and 1 acre of unvegetated open water present. Wetland not connected to another body of water, but water within 1 mile. Wetland not connected to other wetlands, but within 3 mile radius of other wetlands. Upstream not listed as water quality limited. Residential/Industrial land use within 500 feet of wetland edge.
Fish Habitat - Streams	N/A	
Fish Habitat - Lakes/Ponds	The wetland's fish habitat function is impacted or degraded.	More than 75% of stream shaded by riparian vegetation. Portions of stream channel modified. Stream contains between 10 and 25% of instream structures. Upstream not listed as water quality limited. Residential/Industrial land use within 500 feet of wetland edge. Non-Salmonid, non-sensitive fish species present sometime during the year.
Water Quality	The wetland's water quality function is intact.	Surface flow (including streams and ditches) is wetland's primary source of water. Evidence of flooding or ponding during part of the growing season. High (>60%) degree of wetland vegetation cover. Between 0.5 and 5 acres of wetland connected to other wetlands within a 3 mile radius. Residential/Industrial land use within 500 feet of wetland edge. Upstream not listed as water quality limited in watershed or adjacent to the wetland.
Hydrologic Control	The wetland's hydrologic control function is impacted or degraded.	All or part of wetland located within 100-year floodplain or enclosed basin. Evidence of flooding or ponding during the growing season. Area is between 0.5 and 5 acres. Waterflow out of wetland is unrestricted. Emergent veg. and ponding , or open water only is dominant cover type. Residential/Industrial land use within 500 ft of wetland on downstream or down-slope edge of wetland. Forested or natural area land use upstream.
Sensitivity to Impact	The wetland is potentially sensitive to future impacts.	Stream flow or bank has been modified by human activities within 1 mile above wetland. Water is not being taken out of streams through active diking, drainage, or irrigation districts upstream. Upstream not listed as water quality limited in watershed upstream of the or adjacent to the wetland. Residential/industrial (developed) land use within 500 feet of wetland's edge. Dominant

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-03	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
		Residential/Industrial (developed) land use within 500 feet of wetland's edge. Emergent veg. and ponding,or open water only are the dominant cover types.
Enhancement Potential	The wetland has moderate potential for enhancement.	Wetland has lost one or more functions or one or more functions is not present in assessment results for wildlife habitat, fish habitat, water quality and hydrologic control. Wetland's primary source of water is surface flow, including streams and ditches. Water flow into wetland is not restricted, but if blocked, obstruction can be removed easily. Wetland's area is between 0.5 and 5 acres. Less than 10% of wetland's edge is bordered by a vegetative buffer 25 or more feet wide. Wetland is potentially sensitive to future impacts.
Education	The wetland has potential for educational use.	Wetland site is open to the public for direct access or observation. One to two visible safety hazards exist at the wetland site. Provides wildlife habitat for some species, or fish habitat is impacted or degraded. There is existing physical public access to other features or it can be created easily and other habitats can be observed from this site. There is a maintained public access point within 250 feet of the wetland's edge. Access is not available for limited mobility.
Recreation	The wetland provides recreational opportunities.	There is a maintained public access point within 250 feet of wetland's edge. Wetland not accessible by boat-no boat launch within 1 mile/ cannot develop. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides habitat for some species. Fishing is allowed at wetland or adjacent water body. Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is not pleasing.	Two Cowardin classes are visible from primary viewing area(s). More than 50% of wetland is visible from viewing area(s). General appearance of wetland has visual detractors which cannot be removed easily. Visual character with surrounding area is developed with no landscaping. At certain times, unpleasant odors are present at the primary viewing location. Continuous traffic and other intrusive noise and NO natural sounds are audible at primary viewing location.

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 1-7-99

Wetland Mapping Code: CR04

Investigator(s): DC/AR/JG

Size (acres): 0.82

Location

Legal: T 7N R 4W S 17 200, 300

Other: SW Canyon Rd. at Clatskanie High School campus

Basin: Clatskanie River

Soils

Mapped Series: 26C

Hydrology

Hydrologic Source: Groundwater

Wetland Classification(s): PFO

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
Fraxinus latifolia	*Fraxinus latifolia*	*Rubus laciniatus*	*Phalaris arundinacea*
Alnus rubra	*Spiraea douglasii*		*Juncus effusus*
			Geum macrophyllum

Comments:

Wetland CR4 is a small wetland bisected by SW Canyon Road, just south of Clatskanie High School. Water to support the wetland accumulates at the base of the slopes, which rise on both sides of the road. The wetland is primarily forested, but a lobe on the southwestern end is emergent. The understory on the forested parts of the site includes a large amount of saplings, indicating good recruitment and sustainability. The eastern wetland/upland boundary is generally defined by a change in vegetation coincident with a change in topography at the base of the slope. The western boundary is defined by change in the vegetation to an understory predominated by Himalayan blackberry.

Wetland Classification Codes:

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

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-04a Plot: 22

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located on E side of Canyon Road S of Clatskanie High School across road from gate.

Project #: 2981046 Determined by: DC/AR Date: 1/7/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:
Herb Stratum - % total cover:		**100**
Juncus effusus	FACW	50
Phalaris arundinacea	FACW	50
Geum macrophyllum	FACW	5
Woody Vine Stratum - % total cover:		**5**
Rubus laciniatus	FACU	100

	Ind.	%Cover:
Shrub/Sapling Stratum - % total cover:		**30**
Spiraea douglasii	FACW	60
Fraxinus latifolia	FACW	40
Tree Stratum - % total cover:		**65**
Fraxinus latifolia	FACW	70
Alnus rubra	FAC	30

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 6 of 7 = 86 % (50/20 Rule)

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Kenusky silty clay loam, 0-15%
Drainage Class: poorly drained
Taxonomy: Clayey, mixed, mesic Typic Umbraquults

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-8"	10YR 3/1		silty clay loam
	8-18"	2.5Y 5/2	mottles frequent, medium 7.5YR 4/6	clay

☐ Histosol ☐ Prob. Aquic moisture regime ☑ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☑ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: 1" Depth to saturation: 0"

Primary Indicators:
☑ Inundated
☑ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☑ Oxidized rhizospheres
☑ Water-stained leaves
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:
☐ Local soil survey data
☐ FAC-Neutral test

Remarks: Small areas around soil pit are inundated.

Hydrology Criterion Met? Yes

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-04a Plot: 23

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located on E side of Canyon Road S from Clatskanie High School across from gate on hillside.

Project #: 2981046 Determined by: JG Date: 1/7/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: No

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

Herb Stratum - % total cover:		**Ind. %Cover: 30**
Polystichum munitum	FACU	50
Agrostis stolonifera	FAC	15
Holcus lanatus	FAC	15
Pteridium aquilinum	FACU	10
Juncus effusus	FACW	5
Phalaris arundinacea	FACW	5

Shrub/Sapling Stratum - % total cover:		**Ind. %Cover: 5**
Fraxinus latifolia	FACW	50
Acer circinatum	FAC-	50

Woody Vine Stratum - % total cover:		**70**
Rubus laciniatus	FACU	60
Rubus ursinus	FACU	20
Rubus discolor	FACU	20
Rubus spectabilis	FAC+	10

Tree Stratum - % total cover:		**5**
Fraxinus latifolia	FACW	100

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 2 of 7 = 29 % (50/20 Rule)

Vegetation Criterion Met? No

SOILS Mapped Unit Name: Scaponia-Braun silt loams, 30-60% slopes
Drainage Class: well drained
Taxonomy: Fine-loamy, mixed, mesic Dystric Eutrochrepts/Umbris Dystrochrepts

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-6"	10YR 3/2		loam
	6-16"	10YR 3/3		loam

☐ Histosol ☐ Prob. Aquic moisture regime ☐ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☐ On hydric soils list

Remarks: The boundary around the 6" depth is gradual.

Soil Criterion Met? No

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: >16"

Primary Indicators:
☐ Inundated
☐ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☐ Oxidized rhizospheres ☐ Local soil survey data
☐ Water-stained leaves ☐ FAC-Neutral test
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:

Hydrology Criterion Met? No

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	01/07/99	Investigator(s):	JG/DC/AR
Project Name:	Clatskanie LWI		
WetlandCode:	CR-04	ProjectNumber:	2981046

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

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

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

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-04	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	The wetland provides habitat for some wildlife species.	One Cowardin wetland class with more than 5 plant species. Woody vegetation is dominant vegetation cover. Low degree of Cowardin class interspersion. Between 0.5 and 1 acre of unvegetated open water present. Wetland not connected to another body of water, but water within 1 mile. Wetland not connected to other wetlands, but within 3 mile radius of other wetlands. Upstream not listed as water quality limited. Exclusive Forest use or Open Space within 500 feet of wetland edge.
Fish Habitat - Streams	N/A	
Fish Habitat - Lakes/Ponds	N/A	
Water Quality	The wetland's water quality function is impacted or degraded.	Groundwater (including seeps and springs) is wetland's primary source of water. Evidence of flooding or ponding during part of the growing season. High (>60%) degree of wetland vegetation cover. Between 0.5 and 5 acres of wetland connected to other wetlands within a 3 mile radius. Exclusive Forest use or Open Space within 500 feet of wetland edge. Upstream not listed as water quality limited in watershed or adjacent to the wetland.
Hydrologic Control	The wetland's hydrologic control function is impacted or degraded.	No part of wetland located within 100-year floodplain or enclosed basin. Evidence of flooding or ponding during the growing season. Area is between 0.5 and 5 acres. Waterflow out of wetland is unrestricted. Woody vegetation is dominant cover type. Exclusive Forest Use or Open Space within 500 ft of wetland on downstream or down-slope edge of wetland. Forested or natural area land use upstream.
Sensitivity to Impact	The wetland is potentially sensitive to future impacts.	Stream flow or bank has not been modified by human activities within 1 mile above wetland. Water is not being taken out of streams through active diking, drainage, or irrigation districts upstream. Upstream not listed as water quality limited in watershed upstream of the or adjacent to the wetland. Exclusive Forest use or Open Space within 500 feet of wetland's edge. Dominant Residential/Industrial (developed) land use within 500 feet of wetland's edge. Woody vegetation is the dominant cover.
Enhancement Potential	The wetland has moderate potential for enhancement.	Wetland has lost one or more functions or one or more functions is not present in assessment results for wildlife habitat, fish habitat, water quality and hydrologic control.

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-04	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
		Wetland's primary source of water is groundwater, including springs and seeps. Wetland's area is between 0.5 and 5 acres. Between 10 and 40 % of wetland's edge is bordered by a vegetative buffer 25 or more feet wide. Wetland is potentially sensitive to future impacts.
Education	The wetland has potential for educational use.	Wetland site is open to the public for direct access or observation. One to two visible safety hazards exist at the wetland site. Provides wildlife habitat for some species, or fish habitat is impacted or degraded. There is existing physical public access to other features or it can be created easily and other habitats can be observed from this site. There is a maintained public access point within 250 feet of the wetland's edge. Access is not available for limited mobility.
Recreation	The wetland has the potential to provide recreational opportunities.	There is a maintained public access point within 250 feet of wetland's edge. Wetland not accessible by boat-no boat launch within 1 mile/ cannot develop. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides habitat for some species. Fishing is not allowed at wetland or adjacent water body (or not applicable). Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be moderately pleasing.	One Cowardin class is visible from primary viewing area(s). More than 50% of wetland is visible from viewing area(s). General appearance of wetland has visual detractors which cannot be removed easily. Visual character with surrounding area is landscaped or manipulated by people. At certain times, unpleasant odors are present at the primary viewing location. Some traffic and other similar sounds and natural sounds are audible at primary viewing locations.

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 1-6-99

Wetland Mapping Code: CR05

Investigator(s): JG/AR

Size (acres): 11.62

Location

Legal: T 7N R 4W S 8, 17 100, 200, 600, 700, 4500

Other: Intersection of Belleflower and Erickson to intersection of Nehalem St. and Conyers Ck. Rd.

Basin: Clatskanie River

Soils

Mapped Series: 24

Hydrology

Hydrologic Source: Surface flow

Wetland Classification(s): PEM, PSS

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
	Salix sp.	*Rubus discolor*	*Juncus effusus*
			Phalaris arundinacea
			Cirsium arvense

Comments:

Wetland CR5 is Conyers Creek and associated wetlands. Conyers Creek flows in a relatively natural meandering channel about 25 feet wide and 5 feet deep. The sides of the channel are steep and break sharply at the top. Wetlands on both sides of the creek are a mix of palustrine emergent and scrub/shrub wetlands. Emergent wetlands in the upper part of the creek are in fields that may be used for pasture or hay production. Soil at the wetland sample point had been deposited recently. The top layer of material apparently had been deposited during the most recent flood event, just before the inventory.

Wetland Classification Codes:

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

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-05 Plot: 20

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located on the W point of the property on Erickson Rd. 20' from the top of the bank of Conyers Creek.

Project #: 2981046 Determined by: JG/AR Date: 1/6/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:		Ind.	%Cover:
Herb Stratum - % total cover:		70	**Shrub/Sapling Stratum** - % total cover:		60
Juncus effusus	FACW	50	*Salix sp.*	FAC	100
Phalaris arundinacea	FACW	50			
Cirsium arvense	FACU	10			
Woody Vine Stratum - % total cover:		10	**Tree Stratum** - % total cover:		0
Rubus discolor	FACU	100			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 3 of 4 = 75 % (50/20 Rule)

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Hapludalfs-Udifluvents complex
Drainage Class: Moderately well drained and well drained
Taxonomy: Hapludalfs/Udifluvents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-2"	10YR 4/1		silty loam
	2-2.5"			undecomoposed organic material (grasses, wood, etc.)
	2.5-	10YR 4/3		fine sandy loam

☐ Histosol ☐ Prob. Aquic moisture regime ☐ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☐ On hydric soils list

Remarks: Upper 16" of soil layer mostly from deposition by flooding.

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: 0"

Primary Indicators:
☐ Inundated
☑ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☑ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☐ Oxidized rhizospheres
☐ Water-stained leaves
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:
☐ Local soil survey data
☐ FAC-Neutral test

Remarks: Periodic hydrology appears to be during flood events.

Hydrology Criterion Met? Yes

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-05 Plot: 21

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located on NW edge of property on Erickson Rd. at base of hillside.

Project #: 2981046 Determined by: JG/AR Date: 1/6/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: No

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:		Ind.	%Cover:
Herb Stratum - % total cover:		100	**Shrub/Sapling Stratum** - % total cover:		0
Phalaris arundinacea	FACW	100			
Woody Vine Stratum - % total cover:		40	**Tree Stratum** - % total cover:		30
Rubus discolor	FACU	100	*Prunus avium*	UPL	100

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 1 of 3 = 33 % (50/20 Rule)

Vegetation Criterion Met? No

SOILS Mapped Unit Name: Hapludalfs-Udifluvents complex
Drainage Class: Moderately well drained and well drained
Taxonomy: Hapludalfs/Udifluvents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-1"	10YR 3/2		silty loam
	1-3"	10YR 3/3		angular silt loam
	3-7"	10YR 3/3	diffuse stains on ped. faces (10YR 4/4)	loam
	7-16"	10YR 3/2		loam

☐ Histosol ☐ Prob. Aquic moisture regime ☐ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☐ On hydric soils list

Soil Criterion Met? No

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: >16"

Primary Indicators:
☐ Inundated
☐ Saturated in upper 12"
☐ Water marks
☑ Drift lines
☑ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☑ Oxidized rhizospheres ☐ Local soil survey data
☐ Water-stained leaves ☐ FAC-Neutral test
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:

Hydrology Criterion Met? Yes

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	01/06/99	Investigator(s):	JG/AR
Project Name:	Clatskanie LWI		
WetlandCode:	CR-05	ProjectNumber:	2981046

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

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

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

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-05	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	The wetland provides diverse wildlife habitat.	Two or more Cowardin wetland classes. Emergent veg. & ponding or open water only. Low degree of Cowardin class interspersion. More than 1 acre of unvegetated open water present. Wetland connected to another body of water by surface water. Wetland connected to other wetlands within a 3 mile radius. Upstream not listed as water quality limited. Exclusive Forest use or Open Space within 500 feet of wetland edge. More than 40% of wetland edge bordered by veg. buffer 25 or more feet wide.
Fish Habitat - Streams	The wetland's fish habitat function is impacted or degraded.	Between 50 and 75% of stream shaded by riparian vegetation. Stream channel natural/returning to natural physical character. Stream contains between 10 and 25% of instream structures. Upstream not listed as water quality limited. Exclusive Forest use or Open Space within 500 ft of wetland edge. Salmon, trout, or sensitive species present sometime during the year.
Fish Habitat - Lakes/Ponds	N/A	
Water Quality	The wetland's water quality function is intact.	Surface flow (including streams and ditches) is wetland's primary source of water. Evidence of flooding or ponding during part of the growing season. High (>60%) degree of wetland vegetation cover. More than 5 acres of wetland area. Exclusive Forest use or Open Space within 500 feet of wetland edge. Upstream not listed as water quality limited in watershed or adjacent to the wetland.
Hydrologic Control	The wetland's hydrologic control function is intact.	All or part of wetland located within 100-year floodplain or enclosed basin. Evidence of flooding or ponding during the growing season. Area is more than 5 acres. Waterflow out of wetland is restricted or no outlet. Emergent veg. and ponding , or open water only is dominant cover type. Residential/Industrial land use within 500 ft of wetland on downstream or down-slope edge of wetland. Forested or natural area land use upstream.
Sensitivity to Impact	The wetland is potentially sensitive to future impacts.	Stream flow or bank has not been modified by human activities within 1 mile above wetland. Water is not being taken out of streams through active diking, drainage, or irrigation districts upstream. Upstream not listed as water quality limited in watershed upstream of the or adjacent to the wetland. Exclusive Forest use or Open Space within 500 feet of

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-05	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
		wetland's edge. Dominant Residential/Industrial (developed) land use within 500 feet of wetland's edge. Emergent veg. and ponding,or open water only are the dominant cover types.
Enhancement Potential	N/A	
Education	The wetland has potential for educational use.	Wetland site is open to the public for direct access or observation. One to two visible safety hazards exist at the wetland site. Results of wildlife habitat and fish habitat assessment criteria prove wetland provides diverse Wildlife Habitat, or Fish Habitat function is intact. There is existing physical public access to other features or it can be created easily and other habitats can be observed from this site. There is an unmaintained access point within 250 feet of the wetland's edge. Access is not available for limited mobility.
Recreation	The wetland has the potential to provide recreational opportunities.	There is an unmaintained public access point within 250 feet of the wetland's edge. Wetland not accessible by boat-no boat launch within 1 mile/ cannot develop. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides diverse wildlife habitat. Fishing is allowed at wetland or adjacent water body. Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be pleasing.	More than two Cowardin classes are visible from primary viewing area(s). More than 50% of wetland is visible from viewing area(s). General appearance of wetland has no visual detractors. Visual character with surrounding area is open or naturally landscaped. Natural, pleasant odors are present at primary viewing location. Some traffic and other similar sounds and natural sounds are audible at primary viewing locations.

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 1-6-99 **Wetland Mapping Code:** CR06

Investigator(s): JG/AR **Size (acres):** 1.15

Location

Legal: T 7N R 4W S 8 100

Other: South and east of Truehaak St.

Basin:

Soils

Mapped Series: 26C

Hydrology

Hydrologic Source: Groundwater

Wetland Classification(s): PSS

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
	Salix sp.		*Phalaris arundinacea*
			Juncus effusus
			Scirpus microcarpus
			Holcus lanatus
			Ranunculus repens

Comments:

Wetland CR6 is a palustrine scrub/shrub wetland supported by drainage from the slope below Belleflower Road. Water apparently enters the wetland from numerous small seeps at the toe of the slope. Vegetation conditions in the southwestern lobe of the wetland are of recent origin. The aerial photographs used in the inventory indicate that the site was forested in 1994. At the time of the inventory, the trees had been removed, and a thick cover of emergent and shrub vegetation covered the site.

Wetland Classification Codes:

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

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-06 Plot: 18

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located approximately 100' S of 90 degree bend in Truehaak St. to the W of abandoned mobile home park.

Project #: 2981046 Determined by: JG/AR Date: 1/6/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Comments: Area seems to be spring and seep fed from base of hill to the S.

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

Herb Stratum - % total cover:		Ind. %Cover: 90	Shrub/Sapling Stratum - % total cover:		Ind. %Cover: 40
Phalaris arundinacea	FACW	50	*Salix sp.*	FAC	90
Juncus effusus	FACW	30	*Populus balsamifera*	FAC	10
Scirpus microcarpus	OBL	20			
Holcus lanatus	FAC	10			
Ranunculus repens	FACW	10			
Equisetum arvense	FAC	5			
Woody Vine Stratum - % total cover:		0	**Tree Stratum** - % total cover:		0

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 4 of 4 = 100 % (50/20 Rule)

Remarks: Typha latifolia is present at less than 5% and outside plot area, but within immediate vicinity.

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Hapludalfs-Udifluvents complex
Drainage Class: Moderately well drained and well drained
Taxonomy: Hapludalfs/Udifluvents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-4"	10YR 4/2	mottles few, medium (not bright)	sandy silt loam
	4-16"	10YR 4/1	mottles common, large 10YR 4/3	fine sandy loam

☐ Histosol ☐ Prob. Aquic moisture regime ☑ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☐ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0.5" Depth to water table: >16" Depth to saturation: 0"

Primary Indicators:
☑ Inundated
☑ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☑ Drainage patterns

Secondary Indicators (2 or more required):
☐ Oxidized rhizospheres ☐ Local soil survey data
☐ Water-stained leaves ☐ FAC-Neutral test
☐ Recorded data (aerials, groundwater data)
Explain:
Other
Explain:

Remarks: The ground is uneven and hummocky with areas of inundation. Soil pit dug in slightly elevated spot.

Hydrology Criterion Met? Yes

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-06 Plot: 19

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located on hillside to the S of 90 degree bend in Truehaak St.

Project #: 2981046 Determined by: JG/AR Date: 1/6/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: No

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:
Herb Stratum - % total cover:		**20**
Epilobium watsonii	FACW	40
Equisetum arvense	FAC	40
Festuca arundinacea	FAC-	20
Woody Vine Stratum - % total cover:		**70**
Rubus ursinus	FACU	50
Rubus discolor	FACU	40
Ilex aquifolium	UPL	10

	Ind.	%Cover:
Shrub/Sapling Stratum - % total cover:		**0**
Tree Stratum - % total cover:		**70**
Alnus rubra	FAC	100

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 3 of 6 = 50 % (50/20 Rule)

Vegetation Criterion Met? No

SOILS Mapped Unit Name: Braun-Scaponia silt loams, 5-30% slopes
Drainage Class: well drained
Taxonomy: Fine-loamy, mixed, mesic Dystric Eutrochrepts/Umbris Dystrochrepts

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-16"	10YR 3/3		coarse sandy loam

☐ Histosol ☐ Prob. Aquic moisture regime ☐ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☐ On hydric soils list

Soil Criterion Met? No

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: >16"

Primary Indicators:
☐ Inundated
☐ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☐ Oxidized rhizospheres ☐ Local soil survey data
☐ Water-stained leaves ☐ FAC-Neutral test
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:

Hydrology Criterion Met? No

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	01/06/99	Investigator(s):	JG/AR
Project Name:	Clatskanie LWI		
WetlandCode:	CR-06	ProjectNumber:	2981046

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

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

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

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-06	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	The wetland provides habitat for some wildlife species.	One Cowardin wetland class with more than 5 plant species. Woody vegetation is dominant vegetation cover. Low degree of Cowardin class interspersion. Less than 0.5 acre of unvegetated open water present. Wetland connected to another body of water by surface water. Wetland not connected to other wetlands, but within 3 mile radius of other wetlands. Upstream not listed as water quality limited. Residential/Industrial land use within 500 feet of wetland edge.
Fish Habitat - Streams	N/A	
Fish Habitat - Lakes/Ponds	N/A	
Water Quality	The wetland's water quality function is impacted or degraded.	Groundwater (including seeps and springs) is wetland's primary source of water. Evidence of flooding or ponding during part of the growing season. High (>60%) degree of wetland vegetation cover. Between 0.5 and 5 acres of wetland connected to other wetlands within a 3 mile radius. Residential/Industrial land use within 500 feet of wetland edge. Upstream not listed as water quality limited in watershed or adjacent to the wetland.
Hydrologic Control	The wetland's hydrologic control function is intact.	All or part of wetland located within 100-year floodplain or enclosed basin. Evidence of flooding or ponding during the growing season. Area is between 0.5 and 5 acres. Waterflow out of wetland is unrestricted. Woody vegetation is dominant cover type. Residential/Industrial land use within 500 ft of wetland on downstream or down-slope edge of wetland. Forested or natural area land use upstream.
Sensitivity to Impact	The wetland is potentially sensitive to future impacts.	Stream flow or bank has not been modified by human activities within 1 mile above wetland. Water is not being taken out of streams through active diking, drainage, or irrigation districts upstream. Upstream not listed as water quality limited in watershed upstream of the or adjacent to the wetland. Residential/industrial (developed) land use within 500 feet of wetland's edge. Dominant Residential/Industrial (developed) land use within 500 feet of wetland's edge. Woody vegetation is the dominant cover.
Enhancement Potential	The wetland has moderate potential for enhancement.	Wetland has lost one or more functions or one or more functions is not present in assessment results for wildlife habitat, fish habitat, water quality and hydrologic control.

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-06	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
		Wetland's primary source of water is groundwater, including springs and seeps. Wetland's area is between 0.5 and 5 acres. Between 10 and 40 % of wetland's edge is bordered by a vegetative buffer 25 or more feet wide. Wetland is potentially sensitive to future impacts.
Education	The wetland has potential for educational use.	Wetland site is open to the public for direct access or observation. One to two visible safety hazards exist at the wetland site. Provides wildlife habitat for some species, or fish habitat is impacted or degraded. There is existing physical public access to other features or it can be created easily and other habitats can be observed from this site. There is a maintained public access point within 250 feet of the wetland's edge. Access is not available for limited mobility.
Recreation	The wetland has the potential to provide recreational opportunities.	There is a maintained public access point within 250 feet of wetland's edge. Wetland not accessible by boat-no boat launch within 1 mile/ cannot develop. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides habitat for some species. Fishing is not allowed at wetland or adjacent water body (or not applicable). Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be moderately pleasing.	One Cowardin class is visible from primary viewing area(s). More than 50% of wetland is visible from viewing area(s). General appearance of wetland has visual detractors which cannot be removed easily. Visual character with surrounding area is landscaped or manipulated by people. At certain times, unpleasant odors are present at the primary viewing location. Continuous traffic and other intrusive noise and NO natural sounds are audible at primary viewing location.

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 1-12-99

Wetland Mapping Code: CR07

Investigator(s): JG/AR

Size (acres): 0.77

Location

Legal: T 7N R 4W S 8 2101

Other: South of Norman St. east of Howard Dr.

Basin: Clatskanie River

Soils

Mapped Series: 7D

Hydrology

Hydrologic Source: Groundwater

Wetland Classification(s): PEM

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
			Juncus sp.
			Phalaris arundinacea

Comments:

Wetland CR7 is a small, palustrine emergent wetland on a slope in a residential area. The boundary between the wetland and upland was characterized by a change from reed canarygrass to mowed turf grass. Vegetation observed from off the site suggests low diversity of species. No surface water source or drainage was observed.

Wetland Classification Codes:

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

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	01/12/99	Investigator(s):	JG/AR
Project Name:	Clatskanie LWI		
WetlandCode:	CR-07	ProjectNumber:	2981046

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

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

Wildlife Habitat:	The wetland provides habitat for some wildlife species.
Fish Habitat - Streams:	N/A
Fish Habitat - Lakes/Ponds:	N/A
Water Quality:	The wetland's water quality function is impacted or degraded.
Hydrologic Control:	The wetland's hydrologic control function is impacted or degraded.
Sensitivity to Impact:	The wetland is potentially sensitive to future impacts.
Enhancement Potential:	The wetland has moderate potential for enhancement.
Education:	The wetland site is not appropriate for educational use.
Recreation:	The wetland is not appropriate for or does not provide recreational opport
Aesthetic Quality:	The wetland is considered to be moderately pleasing.

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-07	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	The wetland provides habitat for some wildlife species.	One Cowardin wetland class with 5 or fewer plant species. Emergent veg. or wet meadow. Low degree of Cowardin class interspersion. Less than 0.5 acre of unvegetated open water present. Wetland not connected to another body of water, but water within 1 mile. Wetland not connected to other wetlands, but within 3 mile radius of other wetlands. Upstream not listed as water quality limited. Residential/Industrial land use within 500 feet of wetland edge.
Fish Habitat - Streams	N/A	
Fish Habitat - Lakes/Ponds	N/A	
Water Quality	The wetland's water quality function is impacted or degraded.	Groundwater (including seeps and springs) is wetland's primary source of water. Unable to determine evidence of flooding or ponding during the growing season (or unapplicable). High (>60%) degree of wetland vegetation cover. Between 0.5 and 5 acres of wetland connected to other wetlands within a 3 mile radius. Residential/Industrial land use within 500 feet of wetland edge. Upstream not listed as water quality limited in watershed or adjacent to the wetland.
Hydrologic Control	The wetland's hydrologic control function is impacted or degraded.	No part of wetland located within 100-year floodplain or enclosed basin. Unable to determine evidence of flooding or ponding during the growing season (or not applicable). Area is between 0.5 and 5 acres. Waterflow out of wetland is restricted or no outlet. Emergent veg. or wet meadow is dominant cover type. Residential/Industrial land use within 500 ft of wetland on downstream or down-slope edge of wetland. Urban or Urbanizing land use in watershed upstream from area.
Sensitivity to Impact	The wetland is potentially sensitive to future impacts.	Stream flow or bank has been modified by human activities within 1 mile above wetland. Water is being taken out of stream(s) through active diking, drainage, or irrigation districts upstream. Upstream not listed as water quality limited in watershed upstream of the or adjacent to the wetland. Residential/industrial (developed) land use within 500 feet of wetland's edge. Dominant Residential/Industrial (developed) land use within 500 feet of wetland's edge. Emergent veg. only or wet meadow is the dominant cover.
Enhancement Potential		

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-07	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
	The wetland has moderate potential for enhancement.	Wetland has lost one or more functions or one or more functions is not present in assessment results for wildlife habitat, fish habitat, water quality and hydrologic control. Wetland's primary source of water is groundwater, including springs and seeps. Wetland's area is between 0.5 and 5 acres. Less than 10% of wetland's edge is bordered by a vegetative buffer 25 or more feet wide. Wetland is potentially sensitive to future impacts.
Education	The wetland site is not appropriate for educational use.	Wetland site is not open to the public for direct access or observation. There are no visible hazards to the public at the wetland site. Provides wildlife habitat for some species, or fish habitat is impacted or degraded. There is no existing physical public access to other features, and observation of other features cannot be made. There is not an existing access point within 250 feet of the wetland's edge (if existing-hazardous). Access is not available for limited mobility.
Recreation	The wetland is not appropriate for or does not provide recreational opportunities.	There is not an existing access point within 250 feet of the wetland's edge (if existing-hazardous). Wetland not accessible by boat-no boat launch within 1 mile/ cannot develop. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides habitat for some species. Fishing is not allowed at wetland or adjacent water body (or not applicable). Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be moderately pleasing.	One Cowardin class is visible from primary viewing area(s). More than 50% of wetland is visible from viewing area(s). General appearance of wetland has visual detractors which cannot be removed easily. Visual character with surrounding area is landscaped or manipulated by people. At certain times, unpleasant odors are present at the primary viewing location. Some traffic and other similar sounds and natural sounds are audible at primary viewing locations.

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 8-7-98

Wetland Mapping Code: CR08

Investigator(s): DC/DG

Size (acres): 31.05

Location

Legal: T 7N R 4W S 8 200, 201, 500, 3000, 3100

Other: East of Clatskanie River, north of Nehalem St., west of Old Columbia River Highway

Basin: Clatskanie River

Soils

Mapped Series: 67

Hydrology

Hydrologic Source: Groundwater

Wetland Classification(s): POW, PEM

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
			Phalaris arundinacea
			Juncus effusus
			Alopecurus geniculatus

Comments:

Wetland CR8 is a palustrine emergent wetland behind a dike on the Clatskanie River. A tide gate permits free flow of water out of the wetland. The wetland includes straight, excavated ditches and an oxbow with open water. The wetland is used for low-intensity agriculture, possibly hay production or grazing. The wetland/upland boundary on most of the site is defined by vegetation and hydrology changes that are coincident with the base of the dike and bank that surrounds the wetland. On the northwestern edge, the boundary is defined by a gradual change to a predominance of non-hydrophytic vegetation. This wetland also includes a small parcel of wetland dominated by alder (Alnus rubra) and skunk cabbage (Lysichitum americanum) that receives runoff from the slope above 5th Street.

Wetland Classification Codes:

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

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-08 Plot: 01

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography: Plot located on E bank of slough (E side of Stimson mill), 3' from open water of unknown depth.

Project #: 2981046 Determined by: DC./DG Date: 7/29/98

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Comments: Many nutria living in slough.

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

Herb Stratum - % total cover:		**Ind. %Cover:** 95
Juncus effusus	FACW	30
Alopecurus geniculatus	OBL	30
Callitriche stagnalis	OBL	20
Phalaris arundinacea	FACW	15
Scirpus microcarpus	OBL	10
Glyceria elata	FACW	5

Shrub/Sapling Stratum - % total cover:		**Ind. %Cover:** 5
Spiraea douglasii	FACW	100

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

Tree Stratum - % total cover: **0**

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 4 of 4 = **100** % (50/20 Rule)

Remarks: Vegetation on banks of slough typical of sample plot. Top of bank covered with Rubus discolor. Sporadic Salix lasiandra, Alnus rubra, and Fraxinus latifolia along slough bank. Algal bloom in progress.

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Wauna-Locoda silt loams, protected
Drainage Class: poorly-very poorly drained
Taxonomy: Fine-silty, mixed, acid, mesic Aeric/Typic Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-16"	5Y 3/1		silty sand

☐ Histosol ☐ Prob. Aquic moisture regime ☐ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☑ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: 0"

Primary Indicators:
☐ Inundated
☑ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☑ Oxidized rhizospheres
☐ Water-stained leaves
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:
☐ Local soil survey data
☐ FAC-Neutral test

Hydrology Criterion Met? Yes

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-08 Plot: 02

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located just S of E/W drainage ditch (within 20').

Project #: 2981046 Determined by: DC/DG Date: 7/29/98

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Comments: This plot is very typical of this wetland. Wetland is a low-lying area with ditches surrounding and within. Used for cattle pasture in the past.

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

Herb Stratum - % total cover:		**Ind. %Cover:** 100
Alopecurus geniculatus	OBL	40
Phalaris arundinacea	FACW	20
Juncus effusus	FACW	20
Agrostis stolonifera	FAC	10
Ranunculus repens	FACW	10

Shrub/Sapling Stratum - % total cover: **Ind. %Cover:** 0

Woody Vine Stratum - % total cover: 0

Tree Stratum - % total cover: 0

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 3 of 3 = 100 % (50/20 Rule)

Remarks: Other plants present include Polygonum sp., Eleocharis ovata, Glyceria elata.

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Wauna-Locoda silt loams, protected
Drainage Class: poorly-very poorly drained
Taxonomy: Fine-silty, mixed, acid, mesic Aeric/Typic Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-14"	10YR 4/2	frequent, fine mottles 7.5YR 3/3	silt loam
	14-16"	10YR 3/1		silty clay loam

☐ Histosol ☐ Prob. Aquic moisture regime ☑ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☑ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: 12"

Primary Indicators:
☐ Inundated
☑ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☑ Oxidized rhizospheres
☐ Water-stained leaves
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:
☐ Local soil survey data
☐ FAC-Neutral test

Hydrology Criterion Met? Yes

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-08 Plot: 03

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located E of Stimson Lumber, W of wetland.

Project #: 2981046 Determined by: DC/DG Date: 7/29/98

DETERMINATION: IS THIS PLOT IN A WETLAND? No

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

Herb Stratum - % total cover:		**Ind. %Cover: 100**
Holcus lanatus	FAC	30
Dactylis glomerata	FACU	30
Agropyron spicatum	UPL	20
Cirsium arvense	FACU	10
Agrostis tenuis	FAC	5
Ranunculus repens	FACW	5

Shrub/Sapling Stratum - % total cover: **0** Ind. %Cover:

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

Tree Stratum - % total cover: **0**

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 1 of 3 = 33 % (50/20 Rule)

Vegetation Criterion Met? No

SOILS Mapped Unit Name: Wauna-Locoda silt loams, protected
Drainage Class: poorly-very poorly drained
Taxonomy: Fine-silty, mixed, acid, mesic Aeric/Typic Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-16"	10YR 4/3		silt loam

☐ Histosol ☐ Prob. Aquic moisture regime ☐ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☑ On hydric soils list

Soil Criterion Met? No

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: >16"

Primary Indicators:
☐ Inundated
☐ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☐ Oxidized rhizospheres
☐ Water-stained leaves
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:
☐ Local soil survey data
☐ FAC-Neutral test

Hydrology Criterion Met? No

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-08 Plot: 04

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located N of dredge spoil cell, E of wastewater treatment facility.

Project #: 2981046 Determined by: DC/DG Date: 8/7/98

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Comments: Area adjacent to Clatskanie River. Area has drainage ditches and a slough that has pumps near the wastewater treatment facility that pump water into the river. Species in plot are typical of the area.

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

Herb Stratum - % total cover:		**Ind. %Cover: 100**
Alopecurus geniculatus	OBL	50
Juncus effusus	FACW	30
Phalaris arundinacea	FACW	10
Polygonum sp.	FAC	10
Agrostis tenuis	FAC	5

Shrub/Sapling Stratum - % total cover: **0** Ind. %Cover:

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

Tree Stratum - % total cover: **0**

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 2 of 2 = 100 % (50/20 Rule)

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Wauna-Locoda silt loams, protected
Drainage Class: poorly-very poorly drained
Taxonomy: Fine-silty, mixed, acid, mesic Aeric/Typic Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-3"	10YR 3/3		silt loam
	3-18"	2.5YR 4/1	large, frequent mottles 5YR 3/4	fine silt loam

☐ Histosol ☐ Prob. Aquic moisture regime ☑ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☑ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: >18" Depth to saturation: >18"

Primary Indicators:
☐ Inundated
☐ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☑ Drainage patterns

Secondary Indicators (2 or more required):
☑ Oxidized rhizospheres ☐ Local soil survey data
☐ Water-stained leaves ☐ FAC-Neutral test
☐ Recorded data (aerials, groundwater data)
Explain:
☑ Other
Explain: Algal mats on surface

Hydrology Criterion Met? Yes

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-08 Plot: 05

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located N of western end of dredge spoil cell, E of wastewater treatment facility. Slightly higher than wetland area.

Project #: 2981046 Determined by: DC/DG Date: 8/7/98

DETERMINATION: IS THIS PLOT IN A WETLAND?: No

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:
Herb Stratum - % total cover:		100
Agrostis tenuis	FAC	50
Trifolium repens	FAC	50
Woody Vine Stratum - % total cover:		0

	Ind.	%Cover:
Shrub/Sapling Stratum - % total cover:		0
Tree Stratum - % total cover:		0

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 2 of 2 = 100 % (50/20 Rule)

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Wauna-Locoda silt loams, protected
Drainage Class: poorly-very poorly drained
Taxonomy: Fine-silty, mixed, acid, mesic Aeric/Typic Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-18"	10YR 4/3	pockets of 10YR 4/2	silt

☐ Histosol ☐ Prob. Aquic moisture regime ☐ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☑ On hydric soils list

Remarks: Soil is probably dredge spoils.

Soil Criterion Met? No

HYDROLOGY

Depth of inundation 0" Depth to water table: >18" Depth to saturation: >18"

Primary Indicators:
☐ Inundated
☐ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☐ Oxidized rhizospheres ☐ Local soil survey data
☐ Water-stained leaves ☐ FAC-Neutral test
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:

Hydrology Criterion Met? No

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-08 Plot: 08

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography: Plot located approximately 200 yards N of Hwy. 30, approximately 300 yards S of Stimson log yard, and 50 yards E of N/S ditch.

Project #: 2981046 Determined by: DC/DG Date: 8/7/98

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:
Herb Stratum - % total cover:		100
Juncus effusus	FACW	70
Lotus corniculatus	FAC	20
Phalaris arundinacea	FACW	10
Woody Vine Stratum - % total cover:		0

	Ind.	%Cover:
Shrub/Sapling Stratum - % total cover:		0
Tree Stratum - % total cover:		0

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 2 of 2 = 100 % (50/20 Rule)

Remarks: Minor species include: Alopecurus geniculatus, Juncus bufonius, Carex obnupta.

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Wauna-Locoda silt loams, protected
Drainage Class: poorly-very poorly drained
Taxonomy: Fine-silty, mixed, acid, mesic Aeric/Typic Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-14"	2.5Y 4/2	mottles frequent, medium 5YR 3/4	silt
	14-18	2.5Y 4/2	mottles frequent, medium 5YR 3/4	silty clay loam

☐ Histosol ☐ Prob. Aquic moisture regime ☑ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☑ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: >18" Depth to saturation: >18"

Primary Indicators:
☐ Inundated
☐ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☑ Drainage patterns

Secondary Indicators (2 or more required):
☑ Oxidized rhizospheres
☐ Water-stained leaves
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:
☐ Local soil survey data
☐ FAC-Neutral test

Remarks: Hydrology source: surface flow, lower areas with evidence of earlier ponding.

Hydrology Criterion Met? Yes

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-08 Plot: 09

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located approximately 150 yards S of log storage area at Stimson Lumber.

Project #: 2981046 Determined by: DC/DG Date: 8/7/98

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Comments: Wetland in a low-lying area with drainage ditches.

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

		Ind. %Cover:
Herb Stratum - % total cover:		100
Phalaris arundinacea	FACW	90
Juncus effusus	FACW	10
Woody Vine Stratum - % total cover:		0

	Ind. %Cover:
Shrub/Sapling Stratum - % total cover:	0
Tree Stratum - % total cover:	0

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 1 of 1 = 100 % (50/20 Rule)

Remarks: Vegetation typical of area. Some Lotus corniculatus around edges.

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Wauna-Locoda silt loams, protected
Drainage Class: poorly-very poorly drained
Taxonomy: Fine-silty, mixed, acid, mesic Aeric/Typic Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-6"	2.5Y 4/2	mottles many, fine 7.5YR 3/3	silt loam
	6-10"	2.5Y 2/3	mottles frequent, fine 7.5YR 3/4	silty clay loam
	10-	2.5Y 4/2	mottles frequent, large 7.5YR 3/4	silty clay loam

☐ Histosol ☐ Prob. Aquic moisture regime ☑ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☑ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: >18" Depth to saturation: >18"

Primary Indicators:
☐ Inundated
☐ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☑ Drainage patterns

Secondary Indicators (2 or more required):
☑ Oxidized rhizospheres
☐ Water-stained leaves
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:
☐ Local soil survey data
☐ FAC-Neutral test

Hydrology Criterion Met? Yes

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	08/07/98	Investigator(s):	DC/DG
Project Name:	Clatskanie LWI		
WetlandCode:	CR-08	ProjectNumber:	2981046

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

intact

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

Wildlife Habitat:	The wetland provides habitat for some wildlife species.
Fish Habitat - Streams:	N/A
Fish Habitat - Lakes/Ponds:	The wetland's fish habitat function is impacted or degraded.
Water Quality:	The wetland's water quality function is impacted or degraded.
Hydrologic Control:	The wetland's hydrologic control function is ~~impacted or degraded.~~ intact
Sensitivity to Impact:	The wetland is potentially sensitive to future impacts.
Enhancement Potential:	The wetland has moderate potential for enhancement.
Education:	The wetland site is not appropriate for educational use.
Recreation:	The wetland is not appropriate for or does not provide recreational opport
Aesthetic Quality:	The wetland is considered to be moderately pleasing.

Hydrologic flow is restricted somewhat by the tidegates. The capacity of the culverts is small relative to peak flows, impounding water for a short time.

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-08	ProjectNumber:	2981046

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

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-08	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
		Residential/Industrial (developed) land use within 500 feet of wetland's edge. Emergent veg. and ponding,or open water only are the dominant cover types.
Enhancement Potential	The wetland has moderate potential for enhancement.	Wetland has lost one or more functions or one or more functions is not present in assessment results for wildlife habitat, fish habitat, water quality and hydrologic control. Wetland's primary source of water is groundwater, including springs and seeps. Wetland's area is more than 5 acres. Between 10 and 40 % of wetland's edge is bordered by a vegetative buffer 25 or more feet wide. Wetland is potentially sensitive to future impacts.
Education	The wetland site is not appropriate for educational use.	Wetland site is not open to the public for direct access or observation. More than two visible safety hazards exist at the wetland site. Provides wildlife habitat for some species, or fish habitat is impacted or degraded. There is no existing physical public access to other features, but observation of other features can be made. There is not an existing access point within 250 feet of the wetland's edge (if existing-hazardous). Access is not available for limited mobility.
Recreation	The wetland is not appropriate for or does not provide recreational opportunities.	There is not an existing access point within 250 feet of the wetland's edge (if existing-hazardous). Wetland not accessible by boat-no boat launch within 1 mile/ cannot develop. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides habitat for some species. Fishing is allowed at wetland or adjacent water body. Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be moderately pleasing.	Two Cowardin classes are visible from primary viewing area(s). More than 50% of wetland is visible from viewing area(s). General appearance of wetland has visual detractors which cannot be removed easily. Visual character with surrounding area is landscaped or manipulated by people. At certain times, unpleasant odors are present at the primary viewing location. Continuous traffic and other intrusive noise and natural sounds are audible at primary viewing location.

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 8-7-98 **Wetland Mapping Code:** CR09

Investigator(s): DC/DG **Size (acres):** 5.1

Location

Legal: T 7N R 4W S 8 200

Other: Stimson Lumber Co. mill

Basin: Clatskanie River

Soils

Mapped Series: 67

Hydrology

Hydrologic Source: Groundwater

Wetland Classification(s): PEM

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
			Carex obnupta
			Phalaris arundinacea
			Juncus effusus
			Lotus corniculatus
			Alopecurus geniculatus
			Callitriche stagnalis

Comments:

Wetland CR9 is a palustrine emergent wetland behind a dike on the Clatskanie River. This wetland is separated from CR8 by a dike; an open hydrologic connection between the wetlands was not observed. The wetland includes straight, excavated ditches and a shallow oxbow with open water. The wetland is used for low-intensity agriculture, possibly hay production or grazing. The wetland/upland boundary on most of the site is defined by vegetation and hydrology changes that are coincident with the base of the dike and bank that surrounds the wetland. On the southwestern edge of the wetland, the boundary is defined by a gradual change to a predominance of non-hydrophytic vegetation.

Wetland Classification Codes:

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

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-09 Plot: 06

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located 50' E of railroad, even with the S end of Stimson log stacks.

Project #: 2981046 Determined by: DC/DG Date: 8/7/98

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Comments: A finger of wetland runs N/S along western edge of Stimson log yard. Groundwater and precipitation are hydrology sources (groundwater primary). Surface flow from log yards to the north. Probably hydrologically connected to the oxbow on western side of the railroad tracks.

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:
Herb Stratum - % total cover:		100
Carex obnupta	OBL	100
Woody Vine Stratum - % total cover:		0

	Ind.	%Cover:
Shrub/Sapling Stratum - % total cover:		0
Tree Stratum - % total cover:		0

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 1 of 1 = 100 % (50/20 Rule)

Remarks: Juncus effusus, Typha latifolia, Spiraea douglasii, Impatiens sp., Phalaris arundinacea around edges of wetland. Bands of Typha and Spiraea along toe of railroad bed slope.

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Wauna-Locoda silt loams, protected
Drainage Class: poorly-very poorly drained
Taxonomy: Fine-silty, mixed, acid, mesic Aeric/Typic Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-11"	10YR 3/2	mottles many, medium 10YR 4/6, 2.5Y 4/1	highly organic
	11-18"	2.5 Y 3/1		silty clay loam

☐ Histosol ☐ Prob. Aquic moisture regime ☑ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☑ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: 11" Depth to saturation: 0"

Primary Indicators:
☐ Inundated
☑ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☑ Drainage patterns

Secondary Indicators (2 or more required):
☑ Oxidized rhizospheres
☐ Water-stained leaves
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:
☐ Local soil survey data
☐ FAC-Neutral test

Hydrology Criterion Met? Yes

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-09 Plot: 07

T 7N R 4W S 8 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located approximately 100 yards E of railroad tracks and 100 yards S of SW corner of Stimson Lumber log storage.

Project #: 2981046 Determined by: DC/DG Date: 8/7/98

DETERMINATION: IS THIS PLOT IN A WETLAND?: No

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:
Herb Stratum - % total cover:		**80**
Agrostis tenuis	FAC	70
Cirsium arvense	FACU	10
Cirsium vulgare	FACU	10
Phalaris arundinacea	FACW	10
Woody Vine Stratum - % total cover:		**20**
Rubus laciniatus	FACU	50
Rubus discolor	FACU	50

	Ind.	%Cover:
Shrub/Sapling Stratum - % total cover:		**0**
Tree Stratum - % total cover:		**0**

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 1 of 3 = 33 % (50/20 Rule)

Vegetation Criterion Met? No

SOILS Mapped Unit Name: Wauna-Locoda silt loams, protected
Drainage Class: poorly-very poorly drained
Taxonomy: Fine-silty, mixed, acid, mesic Aeric/Typic Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-16"	10YR 3/2	mottles few, medium 7.5YR 3/4	silt

☐ Histosol ☐ Prob. Aquic moisture regime ☑ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☑ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: >16"

Primary Indicators:
☐ Inundated
☐ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☐ Oxidized rhizospheres ☐ Local soil survey data
☐ Water-stained leaves ☐ FAC-Neutral test
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:

Hydrology Criterion Met? No

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	08/07/98	Investigator(s):	DC/DG
Project Name:	Clatskanie LWI		
WetlandCode:	CR-09	ProjectNumber:	2981046

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

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

Wildlife Habitat:	The wetland provides habitat for some wildlife species.
Fish Habitat - Streams:	N/A
Fish Habitat - Lakes/Ponds:	The wetland's fish habitat function is impacted or degraded.
Water Quality:	The wetland's water quality function is impacted or degraded.
Hydrologic Control:	The wetland's hydrologic control function is intact.
Sensitivity to Impact:	The wetland is potentially sensitive to future impacts.
Enhancement Potential:	The wetland has moderate potential for enhancement.
Education:	The wetland site is not appropriate for educational use.
Recreation:	The wetland has the potential to provide recreational opportunities.
Aesthetic Quality:	The wetland is considered to be moderately pleasing.

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-09	ProjectNumber:	2981046

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

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-09	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
		(developed) land use within 500 feet of wetland's edge. Emergent veg. and ponding,or open water only are the dominant cover types.
Enhancement Potential	The wetland has moderate potential for enhancement.	Wetland has lost one or more functions or one or more functions is not present in assessment results for wildlife habitat, fish habitat, water quality and hydrologic control. Wetland's primary source of water is groundwater, including springs and seeps. Wetland's area is more than 5 acres. Less than 10% of wetland's edge is bordered by a vegetative buffer 25 or more feet wide. Wetland is potentially sensitive to future impacts.
Education	The wetland site is not appropriate for educational use.	Wetland site is not open to the public for direct access or observation. More than two visible safety hazards exist at the wetland site. Provides wildlife habitat for some species, or fish habitat is impacted or degraded. There is no existing physical public access to other features, but observation of other features can be made. There is not an existing access point within 250 feet of the wetland's edge (if existing-hazardous). Access is not available for limited mobility.
Recreation	The wetland has the potential to provide recreational opportunities.	There is not an existing access point within 250 feet of the wetland's edge (if existing-hazardous). Boat launch could be developed within 0.5-1mile. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides habitat for some species. Fishing is not allowed at wetland or adjacent water body (or not applicable). Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be moderately pleasing.	Two Cowardin classes are visible from primary viewing area(s). More than 50% of wetland is visible from viewing area(s). General appearance of wetland has visual detractors which cannot be removed easily. Visual character with surrounding area is landscaped or manipulated by people. At certain times, unpleasant odors are present at the primary viewing location. Continuous traffic and other intrusive noise and natural sounds are audible at primary viewing location.

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 8-21-98 **Wetland Mapping Code:** CR10

Investigator(s): JG/DG **Size (acres):** 3.5

Location

Legal: T 7N R 4W S 8 400, 2300

Other: North of Highway 30, south of Clatskanie River, astride railroad grade

Basin: Clatskanie River

Soils

Mapped Series: 67

Hydrology

Hydrologic Source: Surface flow

Wetland Classification(s): PEM

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
Populus balsamifera	*Salix scouleriana*		*Phalaris arundinacea*
	Cornus stolonifera		*Glyceria sp.*
	Fraxinus latifolia		*Wolffia papulifera*
	Populus balsamifera		*Polygonum sp.*

Comments:

Wetland CR10 is a small, palustrine scrub/shrub wetland sandwiched between the Clatakanie River on the north, Highway 30 on the south, and bisected by the Burlington Northern railroad tracks. Water to support the wetland vegetation results from drainage off the highway, and the water table and/or flooding of the Clatskanie River. The wetland boundary on the northern edge is defined by the river bank. The wetland/upland boundary for the rest of the wetland is characterized by changes in soil, hydrology, and vegetation that are coincident with the topographic changes at the base of the railroad bed and the highway fill.

Wetland Classification Codes:

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

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-10 Plot: 10

T 7N R 4W S 5 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Located between Hwy. 30 and Clatskanie River.

Project #: 2981046 Determined by: JG/DG Date: 8/21/98

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

Herb Stratum - % total cover:		Ind. %Cover: 70	Shrub/Sapling Stratum - % total cover:		Ind. %Cover: 20
Phalaris arundinacea	FACW	40	*Salix scouleriana*	FAC	40
Glyceria sp.	OBL	20	*Cornus stolonifera*	FACW	30
Wolffia papulifera	NI	20	*Fraxinus latifolia*	FACW	20
Polygonum sp.	FAC	20	*Populus balsamifera*	FAC	10
Woody Vine Stratum - % total cover:			**Tree Stratum** - % total cover:		10
			Populus balsamifera	FAC	100

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 7 of 8 = 88 % (50/20 Rule)

Remarks: Vegetation within the plot is characteristic of the area. The majority of this wetland is shrub vegetation (willows). Also present are Typha latifolia, Impatiens sp., Iris pseudacorus, and Salix lasiandra.

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Wauna-Locoda silt loams, protected
Drainage Class: poorly-very poorly drained
Taxonomy: Fine-silty, mixed, acid, mesic Aeric/Typic Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-4"	10YR 4/1	mottles frequent, small 5YR 4/6	silt loam
	4-9"	2.5Y 3/1	mottles common, medium 5YR 4/6	clayey silt
	9-18"	2.5/10Y		clayey silt

☐ Histosol ☐ Prob. Aquic moisture regime ☑ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☑ Gleyed ☐ Highly organic surface layer ☑ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: 12" Depth to saturation: 0"

Primary Indicators:
☐ Inundated
☑ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☑ Drainage patterns

Secondary Indicators (2 or more required):
☐ Oxidized rhizospheres
☐ Water-stained leaves
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:
☐ Local soil survey data
☐ FAC-Neutral test

Remarks: Portions of the wetland are regularly inundated as the tide comes in and goes out.

Hydrology Criterion Met? Yes

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	08/21/98	Investigator(s):	JG/DG
Project Name:	Clatskanie LWI		
WetlandCode:	CR-10	ProjectNumber:	2981046

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

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

Wildlife Habitat:	The wetland provides habitat for some wildlife species.
Fish Habitat - Streams:	N/A
Fish Habitat - Lakes/Ponds:	N/A
Water Quality:	The wetland's water quality function is intact.
Hydrologic Control:	The wetland's hydrologic control function is intact.
Sensitivity to Impact:	The wetland is potentially sensitive to future impacts.
Enhancement Potential:	The wetland has moderate potential for enhancement.
Education:	The wetland site is not appropriate for educational use.
Recreation:	The wetland has the potential to provide recreational opportunities.
Aesthetic Quality:	The wetland is considered to be moderately pleasing.

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-10	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	The wetland provides habitat for some wildlife species.	One Cowardin wetland class with more than 5 plant species. Woody vegetation is dominant vegetation cover. Low degree of Cowardin class interspersion. Less than 0.5 acre of unvegetated open water present. Wetland not connected to another body of water, but water within 1 mile. Wetland connected to other wetlands within a 3 mile radius. One or more upstream reaches are listed water quality limited. Exclusive Forest use or Open Space within 500 feet of wetland edge.
Fish Habitat - Streams	N/A	
Fish Habitat - Lakes/Ponds	N/A	
Water Quality	The wetland's water quality function is intact.	Surface flow (including streams and ditches) is wetland's primary source of water. Evidence of flooding or ponding during part of the growing season. High (>60%) degree of wetland vegetation cover. Between 0.5 and 5 acres of wetland connected to other wetlands within a 3 mile radius. Exclusive Forest use or Open Space within 500 feet of wetland edge. One or more upstream reaches are listed water quality limited in watershed or adjacent to the wetland.
Hydrologic Control	The wetland's hydrologic control function is intact.	All or part of wetland located within 100-year floodplain or enclosed basin. Evidence of flooding or ponding during the growing season. Area is between 0.5 and 5 acres. Waterflow out of wetland is unrestricted. Woody vegetation is dominant cover type. Exclusive Forest Use or Open Space within 500 ft of wetland on downstream or down-slope edge of wetland. Urban or Urbanizing land use in watershed upstream from area.
Sensitivity to Impact	The wetland is potentially sensitive to future impacts.	Stream flow or bank has been modified by human activities within 1 mile above wetland. Water is not being taken out of streams through active diking, drainage, or irrigation districts upstream. One or more upstream reaches listed as water quality limited in watershed or adjacent to the wetland. Exclusive Forest use or Open Space within 500 feet of wetland's edge. Dominant Residential/Industrial (developed) land use within 500 feet of wetland's edge. Woody vegetation is the dominant cover.
Enhancement Potential	The wetland has moderate potential for enhancement.	Wetland has lost one or more functions or one or more functions is not present in assessment results for wildlife habitat, fish

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-10	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
		habitat, water quality and hydrologic control. Wetland's primary source of water is surface flow, including streams and ditches. Water flow into wetland is not restricted, but if blocked, obstruction can be removed easily. Wetland's area is between 0.5 and 5 acres. Less than 10% of wetland's edge is bordered by a vegetative buffer 25 or more feet wide. Wetland is potentially sensitive to future impacts.
Education	The wetland site is not appropriate for educational use.	Wetland site is not open to the public for direct access or observation. There are no visible hazards to the public at the wetland site. Provides wildlife habitat for some species, or fish habitat is impacted or degraded. There is existing physical public access to other features or it can be created easily and other habitats can be observed from this site. There is an unmaintained access point within 250 feet of the wetland's edge. Access is not available for limited mobility.
Recreation	The wetland has the potential to provide recreational opportunities.	There is an unmaintained public access point within 250 feet of the wetland's edge. Boat launch could be developed within 0.5-1mile. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides habitat for some species. Fishing is allowed at wetland or adjacent water body. Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be moderately pleasing.	Two Cowardin classes are visible from primary viewing area(s). More than 50% of wetland is visible from viewing area(s). General appearance of wetland has no visual detractors. Visual character with surrounding area is open or naturally landscaped. Natural, pleasant odors are present at primary viewing location. Continuous traffic and other intrusive noise and natural sounds are audible at primary viewing location.

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 1-7-99 **Wetland Mapping Code:** CR11

Investigator(s): JG/AR **Size (acres):** 15.72

Location

Legal: T 7N R 4W S 4, 5 900, 2800

Other: Between Old Columbia Highway and Beaver Dredge Cut

Basin: Clatskanie River

Soils

Mapped Series: 28

Hydrology

Hydrologic Source: Surface flow

Wetland Classification(s): PSS

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
Acer macrophyllum	*Salix sp.*	*Rubus ursinus*	*Phalaris arundinacea*
	Spiraea douglasii		

Comments:

Wetland CR11 is a thicket of wetland shrubs, trees, and herbaceous vegetation. This palustrine scrub/shrub wetland is on unprotected floodplain adjacent to the Beaver Dredge Cut. Shrub vegetation is dense, with a profuse herbaceous layer beneath. Water to support this wetland is the high water table and floodwaters from Beaver Dredge Cut. The northern wetland boundary is the bank of the channel. The southern boundary is generally the base of the fill for the Burlington Northern railroad tracks.

Wetland Classification Codes:

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

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-11 Plot: 27

T 7N R 4W S 4 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located 150' N of the base of the railroad grade, S of the bend in Beaver Falls Rd.

Project #: 2981046 Determined by: JG/AR Date: 1/7/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:		Ind.	%Cover:
Herb Stratum - % total cover:		**80**	**Shrub/Sapling Stratum** - % total cover:		**70**
Phalaris arundinacea	FACW	100	*Salix sp.*	FAC	60
			Spiraea douglasii	FACW	40
Woody Vine Stratum - % total cover:		**5**	**Tree Stratum** - % total cover:		**20**
Rubus ursinus	FACU	100	*Acer macrophyllum*	FACU	100

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 3 of 5 = 60 % (50/20 Rule)

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Locoda silt loam

Drainage Class: very poorly drained

Taxonomy: Fine-silty, mixed, acid, mesic Typic Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-16"	10YR 3/2-3/1		silt

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

☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan

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

Remarks: Large woody material (stems, cones) found throughout soil sample.

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: 9" Depth to saturation: 0"

Primary Indicators:

- ☑ Inundated
- ☑ Saturated in upper 12"
- ☐ Water marks
- ☐ Drift lines
- ☑ Sediment deposits
- ☐ Drainage patterns

Secondary Indicators (2 or more required):

- ☐ Oxidized rhizospheres
- ☐ Water-stained leaves
- ☐ Recorded data (aerials, groundwater data)
  Explain:
- ☐ Other
  Explain:
- ☐ Local soil survey data
- ☐ FAC-Neutral test

Hydrology Criterion Met? Yes

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-11 Plot: 28

T 7N R 4W S 4 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located on hillside to the S of the bend in Beaver Falls Rd., and approximately 100 feet N from the railroad grade.

Project #: 2981046 Determined by: JG/AR Date: 1/7/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: No

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:		Ind.	%Cover:
Herb Stratum - % total cover:		70	**Shrub/Sapling Stratum** - % total cover:		70
Polystichum munitum	FACU	100	*Corylus cornuta*	FACU	100
Woody Vine Stratum - % total cover:		5	**Tree Stratum** - % total cover:		50
Rubus ursinus	FACU	100	*Acer macrophyllum*	FACU	50
			Pseudotsuga menziesii	FACU	50

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 0 of 5 = 0 % (50/20 Rule)

Vegetation Criterion Met? No

SOILS Mapped Unit Name: Locoda silt loam
Drainage Class: very poorly drained
Taxonomy: Fine-silty, mixed, acid, mesic Typic Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-16"	10YR 2/2		gravelly loam (40% gravel to 6")

☐ Histosol ☐ Prob. Aquic moisture regime ☐ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☑ On hydric soils list

Remarks: Soil very loose and unconsolidated.

Soil Criterion Met? No

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: >16"

Primary Indicators:
☐ Inundated
☐ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☐ Oxidized rhizospheres
☐ Water-stained leaves
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:
☐ Local soil survey data
☐ FAC-Neutral test

Hydrology Criterion Met? No

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	JG/AR	Investigator(s):	01/07/99
Project Name:	Clatskanie LWI		
WetlandCode:	CR-11	ProjectNumber:	2981046

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

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

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

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-11	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	The wetland provides habitat for some wildlife species.	One Cowardin wetland class with more than 5 plant species. Woody vegetation is dominant vegetation cover. Low degree of Cowardin class interspersion. Less than 0.5 acre of unvegetated open water present. Wetland connected to another body of water by surface water. Wetland connected to other wetlands within a 3 mile radius. Upstream not listed as water quality limited. Exclusive Forest use or Open Space within 500 feet of wetland edge.
Fish Habitat - Streams	The wetland's fish habitat function is impacted or degraded.	Less than 50% of stream shaded by riparian vegetation. Physical character of stream channel extensively modified/piped. Stream contains less than 10% of instream structures. One or more upstream reaches are listed moderate water quality. Exclusive Forest use or Open Space within 500 ft of wetland edge. Salmon, trout, or sensitive species present sometime during the year.
Fish Habitat - Lakes/Ponds	N/A	
Water Quality	The wetland's water quality function is intact.	Surface flow (including streams and ditches) is wetland's primary source of water. Evidence of flooding or ponding during part of the growing season. High (>60%) degree of wetland vegetation cover. More than 5 acres of wetland area. Exclusive Forest use or Open Space within 500 feet of wetland edge. Upstream not listed as water quality limited in watershed or adjacent to the wetland.
Hydrologic Control	The wetland's hydrologic control function is intact.	All or part of wetland located within 100-year floodplain or enclosed basin. Evidence of flooding or ponding during the growing season. Area is more than 5 acres. Waterflow out of wetland is unrestricted. Woody vegetation is dominant cover type. Agricultural land use within 500 ft of wetland on downstream or down-slope edge of wetland. Agricultural land use in watershed upstream from area.
Sensitivity to Impact	The wetland is potentially sensitive to future impacts.	Stream flow or bank has been modified by human activities within 1 mile above wetland. Water is not being taken out of streams through active diking, drainage, or irrigation districts upstream. Upstream not listed as water quality limited in watershed upstream of the or adjacent to the wetland. Exclusive Forest use or Open Space within 500 feet of wetland's edge. Dominant Residential/Industrial (developed) land use

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-11	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
		within 500 feet of wetland's edge. Woody vegetation is the dominant cover.
Enhancement Potential	The wetland has moderate potential for enhancement.	Wetland has lost one or more functions or one or more functions is not present in assessment results for wildlife habitat, fish habitat, water quality and hydrologic control. Wetland's primary source of water is surface flow, including streams and ditches. Water flow into wetland is not restricted, but if blocked, obstruction can be removed easily. Wetland's area is more than 5 acres. Less than 10% of wetland's edge is bordered by a vegetative buffer 25 or more feet wide. Wetland is potentially sensitive to future impacts.
Education	The wetland has potential for educational use.	Wetland site is open to the public for direct access or observation. One to two visible safety hazards exist at the wetland site. Provides wildlife habitat for some species, or fish habitat is impacted or degraded. There is existing physical public access to other features or it can be created easily and other habitats can be observed from this site. There is an unmaintained access point within 250 feet of the wetland's edge. Access is not available for limited mobility.
Recreation	The wetland has the potential to provide recreational opportunities.	There is an unmaintained public access point within 250 feet of the wetland's edge. Boat launch could be developed within 0.5-1mile. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides habitat for some species. Fishing is allowed at wetland or adjacent water body. Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be moderately pleasing.	Two Cowardin classes are visible from primary viewing area(s). Between 25 and 50% of wetland is visible from viewing area(s). General appearance of wetland has no visual detractors. Visual character with surrounding area is open or naturally landscaped. Natural, pleasant odors are present at primary viewing location. Some traffic and other similar sounds and natural sounds are audible at primary viewing locations.

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 1-7-99

Wetland Mapping Code: CR12

Investigator(s): JG/DG/AR

Size (acres): 59.22

Location

Legal: T 7N R 4W S 5 200, 1300, 2600, 2700

Other: North and west of abandoned Beaver Lumber Co. mill

Basin: Clatskanie River

Soils

Mapped Series: 15, 66, 68

Hydrology

Hydrologic Source: Groundwater

Wetland Classification(s): PEM

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
	Populus balsamifera	*Rubus discolor*	*Lotus corniculatus*
	Alnus rubra		*Impatiens sp.*
			Phalaris arundinacea
			Iris sp.

Comments:

Wetland CR12 is a large palustrine emergent wetland on dike-protected land along Beaver Dredge Cut. The wetland is generally level, with gently undulating topography and a network of straight, excavated ditches. The ditches and low spots contained water at the time of the inventory field work. The wetland/upland boundary is generally characterized by changes in vegetation and hydrology at the base of the protective dike. Small upland areas in the wetland are characterized by a predominance of non-hydrophytic vegetation and lack of wetland hydrology associated with slightly higher elevation.

Wetland Classification Codes:

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

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-12 Plot: 24

T 7N R 4W S 5 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located in field to the NW of abandoned log mill.

Project #: 2981046 Determined by: JG/AR Date: 1/7/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:
Herb Stratum - % total cover:		**100**
Phalaris arundinacea	FACW	100
Woody Vine Stratum - % total cover:		**0**

	Ind.	%Cover:
Shrub/Sapling Stratum - % total cover:		**0**
Tree Stratum - % total cover:		**0**

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 1 of 1 = 100 % (50/20 Rule)

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Crims silt loam, protected
Drainage Class: very poorly drained
Taxonomy: Loamy, mixed, dysic, mesic Terric Medihemists

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-9"	10YR 3/2	mottles common, small 2.5YR 3/6	loam
	9-11"	10YR 4/1	mottles common, small 2.5YR 3/6	loam
	11-16"	10YR 2/1		muck

☐ Histosol ☐ Prob. Aquic moisture regime ☑ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☑ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: 0"

Primary Indicators:
☐ Inundated
☑ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☑ Oxidized rhizospheres ☐ Local soil survey data
☐ Water-stained leaves ☐ FAC-Neutral test
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:

Hydrology Criterion Met? Yes

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-12 Plot: 25

T 7N R 4W S 5 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located in the field to the NW of the abandoned log mill.

Project #: 2981046 Determined by: JG/AR Date: 1/7/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: No

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

	Ind.	%Cover:
Herb Stratum - % total cover:		100
Cirsium arvense	FACU	25
Phalaris arundinacea	FACW	25
Holcus lanatus	FAC	25
Festuca arundinacea	FAC-	15
Ranunculus repens	FACW	10
Lotus corniculatus	FAC	5
Rumex crispus	FAC+	5
Woody Vine Stratum - % total cover:		0

	Ind.	%Cover:
Shrub/Sapling Stratum - % total cover:		0
Tree Stratum - % total cover:		0

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 2 of 3 = 67 % (50/20 Rule)

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Wauna silt loam, protected
Drainage Class: poorly drained
Taxonomy: Fine-silty, mixed, acid, mesic Aeric Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-12"	10YR 4/3	mottles few, small, faint	loam
	12-16"	10YR 4/2	mottles common, small, faint	clayey loam

☐ Histosol ☐ Prob. Aquic moisture regime ☑ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☐ On hydric soils list

Remarks: Gradual boundary around the 12" area. Criterion is met marginally.

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: >16"

Primary Indicators:
☐ Inundated
☐ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☐ Oxidized rhizospheres ☐ Local soil survey data
☐ Water-stained leaves ☐ FAC-Neutral test
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:

Hydrology Criterion Met? No

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-12 Plot: 26

T 7N R 4W S 5 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located in field to the N of the abandoned log mill and approximately 100 yards E of Boat Club Rd.

Project #: 2981046 Determined by: JG/AR Date: 1/7/99

DETERMINATION: IS THIS PLOT IN A WETLAND?: No

Comments: Area around plot was slightly elevated above surrounding landscape.

Do Normal Circumstances exist on the site? Yes

Are Soils ☐ Vegetation ☐ Hydrology ☐ significantly disturbed? No

VEGETATION Dominant Plant Species

Herb Stratum - % total cover:		**Ind. %Cover: 100**
Agrostis stolonifera	FAC	60
Holcus lanatus	FAC	20
Festuca arundinacea	FAC-	20
Cirsium arvense	FACU	5
Lolium perenne	FACU	5

Shrub/Sapling Stratum - % total cover: **0** Ind. %Cover:

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

Tree Stratum - % total cover: **0**

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 2 of 3 = 67 % (50/20 Rule)

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Wauna-Locoda silt loams, protected
Drainage Class: poorly-very poorly drained
Taxonomy: Fine-silty, mixed, acid, mesic Aeric/Typic Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-4"	10YR 3/1		mucky loam
	4-10"	10YR 2/2		loam
	10-15"	10YR 3/1		mucky loam
	15"+	10YR 2/1		muck

☐ Histosol ☐ Prob. Aquic moisture regime ☐ Redox features ☐ Organic streaking
☐ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan
☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☐ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: >16" Depth to saturation: >16"

Primary Indicators:
☐ Inundated
☐ Saturated in upper 12"
☐ Water marks
☐ Drift lines
☐ Sediment deposits
☐ Drainage patterns

Secondary Indicators (2 or more required):
☐ Oxidized rhizospheres
☐ Water-stained leaves
☐ Recorded data (aerials, groundwater data)
Explain:
☐ Other
Explain:
☐ Local soil survey data
☐ FAC-Neutral test

Remarks: Soil in this plot was extremely dry and dusty, despite recent rainfall.

Hydrology Criterion Met? No

WETLAND DETERMINATION DATA SHEET - 1987 MANUAL

Client/Applicant: City of Clatskanie Site: CR-12 Plot: 32

T 7N R 4W S 5 City: Clatskanie County: Columbia State: OR

Plot Location; Topography Plot located in a log deck drainage ditch on the abandoned Beaver Lumber property.

Project #: 2981046 Determined by: JG/DG Date: 8/21/98

DETERMINATION: IS THIS PLOT IN A WETLAND?: Yes

Comments: Ten drainage ditches that are remnant of the probable original elevation of the site. Upland areas between ditches appear to have been created by the spreading of sawmill debris over time. One major ditch mapped as wetland.

Do Normal Circumstances exist on the site? No

Are Soils ☑ **Vegetation** ☑ **Hydrology** ☑ **significantly disturbed?** Yes

Explanation: Soil is macro-organic, composed of bark from logs. Plot is in ditch in abandoned log storage yard.

VEGETATION Dominant Plant Species

	Ind.	%Cover:		Ind.	%Cover:
Herb Stratum - % total cover:		**80**	**Shrub/Sapling Stratum** - % total cover:		**10**
Lotus corniculatus	FAC	40	*Populus balsamifera*	FAC	50
Impatiens sp.	FACW	20	*Alnus rubra*	FAC	50
Phalaris arundinacea	FACW	20			
Iris sp.	FACW	10			
Woody Vine Stratum - % total cover:		**10**	**Tree Stratum** - % total cover:		**0**
Rubus discolor	FACU	100			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 5 of 6 = 83 % (50/20 Rule)

Vegetation Criterion Met? Yes

SOILS Mapped Unit Name: Wauna silt loam, protected

Drainage Class: poorly drained

Taxonomy: Fine-silty, mixed, acid, mesic Aeric Fluvaquents

Horizon	Depth	Matrix Color	Redox Abundance, Size, Color	Texture, Structure, Other
	0-18"	2.5 /N	organic derived from bark & sawdust	

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

☑ Histic epipedon ☐ Reducing conditions ☐ Concretions ☐ Organic pan

☐ Sulfidic odor ☐ Gleyed ☐ Highly organic surface layer ☐ On hydric soils list

Soil Criterion Met? Yes

HYDROLOGY

Depth of inundation 0" Depth to water table: >18" Depth to saturation: >18"

Primary Indicators:

☐ Inundated

☐ Saturated in upper 12"

☐ Water marks

☐ Drift lines

☐ Sediment deposits

☐ Drainage patterns

Secondary Indicators (2 or more required):

☐ Oxidized rhizospheres ☐ Local soil survey data

☐ Water-stained leaves ☐ FAC-Neutral test

☐ Recorded data (aerials, groundwater data)

Explain:

☑ Other

Explain: Dried algal mats on surface

Remarks: Plot located at the bottom of a drainage ditch. No water currently in ditch.

Hydrology Criterion Met? Yes

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	01/07/99	Investigator(s):	JG/AR
Project Name:	Clatskanie LWI		
WetlandCode:	CR-12	ProjectNumber:	2981046

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

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

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

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-12	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	The wetland provides habitat for some wildlife species.	One Cowardin wetland class with more than 5 plant species. Emergent veg. & ponding or open water only. Low degree of Cowardin class interspersion. Less than 0.5 acre of unvegetated open water present. Wetland not connected to another body of water, but water within 1 mile. Wetland not connected to other wetlands, but within 3 mile radius of other wetlands. Upstream not listed as water quality limited. Agricultural land use within 500 feet of wetland edge.
Fish Habitat - Streams	N/A	
Fish Habitat - Lakes/Ponds	N/A	
Water Quality	The wetland's water quality function is impacted or degraded.	Groundwater (including seeps and springs) is wetland's primary source of water. Evidence of flooding or ponding during part of the growing season. High (>60%) degree of wetland vegetation cover. More than 5 acres of wetland area. Agricultural land use within 500 feet of wetland edge. Upstream not listed as water quality limited in watershed or adjacent to the wetland.
Hydrologic Control	The wetland's hydrologic control function is intact.	All or part of wetland located within 100-year floodplain or enclosed basin. Evidence of flooding or ponding during the growing season. Area is more than 5 acres. Waterflow out of wetland is restricted or no outlet. Emergent veg. or wet meadow is dominant cover type. Agricultural land use within 500 ft of wetland on downstream or down-slope edge of wetland. Agricultural land use in watershed upstream from area.
Sensitivity to Impact	The wetland is potentially sensitive to future impacts.	Stream flow or bank has been modified by human activities within 1 mile above wetland. Water is being taken out of stream(s) through active diking, drainage, or irrigation districts upstream. Upstream not listed as water quality limited in watershed upstream of the or adjacent to the wetland. Agricultural land use within 500 feet of wetland's edge. Dominant Agricultural land use within 500 feet of wetland's edge. Emergent veg. and ponding,or open water only are the dominant cover types.
Enhancement Potential	The wetland has moderate potential for enhancement.	Wetland has lost one or more functions or one or more functions is not present in assessment results for wildlife habitat, fish habitat, water quality and hydrologic control. Wetland's primary source of water is

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-12	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
		groundwater, including springs and seeps. Wetland's area is more than 5 acres. Between 10 and 40 % of wetland's edge is bordered by a vegetative buffer 25 or more feet wide. Wetland is potentially sensitive to future impacts.
Education	The wetland has potential for educational use.	Wetland site is open to the public for direct access or observation. One to two visible safety hazards exist at the wetland site. Provides wildlife habitat for some species, or fish habitat is impacted or degraded. There is existing physical public access to other features or it can be created easily and other habitats can be observed from this site. There is an unmaintained access point within 250 feet of the wetland's edge. Access is not available for limited mobility.
Recreation	The wetland has the potential to provide recreational opportunities.	There is an unmaintained public access point within 250 feet of the wetland's edge. Wetland not accessible by boat-no boat launch within 1 mile/ cannot develop. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides habitat for some species. Fishing is allowed at wetland or adjacent water body. Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be pleasing.	Two Cowardin classes are visible from primary viewing area(s). More than 50% of wetland is visible from viewing area(s). General appearance of wetland has no visual detractors. Visual character with surrounding area is open or naturally landscaped. Natural, pleasant odors are present at primary viewing location. Some traffic and other similar sounds and natural sounds are audible at primary viewing locations.

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 1-12-99 **Wetland Mapping Code:** CR13

Investigator(s): JG/AR **Size (acres):** 22.19

Location

Legal: T 7N R 4W S 5, 8 2400, 2500

Other: North of Burlington Northern railroad, east of Clatskanie River

Basin: Clatskanie River

Soils

Mapped Series: 67

Hydrology

Hydrologic Source: Surface flow

Wetland Classification(s): POW, PFO, PSS, PEM

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
Populus balsamifera	*Spiraea douglasii*	*Rubus discolor*	*Scirpus microcarpus*
Fraxinus latifolia	*Salix sp.*		*Juncus sp.*
Alnus rubra	*Cornus stolonifera*		*Carex sp.*
			Phalaris arundinacea

Comments:

Wetland CR13 is a palustrine scrub/shrub, forested, and open water wetland adjacent to the Clatskanie River. A slough (palustine open water wetland) on the northern side of the river encircles most of the terrestrial wetland. An isthmus about 300 feet wide connects it to the mainland. Vegetation observed from vantage points indicates that this wetland supports a somewhat higher diversity of species than most of the wetlands in the inventory. An arm of the slough penetrates into the wetland, significantly increasing the proportion of shoreline relative to the wetland area.

Wetland Classification Codes:

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

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	JG/AR	Investigator(s):	01/12/99
Project Name:	Clatskanie LWI		
WetlandCode:	CR-13	ProjectNumber:	2981046

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

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

Wildlife Habitat:	The wetland provides diverse wildlife habitat.
Fish Habitat - Streams:	The wetland's fish habitat function is impacted or degraded.
Fish Habitat - Lakes/Ponds:	N/A
Water Quality:	The wetland's water quality function is intact.
Hydrologic Control:	The wetland's hydrologic control function is intact.
Sensitivity to Impact:	The wetland is sensitive to future impacts.
Enhancement Potential:	N/A
Education:	The wetland site is not appropriate for educational use.
Recreation:	The wetland has the potential to provide recreational opportunities.
Aesthetic Quality:	The wetland is considered to be moderately pleasing.

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-13	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	The wetland provides diverse wildlife habitat.	Two or more Cowardin wetland classes. Woody vegetation is dominant vegetation cover. Moderate degree of Cowardin class interspersion. More than 1 acre of unvegetated open water present. Wetland connected to another body of water by surface water. Wetland connected to other wetlands within a 3 mile radius. One or more upstream reaches are listed water quality limited. Agricultural land use within 500 feet of wetland edge.
Fish Habitat - Streams	The wetland's fish habitat function is impacted or degraded.	Less than 50% of stream shaded by riparian vegetation. Portions of stream channel modified. Stream contains less than 10% of instream structures. One or more upstream reaches are listed water quality limited. Agricultural land use within 500 ft of wetland edge. Salmon, trout, or sensitive species present sometime during the year.
Fish Habitat - Lakes/Ponds	N/A	
Water Quality	The wetland's water quality function is intact.	Surface flow (including streams and ditches) is wetland's primary source of water. Evidence of flooding or ponding during part of the growing season. High (>60%) degree of wetland vegetation cover. More than 5 acres of wetland area. Agricultural land use within 500 feet of wetland edge. One or more upstream reaches are listed water quality limited in watershed or adjacent to the wetland.
Hydrologic Control	The wetland's hydrologic control function is intact.	All or part of wetland located within 100-year floodplain or enclosed basin. Evidence of flooding or ponding during the growing season. Area is more than 5 acres. Waterflow out of wetland is unrestricted. Woody vegetation is dominant cover type. Agricultural land use within 500 ft of wetland on downstream or down-slope edge of wetland. Agricultural land use in watershed upstream from area.
Sensitivity to Impact	The wetland is sensitive to future impacts.	Stream flow or bank has been modified by human activities within 1 mile above wetland. Water is being taken out of stream(s) through active diking, drainage, or irrigation districts upstream. One or more upstream reaches listed as water quality limited in watershed or adjacent to the wetland. Agricultural land use within 500 feet of wetland's edge. Dominant Residential/Industrial (developed) land use within 500 feet of wetland's edge. Woody

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-13	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
		vegetation is the dominant cover.
Enhancement Potential	N/A	
Education	The wetland site is not appropriate for educational use.	Wetland site is not open to the public for direct access or observation. One to two visible safety hazards exist at the wetland site. Results of wildlife habitat and fish habitat assessment criteria prove wetland provides diverse Wildlife Habitat, or Fish Habitat function is intact. There is no existing physical public access to other features, but observation of other features can be made. There is not an existing access point within 250 feet of the wetland's edge (if existing-hazardous). Access is not available for limited mobility.
Recreation	The wetland has the potential to provide recreational opportunities.	There is not an existing access point within 250 feet of the wetland's edge (if existing-hazardous). Boat launch could be developed within 0.5-1mile. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides diverse wildlife habitat. Fishing is allowed at wetland or adjacent water body. Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be moderately pleasing.	More than two Cowardin classes are visible from primary viewing area(s). Between 25 and 50% of wetland is visible from viewing area(s). General appearance of wetland has visual detractors which cannot be removed easily. Visual character with surrounding area is landscaped or manipulated by people. At certain times, unpleasant odors are present at the primary viewing location. Some traffic and other similar sounds and natural sounds are audible at primary viewing locations.

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 1-12-99

Wetland Mapping Code: CR14

Investigator(s): JG/AR

Size (acres): 48.14

Location

Legal: T 7N R 4W S 6 600, 700

Other: North of Highway 30 at the confluence of the Beaver Dredge Cut and the Clatskanie River

Basin: Clatskanie River

Soils

Mapped Series: 67

Hydrology

Hydrologic Source: Surface flow

Wetland Classification(s): POW, PFO, PSS, PEM

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
Fraxinus latifolia	*Cornus stolonifera*		*Phalaris arundinacea*
Populus balsamifera	*Salix sp.*		
Alnus rubra			

Comments:

Wetland CR14 is a palustrine emergent, scrub/shrub, forested, and open water wetland at the mouth of the Clatskanie River. The large, emergent section of this wetland has an extensive hydrologic connection with the river, through a system of small, natural drainage channels on the site. The appearance of the channels in the aerial photographs, and flooding of the area that occurred during the inventory, suggests that the emergent part of the wetland is flooded frequently, possibly by tidal flux. The margins of the wetland support shrubs and trees, and are slightly higher than the emergent part. Palustrine open water wetland of a slough forms the northern boundary of the wetland. The wetland boundary on the north is the bank of the river. On the southern edge, the boundary is marked by changes in soil, hydrology, and vegetation associated with increased elevation. The eastern boundary is a dike surrounding a dredge spoil cell.

Wetland Classification Codes:

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

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	01/12/99	Investigator(s):	JG/AR
Project Name:	Clatskanie LWI		
WetlandCode:	CR-14	ProjectNumber:	2981046

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

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

Wildlife Habitat:	The wetland provides diverse wildlife habitat.
Fish Habitat - Streams:	The wetland's fish habitat function is impacted or degraded.
Fish Habitat - Lakes/Ponds:	N/A
Water Quality:	The wetland's water quality function is intact.
Hydrologic Control:	The wetland's hydrologic control function is impacted or degraded.
Sensitivity to Impact:	The wetland is potentially sensitive to future impacts.
Enhancement Potential:	N/A
Education:	The wetland site is not appropriate for educational use.
Recreation:	The wetland has the potential to provide recreational opportunities.
Aesthetic Quality:	The wetland is considered to be moderately pleasing.

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-14	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	The wetland provides diverse wildlife habitat.	Two or more Cowardin wetland classes. Emergent veg. & ponding or open water only. Moderate degree of Cowardin class interspersion. More than 1 acre of unvegetated open water present. Wetland connected to another body of water by surface water. Wetland connected to other wetlands within a 3 mile radius. One or more upstream reaches are listed water quality limited. Exclusive Forest use or Open Space within 500 feet of wetland edge.
Fish Habitat - Streams	The wetland's fish habitat function is impacted or degraded.	Less than 50% of stream shaded by riparian vegetation. Stream channel natural/returning to natural physical character. Stream contains less than 10% of instream structures. One or more upstream reaches are listed water quality limited. Exclusive Forest use or Open Space within 500 ft of wetland edge. Salmon, trout, or sensitive species present sometime during the year.
Fish Habitat - Lakes/Ponds	N/A	
Water Quality	The wetland's water quality function is intact.	Surface flow (including streams and ditches) is wetland's primary source of water. Evidence of flooding or ponding during part of the growing season. High (>60%) degree of wetland vegetation cover. More than 5 acres of wetland area. Exclusive Forest use or Open Space within 500 feet of wetland edge. One or more upstream reaches are listed water quality limited in watershed or adjacent to the wetland.
Hydrologic Control	The wetland's hydrologic control function is impacted or degraded.	All or part of wetland located within 100-year floodplain or enclosed basin. Evidence of flooding or ponding during the growing season. Area is more than 5 acres. Waterflow out of wetland is unrestricted. Emergent veg. and ponding , or open water only is dominant cover type. Agricultural land use within 500 ft of wetland on downstream or down-slope edge of wetland. Forested or natural area land use upstream.
Sensitivity to Impact	The wetland is potentially sensitive to future impacts.	Stream flow or bank has not been modified by human activities within 1 mile above wetland. Water is not being taken out of streams through active diking, drainage, or irrigation districts upstream. One or more upstream reaches listed as water quality limited in watershed or adjacent to the wetland. Exclusive Forest use or Open Space within 500 feet of wetland's edge. Dominant

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR-14	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
		Residential/Industrial (developed) land use within 500 feet of wetland's edge. Emergent veg. only or wet meadow is the dominant cover.
Enhancement Potential	N/A	
Education	The wetland site is not appropriate for educational use.	Wetland site is not open to the public for direct access or observation. One to two visible safety hazards exist at the wetland site. Results of wildlife habitat and fish habitat assessment criteria prove wetland provides diverse Wildlife Habitat, or Fish Habitat function is intact. There is existing physical public access to other features or it can be created easily and other habitats can be observed from this site. There is not an existing access point within 250 feet of the wetland's edge (if existing-hazardous). Access is not available for limited mobility.
Recreation	The wetland has the potential to provide recreational opportunities.	There is not an existing access point within 250 feet of the wetland's edge (if existing-hazardous). Boat launch could be developed within 0.5-1mile. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides diverse wildlife habitat. Fishing is allowed at wetland or adjacent water body. Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be moderately pleasing.	Two Cowardin classes are visible from primary viewing area(s). More than 50% of wetland is visible from viewing area(s). General appearance of wetland has no visual detractors. Visual character with surrounding area is open or naturally landscaped. Natural, pleasant odors are present at primary viewing location. Continuous traffic and other intrusive noise and natural sounds are audible at primary viewing location.

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 1-6-99 **Wetland Mapping Code:** CR15

Investigator(s): JG/AR **Size (acres):**

Location

Legal: T 7N R 4W S 8 N/A

Other:

Basin: Clatskanie River

Soils

Mapped Series: N/A

Hydrology

Hydrologic Source: Surface runoff, groundwater

Wetland Classification(s): R3UB

Dominant Vegetation

Trees	Shrubs	Vines	Herbs

Comments:

Wetland CR15 is Falls Creek from the project boundary downstream to the confluence with the Clatskanie River. This perennial creek is in a narrow, steep-sided canyon, and has a moderately steep gradient. The creek channel is unvegetated. This precludes the creek from being regulated as a wetland as it does not meet the hydrophytic vegetation criterion. It is regulated as a Water of the State. Despite not being regulated as a wetland, the Cowardin wetland classification system used in the Local Wetland Inventory uses the wetland classification "riverine" to describe unvegetated stream channels. The defined channel is approximately 10 feet wide. The streambed contains boulders and large woody material. The streambanks are generally continuous with the canyon sides.

Wetland Classification Codes:

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

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 1-6-99 **Wetland Mapping Code:** CR16

Investigator(s): JG/AR **Size (acres):**

Location

Legal: T 7N R 4W S 4, 5 N/A

Other:

Basin: Clatskanie River

Soils

Mapped Series: N/A

Hydrology

Hydrologic Source: Surface runoff, groundwater

Wetland Classification(s): R1UB

Dominant Vegetation

Trees	Shrubs	Vines	Herbs

Comments:

Wetland CR16 is the channel of the Beaver Dredge Cut immediately north of wetland CR11. The channel is unvegetated. This precludes the channel from being regulated as a wetland, as it does not meet the hydrophytic vegetation criterion. It is regulated as a Water of the State. Despite not being regulated as a wetland, the Cowardin wetland classification system used in the Local Wetland Inventory uses the wetland classification "riverine" to describe unvegetated channels. The channel is approximately 100 feet wide. The northern side is confined by a dike, and is considered the study area boundary. The southern side is undiked, allowing high water to flood wetland CR11.

Wetland Classification Codes:

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

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 2-22-99 **Wetland Mapping Code:** CR17

Investigator(s): JG/AR **Size (acres):** 2.35

Location

Legal: T 7N R 4W S 9 200

Other: N of Hwy. 30, E of Cemetery Rd.

Basin: Clatskanie River

Soils

Mapped Series: 30D

Hydrology

Hydrologic Source: Groundwater

Wetland Classification(s): PEM

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
			Phalaris arundinacea
			Holcus lanatus
			Festuca arundinacea
			Agrostis alba
			Juncus tenuis
			Ranunculus repens

Comments:

See DSL DET #96-0006. Wetland CR17 is in a slightly concave terrace on a hillside. The slope above and below the wetland is fairly steep. The wetland is surrounded by undeveloped land, primarily forested.

Wetland Classification Codes:

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

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	2-22-99	Investigator(s):	JG
Project Name:	Clatskanie LWI		
WetlandCode:	CR17	ProjectNumber:	2981046

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

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

Wildlife Habitat:	The wetland provides habitat for some wildlife species.
Fish Habitat - Streams:	N/A
Fish Habitat - Lakes/Ponds:	N/A
Water Quality:	The wetland's water quality function is lost or not present.
Hydrologic Control:	The wetland's hydrologic control function is lost or not present.
Sensitivity to Impact:	The wetland is potentially sensitive to future impacts.
Enhancement Potential:	The wetland has moderate potential for enhancement.
Education:	The wetland site is not appropriate for educational use.
Recreation:	The wetland has the potential to provide recreational opportunities.
Aesthetic Quality:	The wetland is considered to be pleasing.

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR17	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	The wetland provides habitat for some wildlife species.	One Cowardin wetland class with more than 5 plant species. Emergent veg. or wet meadow. Low degree of Cowardin class interspersion. Less than 0.5 acre of unvegetated open water present. Wetland not connected to another body of water, but water within 1 mile. Wetland not connected to other wetlands, but within 3 mile radius of other wetlands. Upstream not listed as water quality limited. Exclusive Forest use or Open Space within 500 feet of wetland edge. More than 40% of wetland edge bordered by veg. buffer 25 or more feet wide.
Fish Habitat - Streams	N/A	
Fish Habitat - Lakes/Ponds	N/A	
Water Quality	The wetland's water quality function is lost or not present.	Groundwater (including seeps and springs) is wetland's primary source of water. No evidence of flooding or ponding during the growing season. High (>60%) degree of wetland vegetation cover. Between 0.5 and 5 acres of wetland connected to other wetlands within a 3 mile radius. Exclusive Forest use or Open Space within 500 feet of wetland edge. Upstream not listed as water quality limited in watershed or adjacent to the wetland.
Hydrologic Control	The wetland's hydrologic control function is lost or not present.	No part of wetland located within 100-year floodplain or enclosed basin. No evidence of flooding or ponding during the growing season. Area is between 0.5 and 5 acres. Waterflow out of wetland is unrestricted. Emergent veg. or wet meadow is dominant cover type. Exclusive Forest Use or Open Space within 500 ft of wetland on downstream or down-slope edge of wetland. Forested or natural area land use upstream.
Sensitivity to Impact	The wetland is potentially sensitive to future impacts.	Stream flow or bank has not been modified by human activities within 1 mile above wetland. Water is not being taken out of streams through active diking, drainage, or irrigation districts upstream. Upstream not listed as water quality limited in watershed upstream of the or adjacent to the wetland. Exclusive Forest use or Open Space within 500 feet of wetland's edge. Dominant Residential/Industrial (developed) land use within 500 feet of wetland's edge. Emergent veg. only or wet meadow is the dominant cover.
Enhancement Potential	The wetland has moderate	Wetland has lost one or more functions or

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR17	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
	potential for enhancement.	one or more functions is not present in assessment results for wildlife habitat, fish habitat, water quality and hydrologic control. Wetland's primary source of water is groundwater, including springs and seeps. Wetland's area is between 0.5 and 5 acres. More than 40% of wetland's edge is bordered by a vegetative buffer 25 or more feet wide. Wetland is potentially sensitive to future impacts.
Education	The wetland site is not appropriate for educational use.	Wetland site is not open to the public for direct access or observation. There are no visible hazards to the public at the wetland site. Provides wildlife habitat for some species, or fish habitat is impacted or degraded. There is existing physical public access to other features or it can be created easily and other habitats can be observed from this site. There is an unmaintained access point within 250 feet of the wetland's edge. Access is not available for limited mobility.
Recreation	The wetland has the potential to provide recreational opportunities.	There is an unmaintained public access point within 250 feet of the wetland's edge. Wetland not accessible by boat-no boat launch within 1 mile/ cannot develop. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides habitat for some species. Fishing is not allowed at wetland or adjacent water body (or not applicable). Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be pleasing.	One Cowardin class is visible from primary viewing area(s). More than 50% of wetland is visible from viewing area(s). General appearance of wetland has no visual detractors. Visual character with surrounding area is open or naturally landscaped. Natural, pleasant odors are present at primary viewing location. Some traffic and other similar sounds and natural sounds are audible at primary viewing locations.

CLATSKANIE LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field Verification: 6-17-99 **Wetland Mapping Code:** CR18

Investigator(s): JG **Size (acres):** 1.7

Location

Legal: T 7N R 4W S 9 1000

Other: South of Highway 30, north of Clatskanie River

Basin: Clatskanie River

Soils

Mapped Series: 24

Hydrology

Hydrologic Source: Precipitation

Wetland Classification(s): PUBF, PSS

Dominant Vegetation

Trees	Shrubs	Vines	Herbs
	Corylus cornuta	*Rubus discolor*	*Phalaris arundinacea*
	Cornus stolonifera		*Sparganium emersum*
	Salix sp.		*Eleocharis ovata*
			Juncus acuminatus
			Juncus effusus
			Veronica americana
			Lycopus uniflorus
			Carex stipata

Comments:

Access to CR18 was not granted. Conditions described for this wetland could not be verified by off-site observation. Information was compiled from NWI mapping, interpretation of aerial photographs, and information in DSL DET 99-0197. The delineation report described the site as an "ephemeral pond" with a "relatively high level of plant diversity."

Wetland Classification Codes:

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

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Date(s):	06/17/99	Investigator(s):	JG
Project Name:	Clatskanie LWI		
WetlandCode:	CR18	ProjectNumber:	2981046

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

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

Wildlife Habitat:	The wetland provides habitat for some wildlife species.
Fish Habitat - Streams:	N/A
Fish Habitat - Lakes/Ponds:	N/A
Water Quality:	The wetland's water quality function is intact.
Hydrologic Control:	The wetland's hydrologic control function is impacted or degraded.
Sensitivity to Impact:	The wetland is potentially sensitive to future impacts.
Enhancement Potential:	The wetland has moderate potential for enhancement.
Education:	The wetland site is not appropriate for educational use.
Recreation:	The wetland is not appropriate for or does not provide recreational opport
Aesthetic Quality:	The wetland is considered to be moderately pleasing.

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR18	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	The wetland provides habitat for some wildlife species.	Two or more Cowardin wetland classes. Emergent veg. & ponding or open water only. Low degree of Cowardin class interspersion. Less than 0.5 acre of unvegetated open water present. Wetland not connected to another body of water, but water within 1 mile. Wetland not connected to other wetlands, but within 3 mile radius of other wetlands. Upstream not listed as water quality limited. Exclusive Forest use or Open Space within 500 feet of wetland edge.
Fish Habitat - Streams	N/A	
Fish Habitat - Lakes/Ponds	N/A	
Water Quality	The wetland's water quality function is intact.	Precipitation or sheet flow is wetland's primary source of water. Evidence of flooding or ponding during part of the growing season. High (>60%) degree of wetland vegetation cover. Between 0.5 and 5 acres of wetland connected to other wetlands within a 3 mile radius. Agricultural land use within 500 feet of wetland edge. Upstream not listed as water quality limited in watershed or adjacent to the wetland.
Hydrologic Control	The wetland's hydrologic control function is impacted or degraded.	All or part of wetland located within 100-year floodplain or enclosed basin. Evidence of flooding or ponding during the growing season. Area is between 0.5 and 5 acres. Waterflow out of wetland is restricted or no outlet. Emergent veg. and ponding , or open water only is dominant cover type. Exclusive Forest Use or Open Space within 500 ft of wetland on downstream or down-slope edge of wetland. Forested or natural area land use upstream.
Sensitivity to Impact	The wetland is potentially sensitive to future impacts.	Stream flow or bank has been modified by human activities within 1 mile above wetland. Water is being taken out of stream(s) through active diking, drainage, or irrigation districts upstream. Upstream not listed as water quality limited in watershed upstream of the or adjacent to the wetland. Exclusive Forest use or Open Space within 500 feet of wetland's edge. Dominant Residential/Industrial (developed) land use within 500 feet of wetland's edge. Emergent veg. and ponding,or open water only are the dominant cover types.
Enhancement Potential	The wetland has moderate potential for enhancement.	Wetland has lost one or more functions or one or more functions is not present in

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLGY

Function and Condition Summary Sheet for the Oregon Method

WetlandCode:	CR18	ProjectNumber:	2981046

Function	Evaluation Descriptor	Rationale
		assessment results for wildlife habitat, fish habitat, water quality and hydrologic control. Wetland's primary source of water is precipitation or sheet flow. Wetland's area is between 0.5 and 5 acres. Between 10 and 40 % of wetland's edge is bordered by a vegetative buffer 25 or more feet wide. Wetland is potentially sensitive to future impacts.
Education	The wetland site is not appropriate for educational use.	Wetland site is not open to the public for direct access or observation. There are no visible hazards to the public at the wetland site. Provides wildlife habitat for some species, or fish habitat is impacted or degraded. There is no existing physical public access to other features, and observation of other features cannot be made. There is not an existing access point within 250 feet of the wetland's edge (if existing-hazardous). Access is not available for limited mobility.
Recreation	The wetland is not appropriate for or does not provide recreational opportunities.	There is not an existing access point within 250 feet of the wetland's edge (if existing-hazardous). Wetland not accessible by boat-no boat launch within 1 mile/ cannot develop. No existing trails and viewing areas to guide user or if created, would disrupt wildlife or plant habitat. Wetland provides habitat for some species. Fishing is not allowed at wetland or adjacent water body (or not applicable). Hunting is not allowed at the wetland.
Aesthetic Quality	The wetland is considered to be moderately pleasing.	One Cowardin class is visible from primary viewing area(s). Less than 25% of wetland is visible from viewing area(s). General appearance of wetland has no visual detractors. Visual character with surrounding area is landscaped or manipulated by people. At certain times, unpleasant odors are present at the primary viewing location. Continuous traffic and other intrusive noise and natural sounds are audible at primary viewing location.



Appendix B

Riparian Data and Summary Sheets

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: BDL-1

Riparian Width Determination

Date: 1/12/99 Investigators: JG/AR

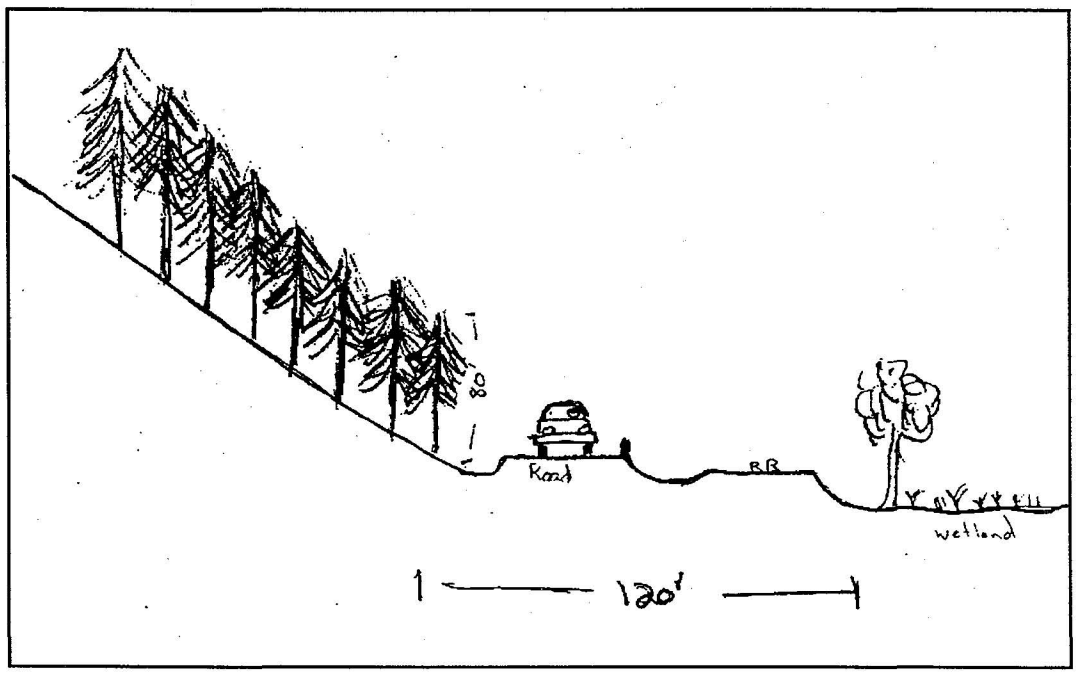
Dominant tree species: Acer macrophyllum

Potential tree height (PTH)/Width of Riparian Area: 90/90
(Width measured horizontally from edge of water resource)

PTH determined by: ☑ On-site vegetation ☐ Reference site Code:

Comments: Upland edge of wetland is a railroad grade; above railroad is Beaver Falls Rd. The distance between them is 20'-150'. The railroad and road therefore occupy most of the riparian area. The topography rises abruptly above the road.

Typical Cross Section:



Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: BDL-1

Riparian Characterization Form — Part 1

General Information

Date: 1/12/99

On-site ☑ Office ☐ Reach Length: 2,900

Investigators: JG/AR Hydrologic Basin: Beaver Creek

Water Resource Information

Water Resource: Stream/River ☑ Width: 200
Lake/Pond ☐ Width: 0
Wetland ☑ Width: 300

LWI Wetland Code: CR-11

Water present year-round: Yes

Are salmonids present in the adjacent water resource: Yes

Is the water resource listed for temperature on DEQ's 303(d) list: No

Within FEMA-mapped 100-year floodplain: Yes

Mapped soil series: Locoda silt loam

Adjacent Land Uses?

Agriculture ☐ Residential ☑ Undeveloped ☐
Commercial ☐ Roads ☑ Forestry ☑

Woody Vegetation **Herbaceous Vegetation**

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: BDL-1

Riparian Characterization Form — Part 2

Average slope in the riparian area: (Question 1)

☐ <10:1 (10%) ☑ Between 10:1 (10%) and 5:1 (20%) ☐ >5:1 (20%)

Extent of impervious surface within the riparian area: (Question 4)

☐ <10% ☐ 10% to 25% ☑ >25%

☐ **The reach is constricted by man-made features.**

☑ **The orientation allows for shading of the water resource at midday in summer.**

Dominant vegetation layer within the riparian area:

☑ Woody vegetation ☐ Herbaceous vegetation ☐ Bare ground

☑ **Woody vegetation hangs over the edge of the water.**

☑ **Large woody debris in riparian area.**

Percent of water resource bordered by vegetated riparian area at least 30 feet wide:

☐ >40% ☐ 10% to 40% ☑ <10%

Degree of development or human cause disturbance:

☐ <25% ☐ 25% to 75% ☑ >75%

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: BDL-1

Riparian Function Assessment Answer Sheet

Water Quality

Question 1:	2
Question 2:	3
Question 3:	3
Question 4:	1
Question 5:	2
Total Points:	11

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Flood Management

Question 6:	3
Question 7:	3
Question 8:	3
Total Points:	9

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Thermal Regulation

Question 9:	3
Question 10:	3
Question 11:	2
Total Points:	8

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Wildlife Habitat

Question 12:	3
Question 13:	3
Question 14:	2
Question 15:	3
Question 16:	1
Question 17:	3
Question 18:	1
Question 19:	3
Total Points:	19

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: BDL-2

Riparian Width Determination

Date: 1/12/99 Investigators: JG/AR

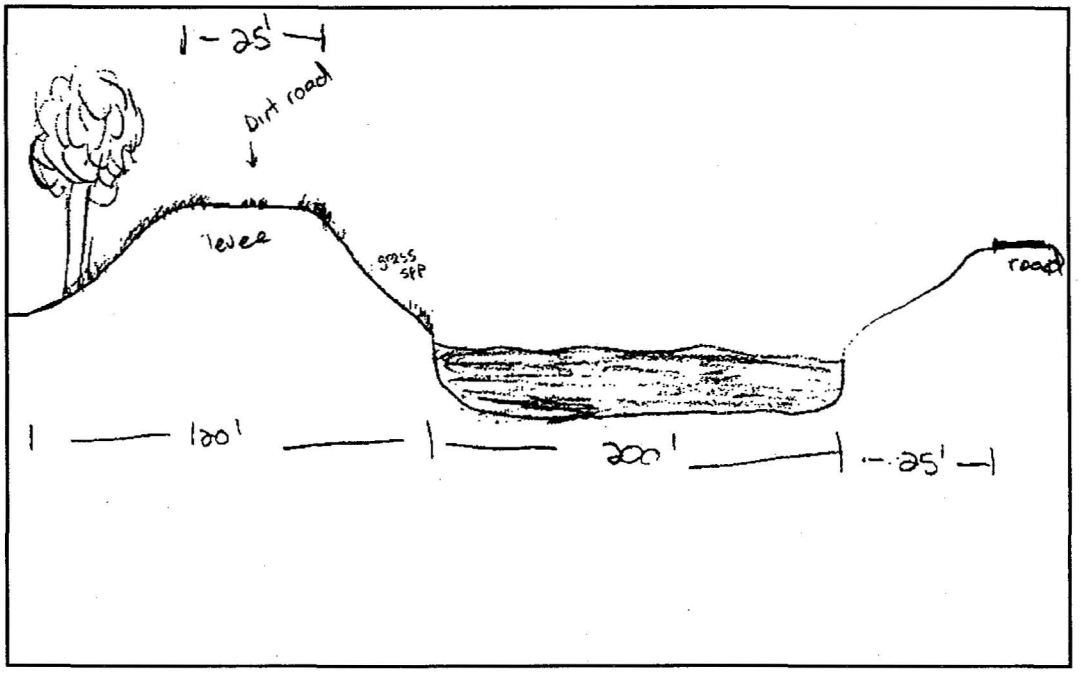
Dominant tree species: Populus trichocarpa

Potential tree height (PTH)/Width of Riparian Area: 120/120
(Width measured horizontally from edge of water resource)

PTH determined by: ☑ On-site vegetation ☐ Reference site Code:

Comments: Riparian area consists of a dike between wetland CR-12 and Beaver Slough. Cottonwood trees in a sparse line to SW of the top of the dike. There are some alder trees mixed in with the cottonwoods.

Typical Cross Section:



Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: BDL-2

Riparian Characterization Form — Part 1

General Information

Date: 1/12/99

On-site ☑ Office ☐ Reach Length: 2,600

Investigators: JG/AR Hydrologic Basin: Beaver Creek

Water Resource Information

Water Resource: Stream/River ☑ Width: 200
Lake/Pond ☐ Width: 0
Wetland ☐ Width: 0

LWI Wetland Code: N/A

Water present year-round: Yes

Are salmonids present in the adjacent water resource: Yes

Is the water resource listed for temperature on DEQ's 303(d) list: No

Within FEMA-mapped 100-year floodplain: Yes

Mapped soil series: Crims silt loam, protected

Adjacent Land Uses?

Agriculture ☑ Residential ☐ Undeveloped ☑
Commercial ☐ Roads ☑ Forestry ☐

Woody Vegetation **Herbaceous Vegetation**

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: BDL-2

Riparian Characterization Form — Part 2

Average slope in the riparian area: (Question 1)

☐ <10:1 (10%) ☑ Between 10:1 (10%) and 5:1 (20%) ☐ >5:1 (20%)

Extent of impervious surface within the riparian area: (Question 4)

☑ <10% ☐ 10% to 25% ☐ >25%

☑ **The reach is constricted by man-made features.**

☐ **The orientation allows for shading of the water resource at midday in summer.**

Dominant vegetation layer within the riparian area:

☐ Woody vegetation ☑ Herbaceous vegetation ☐ Bare ground

☐ **Woody vegetation hangs over the edge of the water.**

☐ **Large woody debris in riparian area.**

Percent of water resource bordered by vegetated riparian area at least 30 feet wide:

☑ >40% ☐ 10% to 40% ☐ <10%

Degree of development or human cause disturbance:

☐ <25% ☐ 25% to 75% ☑ >75%

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: BDL-2

Riparian Function Assessment Answer Sheet

Water Quality

Question 1:	2
Question 2:	2
Question 3:	2
Question 4:	3
Question 5:	2
Total Points:	11

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Flood Management

Question 6:	3
Question 7:	1
Question 8:	1
Total Points:	5

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Thermal Regulation

Question 9:	1
Question 10:	2
Question 11:	1
Total Points:	4

Function:
- ☐ High
- ☐ Medium
- ☑ Low

Wildlife Habitat

Question 12:	2
Question 13:	2
Question 14:	1
Question 15:	1
Question 16:	3
Question 17:	3
Question 18:	3
Question 19:	1
Total Points:	16

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CCL-1

Riparian Width Determination

Date: 1/12/99 Investigators: JG/AR

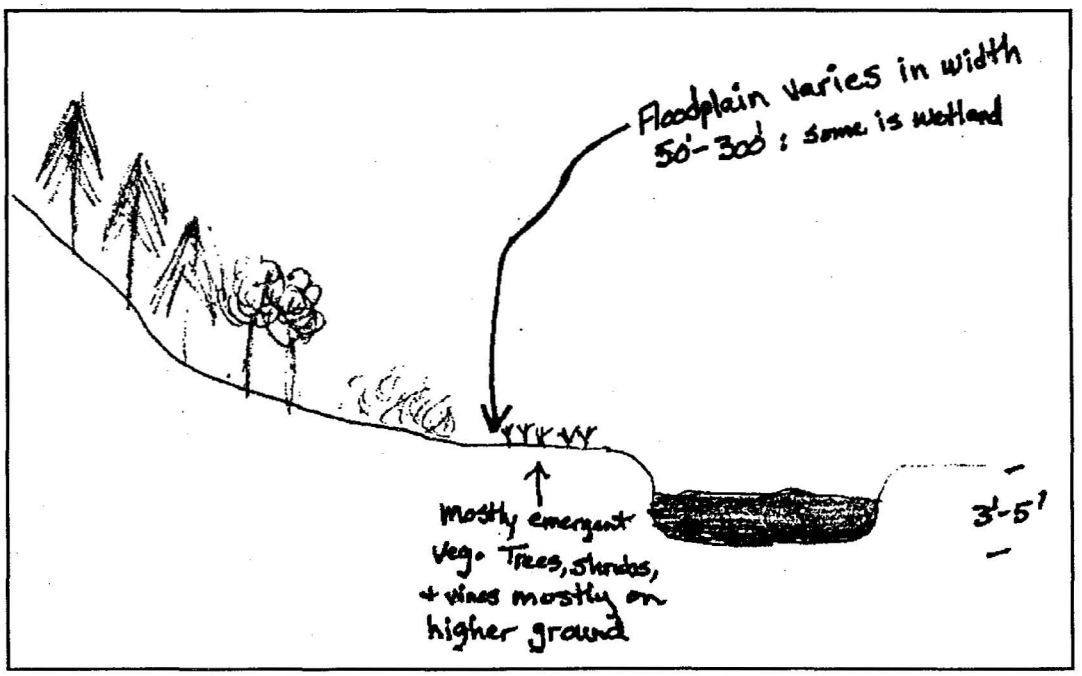
Dominant tree species: Alnus rubra

Potential tree height (PTH)/Width of Riparian Area: 65/65
(Width measured horizontally from edge of water resource)

PTH determined by: ☑ On-site vegetation ☐ Reference site Code:

Comments: CCL-1 is about 75% floodplain. Riparian area is adjacent to Conyers Creek on some short sections of the reach, but starts at upland edge of wetland for most of the reach.

Typical Cross Section:



Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CCL-1

Riparian Characterization Form — Part 1

General Information

Date: 1/12/99

On-site ☑ Office ☐ Reach Length: 2,900

Investigators: JG/AR Hydrologic Basin: Conyers Creek

Water Resource Information

Water Resource: Stream/River ☑ Width: 14
Lake/Pond ☐ Width: 0
Wetland ☑ Width: 150

LWI Wetland Code: CR-5

Water present year-round: Yes

Are salmonids present in the adjacent water resource: Yes

Is the water resource listed for temperature on DEQ's 303(d) list: No

Within FEMA-mapped 100-year floodplain: Yes

Mapped soil series: Hapludalfs-Udifluvents complex

Adjacent Land Uses?

Agriculture ☑ Residential ☑ Undeveloped ☐
Commercial ☐ Roads ☐ Forestry ☑

Woody Vegetation

Alnus rubra
Rubus discolor
Cornus stolonifera
Fraxinus latifolia
Pseudotsuga menziesii

Herbaceous Vegetation

Phalaris arundinacea
Juncus sp.

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CCL-1

Riparian Characterization Form — Part 2

Average slope in the riparian area: (Question 1)

☐ <10:1 (10%) ☑ Between 10:1 (10%) and 5:1 (20%) ☐ >5:1 (20%)

Extent of impervious surface within the riparian area: (Question 4)

☑ <10% ☐ 10% to 25% ☐ >25%

☐ **The reach is constricted by man-made features.**

☐ **The orientation allows for shading of the water resource at midday in summer.**

Dominant vegetation layer within the riparian area:

☐ Woody vegetation ☑ Herbaceous vegetation ☐ Bare ground

☐ **Woody vegetation hangs over the edge of the water.**

☐ **Large woody debris in riparian area.**

Percent of water resource bordered by vegetated riparian area at least 30 feet wide:

☑ >40% ☐ 10% to 40% ☐ <10%

Degree of development or human cause disturbance:

☑ <25% ☐ 25% to 75% ☐ >75%

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CCL-1

Riparian Function Assessment Answer Sheet

Water Quality

Question 1:	2
Question 2:	2
Question 3:	2
Question 4:	3
Question 5:	2
Total Points:	11

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Flood Management

Question 6:	3
Question 7:	1
Question 8:	3
Total Points:	7

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Thermal Regulation

Question 9:	1
Question 10:	2
Question 11:	1
Total Points:	4

Function:
- ☐ High
- ☐ Medium
- ☑ Low

Wildlife Habitat

Question 12:	2
Question 13:	2
Question 14:	1
Question 15:	1
Question 16:	3
Question 17:	3
Question 18:	3
Question 19:	3
Total Points:	18

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CCR-1

Riparian Width Determination

Date: 1/12/99 Investigators: JG/AR

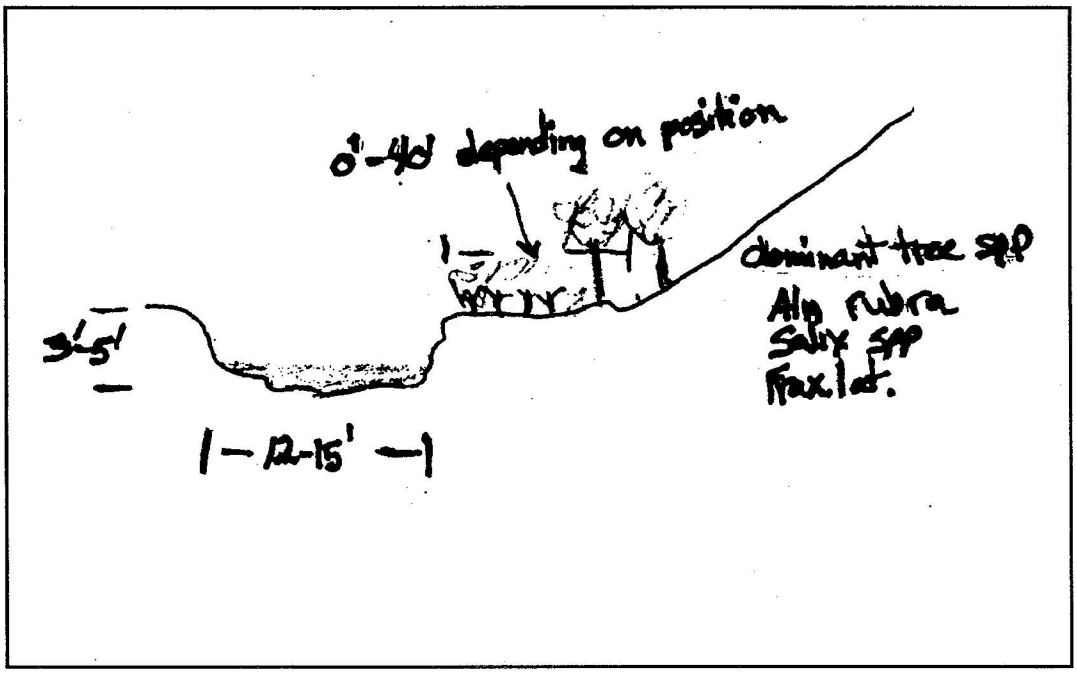
Dominant tree species: Alnus rubra

Potential tree height (PTH)/Width of Riparian Area: 65/65
(Width measured horizontally from edge of water resource)

PTH determined by: ☑ On-site vegetation ☐ Reference site Code:

Comments: The lower portion near Belleflower Rd. crossing has a broader, flatter floodplain area. The upper portion near Nehalem Rd. crossing has a steeper hillslope adjacent to the bank.

Typical Cross Section:



Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CCR-1

Riparian Characterization Form — Part 1

General Information

Date: 1/12/99

On-site ☐ Office ☐ Reach Length: 2,900

Investigators: JG/AR Hydrologic Basin: Conyers Creek

Water Resource Information

Water Resource: Stream/River ☑ Width: 14
Lake/Pond ☐ Width: 0
Wetland ☑ Width: 20

LWI Wetland Code: CR-5

Water present year-round: Yes

Are salmonids present in the adjacent water resource: Yes

Is the water resource listed for temperature on DEQ's 303(d) list: No

Within FEMA-mapped 100-year floodplain: Yes

Mapped soil series: Hapludalfs-Udifluvents complex

Adjacent Land Uses?

Agriculture ☑ Residential ☑ Undeveloped ☐
Commercial ☐ Roads ☐ Forestry ☑

Woody Vegetation

Alnus rubra
Salix sp.
Fraxinus latifolia
Spiraea douglasii
Rubus discolor
Cornus stolonifera
Rubus ursinus

Herbaceous Vegetation

Juncus effusus
Phalaris arundinacea
Polystichum munitum

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CCR-1

Riparian Characterization Form — Part 2

Average slope in the riparian area: (Question 1)

☐ <10:1 (10%) ☑ Between 10:1 (10%) and 5:1 (20%) ☐ >5:1 (20%)

Extent of impervious surface within the riparian area: (Question 4)

☑ <10% ☐ 10% to 25% ☐ >25%

☐ **The reach is constricted by man-made features.**

☐ **The orientation allows for shading of the water resource at midday in summer.**

Dominant vegetation layer within the riparian area:

☑ Woody vegetation ☐ Herbaceous vegetation ☐ Bare ground

☐ **Woody vegetation hangs over the edge of the water.**

☑ **Large woody debris in riparian area.**

Percent of water resource bordered by vegetated riparian area at least 30 feet wide:

☑ >40% ☐ 10% to 40% ☐ <10%

Degree of development or human cause disturbance:

☑ <25% ☐ 25% to 75% ☐ >75%

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CCR-1

Riparian Function Assessment Answer Sheet

Water Quality

Question 1:	2
Question 2:	3
Question 3:	3
Question 4:	3
Question 5:	2
Total Points:	13

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Flood Management

Question 6:	3
Question 7:	3
Question 8:	3
Total Points:	9

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Thermal Regulation

Question 9:	1
Question 10:	3
Question 11:	2
Total Points:	6

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Wildlife Habitat

Question 12:	3
Question 13:	3
Question 14:	2
Question 15:	3
Question 16:	3
Question 17:	3
Question 18:	3
Question 19:	3
Total Points:	23

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRL-1

Riparian Width Determination

Date: 1/12/99 Investigators: JG/AR

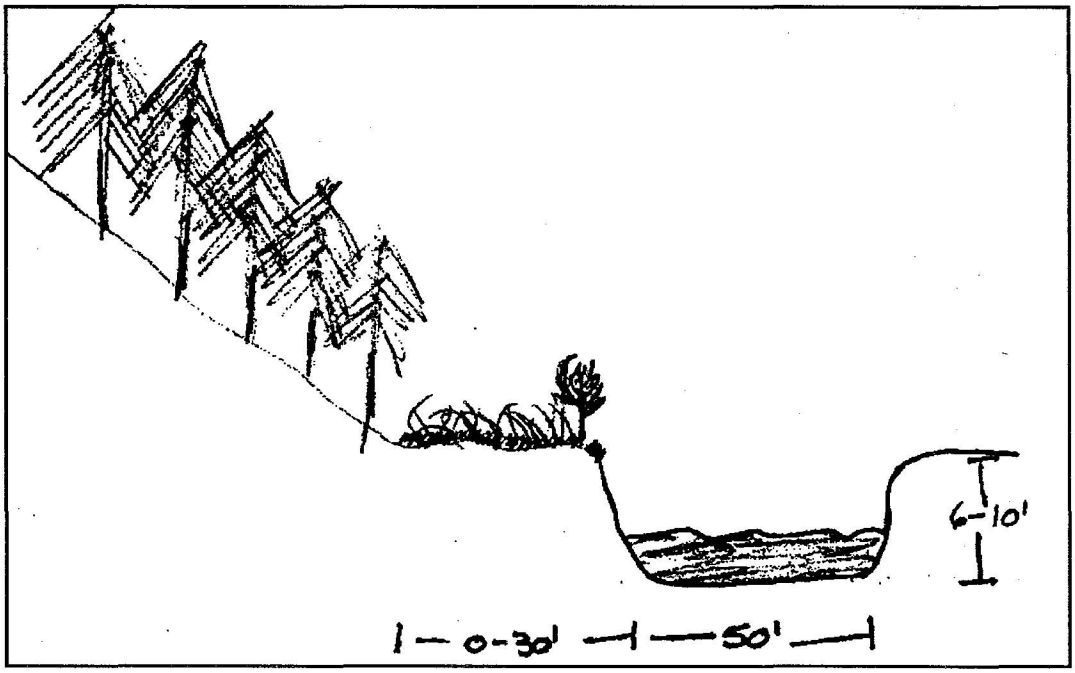
Dominant tree species: Pseudotsuga menziesii

Potential tree height (PTH)/Width of Riparian Area: 120/120
(Width measured horizontally from edge of water resource)

PTH determined by: ☑ On-site vegetation ☐ Reference site Code:

Comments: Left riparian area alternates between small sections of flat floodplain (with fir, alder, and ash) shelves and sloped, wooded areas (mostly firs). Reach starts at Olsen Rd. crossing and ends at Hwy. 30 bridge crossing.

Typical Cross Section:



Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRL-1

Riparian Characterization Form — Part 1

General Information

Date: 1/12/99

On-site ☑ Office ☐ Reach Length: 5,700

Investigators: JG/AR Hydrologic Basin: Clatskanie River

Water Resource Information

Water Resource: Stream/River ☑ Width: 50
Lake/Pond ☐ Width: 0
Wetland ☐ Width: 0

LWI Wetland Code: CR-1

Water present year-round: Yes

Are salmonids present in the adjacent water resource: Yes

Is the water resource listed for temperature on DEQ's 303(d) list: No

Within FEMA-mapped 100-year floodplain: Yes

Mapped soil series: Hapludalfs-Udifluvents complex

Adjacent Land Uses?

Agriculture ☑ Residential ☑ Undeveloped ☐
Commercial ☐ Roads ☑ Forestry ☑

Woody Vegetation	Herbaceous Vegetation
Pseudotsuga menziesii	Phalaris arundinacea
Alnus rubra	Rubus ursinus
Fraxinus latifolia	Polystichum munitum
Rubus discolor	
Salix sp.	
Cornus stolonifera	

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRL-1

Riparian Characterization Form — Part 2

Average slope in the riparian area: (Question 1)

☐ <10:1 (10%) ☑ Between 10:1 (10%) and 5:1 (20%) ☐ >5:1 (20%)

Extent of impervious surface within the riparian area: (Question 4)

☑ <10% ☐ 10% to 25% ☐ >25%

☐ **The reach is constricted by man-made features.**

☑ **The orientation allows for shading of the water resource at midday in summer.**

Dominant vegetation layer within the riparian area:

☑ Woody vegetation ☐ Herbaceous vegetation ☐ Bare ground

☑ **Woody vegetation hangs over the edge of the water.**

☑ **Large woody debris in riparian area.**

Percent of water resource bordered by vegetated riparian area at least 30 feet wide:

☑ >40% ☐ 10% to 40% ☐ <10%

Degree of development or human cause disturbance:

☐ <25% ☑ 25% to 75% ☐ >75%

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRL-1

Riparian Function Assessment Answer Sheet

Water Quality

Question 1:	2
Question 2:	3
Question 3:	3
Question 4:	3
Question 5:	2
Total Points:	13

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Flood Management

Question 6:	3
Question 7:	3
Question 8:	3
Total Points:	9

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Thermal Regulation

Question 9:	3
Question 10:	3
Question 11:	2
Total Points:	8

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Wildlife Habitat

Question 12:	3
Question 13:	3
Question 14:	2
Question 15:	3
Question 16:	3
Question 17:	3
Question 18:	1
Question 19:	2
Total Points:	20

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRL-2

Riparian Width Determination

Date: 1/12/99 Investigators: JG/AR

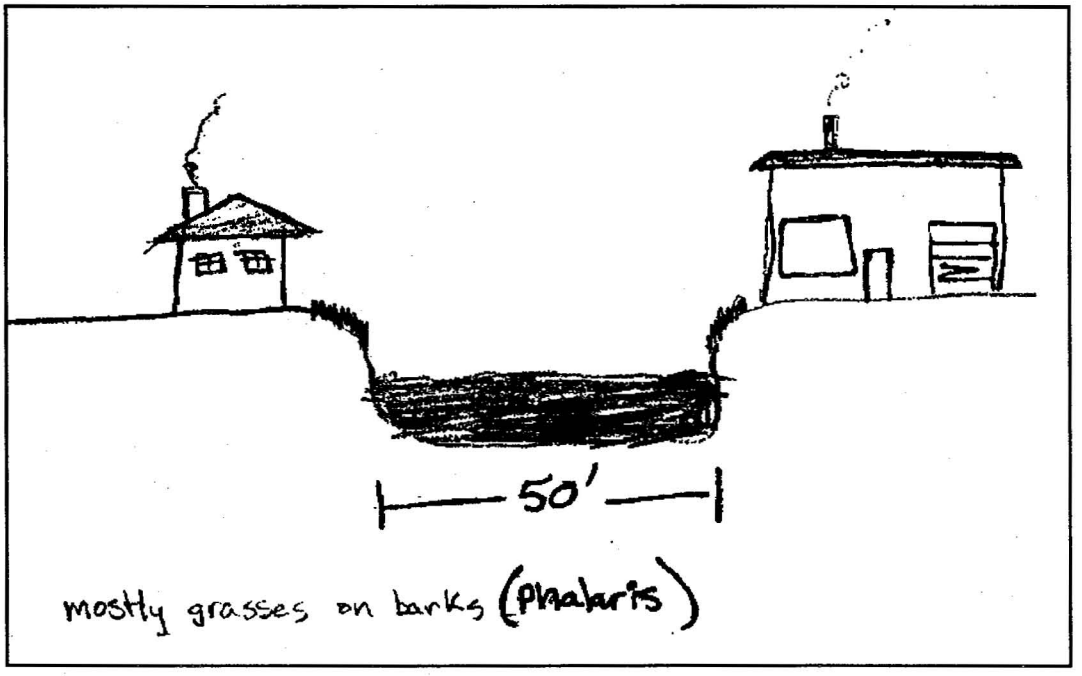
Dominant tree species: Populus balsamifera

Potential tree height (PTH)/Width of Riparian Area: 120/120
(Width measured horizontally from edge of water resource)

PTH determined by: ☑ On-site vegetation ☐ Reference site Code:

Comments: Reach starts at the Hwy. 30 crossing and ends at the confluence of Fall Creek. The reach is mostly an urban riparian corridor with very few trees or herbaceous vegetation throughout (with the exception of the city park) and width of 10'-20'.

Typical Cross Section:



Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRL-2

Riparian Characterization Form — Part 1

General Information

Date: 1/12/99

On-site ☑ Office ☐ Reach Length: 5,700

Investigators: JG/AR Hydrologic Basin: Clatskanie River

Water Resource Information

Water Resource: Stream/River ☑ Width: 50
Lake/Pond ☐ Width: 0
Wetland ☐ Width: 0

LWI Wetland Code: CR-1

Water present year-round: Yes

Are salmonids present in the adjacent water resource: Yes

Is the water resource listed for temperature on DEQ's 303(d) list: No

Within FEMA-mapped 100-year floodplain: Yes

Mapped soil series: Hapludalfs-Udifluvents cmplx, Wauna-Locoda si. lm.

Adjacent Land Uses?

Agriculture ☐ Residential ☑ Undeveloped ☐
Commercial ☑ Roads ☑ Forestry ☐

Woody Vegetation

Populus balsamifera ssp. Trichocarpa
Alnus rubra
Rubus discolor
Rubus ursinus
Cornus stolonifera
Salix sp.

Herbaceous Vegetation

Phalaris arundinacea
Juncus effusus
Carex sp.

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRL-2

Riparian Characterization Form — Part 2

Average slope in the riparian area: (Question 1)

☑ <10:1 (10%) ☐ Between 10:1 (10%) and 5:1 (20%) ☐ >5:1 (20%)

Extent of impervious surface within the riparian area: (Question 4)

☐ <10% ☐ 10% to 25% ☑ >25%

☑ **The reach is constricted by man-made features.**

☐ **The orientation allows for shading of the water resource at midday in summer.**

Dominant vegetation layer within the riparian area:

☐ Woody vegetation ☐ Herbaceous vegetation ☑ Bare ground

☐ **Woody vegetation hangs over the edge of the water.**

☐ **Large woody debris in riparian area.**

Percent of water resource bordered by vegetated riparian area at least 30 feet wide:

☐ >40% ☑ 10% to 40% ☐ <10%

Degree of development or human cause disturbance:

☐ <25% ☐ 25% to 75% ☑ >75%

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRL-2

Riparian Function Assessment Answer Sheet

Water Quality

Question 1:	3
Question 2:	1
Question 3:	2
Question 4:	1
Question 5:	2
Total Points:	9

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Flood Management

Question 6:	3
Question 7:	1
Question 8:	1
Total Points:	5

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Thermal Regulation

Question 9:	1
Question 10:	1
Question 11:	1
Total Points:	3

Function:
- ☐ High
- ☐ Medium
- ☑ Low

Wildlife Habitat

Question 12:	2
Question 13:	1
Question 14:	1
Question 15:	1
Question 16:	2
Question 17:	3
Question 18:	3
Question 19:	1
Total Points:	14

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRL-3

Riparian Width Determination

Date: 1/12/99 Investigators: JG/AR

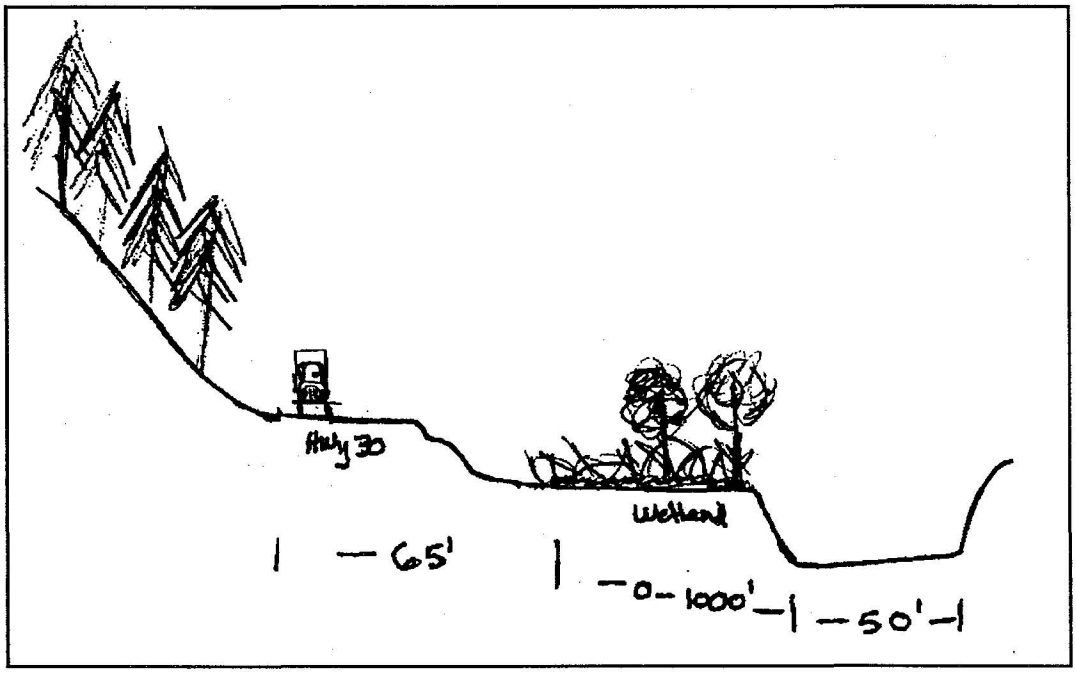
Dominant tree species: Alnus rubra

Potential tree height (PTH)/Width of Riparian Area: 65/65
(Width measured horizontally from edge of water resource)

PTH determined by: ☑ On-site vegetation ☐ Reference site Code:

Comments: CRL-3 starts at the confluence with Fall Creek and ends at the junction with Beaver Slough. Hwy. 30 runs along the S side of this riparian area. On the S side of the highway, the topography rises precipitously for 100'-200'. To the N of the highway the ground is nearly flat.

Typical Cross Section:



Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRL-3

Riparian Characterization Form — Part 1

General Information

Date: 1/12/99

On-site ☑ Office ☐ Reach Length: 4,600

Investigators: JG/AR Hydrologic Basin: Clatskanie River

Water Resource Information

Water Resource: Stream/River ☑ Width: 50
Lake/Pond ☐ Width: 0
Wetland ☑ Width: 500

LWI Wetland Code: CR-1, CR-10, CR-14

Water present year-round: Yes

Are salmonids present in the adjacent water resource: Yes

Is the water resource listed for temperature on DEQ's 303(d) list: No

Within FEMA-mapped 100-year floodplain: Yes

Mapped soil series: Wauna-Locoda silt loams

Adjacent Land Uses?

Agriculture ☐ Residential ☐ Undeveloped ☑
Commercial ☐ Roads ☑ Forestry ☐

Woody Vegetation	Herbaceous Vegetation
Populus balsamifera ssp. Trichocarpa	Phalaris arundinacea
Alnus rubra	Daucus carota
Salix sp.	Festuca arundinacea
Fraxinus latifolia	Juncus effusus
Pseudotsuga menziesii	Carex sp.
Cornus stolonifera	Rubus ursinus
Rubus discolor	

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRL-3

Riparian Characterization Form — Part 2

Average slope in the riparian area: (Question 1)

☑ <10:1 (10%) ☐ Between 10:1 (10%) and 5:1 (20%) ☐ >5:1 (20%)

Extent of impervious surface within the riparian area: (Question 4)

☐ <10% ☑ 10% to 25% ☐ >25%

☑ **The reach is constricted by man-made features.**

☐ **The orientation allows for shading of the water resource at midday in summer.**

Dominant vegetation layer within the riparian area:

☑ Woody vegetation ☐ Herbaceous vegetation ☐ Bare ground

☑ **Woody vegetation hangs over the edge of the water.**

☑ **Large woody debris in riparian area.**

Percent of water resource bordered by vegetated riparian area at least 30 feet wide:

☑ >40% ☐ 10% to 40% ☐ <10%

Degree of development or human cause disturbance:

☐ <25% ☐ 25% to 75% ☑ >75%

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRL-3

Riparian Function Assessment Answer Sheet

Water Quality

Question 1:	3
Question 2:	3
Question 3:	3
Question 4:	2
Question 5:	2
Total Points:	13

Function:
- [x] High
- [ ] Medium
- [ ] Low

Flood Management

Question 6:	3
Question 7:	3
Question 8:	1
Total Points:	7

Function:
- [ ] High
- [x] Medium
- [ ] Low

Thermal Regulation

Question 9:	1
Question 10:	3
Question 11:	2
Total Points:	6

Function:
- [ ] High
- [x] Medium
- [ ] Low

Wildlife Habitat

Question 12:	2
Question 13:	3
Question 14:	2
Question 15:	1
Question 16:	3
Question 17:	3
Question 18:	3
Question 19:	1
Total Points:	18

Function:
- [x] High
- [ ] Medium
- [ ] Low

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRR-1

Riparian Width Determination

Date: 1/12/99 Investigators: JG/AR

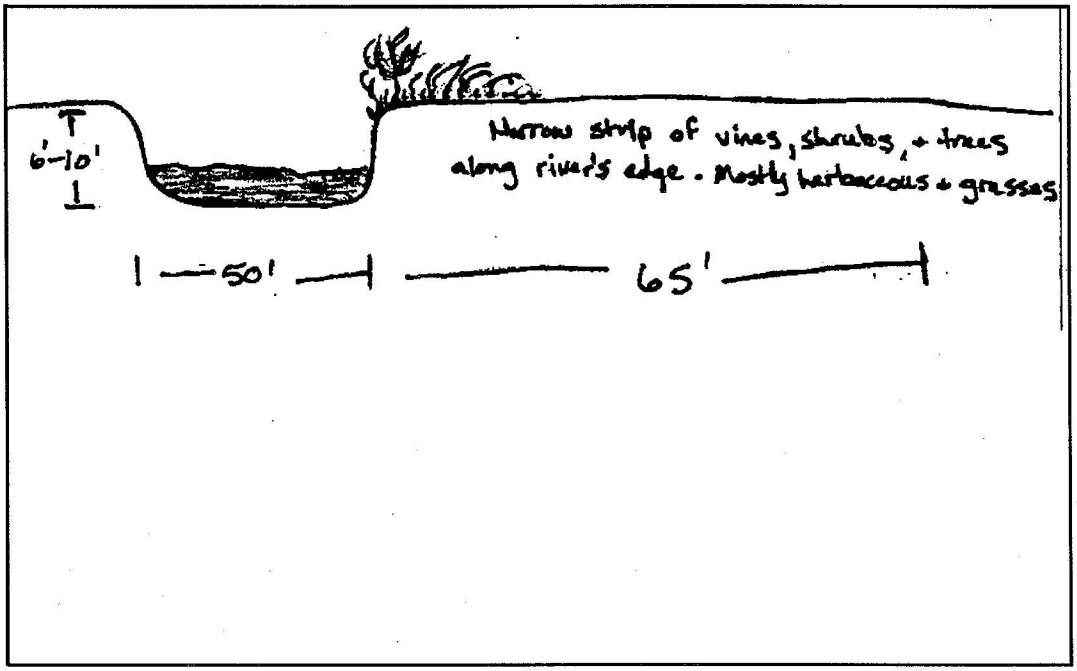
Dominant tree species: Alnus rubra

Potential tree height (PTH)/Width of Riparian Area: 65/65
(Width measured horizontally from edge of water resource)

PTH determined by: ☑ On-site vegetation ☐ Reference site Code:

Comments: Riparian area is in the floodplain, adjacent to the river. Wetland is restricted to the river channel. Reach is from Olsen Rd. to Hwy. 30 on the downstream end.

Typical Cross Section:



Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRR-1

Riparian Characterization Form — Part 1

General Information

Date: 1/12/99

On-site ☑ Office ☐ Reach Length: 5,700

Investigators: JG/AR Hydrologic Basin: Clatskanie River

Water Resource Information

Water Resource: Stream/River ☑ Width: 50
Lake/Pond ☐ Width: 0
Wetland ☐ Width: 0

LWI Wetland Code: CR-1

Water present year-round: Yes

Are salmonids present in the adjacent water resource: Yes

Is the water resource listed for temperature on DEQ's 303(d) list: No

Within FEMA-mapped 100-year floodplain: Yes

Mapped soil series: Hapludalfs-Udifluvents complex

Adjacent Land Uses?

Agriculture ☑ Residential ☑ Undeveloped ☐
Commercial ☐ Roads ☐ Forestry ☐

Woody Vegetation	Herbaceous Vegetation
Alnus rubra	Phalaris arundinacea
Salix sp.	Festuca arundinacea
Cornus stolonifera	
Rubus discolor	
Fraxinus latifolia	

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRR-1

Riparian Characterization Form — Part 2

Average slope in the riparian area: (Question 1)

☑ <10:1 (10%) ☐ Between 10:1 (10%) and 5:1 (20%) ☐ >5:1 (20%)

Extent of impervious surface within the riparian area: (Question 4)

☑ <10% ☐ 10% to 25% ☐ >25%

☐ **The reach is constricted by man-made features.**

☐ **The orientation allows for shading of the water resource at midday in summer.**

Dominant vegetation layer within the riparian area:

☐ Woody vegetation ☑ Herbaceous vegetation ☐ Bare ground

☑ **Woody vegetation hangs over the edge of the water.**

☐ **Large woody debris in riparian area.**

Percent of water resource bordered by vegetated riparian area at least 30 feet wide:

☐ >40% ☑ 10% to 40% ☐ <10%

Degree of development or human cause disturbance:

☐ <25% ☑ 25% to 75% ☐ >75%

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRR-1

Riparian Function Assessment Answer Sheet

Water Quality

Question 1:	3
Question 2:	2
Question 3:	3
Question 4:	3
Question 5:	2
Total Points:	13

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Flood Management

Question 6:	3
Question 7:	1
Question 8:	3
Total Points:	7

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Thermal Regulation

Question 9:	1
Question 10:	2
Question 11:	2
Total Points:	5

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Wildlife Habitat

Question 12:	2
Question 13:	2
Question 14:	2
Question 15:	1
Question 16:	2
Question 17:	3
Question 18:	1
Question 19:	3
Total Points:	16

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRR-2

Riparian Width Determination

Date: 1/12/99 Investigators: JG/AR

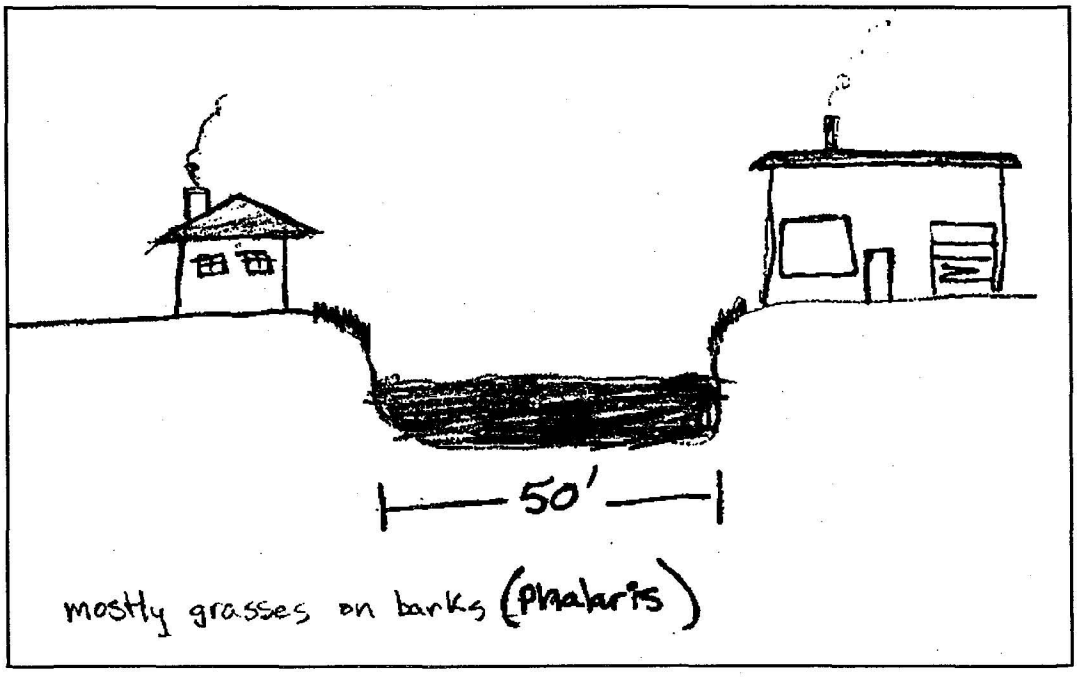
Dominant tree species: Populus balsamifera

Potential tree height (PTH)/Width of Riparian Area: 120/120
(Width measured horizontally from edge of water resource)

PTH determined by: ☑ On-site vegetation ☐ Reference site Code:

Comments: Reach starts at the Hwy. 30 crossing and ends near the dredge spoil pond upstream from the wastewater treatment plant. The reach is mostly an urban riparian corridor with very few trees or herbaceous vegetation throughout (with the exception of the city park) and width of 10'-20'.

Typical Cross Section:



Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRR-2

Riparian Characterization Form — Part 1

General Information

Date: 1/12/99

On-site ☑ Office ☐ Reach Length: 3,300

Investigators: JG/AR Hydrologic Basin: Clatskanie River

Water Resource Information

Water Resource: Stream/River ☑ Width: 50
Lake/Pond ☐ Width: 0
Wetland ☐ Width: 0

LWI Wetland Code: CR-1

Water present year-round: Yes

Are salmonids present in the adjacent water resource: Yes

Is the water resource listed for temperature on DEQ's 303(d) list: No

Within FEMA-mapped 100-year floodplain: Yes

Mapped soil series: Hapludalfs-Udifluvents complex

Adjacent Land Uses?

Agriculture ☐ Residential ☑ Undeveloped ☐
Commercial ☑ Roads ☑ Forestry ☐

Woody Vegetation	Herbaceous Vegetation
Populus balsamifera ssp. Trichocarpa	Phalaris arundinacea
Alnus rubra	Juncus effusus
Rubus discolor	Carex sp.
Cornus stolonifera	
Rubus ursinus	
Salix sp.	

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRR-2

Riparian Characterization Form — Part 2

Average slope in the riparian area: (Question 1)

☑ <10:1 (10%) ☐ Between 10:1 (10%) and 5:1 (20%) ☐ >5:1 (20%)

Extent of impervious surface within the riparian area: (Question 4)

☐ <10% ☐ 10% to 25% ☑ >25%

☑ **The reach is constricted by man-made features.**

☐ **The orientation allows for shading of the water resource at midday in summer.**

Dominant vegetation layer within the riparian area:

☐ Woody vegetation ☐ Herbaceous vegetation ☑ Bare ground

☐ **Woody vegetation hangs over the edge of the water.**

☐ **Large woody debris in riparian area.**

Percent of water resource bordered by vegetated riparian area at least 30 feet wide:

☐ >40% ☑ 10% to 40% ☐ <10%

Degree of development or human cause disturbance:

☐ <25% ☐ 25% to 75% ☑ >75%

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRR-2

Riparian Function Assessment Answer Sheet

Water Quality

Question 1:	3
Question 2:	1
Question 3:	2
Question 4:	1
Question 5:	2
Total Points:	9

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Flood Management

Question 6:	3
Question 7:	1
Question 8:	1
Total Points:	5

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Thermal Regulation

Question 9:	1
Question 10:	1
Question 11:	1
Total Points:	3

Function:
- ☐ High
- ☐ Medium
- ☑ Low

Wildlife Habitat

Question 12:	2
Question 13:	1
Question 14:	1
Question 15:	1
Question 16:	2
Question 17:	3
Question 18:	3
Question 19:	1
Total Points:	14

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRR-3

Riparian Width Determination

Date: 1/12/99 Investigators: JG/AR

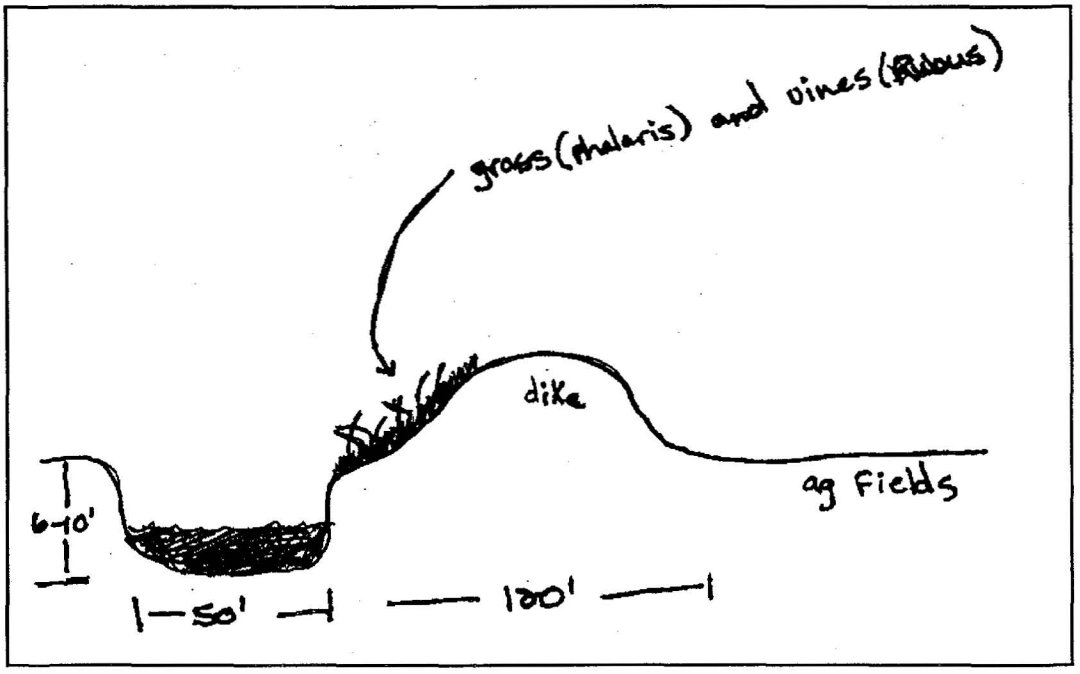
Dominant tree species: Populus balsamifera

Potential tree height (PTH)/Width of Riparian Area: 120/120
(Width measured horizontally from edge of water resource)

PTH determined by: ☑ On-site vegetation ☐ Reference site Code:

Comments: CRR-3 starts at the dredge spoils pond S of the wastewater treatment plant and ends at the junction with Beaver Slough. The river is contained by a dike with agricultural fields behind the dike.

Typical Cross Section:



Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRR-3

Riparian Characterization Form — Part 1

General Information

Date: 1/12/99

On-site ☑ Office ☐ Reach Length: 7,000

Investigators: JG/AR Hydrologic Basin: Clatskanie River

Water Resource Information

Water Resource: Stream/River ☑ Width: 50
Lake/Pond ☐ Width: 0
Wetland ☐ Width: 0

LWI Wetland Code: CR-1

Water present year-round: Yes

Are salmonids present in the adjacent water resource: Yes

Is the water resource listed for temperature on DEQ's 303(d) list: No

Within FEMA-mapped 100-year floodplain: Yes

Mapped soil series: Wauna-Locoda silt loams

Adjacent Land Uses?

Agriculture ☑ Residential ☐ Undeveloped ☑
Commercial ☐ Roads ☑ Forestry ☐

Woody Vegetation

Populus balsamifera ssp. Trichocarpa
Alnus rubra
Fraxinus latifolia
Rubus discolor

Herbaceous Vegetation

Phalaris arundinacea

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRR-3

Riparian Characterization Form — Part 2

Average slope in the riparian area: (Question 1)

☑ <10:1 (10%) ☐ Between 10:1 (10%) and 5:1 (20%) ☐ >5:1 (20%)

Extent of impervious surface within the riparian area: (Question 4)

☑ <10% ☐ 10% to 25% ☐ >25%

☑ **The reach is constricted by man-made features.**

☐ **The orientation allows for shading of the water resource at midday in summer.**

Dominant vegetation layer within the riparian area:

☐ Woody vegetation ☑ Herbaceous vegetation ☐ Bare ground

☑ **Woody vegetation hangs over the edge of the water.**

☐ **Large woody debris in riparian area.**

Percent of water resource bordered by vegetated riparian area at least 30 feet wide:

☐ >40% ☑ 10% to 40% ☐ <10%

Degree of development or human cause disturbance:

☐ <25% ☑ 25% to 75% ☐ >75%

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: CRR-3

Riparian Function Assessment Answer Sheet

Water Quality

Question 1:	3
Question 2:	2
Question 3:	2
Question 4:	3
Question 5:	2
Total Points:	12

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Flood Management

Question 6:	1
Question 7:	1
Question 8:	1
Total Points:	3

Function:
- ☐ High
- ☐ Medium
- ☑ Low

Thermal Regulation

Question 9:	1
Question 10:	2
Question 11:	2
Total Points:	5

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Wildlife Habitat

Question 12:	1
Question 13:	2
Question 14:	2
Question 15:	1
Question 16:	2
Question 17:	3
Question 18:	1
Question 19:	1
Total Points:	13

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: FCL-1

Riparian Width Determination

Date: 1/12/99 Investigators: JG/AR

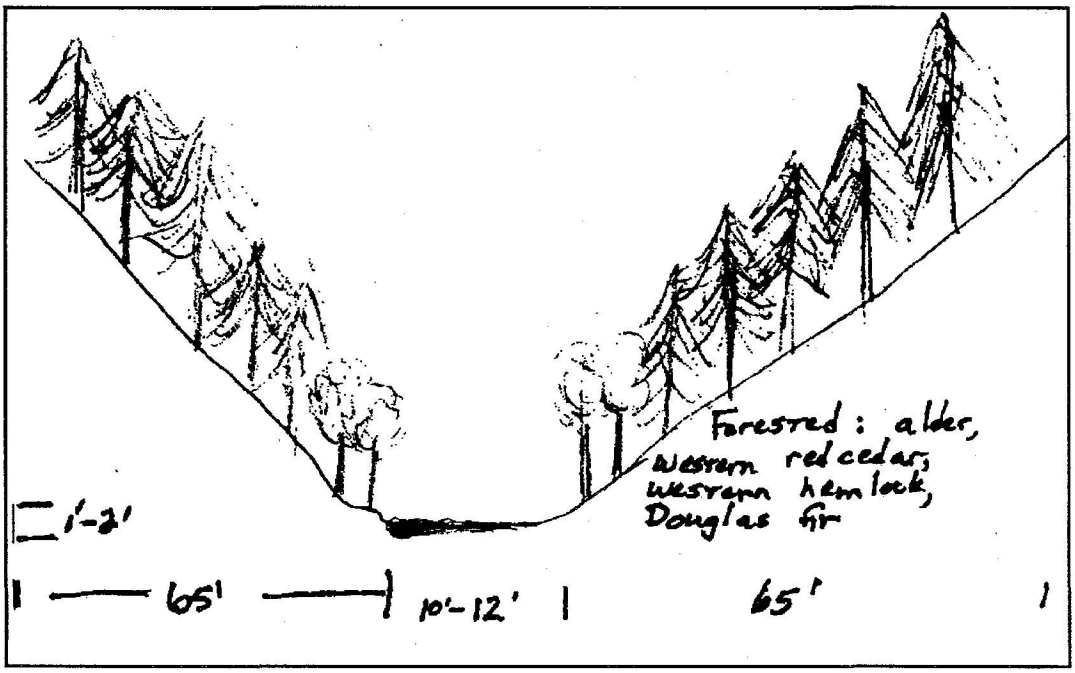
Dominant tree species: Alnus rubra

Potential tree height (PTH)/Width of Riparian Area: 65/65
(Width measured horizontally from edge of water resource)

PTH determined by: ☑ On-site vegetation ☐ Reference site Code:

Comments: Alder approximately 75%; also Thuja plicata, Tsuga heterophylla, Pseudotsuga menziesii. FCR-1 is in a steep, narrow canyon. Wetland is restricted to the streambed and bankfull mark of the creek. Stream gradient is moderately steep, perhaps 10%.

Typical Cross Section:



Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: FCL-1

Riparian Characterization Form — Part 1

General Information

Date: 1/12/99

On-site ☐ Office ☐

Reach Length: 1,600

Investigators: JG/AR

Hydrologic Basin: Fall Creek

Water Resource Information

Water Resource: Stream/River ☑ Width: 11
Lake/Pond ☐ Width: 0
Wetland ☐ Width: 0

LWI Wetland Code: N/A

Water present year-round: Yes

Are salmonids present in the adjacent water resource: Yes

Is the water resource listed for temperature on DEQ's 303(d) list: No

Within FEMA-mapped 100-year floodplain: Yes

Mapped soil series: Udifluvents-Dystrochrepts cmplx, Wauld v. gr. lm.

Adjacent Land Uses?

Agriculture ☐ Residential ☐ Undeveloped ☐
Commercial ☐ Roads ☐ Forestry ☑

Woody Vegetation

Alnus rubra
Thuja plicata
Tsuga heterophylla
Pseudotsuga menziesii
Rubus discolor
Rubus spectabilis
Rubus ursinus
Acer macrophyllum

Herbaceous Vegetation

Polystichum munitum
Phalaris arundinacea

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: FCL-1

Riparian Characterization Form — Part 2

Average slope in the riparian area: (Question 1)

☐ <10:1 (10%) ☐ Between 10:1 (10%) and 5:1 (20%) ☑ >5:1 (20%)

Extent of impervious surface within the riparian area: (Question 4)

☑ <10% ☐ 10% to 25% ☐ >25%

☐ **The reach is constricted by man-made features.**

☑ **The orientation allows for shading of the water resource at midday in summer.**

Dominant vegetation layer within the riparian area:

☑ Woody vegetation ☐ Herbaceous vegetation ☐ Bare ground

☑ **Woody vegetation hangs over the edge of the water.**

☑ **Large woody debris in riparian area.**

Percent of water resource bordered by vegetated riparian area at least 30 feet wide:

☑ >40% ☐ 10% to 40% ☐ <10%

Degree of development or human cause disturbance:

☑ <25% ☐ 25% to 75% ☐ >75%

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: FCL-1

Riparian Function Assessment Answer Sheet

Water Quality

Question 1:	1
Question 2:	3
Question 3:	3
Question 4:	3
Question 5:	2
Total Points:	12

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Flood Management

Question 6:	1
Question 7:	3
Question 8:	3
Total Points:	7

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Thermal Regulation

Question 9:	3
Question 10:	3
Question 11:	2
Total Points:	8

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Wildlife Habitat

Question 12:	3
Question 13:	3
Question 14:	2
Question 15:	3
Question 16:	3
Question 17:	3
Question 18:	1
Question 19:	3
Total Points:	21

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Urban Riparian Inventory and Assessment

Project Number: 2981046

Project Name: Clatskanie LWI

Riparian Code: FCR-1

Riparian Width Determination

Date: 1/12/99 Investigators: JG/AR

Dominant tree species: Alnus rubra

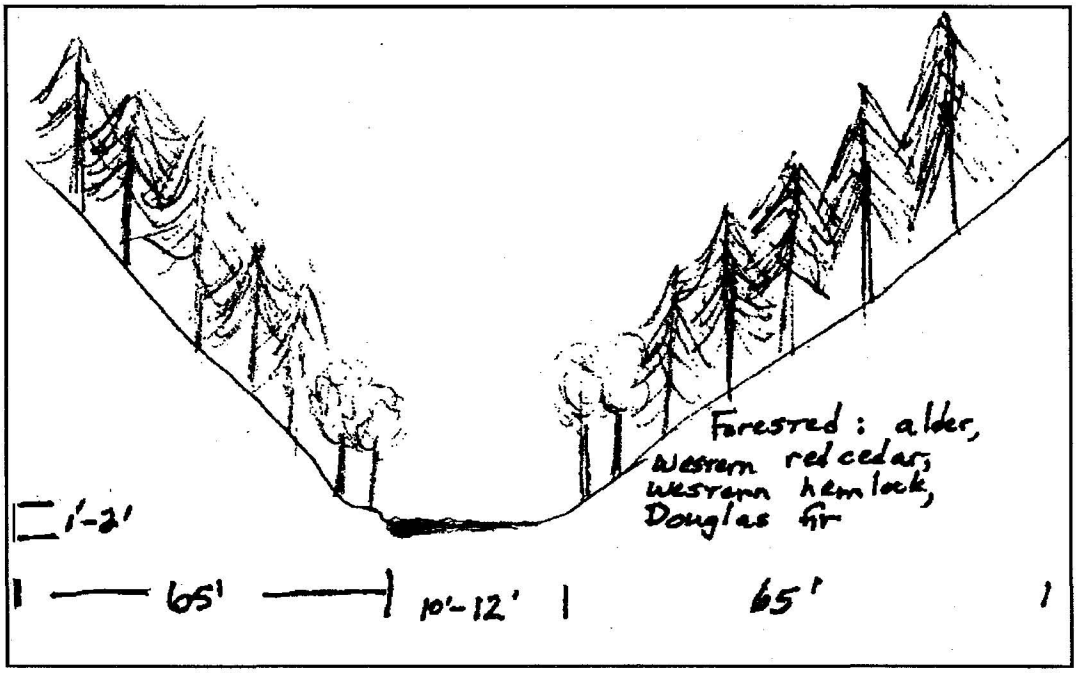
Potential tree height (PTH)/Width of Riparian Area: 65/65

(Width measured horizontally from edge of water resource)

PTH determined by: ☑ On-site vegetation ☐ Reference site Code:

Comments: Alder approximately 75%; also Thuja plicata, Tsuga heterophylla, Pseudotsuga menziesii. FCR-1 is in a steep narrow canyon. Wetland is restricted to the streambed and bankfull mark of the creek. Stream gradient is moderately steep, perhaps 10%.

Typical Cross Section:



Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: FCR-1

Riparian Characterization Form — Part 1

General Information

Date: 1/12/99

On-site ☑ Office ☐ Reach Length: 1,600

Investigators: JG/AR Hydrologic Basin: Fall Creek

Water Resource Information

Water Resource: Stream/River ☑ Width: 11
Lake/Pond ☐ Width: 0
Wetland ☐ Width: 0

LWI Wetland Code: N/A

Water present year-round: Yes

Are salmonids present in the adjacent water resource: Yes

Is the water resource listed for temperature on DEQ's 303(d) list: No

Within FEMA-mapped 100-year floodplain: Yes

Mapped soil series: Udifluvents-Dystrochrepts cmplx, Wauld v. gr. lm.

Adjacent Land Uses?

Agriculture ☐ Residential ☐ Undeveloped ☐
Commercial ☐ Roads ☐ Forestry ☑

Woody Vegetation	Herbaceous Vegetation
Alnus rubra	Polystichum munitum
Thuja plicata	Phalaris arundinacea
Tsuga heterophylla	
Pseudotsuga menziesii	
Rubus discolor	
Rubus spectabilis	
Rubus ursinus	
Acer macrophyllum	

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: FCR-1

Riparian Characterization Form — Part 2

Average slope in the riparian area: (Question 1)

☐ <10:1 (10%) ☐ Between 10:1 (10%) and 5:1 (20%) ☑ >5:1 (20%)

Extent of impervious surface within the riparian area: (Question 4)

☑ <10% ☐ 10% to 25% ☐ >25%

☐ **The reach is constricted by man-made features.**

☑ **The orientation allows for shading of the water resource at midday in summer.**

Dominant vegetation layer within the riparian area:

☑ Woody vegetation ☐ Herbaceous vegetation ☐ Bare ground

☑ **Woody vegetation hangs over the edge of the water.**

☑ **Large woody debris in riparian area.**

Percent of water resource bordered by vegetated riparian area at least 30 feet wide:

☑ >40% ☐ 10% to 40% ☐ <10%

Degree of development or human cause disturbance:

☑ <25% ☐ 25% to 75% ☐ >75%

Urban Riparian Inventory and Assessment

Project Number: 2981046
Project Name: Clatskanie LWI
Riparian Code: FCR-1

Riparian Function Assessment Answer Sheet

Water Quality

Question 1:	1
Question 2:	3
Question 3:	3
Question 4:	3
Question 5:	2
Total Points:	12

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Flood Management

Question 6:	1
Question 7:	3
Question 8:	3
Total Points:	7

Function:
- ☐ High
- ☑ Medium
- ☐ Low

Thermal Regulation

Question 9:	3
Question 10:	3
Question 11:	2
Total Points:	8

Function:
- ☑ High
- ☐ Medium
- ☐ Low

Wildlife Habitat

Question 12:	3
Question 13:	3
Question 14:	2
Question 15:	3
Question 16:	3
Question 17:	3
Question 18:	1
Question 19:	3
Total Points:	21

Function:
- ☑ High
- ☐ Medium
- ☐ Low



Appendix C

DSL OFWAM Manual

APPENDIX C

SUMMARY OF OFWAM ASSESSMENT CATEGORIES

Wetland functions and characteristics assessed by the Oregon Freshwater Assessment Methodology (OFWAM) are summarized below. The results of the assessment are used to determine the significance of each wetland. For complete assessment information, consult the OFWAM document that follows (final draft only).

Wetland Functions

WILDLIFE HABITAT: Wetlands provide habitat for many wildlife species. A single wetland often cannot satisfy all requirements for wildlife use, so its proximity to other bodies of water or upland areas is important. Buffers and corridors are also essential for this reason, and they reduce human disturbance. Many species also have special habitat requirements. Good water quality is necessary for amphibians and mammals; structural diversity is important for birds; and a combination of open water and grazing areas is important for waterfowl.

OFWAM evaluates the habitat diversity for species usually associated with wetlands, without emphasizing one particular species. Wetlands assessed by OFWAM can provide diverse habitat for wildlife, habitat for some wildlife species, or have a wildlife habitat function that is lost or not present.

FISH HABITAT: Wetlands that contribute to habitat for fish include areas with dense overhanging vegetation. This vegetation provides shade, cover, and food sources to related waterways and lakes. Wetlands also provide spawning, rearing, and resting opportunities for fish. However, a wetland need not actually contain fish to contribute to fish habitat, because wetlands may perform important functions for fish-bearing waters downstream.

OFWAM evaluates how a wetland contributes to fish habitat in streams, ponds, or lakes associated with a wetland. The questions are suitable for both warmwater and coldwater fish, and no particular species is emphasized. Wetlands assessed by OFWAM have a fish habitat function that is intact, impacted or degraded, or lost or not present.

WATER QUALITY (pollutant removal):

Sediment Trapping: During periods of heavy rainfall, water runoff may cause erosion and increase solids suspended in receiving surface waters. The excess sediment entering water systems can damage aquatic ecosystems. Sediment accumulation in stream bottoms can smother spawning areas and kill aquatic insect larvae. It also can reduce the storage capacity of downstream water supply reservoirs.

Wetlands perform an important function by trapping sediment from waters that pass through them. As water flows through the wetlands, it is slowed by vegetation, and

sediment settles to the bottom before the water moves farther downstream. As much as 90% of the solids suspended in the water may be removed as the water moves through the wetland, resulting in cleaner water entering rivers, lakes, and estuaries.

Nutrient Attenuation: Nitrogen and phosphorus are the two nutrients most often associated with water pollution. They are also main ingredients of fertilizers used on agricultural fields and lawns, and both are found in high concentrations in discharges from sewage treatment plants and livestock operations. Excessive amounts of nitrogen and phosphorus in lakes and slow-moving streams can cause algal blooms and subsequent oxygen deficiencies, which may kill fish and reduce water quality. The processes that occur as a result of excess nutrients are combined under the term "eutrophication." Within limits, wetlands can reduce nutrient levels so the effects of eutrophication on downstream areas are prevented or reduced.

OFWAM evaluates the potential of a wetland to reduce the impacts of excess nutrients in stormwater runoff on downstream waters. A wetland assessed by OFWAM can have a water quality function that is intact, impacted or degraded, or lost or not present.

HYDROLOGIC CONTROL (flood control and water supply): Wetlands function as natural water storage areas during periods of high runoff and stream flooding. At times, they act as flood regulators by holding floodwaters, then slowly releasing them downstream. This temporary storage reduces the amount of water downstream during floods, thereby reducing peak flows. Through this flood storage mechanism, wetlands associated with tributaries of streams or rivers can prevent water from all tributaries reaching the stream or river at the same time (this is called desynchronization). Wetlands also can act as floodwater "brakes." For example, water flowing through riverine wetlands during floods is slowed by trees, shrubs, rushes, and other wetland vegetation. Wetlands acting as brakes can reduce flood peaks, thereby reducing flood damage, bank and bed erosion, and other adverse effects caused by fast-moving water.

Wetlands also have long-term water holding abilities. Wetlands may store water for longer periods, sometimes for months. The slow draining of these wetlands to surface water or groundwater as the water level in the wetland recedes may contribute to the maintenance of base flows in streams connected hydrologically to the wetland.

OFWAM evaluates the effectiveness of a wetland to reduce downstream flood peaks and store floodwaters. A wetland assessed by OFWAM can have a hydrologic control function that is intact, impacted or degraded, or lost or not present.

EDUCATION: Field trips to wetlands are an important part of the educational experience, providing students opportunities to learn about ecological principles. OFWAM bases the educational assessment on the accessibility and diversity of the wetlands. Wetlands that provide fish and wildlife habitat and permit access to other natural features allow a broader course of study.

OFWAM evaluates the suitability of a wetland to provide educational opportunity and act as an "outdoor classroom." A wetland assessed by OFWAM can have educational use, potential for educational use, or not be appropriate for educational use.

RECREATION: Many recreational activities take place in and around wetlands. Wetlands associated with open bodies of water also may support boating and fishing. Many people simply enjoy the beauty and sounds of nature and spend time walking in or near wetlands observing plant and animal life.

OFWAM evaluates the suitability of a wetland and associated watercourses for non-powered boating, fishing, and similar recreational activities. A wetland assessed by OFWAM can provide, have the potential to provide, not provide, or not be appropriate for recreational opportunities.

Wetland Characteristics

ENHANCEMENT POTENTIAL: Enhancement potential represents how well a wetland might respond to the mitigation of past environmental impacts. The recovery of a wetland, and in particular its wetland function, depends on the site's hydrology, its soils and substrate, and the presence of environmental buffers surrounding the wetland.

OFWAM evaluates the suitability of a degraded wetland for enhancement. A wetland fulfilling this condition does not provide one or more of the functions assessed by OFWAM. A wetland fulfilling this condition, therefore, would be of lower overall quality than a wetland providing such features as wildlife or fish habitat. A wetland assessed by OFWAM can have high, moderate, or little enhancement potential.

AESTHETIC QUALITY: Although this is a subjective index, it is included to assess the open space and overall pleasing qualities of wetlands to local residents and users. The assessment assumes the user will be visiting the wetland, not just driving by in a car, bus, or on a bicycle. Wetlands can be areas of scenic beauty. Most often they are viewed from along a stream, from a canoe, along a nature trail, or from an overlook. The assessment area may include the entire wetland or only a portion, such as an area clearly visible from a road or stream. Thus, this assessment can be based on an average of several viewpoints or on one outstanding viewpoint.

OFWAM evaluates the visual and aesthetic quality of the wetland. Wetlands can be considered pleasing, moderately pleasing, or not pleasing.

SENSITIVITY TO IMPACT: The wetland's ability to provide ecological function depends on its condition. If past environmental impacts have affected its ability to sustain itself, its ability to recover from future impacts is diminished. Various factors, such as vegetation type, contribute to a wetland's sensitivity. Forested wetland types, for example, are considered particularly sensitive, because their vegetation structure is complex and slow to recover once disturbed. Also, a wetland is considered sensitive to impact if the quantity and quality of its water supply has been altered or degraded, and if

the intensity of adjacent land use suggests the impairment is permanent. Under such circumstances, the wetland will have lost some of its natural capacity to recover form impacts. Small, incremental impacts on sensitive wetlands can cause broader, secondary effects throughout the wetland system. A wetland's resilience depends on whether adverse effects caused by future impacts will be localized or spread throughout the wetland and beyond into other ecosystems. The sensitivity to impact index is an indication of risk to the wetland from future changes in the watershed and land surrounding it.

This index evaluates whether an affected or lost wetland function can be restored at a degraded wetland site. It does **not** evaluate the enhancement potential of changing the vegetation through exotic weed removal, which is considered to be a management issue. Wetland enhancement provides opportunities to connect wetlands and adjacent natural areas, thus creating larger natural systems that provide corridors for animal movement.



Appendix D

DSL Riparian Guide

APPENDIX D

SUMMARY OF RIPARIAN GUIDE ASSESSMENT CATEGORIES

Riparian characteristics and functions assessed by the Urban Riparian Inventory and Assessment Guide (Riparian Guide) are summarized below. For complete assessment information, consult the Riparian Guide document that follows (final draft only).

Riparian Functions

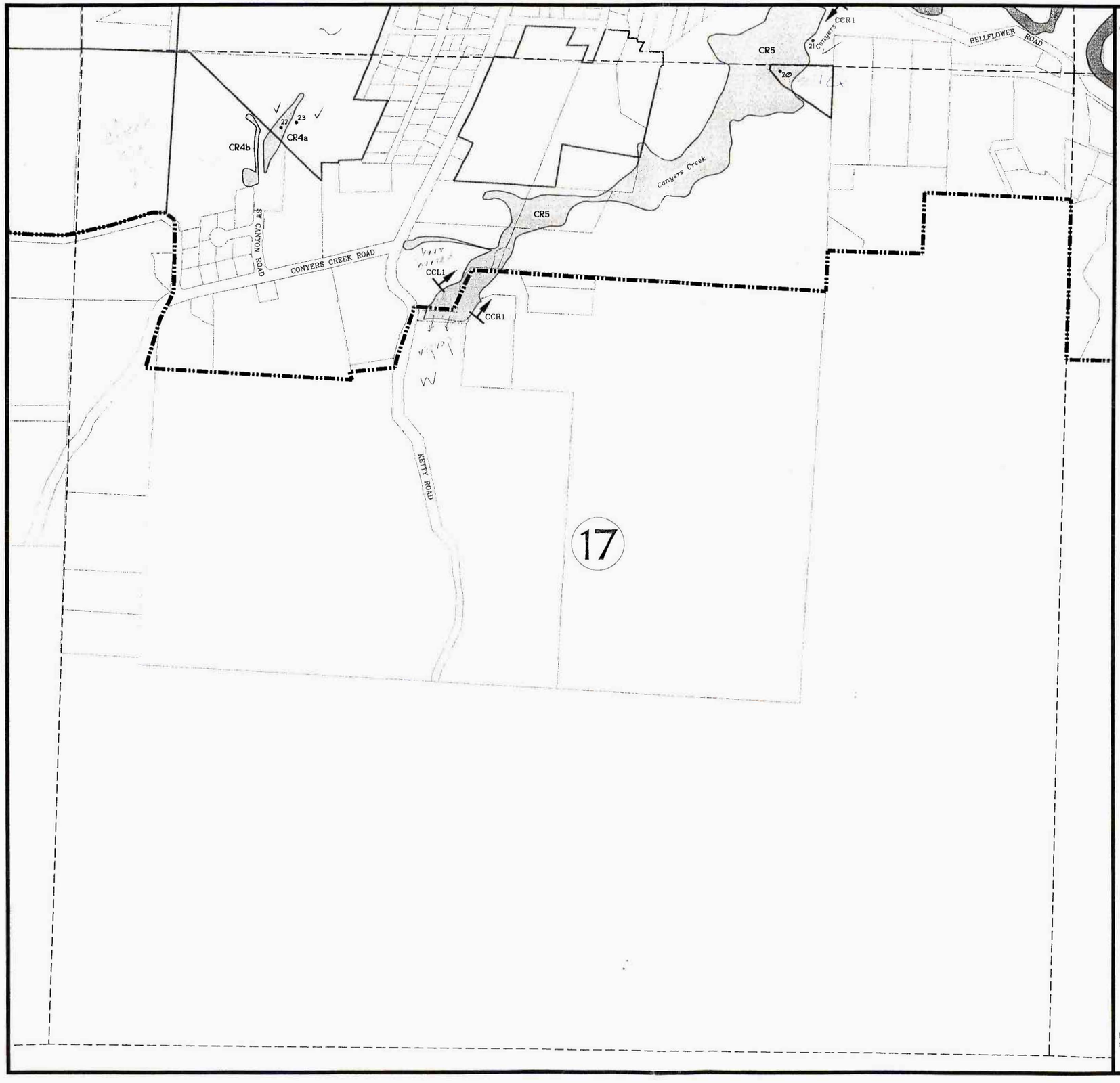
WATER QUALITY: Erosion risk is directly related to slope: The steeper the slope, the greater the risk of erosion. Vegetation reduces erosion by stabilizing soil and banks through the binding action of roots. Woody vegetation provides the most effective stabilization because of its root mass. Declines in urban water quality can be linked directly to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants, and reduce natural infiltration provided by soil and vegetation.

FLOOD MANAGEMENT: The ability of the riparian area to provide a flood management function depends on its potential to store or detain floodwaters temporarily. Floodwaters detained in the riparian area infiltrate into the soil and are slowly released downstream. Woody vegetation reduces the velocity of floodwaters by providing resistance, which increases detention time in the riparian area, allowing the water to infiltrate into the soil. Both of these factors reduce downstream flooding. Channelization of streams and armoring of banks (e.g., riprap, walls, concrete) increase the velocity of floodwaters. Although channelization and armoring may reduce local flooding by separating the water resource from its floodplain, these measures often increase the risk of flooding downstream.

THERMAL REGULATION: In Oregon, vegetation on the southern side of an east-west-oriented water resource has the highest potential of providing shade in the summer. The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, tall, woody vegetation provides more shade than herbaceous vegetation. Vegetation overhanging a water resource provides shade, creating microclimates.

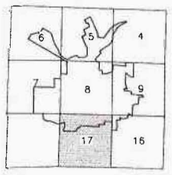
WILDLIFE HABITAT: A vegetated riparian area increases the quality of wildlife habitat by providing food, cover, and nesting opportunities. Vertical complexity of vegetation increases the variety of niches available to wildlife. In general, tall, woody vegetation provides more food, cover, and nesting habitat for a variety of wildlife than herbaceous vegetation. Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water resource and creates microclimates. Large woody debris in the riparian area provides cover for a variety of small mammals, birds, amphibians, and insects. It can also be transported to the aquatic system in flood events, where it can enhance in-stream fish habitat. More than one type of water resource within or immediately adjacent to the riparian reach increases the

complexity and quality of wildlife habitat. Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively affect sensitive wildlife species that cannot tolerate noise, light, or traffic.



T 7N R 4W Section 17

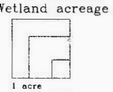
CITY OF CLATSKANIE LOCAL WETLAND INVENTORY



LEGEND

- Inventoried wetlands
- CR17 — Wetland code
- FCR1 — Riparian reach endpoint code
- Waters of the State
- 12 — Sample site
- Delineated wetlands
- DSL DET #36-0006 — DSL DET #
- Perennial stream
- Intermittent stream
- Site access granted
- Study area boundary
- Section line

Wetland acreage





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1999

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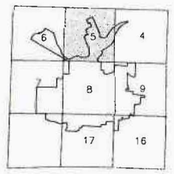
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- Inventoried wetlands
- CR17 — Wetland code
- FCR1 — Riparian reach endpoint code
- Waters of the State
- •12 — Sample site
- Delineated wetlands
- DSL DET #96-2006 — DSL DET #
- Perennial stream
- Intermittent stream
- Site access granted
- Study area boundary
- Section line

Wetland acreage

1 acre
1/2 acre
1/10th acre

NORTH

0 200 400
FEET

MARCH
1999

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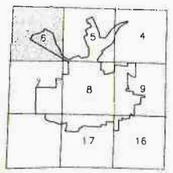
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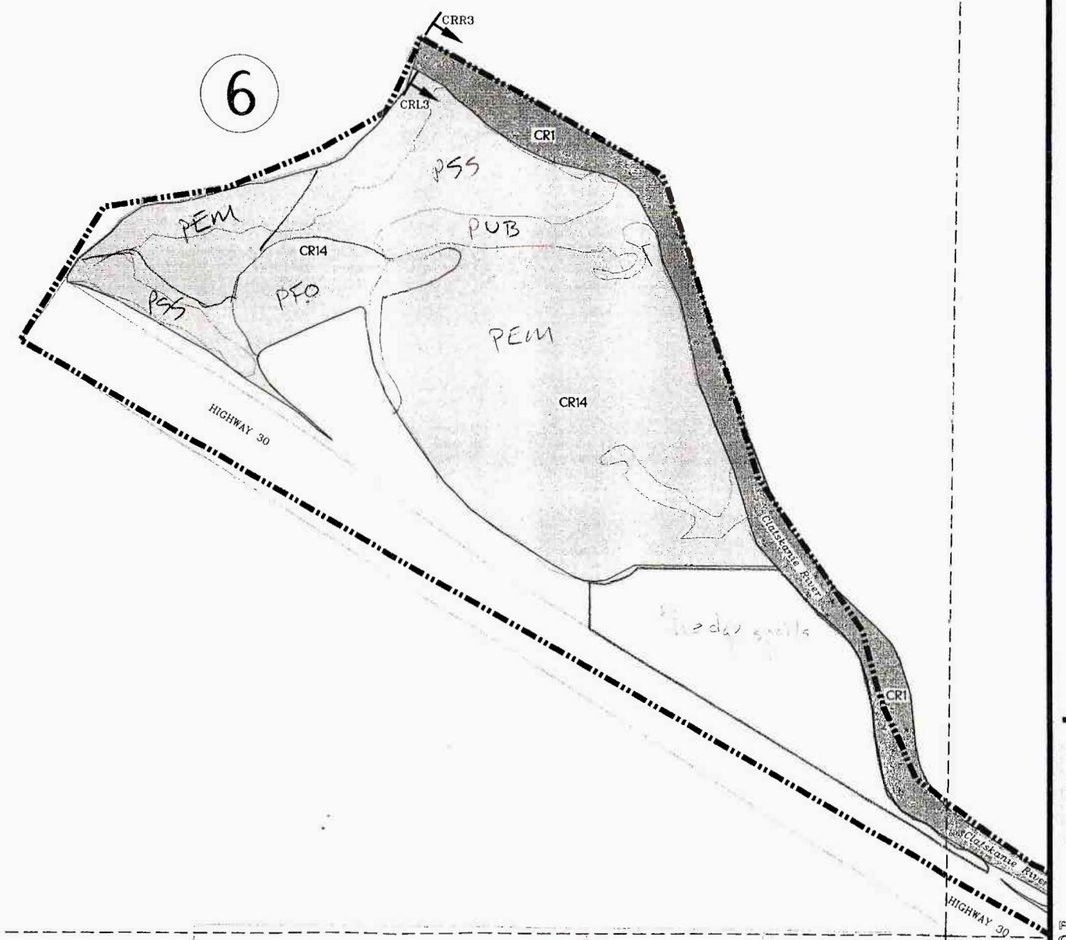
5

BDL2
PEM
24
CR12
25
26
PSS
CR11
CR16
POWx
Beaver Drainage Ditch
BDL1
BDL2
CR16
32
PEM
CR12
PACIFIC & WESTERN RAILROAD
OLD COLUMBIA RIVER HIGHWAY
CR1
Clatskanie River
HIGHWAY 30
CR10
CR10
PSS
CR13
PEM
CR13
POW
POW
POW
OLD COLUMBIA RIVER HIGHWAY

T 7N R 4W Section 06

CITY OF CLATSKANIE LOCAL WETLAND INVENTORY





LEGEND

- Inventoried wetlands
- CR17 — Wetland code
- FCR1 — Riparian reach endpoint code
- Waters of the State
- •12 — Sample site
- Delineated wetlands
- DSL DET #96-0006 — DSL DET #
- Perennial stream
- Intermittent stream
- Site access granted
- Study area boundary
- Section line

Wetland acreage





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- FCR1 — Riparian reach endpoint code
- Waters of the State
- 12 — Sample site
- Delineated wetlands
- DSL DET *96-0006 — DSL DET #
- Perennial stream
- Intermittent stream
- Site access granted
- Study area boundary
- Section line

Wetland acreage

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1999

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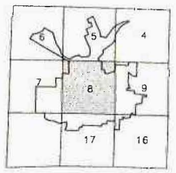
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- CR17 — Wetland code
- FCR1 — Riparian reach endpoint code
- Waters of the State
- 12 — Sample site
- Delineated wetlands
- DSL DET #36-0006 — DSL DET #
- Perennial stream
- Intermittent stream
- Site access granted
- Study area boundary
- Section line

Wetland acreage

1 acre
1/2 acre
1/10th acre

NORTH

0 200 400
FEET

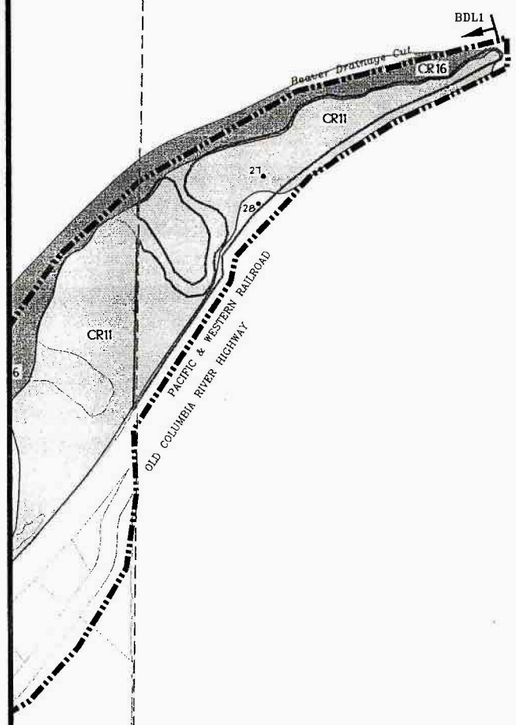
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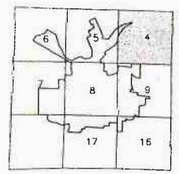
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4

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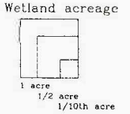
CITY OF CLATSKANIE LOCAL WETLAND INVENTORY



LEGEND

- Inventoried wetlands
- CR17 — Wetland code
- FCR1 — Riparian reach endpoint code
- Waters of the State
- t2 — Sample site
- Delineated wetlands
- DSL DET #36-0006 — DSL DET #
- Perennial stream
- Intermittent stream
- Site access granted
- Study area boundary
- Section line

Wetland acreage





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HIGHWAY 30

Fall Creek

FCL1

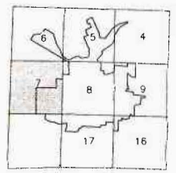
FCR1

7

ORCHARDS AVENUE

T 7N R 4W Section 07

CITY OF CLATSKANIE LOCAL WETLAND INVENTORY



LEGEND

- Inventoried wetlands
- CR17 — Wetland code
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- Delineated wetlands
- DSL DET # — DSL DET #
- Perennial stream
- Intermittent stream
- Site access granted
- Study area boundary
- Section line

Wetland acreage

1 acre
1/2 acre
1/10th acre

NORTH

0 200 400
FEET

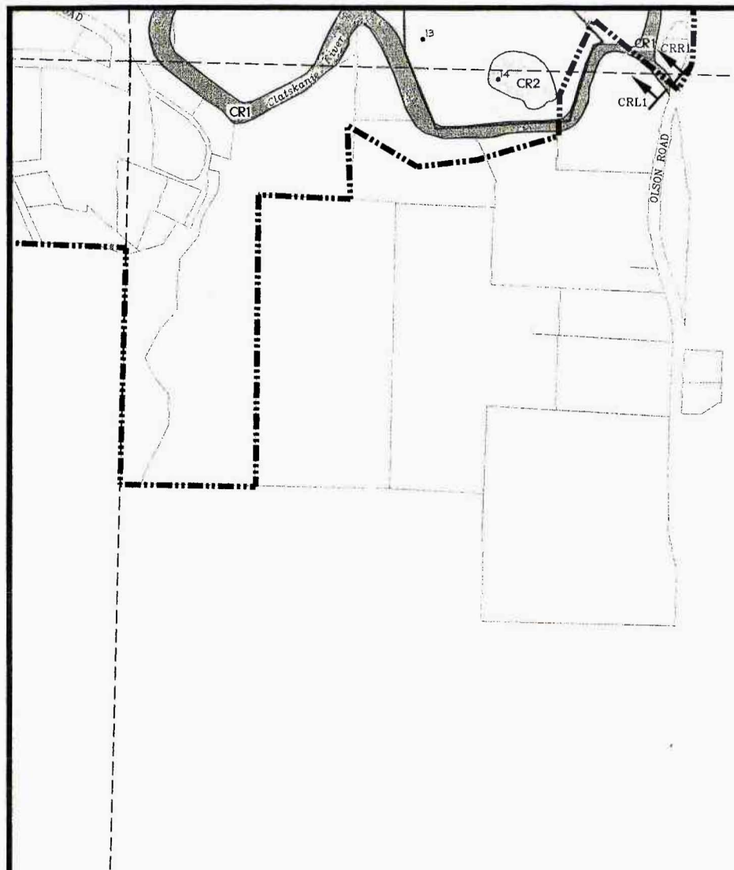
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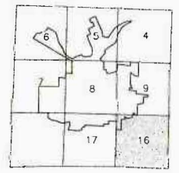
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16

T 7N R 4W Section 016

CITY OF CLATSKANIE LOCAL WETLAND INVENTORY



LEGEND

- Inventoried wetlands
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Wetland acreage





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