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TRANSMITTAL

TO:	Oregon Division of State Lands	**DATE:**	December 2, 2002
	775 Summer Street NE, Suite 100	**PROJECT:**	Tangent Local Wetland
	Salem, Or 97301-1279		Inventory
ATTN:	Janet Morlan	**PROJECT #:**	0110

TRANSMITTED:	Herewith	X	**DISPOSITION:**	For Your Approval	X
	Separate Cover			For Your Information	

TRANSMITTED:

Item	Pages	Date
Tangent LWI –		

REMARKS:

Janet,

Attached is the final draft of the Tangent Local Wetland Inventory. Thanks for your assistance throughout the development of this product.--Chad

COPIES TO:		Architect		**BY**	
File		Contractor		Chad M. Hoffman	
Owner		Other		Environmental Services Team Biologist	

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The City of Tangent
Local Wetland and Riparian Area Inventories and Assessments
Report of Findings

Submitted To:

Oregon Division of State Lands
775 Summer Street NE
Salem, Oregon 97301-1279

Prepared For:

City of Tangent
32909 Highway 99E
Tangent, Oregon 97389

Prepared By:



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Eugene, Oregon 97401

APPROVED WETLANDS INVENTORY
Oregon Division of State Lands
Meets Local Wetlands Inventory standards
Date 2/7/03 Approved by J. Morlan

August 2002

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Summary of Findings

The City of Tangent is located approximately four miles southwest of Albany and approximately eight miles east of Corvallis in Linn County. Nestled between the Calapooia River and South Santiam River on a broad valley terrace, Tangent is situated between Corvallis and Lebanon along State Highway 20.

Fieldwork was conducted between April 2001 and February 2002. Inventory fieldwork included a combination of off-site and on-site methodologies, dependent upon permission to enter the properties involved. Within the approximately 2412 acres of the Tangent Local Wetland Inventory Study Area, twenty-five wetland areas were identified, totaling approximately 224 acres. This is not unexpected, given the character of the landscape. Much of the wetland acreage within the Study Area is currently in agricultural production (~64%). Overall, the larger Study Area is affected by many anthropogenic influences. Waterways in particular have been filled or have been altered through years of plowing, disconnected, piped, or rerouted from historic locations. Wetlands have therefore become more isolated from historic hydrology sources. As a result of this hydrologic manipulation, in combination with agricultural management of vegetation throughout the area, very little remains of the historic wetland resources within the Study Area.

Two riparian systems were identified within the Study Area: the Lake Creek tributaries and the Oak Creek tributaries. As mentioned above, waterways in the Study Area have been filled, disconnected, piped, and rerouted, with a resulting loss of vegetative connectivity, channel structure and channel / habitat complexity. Riparian areas are generally restricted by agricultural practices in the Lake Creek system, and the Oak Creek tributaries are also very confined in much of the developed northern portions of Tangent.

TABLE III. COWARDIN CLASSES

Wetland Number	Cowardin Classification	Wetland Acreage
L-1	100% Palustrine Emergent (x)	1.4 PEM(x)
L-2	100% Palustrine Emergent	0.9 PEM
L-3f	100% Palustrine Emergent (f)	16.0 PEM(f)
L-4A	85% Palustrine Forested, 15% Palustrine Emergent (f)	5.8 PFO / 1.0 PEM(f)
L-4B	100% Palustrine Forested	30.8 PFO
L-4C	80% Palustrine Forested, 20% Palustrine Emergent	1.5 PFO / 0.4 PEM
L-4D	100% Palustrine Forested	17.0 PFO
L-5f	92% Palustrine Emergent (f), 08% Palustrine Forested	22.3 PEM(f) / 1.9 PFO
L-6f	100% Palustrine Emergent (f)	6.7 PEM(f)
L-7f	100% Palustrine Emergent (f)	19.0 PEM(f)
L-8f	100% Palustrine Emergent (f)	5.3 PEM(f)
L-9	100% Palustrine Emergent	1.4 PEM
L-10f	100% Palustrine Emergent (f)	1.0 PFO
L-11	100% Palustrine Emergent (x)	1.5 PEM (x)
L-12A	80% Palustrine Forested, 20% Palustrine Emergent (x)	0.5 PFO / 0.1 PEM(x)
L-12B	95% Palustrine Forested, 5% Palustrine Emergent (x)	2.9 PFO / 0.2 PEM(x)
L-12C	80% Palustrine Forested, 20% Palustrine Emergent (x)	1.3 PFO / 0.3 PEM(x)
L-12D	90% Palustrine Forested, 10% Palustrine Emergent (x)	3.0 PFO / 0.3 PEM(x)
L-13f	100% Palustrine Emergent (f)	40.3 PEM(f)
O-1f	100% Palustrine Emergent (f,x)	8.3 PEM (f,x)
O-2A	75% Palustrine Forested, 25% Palustrine Emergent (f,x)	2.3 PFO / 0.8 PEM (f,x)
O-2B	50% Palustrine Emergent (f), 50% Palustrine Forested	3.2 PFO / 3.2 PEM (f)
O-2C	100% Palustrine Forested	1.0 PFO
O-3f	100% Palustrine Emergent (f)	3.7 PEM(f)
O-4f	100% Palustrine Emergent (f)	18.5 PEM(f)
Total Wetland Area	**Palustrine Emergent (PEM)** **Palustrine Forested (PFO)**	**151.6 acres** **72.2 acres**
		223.8 acres = ~224 acres

f = farmed, x = excavated

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1. INTRODUCTION

1.1. Layout of This Document

This document is organized in a manner intended to best facilitate understanding of the data, analysis and conclusions being presented. Discussion of the results of the inventory and analysis is presented in an integrative fashion, providing an overview and context for further understanding of this local landscape. Information is compiled and presented in the Appendices regarding each individual Wetland Unit and individual Riparian Reach, including all field information, data forms, assessment forms, maps, aerial photos and site photos.

2. METHODOLOGY

2.1. Public Involvement

Initially, all citizens of the City of Tangent were notified that the project had been authorized and would begin in the spring of 2001. On April 1, 2001, notices were sent to property owners anticipated to be affected by the inventory process, along with requests for authorization to enter properties for on-site investigations. Property owners were also notified that Public Meeting #1 would be held on April 12, 2001. Approximately 20 favorable responses were returned with signatures authorizing the requested Permits of Entry for the fieldwork.

Public Meeting #1 was held as planned, and those citizens in attendance were provided the opportunity to discuss the project and the process for the Local Wetland Inventory. General information was presented related to wetland definition, the Local Wetland Inventory process, and the regulatory / land use planning context which had initiated the project. This meeting had very limited attendance by the community.

Public Meeting # 2 was held in September 2002, in order to apprise the Tangent community of the draft findings from the Local Wetland and Riparian Areas inventories. This meeting was held in conjunction with a regularly scheduled planning commission meeting. Participants were given the opportunity to review the maps and discuss the findings with representatives from Satre Associates and the Division of State Lands. An additional two-week public comment period was provided after Public Meeting #2 so that interested parties could formally respond to the information presented.

2.2. Local Wetlands Inventory

All work conducted during the Wetland Inventory phase of this project conforms to standards identified in Oregon Administrative Rules 141-086-0180 through 141-086-0240. Using the above standards, all wetlands greater than 0.5 acres in size within a local jurisdiction were identified, mapped and assessed using the Oregon Freshwater Wetland Assessment Methodology (OFWAM). The "*Guidance for Mapping Agricultural Sites*" issued by the Division of State Lands, dated July 10, 1998, was also followed.

Wetland locations were mapped on a 1" = 500' scale parcel-based map. This parcel-based map provides the property owners, local jurisdiction, and the Division of State Lands with the ability to know which tax lots may contain wetlands. This approved Local Wetland Inventory combines National Wetland Inventory information with a comprehensive wetland analysis, and can function as a planning tool for future growth and development within the Study Area.

2.2.1. Routine Off-site Determination

Off-site Determinations were conducted to determine the approximate location of wetland boundaries where access was not permitted by the property owner. The methodology followed for off-site Determinations included review of all available information, generally followed by field verification from nearby lands. The available information included the USGS topographic quadrangles, the *Soil Survey of Linn County Area Oregon* (NRCS 1982), the National Wetland Inventory maps, Natural Resources Conservation Service maps and records, and historic aerial photographs at a variety of scales. Black and white aerial photographs (1936, 1956, 1961, 1963, 1970, 1979, & 1982) were used to analyze historic land developments within the Study Area. Recent digital black and white photographs (1997, 2000) and a color infrared (CIR) from 1986 were used for the purposes of office interpretation and mapping of wetland boundaries.

2.2.2. Routine On-site Determination

Where access to the wetland areas was granted, observations and sampling techniques for wetland determination included inspection of vegetation, hydrology, and soils using the techniques outlined by the Routine On-site Determination Method of the 1987 Corps of Engineers Wetland Delineation Manual. Sampling points were established in pairs which defined the boundary between upland and wetland.

If a prior wetland study had been conducted on the property and approved by regulatory personnel, the determination was considered to be a Prior On-site Determination. Previous wetland delineation boundaries were field verified on foot where parcel access was granted. If access was not granted, the wetland boundaries were observed from adjacent roads or properties and aerial photograph interpretation, to verify that conditions are still similar to what is identified in the previous work.

Fieldwork was conducted between April 2001 and February 2002 as follows:

TABLE I. FIELD VISIT DATES

Wetland Area	Date	Wetland Area	Date
L-1	2/27/02	L-11	7/11/01
L-2	7/13/01	L-12A	6/06/01
L-3f	7/13/01, 2/27/02	L-12B	6/06/01
L-4A	6/12/01	L-12C	5/30/01, 2/27/02
L-4B	7/11/01	L-12D	5/08/01, 5/21/01
L-4C	7/11/01	L-13f	2/27/02
L-4D	06/29/01, 7/02/01	O-1f	7/13/01, 02/27/02
L-5f	7/02/01, 2/27/02	O-2A	7/06/01
L-6f	02/27/02	O-2B	7/06/01
L-7f	7/02/01, 02/27/02	O-2C	7/06/01
L-8f	7/02/01, 02/27/02	O-3f	2/27/02
L-9	7/02/01	O-4f	2/27/02
L-10f	7/02/01, 02/27/02		

2.3. Wetland Quality Assessment

The wetlands identified within the Project Study Area were assessed for general function and condition, as well as for any unique attributes which might suggest or require special protection.

2.3.1. The Oregon Freshwater Wetland Assessment Methodology
The condition and function of identified wetlands in the study area were assessed by use of the *Oregon Freshwater Wetland Assessment Methodology* (OFWAM) (Roth et al, 1996). This method assesses the general status and relative quality of wetlands within a given area for planning and educational purposes; it is not intended for detailed, quantitative analysis. It can be a very effective tool in making community decisions, such as assisting in the identification of those areas functioning most optimally or those areas whose functions are least impacted. The relative quality of a wetland is determined by evaluating six wetland functions and three conditions for each of the wetlands. The *Oregon Freshwater Wetland Assessment Methodology* is based on field observations at each wetland, and an assessment of the status of performance of the functions of wildlife habitat, fish habitat, water quality, hydrologic control, education, and recreation. The wetland condition criteria evaluates these same wetlands for their enhancement potential, sensitivity to future impacts, and aesthetic quality. The questionnaires for each wetland unit assessed are included in the Appendices.

2.3.2. Wetlands of Special Interest for Protection
Wetlands that qualify as uncommon in Oregon, are already protected by regulatory rules, or are protected in a recognized management plan are singled out using the ten questions of the OFWAM Wetlands of Special Interest for Protection. An answer of "yes" to any of the questions highlights the wetland as needing special attention for future protection and management plans.

2.3.3. Determination of Locally Significant Wetlands
Criteria for identifying locally significant wetlands are made using rules and guidelines adopted by the Division of State Lands (OAR 141-086-0300 through 141-086-0390). This determination is based upon OFWAM ranking of wildlife and fish habitat, water quality, hydrological control, as well as presence of rare plant communities and listed species, proximity to a 303(d) listed stream (DEQ water quality limited water body) and surface water connection to a stream containing salmonids. A wetland that was artificially created is not considered a locally significant wetland.

2.3.4. Field Methodology
On-site collection of data included observations of: surface hydrology, connectivity to other wetlands and the surrounding landscape, characterization of vegetative structure including wetland class, physical attributes, and any observable disturbances. These forms are included in the Appendices for each wetland unit.

2.3.5. Overall Assessment
Office research included collection of landscape and topographic information from a variety of sources. The data gathered in the field and in the office were compiled to answer the questions for the assessment of functions and conditions for each wetland.

2.4. Riparian Areas Inventory
All research and assessment work for the Riparian Areas Inventory and Assessment follows the *Urban Riparian Inventory and Assessment Guide* (1998) as developed for the Oregon Division of State Lands.

Riparian areas are those areas adjacent to a water resource which display transitions between terrestrial and aquatic zones. These areas are beneficial to a large number of organisms and provide for flood storage and amelioration, erosion control, and bank or slope stabilization. This is the zone where vegetative material is deposited, where significant shading of streams can occur, where humidity is typically higher and temperatures typically cooler.

The inventory of riparian areas began with a review of the existing information, particularly historic aerial photos, the National Wetland Inventory map and other sources. The Study Area was divided into watershed sub-basins based upon hydrology, topography and the built environment. The field assessment of riparian areas included diagrams of the right and left banks, measurements of riparian area width, estimates of the average slope of the bank and characterization of the vegetation typical for the particular section being studied.

A standardized riparian characterization form was developed for assessing the physical character of each side of the bank. The field data collected characterized existing vegetation, channel width and depth, adjacent land uses, type of substrate within the channel, presence of water and salmonids, percent slope, degree of human disturbance and channel modification (e.g., culverted, channelized), percentage of shade, presence of large woody debris, and percentage of the vegetation cover in the riparian area. Riparian reach length is determined by the character, vegetation, land use and cover of each bank; if the character changes on one bank, a new reach is considered to have begun for both sides of the stream. All data sheets are included in the Appendices.

2.5. Riparian Quality Assessment

In order to assess the function and condition of the riparian areas, a series of questions were answered regarding the structure of riparian zones on each side of each reach. This characterization allows inferences regarding the ability of a riparian area to perform various functions, such as thermal regulation, erosion control, flood control, water quality, and wildlife habitat within the riparian zone. Each question results in a point score and a qualitative rating for performance of the variety of functions as High, Medium, or Low. The results are included in the Appendices and are shown in Figure 10.

2.6. Cartography

Cartography for the Riparian Inventory and Assessment phase of this project closely followed the same pattern and sequence of activity as the Wetland Inventory and Assessment. Base map information was obtained from the Linn Council of Governments, and augmented by drafted layers developed from findings obtained in the field. The map information was managed and manipulated within the ArcView GIS 3.2 program. A variety of symbologies and production sequences were explored before the versions included in this document were selected.

3. STUDY AREA INFORMATION

3.1. Overview

The City of Tangent is located approximately four miles southwest of Albany and approximately eight miles east of Corvallis in Linn County. Nestled between the Calapooia River and South Santiam River on a broad valley terrace, Tangent is situated between Corvallis and Lebanon along State Highway 20. Please see Vicinity Map (Figure 1), and USGS Map (Figure 2).

Within the Willamette Valley, the City of Tangent has the highest percentage of Exclusive Farmed Use (EFU) zoned parcels within its Urban Growth Boundary. This fact can give insight to the condition, location, and function of wetland systems within the city limits.

Soils on the terraces above the flood plains in the Willamette Valley are typically well drained with undulating bar and channel relief, reflecting a long history of meandering rivers and resulting deposited materials. In other valley landscape positions, soils are poorly drained due to a high water table and/or a high clay content that restricts water movement. The *Soil Survey for Linn County Area, Oregon*

identifies soils for the area as a mixture of the following series. These soils listed as "hydric" are soils formed under conditions of prolonged inundation or surface saturation, and are generally indicative of wetland conditions. "Inclusion" refers to the frequent presence of a different soil series that occurs in areas too small to map separately, such as in small depressions. Please see Soil Survey Map, Figure 3.

TABLE II. MAPPED SOIL UNITS

Soil Symbol	Soil Name	Hydric Status
(3)	Amity silt loam	Hydric Concord and Dayton soil inclusions
(8)	Bashaw clay	Hydric
(27)	Concord silt loam	Hydric
(28)	Conser silty clay loam	Hydric
(33)	Dayton silt loam	Hydric
(46)	Holcomb silt loam	Hydric Concord and Dayton soil inclusions
(67)	McBee silty clay loam	Hydric Wapato soil inclusions
(99)	Wapato silty clay loam	Hydric
(100)	Whiteson silt loam	Hydric
(102)	Willamette silt loam	Hydric Concord and Dayton soil inclusions
(106A)	Woodburn silt loam, 0-3% slopes	Hydric Concord and Dayton soil inclusions

(3) Amity silt loam. This somewhat poorly drained soil occurs on broad terraces of the Willamette Valley. Slopes are 0-3 percent. Typically, the surface layer is very dark grayish brown silt loam to about 16 inches in depth. The subsurface is dark gray, faintly mottled silt loam about six inches thick. Permeability of Amity is moderately slow and runoff is slow. This unit is listed by Hydric Soils in Linn County Area as having hydric inclusions.

(8) Bashaw clay. Bashaw clay occurs on flood plains, terraces, and fans. This deep, poorly drained soil formed in fine textured alluvium. Slopes are 0-1 percent. The surface layer is typically black silty clay about four inches thick. The next 32 inches are black, mottled clay. Permeability of this series is very slow and runoff is very slow to ponded and the hazard of water erosion is slight. This unit is listed by Hydric Soils in Linn County Area as a hydric soil.

(27) Concord silt loam. This series is a deep, poorly soil that occurs on broad terraces. It formed in silty and clayey alluvium. Slopes are 0-2 percent. Typically, the surface layer is very dark grayish brown silt loam to about 10 inches. The next layer, about 16 inches thick is dark gray, mottled silt loam. Permeability is slow, runoff is slow to ponded, and the hazard of erosion is generally slight. This unit is listed by Hydric Soils in Linn County Area as a hydric soil.

(28) Conser silty clay loam. This deep, poorly drained soil is in depressional areas along drainageways. It formed in silty and clayey mixed alluvium. The surface layer to a depth of about 9 inches is very dark brown silty clay loam. The upper 5 inches of the subsoil is very dark grayish brown silty clay and the next 27 inches are very dark gray and brown, mottled clay and silty clay. Permeability and runoff are slow with an available water capacity of approximately 9 to 12 inches. This unit is listed in Linn County Area as a hydric soil.

(33) Dayton silt loam. This poorly drained soil is found on broad valley terraces. Slope is 0-2 percent. The surface layer is typically is grayish brown silt loam about nine inches thick. The subsurface layer is

dark gray silt loam about six inches thick. The next 25 inches is dark gray, olive gray, and mottled gray silty clay. Permeability is very slow and runoff is very slow to ponded. This unit is listed by Hydric Soils in Linn County Area as a hydric soil.

(46) Holcomb silt loam. This somewhat poorly drained soil is found on broad valley terraces. The surface layer is very dark grayish brown silt loam about seven inches thick over very dark grayish brown, mottle silty clay loam about 14 inches thick. Permeability is very slow and runoff is slow. This unit is listed by Hydric Soils in Linn County Area as having hydric inclusions.

(67) McBee silty clay loam. This moderately well drained soil is found on flood plains. The surface layer is typically dark brown silty clay loam about 19 inches thick. Permeability is moderate and runoff is slow. This unit is listed by Hydric Soils in Linn County Area as having hydric inclusions.

(99) Wapato silty clay loam. This poorly drained soil is found on old abandoned river channels and depressional areas of floodplains. Slope is 0-3 percent. The surface layer is typically very dark grayish brown, mottled silty clay loam about 17 inches thick. Permeability is moderately slow and runoff is slow to ponded. This unit is listed by Hydric Soils in Linn County Area as a hydric soil.

(100) Whiteson silt loam. This somewhat poorly drained to poorly drained soil is found on floodplains. Slope is 0-3 percent. The surface layer is typically very dark grayish brown silt loam about 11 inches thick. The subsoil is mottled, dark grayish brown clay loam about four inches thick. The upper 28 inches of the substratum is mottled, gray and olive gray silty clay and clay. Permeability is very slow and runoff is slow. This unit is listed by Hydric Soils in Linn County Area as a hydric soil.

(102) Willamette silt loam. This deep, well drained soil is found on broad valley terraces. The surface layer is generally very dark brown silt loam about 13 inches thick. The next layer is very dark grayish brown silt loam about 9 inches thick. Permeability of this series is moderate and runoff is slow. This unit is listed by Hydric Soils in Linn County Area as having hydric inclusions.

(106A) Woodburn silt loam, 0-3% percent slopes. This deep, moderately well drained soil is found on broad valley terraces. Typically, the surface layer is very dark brown silt loam about six inches thick. The next layer is dark brown silt loam about 13 inches thick. Permeability of this series is moderately slow and runoff is slow. This unit is listed by Hydric Soils in Linn County Area as having hydric inclusions.

3.2. Previous Delineations in the Study Area

The National Wetland Inventory Map (1994) identifies numerous features in the Study Area as potential wetlands (Figure 4). The majority of the wetland acreage is mapped as Palustrine Forested Seasonally Flooded (PFOC), with smaller Palustrine Emergent wetlands scattered throughout the area.

On-site determinations and delineations have been previously conducted for several parcels within the Study Area. Information and maps for these previous delineations are included in the LWI Findings portion of this document where appropriate, and are summarized here:

Tax Lot Number	DSL Determination #	Wetlands Present
110436-01600 & 120401-01700	93-0083	Palustrine Shrub / Emergent
120306-01303	93-0029	Palustrine Emergent
120306-01501	98-0195	Palustrine Emergent

120401-00114	99-0249	Palustrine Emergent
120401-01100	USDA determination	Prior Converted
120412-00800	USDA Determination	Prior Converted
120412-00900	99-0119	Palustrine Forested/Emergent

4. LWI FINDINGS

4.1. Summary

Within the approximately 2412 acres of the Tangent Local Wetland Inventory Study Area, twenty-five wetland areas were identified, totaling approximately 224 acres. This is not unexpected, given the character of the landscape. Much of the wetland acreage within the Study Area is currently in agricultural production (~64%). Overall, the larger Study Area is affected by many anthropogenic influences. Waterways in particular have been filled or have been altered through years of plowing, disconnected, piped, or rerouted from historic locations. Wetlands have therefore become more isolated from historic hydrology sources. As a result of this hydrologic manipulation, in combination with agricultural management of vegetation throughout the area, very little remains of the historic wetland resources within the Study Area.

4.2. Local Wetlands Inventory

All wetland Data Forms and Characterization Forms are included in the Appendices, organized by Wetland Unit.

4.2.1. Wetland Acreage and Distribution

Twenty-five wetlands were identified within the Study Area, comprising approximately 224 acres. Approximately 144 acres of these wetlands exist as agricultural wetland areas. Because many of these farmed fields have a very complex mosaic of wetlands and non-wetlands, the wetland locations on the LWI map and the acreages presented for farmed wetlands are very approximate. The largest forested wetland complex is found in the southwestern quarter of Tangent, associated with the mainstem of Lake Creek. This broad forested wetland is vegetated with Oregon ash (*Fraxinus latifolia*), cow parsnip (*Heracleum lanatum*), camas (*Camassia quamash*) and creeping jenny (*Lysimachia nummularia*). To the east lies a similarly forested wetland associated with a tributary to Lake Creek. Many of the smaller forested wetlands in the southern half of Tangent are associated with tributaries to Lake Creek and are surrounded by agricultural practices, residential developments and roads. Forested wetlands associated with small tributaries of Oak Creek in the northern half of the Study Area have been altered (hydrology) and greatly reduced. Factors contributing to this include residential and commercial development pressures and manipulation of hydrology regimes.

TABLE III COWARDIN CLASSES

Wetland Number	Cowardin Classification	Wetland Acreage
L-1	100% Palustrine Emergent (x)	1.4 PEM(x)
L-2	100% Palustrine Emergent	0.9 PEM
L-3f	100% Palustrine Emergent (f)	16.0 PEM(f)
L-4A	85% Palustrine Forested, 15% Palustrine Emergent (f)	5.8 PFO / 1.0 PEM(f)
L-4B	100% Palustrine Forested	30.8 PFO
L-4C	80% Palustrine Forested, 20% Palustrine Emergent	1.5 PFO / 0.4 PEM
L-4D	100% Palustrine Forested	17.0 PFO
L-5f	92% Palustrine Emergent (f), 08% Palustrine Forested	22.3 PEM(f) / 1.9 PFO

L-6f	100% Palustrine Emergent (f)	6.7 PEM(f)
L-7f	100% Palustrine Emergent (f)	19.0 PEM(f)
L-8f	100% Palustrine Emergent (f)	5.3 PEM(f)
L-9	100% Palustrine Emergent	1.4 PEM
L-10f	100% Palustrine Emergent (f)	1.0 PFO
L-11	100% Palustrine Emergent (x)	1.5 PEM (x)
L-12A	80% Palustrine Forested, 20% Palustrine Emergent (x)	0.5 PFO / 0.1 PEM(x)
L-12B	95% Palustrine Forested, 5% Palustrine Emergent (x)	2.9 PFO / 0.2 PEM(x)
L-12C	80% Palustrine Forested, 20% Palustrine Emergent (x)	1.3 PFO / 0.3 PEM(x)
L-12D	90% Palustrine Forested, 10% Palustrine Emergent (x)	3.0 PFO / 0.3 PEM(x)
L-13f	100% Palustrine Emergent (f)	40.3 PEM(f)
O-1f	100% Palustrine Emergent (f,x)	8.3 PEM (f,x)
O-2A	75% Palustrine Forested, 25% Palustrine Emergent (f,x)	2.3 PFO / 0.8 PEM (f,x)
O-2B	50% Palustrine Emergent (f), 50% Palustrine Forested	3.2 PFO / 3.2 PEM (f)
O-2C	100% Palustrine Forested	1.0 PFO
O-3f	100% Palustrine Emergent (f)	3.7 PEM(f)
O-4f	100% Palustrine Emergent (f)	18.5 PEM(f)
Total Wetland Area	**Palustrine Emergent (PEM)** **Palustrine Forested (PFO)**	**151.6 acres** **72.2 acres**
		223.8 acres = ~224 acres

f = farmed, x = excavated

4.2.2. Wetland Classification

Wetland areas are defined by plant communities, soil structure, and water regimes. "Classification of Wetland and Deep Water Habitats of the United States," (Cowardin et al., 1979) outlines a hierarchical wetland classification approach that groups wetlands and deepwater habitats which share similar hydrogeomorphic, and biological conditions. The following is a description of the wetland systems, classes, and special modifiers (emergent, scrub-shrub, forested, farmed, etc.) found within the Study Area, as described by Cowardin et al.

A Palustrine system includes all non-tidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens and all such wetlands that occur in tidal areas where salinity is less than 0.5%. This includes areas traditionally called swamps marshes, fens, as well as shallow, permanent or intermittent water bodies called ponds.

A Riverine system includes all wetlands and deepwater habitats contained within a channel but not including palustrine emergent, scrub-shrub or forested wetlands,

An Emergent Wetland class is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Perennial plants usually dominate the vegetative cover of emergent wetlands. Emergent wetlands are known by many names, including marsh, meadow, fen, prairie pothole, and slough.

A Scrub-Shrub wetland class includes areas dominated by woody vegetation less than six meters (20 feet) tall. This class includes true, shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. Scrub-shrub wetlands are known by many names including shrub swamps, bog, and pocosin.

A Forested Wetland class is characterized by woody vegetation that is six meters tall or taller. Forested wetlands only occur in palustrine and estuarine systems, and normally possess an overstory of trees, an understory of young trees or shrubs, and a herbaceous layer.
Farmed (f) is a special modifier in which the soil surface has been mechanically or physically altered for production of crops, but hydrophytes will becomes established if farming is discontinued.

Excavated (x) is a special modifier that describes a basin or channel that was excavated by man. This modifier can describe a channel that was created entirely from uplands and a re-channelized or re-shaped natural drainage feature.

As might be expected in a landscape with a long history of agricultural use, wetland elements are restricted and confined by agricultural fields. Much of the historic extent of Tangent's wetlands were bottomland forest and remnants of this landscape type are still found, defined by the edge of Oregon ash trees. Tangent's Palustrine Emergent wetlands are generally areas that were logged of the ash trees and converted to agricultural lands or created for mitigation purposes.

4.2.3. Agricultural Wetlands
Agricultural wetlands are often the most difficult to map due to the extent which their characteristics are altered by farming activities. For agricultural wetlands, vegetation is considered to be altered or not present; soils are assumed to be mixed by plowing and may be partially drained, although they still display hydric characteristics. Hydrology (the duration of surface saturation and ponding) becomes the most singularly important factor in determining whether an area is considered wetland.

Where permission was granted, on-site investigation of agricultural wetlands was conducted in February 2002. Hydrology and soils were documented. This data was combined with in-office evaluation of soils and hydrology information that included review of various aerial photographs and maps. The information was analyzed in an attempt to determine recent hydrologic patterns, as well as pre-disturbance / development hydrology regimes of the Study Area.

The Oregon Division of State Lands has regulatory jurisdiction over all farmed wetlands that meet hydrology criteria. The Army Corps of Engineers does not exert jurisdiction over Prior Converted Croplands, as determined by the U.S. Department of Agriculture (USDA) National Food Security Act Manual criteria.

Where permission was granted, on-site investigation of agricultural wetlands was conducted in February 2002. Hydrology and soils were documented. This data was combined with in-office evaluation of soils and hydrology information that included review of various aerial photographs and maps. The information was analyzed in an attempt to determine recent hydrologic patterns, as well as pre-disturbance / development hydrology regimes of the Study Area.

Investigations were made at the USDA Farm Service Agency and the Natural Resources Conservation Service offices regarding determinations of wetlands present on agricultural lands within the Project Study Area. Two parcels were found to contain record of Prior Converted wetlands.

4.3. Wetland Quality Assessment
All Wetland Characterization Sheets and Function and Condition Summary Sheets are included in the Appendices, organized by Wetland Unit.

4.3.1. The Oregon Freshwater Wetland Assessment Methodology
Concurrent with the determination / mapping fieldwork, information was collected regarding characterization of the wetland areas as preparatory for the assessment. The Assessment began with a characterization of the watershed sub-basins as identified for the Study Area: the northern half and the southern half (please see Figure 5, Drainage Basins of Tangent). The Watershed Settings are summarized in the following Summary Charts, on pages 17 and 18. The two watersheds share many characteristics, including geomorphic history, historic agricultural usage and currently degraded water quality and overall habitat value.

Individual Wetland Units were characterized for their structure, overall connections to the surrounding landscape, wetland habitat provisions, fish and wildlife habitat value, and opportunities for recreation, aesthetic experience and accessibility. The results of the Function and Condition Assessment are summarized in the Table in the Appendices. In general, all wetlands in the Study Area provide some habitat but are degraded; water quality is degraded; hydrologic control is degraded; and results are varied for: sensitivity to future impacts, potential for enhancement activities, recreational opportunities and aesthetic quality.

4.3.2. Wetlands of Special Interest for Protection
In order to be considered as a Wetland of Special Interest for Protection, a "yes" answer to any of the several standardized questions needs to be achieved. Please note that only those wetlands determined not artificially created were evaluated for this section.

None of the wetlands in this study qualified as wetlands of special interest. Most of the wetlands are dry during the late spring and summer, as the waterways dry up. Water remains in the main tributaries of Lake Creek, but is reduced to a trickle.

Contact was made with the Oregon Natural Heritage Program (ONHP) and with the Oregon Department of Fish and Wildlife (ODFW) regarding known sightings of protected species within the Study Area. According to ODFW, Steelhead (*Oncorhynchus mykiss*) and Chinook (*Oncorhynchus tshawytscha*) are present in the Upper Willamette River system. However, given the slow flow and somewhat degraded water quality, these species are not thought to be present in the Study Area waterways.

Several sightings of species of interest were reported by the ONHP just outside the study boundary. One northwestern pond turtle (*Clemmys marmorata marmorata*) was found near Lake Creek in 1993 west of the project boundary and several were recorded near the Calapooia River. The pond turtle is listed Federally as a species of concern and listed by the State as sensitive-critical. Thin-leaved peavine (*Lathyrus holochlorus*) was found northwest of the study area, near Linn-Benton Community College in 1979. This peavine is listed Federally as a species of concern.

4.3.3. Determination of Locally Significant Wetlands
A wetland will be identified as locally significant if 1) it satisfies a high rating for any of the four OFWAM criteria ranking ecological function (intact fish habitat, diverse wildlife habitat, intact water quality and intact hydrologic control), 2) it occurs within 1/4 mile of a 303(d) listed stream and scores at least a moderate rating for the water quality function, 3) there are any surface water connections to salmonid-bearing streams and the wetland scores at least moderately for fish habitat, and 4) if it contains one or more rare plant communities. Lake Creek flows into the Calapooia River northwest of Tangent. The Calapooia River is listed on the 303(d) list as bacteria and temperature limited, but is more than one mile west of the creek.

Of the twenty-five wetland areas, nine wetlands meet criteria for Locally Significant Wetlands. L-4A, L-4B, L-4C, L-4D, L-12A, L-12B, L-12C, L-12D, and O-2B qualified as a potentially Locally Significant Wetland, by virtue of having one or more intact ecological functions. The other wetlands did not satisfy any of the criteria for designation as a locally significant wetland. Locally Significant Wetlands will be subject to further planning steps by the City of Tangent, but all of the wetlands identified within this report, including those that didn't qualify as Locally Significant may be subject to both Division of State Lands and Army Corps of Engineers regulations.

4.3.4. Potential Compensatory Mitigation Sites

Parcels which historically displayed wetland characteristics but which have been altered, effectively drained and are otherwise converted from their historic character, present opportunities for restoration of wetland area and ecological functions. Two such Prior Converted parcels have been previously identified by the US Department of Agriculture and lie within the Study Area. These wetland areas are mapped on Figure 11 of this document. Other farmed wetland areas within the Study Area may also have suitable potential for wetland enhancement.

4.4. Aerial photographs and maps

Numerous historic and current aerial photos have been utilized for this study. The photo dates and scales are as follows:

Date	Scale	Type
1936	1 : 15,000	Black and White
1956	1 : 20,000	Black and White
1961	1 : 12,000	Black and White
1963	1 : 20,000	Black and White
1970	1 ; 20,000	Black and White
1979	1 : 40,000	Black and White
1982	1 : 31,680	Black and White
5-17-1997		Black and White
2000	1 : 24,000	Black and White (digital)

Maps for this document were developed for each identified wetland unit and for the overall Local Wetland Inventory Index Map. Using ArcView GIS (the cartographic system utilized), field information was overlaid upon existing digital data provided by Linn County Council of Governments. Field information was drawn onto a separate theme layer, using the GIS drawing tools and with the Tangent digitized aerial photo displayed underneath.

5. RIPARIAN FINDINGS

5.1. Summary

Within the 2412 acre Study Area, two riparian systems were identified: the Lake Creek tributaries and the Oak Creek tributaries. The Lake Creek tributaries were subsequently divided into two portions for research and assessment: the main branch of Lake Creek (Riparian Code 1a and 1b) and the tributaries to the east (Riparian Code 2a and 2b). Waterways in the Study Area have been filled, disconnected, piped, and rerouted, with a resulting loss of vegetative connectivity, channel structure and channel / habitat complexity. Riparian areas are generally restricted by agricultural practices in the Lake Creek system and the Oak Creek tributaries are also confined in much of the developed northern portions of Tangent.

5.2. Riparian Inventory Results

A previous Study of Tangent Riparian Areas had been conducted by community member Chris Schaffner (September 1999). The Study followed the general guidelines as presented in the Urban Riparian Inventory and Assessment Guide, and was referenced and has been incorporated into the present study.

Preparatory to the Riparian Inventory field work, preliminary reach lengths were determined from aerial photos. These were verified in the field and modified where needed. The Lake Creek tributaries were subsequently divided into three western reaches, and ten eastern reaches; the Oak Creek tributaries were divided into three reaches.

Field forms were created for Riparian Width Determination and Riparian Characterization, and were completed for each reach and bank (left and right, as viewed downstream). In most cases, the actual riparian width (distance to nearest obstruction to vegetation continuity) was less than the width established by Potential Tree Height. The exceptions to this are those areas surrounding the main branch of Lake Creek.

Based upon the findings from fieldwork and an analysis of current aerial photos, the Riparian Areas present within the Tangent LWI Study Area are as follows:

Lake Creek West	40.9 acres
Lake Creek East	21.5 acres
Oak Creek tributaries	6.1 acres
for a total of	68.5 acres

The Riparian Width and Characterization forms for each Riparian Reach and Bank are included in the Appendices, along with aerial and site photos and maps.

5.3. Riparian Quality Assessment Results

As described earlier, the assessment of riparian functions and conditions is conducted utilizing information collected from existing documentation, augmented with field information developed during the inventory phase of the project. Additional forms are completed and the result is a rating of each Riparian Reach and Bank for a set of Riparian Functions and Conditions. The Riparian Function Assessment Forms for each Riparian Reach and Bank are included in the Appendices, as is the Riparian Function Assessment Summary Table.

In general, the Lake Creek reaches rated consistently high for functions of water quality and medium for flood management. The results for thermal regulation and wildlife habitat were quite varied, but the majority of the reaches rated low for these functions. The Oak Creek reaches generally rated medium for water quality and flood management functions, and low for thermal regulation and wildlife habitat.

5.4. Aerial Photographs and Maps

Aerial photographs display the changes over time in the extent and density of riparian vegetation along the two systems identified in the Study Area. As lands adjacent to the two stream systems have been developed or tilled, impervious surfaces have increased and riparian areas have become increasingly constricted.

6. GLOSSARY OF TERMS

404 (Wetland) Permit - A U.S. Army Corps of Engineers permit issued under Section 404 of the federal Clean Water Act which allows an activity (filling) within a wetland. A 404 permit usually requires compensatory mitigation for the allowed activity in a wetland.

Atypical Situation - Areas in which one or more parameters (vegetation, soil, and / or hydrology) have been sufficiently altered by recent human activities or natural events to preclude the presence of wetland indicators of the parameter. For example, farmed wetlands are atypical in that native vegetation is replaced by a crop.

Bog - A wetland receiving water and nutrients only from atmospheric inputs, dominated by sphagnum mosses and ericaceous shrubs, and characterized by low nutrient and oxygen availability, high acidity, and peat accumulation.

Degraded - Lowered in quality from adverse impacts such as vegetation removal, invasion of nonnative species and/or draining.

Emergent Plant - A rooted herbaceous plant species that has parts extending above a water or ground surface.

Estuarine – A system that consists of deepwater tidal habitats and adjacent tidal wetlands that are usually semi-enclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from land.

Fen - A peat-accumulating wetland that receives mineral enriched, aerated water from the surrounding landscape.

Farmed Wetlands – Farmed wetlands are classified as palustrine emergent (Cowardin classification) wetlands that are in agricultural use. Note that this is not the same as a "farmed wetland" classification by the USDA, which has a specific surface water ponding requirement and date of conversion to farming use.

Flooded - A condition in which the soil surface is temporarily covered with flowing water from any source, such as streams overflowing their banks, runoff from adjacent or surrounding slopes, inflow from high tides, or any combination of sources.

Growing Season - The portion of the year when soil temperatures at 19.7 inches below the soil surface are higher than biologic zero (5° C). Can be approximated by the number of frost-free days.

Habitat - The sum of the physical, chemical, and biological environment occupied by individuals of a particular species, population, or community.

Hydric Soil - A soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation.

Hydrogeomorphic (HGM) Classification - A wetland classification system based on the position of a wetland in the landscape (geomorphic setting), dominant sources of water, and the flow and fluctuation of water once in the wetland. Hydrogeomorphic classes include riverine, depressional, slope, mineral soil flats, organic soil flats, estuarine fringe, and lacustrine fringe.

Hydrologic Basin - An area of land that drains into a particular river or body of water, usually defined by topography.

Hydrophyte / Hydrophytic Vegetation - The sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

Inundation - A condition in which water from any source temporarily or permanently covers a land surface.

Jurisdictional Wetland - A wetland subject to rules and regulations identified within Section 404 of the Clean Water Act and Oregon's fill and removal statute.

Marsh - A frequently or continually inundated wetland characterized by emergent herbaceous vegetation adapted to saturated soil conditions.

Palustrine Wetland System - A freshwater wetland dominated by trees, shrubs, and emergent vegetation. Other systems include marine, estuarine, riverine, and lacustrine (deep water, such as lakes).

Ponded - A condition in which water stands in a closed depression. Water may be removed only by percolation, evaporation, and / or transpiration.

Prior Converted Wetlands - An agricultural wetland classification for those areas which are not potholes, playas or pocosins, where inundation is less than 15 consecutive days during the growing season or 10% of the growing season, whichever is less, most years (50% chance or more) and have a crop history before 12/23/85. (From National Food Security Act Manual, 3rd Edition, 11/96)

Rare Species - Any plant or animal species which is included in the Oregon Natural Heritage Program (ONHP) database of Rare, Threatened and Endangered Species of Oregon, 2001.

Reach - A segment of a riparian area with relatively homogeneous physical characteristics. Its length parallel to the water resource can be determined by major changes in vegetation type, slope or by changes in land use.

Riparian - The land bordering a stream or river; also pertaining to the vegetation typical of those borders (grasses, shrubs, and trees such as reed canary grass, spiraea, willows, ash and cottonwoods).

Roadside Ditch - A small, narrow ditch constructed adjacent to a roadway to convey stormwater runoff. Distinguished from larger ditches or channels that are part of the area-wide storm drainage system.

Sample Plot - An area of land used for measuring or observing existing conditions.

Saturated Soil Conditions - A condition in which all easily drained voids between soil particles in the root zone are temporarily or permanently filled with water to the soil surface at pressures greater than atmospheric.

Scrub-shrub Wetland - This type of wetland includes woody plants such as shrubs and small trees under 20 feet in height. They may represent a successional stage to a forested wetland.

Slough - A swamp or shallow lake system with standing water.

Soil Series - A group of soils having horizons similar in differentiating characteristics and arrangement in the soil profile, except for texture of the surface horizon.

Surface Runoff - Water that flows over the surface of the land as a result of rainfall or snowmelt. Surface runoff enters streams and rivers to become channelized stream flow.

Swamp - A wetland dominated by trees or shrubs.

Top of Bank - Topography break at the top of the stream bank; point at which floodwater leaves the channel.

Watershed - The area drained by a tributary or a river system.

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

Wet Prairie - A unique type of wetland which once covered vast areas of the Willamette Valley floor. This term is used to describe a plant community dominated by tufted hairgrass, *Deschampsia cespitosa*. This wetland type is typically saturated or slightly flooded in the winter, but is dry in the summer and early fall.

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8. FIGURES

1: Vicinity Map
2: USGS Map
3: Study Area Soils Map
4: NWI Map
5: Drainage Basins of Tangent Map
6: FEMA Zone Designations
7: Potential Compensatory Mitigation Site Map
8: Watershed Summaries
9: Aerial Photographs



Legend

Study Area Boundary

1,000 0 1,000 2,000 3,000

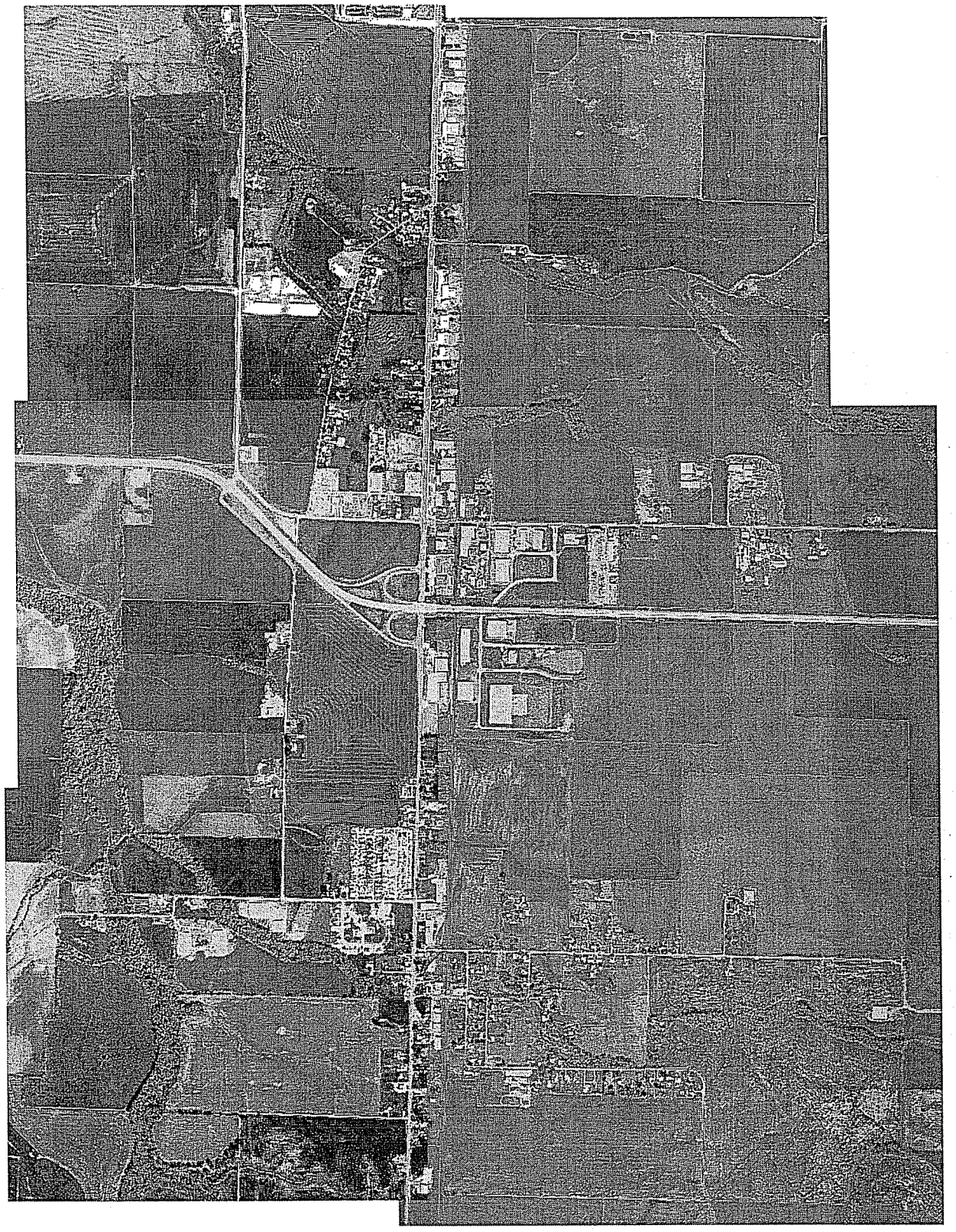
Feet

N

W E

S

1986 Aerial Photograph
Tangent LWI
City of Tangent
October 2002



Scale: 1 : 24, 000

2000

N

AERIAL PHOTOGRAPHS

Tangent LWI
City of Tangent
October 2001

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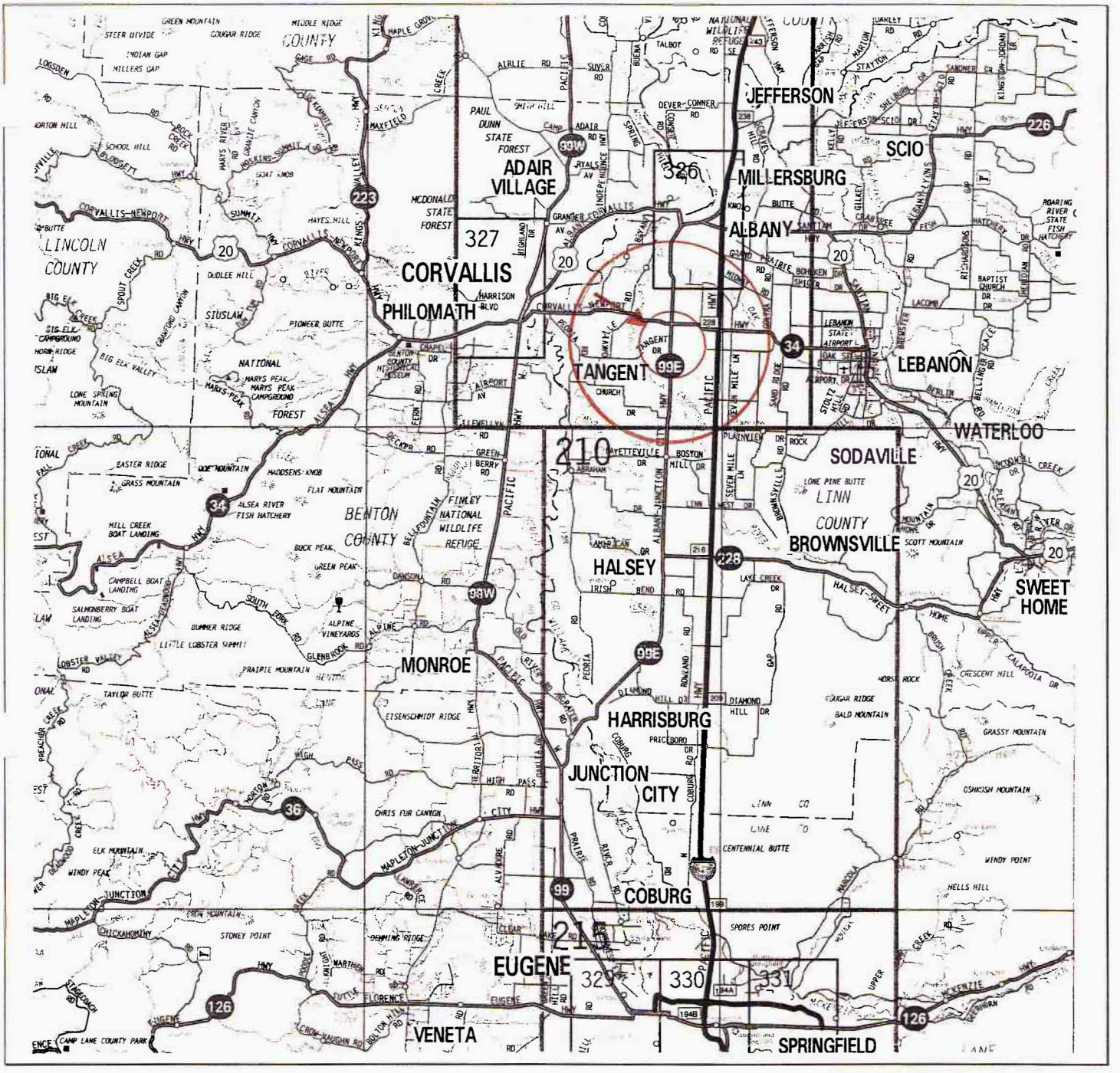

Scale: 1" = 7.5 miles

N
W E
S

7.5 0 7.5 Miles

VICINITY MAP
Tangent LWI
City of Tangent
October, 2001
Figure 1

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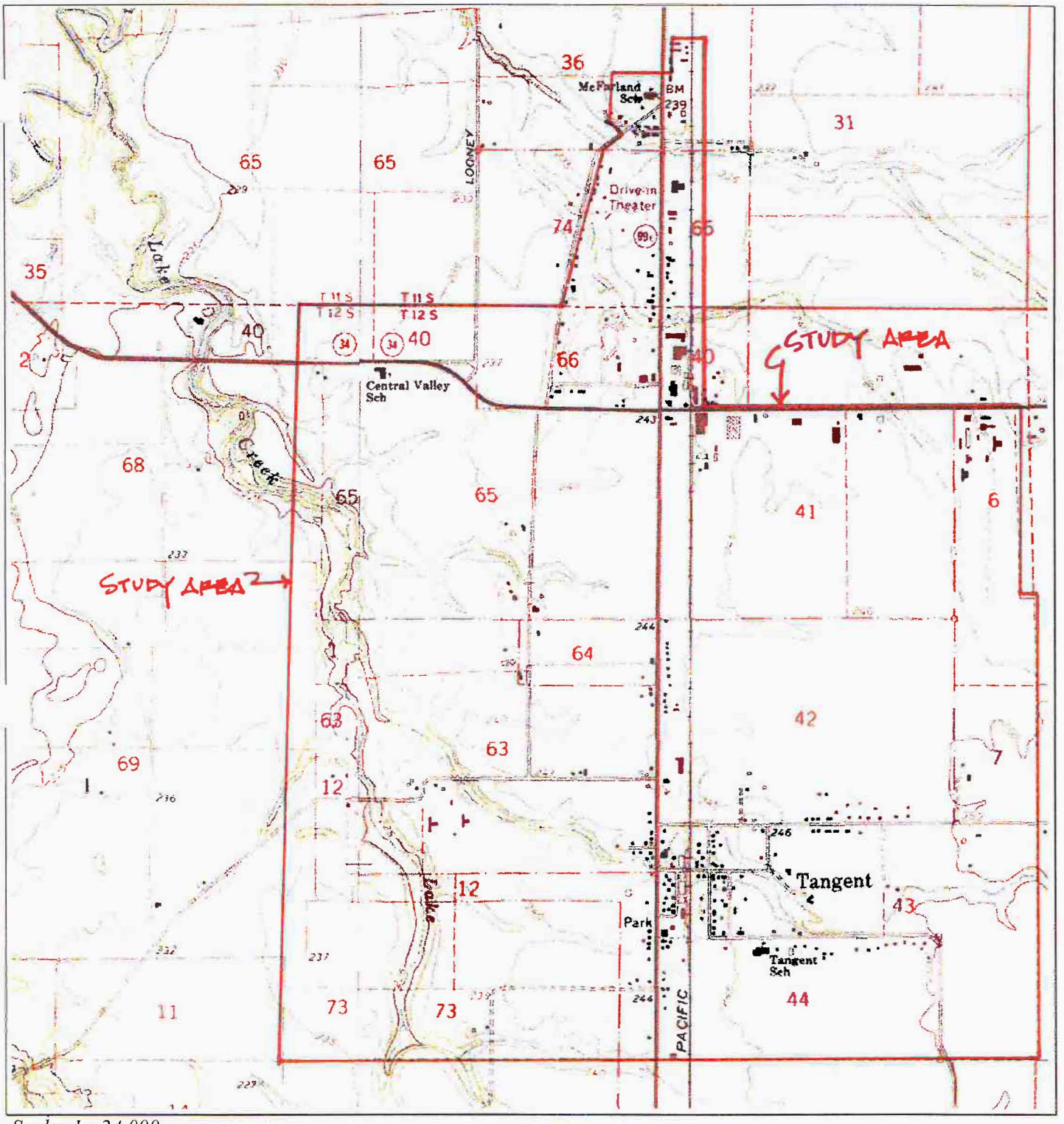

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0 5 1 MILE
0 1000 FEET 0 500 1000 METERS

N W E S

USGS TOPOGRAPHIC MAP
Tangent LWI
City of Tangent
October 2001
Figure 2

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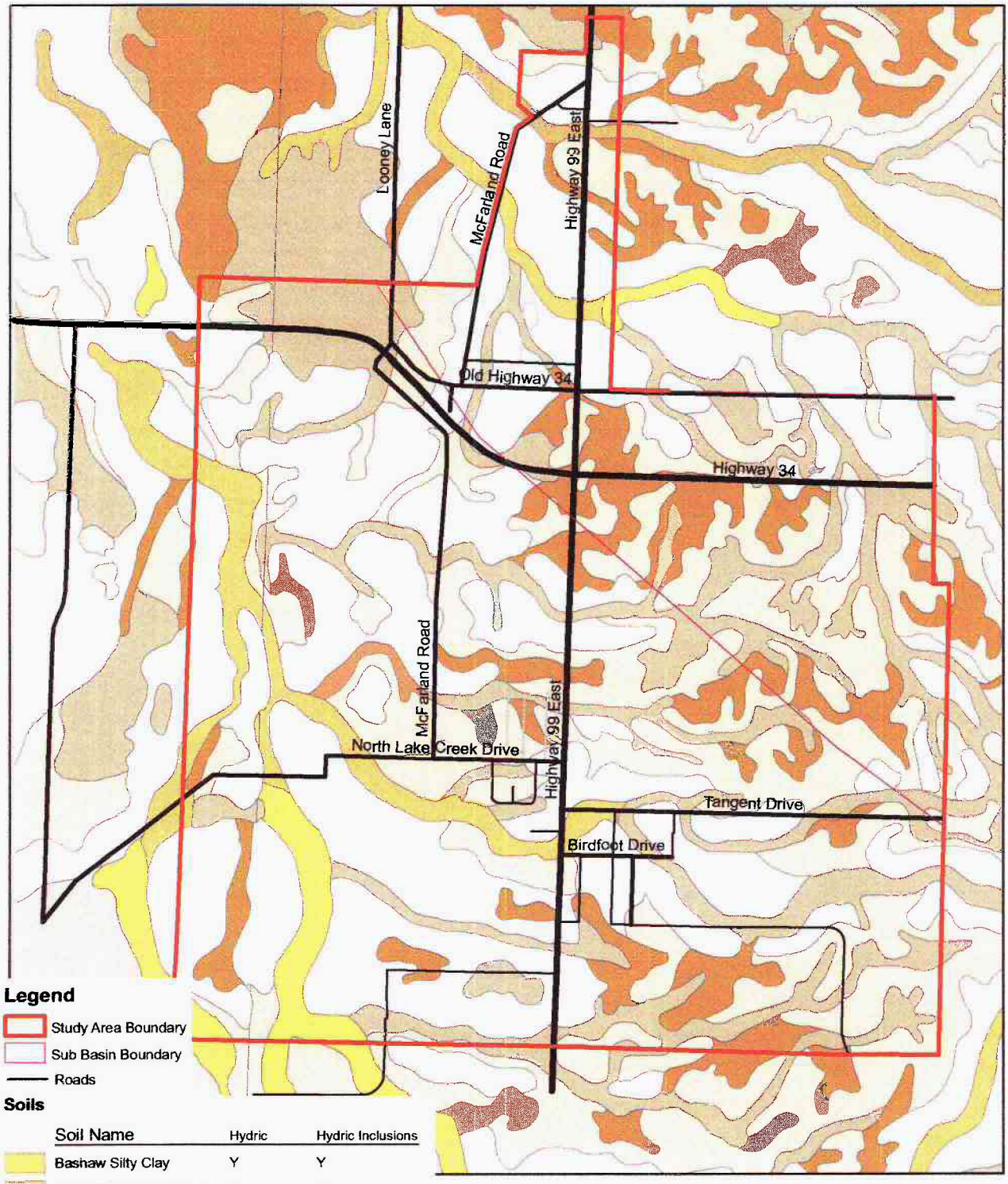


Legend

- Study Area Boundary
- Sub Basin Boundary
- Roads

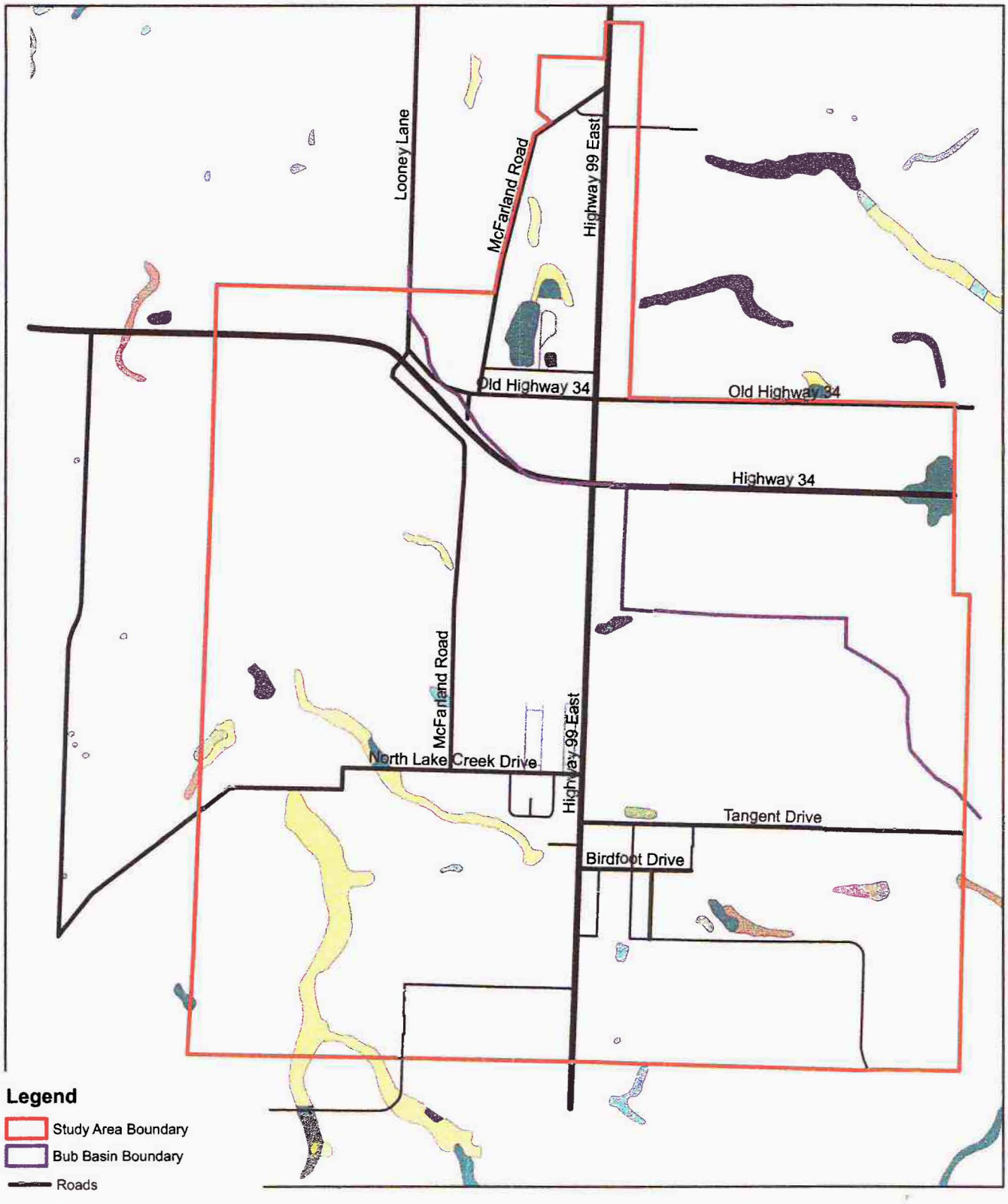
Soils

Soil Name	Hydric	Hydric Inclusions
Bashaw Silty Clay	Y	Y
Conser Silty Clay Loam	Y	Y
Waldo Silty Clay Loam	Y	Y
Whiteson Silt Loam	Y	Y
Concord Silt Loam	Y	N
Dayton Silt Loam	Y	N
Wapato Silty Clay Loam	Y	N
Amity Silt Loam	N	Y

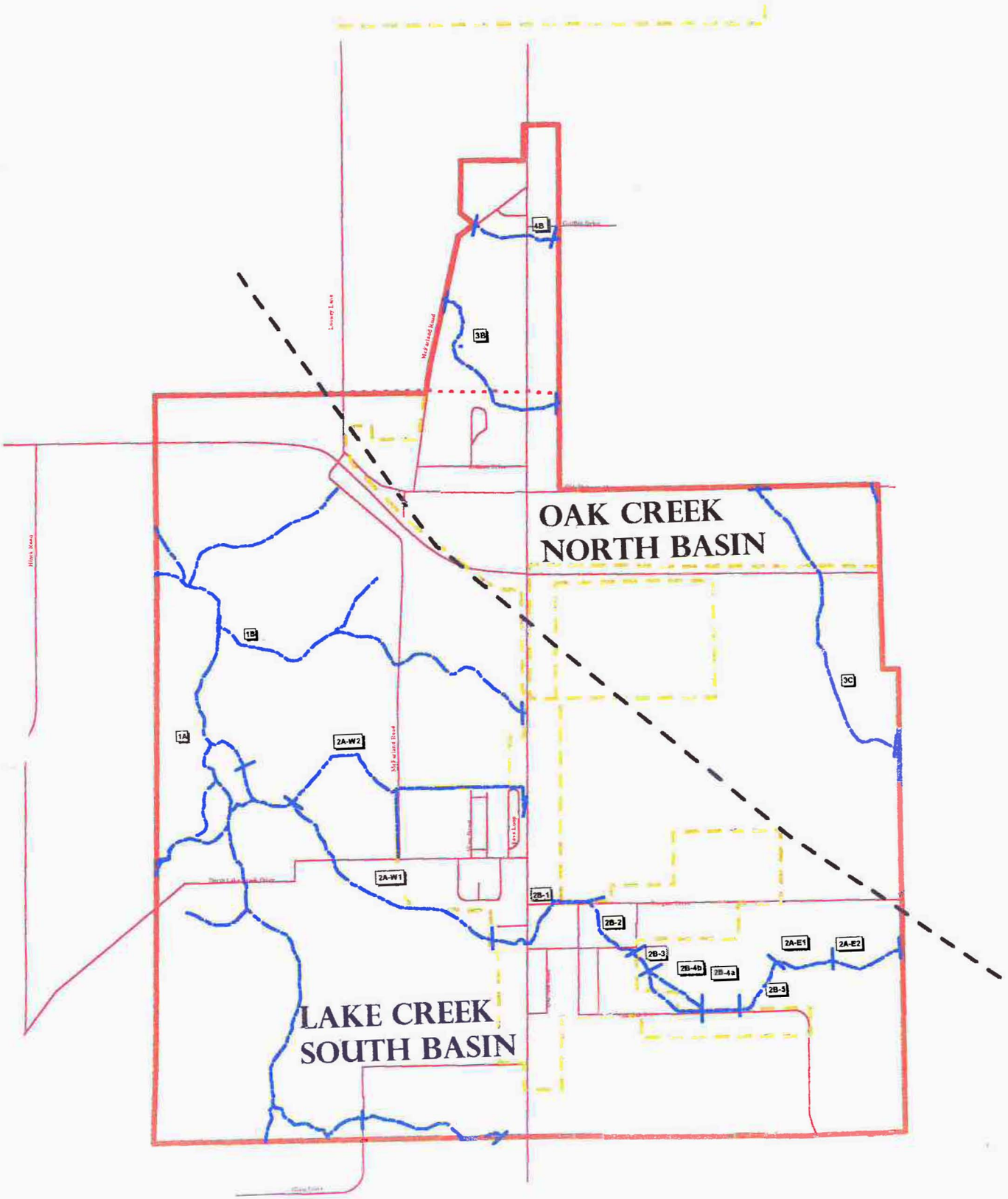
1,000 0 1,000 2,000 Feet

N W E S

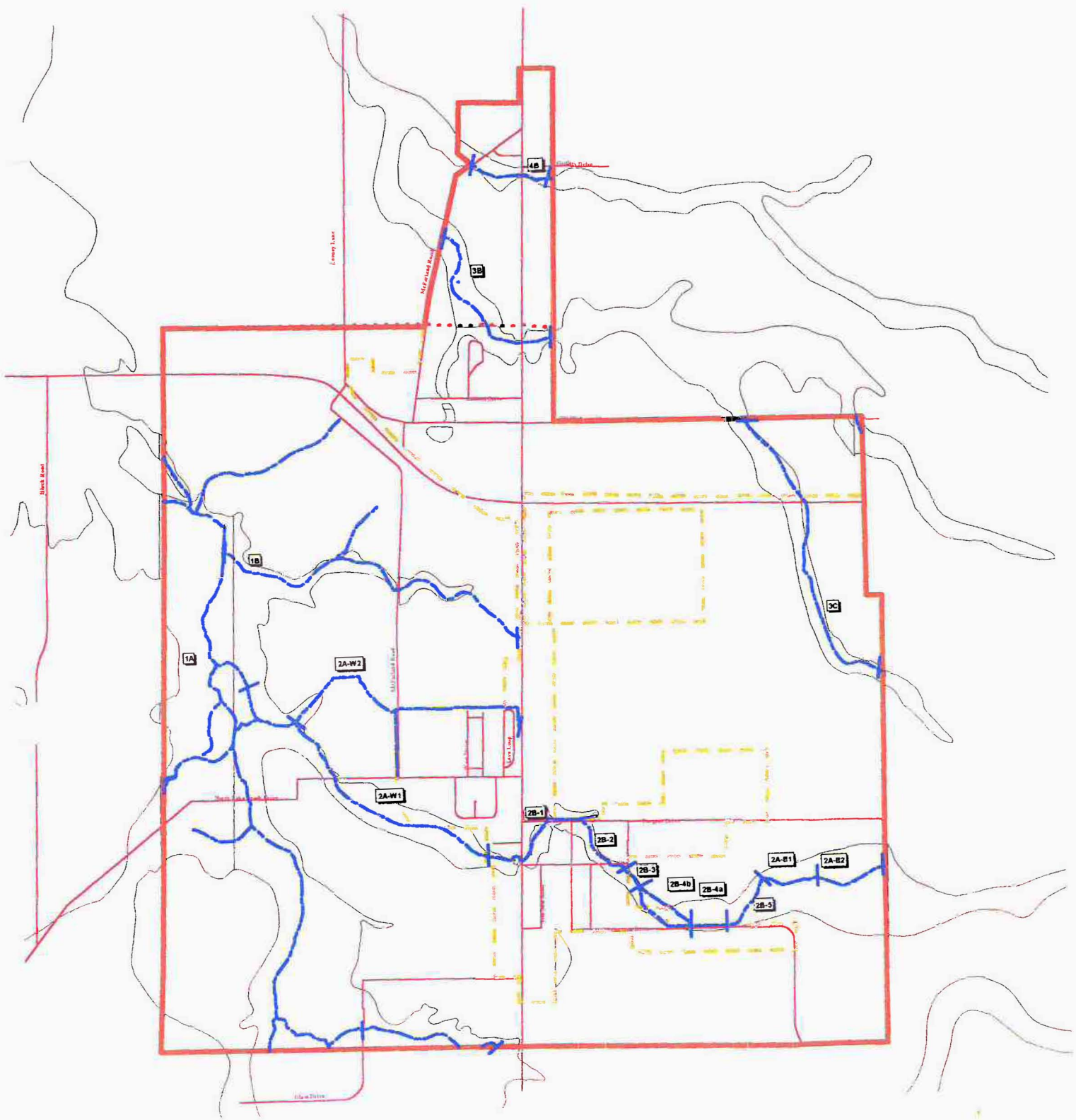
Study Area Soils: Hydric and Hydric Inclusions
Tangent LWI
City of Tangent
October 2002
Figure 3



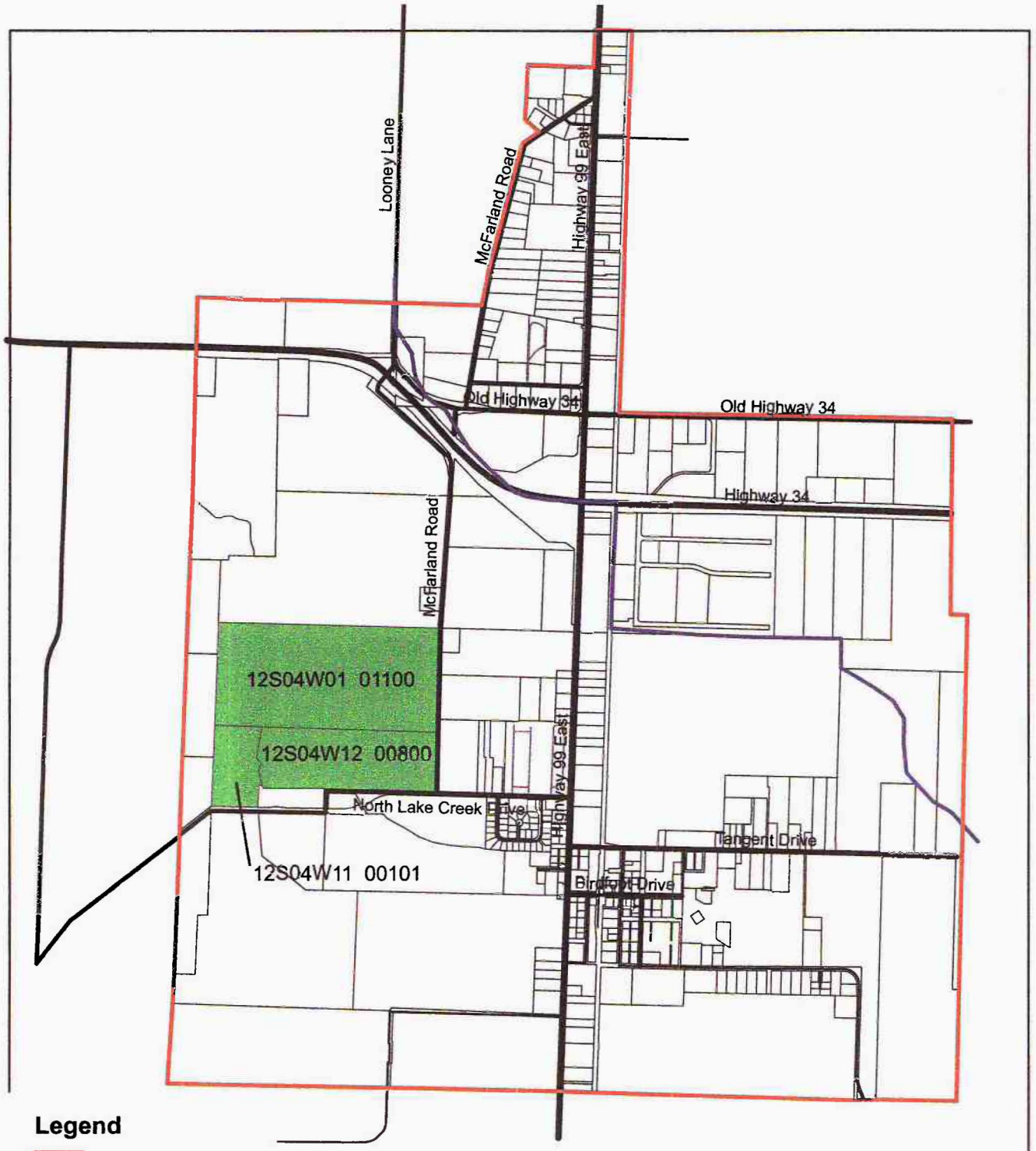
Study Area National Wetland Inventory
Tangent LWI
City of Tangent
October 2002
Figure 4



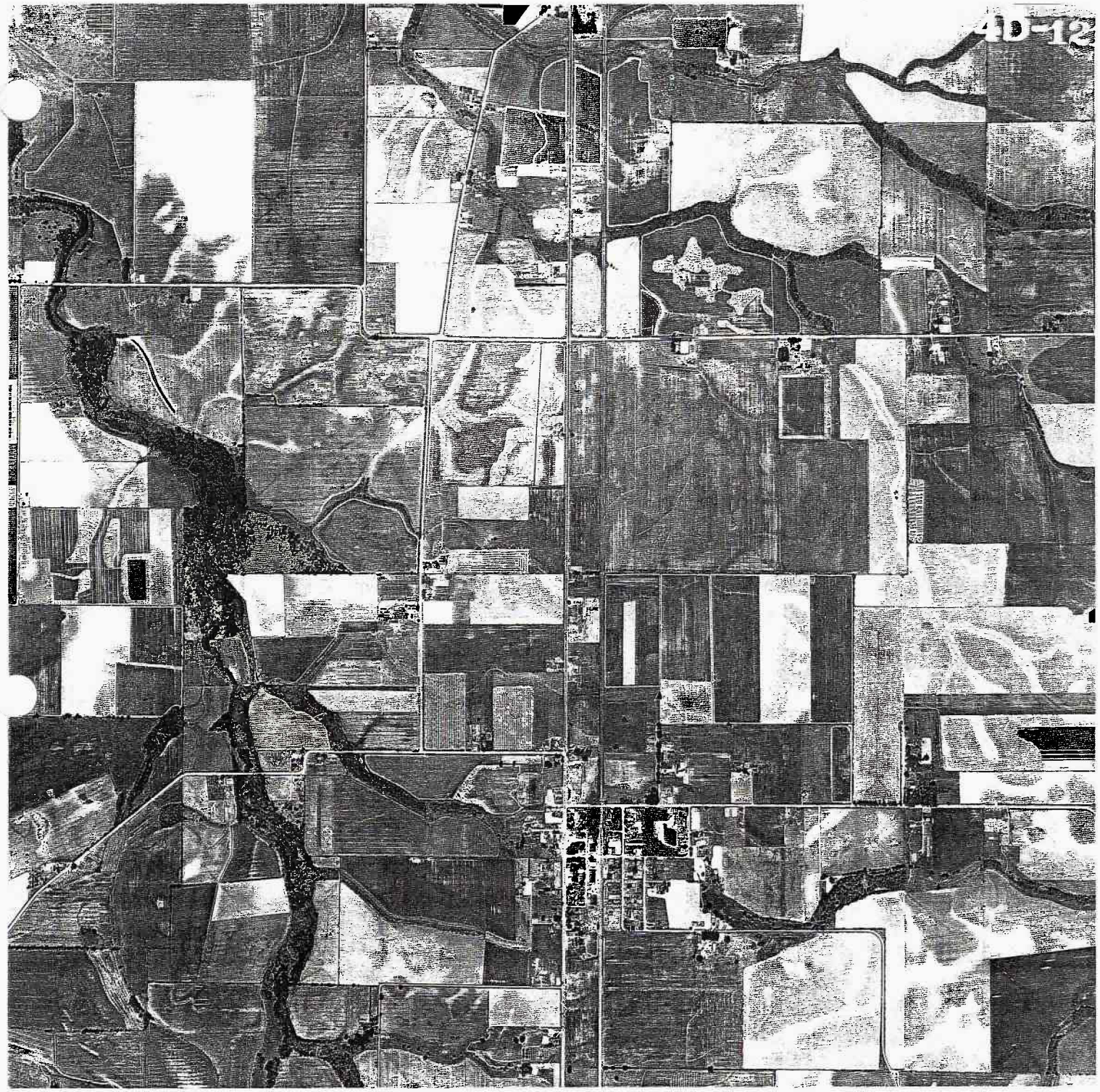
Drainage Basins of Tangent
Tangent LWI
City of Tangent
October 2001
Figure 5



FEMA Map
Tangent LWI
City of Tangent
October 2001
Figure 6



Potential Compensatory Mitigation Sites
Tangent LWI
City of Tangent
October 2002
Figure 7



Scale: 1: 12, 000

1961

N

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Tangent LWI
City of Tangent
October, 2001

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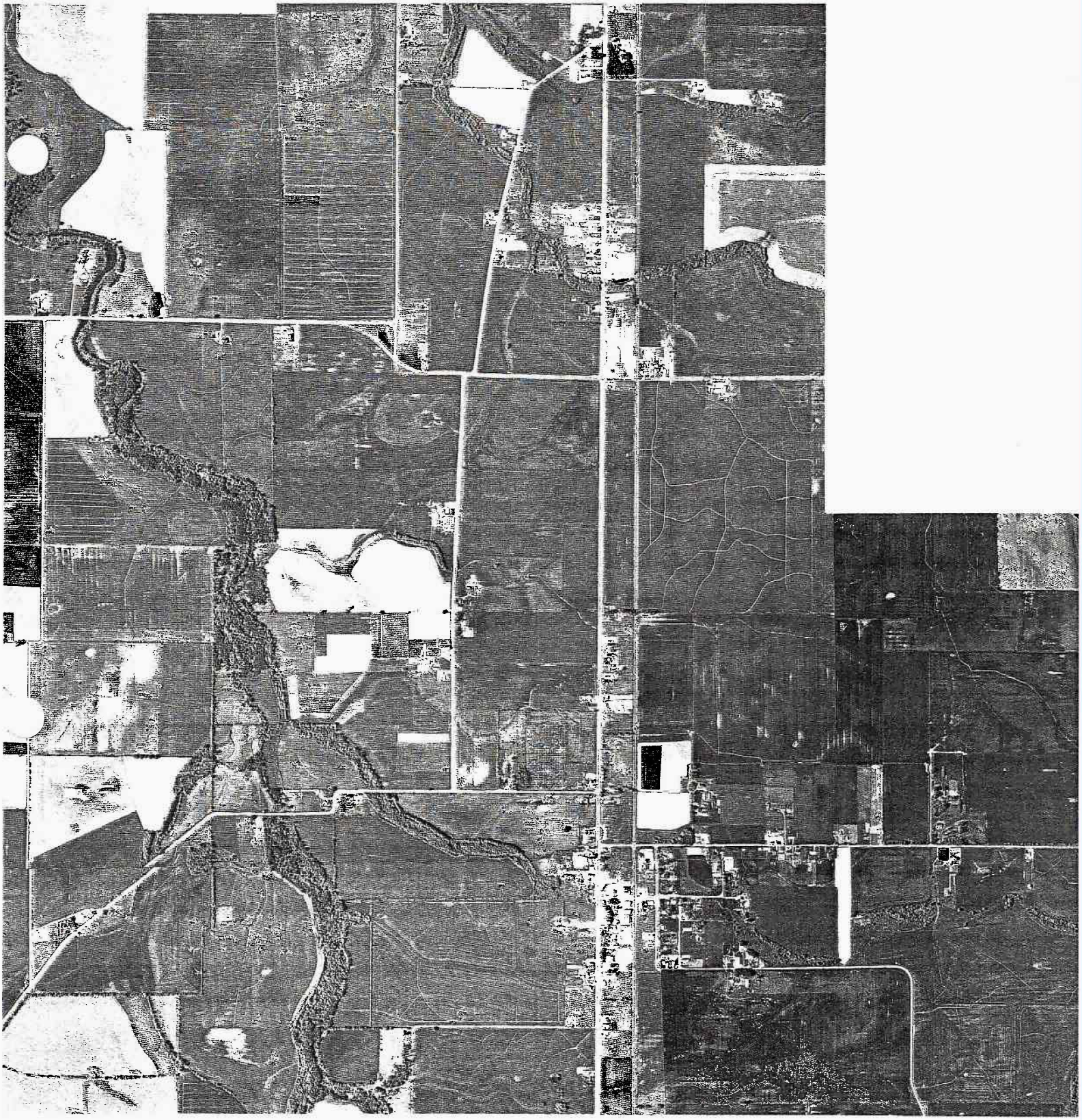

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1963

N

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City of Tangent
October 2001

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Scale: 1: 20, 000

1970

N

AERIAL PHOTOGRAPHS

Tangent LWI
City of Tangent
October 2001

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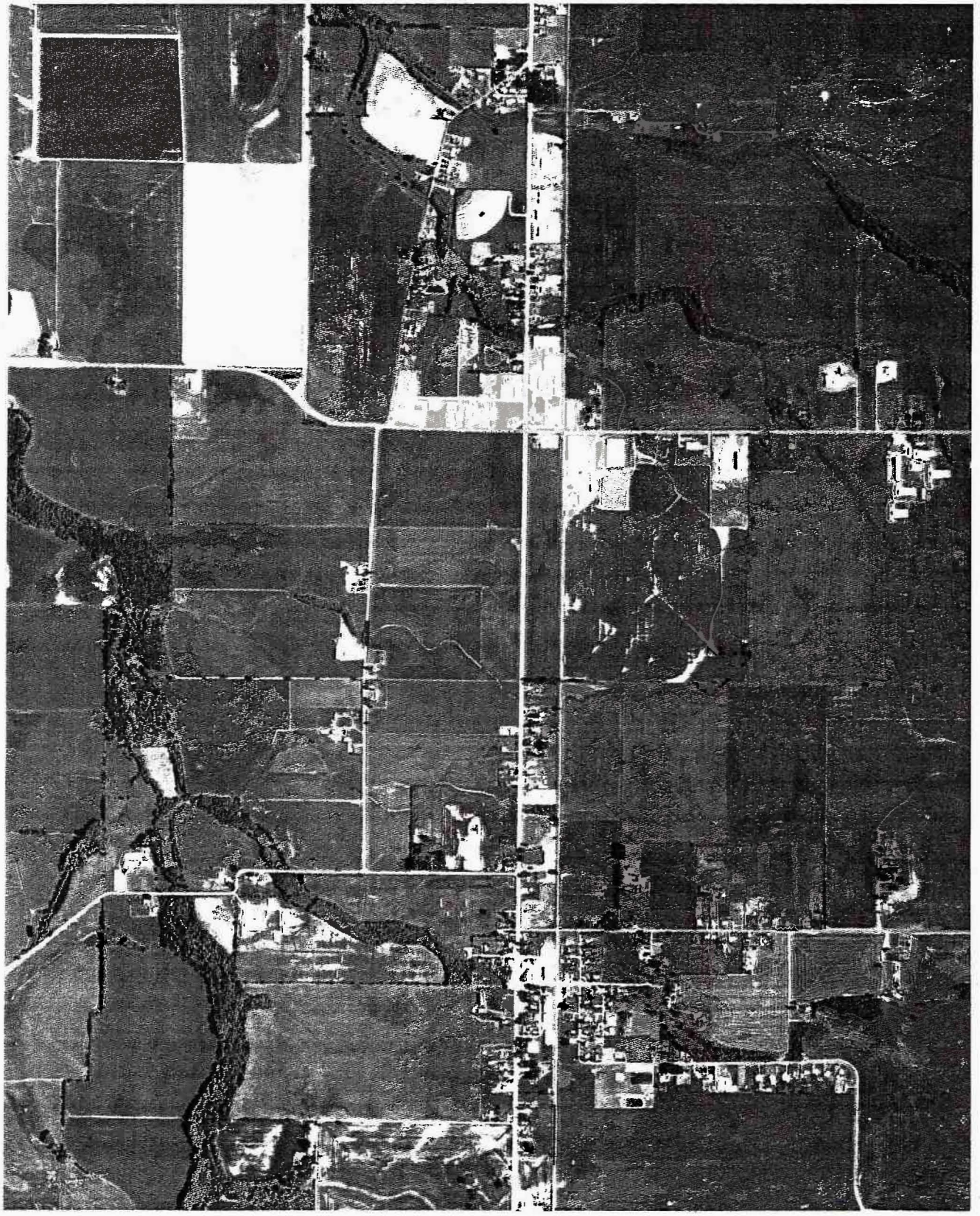


Scale: 1: 40, 000

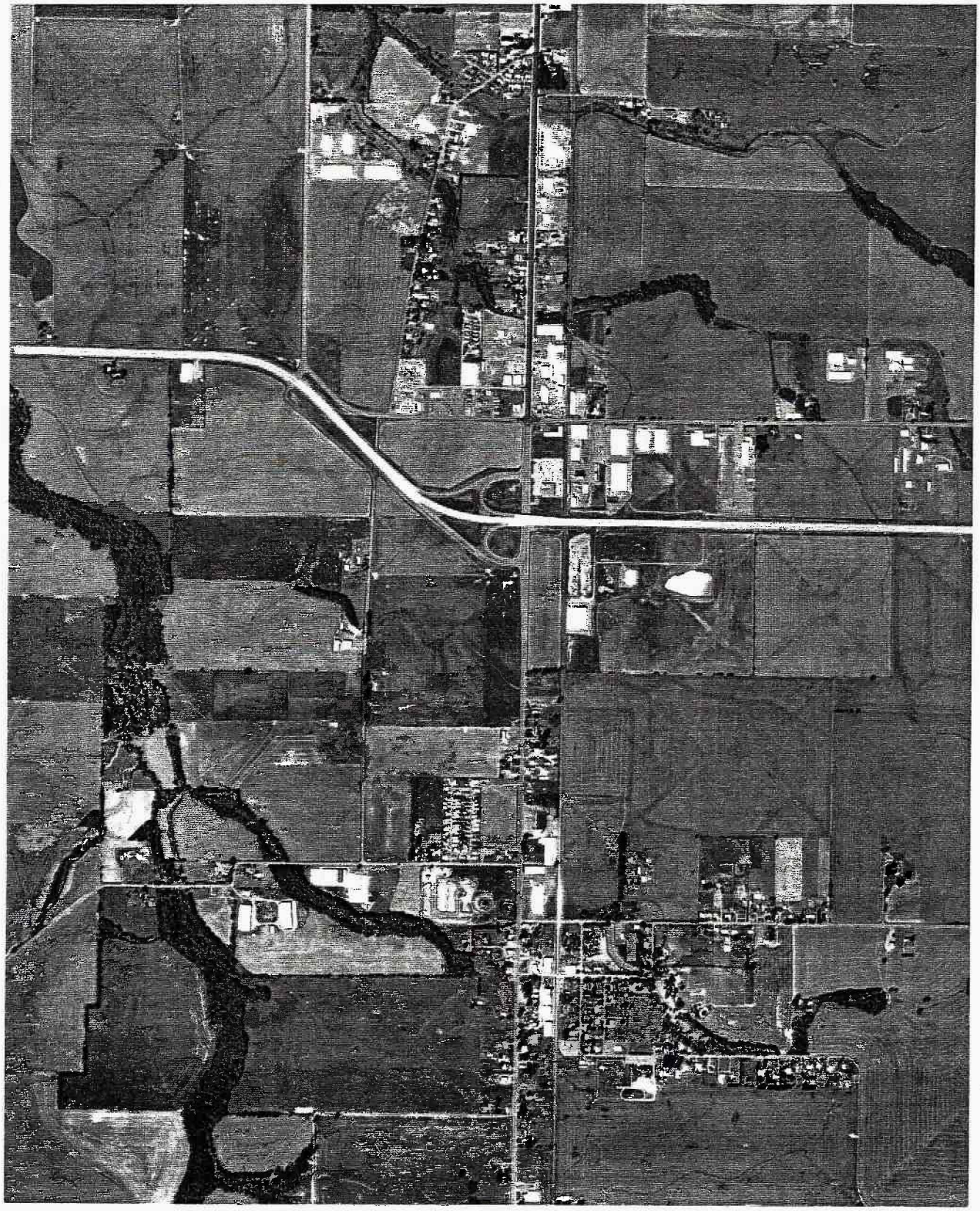
1979

N

AERIAL PHOTOGRAPHS
Tangent LWI
City of Tangent
October 2001

SATRE ASSOCIATES

Satre Associates, PC
132 East Broadway, Suite 536 (541) 465-4721
Eugene, Oregon 97401 (541) 465-4722 fax



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1982

N

AERIAL PHOTOGRAPHS

Tangent LWI
City of Tangent
October 2001

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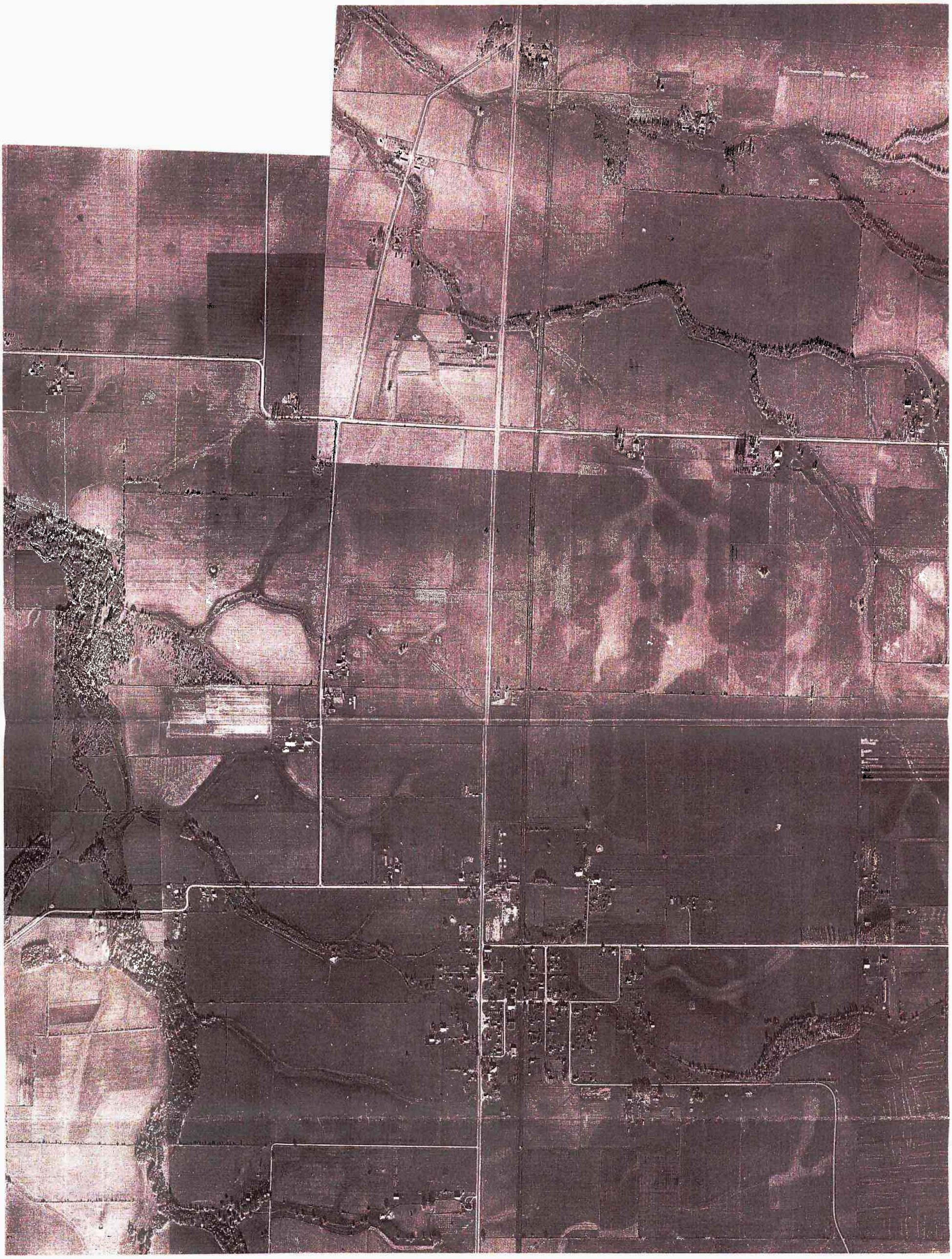

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1936

N

AERIAL PHOTOGRAPHS
Tangent LWI
City of Tangent
October, 2001

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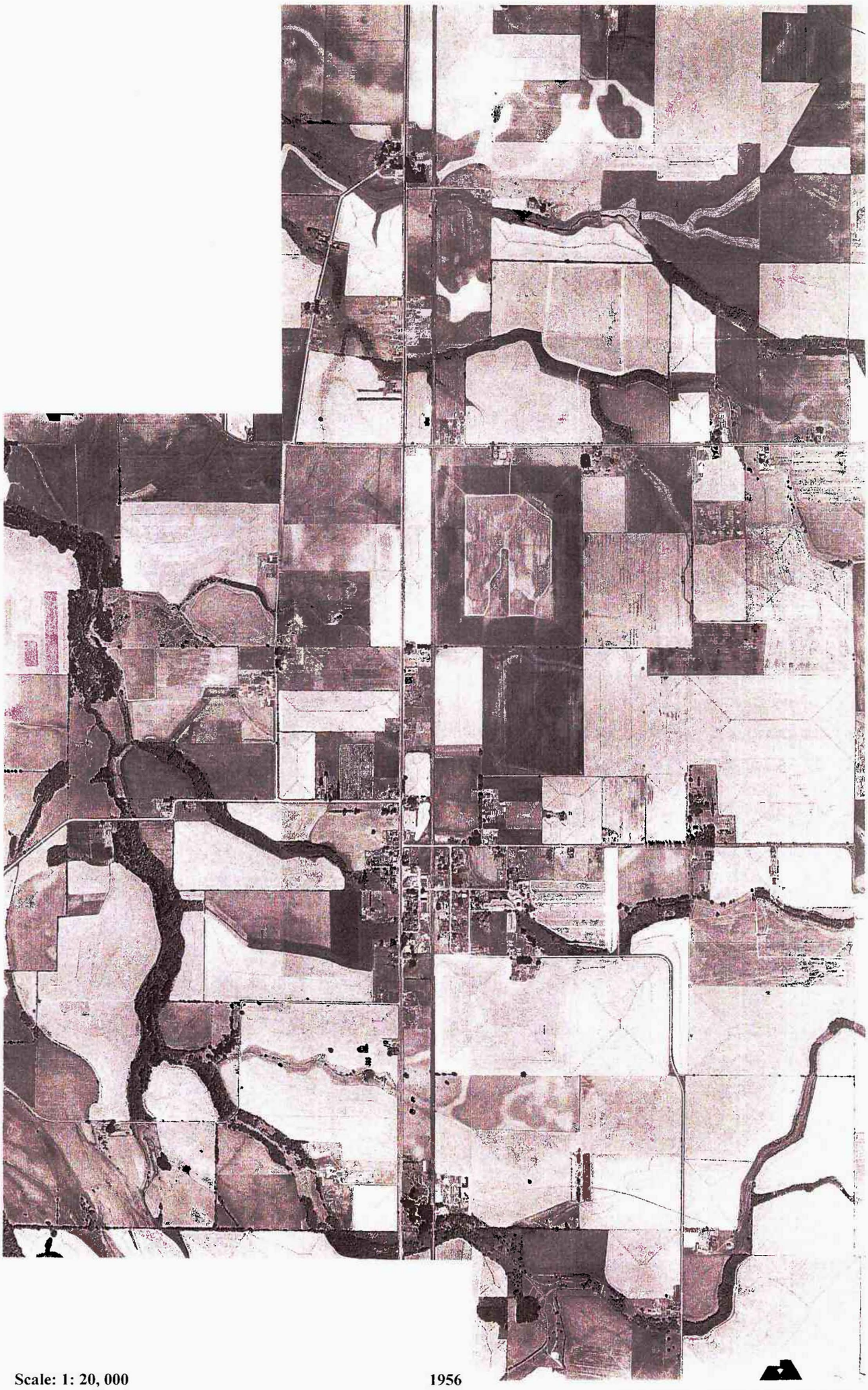

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1956

N

AERIAL PHOTOGRAPHS

Tangent LWI

City of Tangent

October 2001

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Watershed summary for the Oregon Method

Watershed or community identification: *Oak Creek tributaries / North Basin*

Characteristic	Description
Physical characteristics of the watershed	The eastern portions of Oak Creek Sub-basin consist of relatively level agricultural fields, delineated by fencelines and crossed by the few tributaries to Oak Creek. The tributaries in the western portions of this sub-basin flow through residential areas and commercial properties.
Land use within the watershed	Major portion of land use is agriculture and more recently, development of commercial/industrial facilities in the northern reaches of Tangent.
Water quality	Although not listed on the 303d list, given the land use in this watershed, water quality should be expected to be degraded. Riparian edges have been reduced, resulting in higher stream temperatures than historical conditions.
Biological characteristics of the watershed	The drainageways in the northern portions of Tangent flow through residential and commercial areas. The banks are mostly vegetated with grasses and the surrounding area is constricted by impervious surface or landscaping. Biological diversity is limited to those species that survive in such a highly managed environment.

Narrative summary of watershed description

Recent history has been dominated by agricultural practices, isolating native vegetation to the major tributaries. Seasonal flooding spills into the adjacent wooded riparian areas and into meandering surface water channels that cut through active agricultural fields. Seasonal ponding within farmed areas is also present in the agricultural fields

Historically, the waterways of Tangent flow through a mosaic of wetland soil types. The Study Area is underlain with a high diversity of wetland soil types as eleven of mapped soil series display some hydric characteristics.

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WETLAND FUNCTION AND CONDITION SUMMARY TABLE
Tangent Local Wetland Inventory

WETLAND NUMBER	L-1	L-2	L-3f	L-4A	L-4B	L-4C	L-4D	L-5f	L-6f	L-7f	L-8f	L-9	L-10f
WETLAND ACREAGE	1.4 acres	0.9 acres	16.0 acres	6.8 acres	30.8 acres	1.9 acres	17.0 acres	24.2 acres	6.7 acres	19.0 acres	5.3 acres	1.4 acres	1.0 acres
WILDLIFE HABITAT	Provides some	Provides some	Provides some	Provides diverse	Provides diverse	Provides diverse	Provides some	Provides some	Provides some	Provides some	Provides some	Provides some	Provides some
FISH HABITAT	N/A	N/A	N/A	Provides diverse	Provides diverse	Impacted or degraded	Provides diverse	N/A	N/A	N/A	N/A	N/A	N/A
WATER QUALITY	Impacted or degraded	Impacted or degraded	Impacted or degraded	Intact	Intact	Intact	Intact	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded	Impacted or degraded	Impacted or degraded	Intact	Intact	Impacted or degraded	Intact	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded
SENSITIVITY TO FUTURE IMPACTS	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive
ENHANCEMENT POTENTIAL	Little potential	Moderate potential	Moderate potential	High potential	High potential	High potential	High potential	Moderate potential	Moderate potential	Moderate potential	Moderate potential	Moderate potential	Moderate potential
EDUCATION	Potential use	Potential use	No use	Potential use	Potential use	Potential use	Potential use	Potential use	No use	No use	No use	Potential use	Potential use
RECREATION	No value	Potential value	No value	Potential value	Potential value	Potential recreation	Potential recreation	No value	No value	No value	No value	Potential value	No value
AESTHETIC QUALITY	Not pleasing	Not pleasing	Not pleasing	Moderately pleasing	Moderately pleasing	Moderately pleasing	Moderately pleasing	Not pleasing	Not pleasing	Not pleasing	Not pleasing	Moderately pleasing	Not pleasing

WETLAND NUMBER	L-11	L-12A	L-12B	L-12C	L-12D	L-13f	O-1f	O-2A	O-2B	0-2C	O-3f	O-4f
WETLAND ACREAGE	1.5 acres	0.6 acres	3.1 acres	1.6 acres	3.3 acres	40.3 acres	8.3 acres	3.1 acres	6.4 acres	1.0 acres	3.7 acres	18.5 acres
WILDLIFE HABITAT	Provides some	Provides diverse	Provides diverse	Provides diverse	Provides diverse	Provides some	Provides some	Provides some	Provides some	Provides some	Provides some	Provides some
FISH HABITAT	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	N/A	Impacted or degraded	Impacted or degraded	Intact	Impacted or degraded	N/A	N/A
WATER QUALITY	Impacted or degraded	Impacted or degraded	Intact	Intact	Intact	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded	Impacted or degraded
SENSITIVITY TO FUTURE IMPACTS	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive	Sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential	High potential	High potential	High potential	High potential	Moderate potential	Little potential	High potential	High potential	High potential	Moderate potential	Moderate potential
EDUCATION	Potential use	Potential use	Potential use	Potential use	Potential use	No use	No use	Potential use	Potential use	Potential use	No use	No use
RECREATION	Potential value	Potential value	Potential value	Potential value	No value	No value	No value	Potential value	Potential value	Potential value	No value	No value
AESTHETIC QUALITY	Not pleasing	Moderately pleasing	Moderately pleasing	Moderately pleasing	Moderately pleasing	Not pleasing	Not pleasing	Not pleasing	Not pleasing	Moderately pleasing	Not pleasing	Not pleasing

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APPENDIX 9.2.

WETLAND AREAS
by Drainage System and Wetland Unit

WETLAND L-1

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	1.4 ACRES
TAX LOTS:	T.12S-R.04W-S.01-00-00300, -00301, 00302, -00400
LOCATION:	NORTH OF HIGHWAY 34
FIELD DATES:	2/27/02
SAMPLING POINT #S:	37-40
VEGETATION COMMUNITY:	REED CANARY GRASS / JUNCUS
HYDROLOGY:	PRECIPITATION, SURFACE RUN-OFF, GROUNDWATER, LAKE CREEK
SOILS:	AMITY SILT LOAM, DAYTON SILT LOAM
COWARDIN CLASSIFICATION:	PEMd / PEM
HGM CLASSIFICATION:	RIVERINE FLOW THROUGH* / RIVERINE IMPOUNDING
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-1
WETLAND ACREAGE	1.4 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
~~ENHANCEMENT POTENTIAL~~	~~Little potential~~
EDUCATION	Potential use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 2/27/02
Data Sheet Numbers: SP 37-40
Investigator(s): Chad Hoffman and Colin McArthur

Wetland Mapping Code: **L-1**
Size (acres): 1.4
Cowardin Classification*: PEMd / PEM
%PSS: %PEM(d) 100% PFO:
HGM Classification**: RFT with RI areas

Location:

T-R-S: 12-04-01
Physical: North of Highway 34
Hydrologic Basin: Lake Creek South

Tax Lot(s):
-00300 -00400
-00301
-00302

Soils:

Mapped Series: (3) Amity Silt Loam, (33) Dayton Silt Loam

Hydrology:

Hydrologic Source: Lake Creek, Precipitation, Surface Runoff, Groundwater

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
			Reed Canary Grass (*Phalaris arundinacea*)
			Dagger-leaf Rush *(Juncus ensifolius)*
			Redtop Bentgrass (*Agrostis alba*)

Comments:

Drainage feature lined with Reed Canary Grass

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water
**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Chad Hoffman and Colin McArthur*
Normal circumstances exist on the site? yes
Is the site significantly disturbed (Atypical Situation?) NO
Is the area a potential Problem Area (If needed, explain on reverse)? NO

Date: 2/27/02
County: Linn
State: Oregon
Community ID:
Transect ID: T-2 /
Plot ID: SP 37

VEGETATION

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Agrostis alba	H	FAC	59	60					
*	Madia glomerata	H	FACU+	39	40					
	Epilobium sp.	H	N/A	02	2					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50%

Criterion Met? No

Remarks: Madia covers much of the area in Question

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water 0"
Depth to free water @ 6"
Depth to saturated soil @ surface

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks: Very Hummocky

SOILS

Map unit name (Series and phase) (3) Amity Silt Loam
Drainage class Somewhat poorly Drained
Taxonomy (subgroup) Fine, montmorillonitic, mesic Vertic Albaqualf
Field observations confirm mapped type?

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0 - 1/2"				Organics
1/2" - 4"	2.5 Y 3/2			Silty clay Loam
4" - 18"	2.5 Y 3/2	7.5 YR 5/6	Many, Medium, Distinct	Silty clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ ~~Histic epipedon~~
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ ~~High organic content in surface layer in sandy soils~~
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List Inclusions only
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? yes
Hydric soils present? yes

Remarks Area most likey was wet in the past, but roads, development has disconnected the area.

Is this sampling point within a wetland? No

CH

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Chad Hoffman and Colin McArthur*
Normal circumstances exist on the site? yes
Is the site significantly disturbed (Atypical Situation?) no
Is the area a potential Problem Area (If needed, explain on reverse)? no

Date: 2/27/02
County: Linn
State: Oregon
Community ID:
Transect ID: T-L1
Plot ID: SP 38

VEGETATION

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Phalaris arundinacea	H	FACW	100	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? yes

Remarks: ~25'-30' roadside drainage swale/impoundment water area

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water @ 8"
Depth to saturated soil @ 6"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? yes

Remarks:

SOILS

Map unit name (3) Amity Silt Loam
(Series and phase)
Taxonomy (subgroup) Fine, montmorillonitic, mesic Vertic Albaqualf

Drainage class Somewhat Poorly drained
Field observations confirm mapped type? No

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-1"				Organic Matter
1"-6"	2.5 Y 3/2			Silty Clay Loam
6"-18"	2.5 Y 4/2	7.5 Y/5 5/8	Many, Fine, Distinct	Silty Clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ ~~Histic epipedon~~
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ ~~High organic content in surface layer in sandy soils~~
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List — Inclusions only
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? yes Wetland hydrology present? yes Hydric soils present? yes	Remarks	Is this sampling point within a wetland?	yes

CH

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WETLAND DELINEATION DATA FORM

Project/Site:	Tangent LWI	Date:	2/27/02
Applicant/Owner:		County:	Linn
Investigators:	*Chad Hoffman and Colin McArthur*	State:	Oregon
Normal circumstances exist on the site?		Community ID:	
Is the site significantly disturbed (Atypical Situation?)		Transect ID:	T-L1-A
Is the area a potential Problem Area (If needed, explain on reverse)?		Plot ID:	SP 39

VEGETATION

w/in R-O-W northside at Highway 34

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Phalaris arundinacea	H	FACW	100	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No Remarks:

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Drainage class: Poorly Drained
Field observations confirm mapped type?
Taxonomy (subgroup): Fine, montmorillonitic, mesic, Typic Albaqualf

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-1"				Organics
1"-18"	10 YR 3/2			Silty Clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ ~~Histic epipedon~~
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ ~~High organic content in surface layer in sandy soils~~
- ☐ Organic streaking in sandy soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Remarks:

WETLAND DETERMINATION

Wetland vegetation present? yes Wetland hydrology present? No Hydric soils present? No	Remarks	Is this sampling point within a wetland?	No

CH

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WETLAND DELINEATION DATA FORM

Project/Site:	Tangent LWI	Date:	2/27/02
Applicant/Owner:		County:	Linn
Investigators:	*Chad Hoffman and Colin McArthur*	State:	Oregon
Normal circumstances exist on the site?	yes	Community ID:	
Is the site significantly disturbed (Atypical Situation?)	ND	Transect ID:	T-L1-A
Is the area a potential Problem Area (If needed, explain on reverse)?	yes	Plot ID:	SP 4D

VEGETATION

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Phalaris arundinacea	H	FACW	40	30					
*	Juncus ensifolius	H	FACW	33	25					
*	Agrostis alba	H	FAC	27	20					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? yes Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water ½"
Depth to free water @ surface
Depth to saturated soil @ surface

Primary Wetland Hydrology Indicators:
- ☑ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? yes Remarks:

SOILS

Map unit name (33) Dayton Silt Loam — Drainage class Poorly Drained
(Series and phase) — Field observations confirm mapped type?
Taxonomy (subgroup) Fine, montmorillonitic, mesic Typic Albaqualf

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-0.5"				Organics
0.5"-6"	10 YR 3/2			Silty Clay Loam
6"-18"	10 YR 4/2	5 YR 5/8	Many, Medium, Distinct	Silty Clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? yes Remarks:

WETLAND DETERMINATION

Wetland vegetation present? yes Wetland hydrology present? yes Hydric soils present? yes	Remarks	Is this sampling point within a wetland?	yes

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ - not listed
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C: no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present Heavy Traffic

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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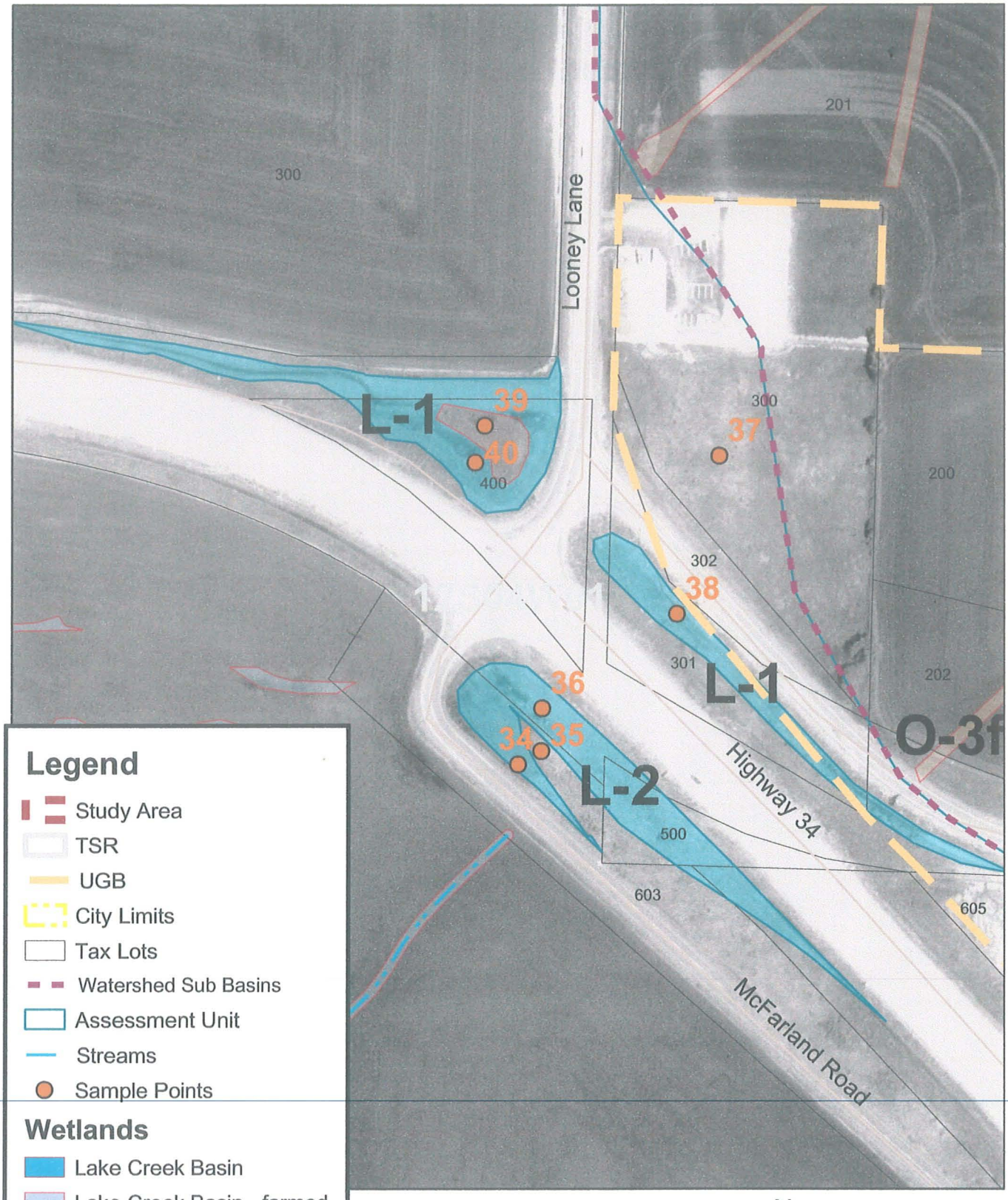

DETAIL MAP L-1
City of Tangent
October 2002

SATRE ASSOCIATES

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WETLAND L-2

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	0.9 ACRES
TAX LOTS:	T.12S-R.04W-S.01-00-00500, -00603
LOCATION:	SOUTH OF HIGHWAY 34
FIELD DATES:	7/13/01
SAMPLING POINT #S:	34-36
VEGETATION COMMUNITY:	COTTONWOOD / ROSE / SOFT RUSH
HYDROLOGY:	PRECIPITATION, SURFACE RUN-OFF, GROUNDWATER
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM
COWARDIN CLASSIFICATION:	PEM*
HGM CLASSIFICATION:	SLOPE / FLATS*
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-2
WETLAND ACREAGE	0.9 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Not pleasing

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WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/13/01
Data Sheet Numbers: Sp 34-36
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-2**
Size (acres): 0.9
Cowardin Classification*: PEM
%PSS: %PEM: 100 PFO:
HGM Classification**: S / F

Location:

T-R-S: 12-04-01
Physical: South of Highway 34
Hydrologic Basin: Lake Creek South

Tax Lot(s):
-00603
-00500

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam

Hydrology:

Hydrologic Source: Precipitation, Surface Runoff, and Groundwater

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Black Cottonwood (*Populus trichocarpa*) (saplings)	Nootka Rose (*Rosa nutkana*)		Soft Rush (*Juncus effusus*)
			Creeping Velvet Grass (*Holcus mollis*)
			Colonial Bentgrass (*Agrostis capillaris*)
			Vetch (*Vicia tetrasperma)*
			Reed Canary Grass (*Phalaris arundinacea*)

Comments:

Located between Highway 34 and southern access to McFarland Road.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
) normal circumstances exist on the site? Yes
he site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 7/13/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-22
Plot ID: SP 34

VEGETATION

Just S. of Hwy 34 & N. of McFarland Rd

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
☆ Juncus effusus	H	FACW	44	40	Populus trichocarpa ★	S	FAC	40	20
☆ Rosa nutkana	S	FAC	60	30					
☆ Holcus mollis (?)	H	FACU	56	50					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 75%

Criterion Met? Yes — Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >10"
Depth to saturated soil >10"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes — Remarks: Bottom of road slope (McFarland)

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-10"	10YR 3/2	7.5YR 3/4	Many Coarse Distinct	Silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☑ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes — Remarks: Soils very dry

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

GEM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*

Date: 7/13/01
County: Linn
State: Oregon

normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Community ID:
Transect ID: T-L2
Plot ID: Sp 35

VEGETATION

35' N of Sp 34

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Rubus discolor	V	FACU	100	35					
	Agrostis capillaris	H	FAC	16	5					
*	Holcus lanatus	H	FAC	78	25					
	Lotus micranthus	H	NOL	6	2					
	Rosa nutkana	S	FAC	100	10					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50 %

Criterion Met? No Remarks: Marginal

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >10"
Depth to saturated soil >10"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No Remarks: Slightly higher than Sp 34

SOILS

Map unit name (Series and phase): (33) Dayton Silt loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-10	10YR 3/2			silt loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? No Remarks: Soils very hard

WETLAND DETERMINATION

Wetland vegetation present? No - marginal
Wetland hydrology present? No
Hydric soils present? No

Remarks: Upland island

Is this sampling point within a wetland? No

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
Date: 7/13/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L2
Plot ID: SP 36

) normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

VEGETATION

Just S. of Hwy 35; 50' N of Sp35

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	
Lotus micranthus	H	NOL	4	5	Vicia tetrasperma	H	NOL	30	40	*
Deschampsia cespitosa	H	FACW	4	5	Agrostis capillaris	H	FAC	38	50	*
					Holcus lanatus	H	FAC	2	2	
* Phalaris arundinacea	H	FACW	15	20						
Rumex crispus	H	FAC+	7	10						

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 67 %

Criterion Met? Yes
Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >12"
Depth to saturated soil >12"

Secondary Wetland Hydrology Indicators
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes
Remarks: Base of road slope

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-12"	10 YR 3/2	2.5 YR 3/6	Many Medium Distinct	silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

HGM

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

→ South of Highway 34

Wildlife Habitat:

Q1: Number of Cowardin wetland classes
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: Dominant Veg
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: Cowardin class interspersion (edge effect)
A: High, B: Moderate, C: Low

Q4: Acres of unvegetated open water
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: How is wetland connected to another body of water?
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: How connected to other wetlands?
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: What is water quality condition upstream/adjacent to wetland?
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: What is dominant land use w/in 500' of wetland?
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q9b: Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Assessment:
Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
★ Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A

Q1: % of stream shaded by riparian veg:
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: What is physical characteristic of stream channel:
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: % of entire stream w/instream structures (natural)
A: >25%, B: 10-25%, C: <10%

Q4: Water quality condition of stream reaches upstream/adjacent to wetland
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: Dominant existing land use:
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: Are fish present in stream/lake/wetland pond
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: Does pond/lake contain deep and shallow water?
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition Not listed, but BPS
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored.

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public? heavy traffic
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?** no Other features
A: yes, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, C: developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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Sp 34, 35



View east towards Sp 34.



View north at Sp 35.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 13, 2001

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View southwest at Sp 36.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 13, 2001

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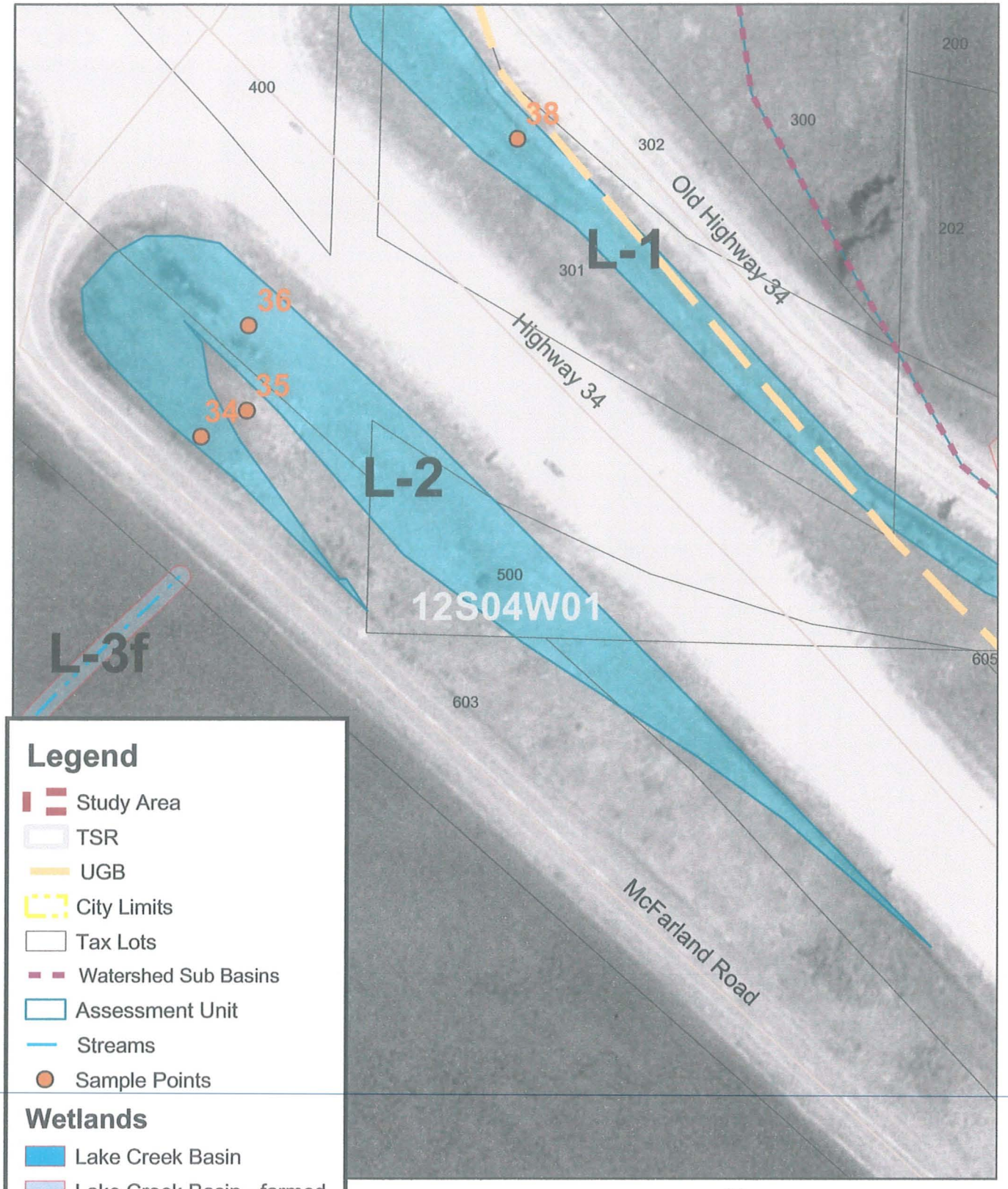

DETAIL MAP L-2
City of Tangent
October 2002

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WETLAND L-3f

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	16.0 ACRES
TAX LOTS:	T.12S-R.04W-S.01-00 -00100-00203, -00300, -00600, -00601, -00700, -00800, -01000
LOCATION:	NORTH OF NORTH LAKE CREEK DR. AND SOUTH OF HIGHWAY 34
FIELD DATES:	7/13/01; 2/27/02
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	FARMED WETLAND (GRASS PRODUCTION)
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WILLAMETTE SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf—(FARMED SURFACE DRAINAGES AND PONDED AREAS)
HGM CLASSIFICATION:	SLOPE / FLATS* WITH RIVERINE IMPOUNDING (FARMED SURFACE DRAINAGES)
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-3f
WETLAND ACREAGE	16.0 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

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WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/13/01, 02/27/02
Data Sheet Numbers: Off Site Determination
Investigator(s): Greta Murdoff, Chad Hoffman, and Colin McArthur

Wetland Mapping Code: **L-3f**
Size (acres): 16.0

Cowardin Classification*: PEMf
%PSS: %PEMf: 100 PFO:
HGM Classification**: S / F with RI

Location:

T-R-S: 12-04-01
Physical: North of North Lake Creek Drive and South of Highway 34
Hydrologic Basin: Lake Creek South

Tax Lot(s):

-00100	-00600	-00800
-00203	-00601	-01000
-00300	-00700	

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (151) Willamette Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Precipitation, Surface Runoff, Groundwater, Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
			Active Agricultural Field (Grass Production)

Comments:
Farmed surface drainages and ponded areas. Off site determination--hydrology determined through aerial photograph interpretation and off site field visits during the winter months.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** Farmed areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment:
Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
★ Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A Farmed Wetland Areas

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-5f

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition not listed, BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow/Farmed

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public?
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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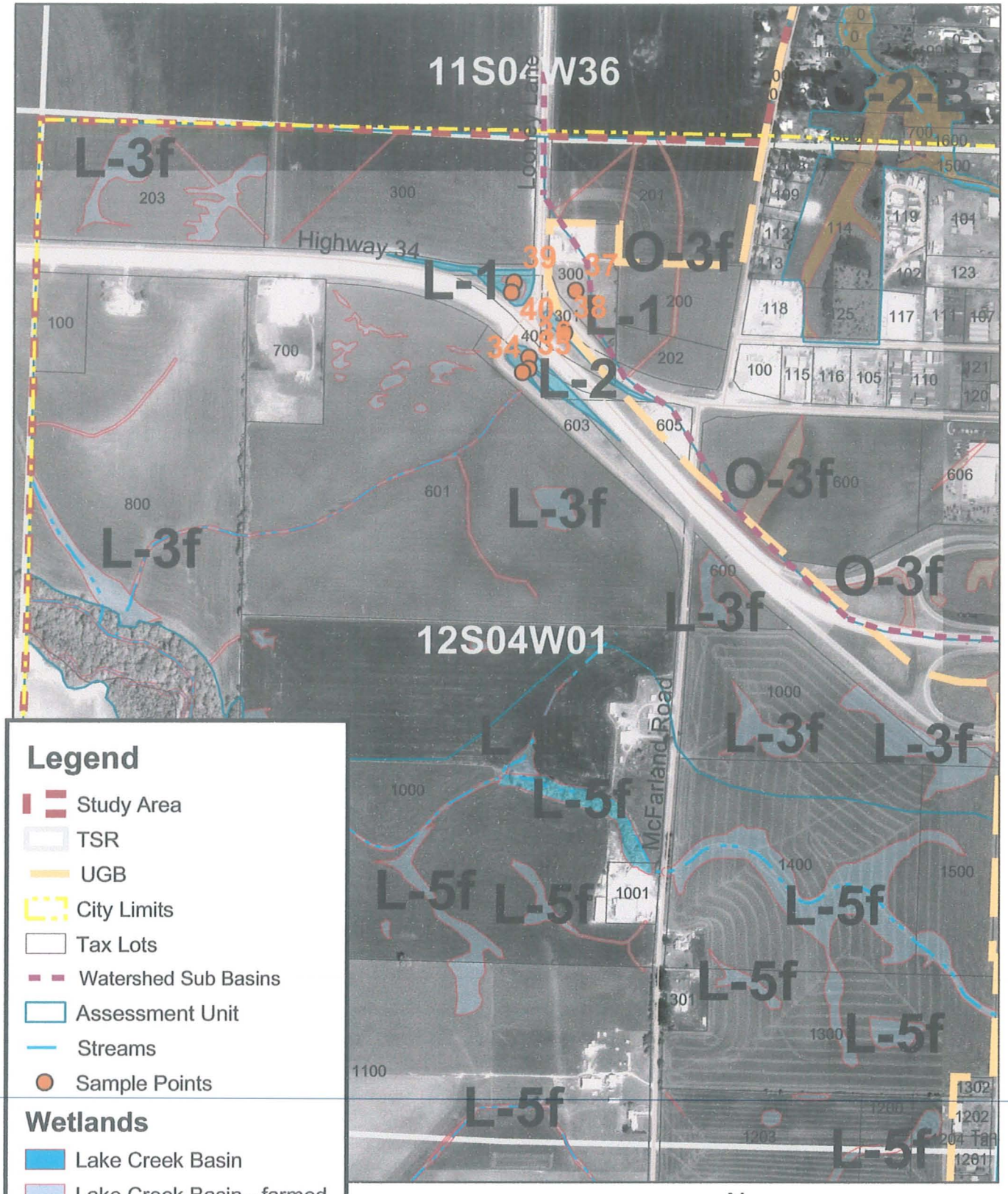

DETAIL MAP L-3f
City of Tangent
October 2002

SATRE ASSOCIATES

Satre Associates, P.C.
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Eugene, Oregon 97401 (541) 465-4722 fax

WETLAND L-4A

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	6.8 ACRES
TAX LOTS:	T.12S-R.04W-S.01-00-00200, 00601; T.12S-R.04W-S.01-00-00800, -01000, -01100; T.12S-R.04W-S.12-00-00101, -00102, -00402, -00800, -01000
LOCATION:	NORTH OF NORTH LAKE CREEK Dr.
FIELD DATES:	6/12/01
SAMPLING POINT #S:	17-23
VEGETATION COMMUNITY:	ASH, MEADOW FOXTAIL / RUSH; FARMED AREAS
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, BASHAW SILTY CLAY, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, MCBEE SILTY CLAY LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO* / PEM
HGM CLASSIFICATION:	RIVERINE FLOW-THROUGH* WITH RIVERINE IMPOUNDING
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-4A
WETLAND ACREAGE	6.8 acres
WILDLIFE HABITAT	Provides diverse habitat
~~FISH HABITAT~~	~~Provides diverse habitat~~
WATER QUALITY	Intact
HYDROLOGIC CONTROL	Intact
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Moderate pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 6/12/01
Data Sheet Numbers: Sp 17-23
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-4A**
Size (acres): 6.8
Cowardin Classification*: PFO / PEM / PEMf
%PSS: %PEM(f): 15 %PFO: 85
HGM Classification**: RFT with RI

Location:

T-R-S: 12-04-12, 12-04-01
Physical: North of North Lake Creek Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.04W-S.01-00-00200, -00601, -00800, -01000, -01100;
T.12S-R.04W-S.12-00-00101, -00102, -00402, -00800, -01000

Soils:

Mapped Series: (3) Amity Silt Loam, (8) Bashaw Silty Clay, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (67) McBee Silty Clay Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia)*		Himalayan Blackberry (*Rubus discolor)*	Cow-Parsnip (*Heracleum lanatum*)
			Meadow Foxtail (*Alopecurus pratensis*)
			Spreading Rush (*Juncus patens*)
			Reed Canary Grass (*Phalaris arundinacea*)
			Rough Bluegrass (*Poa trivialis*)

Comments:

Wetland areas include a small emergent wetland near ephemeral tributary and forested wetlands associated with the perennial water feature.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
Date: 6/12/01
County: Linn
State: Oregon
normal circumstances exist on the site? Yes
he site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No
Community ID:
Transect ID: T-L-4A
Plot ID: SP 17

VEGETATION

7' E of channel

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Phalaris arundinacea	H	FACW	100	100					
* Fraxinus latifolia	T	FACW	61	55					
* Quercus garryana	T	NOL	39	35					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC:

Criterion Met? Yes

Remarks: banks here are phalaris monoculture

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes

Remarks: On banks & channel

SOILS

Map unit name (Series and phase): (28) Conser silty clay loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-6"	10 YR 3/1			silty clay loam
6-18"	10 YR 4/1	7.5 YR 4/6	Many Medium Distinct	clay; OR 7's

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

YLM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*

Date: 6/12/01
County: Linn
State: Oregon

normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Community ID:
Transect ID: T- L-4A
Plot ID: SP18

VEGETATION

25' up the bank, From SP17

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Bare ground	-	-	-	90	Fraxinus latifolia	T	FACW	100	85 *
Heracleum lanatum	H	FAC+		10	Rubus discolor	V	FACW	100	25 *
Carex sp.	H	-		10	Rosa sp.	S	-	100	5

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50%

Criterion Met? Yes

Remarks: Ash Riparian Area

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks:

SOILS

Map unit name (Series and phase): (28) Conser Silty Clay Loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? No, light & loamy

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-2"	-			Organics
2-18"	10 YR 3/1	10 YR 2/2	Many, Coarse, Faint	Silt Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes Wetland hydrology present? No Hydric soils present? Yes	Remarks	Is this sampling point within a wetland?	NO

YAM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*

Date: 6/12/01
County: Linn
State: Oregon

normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) Yes - Agricultural
Is the area a potential Problem Area (If needed, explain on reverse)? No

Community ID:
Transect ID: T-L-4A
Plot ID: SD 19

VEGETATION

25' E of SD 18

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Fraxinus latifolia	T	FACW	100	30	Heracleum lanatum	H	FACT	5	5
*	Rubus discolor	V	FACU	100	20					
	Galium aparine	H	FACU	11	10					
*	Lolium multiflorum	H	NOL	63	60					
*	Poa trivialis	H	FACW	26	25					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50%

Criterion Met? No

Remarks: Edge of Ag field (& riparian area)

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water None
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks:

SOILS

Map unit name (Series and phase): (28) Conser Silty Clay Loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? No

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-8"	10 YR 3/2			silty clay loam
8-18"	10 YR 3/1			silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ ~~High organic content in surface layer in sandy soils~~
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? No
Hydric soils present? Yes - marginal

Remarks

Is this sampling point within a wetland? No

GLW

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
Date: 6/12/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-4A
Plot ID: SP20

normal circumstances exist on the site? Yes
he site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

VEGETATION

15' W of upbank from channel

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Fraxinus latifolia	T	FACW	100	100	Heracleum lanatum	H	FACT	4	5
*	Poa trivialis	H	FACW	65	70					
	Phalaris arundinacea	H	FACW	3	3					
	Lapsana communis	H	NI	14	15					
	Galium aparine	H	FACU	14	15					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes
Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes
Remarks:

SOILS

Map unit name (Series and phase): (28) Conser Silty clay loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10YR 3/1			silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks: Marginal - no redox, only slightly lower chroma

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? No
Hydric soils present? Yes - marginal
Remarks
Is this sampling point within a wetland? Yes

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
Date: 6/12/01
County: Linn
State: Oregon
normal circumstances exist on the site? Yes
ne site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No
Community ID:
Transect ID: T-L4A
Plot ID: Sp21

VEGETATION

On ridge between 2 channels

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Phalaris arundinacea	H	FACW	7	10	Fraxinus latifolia	T	FACW	100	70 *
* Heracleum lanatum	H	FACT	18	25	Rosa pisocarpa	S	FAC	78	35 *
* Galium aparine	H	FACU	32	45	Symphoricarpos albus	S	FACU	22	10
* Poa trivalis	H	FACW	43	60					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 80 %

Criterion Met? Yes

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☒ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks: Main channel is ≈ 20' away, smaller/connecting channel is ≈ 15' downslope

SOILS

Map unit name (Series and phase): (67) McBee Silty Clay Loam
Taxonomy (subgroup): Fine-silty, mixed, mesic Cumulic Ultic Haploxeroll
Drainage class: Moderately well drained
Field observations confirm mapped type? No, looks more like Woodburn

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0 - 14"	10YR 3/1			Silt Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List (Inclusions only)
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks: Marginal - very permeable, steep banks

WETLAND DETERMINATION

Wetland vegetation present? Yes Wetland hydrology present? No Hydric soils present? Yes - Marginal	Remarks	Is this sampling point within a wetland?	No

L4

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*

Date: 6/12/01
County: Linn
State: Oregon

normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Community ID: T-2-4A
Transect ID:
Plot ID: SD22

VEGETATION

On W bank of channel (now a remnant)

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Heracleum lanatum	N	FAC+	11	10					
* Alopecurus pratensis	N	FACW	26	25					
* Juncus patens	N	FACW	63	60					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes

Remarks: Near open field

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators: a few @ 1-4"
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks: Slightly lower than surrounding fields

SOILS

Map unit name (Series and phase) (28) Conser Silty Clay Loam
Taxonomy (subgroup) Fine, mixed, mesic Typic Argiaquoll
Drainage class Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-10"	10 YR 3/2			silty clay loam
10-18"	10 YR 3/1	5 YR 4/4	Few Med.-Fine Distinct	silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions >10"
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks: Marginal

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes - marginally

Remarks: It appears that the channel used to flow down this finger, but the main channel is now to the west ≈ 30'

Is this sampling point within a wetland? Yes

JLW

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*

Date: 6/12/01
County: Linn
State: Oregon

normal circumstances exist on the site? Yes
he site significantly disturbed (Atypical Situation?) No - but in mown area
Is the area a potential Problem Area (If needed, explain on reverse)? No

Community ID:
Transect ID: T-L-4A-N
Plot ID: SP 23

VEGETATION

20' E of SP22 in open field

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Festuca arundinacea	H	FAC-	100	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 0 %

Criterion Met? No

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water None
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks:

SOILS

Map unit name (Series and phase): (28) Conser Silty Clay Loam
Taxonomy (subgroup): Fine, Mixed, Mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10YR 3/1			silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☑ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks: Marginal

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? No
Hydric soils present? Yes - marginal

Remarks

Is this sampling point within a wetland? No

YCM

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L-4A

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: Number of Cowardin wetland classes
Rural: A: 3-4, B: 2, C: 1
Urban: (A) 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: Dominant Veg
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: Cowardin class interspersion (edge effect)
A: High, (B) Moderate, C> Low

Q4: Acres of unvegetated open water
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: (A) >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: How is wetland connected to another body of water?
(A): by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: How connected to other wetlands?
(A) W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: What is water quality condition upstream/adjacent to wetland?
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: What is dominant land use w/in 500' of wetland?
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q9a: Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q9b: Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide
(A): >40%, B: 10-40%, C: <10%

Assessment: * Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: % of stream shaded by riparian veg:
W. Oregon: (A) >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: What is physical characteristic of stream channel:
(A) natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: % of entire stream w/instream structures (natural)
A: >25%, (B) 10-25%, C: <10%

Q4: Water quality condition of stream reaches upstream/adjacent to wetland
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: Dominant existing land use:
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q6: Are fish present in stream/lake/wetland pond
A: salmon, trout, or sensitive sp some time of the year, (B) other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: Does pond/lake contain deep and shallow water?
A: yes, B: cannot determine, C: no

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L-4A

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A) surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A): yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
(A) high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
(A): >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B): Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B): 1+ stream upstr/adj in moderate condition not listed, BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A): yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A): yes, B: unable to determine, C; no

Q3: **Wetland acreage**
(A): >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, (C) unrestricted flow

Q5: **Dominant veg cover**
(A): Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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L-4A

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, (B) no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, (B) unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
(C) no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, (B) Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, (B) Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
(A): 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
(A): Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
(A) no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, (B) 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
(A): >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, (B) potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, (C) no

Q2: Visible hazards to public?
(A) no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, (B) do not meet A or C, C: lost/ not intact

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L-4A

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no
Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no
Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no
Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no
Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no
Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present
Q5: **Fishing allowed?**
A: yes, B: no, or not applicable
Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1
Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%
Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist
Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping
Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always
Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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View North of Sp 17.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
May 08, 2001

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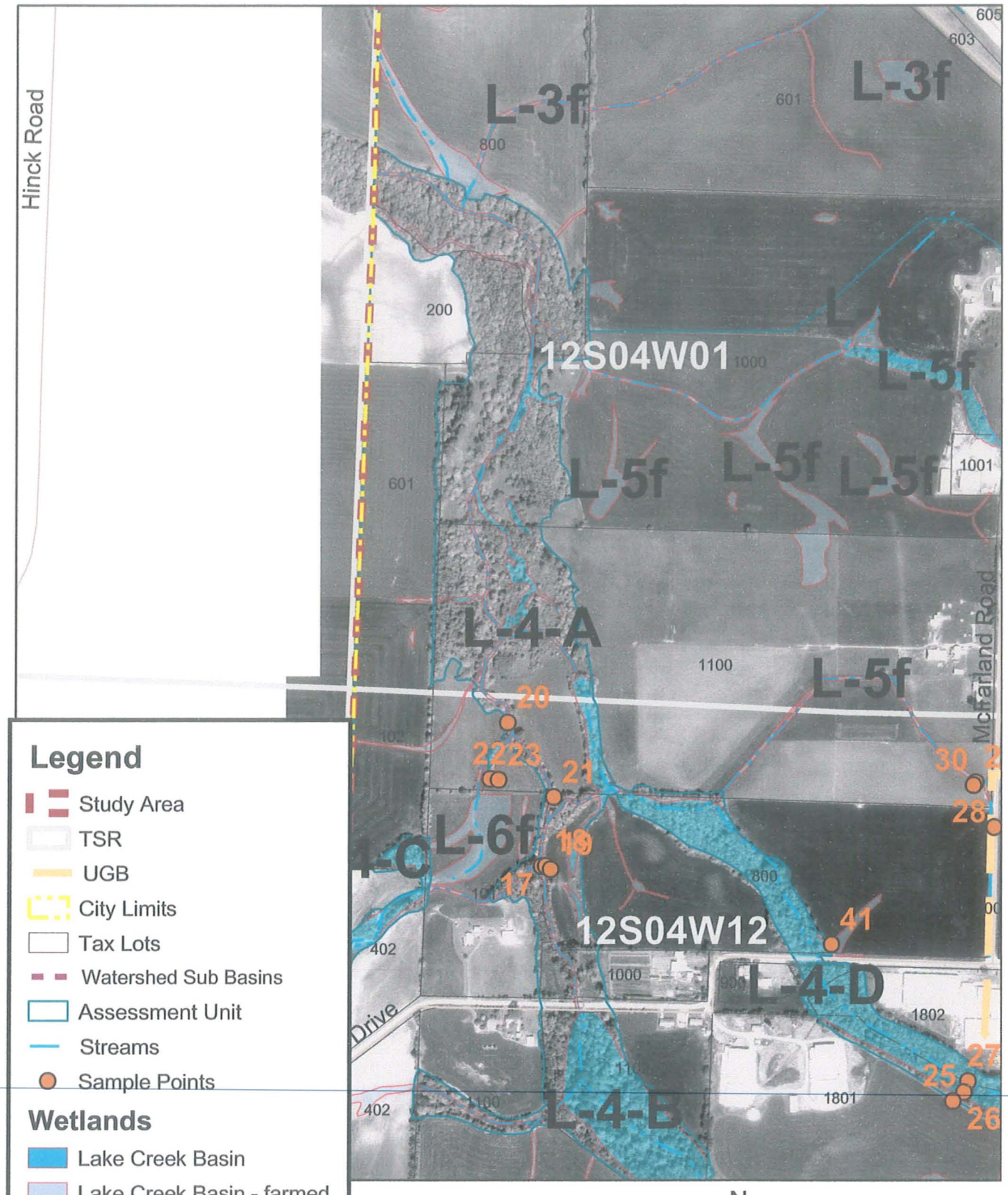

Legend

- Study Area
- TSR
- UGB
- City Limits
- Tax Lots
- Watershed Sub Basins
- Assessment Unit
- Streams
- Sample Points

Wetlands

- Lake Creek Basin
- Lake Creek Basin - farmed
- Oak Creek Basin
- Oak Creek basin - farmed

0 250 500 1,000 Feet

N

DETAIL MAP L-4-A
City of Tangent
October 2002

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WETLAND L-4B

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	30.8 ACRES
TAX LOTS:	T.12S-R.04W-S.11-00-00402 T.12S-R.04W-S.12-00-01100, -01102, -01200, -01801
LOCATION:	SOUTH OF NORTH LAKE CREEK DR.
FIELD DATES:	7/11/01
SAMPLING POINT #S:	33
VEGETATION COMMUNITY:	ASH
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, BASHAW SILTY CLAY, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO*
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* WITH RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-4B
WETLAND ACREAGE	30.82acres
WILDLIFE HABITAT	Provides diverse habitat
FISH HABITAT	Provides diverse habitat
WATER QUALITY	Intact
HYDROLOGIC CONTROL	Intact
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Moderately pleasing

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WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/11/01
Data Sheet Numbers: Sp 33
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-4B**
Size (acres): 30.8
Cowardin Classification*: PFO
%PSS: %PEM: %PFO: 100
HGM Classification**: RI with RFT

Location:

T-R-S: 12-02-11; 12-04-12
Physical: South of North Lake Creek Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.04W-S.11-00-00402
T.12S-R.04W-S.12-00-01100, -01102, -01200, -01801

Soils:

Mapped Series: (3) Amity Silt Loam, (8) Bashaw Silty Clay, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia)*		Trailing Blackberry (*Rubus ursinus)*	Nipplewort (*Lapsana communis)*
			Common Camas (*Camassia quamash)*
			Oregon Saxifrage (*Saxifraga oregana)*
			Creeping Jenny (*Lysimachia nummularia)*

Comments:

Large forested wetland surrounding Lake Creek.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
Date: 7/11/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-4B
Plot ID: SP 33

normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

VEGETATION

30' W of Ag. field w/in riparian area

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Fraxinus latifolia	T	FACW	100	100	Lysimachia nummularia	H	FACW	32	20 *
* Rubus ursinus	V	FAC	100	50	Perideridia gairdneri	H	FAC	4	2
Lapsana communis	H	NI	16	10					
* Camassia quamash	H	FACW	32	20					
Saxifraga oregana	H	FACW+	16	10					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 75%

Criterion Met? Yes
Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >14"
Depth to saturated soil >14"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes
Remarks:

SOILS

Map unit name (Series and phase): (8) Bashaw Silty Clay
Taxonomy (subgroup): Very-fine, montmorillonitic, mesic Typic Pelloxerert
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-14"	10YR 3/1	10YR 4/6	Few, Medium, Faint	Silty Clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes
Remarks
Is this sampling point within a wetland? Yes

Yem

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L-4B

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment:
Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-4B

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: ✓Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: ✓Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C: no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-4B

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, (B): no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, (B): unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
(C): no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, (B): Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, (B): Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
(A): Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
(A): 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
(A): Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
(A): no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
(A): >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
(A): >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, (B): potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential if Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, (C): no

Q2: Visible hazards to public?
(A): no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, (B): do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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View West from Sp 33, towards Lake Creek.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 11, 2001

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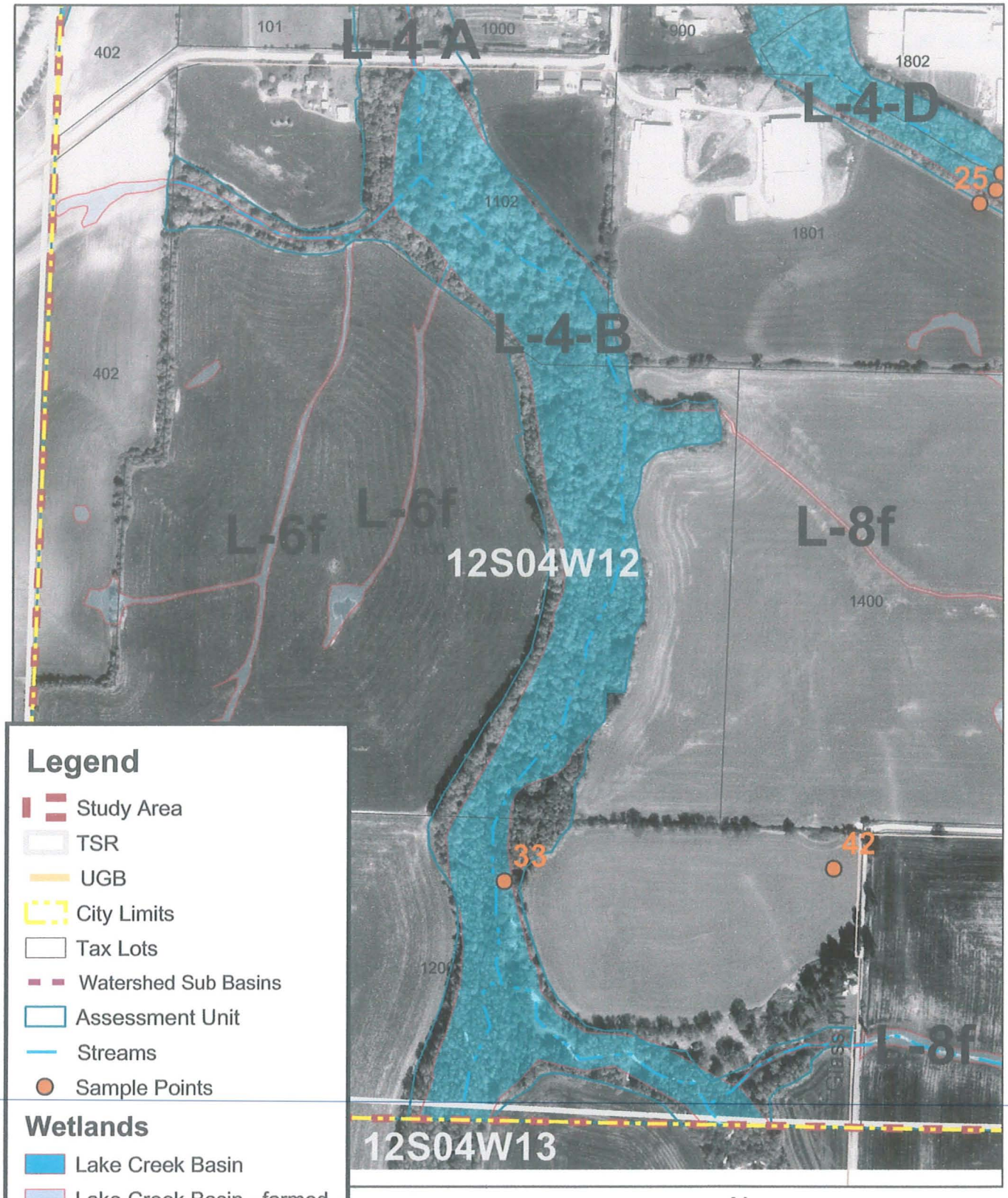

Legend

- Study Area
- TSR
- UGB
- City Limits
- Tax Lots
- Watershed Sub Basins
- Assessment Unit
- Streams
- Sample Points

Wetlands

- Lake Creek Basin
- Lake Creek Basin - farmed
- Oak Creek Basin
- Oak Creek basin - farmed

0 250 500 1,000 Feet

N

DETAIL MAP L-4-B
City of Tangent
October 2002

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WETLAND L-4C

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	1.9 ACRES
TAX LOTS:	T.12S-R.04W-S.11-00-00101, -00102, -00402
LOCATION:	NORTH OF NORTH LAKE CREEK Dr.
FIELD DATES:	7/11/01
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	ASH / HAWTHORNE /REED CANARY GRASS
HYDROLOGY:	LAKE CREEK
SOILS:	CONCORD SILT LOAM, CONSER SILTY CLAY LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO* / PEM
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* WITH RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM QUESTIONNAIRE
- MAP

WETLAND NUMBER	L-4C
WETLAND ACREAGE	1.9 acres
WILDLIFE HABITAT	Provides diverse habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Intact
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential recreation
AESTHETIC QUALITY	Moderately pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/11/01
Data Sheet Numbers: None (off-site)
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-4C**
Size (acres): 1.9
Cowardin Classification*: PFO / PEM
%PSS: %PEM: 20 %PFO: 80
HGM Classification**: RI with RFT

Location:

T-R-S: 12-04-11
Physical: North of North Lake Creek Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
101
102
402

Soils:

Mapped Series: (27) Concord Silt Loam, (28) Conser Silty Clay Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia)*	Douglas' Hawthorn (*Crataegus douglasii*)	Himalayan Blackberry (*Rubus discolor*)	Reed Canary Grass (*Phalaris arundinacea*)

Comments:

Off-site determination, no permission to enter---hydrology determined through aerial photograph interpretation and off site field visits during the winter months.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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L-4C offsite

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: Number of Cowardin wetland classes
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: Dominant Veg
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: Cowardin class interspersion (edge effect)
A: High, B: Moderate, C> Low

Q4: Acres of unvegetated open water
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: How is wetland connected to another body of water?
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: How connected to other wetlands?
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: What is water quality condition upstream/adjacent to wetland?
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: What is dominant land use w/in 500' of wetland?
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q9b: Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Assessment:
- Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
- Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
- Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: % of stream shaded by riparian veg:
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: What is physical characteristic of stream channel:
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: % of entire stream w/instream structures (natural)
A: >25%, B: 10-25%, C: <10%

Q4: Water quality condition of stream reaches upstream/adjacent to wetland
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: Dominant existing land use:
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: Are fish present in stream/lake/wetland pond
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: Does pond/lake contain deep and shallow water?
A: yes, B: cannot determine, C: no

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L-4C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPS
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-4C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?** but likely
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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L-4C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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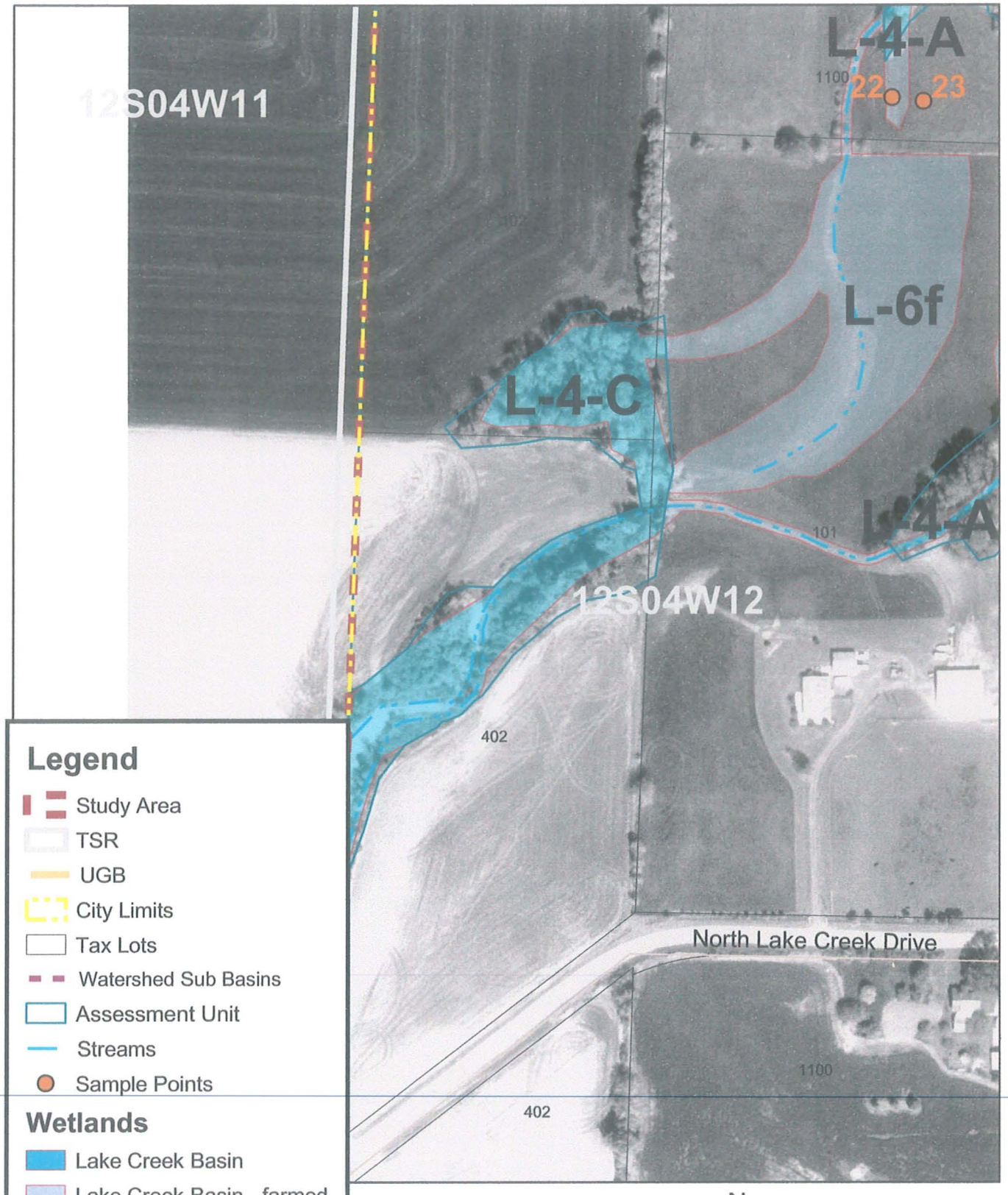

DETAIL MAP L-4-C
City of Tangent
October 2002

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WETLAND L-4D

DRAINAGE BASIN:	LAKE CREEK /SOUTH BASIN
WETLAND ACREAGE:	17.0 ACRES
TAX LOTS:	T.12S-R.04W-S.12-00-08000, -01801, -00900 T.12S-R.04W-S.12-AD-05300 T.12S-R.04W-S.01-00-01100
LOCATION:	NORTH AND SOUTH OF NORTH LAKE CREEK DR.
FIELD DATES:	6/29/01, 7/02/01
SAMPLING POINT #S:	25-27
VEGETATION COMMUNITY:	ASH; ROSE; SPEEDWELL; FARMED
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WAPATO SILTY CLAY LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO*
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* WITH RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- PREVIOUS DELINEATION INFORMATION
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-4D
WETLAND ACREAGE	17.0 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	Provides diverse habitat
WATER QUALITY	Intact
HYDROLOGIC CONTROL	Intact
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential recreation
AESTHETIC QUALITY	Moderately pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 6/29/01, 7/02/01
Data Sheet Numbers: Sp 25, 26, 27
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-4D**
Size (acres): 17.0
Cowardin Classification*: PFO
%PSS: %PEM: %PFO: 100
HGM Classification**: RI with RFT

Location:

T-R-S: 12-04-12, 12-04-12-AD, 12-04-01
Physical: North and South of N. Lake Creek Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.04W-S.12-00-08000, -01801, -00900;
T.12S-R.04W-S.12-AD-05300
T.12S-R.04W-S.01-00-01100

Soils:

Mapped Series: (3) Amity Silt Loam, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (99) Wapato Silty Clay Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia*)	Nootka Rose (*Rosa nutkana*)	Bittersweet Nightshade (*Solanum dulcamara*)	Rough Bluegrass (*Poa trivialis*)
		Creeping Jenny (*Lysimachia nummularia*)	Pennyroyal (*Mentha spicata*)
			American Brooklime (*Veronica americana*)
			California False Hellebore (*Veratrum californicum*)

Comments:

Large forested wetland surrounding a fork of Lake Creek.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

SATRE ASSOCIATES

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Eugene, Oregon 97401 (541) 465-4722 fax

WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman

Date: 6/29/01
County: Linn
State: Oregon

normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Community ID:
Transect ID: T-L-4D
Plot ID: SD 25

VEGETATION

At edge of riparian area/ag field

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Fraxinus latifolia	T	FACW	100	70					
*	Lolium multiflorum	H	NOL	100	50					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50 %

Criterion Met? No

Remarks: Marginally No

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water > 18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks:

SOILS

Map unit name (Series and phase): (28) Conser Silty Clay Loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-16"	10 YR 3/2			silty clay loam
16-18"	10 YR 3/1	7.5 YR 2.5/2	Common Fine Faint	silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? No

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? No
Hydric soils present? No

Remarks

Is this sampling point within a wetland? No

YCM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
Date: 6/29/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-4D
Plot ID: SP 26

normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

VEGETATION

70' E of SP27

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	
*	Fraxinus latifolia	T	FACW	100	100	Veronica americana	H	OBL	21	CO	*
	Solanum dulcamara	V	FAC+	43	15						
*	Poa trivialis	H	FACW	74	70						
*	Lysimachia nummularia	V	FACW	57	20						
	Geum macrophyllum	H	FACW-	5	5						

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes
Remarks: W/in forested area

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none present
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators many ea"
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes
Remarks:

SOILS

Map unit name (Series and phase): (28) Conser Silty Clay Loam
Drainage class: Poorly drained
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Field observations confirm mapped type?

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-14"	10 YR 3/1	7.5 YR 5/8	Common Medium Distinct	silty clay loam
14-18"	10 YR 4/1	7.5 YR 3/4	Many Coarse Distinct	silty clay loam
		7.5 YR 4/6	"	

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present?	Remarks	Is this sampling point within a wetland?
Yes		Yes
Wetland hydrology present? Yes		
Hydric soils present? Yes		

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 7/2/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-4-D
Plot ID: Sp 27

VEGETATION

50' E of Sp 26

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Fraxinus latifolia	T	FACW	100	75					
* Solanum dulcamara	V	FAC+	100	80					
Veronica americana	H	OBL	67	10					
Mentha spicata	H	OBL	33	5					
bare ground	—	—	—	10					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water 12"
Depth to saturated soil 5"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes Remarks: Near drainageway

SOILS

Map unit name (Series and phase): (28) Conser Silty Clay Loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-15"	10 YR 3/1			silty clay loam
15-18"	10 YR 4/1	7.5 YR 2.5/2	Few Medium Distinct	clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

GJCM

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WETLAND DELINEATION DATA FORM

Project/Site:	Tangent LWI	Date:	2/27/02
Applicant/Owner:		County:	Linn
Investigators:	*Chad Hoffman and Colin McArthur*	State:	Oregon
Normal circumstances exist on the site?	No, Farmed Wetland Field	Community ID:	
Is the site significantly disturbed (Atypical Situation?)		Transect ID:	T-L-4D
Is the area a potential Problem Area (If needed, explain on reverse)?		Plot ID:	SP 4/

VEGETATION

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Populus trichocarpa	T	FACW	100	10					
Bare Ground	—	—	—	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 0%

Criterion Met? No

Remarks: Tiled Soils Fenceline Species

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☑ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water None
Depth to free water @ 6"
Depth to saturated soil @ Surface

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☑ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks:

SOILS

Map unit name (Series and phase)
Taxonomy (subgroup)
Drainage class
Field observations confirm mapped type?

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10 YR 3/2	2.5 YR 4/6	Many, Fine, Distinct	Silty clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Wetland hydrology present? Hydric soils present?	Remarks: Farmed Wetland?	Is this sampling point within a wetland?	Yes

CH Farmed

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Oregon
John A. Kitzhaber, M.D., Governor

Division of State Lands
775 Summer Street NE
Salem, OR 97310-1337
(503) 378-3805
FAX (503) 378-4844
TTY (503) 378-4615

State Land Board
John A. Kitzhaber
Governor
Phil Keisling
Secretary of State
Jim Hill
State Treasurer

April 27, 1999

Scott Craig, PWS
W.E.T.
P.O. Box 632
Corvallis, OR 97339-0632

Re: Wetland Delineation for North Lake Creek Drive Realignment, Linn County
T12S R4W S12 TL 900, 1802; DSL Det. # 99-0119; GA 16996

Dear Scott:

I have reviewed your wetland delineation report for the above site and concur with your conclusions. The wetland area mapped in your report is subject to permit requirements of the state Removal-Fill Law. A state permit is required for fill or excavation of 50 cubic yards or more in the wetland area. Federal or local wetland permit requirements may apply as well. I understand that a permit application has been submitted (GA 16996).

Division approval of wetland delineation reports is based upon the information provided to us. Should additional information be brought to our attention or should site conditions change, we would consider the new information and re-evaluate the site and our jurisdictional determination as needed.

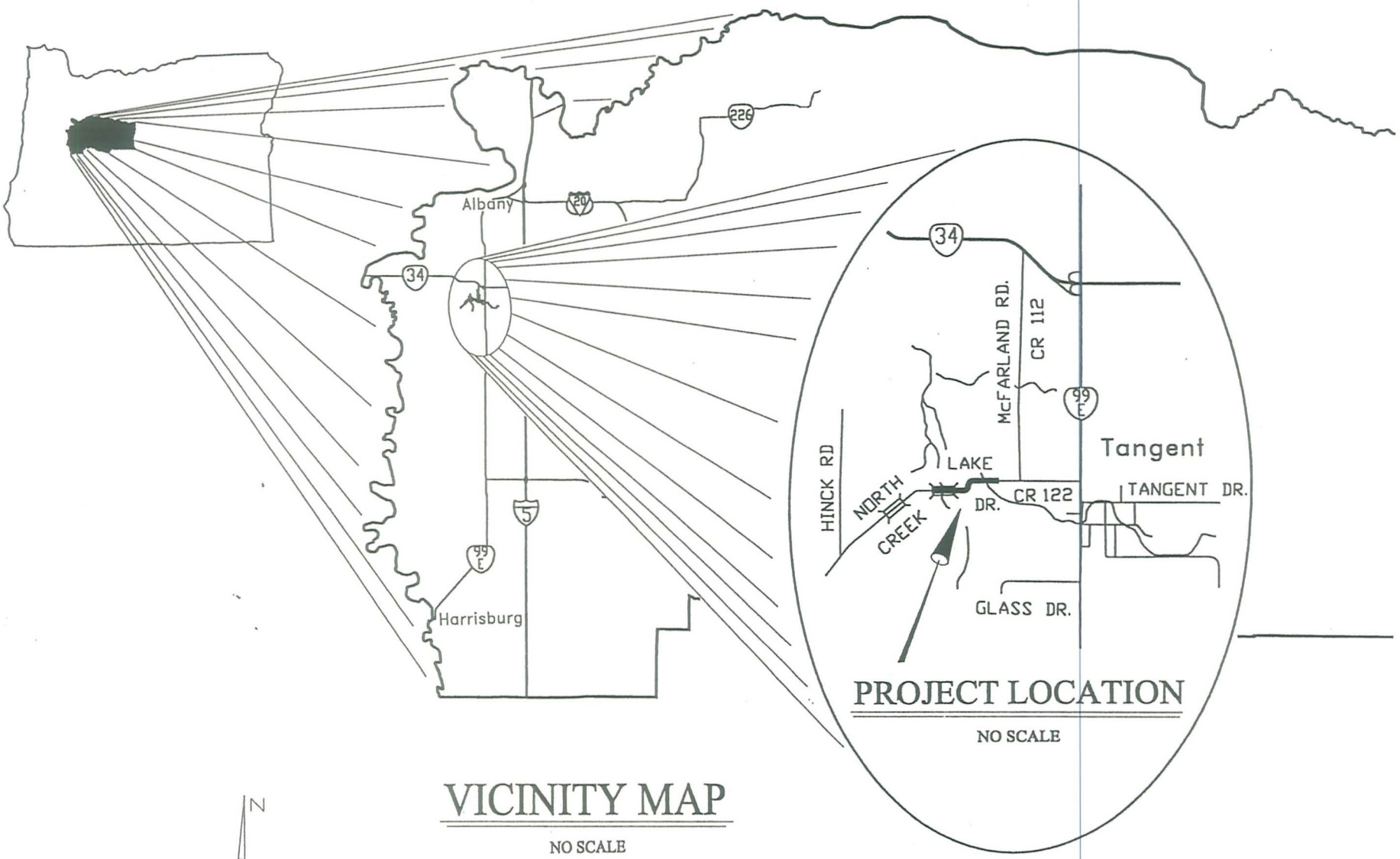
Thank you for your report. Please phone if you or your client has any questions.

Sincerely,

Janet C. Morlan

Janet C. Morlan, PWS
Wetlands Program Leader

cc: Ken Franklin, DSL
Jim Goudzwaard and Mary Headley, Corps of Engineers



VICINITY MAP

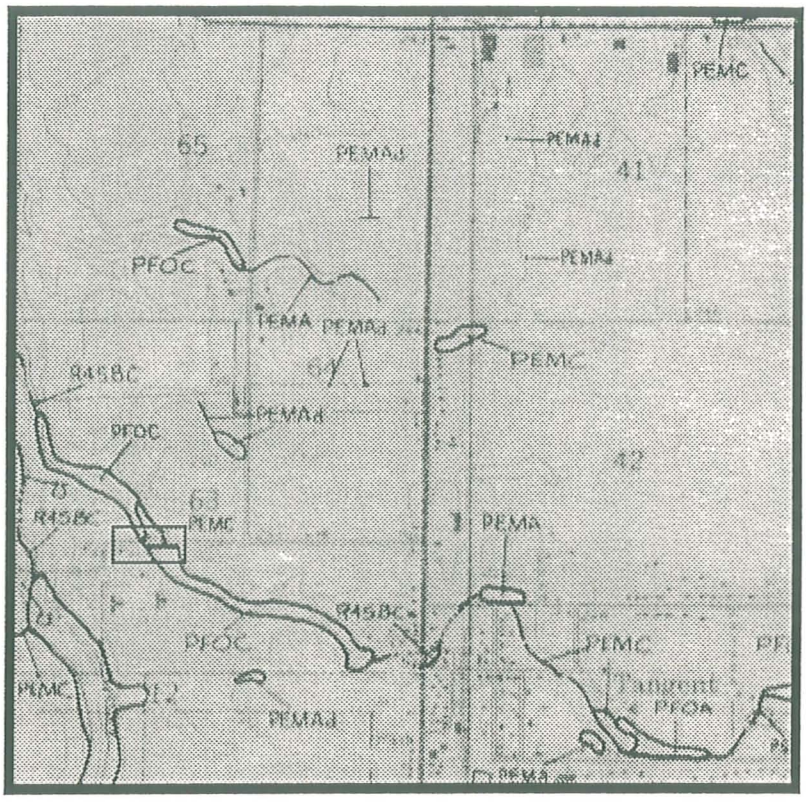
NO SCALE

N
W E
S

LINN COUNTY ENGINEER'S OFFICE 3010 FERRY STREET SW ALBANY, OREGON 97321

C.R. 122, N. LAKE CREEK. DR.
WETLANDS LOCATION

DRAWING NO. :	WETPERMIT.DWG
DATE:	3/15/99
DESIGNED BY:	M. HARDING
SHEET	01
HOR'Z	As Noted
VERT SCALE:	As Noted

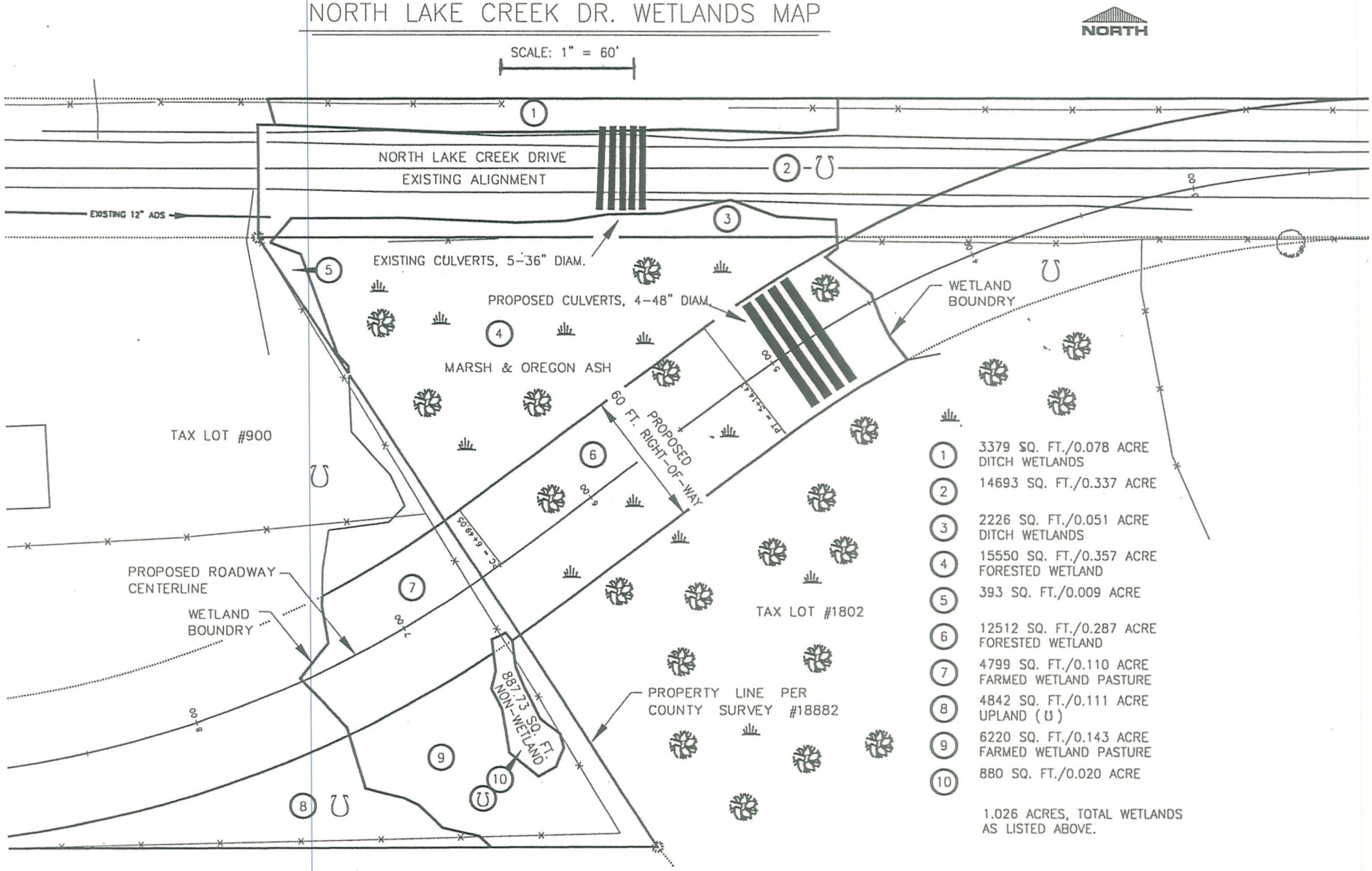


Scale: ≈1"=2,000'

NWI Map
Tangent 7.5 Quad
N. Lake Creek Dr. Road Realignment
Linn County, OR
WET Inc., March 1999

NORTH LAKE CREEK DR. WETLANDS MAP

SCALE: 1" = 60'



LINN COUNTY ENGINEER'S OFFICE
3010 FERRY STREET SW
ALBANY, OREGON 97321

C.R. 122, N. LAKE CREEK. DR. WETLANDS LOCATION

DRAWING NO. :	122WETLANDS.DWG
DATE:	3/15/99
DESIGNED BY:	M. HARDING
SHEET:	01
HORZ SCALE:	As Noted
VERT SCALE:	As Noted

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 6/29/01 and 7/02/01
Data Sheet Numbers: Sp 25, 26, 27
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: W2A
Size (acres): 18.5
Cowardin Classification*
%PSS: %PEM: %PFO: 100

Location:

T-R-S: 12-04-12, 12-04-01
Physical: North and South of North Lake Creek Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
120412008000, -01801, -00900
120412AD05300
12040101100

Soils:

Mapped Series: (28) Conser Silty Clay Loam

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Fraxinus latifolia	*Rosa nutkana*	*Solanum dulcamara*	*Poa trivialis*
		Lysimachia nummularia	*Mentha spicata*
			Veronica americana
			Veratrum californicum

Comments:

Large forested wetland surrounding a fork of Lake Creek.

*Cowardin Classifications:
FO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

SATRE ASSOCIATES

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WETLAND FUNCTION AND CONDITION SUMMARY TABLE
Tangent Local Wetland Inventory

Wetland Identification: **W2A**

Function	Assessment	Rationale
WILDLIFE HABITAT	Provides some wildlife habitat	Forested riparian area surrounded by agricultural fields.
FISH HABITAT	Provides diverse fish habitat	Forested riparian area provides shading, natural channel.
WATER QUALITY	Intact	Forested riparian area with seasonal flooding.
HYDROLOGIC CONTROL	Intact	Located within floodplain, seasonally flooded, natural channel interrupted only by culvert under North Lake Creek Drive.
SENSITIVITY TO FUTURE IMPACTS	Potentially sensitive	Forested vegetation, constricted by agricultural fields, likely using water for irrigation or drainage.
ENHANCEMENT POTENTIAL	High potential	Functions are degraded but not lost, there are a few areas of non-ag upland that could be restored to wetland.
EDUCATION	Potential use	Surrounded by private property, but a portion of the wetland can be viewed from North Lake Creek Drive.
RECREATION	Potential value	Possibilities for viewing forested wetland from road, but no public access, no viewing areas, surrounded by agricultural fields.
AESTHETIC QUALITY	Moderately pleasing	Natural area surrounded by agricultural fields.

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L-4D

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-41D

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPS
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-4D

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public?
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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Sp 25, 26



View east towards Sp 25.



View west from Sp 26.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
June 29, 2001

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View Northeast at Sp 27, near flowing water.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
June 29, 2001

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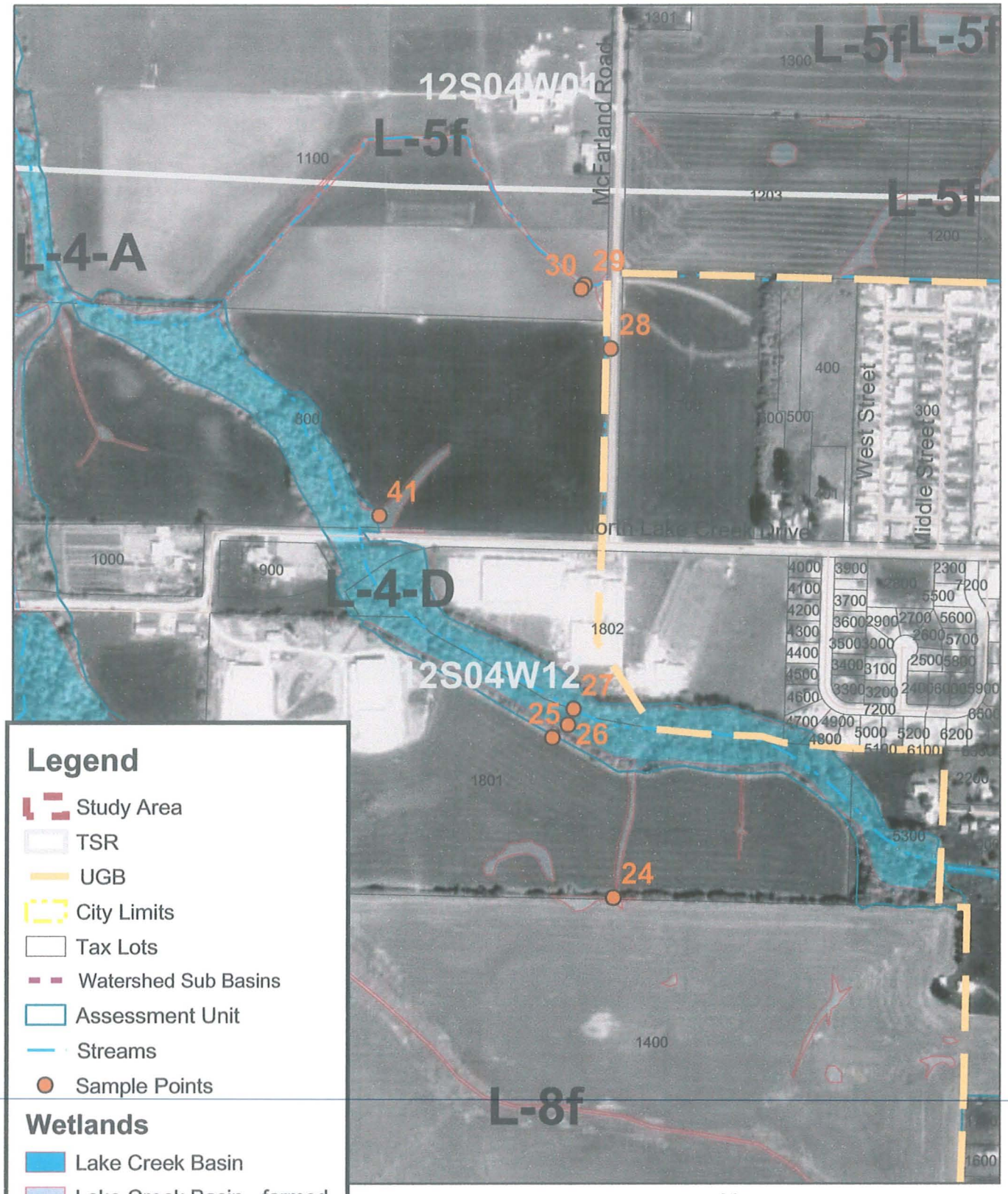

DETAIL MAP L-4D
City of Tangent
October 2002

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WETLAND L-5f

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	24.2 ACRES
TAX LOTS:	T.12S-R.04W-S.01-00-01000, -01001-01100, -01200, -01203, -01204, --01300, -01301, -01400, -01500; T.12S-R.04W-S12-00-00400, -00500, -00600, -00700, -00800
LOCATION:	WEST OF HIGHWAY 99E, NORTH OF NORTH LAKE CREEK ROAD
FIELD DATES:	7/02/01, 2/27/02
SAMPLING POINT #S:	28-30, 41
VEGETATION COMMUNITY:	FARMED WETLAND (GRASS PRODUCTION); ASH / BEDSTRAW
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WAPATO SILTY CLAY LOAM, WILLAMETTE SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf (FARMED)*; PFO
HGM CLASSIFICATION:	RIVERINE IMPOUNDING (FARMED SURFACE DRAINAGES)* WITH SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-5f
WETLAND ACREAGE	24.2 acres
WILDLIFE HABITAT	Provides some habitat
~~FISH HABITAT~~	~~N/A~~
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	Potential use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/02/01, 2/27/02
Data Sheet Numbers: SP 28, 29, 30, 41
Investigator(s): Greta Murdoff, Chad Hoffman, and Colin McArthur

Wetland Mapping Code: **L-5f**
Size (acres): 24.2
Cowardin Classification*: PEMf / PFO
%PSS: %PEMf: 92 %PFO: 08
HGM Classification**: RI with S / F

Location:

T-R-S: 12-04-01, 12-04-12
Physical: West of Highway 99 East and North of North Lake Creek Road
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.04W-S.01-00-01000, -01001-01100, -01200, -01203, -01204, --01300, -01301, -01400, -01500; T.12S-R.04W-S12-00-00400, -00500, -00600, -00700, -00800

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (99) Wapato Silty Clay Loam, (151) Willamette Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Precipitation, Surface Runoff, Groundwater, Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia*)		Cleavers (*Galium aparine*)	Active Agricultural Field (Grass Production)

Comments:

The PFO area is mapped on the NWI, but needs sampling points to confirm is current wetland status. The trees here are dead or dying, possibly due to surrounding agricultural activities influence on hydrology connection.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 7/2/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-5f
Plot ID: SO 28

VEGETATION

30' S of 2A-W2

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Carex densa	H	OBL	7	10	Agrostis alba	H	FAC	48	75 *
Parentucellia viscosa	H	FAC-	3	5	Holcus lanatus	H	FAC	10	15
Lolium multiflorum	H	NOL	3	5					
* Juncus effusus	H	FACW	19	30					
Vicia sp	H	-	10	15					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes | Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes | Remarks: Roadside drainage flowing to 2A-W2

SOILS

Map unit name (Series and phase): (3) Amity Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Vertic Albaqualf
Drainage class: Somewhat poorly drained
Field observations confirm mapped type? No

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-6"	10 YR 5/2	7.5 YR 4/6	Many Med Distinct	silty clay
6-18"	10 YR 5/1	7.5 YR 4/4	Many Coarse Distinct	silty clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List (Inclusions only)
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes | Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

JGM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 7/2/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-Sf
Plot ID: SD 29

VEGETATION

30' W of Road

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Holcus lanatus	H	FAC	9	10	Bedemannia syzigachne	H	OBL	5	5
Trifolium repens	H	FAC	5	5					
* Alopecurus geniculatus	H	FACW+	38	40					
* Agrostis alba	H	FAC	19	20					
* Veronica scutellata	H	OBL	24	25					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes | Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water 10"
Depth to saturated soil 10"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes | Remarks: W/in drainageway

SOILS

Map unit name (Series and phase): (99) Wapato Silty Clay Loam
Taxonomy (subgroup): Fine-silty, mixed, mesic Fluvaquentic Haplaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes, but more gleyed than typical

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-14"	10 YR 4/1	10 YR 5/6	Many Med. Distinct	silty clay loam
14-18"	10 YR 5/2	10 YR 5/6	Many Med. Faint	silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☑ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes | Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

GEM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
Date: 7/2/01
County: Linn
State: Oregon
normal circumstances exist on the site? Yes, but w/in Ag field
he site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No
Community ID:
Transect ID: T-L-SF
Plot ID: Sp 30

VEGETATION

20' upbank from Sp 29

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Lolium multiflorum	H	NOL	59	65					
	Gnaphallium palustre	H	FAC+	5	5					
*	bare ground	—	—	36	40					
	Rorippa curvisiliqua	H	FACW+	—	1					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 0 %

Criterion Met? No

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks: Steep banks

SOILS

Map unit name (Series and phase): (99) Wapato Silty Clay Loam
Taxonomy (subgroup): Fine-silty, mixed, mesic Fluvaquentic Haplaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-8"	10 YR 3/1	10 YR 5/4	Common Coarse Distinct	Silty clay loam
8-18"	10 YR 3/1	7.5 YR 4/6	Common Fine Faint	silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ ~~Histic epipedon~~
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ ~~High organic content in surface layer in sandy soils~~
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? No
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? No

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WETLAND DELINEATION DATA FORM

Project/Site:	Tangent LWI	Date:	2/27/02
Applicant/Owner:		County:	Linn
Investigators:	*Chad Hoffman and Colin McArthur*	State:	Oregon
Normal circumstances exist on the site?		Community ID:	
Is the site significantly disturbed (Atypical Situation?)		Transect ID:	T-L-5
Is the area a potential Problem Area (If needed, explain on reverse)?		Plot ID:	SP 41

VEGETATION

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Ag field									
Bare Ground				100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC:

Criterion Met? N/A Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
- Depth of surface water none
- Depth to free water @ 18"
- Depth to saturated soil @ 11"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? yes Remarks:

SOILS

Map unit name (Series and phase): (3) Amity Silt Loam
Drainage class: Somewhat Poorly drained
Field observations confirm mapped type?
Taxonomy (subgroup): Fine, Montmorillonitic, mesic, Vertic Albaqualfs

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10YR 3/2	7.5YR 5/6	Many, Medium, distinct	Silty Clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List (Inclusions only)
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? yes Remarks:

WETLAND DETERMINATION

Wetland vegetation present? N/A Wetland hydrology present? yes Hydric soils present? yes	Remarks: Farmed Wetland	Is this sampling point within a wetland?	yes

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** Farmed Areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment:
Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPS
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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View west from McFarland Road.



View north at Sp 28, immediately west of McFarland Road.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 02, 2001

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View East from McFarland Road.



View west of McFarland Road (approximately 300' west).

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 02, 2001

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View West from McFarland Road.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 02, 2001

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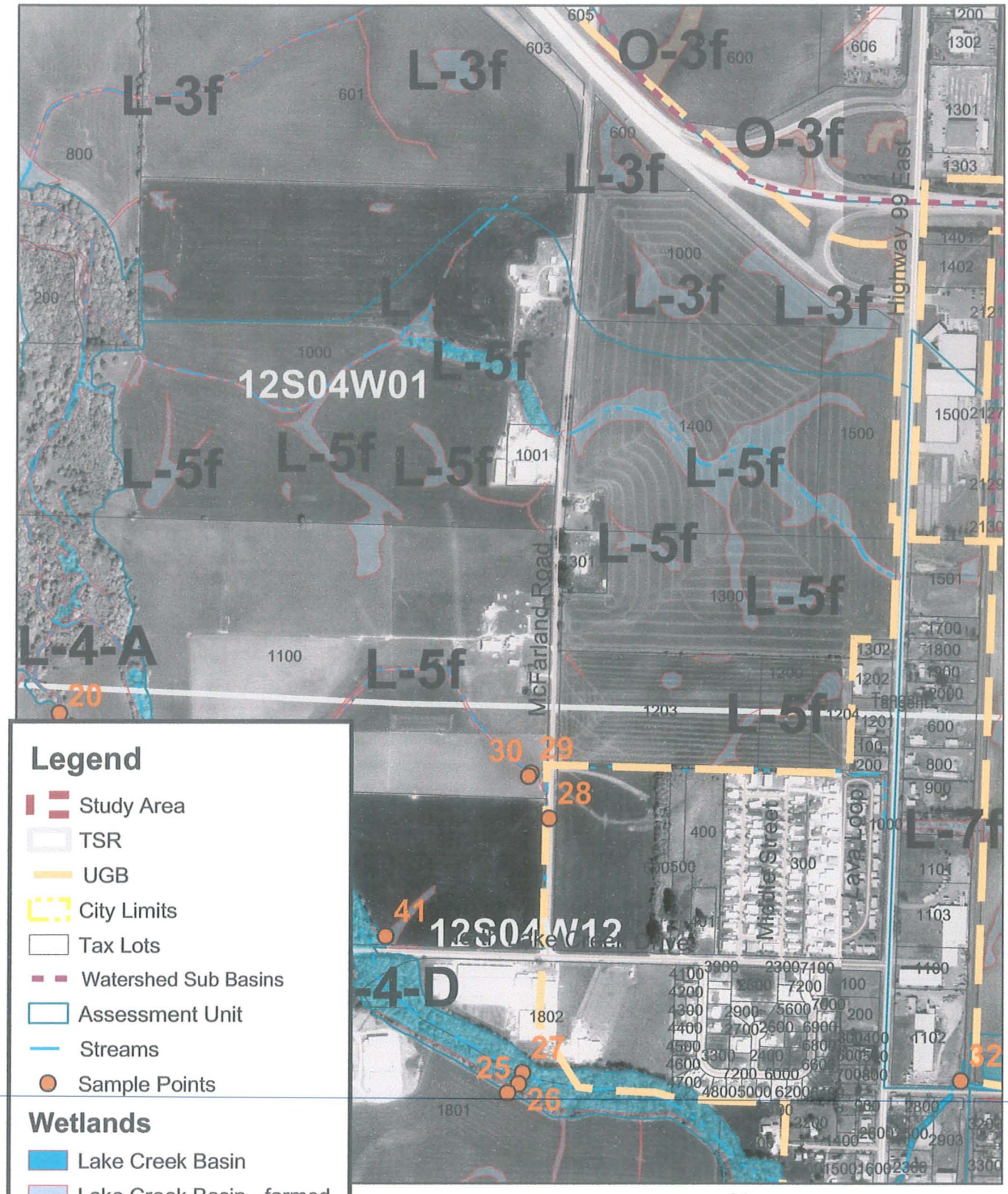

Legend

- Study Area
- TSR
- UGB
- City Limits
- Tax Lots
- Watershed Sub Basins
- Assessment Unit
- Streams
- Sample Points

Wetlands

- Lake Creek Basin
- Lake Creek Basin - farmed
- Oak Creek Basin
- Oak Creek basin - farmed

0 250 500 1,000 Feet

N

DETAIL MAP L-5f
City of Tangent
October 2002

Satre Associates, P.C.
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WETLAND L-6f

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	6.7 ACRES
TAX LOTS:	T.12S-R.04W-S.12-00-01000, -01100, -01102, -01200; T.12S-R.04W-S.11-00-00101, -00402
LOCATION:	NORTH OF NORTH LAKE CREEK DR., SOUTH OF HIGHWAY 34
FIELD DATES:	02/27/02
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	FARMED (GRASS PRODUCTION)
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, BASHAW SILTY CLAY, CONCORD SILT LOAM, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, MCBEE SILTY CLAY LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf (FARMED)
HGM CLASSIFICATION:	RIVERINE IMPOUNDING (FARMED SURFACE DRAINAGES)* WITH SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-6f
WETLAND ACREAGE	6.7
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 2/27/02
Data Sheet Numbers: None (off-site)
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-6f**
Size (acres): 6.7
Cowardin Classification*: PEMf
%PSS: %PEMf: 100 %PFO:
HGM Classification**: RI with S / F

Location:

T-R-S: 12-04-11, 12-04-12
Physical: North of N. Lake Creek Drive and South of Highway 34
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.04W-S.11-00-00101, -00402;
T.12S-R.04W-S.12-00-01000, -01100, -01102, -01200

Soils:

Mapped Series: (3) Amity Silt Loam, (8) Bashaw Silty Clay Loam, (27) Concord Silt Loam, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (67) McBee Silty Clay Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Precipitation, Surface Runoff, Groundwater, Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
			Active Agricultural Field (Grass Production)

Comments:
Off-site determination, no permission to enter---hydrology determined through aerial photograph interpretation and off site field visits during the winter months.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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L-10+

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Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** Farmed Areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A -- Farmed Wetland Areas

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

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A: no reaches listed as water quality limited
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Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-64

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
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A: Exclusive forest/open space, B: Agricultural, C: Developed

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A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

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A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

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A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-64

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
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Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
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Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow / Farmed

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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L-64

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
~~Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises~~
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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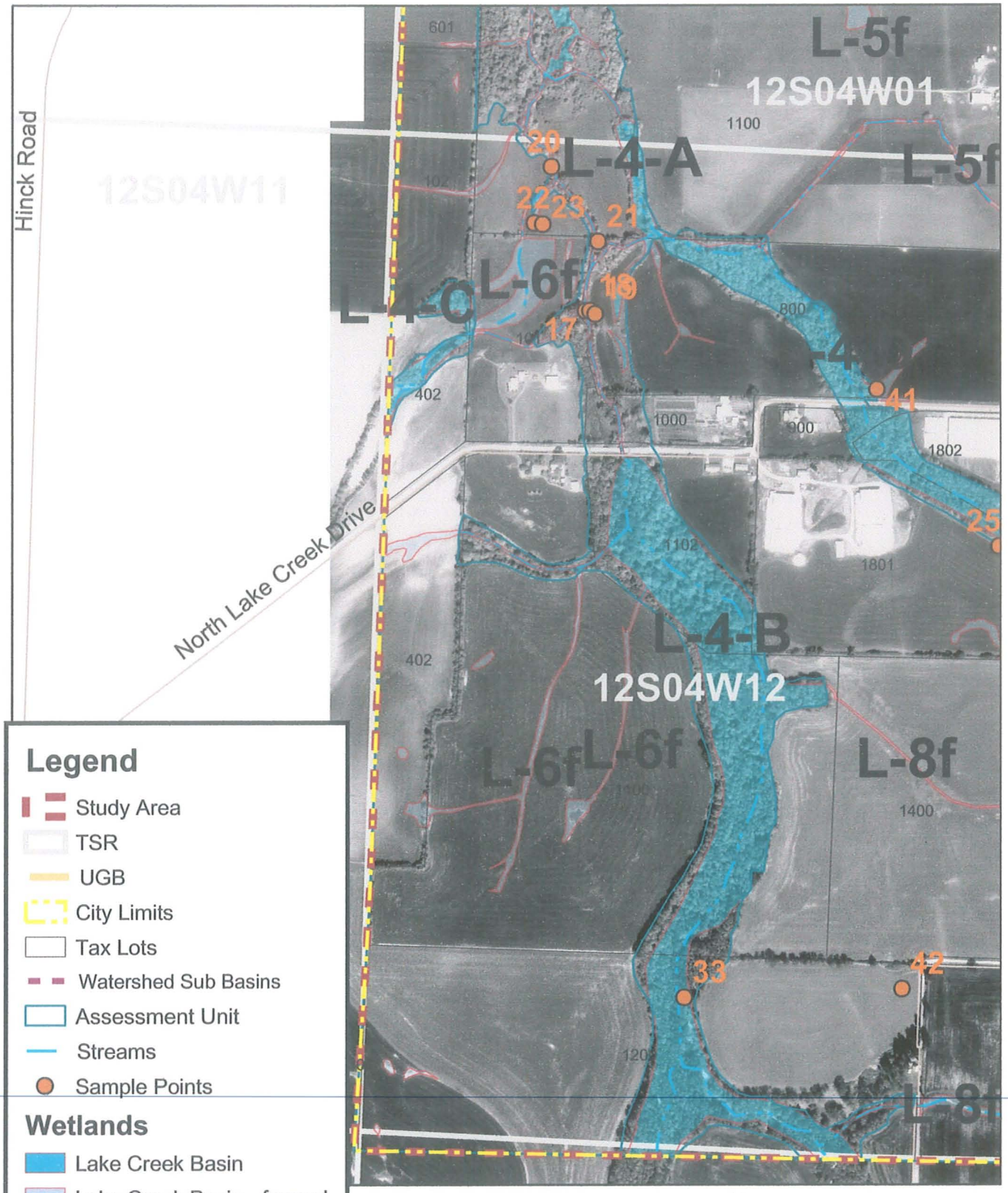

Legend

- Study Area
- TSR
- UGB
- City Limits
- Tax Lots
- Watershed Sub Basins
- Assessment Unit
- Streams
- Sample Points

Wetlands

- Lake Creek Basin
- Lake Creek Basin - farmed
- Oak Creek Basin
- Oak Creek basin - farmed

DETAIL MAP L-6f
City of Tangent
October 2002

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WETLAND L-7f

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	19.0 ACRES
TAX LOTS:	T.12S-R.03W-S.07-D-00100 T.12S-R.03W-S.07-00 -00101, -00102, -00200, -00300, -00302, -00303, -00409, -03000
LOCATION:	EAST OF HIGHWAY 99; NORTH (MOSTLY) AND SOUTH OF TANGENT DRIVE; NORTH OF OLD OAK DRIVE; SOUTH OF HIGHWAY 34
FIELD DATES:	7/02/01, 02/27/02
SAMPLING POINT #S:	4-5
VEGETATION COMMUNITY:	FARMED WETLAND (GRASS PRODUCTION)
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, DAYTON SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf (FARMED)
HGM CLASSIFICATION:	SLOPE / FLATS (FARMED)* WITH RIVERINE IMPOUNDING (FARMED SURFACE DRAINAGES) AND RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION AND AERIAL PHOTOGRAPH INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-7f
WETLAND ACREAGE	19.0 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/02/01, 2/27/02
Data Sheet Numbers: 4, 5
Investigator(s): Greta Murdoff, Chad Hoffman, and Colin McArthur

Wetland Mapping Code: **L-7f**
Size (acres): 19.0
Cowardin Classification*: PEMf
%PSS: %PEMf: 100 %PFO:
HGM Classification**: S / F with RI and RFT

Location:

T-R-S: 12-03-07-D, 12-03-07
Physical: East of Highway 99E, North (mostly) and South of Tangent Drive, North of Old Oak Drive and South of Highway 34
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.03W-S.07-D-00100
T.12S-R.03W-S.07-00 -00101, -00102, -00200, -00300, -00302, -00303, -00409, -03000

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (33) Dayton Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Precipitation, Surface Runoff, Groundwater, Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash *(Fraxinus latifolia)*			Active Agricultural Field (Grass Production)
Douglas' Hawthorn (*Crataegus douglasii*)			

Comments:

Tree species are rooted at the fencelines between agricultural fields

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
Date: 5/30/07
County: Linn
State: Oregon
normal circumstances exist on the site? Yes
he site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No
Community ID:
Transect ID: T-L-7F
Plot ID: SP 4

VEGETATION

At t-o-b on Reach AE 1; 20 N of SO 5

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Poa trivialis	H	FACW	45	50					
* Convolvulus arvensis	H	NOL	55	60					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50%

Criterion Met? Yes Remarks: Marginal

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No Remarks:

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-10"	10 YR 3/2			Silty clay Loam
10-18"	10 YR 4/1	5 YR 3/3 - 5/1	Common, medium, distinct	Silty clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes, marginal
Wetland hydrology present? No
Hydric soils present? Yes, Marginal
Remarks
Is this sampling point within a wetland? No

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site?
the site significantly disturbed (Atypical Situation?)
Is the area a potential Problem Area (If needed, explain on reverse)?

Date: 5/30/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-TF
Plot ID: SP 5

VEGETATION

W/in channel: 20' S of SP 4

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Polygonum punctatum?	H	OBL	85	100					
Eleocharis palustris	H	OBL	13	15					
Alisma plantago-aquatica	H	OBL	2	2					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes | Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators @ >1"
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes | Remarks: W/in channel

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-8"	10 YR 2/2	5 YR 4/6	Many Medium Distinct	Silty clay loam
8-18"	10 YR 4/1			clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes | Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** / Farmed Areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited Not listed
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow channelized + somewhat restricted by small culverts

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated? Probably
A: yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted? channel
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public?
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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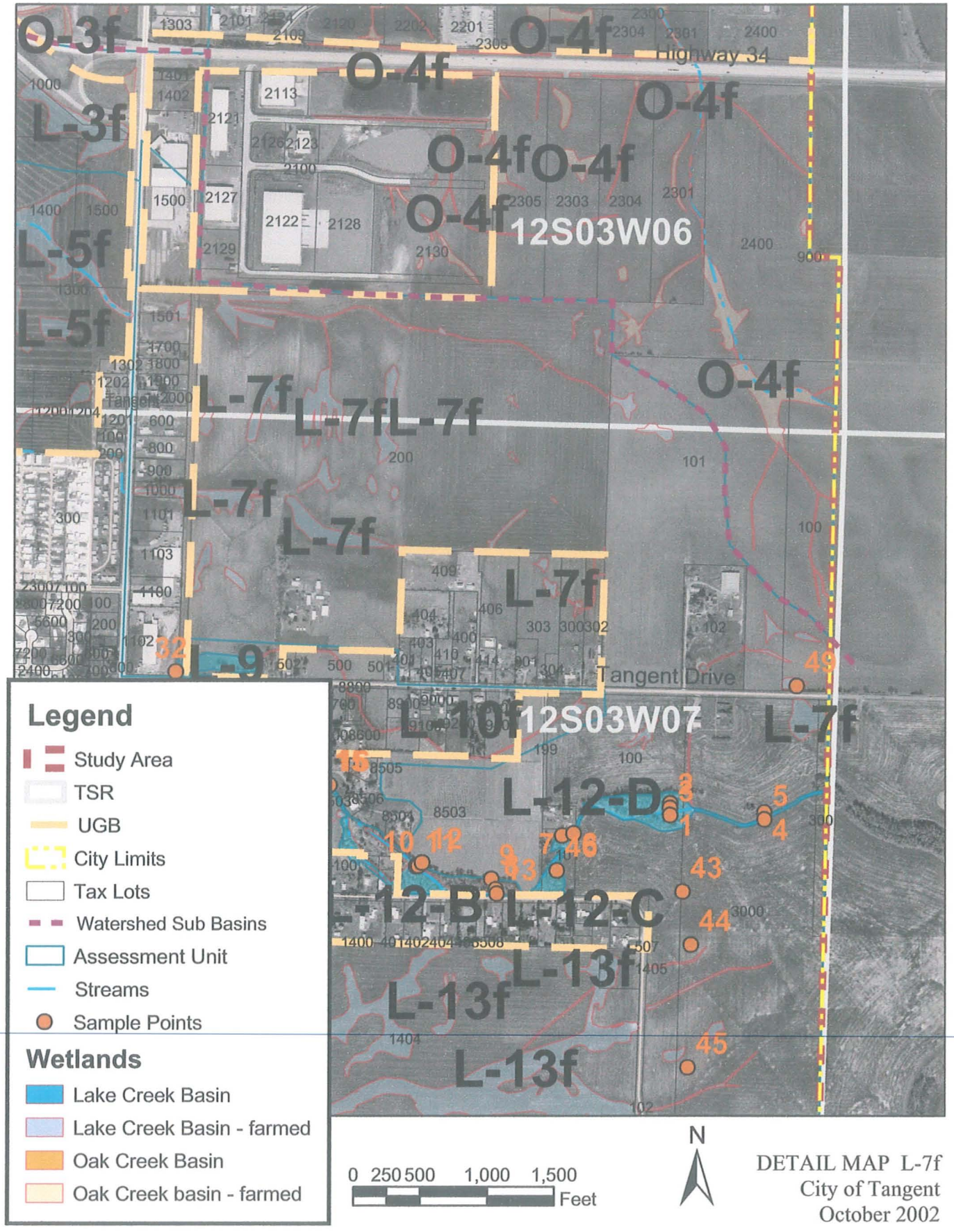

DETAIL MAP L-7f
City of Tangent
October 2002

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WETLAND L-8f

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	5.3 ACRES
TAX LOTS:	T.12S-R.04W-S.12-00-01200, -01300, -01400, -01801
LOCATION:	WEST OF HIGHWAY 99, SOUTH OF NORTH LAKE CREEK DRIVE, NORTH AND SOUTH OF GLASS DRIVE
FIELD DATES:	7/02/01, 02/27/02
SAMPLING POINT #S:	24, 42
VEGETATION COMMUNITY:	FARMED WETLAND (GRASS PRODUCTION);
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WILLAMETTE SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf (FARMED)
HGM CLASSIFICATION:	RIVERINE IMPOUNDING (FARMED SURFACE DRAINAGES) WITH SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-8f
WETLAND ACREAGE	5.3 acres
WILDLIFE HABITAT	Provides some habitat
~~FISH HABITAT~~	~~N/A~~
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/02/01, 02/27/02
Data Sheet Numbers: 24, 42
Investigator(s): Greta Murdoff, Chad Hoffman, and Colin McArthur

Wetland Mapping Code: **L-8f**
Size (acres): 5.3
Cowardin Classification*: PEMf
%PSS: %PEMf: 100 %PFO:
HGM Classification**: RI with S / F

Location:

T-R-S: 12-04-12
Physical: West of Highway 99E, South of N. Lake Creek Drive, and North and South of Glass Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
-01200, -01801
-01300,
-01400,

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (151) Willamette Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Precipitation, Surface Run-off, Groundwater, Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
			Active Agricultural Field (Grass Production)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water
**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/29/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-SF
Plot ID: SP 24

VEGETATION

At Fenceline btwn 2 Ag Fields

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Rubus ursinus	V	FACW	100	40					
* Crataegus douglasii	T	FAC	100	90					
Rosa nutkana	S	FAC-	100	5					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50%

Criterion Met? No Remarks: no

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water None
Depth to free water >14"
Depth to saturated soil >14"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No. Remarks: W/in area mapped on NWI
no hydrologic source

SOILS

Map unit name (Series and phase) (106a) Woodburn silt loam, 0-3% slopes
Drainage class Moderately well drained
Taxonomy (subgroup) Fine-silty, mixed, mesic Aquultic Argixeroll
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-14"	10YR 3/2			silt loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ ~~Histic epipedon~~
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ ~~High organic content in surface layer in sandy soils~~
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List (Inclusions only)
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? No Remarks:

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? No
Hydric soils present? No

Remarks: No evidence as to why this area is mapped as PEMAd on NWI; Surround by ag. fields, dd fenceline w/hawthorn, oaks & blackberry

Is this sampling point within a wetland? No

*Fenceline Species, Sp is adjacent to potential Ag. wetlands areas based on aerial-Photo-Interpretation

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Chad Hoffman and Colin McArthur*
Date: 2/27/02
County: Linn
State: Oregon
Community ID: T-L-BF
Transect ID:
Plot ID: SP 1/2

Are normal circumstances exist on the site? No
Is the site significantly disturbed (Atypical Situation?) Yes
Is the area a potential Problem Area (If needed, explain on reverse)? No

VEGETATION

SW (Refrence Characterization Point)

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Crataegus douglasii	S	FAC	100	10					
Bare Ground	–	–	–	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: N/A

Criterion Met? No

Remarks: Tilled Field

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks:

SOILS

Map unit name (Series and phase) (106A) Woodburn Silt Loam, 0-3% Slopes
Drainage class Moderately well-Drained
Taxonomy (subgroup) Fine-Silty, mixed, mesic Aquultic Argixeroll
Field observations confirm mapped type? No

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10 YR 4/2	10 YR 5/8	Few, Faint, Medium	Silty Clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ ~~Histic epipedon~~
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ ~~High organic content in surface layer in sandy soils~~
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List (Inclusions only)
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? N/A
Wetland hydrology present? No
Hydric soils present? Yes

Remarks: No Hydrology

Is this sampling point within a wetland? NO

CH

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L-8F

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** Farmed Areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
* Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A Farmed Area

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-8F

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: no species, B: other species present some time of the year, C: salmon, trout, or sensitive sp some time of the year

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C: no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-8F

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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L-8F

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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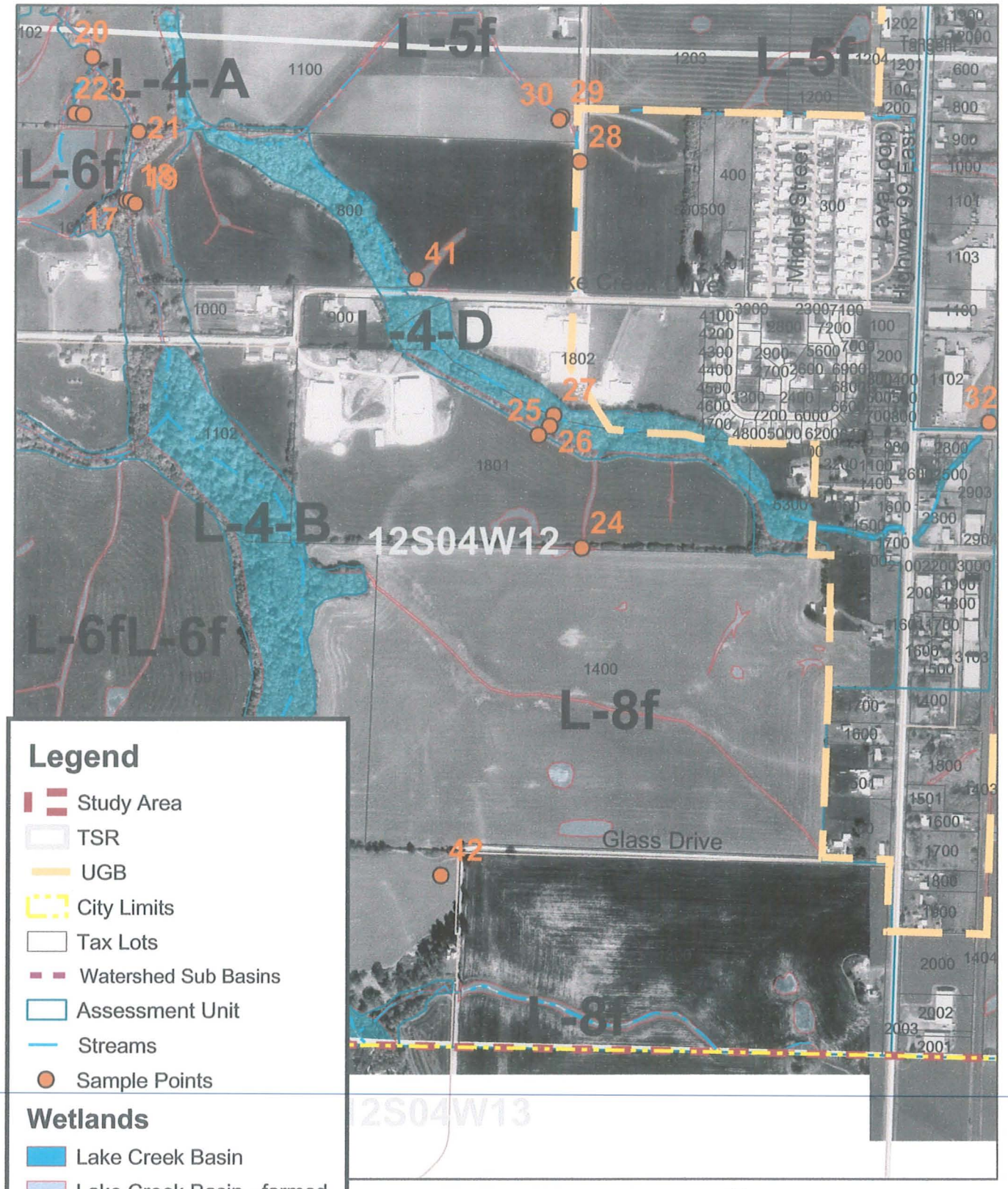

DETAIL MAP L-8f
City of Tangent
October 2002

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WETLAND L-9

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	1.4 ACRES
TAX LOTS:	T.12S-R.03W-S.07-00-00200
LOCATION:	EAST OF HIGHWAY 99 NORTH OF TANGENT DR.
FIELD DATES:	7/02/01
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	TUFTED HAIRGRASS
HYDROLOGY:	LAKE CREEK
SOILS:	CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEM
HGM CLASSIFICATION:	SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	**L-9**
WETLAND ACREAGE	1.4 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
~~**ENHANCEMENT POTENTIAL**~~	~~Moderate potential~~
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Moderately pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/02/01
Data Sheet Numbers: None (off-site)
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-9**
Size (acres): 1.4
Cowardin Classification*: PEM
%PSS: %PEM: 100 %PFO:
HGM Classification**: S / F

Location:

T-R-S: 12-03-07
Physical: East of Highway 99 and North of Tangent Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
-00200

Soils:

Mapped Series: (28) Conser Silty Clay Loam(3), (33) Dayton Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek, Precipitation, Surface Run-off, and Groundwater

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
	Douglas' Hawthorn (*Crataegus douglasii*)		Tufted Hair Grass (*Deschampsia cespitosa*)
			Grass field

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: Number of Cowardin wetland classes
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: Dominant Veg
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: Cowardin class interspersion (edge effect)
A: High, B: Moderate, C> Low

Q4: Acres of unvegetated open water
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: How is wetland connected to another body of water?
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: How connected to other wetlands?
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: What is water quality condition upstream/adjacent to wetland?
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: What is dominant land use w/in 500' of wetland?
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q9b: Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A - channel appears to have been moved to along roadside

Q1: % of stream shaded by riparian veg:
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: What is physical characteristic of stream channel:
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: % of entire stream w/instream structures (natural)
A: >25%, B: 10-25%, C: <10%

Q4: Water quality condition of stream reaches upstream/adjacent to wetland
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: Dominant existing land use:
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: Are fish present in stream/lake/wetland pond
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: Does pond/lake contain deep and shallow water?
A: yes, B: cannot determine, C: no

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L-9

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public?
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no
Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no
Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no
Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no
Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no
Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present
Q5: **Fishing allowed?**
A: yes, B: no, or not applicable
Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1
Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%
Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist
Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping
Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always
Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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View northeast from railroad tracks.



View east from railroad tracks.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 11, 2001

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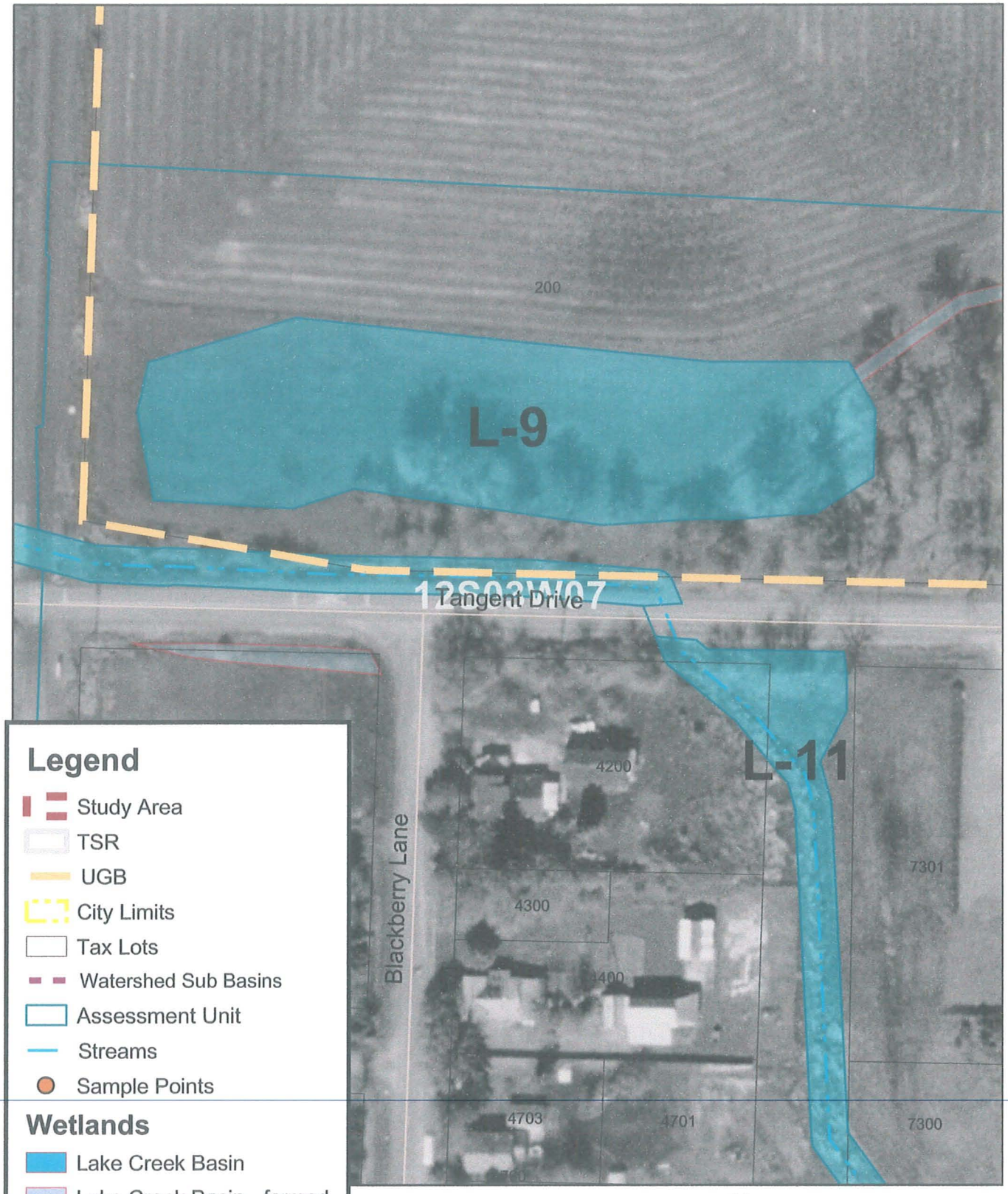

DETAIL MAP L-9
City of Tangent
October 2002

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WETLAND L-10f

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	1.0 ACRES
TAX LOTS:	T.12S-R.03W-S.07-C-08503, -08600, -08700, -08800, -09100, -09200, -09300, -09400 T.12S-R.03W-S.07-D-00100, -00199 T.12S-R.03W-S.07-00-00200, -00500, -00502
LOCATION:	EAST OF HIGHWAY 99; NORTH AND SOUTH OF TANGENT DRIVE
FIELD DATES:	7/02/01, 02/27/02
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	FARMED WETLAND (GRASS PRODUCTION)
HYDROLOGY:	LAKE CREEK
SOILS:	CONCORD SILT LOAM, DAYTON SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf (FARMED)
HGM CLASSIFICATION:	RIVERINE IMPOUNDING (FARMED SURFACE DRAINAGES)* WITH SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-10f
WETLAND ACREAGE	1.0 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
~~WATER QUALITY~~	~~Impacted or degraded~~
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	Potential use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/02/01, 02/27/02
Data Sheet Numbers: None (off-site)
Investigator(s): Greta Murdoff, Chad Hoffman, and Colin McArthur

Wetland Mapping Code: **L-10f**
Size (acres): 1.0
Cowardin Classification*: PEM(f)
%PSS: %PEMf: 100 %PFO:
HGM Classification**: RI with S / F

Location:

T-R-S: 12-03-07, 12-03-07-C, 12-03-07-D
Physical: East of Highway 99 and North and South of Tangent Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.03W-S.07-C-08503, -08600, 08700, -08800, 09100, -09200, -09300, -09400
T.12S-R.03W-S.07-D-00100, -00199
T.12S-R.03W-S.07-00-00200, -00500, -00502

Soils:

Mapped Series: (27) Concord Silt Loam, (33) Dayton Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
			Agricultural Field (Grass Production)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water
**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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L-104

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** Farmed Areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment:
Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
* Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-104

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
X Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A): surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A): yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, (B): Mod 60%, Low <60%

Q4: **Wetland area in acres**
(A): >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B): Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B): 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
X Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A): yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A): yes, B: unable to determine, C; no

Q3: **Wetland acreage**
(A): >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, (B): minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, (B): Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B): Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B): ag., C: forested or natural

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L-104

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public?
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 2 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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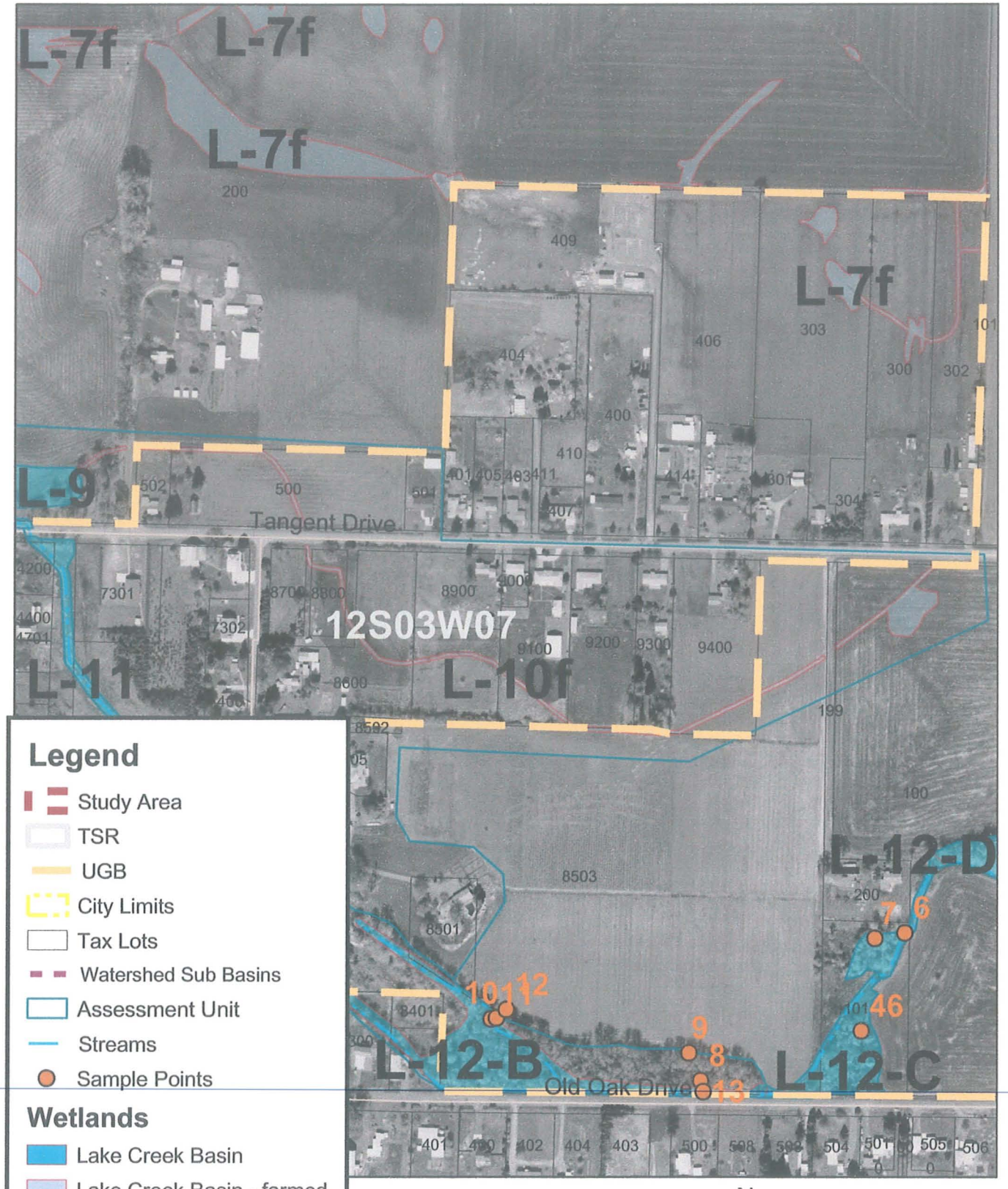

DETAIL MAP L-10f
City of Tangent
October 2002

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WETLAND L-11

DRAINAGE BASIN:	LAKE CREEK
WETLAND ACREAGE:	1.5 ACRES
TAX LOTS:	T.12S-R.03W-S.07-00-01102, -02300; T.12S-R.03W-S.07-C-02300, -02500, -02903, -07300
LOCATION:	EAST OF HIGHWAY 99, NEAT TANGENT DR.
FIELD DATES:	7/11/01
SAMPLING POINT #S:	32
VEGETATION COMMUNITY:	REED CANARY GRASS / SPEEDWELL
HYDROLOGY:	LAKE CREEK
SOILS:	CONSER SILTY CLAY LOAM
COWARDIN CLASSIFICATION:	PEMf (FARMED WETLAND)* / PEMd* / PEM (5%)
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* (INCLUDING FARMED SURFACE DRAINAGES)
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-11
WETLAND ACREAGE	1.5 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Impacted or degraded
~~HYDROLOGIC CONTROL~~	~~Impacted or degraded~~
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/11/01
Data Sheet Numbers: Sp 32
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-11**
Size (acres): 1.5
Cowardin Classification*: PEM, PEMf, PEMd
%PSS: %PEM: 100 %PFO:
HGM Classification**: RI

Location:

T-R-S: 12-03-07, 12-03-07-C
Physical: East of Highway 99, Neat Tangent Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.03W-S.07-00-01102, -02300;
T.12S-R.03W-S.07-C-02300, -02500, -02903, -07300

Soils:

Mapped Series: (28) Conser Silty Clay Loam

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
			Reed Canary Grass (*Phalaris arundinacea)*
			Pennyroyal (*Mentha pulegium*)
			American Brooklime (*Veronica americana*)
			Agricultural Field (Grass Production)

Comments:

Small emergent wetland in basin surrounded by road, railroad, and parking lot.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
Are normal circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 7/11/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-11
Plot ID: SP 32

VEGETATION

(Corner btwn R.R. & Tangent dr.

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Mentha pulegium	H	OBL	38	50					
Populus trichocarpa	T	FAC	100	5					
bare ground	–	–	–	10					
* Veronica americana	H	OBL	31	40					
* Phalaris arundinacea	H	FACW	31	40					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks: ~30' N of drainageway

SOILS

Map unit name (Series and phase) (28) Concer Silty Clay Loam
Taxonomy (subgroup) Fine, mixed, mesic Typic Argiaquoll
Drainage class Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-14"	10 YR 3/1	5 YR 4/6	Many Med. Distinct	silty clay loam
14-18"	10 YR 4/1			clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks: Some cobbles

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks: banks surrounding wetland are steep & rocky (no upland point)

Is this sampling point within a wetland? Yes

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, (B) Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, (B) Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, (C) <0.5 ac

Q5: **How is wetland connected to another body of water?**
(A) by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
(A) W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, (B) 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
★ Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, (C) <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, (B) portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, (C) <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, (C) no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A) surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A) yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, (B) Mod 60%, Low <60%

Q4: **Wetland area in acres**
(A) >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
(A) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, (B) minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, (B) Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
(A) yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?** likely
A: yes, (B) unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
(C) no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
(A) Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
(A) Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, (B) Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
(A) 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
(A) Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
(A) no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, (B) 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, (B) potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, (B) yes, with owners' permission, C: no

Q2: **Visible hazards to public?** near r.r. & roads
A: no, (B) 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, (B) do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, (B) no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
(A) yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, (B) no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
(A) yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, (C) no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, (C) no

Q4: **Wildlife habitat index:**
A: diverse habitat, (B) habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, (B) no, or not applicable

Q6: **Hunting allowed?**
A; yes, (B) no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, (C) 1

Q2: **How much of wetland visible from viewing area?**
(A) >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, (C) visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, (B) landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, (B) unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, (B) continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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Sp 32



View west, near Sp 32.



View northwest, west of railroad tracks.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 11, 2001

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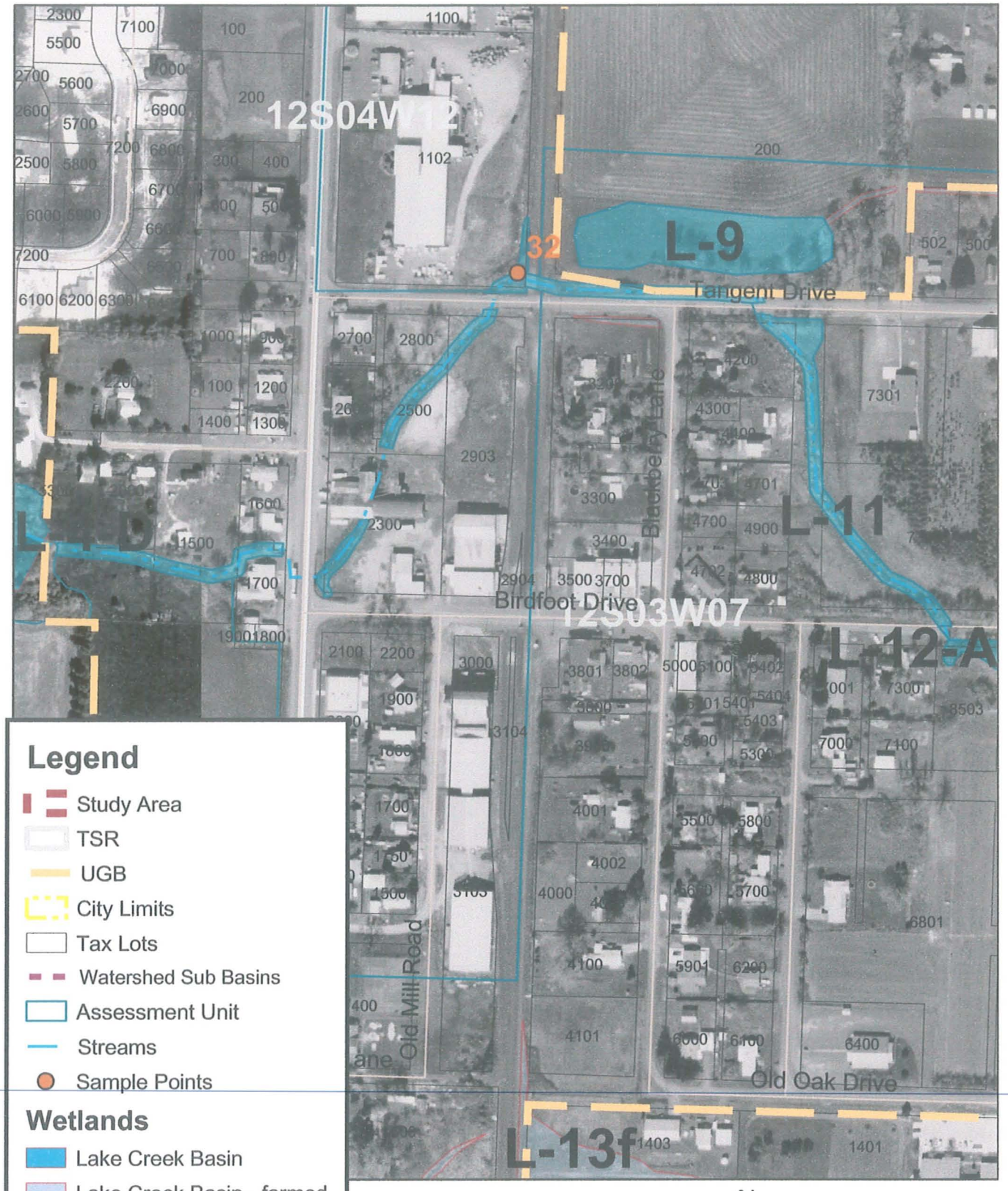

DETAIL MAP L-11
City of Tangent
October 2002

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WETLAND L-12A

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	0.6 ACRES
TAX LOTS:	T.12S-R.03W-S.07-C-08503
LOCATION:	SOUTH OF BIRDFOOT DR.
FIELD DATES:	6/06/01
SAMPLING POINT #S:	14-16
VEGETATION COMMUNITY:	ASH / TALL FESCUE
HYDROLOGY:	LAKE CREEK
SOILS:	DAYTON SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO* / PEMd
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* WITH RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-12A
WETLAND ACREAGE	0.6 acres
WILDLIFE HABITAT	Provides diverse habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Moderately pleasing

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WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 6/6/01
Data Sheet Numbers: Sp 14-16
Investigator(s): Greta Murdoff, Chad Hoffman and Mike Shippey

Wetland Mapping Code: **L-12A**
Size (acres): 0.6
Cowardin Classification*: PFO, PEMd
%PSS: %PEM: 20 %PFO: 80
HGM Classification**: RI with RFT

Location:

T-R-S: 12-03-07-C
Physical: South of Birdfoot Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
08503

Soils:

Mapped Series: (33) Dayton Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia)*	Clustered Rose (*Rosa pisocarpa*)		Rough Bluegrass (*Poa trivialis*)
	Snowberry (*Symphoricarpos albus*)		Tall Fescue (*Festuca arundinacea*)
			Stinging Nettle (*Urtica dioica*)
			Nipplewort (*Lapsana communis*)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water
**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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Eugene, Oregon 97401 (541) 465-4722 fax

WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/6/01
County: Linn
State: Oregon
Community ID: T-L-12A
Transect ID:
Plot ID: SP 15

VEGETATION

25' from channel

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Fraxinus latifolia	T	FACW	100	95	Poa trivialis	H	FACW	50	40 *
					Festuca arundinacea	H	FAC-	50	40 *

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 67

Criterion Met? Yes

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☑ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations: None @ this time
Depth of surface water
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☒ Water-stained leaves
- ☑ Local soil survey data
- ☒ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks:

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Drainage class: Poorly drained
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-12"				organics
12"-16"	10YR 3/1			Silty clay loam
16"-14"	10YR 4/1	7.5YR 3/4	Many Med. Distinct	Silty clay loam
14"-18"	10YR 4/1	7.5YR 3/4	Many Med. Distinct	silty clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☒ Reducing conditions
- ☒ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☒ Listed on Local Hydric Soils List
- ☒ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present?	Remarks	Is this sampling point within a wetland?
Wetland hydrology present? Yes		Yes
Hydric soils present? Yes		

MWS

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/6/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-12A
Plot ID: SP16

VEGETATION

40' West of SP15

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Fraxinus latifolia	T	FACW	100	15					
Poa annua	H	FAC	16	15					
Bare ground	-	-	-	20					
* Lawn grasses	H	-	56	50					
* Trifolium sp	H	-	28	25					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: NO

Criterion Met? No
Remarks: Lawn area

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☒ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes
Remarks:

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? No

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0 - 10"	10 YR 4/2	10 YR 3/4	Many Fine distinct	Silty clay Loam
10 - 18"	10 YR 4/1	10 YR 3/4	Many, coarse, distinct	Silty clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☒ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks: Moist throughout

Is this sampling point within a wetland? No

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: Number of Cowardin wetland classes
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: Dominant Veg
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: Cowardin class interspersion (edge effect)
A: High, B: Moderate, C> Low

Q4: Acres of unvegetated open water
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: How is wetland connected to another body of water?
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: How connected to other wetlands?
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: What is water quality condition upstream/adjacent to wetland?
A: no reaches listed as water quality limited not listed
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: What is dominant land use w/in 500' of wetland?
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q9b: Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Assessment: ☆ Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: % of stream shaded by riparian veg:
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: What is physical characteristic of stream channel:
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: % of entire stream w/instream structures (natural)
A: >25%, B: 10-25%, C: <10%

Q4: Water quality condition of stream reaches upstream/adjacent to wetland
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: Dominant existing land use:
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: Are fish present in stream/lake/wetland pond
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: Does pond/lake contain deep and shallow water?
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "a"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-12A 3

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 2 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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Sp 15, 16



View west at Sp 15, within forested area.



View west towards Sp 16 and 15.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
June 06, 2001

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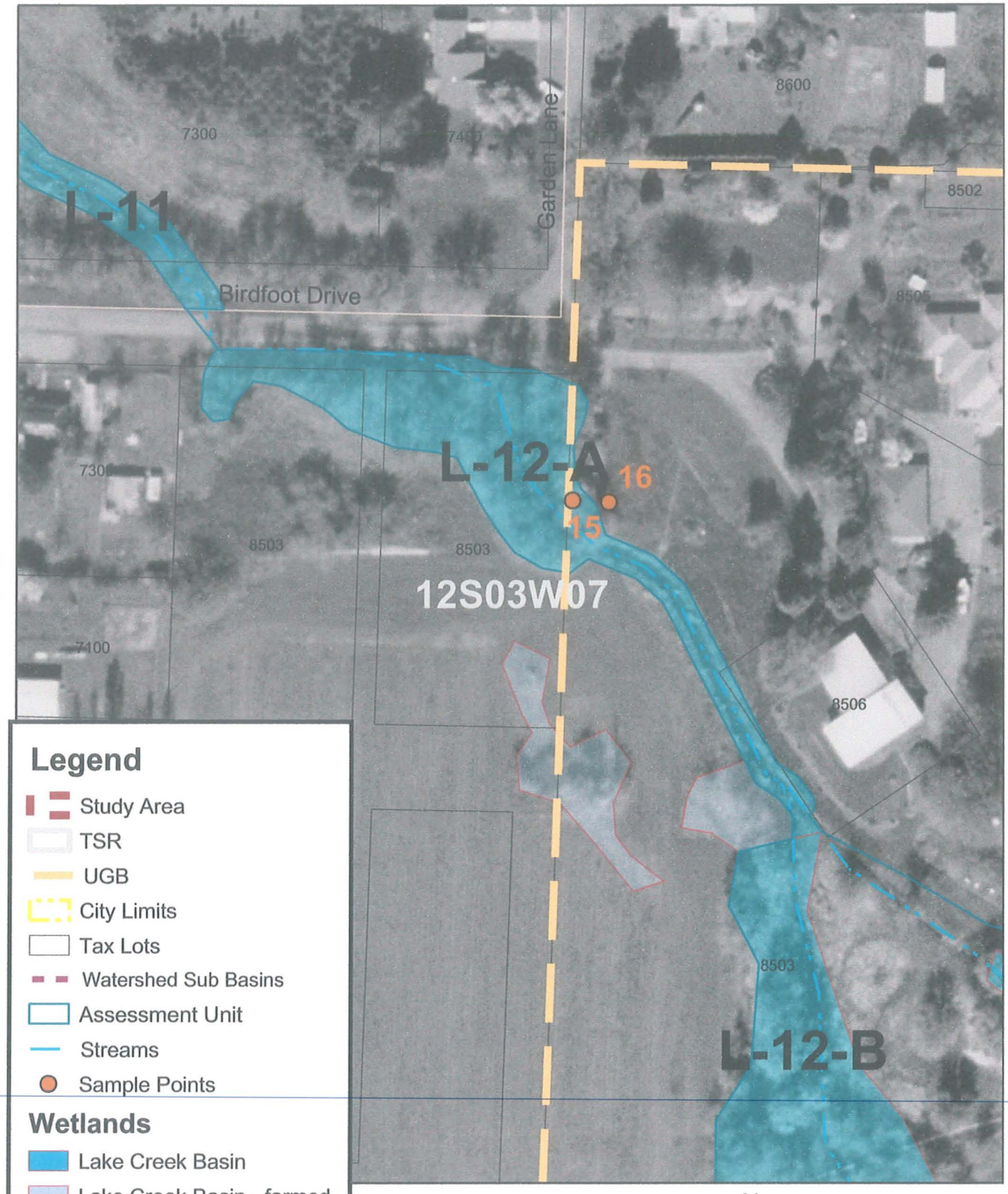

Legend

- Study Area
- TSR
- UGB
- City Limits
- Tax Lots
- Watershed Sub Basins
- Assessment Unit
- Streams
- Sample Points

Wetlands

- Lake Creek Basin
- Lake Creek Basin - farmed
- Oak Creek Basin
- Oak Creek basin - farmed

0 50 100 200 Feet

N

DETAIL MAP L-12-A
City of Tangent
October 2002

SATRE ASSOCIATES

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WETLAND L-12B

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	3.1 ACRES
TAX LOTS:	T.S12-R.03W-S.07-C-08100, -08300, -08503, -08400, -08401, -08501
LOCATION:	NORTH OF OLD OAK DR.
FIELD DATES:	6/06/01
SAMPLING POINT #S:	8-13
VEGETATION COMMUNITY:	ASH / OAK / ROSE / SEDGE
HYDROLOGY:	LAKE CREEK
SOILS:	DAYTON SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO* / PEMd
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* WITH RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-12B
WETLAND ACREAGE	3.1 acres
WILDLIFE HABITAT	Provides diverse habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Intact
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Moderately pleasing

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WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 6/6/01
Data Sheet Numbers: Sp 8-13
Investigator(s): Greta Murdoff, Chad Hoffman, and Mike Shippey

Wetland Mapping Code: **L-12B**
Size (acres): 3.1
Cowardin Classification*: PFO, PEMd
%PSS: %PEM: 5 %PFO: 95
HGM Classification**: RI

Location:

T-R-S: 12-03-07-C
Physical: SE Tangent, North of Old Oak Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
-08100 -08401
-08300 -08501
-08400 -08503

Soils:

Mapped Series: (33) Dayton Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon White Oak (*Quercus garryana)*	Douglas' Hawthorn (*Crataegus douglasii*)	Trailing Blackberry (*Rubus ursinus*)	Canada Thistle (*Cirsium vulgare*)
Oregon Ash (*Fraxinus latifolia)*	Clustered Rose (*Rosa pisocarpa*)		Ribwort (*Plantago lanceolata*)
	Himalayan Blackberry (*Rubus discolor*)		Queen Anne's Lace (*Daucus carota*)
	Snowberry (*Symphoricarpos albus*)		Teasel (*Dipsacus fullonum*)
			Bittersweet Nightshade (*Solanum dulcamara*)
			Slough Sedge (*Carex obnupta*)
			Rough Bluegrass (*Poa trivialis*)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water
**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/6/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-12B
Plot ID: SP 8

VEGETATION

50' N of Road

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Symphoricarpos albus	S	FACU	36	45	Rubus ursinus	V	FACU	100	2
* Fraxinus latifolia	T	FACW	55	60					
* Crataegus douglasii	S	FAC	64	80					
* Quercus garryana	T	UPL	45	50					
bare ground	—	—	-	70					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50%

Criterion Met? No
Remarks: Marginal

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water 7/8"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No
Remarks: This area probably floods during the winter

SOILS

Map unit name (Series and phase): (33) Dayton silt loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-14"	10YR 3/1	7.5 YR 4/4	Many Med. Distinct	silt loam
14-19"	10 YR 3/1	7.5 YR 4/6		silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? No
Remarks:

WETLAND DETERMINATION

Wetland vegetation present?	Remarks	Is this sampling point within a wetland?
Wetland hydrology present?		No
Hydric soils present?		
No / No / No		

9/CM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
Date: 6/6/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-12B
Plot ID: SO 9

normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

VEGETATION

50' N & SO 8

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Fraxinus latifolia	T	FACW	100	70					
Epilobium sp	H	—	100	2					
bare ground	—	—	—	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes
Remarks: At edge of Ag. field

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No
Remarks:

SOILS

Map unit name (Series and phase): (33) Dayton Silt loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10YR 3/2			silt loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? No
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes-marginal
Wetland hydrology present? No
Hydric soils present? No
Remarks
Is this sampling point within a wetland? No

YBM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/6/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-12B
Plot ID: Sp 10

VEGETATION

30' S of Ag. field

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Crataegus douglasii	S	FAC	19	10	Rhamnus purshiana	T	FAC-	5	5
* Symphoricarpos albus	S	FACU	74	40	Toxicodendron diversiloba	S	Nor	4	2
* Carex obnupta	H	OBL	89	50	Poa trivialis	H	FACW	2	1
Carex sp	H	-	9	5	Quercus garryana	T	Nor	15	15
* Fraxinus latifolia	T	FACW	80	80					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 67 %

Criterion Met? Yes
Remarks: W/in forested area

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes
Remarks: 20' E of drainageway

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-8"	10 YR 3/1			silt loam
8-18"	10 YR 3/1	7.5 YR 4/6	Many Med. Distinct	silt loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present?	Remarks	Is this sampling point within a wetland?
Wetland hydrology present? Yes		Yes
Hydric soils present? Yes		

6/6/01

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
Date: 6/6/01
County: Linn
State: Oregon
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No
Community ID:
Transect ID: T-12B
Plot ID: SD 11

VEGETATION

25' W of SD10

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Solanum dulcamara	H	FAC+	100	2	bare ground	—	—	—	100
* Fraxinus latifolia	T	FACW	91	50					
* Rubus ursinus	V	FACU	100	20					
* Crataegus douglasii	S	FAC	100	90					
Rhamnus purshiana	T	FAC-	9	5					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 67%

Criterion Met? Yes
Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☑ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes
Remarks: W/in drainageway
water beetles

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? No

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-6"	10 YR 3/1	7.5 YR 4/4	Many Med. Faint	silty clay loam
		5 YR 3/4		
6-12"	10 YR 4/1	7.5 YR 4/6	Few Med. Distinct	silty clay
12-18"	2.5 Y 4/3			clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes
Remarks
Is this sampling point within a wetland? Yes

YAM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
Date: 6/6/01
County: Linn
State: Oregon
Community ID: T-12B
Transect ID:
Plot ID: SD 12
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

VEGETATION

50' N of SD 10 - Edge of Ag field

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Fraxinus latifolia	T	FACW	100	60					
Rubus discolor	V	FACW	100	10					
* Epilobium sp.	H	–	95	40					
Bare ground	–	–	–	80					
Linnanthes douglasii	H	OBL	5	2					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: ≥ 50 %

Criterion Met? Yes
Remarks: Outside forested area

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water > 18"
Depth to saturated soil > 18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? NO
Remarks:

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0 - 10	10YR 3/2			Silt Loam
10" - 16"	10 YR 2/2			Silty clay Loam
16" - 18"	10YR 4/1	10YR 4/4	Many, Medium, Distinct (30%) mottles	Silty clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? No
Hydric soils present? Yes
Remarks
Is this sampling point within a wetland? No

GEM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/6/01
County: Linn
State: Oregon
Community ID:
Transect ID: 2-12B
Plot ID: SP 13

VEGETATION

15' N of road; ≈50' S of SP 8

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Rosa pisocarpa	S	FAC	42	25	bare ground	—	—	-	80
*	Crataegus douglasii	S	FAC	58	35	Stachys cooleyae	H	FACW	100	15
	Quercus garryana	T	NOL	38	15					
*	Fraxinus latifolia	T	FACW	63	25					
	Rubus discolor	V	FACW	100	10					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes — Remarks: little vegetation w/in channel

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water None
Depth to free water >18"
Depth to saturated soil 7 18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes — Remarks: Roadside drainageway

SOILS

Map unit name (Series and phase): (33) Dayton silt loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-6"	10 YR 3/1	5 YR 4/6	Many Medium Distinct	Silty clay loam
6-11"	10 YR 4/1	10 YR 5/6	Few Medium Distinct	Silty clay
11-18"	10 YR 5/1	10 YR 5/4	Common Med Faint	clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes — Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes - marginal
Hydric soils present? Yes

Remarks: No water in the channel at this time of year

Is this sampling point within a wetland? Yes

GM

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L-12 15

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-12B

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A) surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A) yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
(A) high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, (B) 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, (B) 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, (C) unrestricted flow

Q5: **Dominant veg cover**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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L-12B

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?** likely
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?** channel diverted to roadside?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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L-12B

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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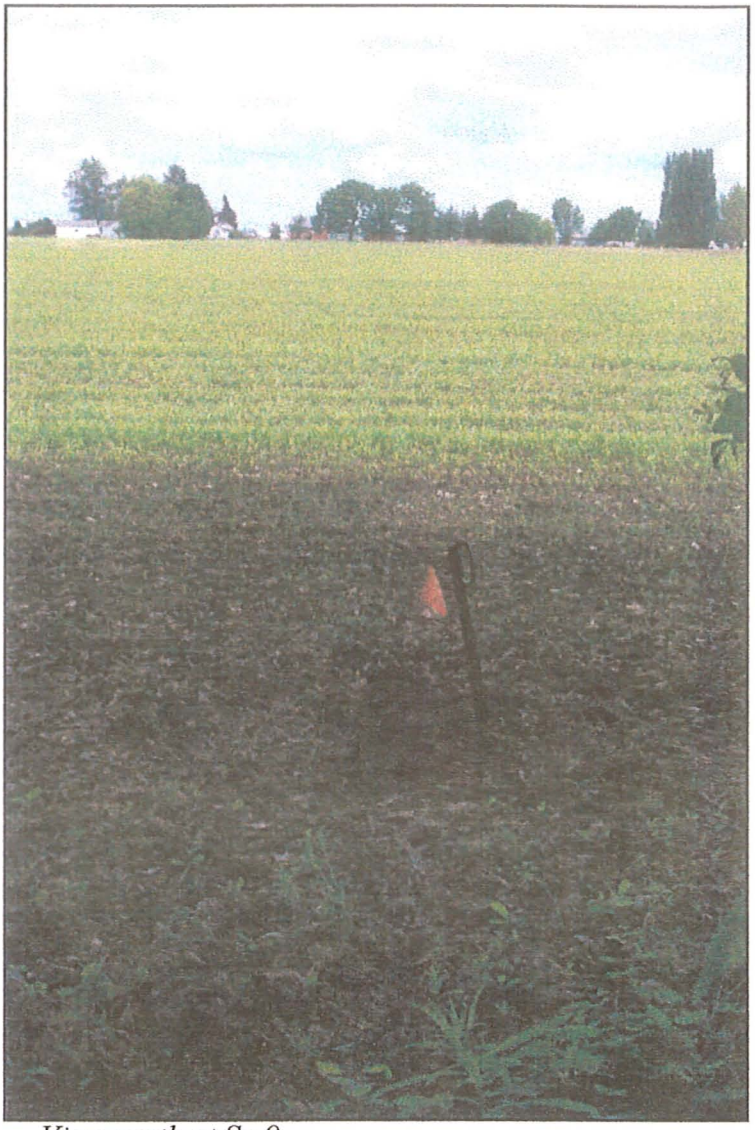
View west within forested area, Sp 8.



View north at Sp 9.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
June 06, 2001

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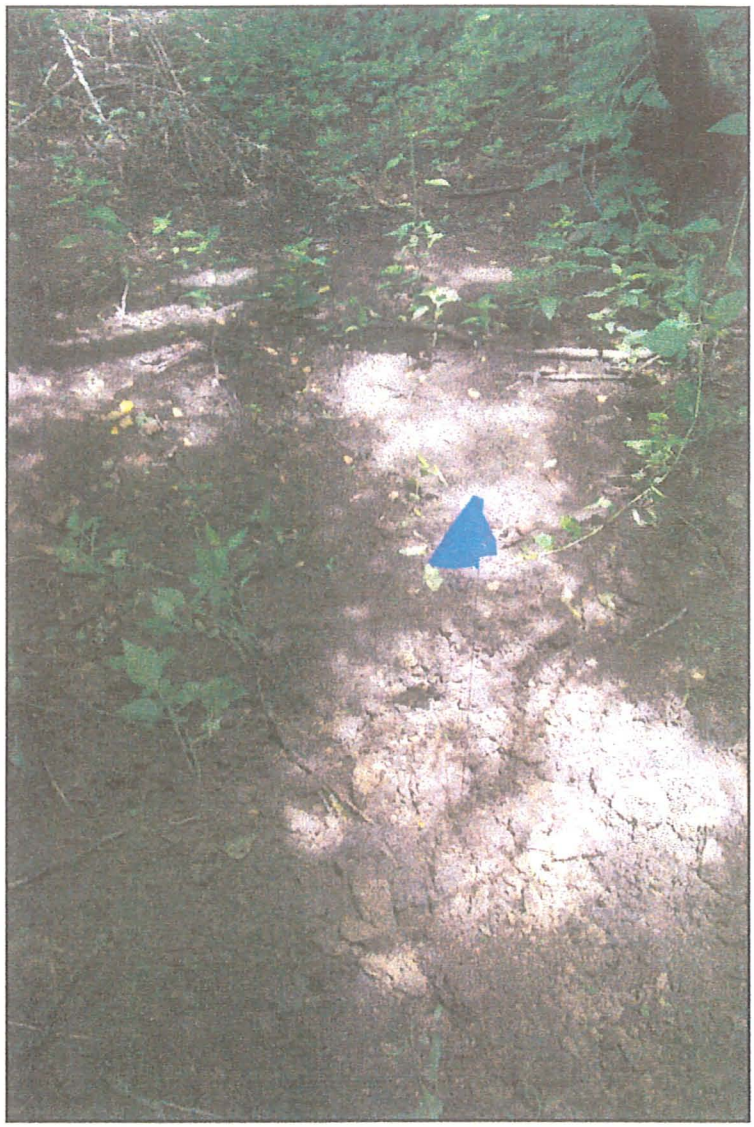
View southeast at Sp 10.



Within channel at Sp 11.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
June 06, 2001

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Sp 12, 13



View north of forested area near Sp 12.



View west along roadside drainageway, Sp 13.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
June 06, 2001

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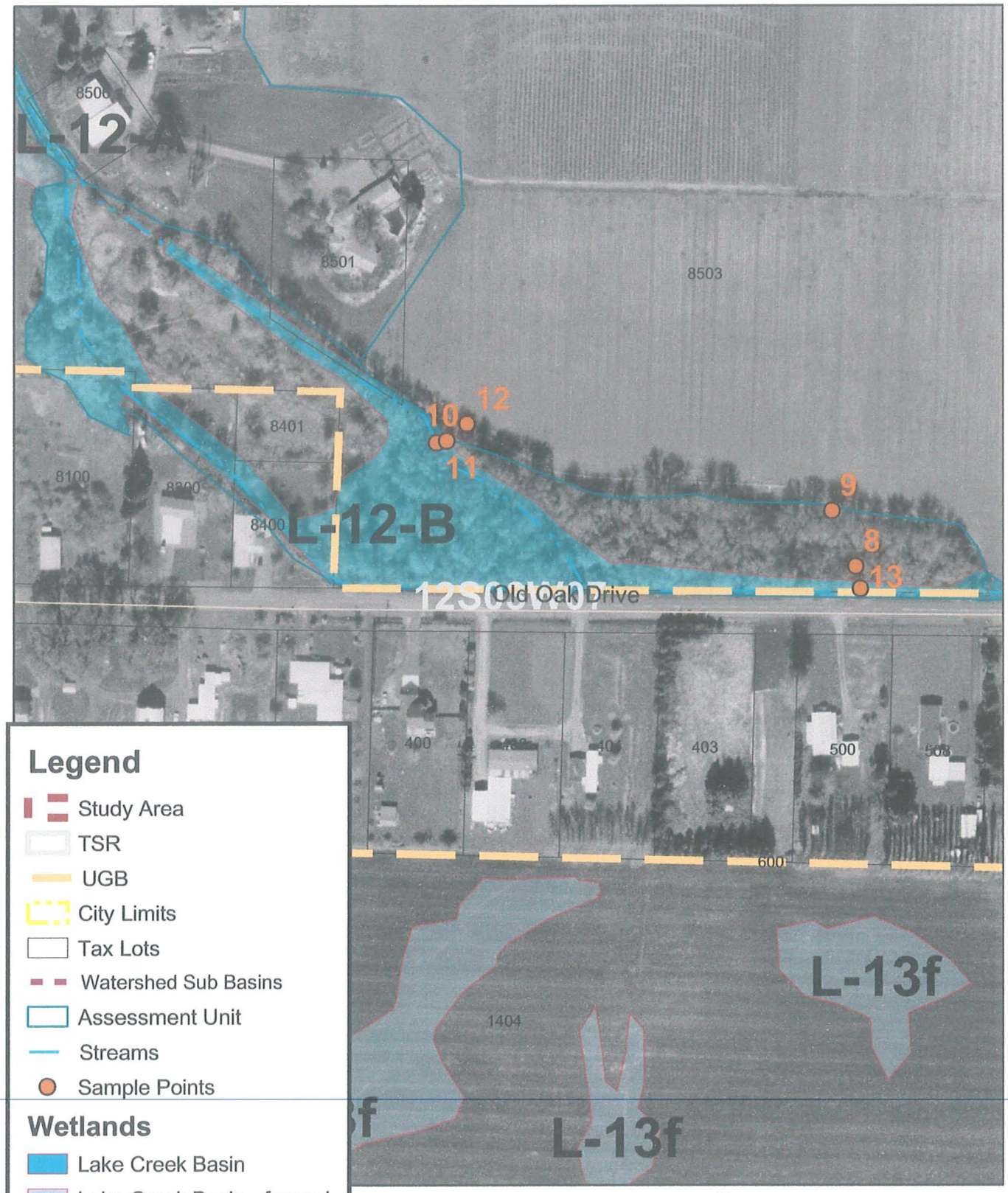

DETAIL MAP L-12-B
City of Tangent
October 2002

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WETLAND L-12C

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	1.6 ACRES
TAX LOTS:	T.12S-R.03W-S.07-D-00101; T.12S-R03W-S.07-C-08503
LOCATION:	NORTH OF OLD OAK DR.
FIELD DATES:	5/30/01, 02/27/02
SAMPLING POINT #S:	6, 7, 46
VEGETATION COMMUNITY:	ASH / HAWTHORNE / MANNAGRASS HIMALAYAN BLACKBERRY
HYDROLOGY:	LAKE CREEK
SOILS:	DAYTON SILT LOAM
COWARDIN CLASSIFICATION:	PFO* / PEMd
HGM CLASSIFICATION:	RIVERINE FLOW-THROUGH*
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-12C
WETLAND ACREAGE	1.6 acres
WILDLIFE HABITAT	Provides diverse habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Intact
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Moderately pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 5/30/01, 2/27/02
Data Sheet Numbers: Sp 6, 7, 46
Investigator(s): Greta Murdoff, Chad Hoffman, and Colin McArthur

Wetland Mapping Code: **L-12C**
Size (acres): 1.6
Cowardin Classification*: PFO, PEMd
%PSS: %PEM: 20 %PFO: 80
HGM Classification**: RI

Location:

T-R-S: 12-03-07-D, 12-03-07-C
Physical: North of Old Oak Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.03W-S.07-D-00101;
T.12S-R03W-S.07-C-08503

Soils:

Mapped Series: (33) Dayton Silt Loam

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia)*	Douglas' Hawthorn (*Crataegus douglasii*)	Himalayan Blackberry (*Rubus discolor*)	Teasel (*Dipsacus fullonum*)
	Nootka Rose (*Rosa nutkana*)		Meadow Foxtail (*Alopecurus pratensis*)
			Reed Canary Grass (*Phalaris arundinacea*)
			Tall Mannagrass (*Glyceria elata*)
			Bittersweet Nightshade (*Solanum dulcamara*)
			Wild Oat (*Avena fatua*)
			Creeping Spike Rush (*Eleocharis palustris*)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
Date: 5/30/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-12C
Plot ID: SP 6

normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

VEGETATION

w/in Channel; 30' W of Ag. field

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Solanum dulcamara	H	FAC+	20	15					
* Glyceria elata	H	FACW+	80	60					
bare ground	–	–	–	50					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water 15"
Depth to saturated soil 12"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes

Remarks: Water was present here on first field visit

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? No, clayey

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-7"	10YR3/1	5YR 3/2	few, medium, distinct	silty clay loam
7-18"	2.5Y 5/2			clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

GM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 5/30/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-12C
Plot ID: Sp 7

VEGETATION

40' W of Sp 6 w/in riparian area

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	
*	Rosa nutkana	S	FAC	20	20	Poa trivialis	H	FACW	88	50	*
*	Crataegus douglasii	S	FAC	80	80	Galium sp	H	-	9	5	
	Camassia quamash	H	FACW	3	2						
	Corylus cornuta	T	FACU	17	15						
*	Fraxinus latifolia	T	FACW	83	75						

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes. Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water None
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes. Remarks: This area is usually flooded in the wet season (see previous riparian inventory)

SOILS

Map unit name (Series and phase): (33) Dayton silt loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-10"	10 YR 3/1	7.5 YR 4/4	Many Medium Distinct	silty clay loam
10-18"	10 YR 5/1	7.5 YR 5/6	Many Coarse Distinct	silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes. Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes-marginal
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

9/am

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Chad Hoffman and Colin McArthur*
Are normal circumstances exist on the site?
Is the site significantly disturbed (Atypical Situation?)
Is the area a potential Problem Area (If needed, explain on reverse)?

Date: 2/27/02
County: Linn
State: Oregon
Community ID:
Transect ID:
Plot ID: SF 46

VEGETATION

W/in Potential Forested Wetland Area

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Populus trichocarpa	T	FAC	100	30					
* Rosa pisocarpa	S/V	FAC	64	35					
* Rubus discolor	S/V	FACU	36	20					
Dactylis glomerata	H	FACU	100	10					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: Late 5/10

Criterion Met? Yes

Remarks: Forested Community adjacent to Drainage TOB

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water @ 8"
Depth to saturated soil @ 6"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks: Adjacent to Drainage Feature

SOILS

Map unit name (Series and phase) (33) Dayton Silt Loam
Taxonomy (subgroup)
Drainage class Poorly Drained
Field observations confirm mapped type?

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10 YR 3/1	5 YR 5/6	Many, Fine, Distinct	Silty Clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

CH

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L-12C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited - not listed
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: *Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-12c

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-12C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?** Probably
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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L-12C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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Sp 6, 7



View west towards Sp 6.



View north from Sp 7.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
May 30, 2001

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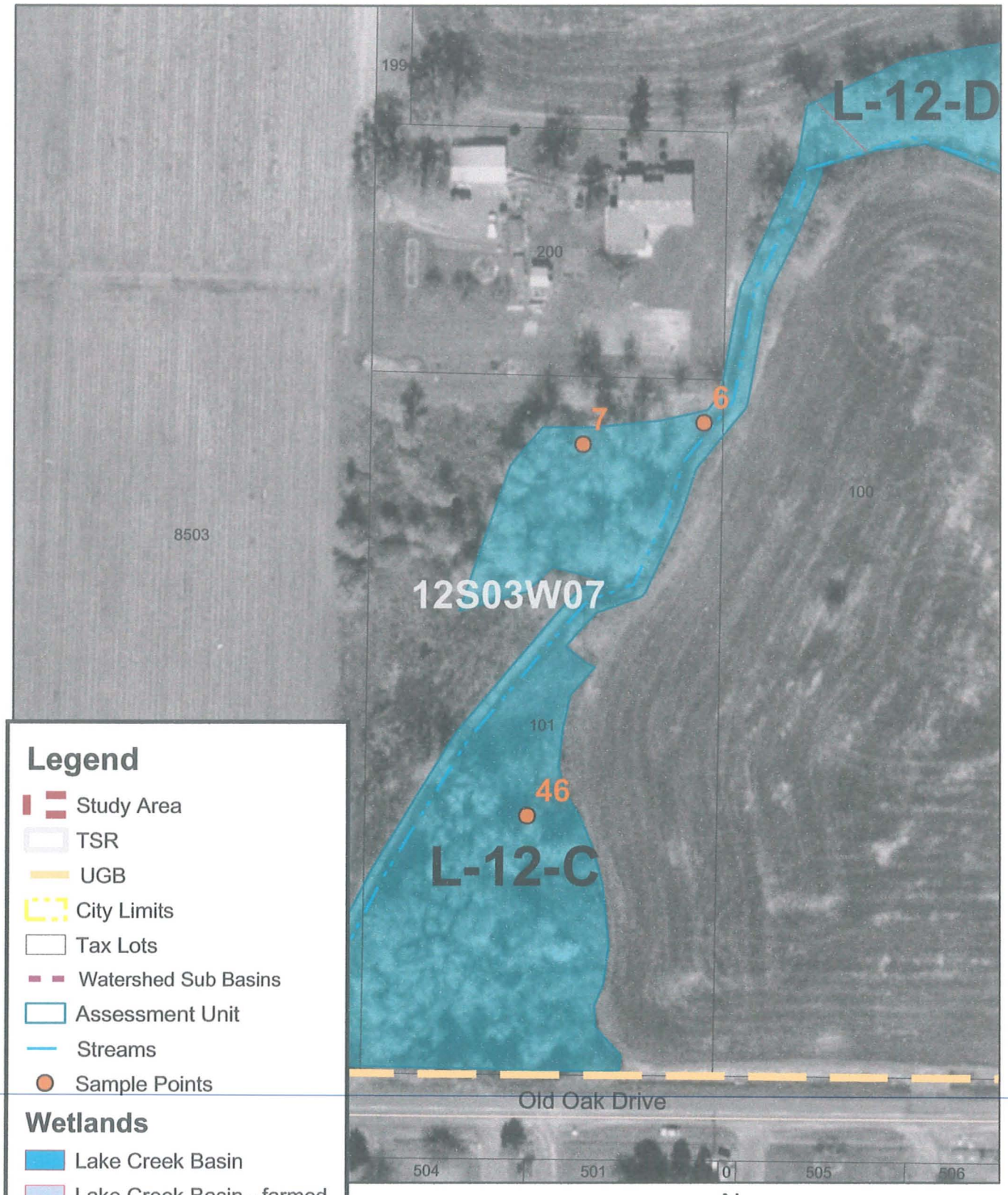

DETAIL MAP L-12-C
City of Tangent
October 2002

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WETLAND L-12D

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	3.3 ACRES
TAX LOTS:	T.12S-R.03W-S.07-D-00100; T.12S-R.03W-S.07-03000
LOCATION:	NORTH OF OLD OAK DR.
FIELD DATES:	5/08/02, 5/21/01
SAMPLING POINT #S:	1-3
VEGETATION COMMUNITY:	ASH / ROUGH BLUEGRASS
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, DAYTON SILT LOAM
COWARDIN CLASSIFICATION:	PFO* / PEMd
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* WITH RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-12D
WETLAND ACREAGE	3.3 acres
WILDLIFE HABITAT	Provides diverse habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Intact
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 5/08/01, 5/21/01
Data Sheet Numbers: Sp 1-3
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-12D**
Size (acres): 3.3
Cowardin Classification*: PFO, PEMd
%PSS: %PEM: 10 %PFO: 90
HGM Classification**: RI

Location:

T-R-S: 12-03-07, 12-03-07-D
Physical: North of Old Oak Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.03W-S.07-D-00100;
T.12S-R.03-S.07-03000

Soils:

Mapped Series: (3) Amity Silt Loam, (33) Dayton Silt Loam

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia*)		Himalayan Blackberry (*Rubus discolor*)	Soft Rush (*Juncus effusus*)
			Velvet Grass (*Holcus lanatus*)
			Rough Bluegrass (*Poa pratensis*)
			Cusick's Sedge (*Carex cusickii*)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water
**HGM Classifications:
= Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner: N/A
Investigators: Greta Murdoff and Chad Hoffman
Date: 5/8/01
County: Linn
State: Oregon
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No
Community ID:
Transect ID: T-L-12D
Plot ID: SP-1

VEGETATION

15' N of drainage

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Juncus effusus	H	FACW	12	10	Poa pratensis	H	FAC	12	10
* Holcus lanatus	H	FAC	59	50					
* Fraxinus latifolia	T	FACW	100	75					
Carex cusickii	H	OBL	17	15					
Rubus discolor	S	FACU	100	5					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes
Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water None
Depth to free water 7/8"
Depth to saturated soil 7/8"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes
Remarks: On slight slope of creek bank, annually flooded

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? No, clayey

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-6"	10 YR 3/1	7.5 YR 3/4	Many Med. Distinct	silty clay
6-18"	10 YR 4/1	7.5 YR 3/4	Many Med. Distinct	clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes, marginal
Hydric soils present? Yes
Remarks
Is this sampling point within a wetland? Yes

YEM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 5/21/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-12D
Plot ID: SP 2

VEGETATION

Up bank from creek: 30' S of SP1

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Tellima grandiflora	H	NI	5	5	Rosa nutkana	S	FAC-	43	15
* Fraxinus latifolia	T	FACW	100	80	Poa trivialis	H	FACW	76	80 *
* Phalaris arundinacea	H	FACW	19	20					
* Crataegus douglasii	S	FAC	57	20					
Rubus discolor	V	FACU	100	10					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes | Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes | Remarks: This area is flooded in the winter months (see previous riparian inventory)

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonite, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-10"	10YR 3/2	7.5YR 4/6	Few Med. Distinct	silty clay loam
10-18"	10YR 4/1	7.5YR 3/3	Many Med. Distinct	silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes | Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes, marginal
Hydric soils present? Yes

Remarks: Next to large debris pile (probably not water driven, too large - 15' high - for this stream)

Is this sampling point within a wetland? Yes

YEM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI	Date: 5/21/01
Applicant/Owner:	County: Linn
Investigators: *Greta Murdoff and Chad Hoffman*	State: Oregon
Is normal circumstances exist on the site? Yes	Community ID:
Is the site significantly disturbed (Atypical Situation?) No	Transect ID: T-L-12D
Is the area a potential Problem Area (If needed, explain on reverse)? No	Plot ID: SP3

VEGETATION

40' Eupbank of SP2

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
☆ Poa trivialis	H	FACW	74	80	Fraxinus latifolia	T	FACW	100	80 ☆
Juncus effusus	H	FACW	14	15	Carex deweyana	H	FACU	5	5
Camassia quamash	H	FACW	2	2	Carex sp	H	-	5	5
Rubus discolor	V	FACU	100	15	Rosa nutkana	S	FAC-	43	15
☆ Crataegus douglasii	S	FAC	57	20					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes | Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water None
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes | Remarks: W/in seasonally flooded zone

SOILS

Map unit name (Series and phase) (33) Dayton Silt Loam
Taxonomy (subgroup) Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class Poorly drained
Field observations confirm mapped type? No, clayey

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-5"	10YR 3/1			Silty Clay Loam
5-14"	10YR 4/1	7.5YR 2.5/2	Many, Medium, Faint	Silty Clay
		7.5YR 4/6	Many, Med., Distinct	
14-18"	10YR 4/1	7.5 4/12 4/6	Many, Med., Distinct	Clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes | Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes Wetland hydrology present? Yes, marginal Hydric soils present? Yes	Remarks	Is this sampling point within a wetland?	Yes

GEM

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L-12 D

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited not listed
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-12D 2

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-12D

3

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?** Probable
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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L-12D 4

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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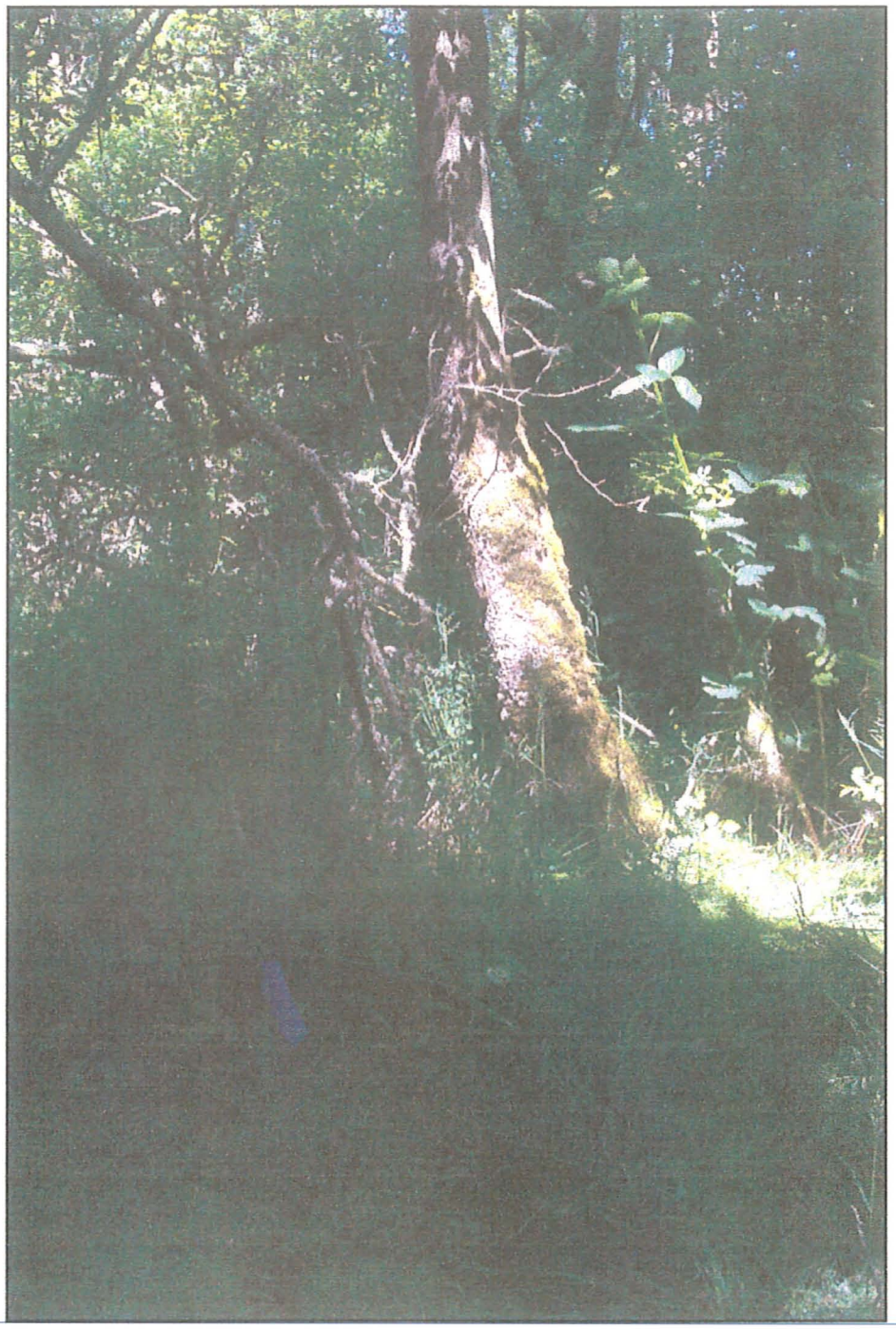
Sp 3



View west at Sp 3.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
May 21, 2001

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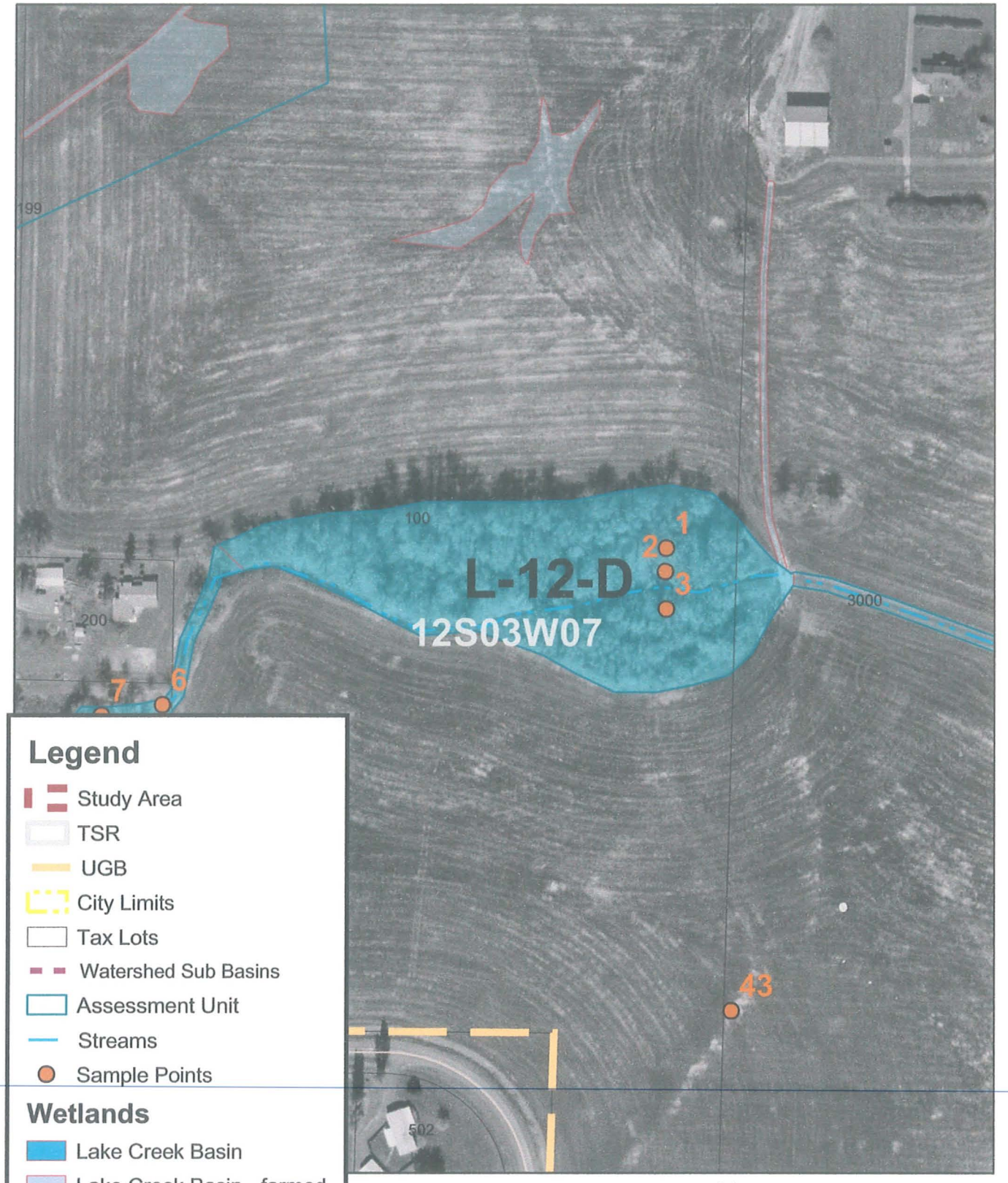

DETAIL MAP L-12-D
City of Tangent
October 2002

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WETLAND L-13f

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	40.3 ACRES
TAX LOTS:	T.12S-R.03W-S.07-00-01401, -01403, 01404, -01405, -03000; T.12S-R.03W-S.07-D-00100
LOCATION:	EAST OF HIGHWAY 99, NEAR OLD OAK DRIVE
FIELD DATES:	02/27/02
SAMPLING POINT #S:	43, 44, 45, 47, 48
VEGETATION COMMUNITY:	FARMED WETLAND (RYE AND OAT PRODUCTION)
HYDROLOGY:	LAKE CREEK, GROUNDWATER, DIRECT PRECIPITATION
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf (FARMED) / PEMd
HGM CLASSIFICATION:	RIVERINE IMPOUNDING (FARMED SURFACE DRAINAGES)* WITH SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-13f
WETLAND ACREAGE	40.3 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 2/27/02
Data Sheet Numbers: SP 43, 44, 45, 47, 48
Investigator(s): Chad Hoffman and Colin McArthur

Wetland Mapping Code: **L-13f**
Size (acres): 40.3
Cowardin Classification*: PEMf, PEMd
%PSS: %PEM: 100 %PFO:
HGM Classification**: RI with Slope / Flats

Location:

T-R-S: 12-03-07, 12-03-07-D
Physical: East of Highway 99E, Near Old Oak Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.03W-S.07-00-01401, -01403, 01404, -01405, -03000;
T.12S-R.03W-S.07-D-00100

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek, Precipitation, Surface Run-off and Groundwater

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
			Italian Ryegrass (*Lolium multiflorum*)
			Perennial Ryegrass (*Lolium perenne*)
			Oats (*Avena sp.*)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
= Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Chad Hoffman and Colin McArthur*
Normal circumstances exist on the site? NO
Is the site significantly disturbed (Atypical Situation?) Yes - Farmed Area
Is the area a potential Problem Area (If needed, explain on reverse)? NO

Date: 2/27/02
County: Linn
State: Oregon
Community ID:
Transect ID:
Plot ID: SP 43

VEGETATION

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Bare Ground				100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: N/A

Criterion Met? Remarks: Ag field

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No Remarks:

SOILS

Map unit name (Series and phase) (33) Dayton Silt Loam
Drainage class Poorly Drained
Taxonomy (subgroup) Fine, Montmorillonitic, mesic, Typic Albaqualf
Field observations confirm mapped type?

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-6"	10 YR 3/1			
6"-18"	10 YR 4/1	7.5 YR 6/8	Few, Fine, Faint	

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes, marginal Remarks:

WETLAND DETERMINATION

Wetland vegetation present? NO
Wetland hydrology present? NO
Hydric soils present? Yes, Marginal

Remarks: no hydrology present

Is this sampling point within a wetland? NO

CH

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Chad Hoffman and Colin McArthur*
Are normal circumstances exist on the site? NO - Farmed Area
Is the site significantly disturbed (Atypical Situation?) Yes
Is the area a potential Problem Area (If needed, explain on reverse)? NO

Date: 2/27/02
County: Linn
State: Oregon
Community ID:
Transect ID:
Plot ID: SP 44

VEGETATION

SE Quad -- (Hydric Soil Point)

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Bare Ground	–	–	–	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC:

Criterion Met? N/A

Remarks: Near 1' wide surface drainages w/in tilled grass-seed field

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met?

Remarks:

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Drainage class: Poorly - Drained
Taxonomy (subgroup): Fine, montmorillonitic, mesic, Typic Albaqualf
Field observations confirm mapped type?

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10 YR 3/1	5 YR 4/6	Few, Fine, Faint	Silty Clay / Silty Clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ ~~High organic content in surface layer in sandy soils~~
- ☐ Organic streaking in sandy soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes, marginal

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? NO
Hydric soils present? Yes, marginal

Remarks

Is this sampling point within a wetland? NO

LH

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Chad Hoffman and Colin McArthur*
Are normal circumstances exist on the site? No Farmed Area
Is the site significantly disturbed (Atypical Situation?) Yes
Is the area a potential Problem Area (If needed, explain on reverse)? NO

Date: 2/27/02
County: Linn
State: Oregon
Community ID:
Transect ID:
Plot ID: SP 45

VEGETATION

SW -- Reference Point

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Bare Ground									

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC:

Criterion Met? N/A

Remarks: Tilled & Seeded Ag - field

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water > 18"
Depth to saturated soil > 18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks:

SOILS

Map unit name (Series and phase) (3) Amity Silt Loam
Taxonomy (subgroup) Fine, montmorillonitic, mesic Vertic Albaqualf
Drainage class Somewhat Poorly Drained
Field observations confirm mapped type? NO

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-6"	10 YR 3/1			Silty Clay Loam
6"-18"	10 YR 4/1	7.5 YR 6/8	Few, Faint, Fine	Silty Clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ ~~Histic epipedon~~
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ ~~High organic content in surface layer in sandy soils~~
- ☐ Organic streaking in sandy soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes, marginal

Remarks: 'Jumbled' Soils --> Tilled

WETLAND DETERMINATION

Wetland vegetation present? Wetland hydrology present? Hydric soils present?	Remarks	Is this sampling point within a wetland?
		ND

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WETLAND DELINEATION DATA FORM

Project/Site:	Tangent LWI	Date:	2/27/02
Applicant/Owner:		County:	Linn
Investigators:	*Chad Hoffman and Colin McArthur*	State:	Oregon
Normal circumstances exist on the site?	NO	Community ID:	
Is the site significantly disturbed (Atypical Situation?)	YES	Transect ID:	
Is the area a potential Problem Area (If needed, explain on reverse)?	NO	Plot ID:	SP 47

VEGETATION

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Festuca arundinacea	H	FAC-		30					
X Poa?? (lawn grass)	H	-		65					
Hypochaeris radicata	H	FACU		2					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: N/A

Criterion Met? N/A

Remarks: Highly managed/mown area adjacent to school

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
- Depth of surface water None
- Depth to free water @ 8"
- Depth to saturated soil @ 6"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks:

SOILS

Map unit name (Series and phase) (27) Concard Silt Loam
Taxonomy (subgroup) Fine, Montmorillonitic, mesic Typic Albaqualfs
Drainage class Poorly Drained
Field observations confirm mapped type?

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-6"	10 YR 3/1	5 YR 4/6	Common, Fine, Distinct	Silty Clay / Silty Clay Loam
6-12"	10 YR 4/1	7.5 YR 5/8	Many, Medium, Distinct	Clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☒ Reducing conditions
- ☒ Gleyed or low chroma colors
- ☐ Concretions
- ☐ ~~High organic content in surface layer in sandy soils~~
- ☐ Organic streaking in sandy soils
- ☒ Listed on Local Hydric Soils List
- ☒ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? N/A Wetland hydrology present? Yes Hydric soils present? Yes	Remarks: Wetland Area where Vegetation is highly managed & manipulated	Is this sampling point within a wetland?	Yes

C*

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Chad Hoffman and Colin McArthur*
Normal circumstances exist on the site?
Is the site significantly disturbed (Atypical Situation?)
Is the area a potential Problem Area (If needed, explain on reverse)?

Date: 2/27/02
County: Linn
State: Oregon
Community ID:
Transect ID:
Plot ID: SP 48

VEGETATION

near Elementary School

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Festuca arundinacea	H	FAC-	17	15					
Lawn Grass	H	-	86	90					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: N/A

Criterion Met? N/A Remarks: Highly Managed / Mown Areas

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? Remarks:

SOILS

Map unit name (Series and phase) (106A) Woodburn Silt Loam 0-3% slopes
Taxonomy (subgroup) Fine-Silty, mixed mesic Aquultic Argixerolls
Drainage class Moderately Well-Drained
Field observations confirm mapped type? NO

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-15"	10YR3/1	7.5YR5/8	Few, Fine, Distinct	Silty clay Loam
15"-18"	10YR4/1			clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ ~~High organic content in surface layer in sandy soils~~
- ☐ Organic streaking in sandy soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes, Marginal Remarks:

WETLAND DETERMINATION

Wetland vegetation present? N/A
Wetland hydrology present? none
Hydric soils present? yes

Remarks: No Hydrology

Is this sampling point within a wetland? No

CH

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: (A:) 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** Farmed Areas
A: Woody, (B:) Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, (C) Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, (C) <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, (B:) no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
(B:) not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
(A:) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, (B:) Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
*Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A Farmed Areas

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-13 +

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), (B) precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A) yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, (B) Mod 60%, Low <60%

Q4: **Wetland area in acres**
(A) >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition BPS
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
(A) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, (B) minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, (B) Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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L-13f

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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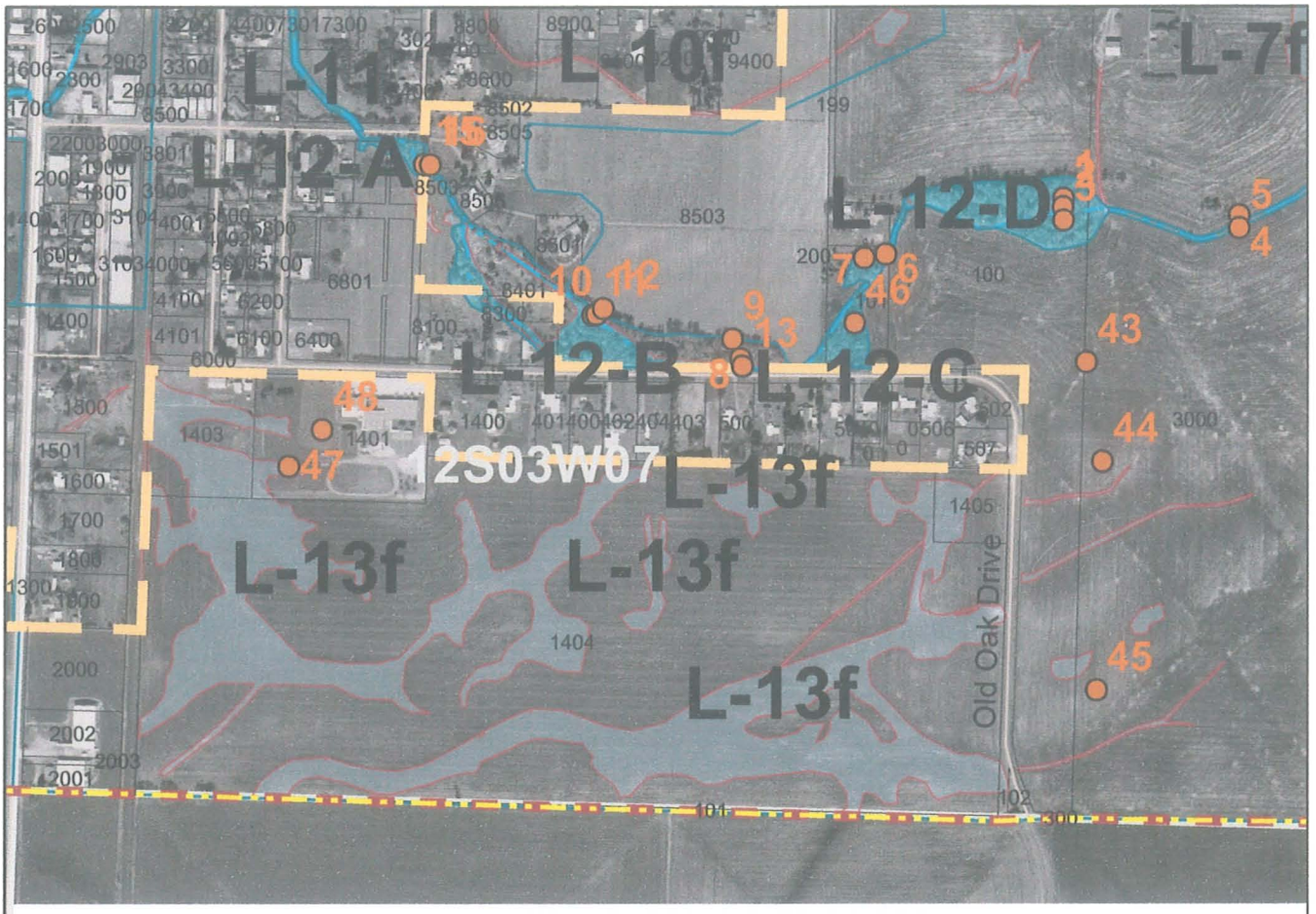

Legend

- Study Area
- TSR
- UGB
- City Limits
- Tax Lots
- Watershed Sub Basins
- Assessment Unit
- Streams
- Sample Points

Wetlands

- Lake Creek Basin
- Lake Creek Basin - farmed
- Oak Creek Basin
- Oak Creek basin - farmed

0 250 500 1,000 1,500 Feet

N

DETAIL MAP L-13f
City of Tangent
October 2002

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WETLAND O-1f

DRAINAGE BASIN:	OAK CREEK / NORTH BASIN
WETLAND ACREAGE:	8.3 ACRES
TAX LOTS:	T.11S-R.04W-S.36-D-00300, -00309, -00310
LOCATION:	NORTH OF HIGHWAY 34, NEAR GRIFFITH DRIVE
FIELD DATES:	7/13/01, 02/27/02
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	COTTONWOOD / ROSE / SOFT RUSH
HYDROLOGY:	OAK CREEK TRIBUTARY, PRECIPITATION, SURFACE RUN-OFF, GROUNDWATER
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, CONSER SILTY CLAY LOAM, WALDO SILTY CLAY LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMd* / PEMf*
HGM CLASSIFICATION:	RIVERINE IMPOUNDING*
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	O-1f
WETLAND ACREAGE	8.3 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Sensitive
ENHANCEMENT POTENTIAL	Little potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/13/02, 2/27/02
Data Sheet Numbers: None (off-site)
Investigator(s): Greta Murdoff, Chad Hoffman, and Colin McArthur

Wetland Mapping Code: **O-1f**
Size (acres): 8.3
Cowardin Classification*: PEMf / PEMd
%PSS: %PEM: 100 %PFO:
HGM Classification**: RI

Location:

T-R-S: 11-04-36-D
Physical: North of Highway 34, Near Griffith Drive
Hydrologic Basin: Oak Creek North

Tax Lot(s):
-00309,
-00310

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (28) Conser Silty Clay Loam, (98) Waldo Silty Clay Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Oak Creek Tributary, Precipitation, Surface Run-off and Groundwater

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

SATRE ASSOCIATES

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C-14

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, (B): 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, (B): Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, (C): Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, (C): <0.5 ac

Q5: **How is wetland connected to another body of water?**
(A): by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
(A): W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
(A): no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, (C): Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
(A): >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
* Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, (C): <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, (B): portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, (C): <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
(A): no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, (C): Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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6-1f

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
*Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
*Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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O-1f

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
* Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
* No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
* Wetland not pleasing if 2+ Q are "c"

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DETAIL MAP O-1f
City of Tangent
October 2002

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WETLAND O-2A

DRAINAGE BASIN:	OAK CREEK / NORTH BASIN
WETLAND ACREAGE:	3.1 ACRES
TAX LOTS:	T.11S-R.04W-S.36-D-00801, -00802, -00803, -00804, -00900, -01000, -01100
LOCATION:	EAST OF N. McFARLAND RD.
FIELD DATES:	7/06/01
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	ASH
HYDROLOGY:	OAK CREEK TRIBUTARY
SOILS:	CONSER SILTY CLAY LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO* / PEMf / PEMd
HGM CLASSIFICATION:	RIVERINE IMPOUNDING*
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- MAP

WETLAND NUMBER	O-2A
WETLAND ACREAGE	3.1 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/06/01
Data Sheet Numbers: None (off-site)
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **O-2A**
Size (acres): 3.1
Cowardin Classification*: PFO / PEMf / PEMd
%PSS: %PEM: 20 %PFO: 75
HGM Classification**: RI

Location:

T-R-S: 11-04-36-D
Physical: East of N. McFarland Road
Hydrologic Basin: Oak Creek North

Tax Lot(s):
-00801, -00804, -01100
-00802, -00900,
-00803, -01000,

Soils:

Mapped Series: (28) Conser Silty Clay Loam, Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Oak Creek Tributary, Precipitation, Surface Run-off, and Groundwater

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash *(Fraxinus latifolia)*			

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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UCH

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE (offsite)
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, (B) 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, (C) Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, (C) <0.5 ac

Q5: **How is wetland connected to another body of water?**
(A) by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
(A) W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
(A) >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: (A) >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, (B) portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, (C) <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, (C) no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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O-2A

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A) surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A) yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
(A) high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, (B) 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, (B) 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, (C) unrestricted flow

Q5: **Dominant veg cover**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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O-2A

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public?
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, (C) no

Q5: **Is there public access within 250' of wetland edge?**
(A) yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, (B) no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
(A) yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, (C) no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, (C) no

Q4: **Wildlife habitat index:**
A: diverse habitat, (B) habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, (B) no, or not applicable

Q6: **Hunting allowed?**
A; yes, (B) no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, (C) 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, (C) <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, (C) visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, (B) landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, (B) unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, (B) continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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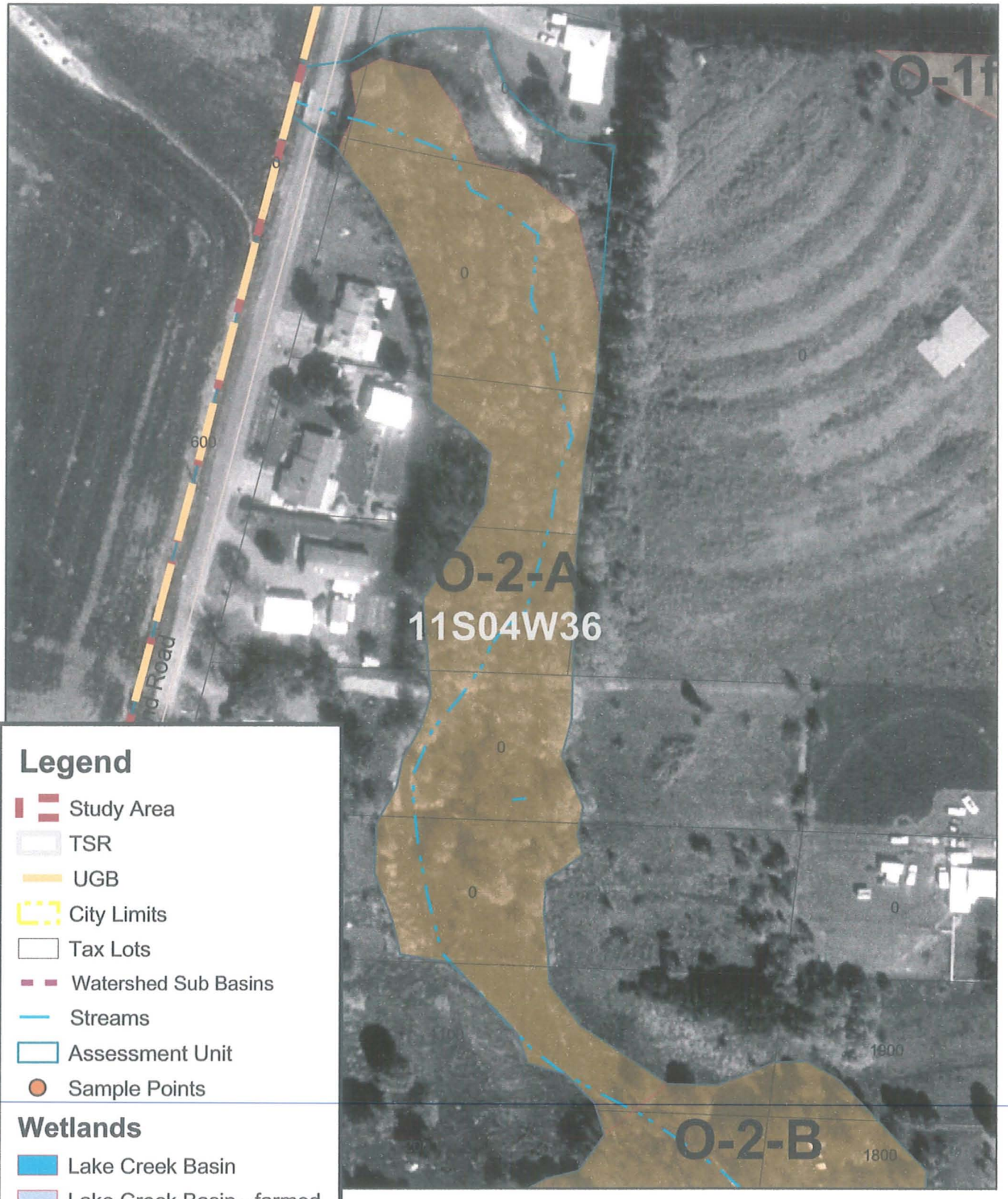

DETAIL MAP O-2-A
City of Tangent
October 2002

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WETLAND O-2B

DRAINAGE BASIN:	OAK CREEK / SOUTH BASIN
WETLAND ACREAGE:	6.4 ACRES
TAX LOTS:	T.11S-R.04W-S.36-D-01100, -01200, -01300, -01500, -01600, -01700, -01800, -01900; T.12S-R.04W-S.01-00-00101, -00114, -00125, -00188
LOCATION:	EAST OF N. McFARLAND RD. AND WEST OF HIGHWAY 99E
FIELD DATES:	7/06/01
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	ASH / FARMED & PASTURED
HYDROLOGY:	OAK CREEK TRIBUTARY, PRECIPITATION, SURFACE RUN-OFF, GROUNDWATER
SOILS:	CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WILLAMETTE SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO* / PEM* / PEMf
HGM CLASSIFICATION:	RIVERINE IMPOUNDING*
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- MAP

WETLAND NUMBER	O-2B
WETLAND ACREAGE	6.4 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	Intact
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/06/01
Data Sheet Numbers: None (off-site)
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **O-2B**
Size (acres): 6.4
Cowardin Classification*: PEM, PFO, PEMf
%PSS: %PEM: 50 %PFO: 50
HGM Classification**: RI

Location:

T-R-S: 11-04-36-D, 12-04-01
Physical: East of north McFarland Road and west of Highway 99E
Hydrologic Basin: Oak Creek North

Tax Lot(s):
T.11S-R.04W-S.36-D-01100, -01200, -01300, -01500, -01600, -01700, -01800, -01900;
T.12S-R.04W-S.01-00-00101, -00114, -00125, -00188

Soils:

Mapped Series: (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (151) Willamette Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Oak Creek Tributary, Precipitation, Surface Run-off, and Groundwater

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia*)			Managed Grass Fields
			Managed Drainages

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water
**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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O-2D

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE (offsite)
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, (B) 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, (B) Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, (C) <0.5 ac

Q5: **How is wetland connected to another body of water?**
(A) by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
(A) W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, (B) 10-40%, C: <10% mostly bordered by yards

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
☆ Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, (C) <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, (B) portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, (C) <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, (C) no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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O-2B

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A) surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, (B) unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, (B) Mod 60%, Low <60%

Q4: **Wetland area in acres**
(A) >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
(A) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, (B) minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
(A) yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?** unlikely
A: yes, (B) unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
(C) no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
(A) Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
(A) Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
(A) 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
(A) Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
(A) no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
(A) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, (B) 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, (B) potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, (C) no

Q2: **Visible hazards to public?**
(A) no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, (B) do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, (C) no

Q5: **Is there public access within 250' of wetland edge?**
(A) yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, (B) no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
(A) yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, (C) no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, (C) no

Q4: **Wildlife habitat index:**
A: diverse habitat, (B) habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, (B) no, or not applicable

Q6: **Hunting allowed?**
A; yes, (B) no

Assessment: Provides recreational opp if Q1, 2 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, (B) 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, (C) <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, (C) visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, (B) landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, (B) unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, (B) continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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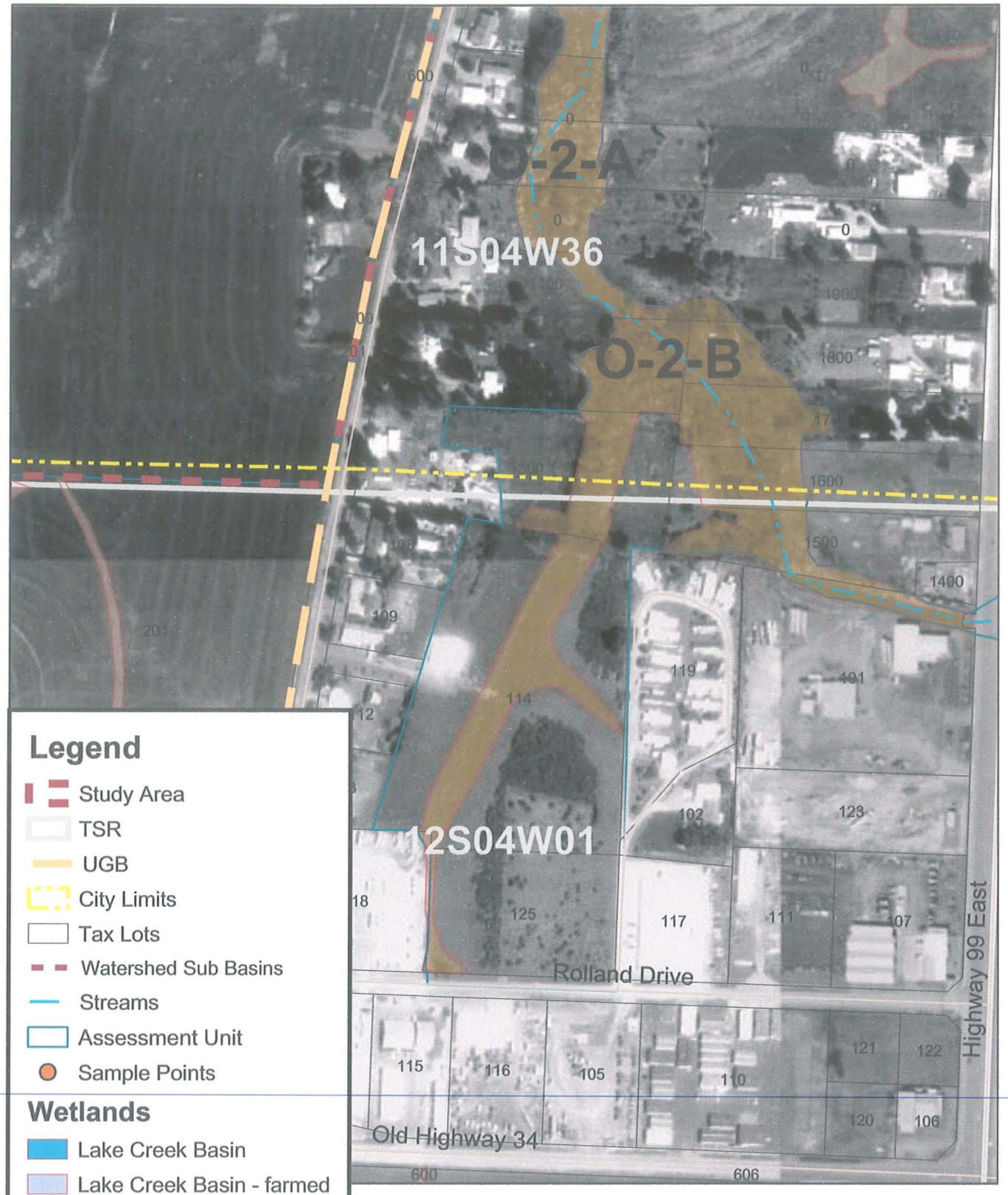

DETAIL MAP O-2-B
City of Tangent
October 2002

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WETLAND O-2C

DRAINAGE BASIN:	OAK CREEK / NORTH BASIN
WETLAND ACREAGE:	1.0 ACRES
TAX LOTS:	T.11S-R.03W-S.31-01600, T.12S-R.03W-S.06-00500
LOCATION:	NORTH OF HIGHWAY 34, EAST OF HIGHWAY 99E
FIELD DATES:	7/06/01
SAMPLING POINT #S:	31
VEGETATION COMMUNITY:	ASH / HAWTHORNE / SOFT RUSH
HYDROLOGY:	OAK CREEK TRIBUTARY, PRECIPITATION, SURFACE RUN-OFF, GROUNDWATER
SOILS:	BASHAW SILTY CLAY, CONSER SILTY CLAY LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO*
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* WITH RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	O-2C
WETLAND ACREAGE	0.97 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Moderately pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/06/01
Data Sheet Numbers: Sp 31
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **O-2C**
Size (acres): 1.0
Cowardin Classification*: PFO
%PSS: %PEM: %PFO: 100
HGM Classification**: RI

Location:

T-R-S: 11-03-31, 12-03-06
Physical: North of Highway 34, East of Highway 99E
Hydrologic Basin: Oak Creek North

Tax Lot(s):
T.11S-R.03W-S.31-01600,
T.12S-R.03W-S.06-00500

Soils:

Mapped Series: (8) Bashaw Silty Clay, (28) Conser Silty Clay Loam, (106A) Woodburn Silty Loam 0 to 3 % slopes

Hydrology:

Hydrologic Source: Oak Creek Tributary, Precipitation, Surface Run-off, and Groundwater

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia*)	Douglas' Hawthorn (*Crataegus douglasii*)		Soft Rush (*Juncus effusus*)
			Reed Canary Grass (*Phalaris arundinacea*)
			Dense Sedge (*Carex densa*)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

SATRE ASSOCIATES

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
Do normal circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 7/6/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-O-2C
Plot ID: SP 31

VEGETATION

~25' N of building; ~250' from Hwy 99

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Dipsacus fullonum	H	FAC		5	Carex densa	H	OBL		5
☆ Fraxinus latifolia	T	FACW	100	50	Juncus effusus	H	FACW		20 ☆
☆ Phalaris arundinacea	H	FACW		50					
Crataegus douglasii	S	FAC	100	5					
Vicia sp	H	—		10					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes | Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators Save @ 2-6"
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes | Remarks:

SOILS

Map unit name (Series and phase): (28) Conser Silty Clay Loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10 YR 2/1	10 YR 4/3	Many Medium Faint	Silty clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes | Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

GEM

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O-2C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, (B): 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
(A): Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, (B): Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, (C): <0.5 ac

Q5: **How is wetland connected to another body of water?**
(A): by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
(A): W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
(A): no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, (C): Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, (C): <10%

Assessment:
Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
4 Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, (B): 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, (B): portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, (C): <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
(A): no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, (C): Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, (B): other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
(A): yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated? very likely
A: yes, (B): unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
(C): no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
(A): Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
(A): Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
(A): Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
(A): 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
(A): Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
(A): no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, (B): 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, (C): <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, (B): potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, (C): no

Q2: Visible hazards to public?
A: no, (B): 1-2 present, C: 2+ present near train tracks

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, (B): do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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Sp 31



Sp 31.



View north near channel within forested area.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 6, 2001

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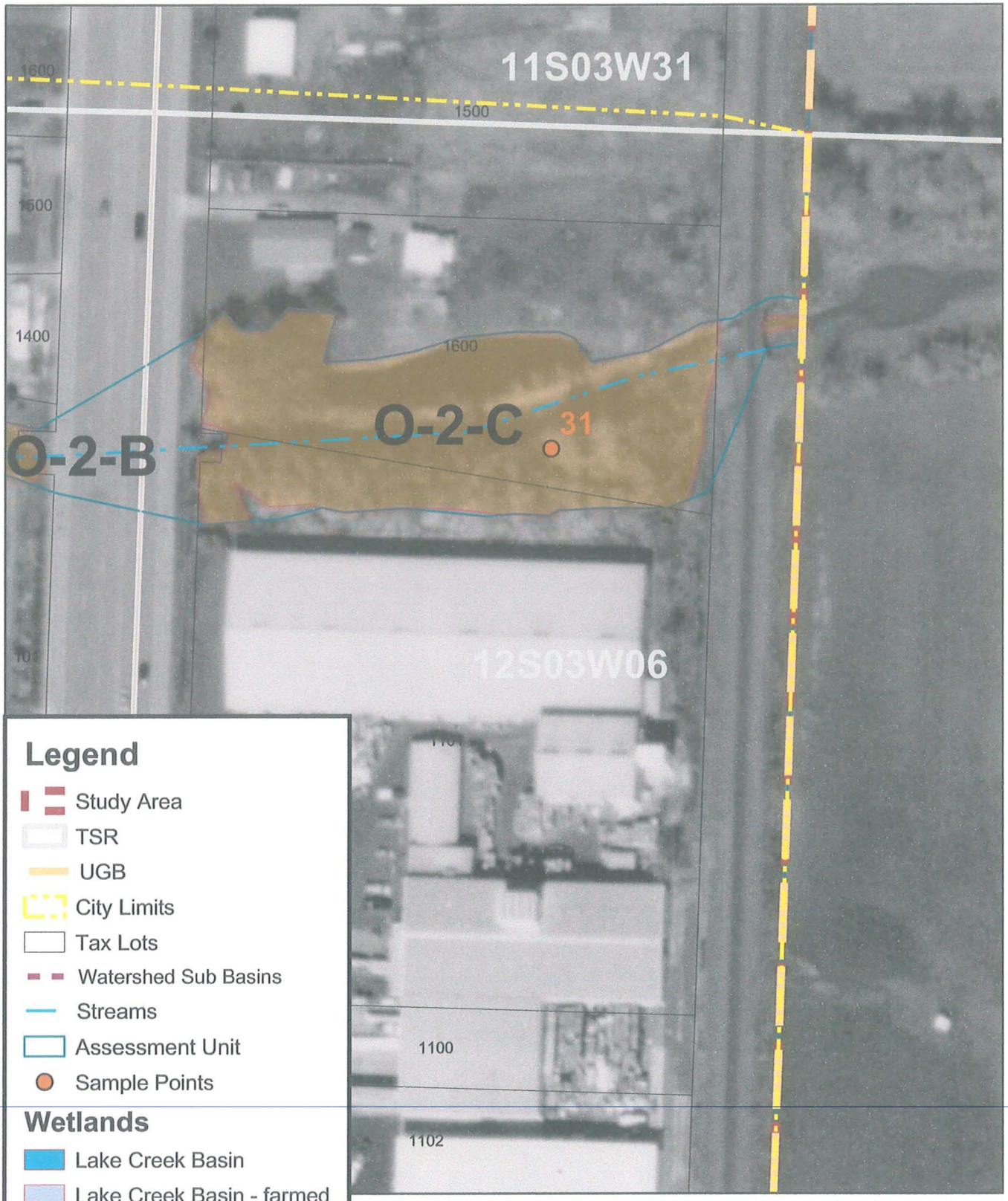

DETAIL MAP O-2-C
City of Tangent
October 2002

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WETLAND O-3f

DRAINAGE BASIN:	OAK CREEK / NORTH BASIN
WETLAND ACREAGE:	3.7 ACRES
TAX LOTS:	T.12S-R.04W-S.01-00-00200, -002012, 00202, -00600, -00606, HWY 34 RIGHT OF WAY
LOCATION:	NORTH OF HIGHWAY 34 AND WEST OF HIGHWAY 99
FIELD DATES:	02/27/02
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	GRASS (FARMED, PASTURED, AND MOWN)
HYDROLOGY:	OAK CREEK TRIBUTARY, PRECIPITATION, SURFACE RUN-OFF, GROUNDWATER
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, DAYTON SILT LOAM, WILLAMETTE SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf*
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* (FARMED SURFACE DRAINAGES)*WITH SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	O-3f
WETLAND ACREAGE	3.7 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 02/27/02
Data Sheet Numbers: None (off-site)
Investigator(s): Chad Hoffman and Colin McArthur

Wetland Mapping Code: **O-3f**
Size (acres): 3.7
Cowardin Classification*: PEMf
%PSS: %PEM: 100 PFO:
HGM Classification**: RI

Location:

T-R-S: 12-04-01
Physical: North of Highway 34 and West of Highway 99E
Hydrologic Basin: Lake Creek North

Tax Lot(s):
-00200, -00606,
-00202, -02012,
-00600, -HWY 34 R-O-W

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (33) Dayton Silt Loam, (151) Willamette Silt Loam, Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Precipitation, Surface Run-off, and Groundwater, Oak Creek Tributary

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash *(Fraxinus latifolia)*			

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
= Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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0-5+

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** Farmed Areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
* Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A -- Farmed Wetlands

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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O-5+

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), (B) precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A) yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, (B) Mod 60%, Low <60%

Q4: **Wetland area in acres**
(A) >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition BTS
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
(A) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, (B) minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, (B) Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
(A): yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
(A): yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
(C): no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, (B): Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, (B): Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, (C): Em veg or wet meadow / Farmed

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, (B): Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, (C): precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, (B): perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
(A): >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
(A): >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, (B): potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, (C): no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, (C): 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, (B): do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
*Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
*No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
~~Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises~~
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
*Wetland not pleasing if 2+ Q are "c"

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DETAIL MAP O-3f
City of Tangent
October 2002

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WETLAND O-4f

DRAINAGE BASIN:	OAK CREEK / NORTH BASIN
WETLAND ACREAGE:	18.5 ACRES
TAX LOTS:	T.12S-R.04W-S.06-00-00100, -00101, -00102, -00200, -02100, -02105, -02120, -02125, -02130, -02201, -02202, -02204 -02300, -02301, 02303, -02304, -02305, -2400, HWY 34 RIGHT OF WAY
LOCATION:	EAST OF HIGHWAY 99E AND NORTH / SOUTH OF HIGHWAY 34; NORTH OF TANGENT DRIVE
FIELD DATES:	02/27/02
SAMPLING POINT #S:	49
VEGETATION COMMUNITY:	GRASS (MOWN, FARMED, PASTURED)
HYDROLOGY:	OAK CREEK TRIBUTARY, PRECIPITATION, SURFACE RUN-OFF, GROUNDWATER
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, DAYTON SILT LOAM, HOLCOMB SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf*
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* (FARMED SURFACE DRAINAGES) WITH SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OM-SITE DETERMINATION WITH AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	O-4f
WETLAND ACREAGE	18.5 acres
~~WILDLIFE HABITAT~~	~~Provides some habitat~~
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 02/27/02
Data Sheet Numbers: 49
Investigator(s): Chad Hoffman and Colin McArthur

Wetland Mapping Code: **O-4f**
Size (acres): 18.5
Cowardin Classification*: PEMf
%PSS: %PEM: 100% PFO:
HGM Classification**: RI with S / F

Location:

T-R-S: 12-04-06,
Physical: East of north McFarland Road
Hydrologic Basin: Lake Creek North

Tax Lot(s):

-00100,	-02100,	-02130,	-02301,
-00101,	-02105,	-02201,	-02303,
-00102,	-02120,	-02202,	-02304,
-00200,	-02125,	-02204,	-02305,
-02400,	HWY 34 R-O-W		

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (33) Dayton Silt Loam, (46) Holcomb Silt Loam, Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Precipitation, Surface Run-off, and Groundwater, Oak Creek Tributary

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash *(Fraxinus latifolia)*			Managed Grass Fields

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
= Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site:	Tangent LWI	Date:	2/27/02
Applicant/Owner:		County:	Linn
Investigators:	*Chad Hoffman and Colin McArthur*	State:	Oregon
Do normal circumstances exist on the site?	yes	Community ID:	O-4f
Is the site significantly disturbed (Atypical Situation?)	NO	Transect ID:	
Is the area a potential Problem Area (If needed, explain on reverse)?	NO	Plot ID:	SP 49

VEGETATION

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Populus trichocarpa	T	FAC	50	20					
Crataegus douglasii	T	FAC	50	20					
Bare Ground	-	-	-	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: N/A

Criterion Met? NO

Remarks: Fenceline Species; Sample Point is taken w/in a tilled field

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
- Depth of surface water none
- Depth to free water >18"
- Depth to saturated soil @ 12"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? yes

Remarks: W/in potential Farmed Wetland Area

SOILS

Map unit name (Series and phase): (3) Amity Silt Loam
Drainage class: Poorly Drained
Taxonomy (subgroup): Fine, montmorillonitic, Mesic Typic Albaqualf
Field observations confirm mapped type? NO

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10 YR 3/2	2.5 YR 4/8	Common, Coarse, Distinct	Silty clay // silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List (Inclusions only)
- ☐ Other ( )

Criterion Met? yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? NO Wetland hydrology present? yes Hydric soils present? yes	Remarks: Hydrology & Aerial Photos indicate Farmed wetland	Is this sampling point within a wetland?	Yes*

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O-4f

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** Farmed Areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment:
Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
★ Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A - Farmed Wetland Areas

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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O-4f

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow / Farmed

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: ~~Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"~~
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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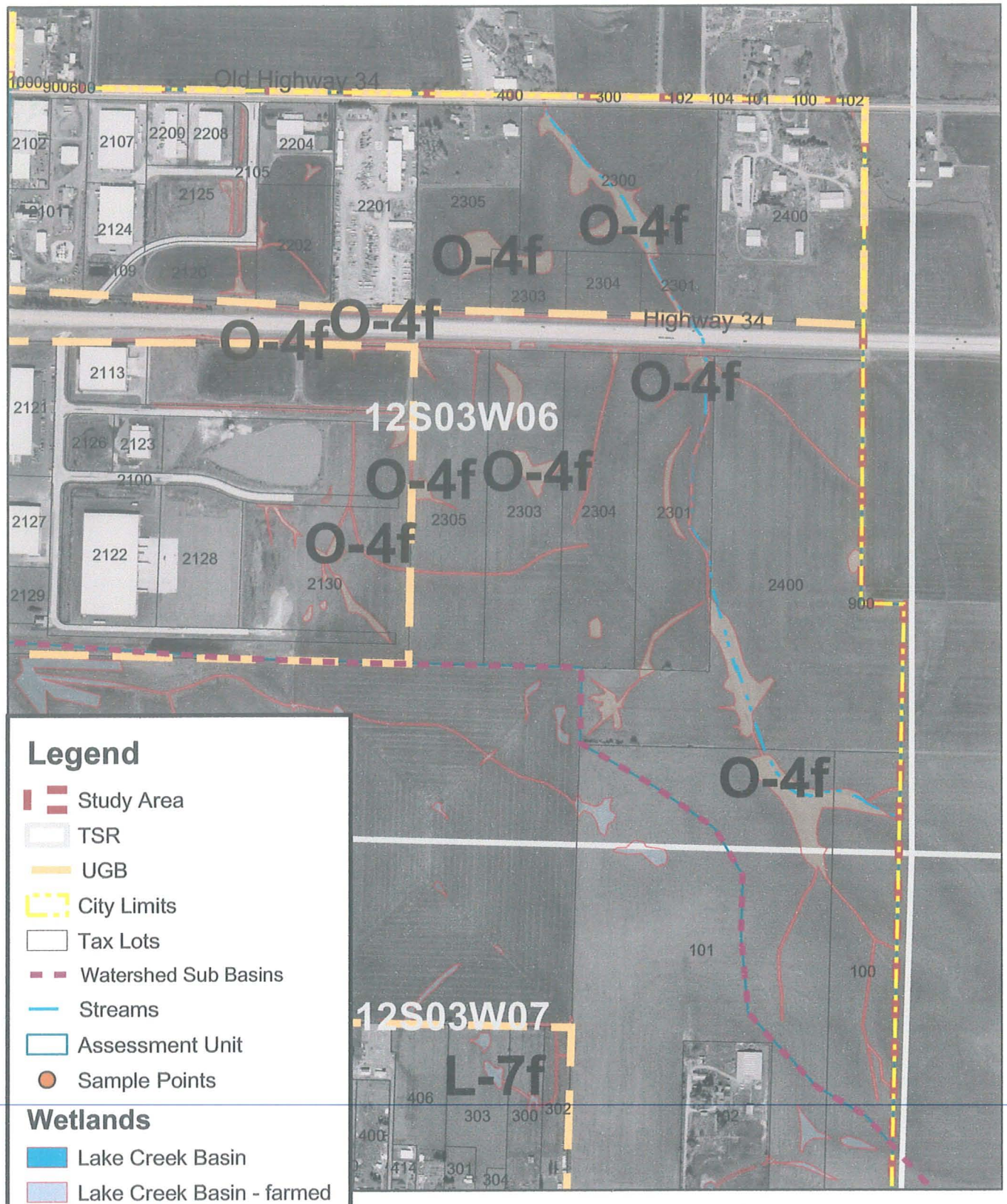

DETAIL MAP O-4f
City of Tangent
October 2002

SATRE ASSOCIATES

Satre Associates, P.C.
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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*

Date: 7/13/01
County: Linn
State: Oregon

normal circumstances exist on the site? Yes
he site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Community ID:
Transect ID: T-12
Plot ID: SP 34

VEGETATION

Just S. of Hwy 34 & N. of McFarland Rd

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
★	Juncus effusus	H	FACW	44	40	Populus trichocarpa	S	FAC	40	20 ★
★	Rosa nutkana	S	FAC	60	30					
★	Holcus mollis (?)	H	FACU	56	50					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 75%

Criterion Met? Yes

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >10"
Depth to saturated soil >10"

Secondary Wetland Hydrology Indicators
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes

Remarks: Bottom of road slope (McFarland)

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-10"	10 YR 3/2	7.5 YR 3/4	Many Coarse Distinct	Silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☑ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☑ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks: Soils very dry

WETLAND DETERMINATION

Wetland vegetation present?	Remarks	Is this sampling point within a wetland?
Wetland hydrology present? Yes		Yes
Hydric soils present? Yes		

GEM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*

Date: 7/13/01
County: Linn
State: Oregon

normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Community ID:
Transect ID: T-L2
Plot ID: Sp 35

VEGETATION

35' N of Sp 34

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
★ Rubus discolor	V	FACW	100	35					
Agrostis capillaris	H	FAC	16	5					
★ Holcus lanatus	H	FAC	78	25					
Lotus micranthus	H	NOL	6	2					
Rosa nutkana	S	FAC	100	10					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50 %

Criterion Met? No Remarks: Marginal

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >10"
Depth to saturated soil >10"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No Remarks: Slightly higher than Sp 34

SOILS

Map unit name (Series and phase): (33) Dayton Silt loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-10	10YR 3/2			silt loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? No Remarks: Soils very hard

WETLAND DETERMINATION

Wetland vegetation present? No - marginal
Wetland hydrology present? No
Hydric soils present? No

Remarks: Upland island

Is this sampling point within a wetland? No

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
Date: 7/13/01
County: Linn
State: Oregon
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No
Community ID:
Transect ID: T-L2
Plot ID: SO36

VEGETATION

Just S. of Hwy 35, 50' N of Sp35

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	
Lotus micranthus	H	NOL	4	5	Vicia tetrasperma	H	NOL	30	40	*
Deschampsia cespitosa	H	FACW	4	5	Agrostis capillaris	H	FAC	38	50	*
					Holcus lanatus	H	FAC	2	2	
* Phalaris arundinacea	H	FACW	15	20						
Rumex crispus	H	FAC+	7	10						

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 67 %

Criterion Met? Yes
Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >12"
Depth to saturated soil >12"

Secondary Wetland Hydrology Indicators
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes
Remarks: Base of road slope

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-12"	10YR 3/2	2.5YR 3/6	Many Medium Distinct	silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes
Remarks
Is this sampling point within a wetland? Yes

HCOM

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

→ South of Highway 34

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment:
Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
★ Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition Not listed, but BPS
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
☆Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
☆Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored.

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
☆Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public? heavy traffic
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?** -- Other features
A: yes, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
* Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
* Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, C: developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
* Wetland not pleasing if 2+ Q are "c"

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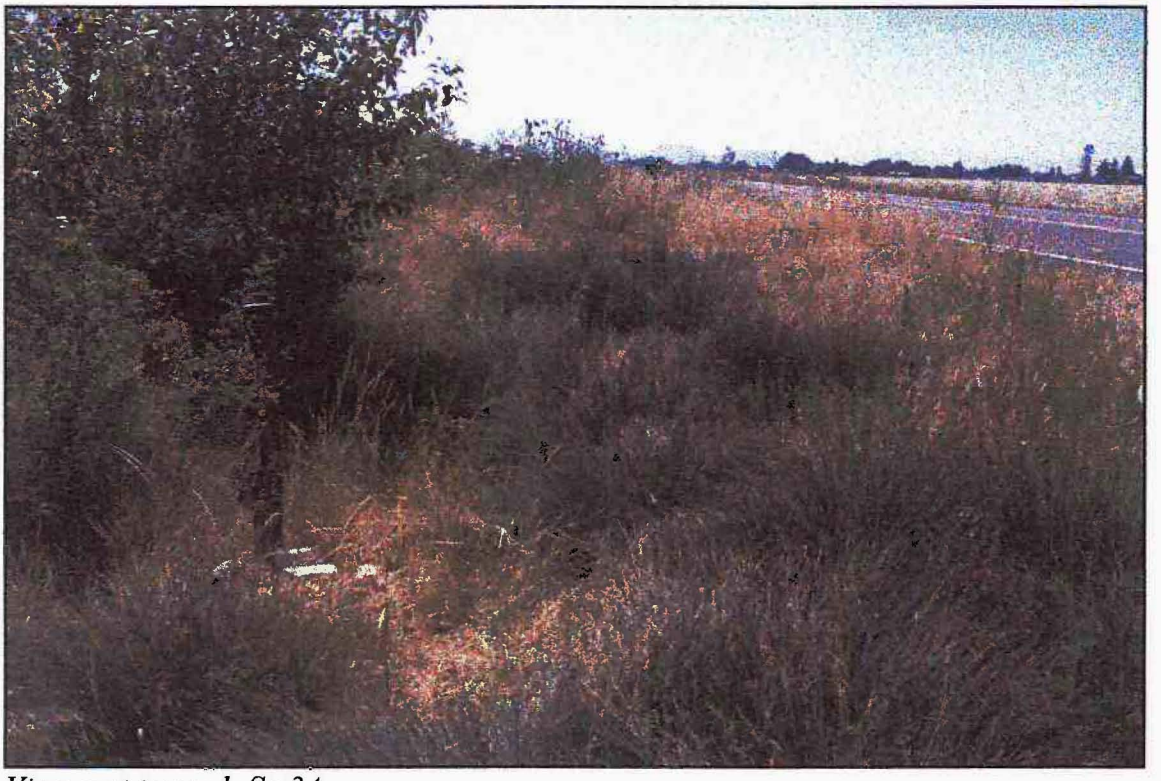
Sp 34, 35



View east towards Sp 34.



View north at Sp 35.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 13, 2001

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Sp 36



View southwest at Sp 36.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 13, 2001

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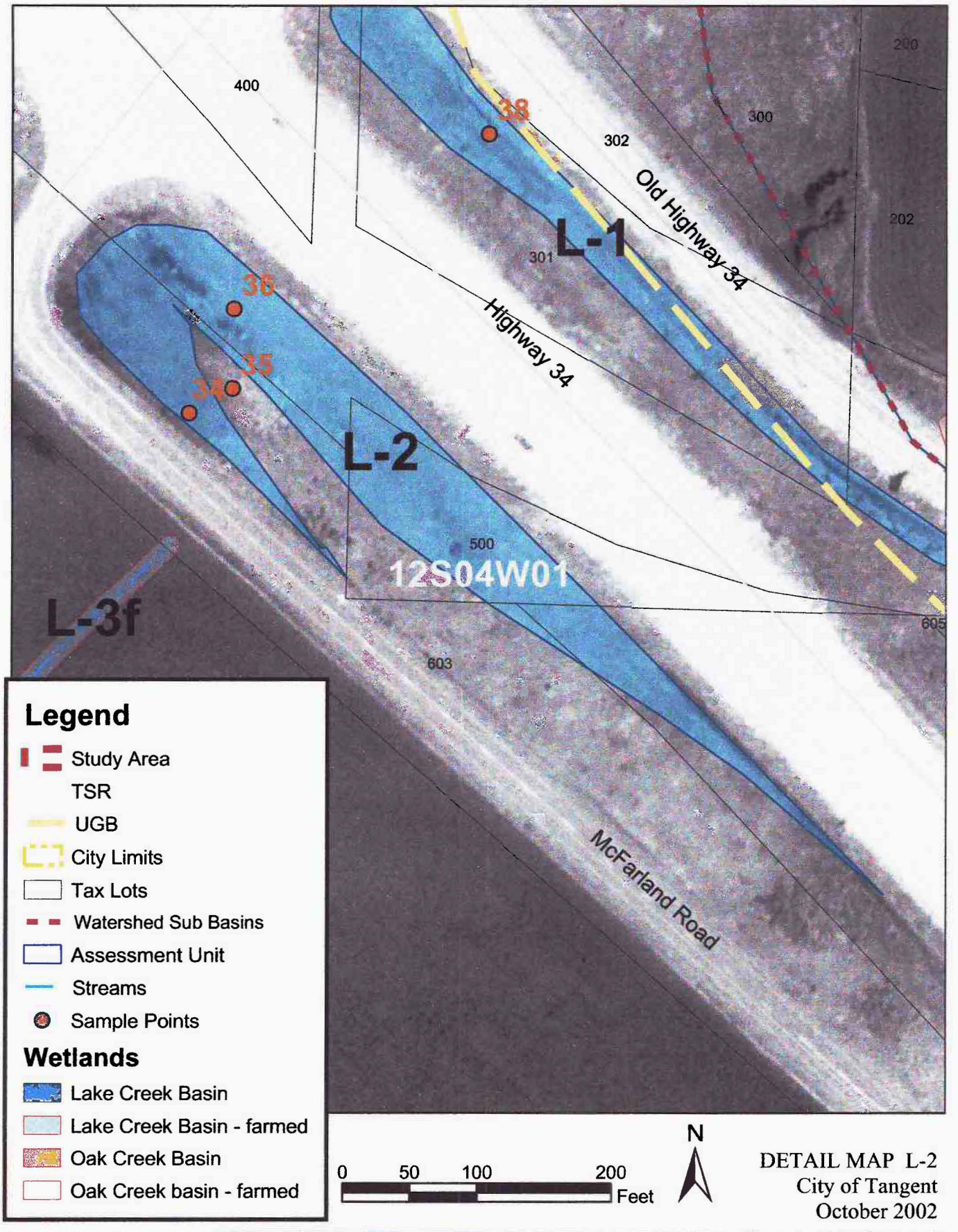

DETAIL MAP L-2
City of Tangent
October 2002

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WETLAND L-3f

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	16.0 ACRES
TAX LOTS:	T.12S-R.04W-S.01-00 -00100-00203, -00300, -00600, -00601, -00700, -00800, -01000
LOCATION:	NORTH OF NORTH LAKE CREEK DR. AND SOUTH OF HIGHWAY 34
FIELD DATES:	7/13/01; 2/27/02
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	FARMED WETLAND (GRASS PRODUCTION)
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WILLAMETTE SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf—(FARMED SURFACE DRAINAGES AND PONDED AREAS)
HGM CLASSIFICATION:	SLOPE / FLATS* WITH RIVERINE IMPOUNDING (FARMED SURFACE DRAINAGES)
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-3f
WETLAND ACREAGE	16.0 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/13/01, 02/27/02
Data Sheet Numbers: Off Site Determination
Investigator(s): Greta Murdoff, Chad Hoffman, and Colin McArthur

Wetland Mapping Code: **L-3f**
Size (acres): 16.0

Cowardin Classification*: PEMf
%PSS: %PEMf: 100 PFO:
HGM Classification**: S / F with RI

Location:

T-R-S: 12-04-01
Physical: North of North Lake Creek Drive and South of Highway 34
Hydrologic Basin: Lake Creek South

Tax Lot(s):

-00100	-00600	-00800
-00203	-00601	-01000
-00300	-00700	

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (151) Willamette Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Precipitation, Surface Runoff, Groundwater, Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
			Active Agricultural Field (Grass Production)

Comments:
Farmed surface drainages and ponded areas. Off site determination--hydrology determined through aerial photograph interpretation and off site field visits during the winter months.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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L-54

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** Farmed areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
★ Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A Farmed Wetland Areas

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-5f

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition not listed, BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-3+

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow/Farmed

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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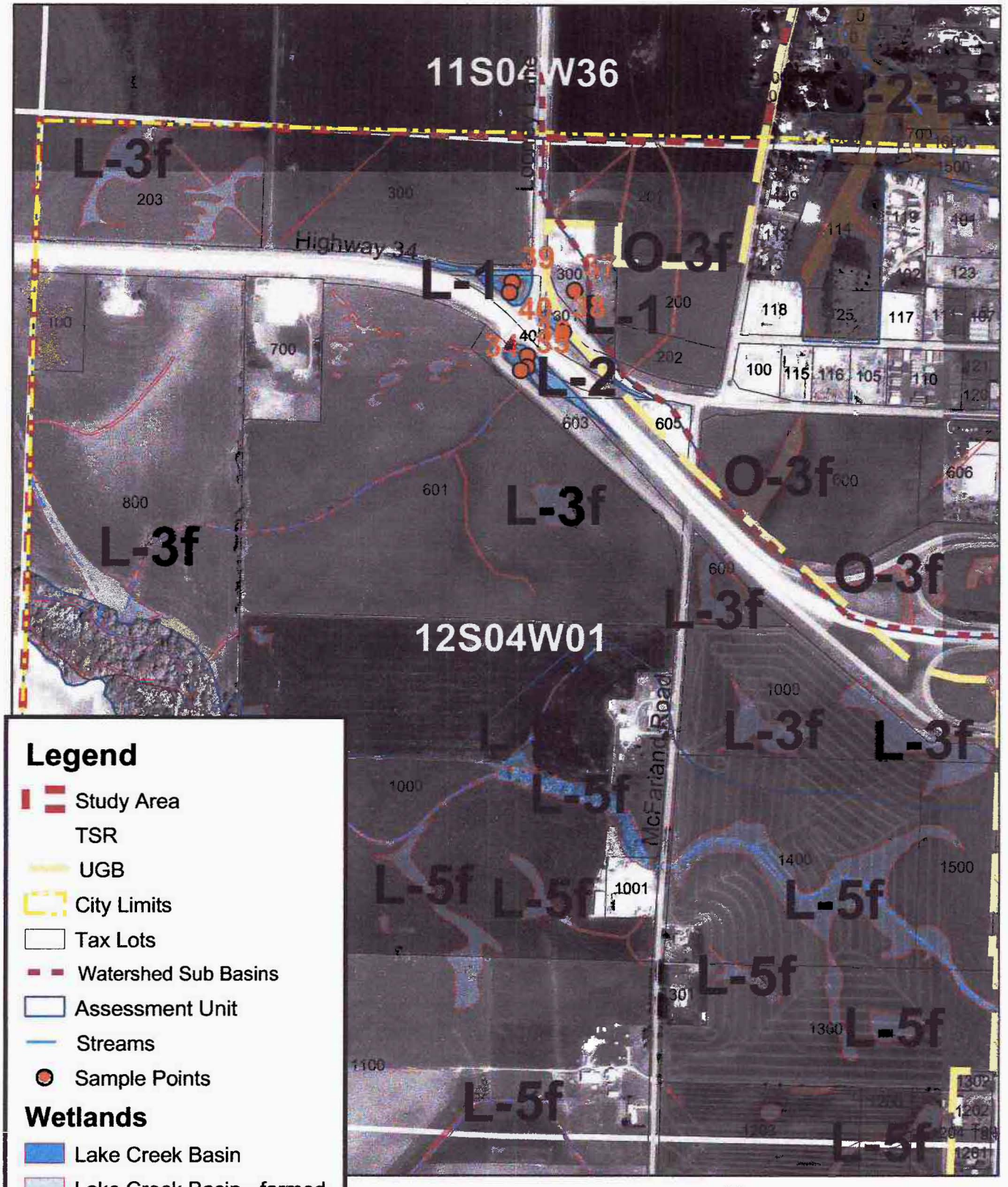

DETAIL MAP L-3f
City of Tangent
October 2002

Satre Associates, P.C.
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Eugene, Oregon 97401 (541) 465-4722 fax

WETLAND L-4A

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	6.8 ACRES
TAX LOTS:	T.12S-R.04W-S.01-00-00200, 00601; T.12S-R.04W-S.01-00-00800, -01000, -01100; T.12S-R.04W-S.12-00-00101, -00102, -00402, -00800, -01000
LOCATION:	NORTH OF NORTH LAKE CREEK Dr.
FIELD DATES:	6/12/01
SAMPLING POINT #S:	17-23
VEGETATION COMMUNITY:	ASH, MEADOW FOXTAIL / RUSH; FARMED AREAS
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, BASHAW SILTY CLAY, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, MCBEE SILTY CLAY LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO* / PEM
HGM CLASSIFICATION:	RIVERINE FLOW-THROUGH* WITH RIVERINE IMPOUNDING
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-4A
WETLAND ACREAGE	6.8 acres
WILDLIFE HABITAT	Provides diverse habitat
FISH HABITAT	Provides diverse habitat
WATER QUALITY	Intact
HYDROLOGIC CONTROL	Intact
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Moderate pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 6/12/01
Data Sheet Numbers: Sp 17-23
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-4A**
Size (acres): 6.8
Cowardin Classification*: PFO / PEM / PEMf
%PSS: %PEM(f): 15 %PFO: 85
HGM Classification**: RFT with RI

Location:

T-R-S: 12-04-12, 12-04-01
Physical: North of North Lake Creek Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.04W-S.01-00-00200, -00601, -00800, -01000, -01100;
T.12S-R.04W-S.12-00-00101, -00102, -00402, -00800, -01000

Soils:

Mapped Series: (3) Amity Silt Loam, (8) Bashaw Silty Clay, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (67) McBee Silty Clay Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia*)		Himalayan Blackberry (*Rubus discolor*)	Cow-Parsnip (*Heracleum lanatum*)
			Meadow Foxtail (*Alopecurus pratensis*)
			Spreading Rush (*Juncus patens*)
			Reed Canary Grass (*Phalaris arundinacea*)
			Rough Bluegrass (*Poa trivialis*)

Comments:

Wetland areas include a small emergent wetland near ephemeral tributary and forested wetlands associated with the perennial water feature.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

SATRE ASSOCIATES

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/12/01
County: Linn
State: Oregon
Community ID:
Transect ID: T- L-4A
Plot ID: SP 17

VEGETATION

7' E of channel

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Phalaris arundinacea	H	FACW	100	100					
* Fraxinus latifolia	T	FACW	61	55					
* Quercus garryana	T	NOL	39	35					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC:

Criterion Met? Yes

Remarks: banks here are phalaris monoculture

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes

Remarks: On banks & channel

SOILS

Map unit name (Series and phase): (28) Conser silty clay loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-6"	10 YR 3/1			silty clay loam
6-18"	10 YR 4/1	7.5 YR 4/6	Many Medium Distinct	clay; OR?

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

Glen

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
Date: 6/12/01
County: Linn
State: Oregon
Community ID:
Transect ID: T- L-4A
Plot ID: SP18

normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

VEGETATION

25' up the bank, From SP17

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Bareground	-	-	-	90	Fraxinus latifolia	T	FACW	100	85 *
Heracleum lanatum	H	FAC+		10	Rubus discolor	V	FACU	100	25 *
Carex sp.	H	-		10	Rosa sp.	S	-	100	5

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50%

Criterion Met? YES
Remarks: Ash Riparian Area

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No
Remarks:

SOILS

Map unit name (Series and phase): (28) Conser Silty Clay Loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? No, light & loamy

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-2"	-			Organics
2-18"	10 YR 3/1	10 YR 2/2	Many, Coarse, Faint	Silt Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes Wetland hydrology present? No Hydric soils present? Yes	Remarks	Is this sampling point within a wetland?	NO

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
Date: 6/12/01
County: Linn
State: Oregon
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) Yes - Agricultural
Is the area a potential Problem Area (If needed, explain on reverse)? No
Community ID:
Transect ID: T-L-4A
Plot ID: SP 19

VEGETATION

25' E of SP 18

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Fraxinus latifolia	T	FACW	100	30	Heracleum lanatum	H	FACT	5	5
*	Rubus discolor	V	FACU	100	20					
	Galium aparine	N	FACU	11	10					
*	Lolium multiflorum	N	NOL	63	60					
*	Poa trivialis	N	FACW	26	25					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50%

Criterion Met? No

Remarks: Edge of Ag field (& riparian area)

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water None
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks:

SOILS

Map unit name (Series and phase): (28) Conser silty clay loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? No

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-8"	10 YR 3/2			silty clay loam
8-18"	10 YR 3/1			silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? No
Hydric soils present? Yes - marginal

Remarks

Is this sampling point within a wetland? No

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*

Date: 6/12/01
County: Linn
State: Oregon

normal circumstances exist on the site? Yes
.he site significantly disturbed (Atypical Situation)? No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Community ID:
Transect ID: T-L-4A
Plot ID: SP20

VEGETATION

15' W of upbank from channel

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Fraxinus latifolia	T	FACW	100	100	Heracleum lanatum	H	FACt	4	5
* Poa trivialis	H	FACW	65	70					
Phalaris arundinacea	H	FACW	3	3					
Lapsana communis	H	NI	14	15					
Galium aparine	H	FACU	14	15					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes — Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes — Remarks:

SOILS

Map unit name (Series and phase): (28) Conser Silty clay loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10YR 3/1			silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☑ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes — Remarks: Marginal - no redox, only slightly lower chroma

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? No
Hydric soils present? Yes - marginal

Remarks

Is this sampling point within a wetland? Yes

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*

Date: 6/12/07
County: Linn
State: Oregon

normal circumstances exist on the site? Yes
ne site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Community ID:
Transect ID: T-L4A
Plot ID: SP2

VEGETATION

On ridge between 2 channels

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Phalaris arundinacea	H	FACW	7	10	Fraxinus latifolia	T	FACW	100	70 *
* Heracleum lanatum	H	FAC+	18	25	Rosa pisocarpa	S	FAC	78	35 *
* Galium aparine	H	FACU	32	45	Symphoricarpos albus	S	FACU	22	10
* Poa trivalis	H	FACW	43	60					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 80 %

Criterion Met? Yes

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☒ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks: Main channel is ≈ 20' away, smaller/connecting channel is ≈ 15' downslope

SOILS

Map unit name (Series and phase): (67) McBee Silty Clay Loam
Taxonomy (subgroup): Fine-silty, mixed, mesic Cumulic Ultic Haploxeroll
Drainage class: Moderately well drained
Field observations confirm mapped type? No, looks more like Woodburn

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0 - 18"	10YR 3/1			Silt loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List (Inclusions only)
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks: Marginal - very permeable, steep banks

WETLAND DETERMINATION

Wetland vegetation present? Yes Wetland hydrology present? No Hydric soils present? Yes - Marginal	Remarks	Is this sampling point within a wetland?	No

L4A

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*

Date: 6/12/01
County: Linn
State: Oregon

normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Community ID: T-L-4A
Transect ID:
Plot ID: SP 2

VEGETATION

On W bank of channel (now a remnant)

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Heracleum lanatum	N	FAC+	11	10					
* Alopecurus pratensis	N	FACW	26	25					
* Juncus patens	N	FACW	63	60					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes

Remarks: Near open field

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators: a few @ 1-4"
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks: Slightly lower than surrounding fields

SOILS

Map unit name (Series and phase) (28) Coreer Silty Clay Loam
Taxonomy (subgroup) Fine, mixed, mesic Typic Argiaquoll
Drainage class Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-10"	10YR 3/2			silty clay loam
10-18"	10YR 3/1	5YR 4/4	Few Med-Fine Distinct	silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions >10"
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☑ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks: Marginal

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes - marginally

Remarks: It appears that the channel used to flow down this linger, but the main channel is now to the west a 30'

Is this sampling point within a wetland? Yes

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
ne site significantly disturbed (Atypical Situation?) No - but in mown area
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/12/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-4A-N
Plot ID: SP 23

VEGETATION

20' E of SP22 in open field

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Festuca arundinacea	H	FAC-	100	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 0 %

Criterion Met? No

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water None
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks:

SOILS

Map unit name (Series and phase): (28) Conser Silty Clay Loam
Taxonomy (subgroup): Fine, Mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10YR 3/1			silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☑ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks: Marginal

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? No
Hydric soils present? Yes - marginal

Remarks

Is this sampling point within a wetland? No

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L-41A

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: (A) 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, (B) Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: (A) >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
(A): by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
(A) W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
(A): >40%, B: 10-40%, C: <10%

Assessment: * Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: (A) >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
(A) natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, (B) 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
(A): no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, (B) other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: * Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A) surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A) yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
(A) high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
(A) >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition not listed, BPJ
C: no reaches listed as water quality limited

Assessment: * Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
(A) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, (C) unrestricted flow

Q5: **Dominant veg cover**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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L-4A

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public?
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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L-4A

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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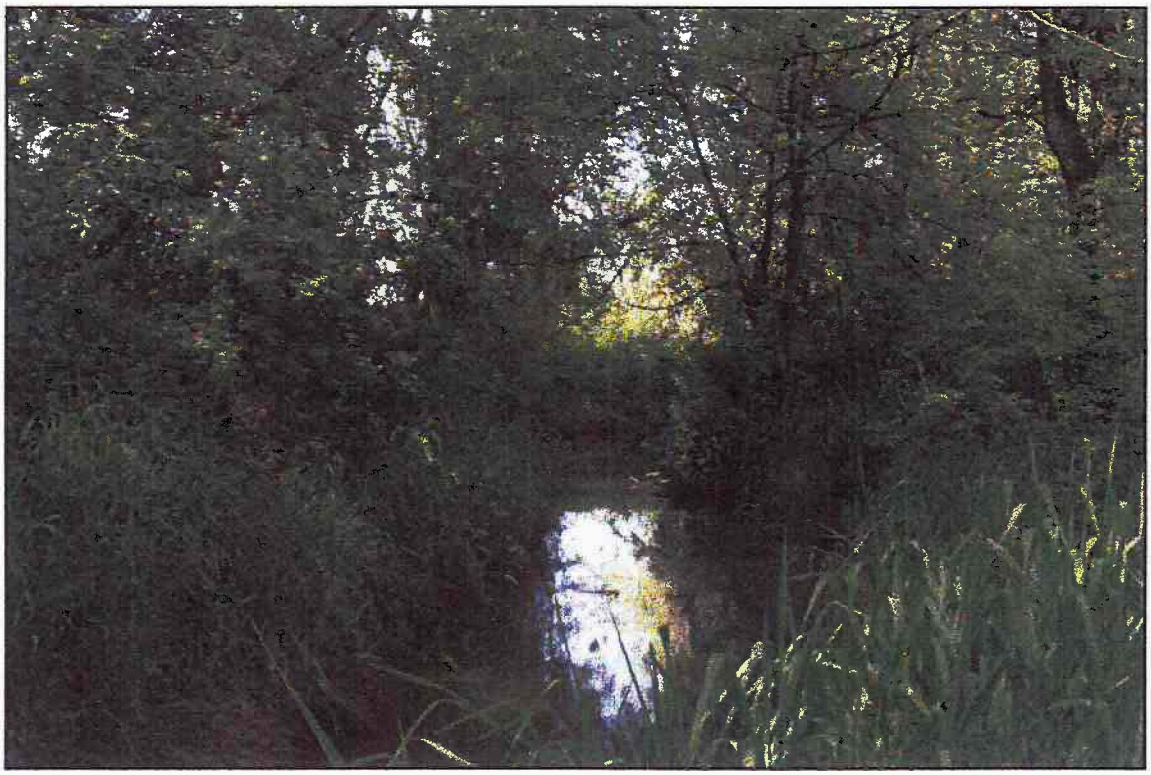
Sp 17



View North of Sp 17.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
May 08, 2001

SATRE ASSOCIATES

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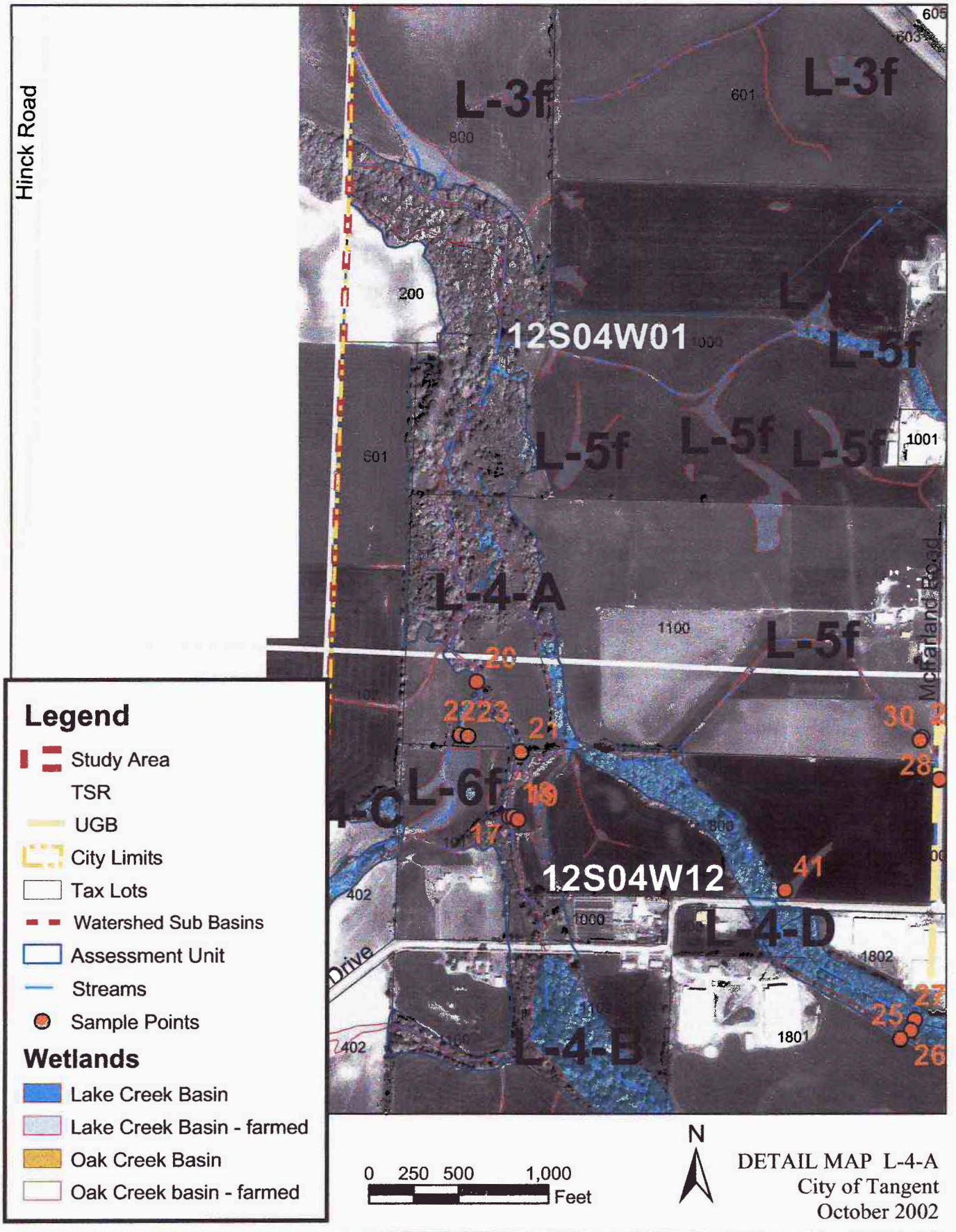

DETAIL MAP L-4-A
City of Tangent
October 2002

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WETLAND L-4B

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	30.8 ACRES
TAX LOTS:	T.12S-R.04W-S.11-00-00402 T.12S-R.04W-S.12-00-01100, -01102, -01200, -01801
LOCATION:	SOUTH OF NORTH LAKE CREEK DR.
FIELD DATES:	7/11/01
SAMPLING POINT #S:	33
VEGETATION COMMUNITY:	ASH
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, BASHAW SILTY CLAY, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO*
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* WITH RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	**L-4B**
WETLAND ACREAGE	30.82acres
WILDLIFE HABITAT	Provides diverse habitat
FISH HABITAT	Provides diverse habitat
WATER QUALITY	Intact
HYDROLOGIC CONTROL	Intact
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Moderately pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/11/01
Data Sheet Numbers: Sp 33
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-4B**
Size (acres): 30.8
Cowardin Classification*: PFO
%PSS: %PEM: %PFO: 100
HGM Classification**: RI with RFT

Location:

T-R-S: 12-02-11; 12-04-12
Physical: South of North Lake Creek Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.04W-S.11-00-00402
T.12S-R.04W-S.12-00-01100, -01102, -01200, -01801

Soils:

Mapped Series: (3) Amity Silt Loam, (8) Bashaw Silty Clay, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia)*		Trailing Blackberry (*Rubus ursinus)*	Nipplewort (*Lapsana communis)*
			Common Camas (*Camassia quamash)*
			Oregon Saxifrage (*Saxifraga oregana)*
			Creeping Jenny (*Lysimachia nummularia)*

Comments:

Large forested wetland surrounding Lake Creek.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation)? No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 7/11/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-4B
Plot ID: SP 33

VEGETATION

30' W of Ag. field w/in riparian area

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Fraxinus latifolia	T	FACW	100	100	Lysimachia nummularia	H	FACW	32	20 *
*	Rubus ursinus	V	FACW	100	50	Perideridia gairdneri	H	FAC	4	2
	Lapsana communis	H	NI	16	10					
*	Camassia quamash	H	FACW	32	20					
	Saxifraga oregana	H	FACW+	16	10					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 75%

Criterion Met? Yes
Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >14"
Depth to saturated soil >14"

Secondary Wetland Hydrology Indicators
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes
Remarks:

SOILS

Map unit name (Series and phase): (8) Bashaw Silty Clay
Taxonomy (subgroup): Very-fine, montmorillonitic, mesic Typic Pelloxerert
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-14"	10YR 3/1	10YR 4/6	Few, Medium, Faint	Silty Clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

Glenn

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L-4B

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
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A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

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A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
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Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-4B

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: ✓Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPS
C: no reaches listed as water quality limited

Assessment: ✓Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-4B

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, (B) no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, (B) unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
(C) no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, (B) Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, (B) Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
(A) 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
(A) Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
(A) no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
(A) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
(A) >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, (B) potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential if Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, (C) no

Q2: Visible hazards to public?
(A) no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, (B) do not meet A or C, C: lost/ not intact

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L-4B

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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View West from Sp 33, towards Lake Creek.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 11, 2001

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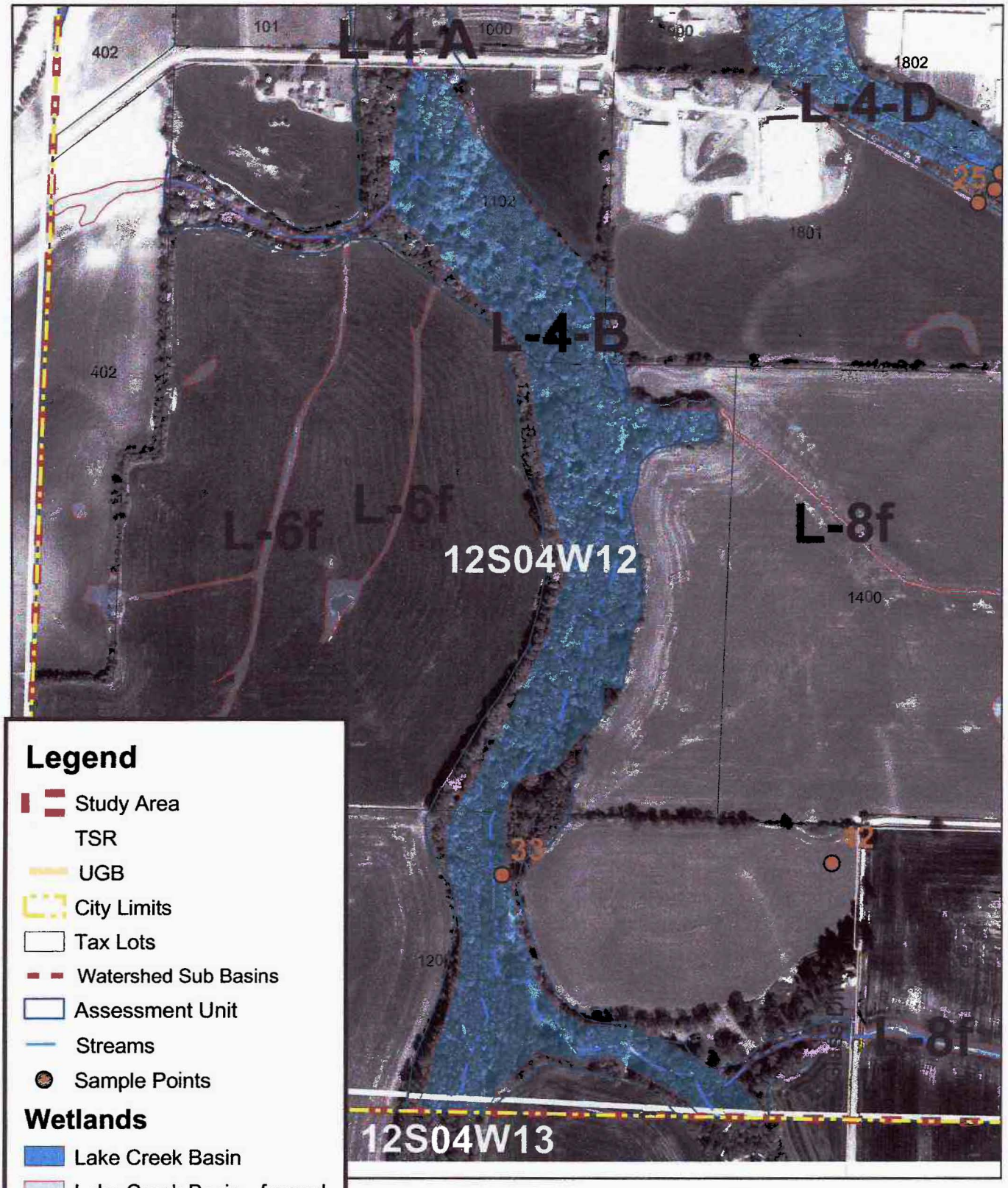

DETAIL MAP L-4-B
City of Tangent
October 2002

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WETLAND L-4C

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	1.9 ACRES
TAX LOTS:	T.12S-R.04W-S.11-00-00101, -00102, -00402
LOCATION:	NORTH OF NORTH LAKE CREEK Dr.
FIELD DATES:	7/11/01
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	ASH / HAWTHORNE /REED CANARY GRASS
HYDROLOGY:	LAKE CREEK
SOILS:	CONCORD SILT LOAM, CONSER SILTY CLAY LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO* / PEM
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* WITH RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM QUESTIONNAIRE
- MAP

WETLAND NUMBER	L-4C
WETLAND ACREAGE	1.9 acres
WILDLIFE HABITAT	Provides diverse habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Intact
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential recreation
AESTHETIC QUALITY	Moderately pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/11/01
Data Sheet Numbers: None (off-site)
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-4C**
Size (acres): 1.9
Cowardin Classification*: PFO / PEM
%PSS: %PEM: 20 %PFO: 80
HGM Classification**: RI with RFT

Location:

T-R-S: 12-04-11
Physical: North of North Lake Creek Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
101
102
402

Soils:

Mapped Series: (27) Concord Silt Loam, (28) Conser Silty Clay Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia*)	Douglas' Hawthorn (*Crataegus douglasii*)	Himalayan Blackberry (*Rubus discolor*)	Reed Canary Grass (*Phalaris arundinacea*)

Comments:

Off-site determination, no permission to enter---hydrology determined through aerial photograph interpretation and off site field visits during the winter months.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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L-4C
offsite

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: X Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-4C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPS
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-4C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?** but likely
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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L-4C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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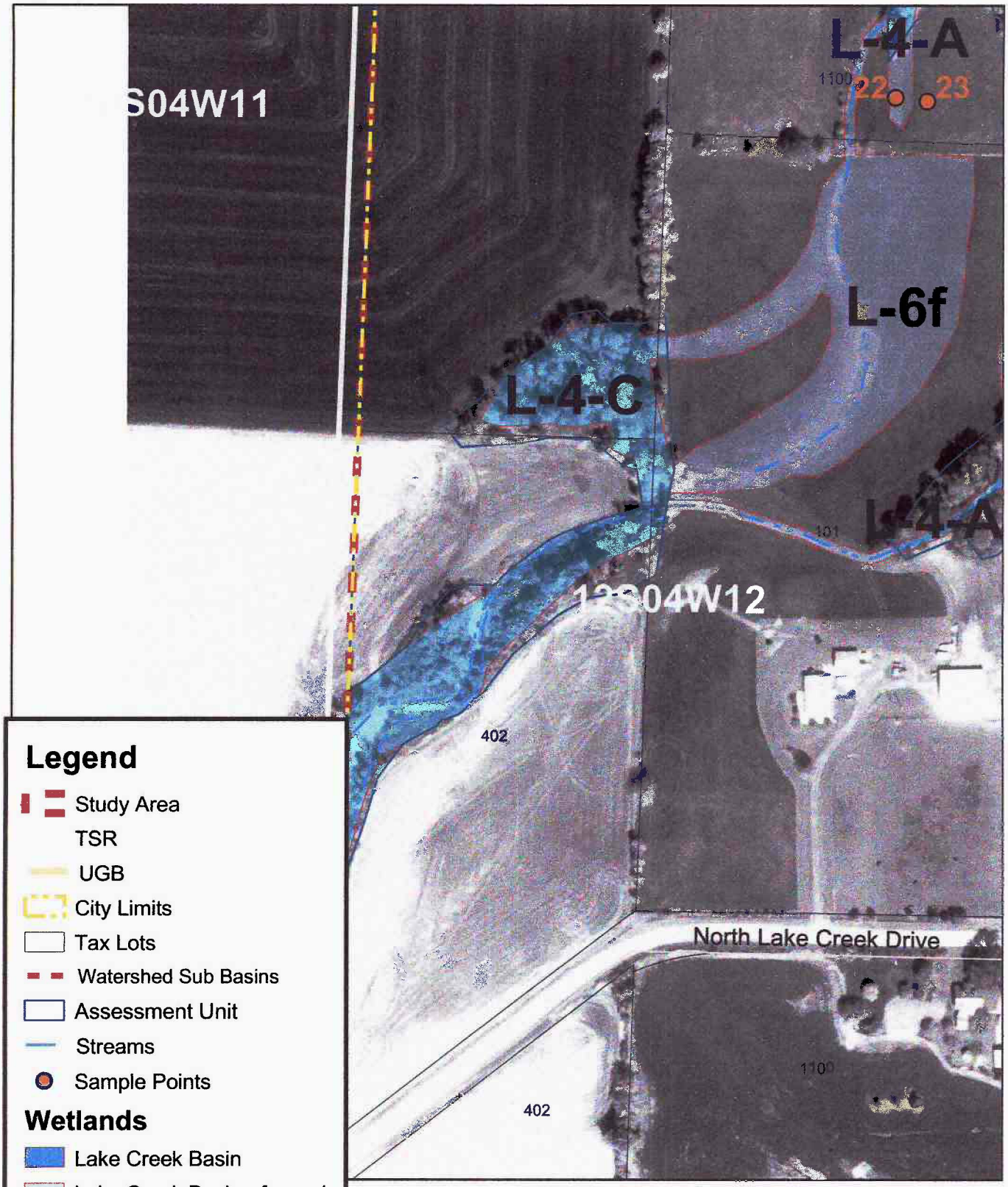

DETAIL MAP L-4-C
City of Tangent
October 2002

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WETLAND L-4D

DRAINAGE BASIN:	LAKE CREEK /SOUTH BASIN
WETLAND ACREAGE:	17.0 ACRES
TAX LOTS:	T.12S-R.04W-S.12-00-08000, -01801, -00900 T.12S-R.04W-S.12-AD-05300 T.12S-R.04W-S.01-00-01100
LOCATION:	NORTH AND SOUTH OF NORTH LAKE CREEK DR.
FIELD DATES:	6/29/01, 7/02/01
SAMPLING POINT #S:	25-27
VEGETATION COMMUNITY:	ASH; ROSE; SPEEDWELL; FARMED
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WAPATO SILTY CLAY LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO*
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* WITH RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- PREVIOUS DELINEATION INFORMATION
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-4D
WETLAND ACREAGE	17.0 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	Provides diverse habitat
WATER QUALITY	Intact
HYDROLOGIC CONTROL	Intact
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential recreation
AESTHETIC QUALITY	Moderately pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 6/29/01, 7/02/01
Data Sheet Numbers: Sp 25, 26, 27
estigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-4D**
Size (acres): 17.0
Cowardin Classification*: PFO
%PSS: %PEM: %PFO: 100
HGM Classification**: RI with RFT

Location:

T-R-S: 12-04-12, 12-04-12-AD, 12-04-01
Physical: North and South of N. Lake Creek Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.04W-S.12-00-08000, -01801, -00900;
T.12S-R.04W-S.12-AD-05300
T.12S-R.04W-S.01-00-01100

Soils:

Mapped Series: (3) Amity Silt Loam, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (99) Wapato Silty Clay Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia*)	Nootka Rose (*Rosa nutkana*)	Bittersweet Nightshade (*Solanum dulcamara*)	Rough Bluegrass (*Poa trivialis*)
		Creeping Jenny (*Lysimachia nummularia*)	Pennyroyal (*Mentha spicata*)
			American Brooklime (*Veronica americana*)
			California False Hellebore (*Veratrum californicum*)

Comments:

Large forested wetland surrounding a fork of Lake Creek.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

SATRE ASSOCIATES

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Eugene, Oregon 97401 (541) 465-4722 fax

WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*

Date: 6/29/01
County: Linn
State: Oregon

normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Community ID:
Transect ID: T-L-4
Plot ID: So 25

VEGETATION

At edge of riparian area/ag field

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
★ Fraxinus latifolia	T	FACW	100	70					
★ Lolium multiflorum	H	NOL	100	50					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50 %

Criterion Met? No

Remarks: Marginally No

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water > 18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks:

SOILS

Map unit name (Series and phase): (28) Conser Silty Clay Loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-16"	10 YR 3/2			silty clay loam
16-18"	10 YR 3/1	7.5 YR 2.5/2	Common Fine Faint	silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? No

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? No
Hydric soils present? No

Remarks

Is this sampling point within a wetland? No

DCM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
Date: 6/29/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-4D
Plot ID: SD 26

Are normal circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

VEGETATION

70' E of SD 27

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	
*	Fraxinus latifolia	T	FACW	100	100	Veronica americana	H	OBL	21	60	*
	Solanum dulcamara	V	FAC+	43	15						
*	Poa trivialis	H	FACW	74	70						
*	Lysimachia nummularia	V	FACW	57	20						
	Geum macrophyllum	H	FACW-	5	5						

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes
Remarks: w/in forested area

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none present
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators many of"
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes
Remarks:

SOILS

Map unit name (Series and phase): (28) Conser Silty Clay Loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type?

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-14"	10 YR 3/1	7.5 YR 5/8	Common Medium Distinct	silty clay loam
14-18"	10 YR 4/1	7.5 YR 3/4	Many Coarse Distinct	silty clay loam
		7.5 YR 4/6	"	

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 7/2/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-4D
Plot ID: SP 27

VEGETATION

50' E of SP 26

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Fraxinus latifolia	T	FACW	100	75					
*	Solanum dulcamara	V	FAC+	100	80					
	Veronica americana	H	OBL	67	10					
	Mentha spicata	H	OBL	33	5					
	bare ground	—	—	—	10					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes | Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water 12"
Depth to saturated soil 5"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes | Remarks: Near drainageway

SOILS

Map unit name (Series and phase): (28) Conser Silty Clay Loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-15"	10YR 3/1			silty clay loam
15-18"	10YR 4/1	7.5YR 2.5/2	Few Medium Distinct	clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes | Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

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WETLAND DELINEATION DATA FORM

Project/Site:	Tangent LWI	Date:	2/27/02
Applicant/Owner:		County:	Linn
Investigators:	*Chad Hoffman and Colin McArthur*	State:	Oregon
Normal circumstances exist on the site?	No, Farmed Wetland Field	Community ID:	
Is the site significantly disturbed (Atypical Situation?)		Transect ID:	T-L-4D
Is the area a potential Problem Area (If needed, explain on reverse)?		Plot ID:	SP 4/

VEGETATION

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Populus trichocarpa	T	FACW	100	10					
Bare Ground	—	—	—	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 0%

Criterion Met? No

Remarks: Tilled Soils Fenceline Species

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☑ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water @ 6"
Depth to saturated soil @ surface

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☑ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks:

SOILS

Map unit name (Series and phase)
Taxonomy (subgroup)
Drainage class
Field observations confirm mapped type?

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10 YR 3/2	2.5 YR 4/6	Many, Fine, Distinct	Silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Wetland hydrology present? Hydric soils present?	Remarks: Farmed Wetland?	Is this sampling point within a wetland?	Yes

CH Farmed

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Oregon
John A. Kitzhaber, M.D., Governor

Division of State Lands
775 Summer Street NE
Salem, OR 97310-1337
(503) 378-3805
FAX (503) 378-4844
TTY (503) 378-4615

State Land Board
John A. Kitzhaber
Governor
Phil Keisling
Secretary of State
Jim Hill
State Treasurer

April 27, 1999

Scott Craig, PWS
W.E.T.
P.O. Box 632
Corvallis, OR 97339-0632

Re: Wetland Delineation for North Lake Creek Drive Realignment, Linn County
T12S R4W S12 TL 900, 1802; DSL Det. # 99-0119; GA 16996

Dear Scott:

I have reviewed your wetland delineation report for the above site and concur with your conclusions. The wetland area mapped in your report is subject to permit requirements of the state Removal-Fill Law. A state permit is required for fill or excavation of 50 cubic yards or more in the wetland area. Federal or local wetland permit requirements may apply as well. I understand that a permit application has been submitted (GA 16996).

Division approval of wetland delineation reports is based upon the information provided to us. Should additional information be brought to our attention or should site conditions change, we would consider the new information and re-evaluate the site and our jurisdictional determination as needed.

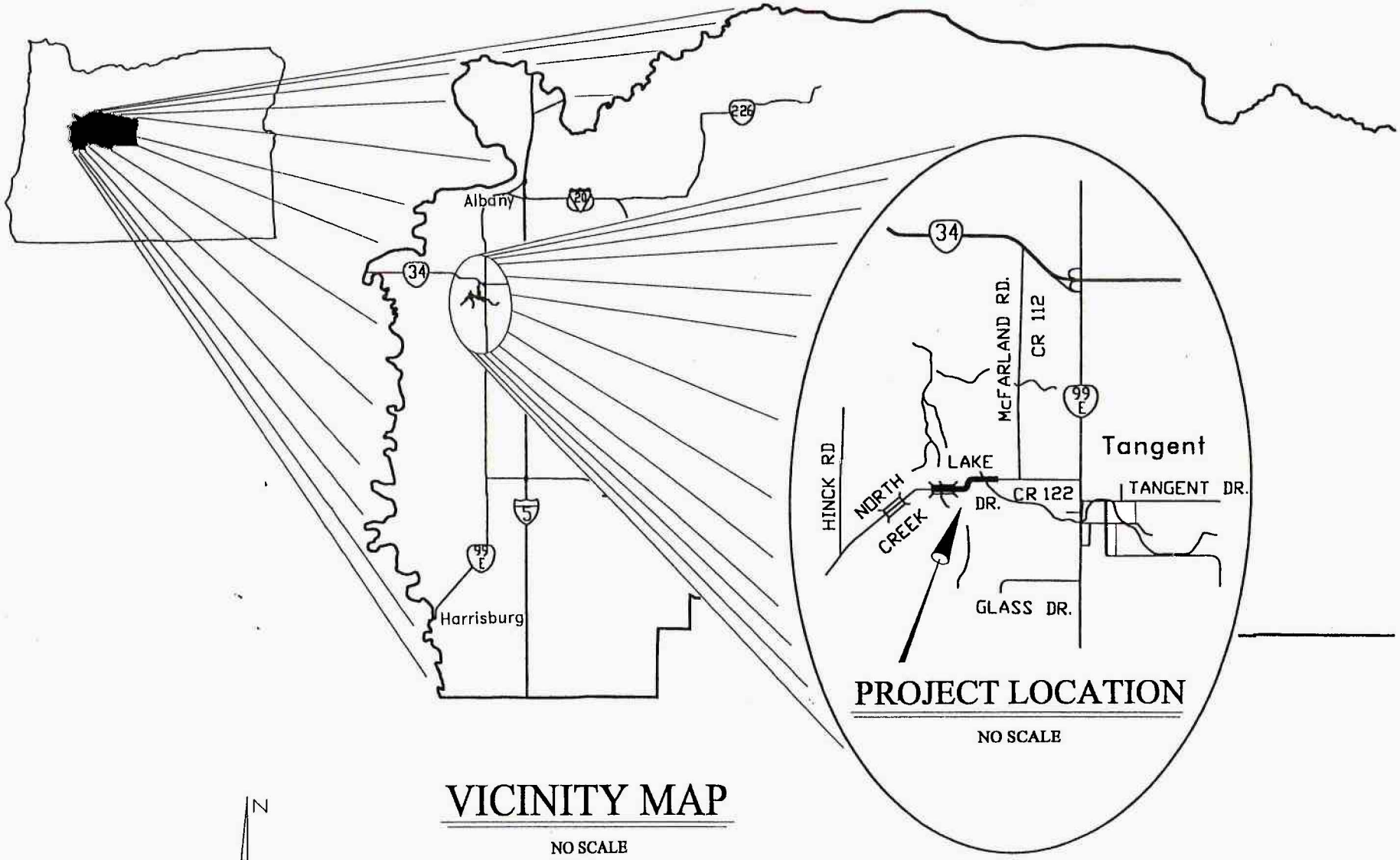
Thank you for your report. Please phone if you or your client has any questions.

Sincerely,

Janet C. Morlan

Janet C. Morlan, PWS
Wetlands Program Leader

cc: Ken Franklin, DSL
Jim Goudzwaard and Mary Headley, Corps of Engineers



VICINITY MAP

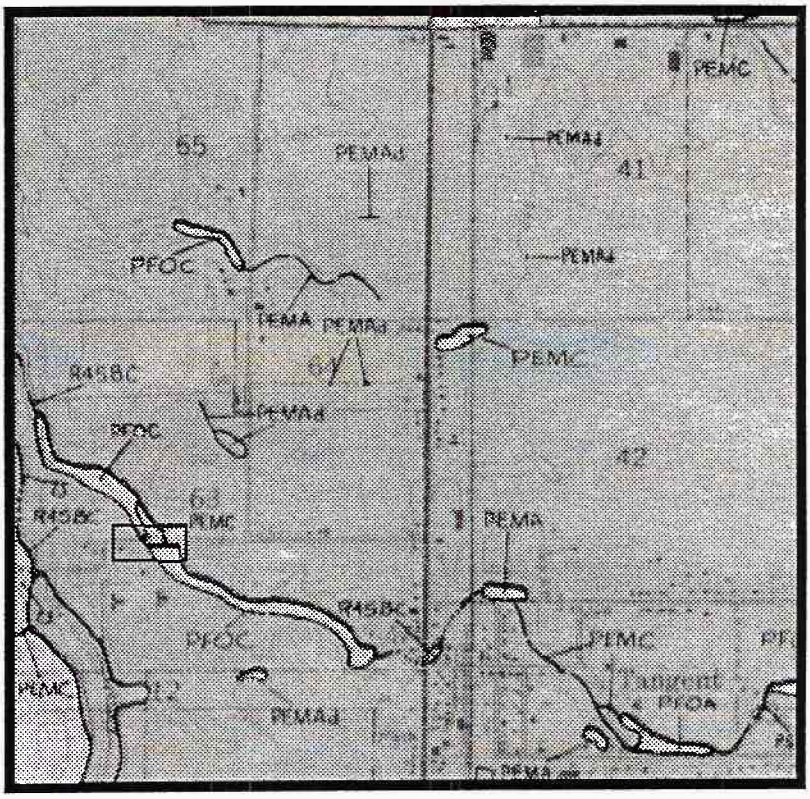
NO SCALE

N
W E
S

LINN COUNTY ENGINEER'S OFFICE 3010 FERRY STREET SW ALBANY, OREGON 97321

C.R. 122, N. LAKE CREEK. DR.
WETLANDS LOCATION

DRAWING NO. :	WETPERMIT.DWG
DATE:	3/15/99
DESIGNED BY:	M. HARDING
SHEET	01
HORZ	As Noted
VERT SCALE:	As Noted

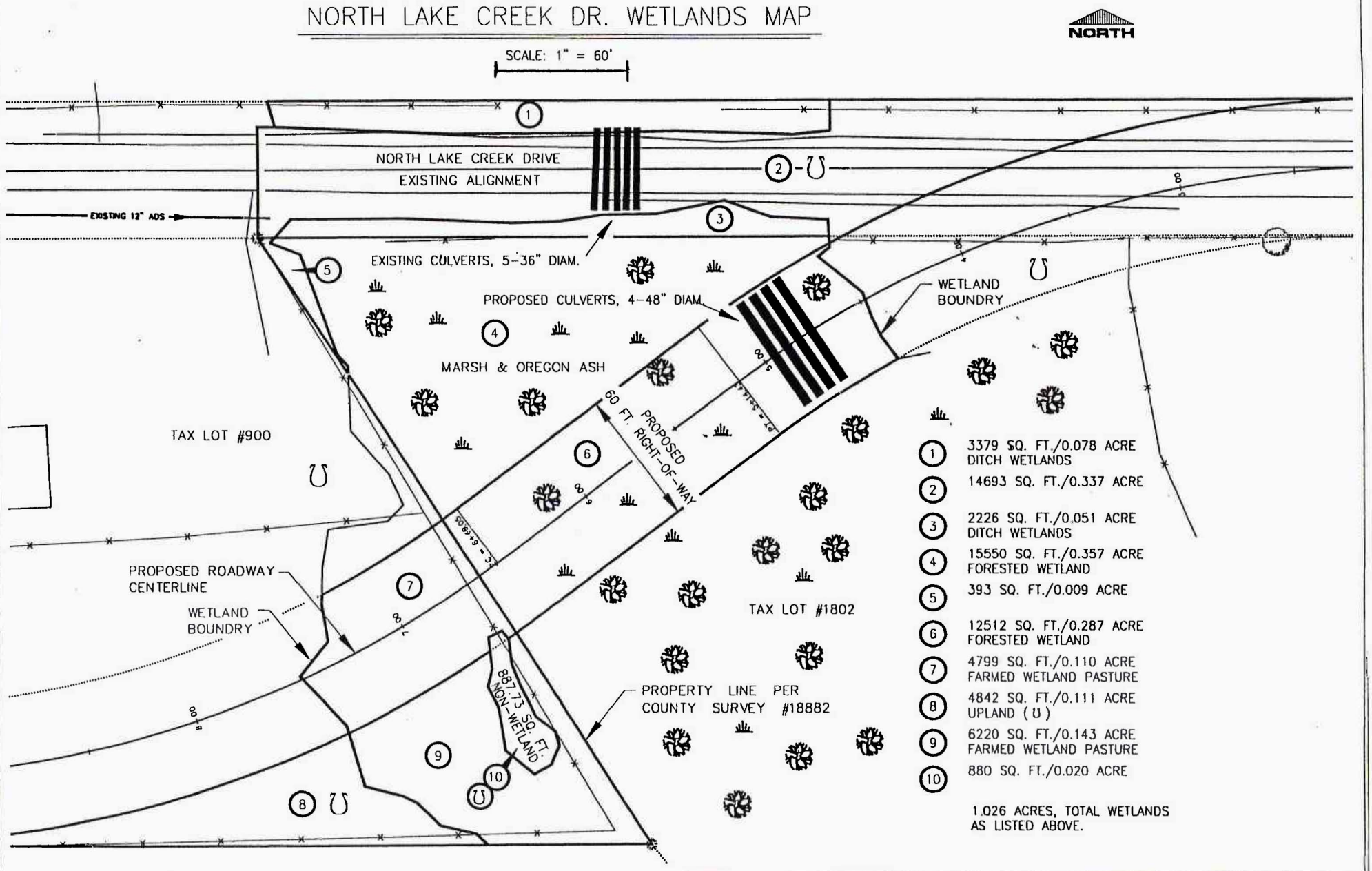


Scale: ≈1"=2,000'

NWI Map
Tangent 7.5 Quad
N. Lake Creek Dr. Road Realignment
Linn County, OR
WET Inc., March 1999

NORTH LAKE CREEK DR. WETLANDS MAP

SCALE: 1" = 60'



LINN COUNTY ENGINEER'S OFFICE
3010 FERRY STREET SW
ALBANY, OREGON 97321

C.R. 122, N. LAKE CREEK. DR.
WETLANDS LOCATION 1.

DRAWING NO. :	122WETLANDS.DWG
DATE:	3/15/99
DESIGNED BY:	M. HARDING
SHEET:	01
HORZ SCALE:	As Noted
VERT SCALE:	As Noted

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 6/29/01 and 7/02/01
ta Sheet Numbers: Sp 25, 26, 27
estigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: W2A
Size (acres): 18.5
Cowardin Classification*
%PSS: %PEM: %PFO: 100

Location:

T-R-S: 12-04-12, 12-04-01
Physical: North and South of North Lake Creek Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
120412008000, -01801, -00900
120412AD05300
12040101100

Soils:

Mapped Series: (28) Conser Silty Clay Loam

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Fraxinus latifolia	*Rosa nutkana*	*Solanum dulcamara*	*Poa trivialis*
		Lysimachia nummularia	*Mentha spicata*
			Veronica americana
			Veratrum californicum

Comments:

Large forested wetland surrounding a fork of Lake Creek.

*Cowardin Classifications:
O = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

SATRE ASSOCIATES

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WETLAND FUNCTION AND CONDITION SUMMARY TABLE
Tangent Local Wetland Inventory

Wetland Identification: **W2A**

Function	Assessment	Rationale
WILDLIFE HABITAT	Provides some wildlife habitat	Forested riparian area surrounded by agricultural fields.
FISH HABITAT	Provides diverse fish habitat	Forested riparian area provides shading, natural channel.
WATER QUALITY	Intact	Forested riparian area with seasonal flooding.
HYDROLOGIC CONTROL	Intact	Located within floodplain, seasonally flooded, natural channel interrupted only by culvert under North Lake Creek Drive.
SENSITIVITY TO FUTURE IMPACTS	Potentially sensitive	Forested vegetation, constricted by agricultural fields, likely using water for irrigation or drainage.
ENHANCEMENT POTENTIAL	High potential	Functions are degraded but not lost, there are a few areas of non-ag upland that could be restored to wetland.
EDUCATION	Potential use	Surrounded by private property, but a portion of the wetland can be viewed from North Lake Creek Drive.
RECREATION	Potential value	Possibilities for viewing forested wetland from road, but no public access, no viewing areas, surrounded by agricultural fields.
AESTHETIC QUALITY	Moderately pleasing	Natural area surrounded by agricultural fields.

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L-4D

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-41D

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-4D

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: ★ Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
★ Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: ★ Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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Sp 25, 26



View east towards Sp 25.



View west from Sp 26.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
June 29, 2001

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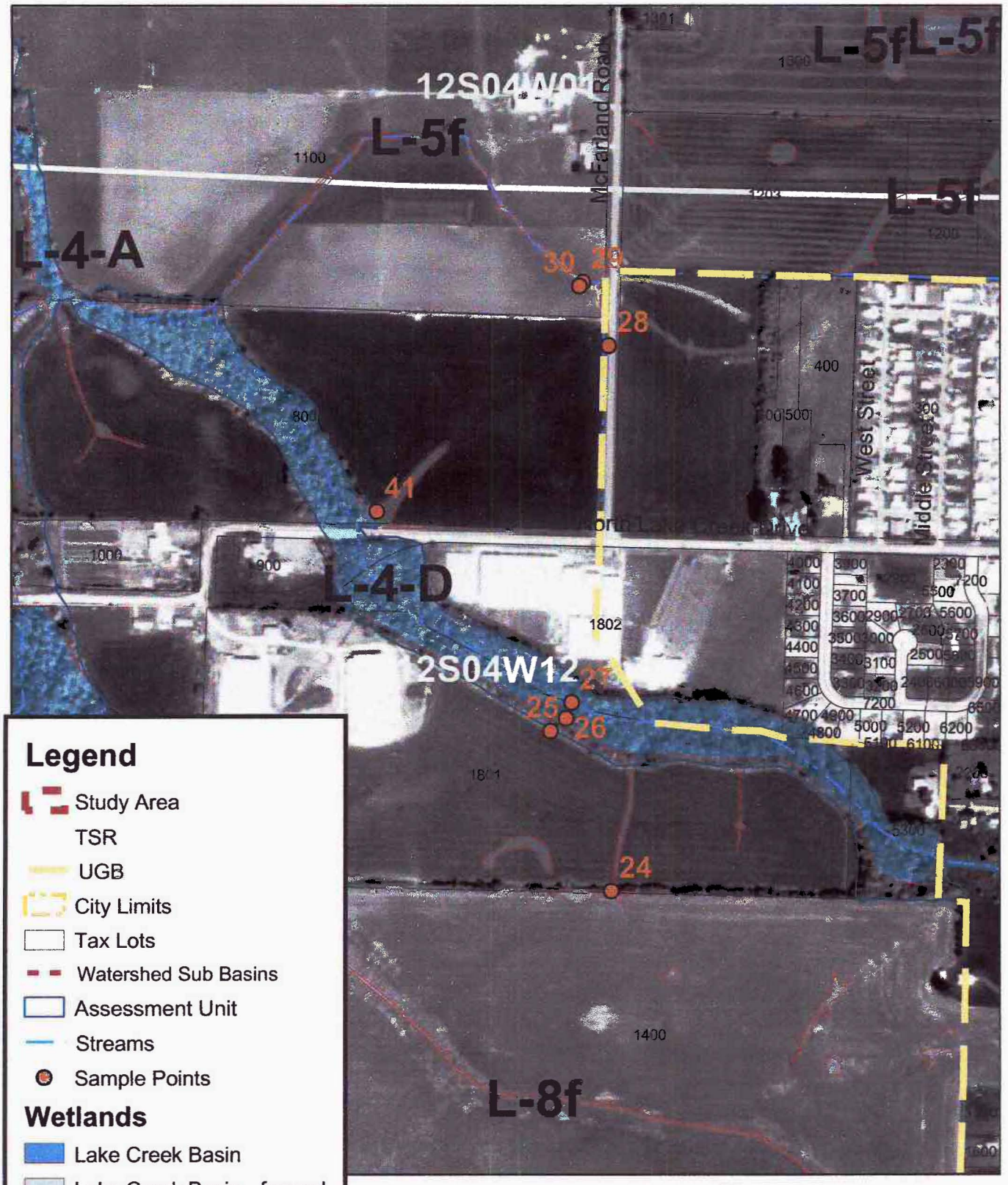
Sp 27



View Northeast at Sp 27, near flowing water.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
June 29, 2001



DETAIL MAP L-4D
City of Tangent
October 2002

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WETLAND L-5f

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	24.2 ACRES
TAX LOTS:	T.12S-R.04W-S.01-00-01000, -01001-01100, -01200, -01203, -01204, --01300, -01301, -01400, -01500; T.12S-R.04W-S12-00-00400, -00500, -00600, -00700, -00800
LOCATION:	WEST OF HIGHWAY 99E, NORTH OF NORTH LAKE CREEK ROAD
FIELD DATES:	7/02/01, 2/27/02
SAMPLING POINT #S:	28-30, 41
VEGETATION COMMUNITY:	FARMED WETLAND (GRASS PRODUCTION); ASH / BEDSTRAW
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WAPATO SILTY CLAY LOAM, WILLAMETTE SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf (FARMED)*; PFO
HGM CLASSIFICATION:	RIVERINE IMPOUNDING (FARMED SURFACE DRAINAGES)* WITH SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-5f
WETLAND ACREAGE	24.2 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	Potential use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/02/01, 2/27/02
Data Sheet Numbers: SP 28, 29, 30, 41
'estigator(s): Greta Murdoff, Chad Hoffman, and Colin McArthur

Wetland Mapping Code: **L-5f**
Size (acres): 24.2
Cowardin Classification*: PEMf / PFO
%PSS: %PEMf: 92 %PFO: 08
HGM Classification**: RI with S / F

Location:

T-R-S: 12-04-01, 12-04-12
Physical: West of Highway 99 East and North of North Lake Creek Road
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.04W-S.01-00-01000, -01001-01100, -01200, -01203, -01204, --01300, -01301, -01400, -01500; T.12S-R.04W-S12-00-00400, -00500, -00600, -00700, -00800

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (99) Wapato Silty Clay Loam, (151) Willamette Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Precipitation, Surface Runoff, Groundwater, Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia*)		Cleavers (*Galium aparine*)	Active Agricultural Field (Grass Production)

Comments:

The PFO area is mapped on the NWI, but needs sampling points to confirm is current wetland status. The trees here are dead or dying, possibly due to surrounding agricultural activities influence on hydrology connection.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water
**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 7/2/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-5f
Plot ID: SO 28

VEGETATION

30' S of 2A-W2

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Carex densa	H	OBL	7	10	Agrostis alba	H	FAC	48	75 *
Parentucellia viscosa	H	FAC-	3	5	Holcus lanatus	H	FAC	10	15
Lolium multiflorum	H	NOL	3	5					
* Juncus effusus	H	FACW	19	30					
Vicia sp	H	-	10	15					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water 7/8"
Depth to saturated soil 7/8"

Secondary Wetland Hydrology Indicators
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes Remarks: Roadside drainage flowing to 2A-W2

SOILS

Map unit name (Series and phase) (3) Amity Silt Loam
Taxonomy (subgroup) Fine, montmorillonitic, mesic Vertic Albaqualf
Drainage class Somewhat poorly drained
Field observations confirm mapped type? No

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-6"	10 YR 5/2	7.5 YR 4/6	Many Med Distinct	Silty clay
6-18"	10 YR 5/1	7.5 YR 4/4	Many Coarse Distinct	silty clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List (Inclusions only)
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 7/2/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-Sf
Plot ID: SD 2 9

VEGETATION

30' W of Road

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Holcus lanatus	H	FAC	9	10	Beckmannia syzigachne	H	OBL	5	5
Trifolium repens	H	FAC	5	5					
★ Alopecurus geniculatus	H	FACW+	38	40					
★ Agrostis alba	H	FAC	19	20					
★ Veronica scutellata	H	OBL	24	25					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water 10"
Depth to saturated soil 10"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes Remarks: W/in drainageway

SOILS

Map unit name (Series and phase): (99) Wapato Silty Clay Loam
Taxonomy (subgroup): Fine-silty, mixed, mesic Fluvaquentic Haplaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes, but more gleyed than typical

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-14"	10 YR 4/1	10 YR 5/6	Many Med. Distinct	silty clay loam
14-18"	10 YR 5/2	10 YR 5/6	Many Med. Faint	silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes
Remarks
Is this sampling point within a wetland? Yes

GEW

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*

Date: 7/2/01
County: Linn
State: Oregon

normal circumstances exist on the site? Yes, but w/in Ag field
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Community ID:
Transect ID: T-L-SF
Plot ID: SP 30

VEGETATION

20' upbank from SP29

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Lolium multiflorum	H	NOL	59	65					
	Gnaphalium palustre	H	FACW+	5	5					
*	bare ground	—	—	36	40					
	Rorippa curvisiliqua	H	FACW+	—	1					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 0 %

Criterion Met? No

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water 7 1/8"
Depth to saturated soil 7 1/8"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks: Steep banks

SOILS

Map unit name (Series and phase): (99) Wapato Silty Clay Loam
Taxonomy (subgroup): Fine-silty, mixed, mesic Fluvaquentic Haplaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-8"	10 YR 3/1	10 YR 5/4	Common Coarse Distinct	Silty clay loam
8-18"	10 YR 3/1	7.5 YR 4/6	Common Fine Faint	Silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? No
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? No

gl (WI)

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WETLAND DELINEATION DATA FORM

Project/Site:	Tangent LWI	Date:	2/27/02
Applicant/Owner:		County:	Linn
Investigators:	*Chad Hoffman and Colin McArthur*	State:	Oregon
Normal circumstances exist on the site?		Community ID:	
Is the site significantly disturbed (Atypical Situation?)		Transect ID:	T-L-5
Is the area a potential Problem Area (If needed, explain on reverse)?		Plot ID:	SP 41

VEGETATION

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Ag field									
Bare ground				100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC:

Criterion Met? N/A Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water @ 18"
Depth to saturated soil @ 11"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? yes Remarks:

SOILS

Map unit name (Series and phase) (3) Amity silt loam
Drainage class Somewhat Poorly drained
Field observations confirm mapped type?
Taxonomy (subgroup) Fine, Mont-mor-illonitic, mesic, Vertic Haploxeralf

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-14"	10YR 3/2	7.5YR 5/6	many, Medium, distinct	Silty Clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List (Inclusions only)
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? yes Remarks:

WETLAND DETERMINATION

Wetland vegetation present? N/A Wetland hydrology present? yes Hydric soils present? yes	Remarks: Farmed Wetlands	Is this sampling point within a wetland?	yes

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** Farmed Areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPS
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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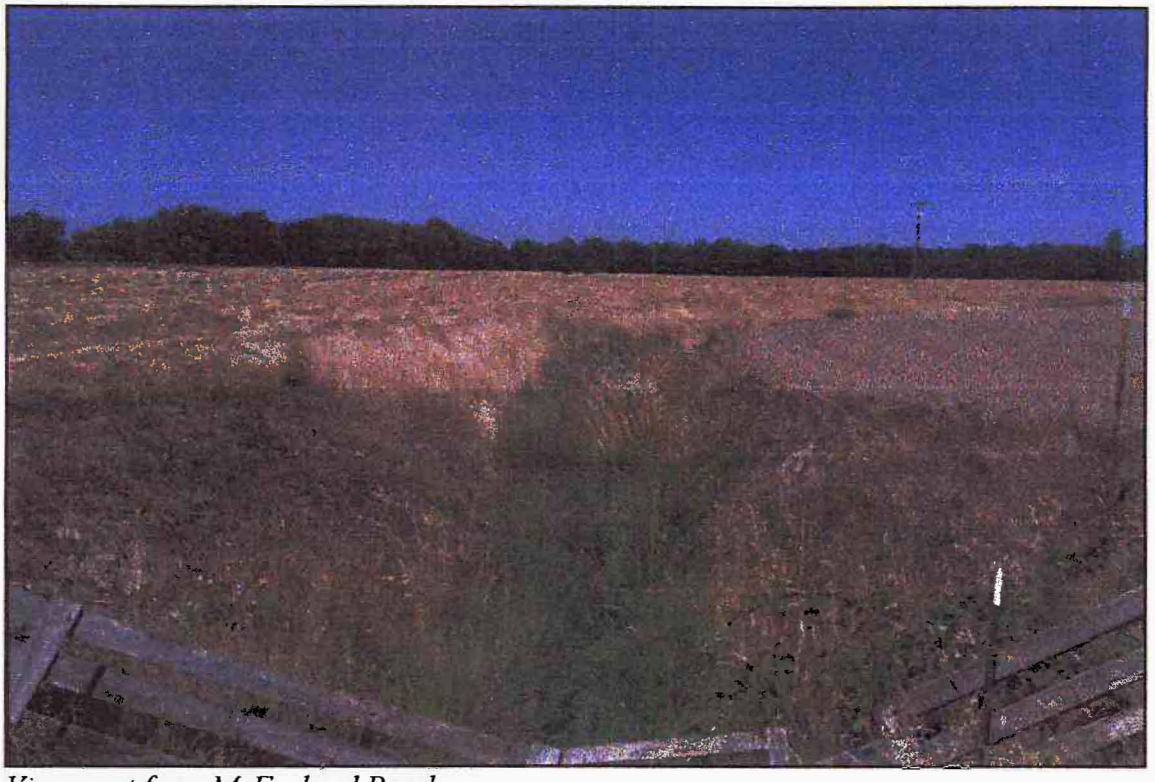

View west from McFarland Road.



View north at Sp 28, immediately west of McFarland Road.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 02, 2001

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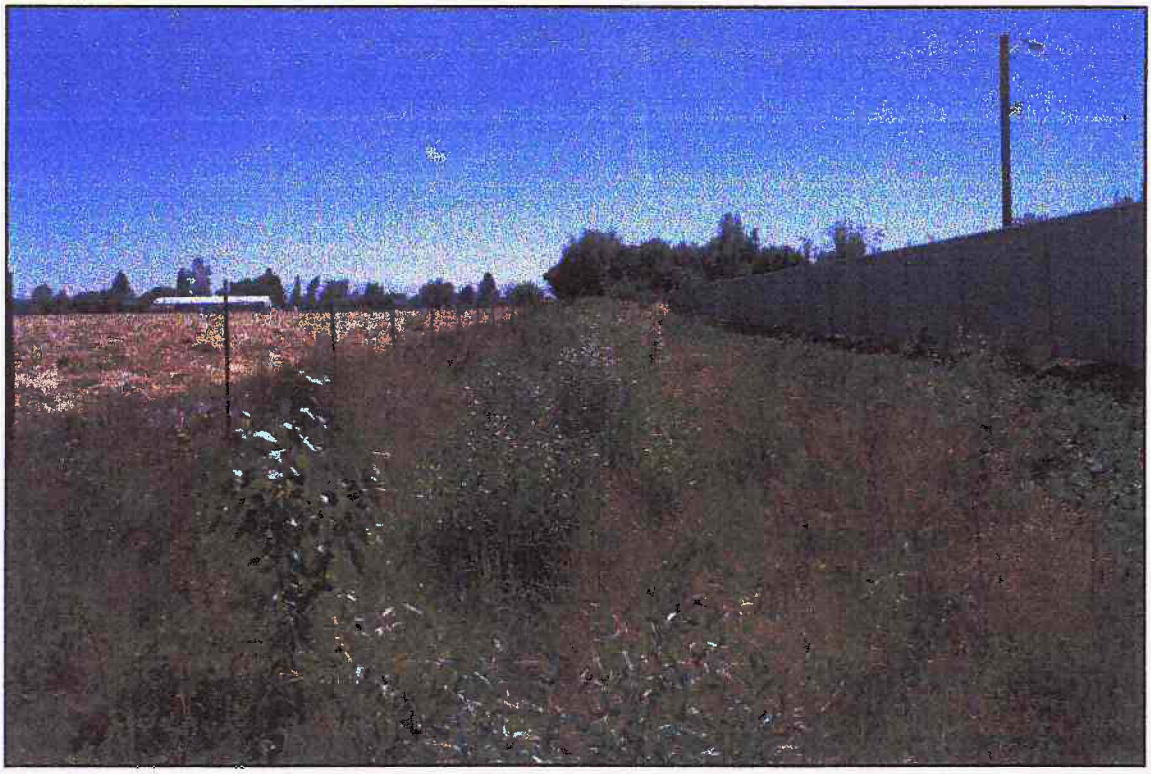

View East from McFarland Road.



View west of McFarland Road (approximately 300' west).

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 02, 2001

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View West from McFarland Road.

SITE PHOTOGRAPHS
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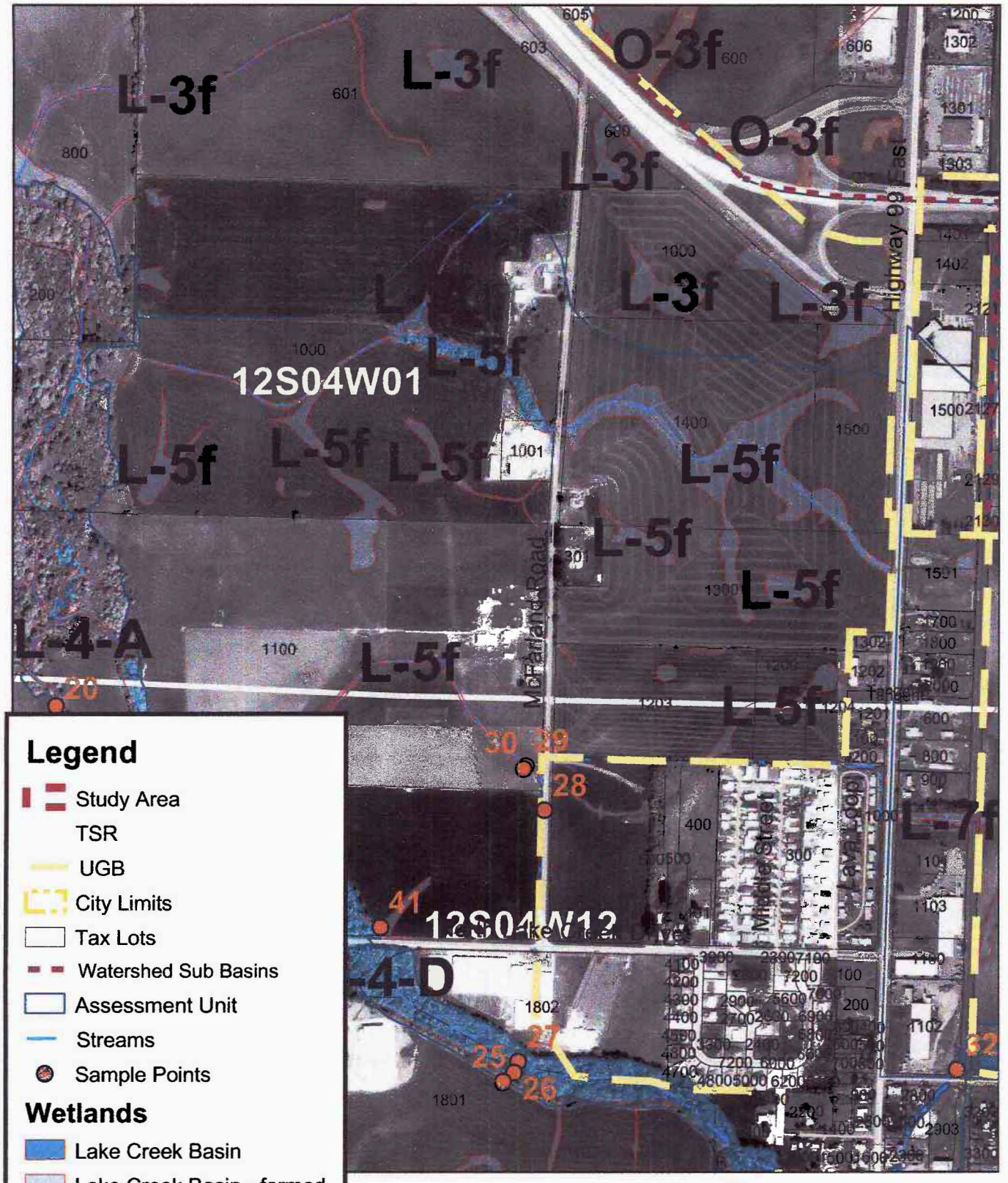

DETAIL MAP L-5f
City of Tangent
October 2002

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WETLAND L-6f

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	6.7 ACRES
TAX LOTS:	T.12S-R.04W-S.12-00-01000, -01100, -01102, -01200; T.12S-R.04W-S.11-00-00101, -00402
LOCATION:	NORTH OF NORTH LAKE CREEK DR., SOUTH OF HIGHWAY 34
FIELD DATES:	02/27/02
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	FARMED (GRASS PRODUCTION)
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, BASHAW SILTY CLAY, CONCORD SILT LOAM, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, MCBEE SILTY CLAY LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf (FARMED)
HGM CLASSIFICATION:	RIVERINE IMPOUNDING (FARMED SURFACE DRAINAGES)* WITH SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-6f
WETLAND ACREAGE	6.7
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 2/27/02
Data Sheet Numbers: None (off-site)
estigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-6f**
Size (acres): 6.7
Cowardin Classification*: PEMf
%PSS: %PEMf: 100 %PFO:
HGM Classification**: RI with S / F

Location:

T-R-S: 12-04-11, 12-04-12
Physical: North of N. Lake Creek Drive and South of Highway 34
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.04W-S.11-00-00101, -00402;
T.12S-R.04W-S.12-00-01000, -01100, -01102, -01200

Soils:

Mapped Series: (3) Amity Silt Loam, (8) Bashaw Silty Clay Loam, (27) Concord Silt Loam, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (67) McBee Silty Clay Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Precipitation, Surface Runoff, Groundwater, Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
			Active Agricultural Field (Grass Production)

Comments:
Off-site determination, no permission to enter---hydrology determined through aerial photograph interpretation and off site field visits during the winter months.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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L-104

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** Farmed Areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment:
Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A -- Farmed Wetland Areas

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

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A: no reaches listed as water quality limited
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Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
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C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-67

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, B: unable to determine, C: no

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C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow / Farmed

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public?
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
* Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
* No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
* Wetland not pleasing if 2+ Q are "c"

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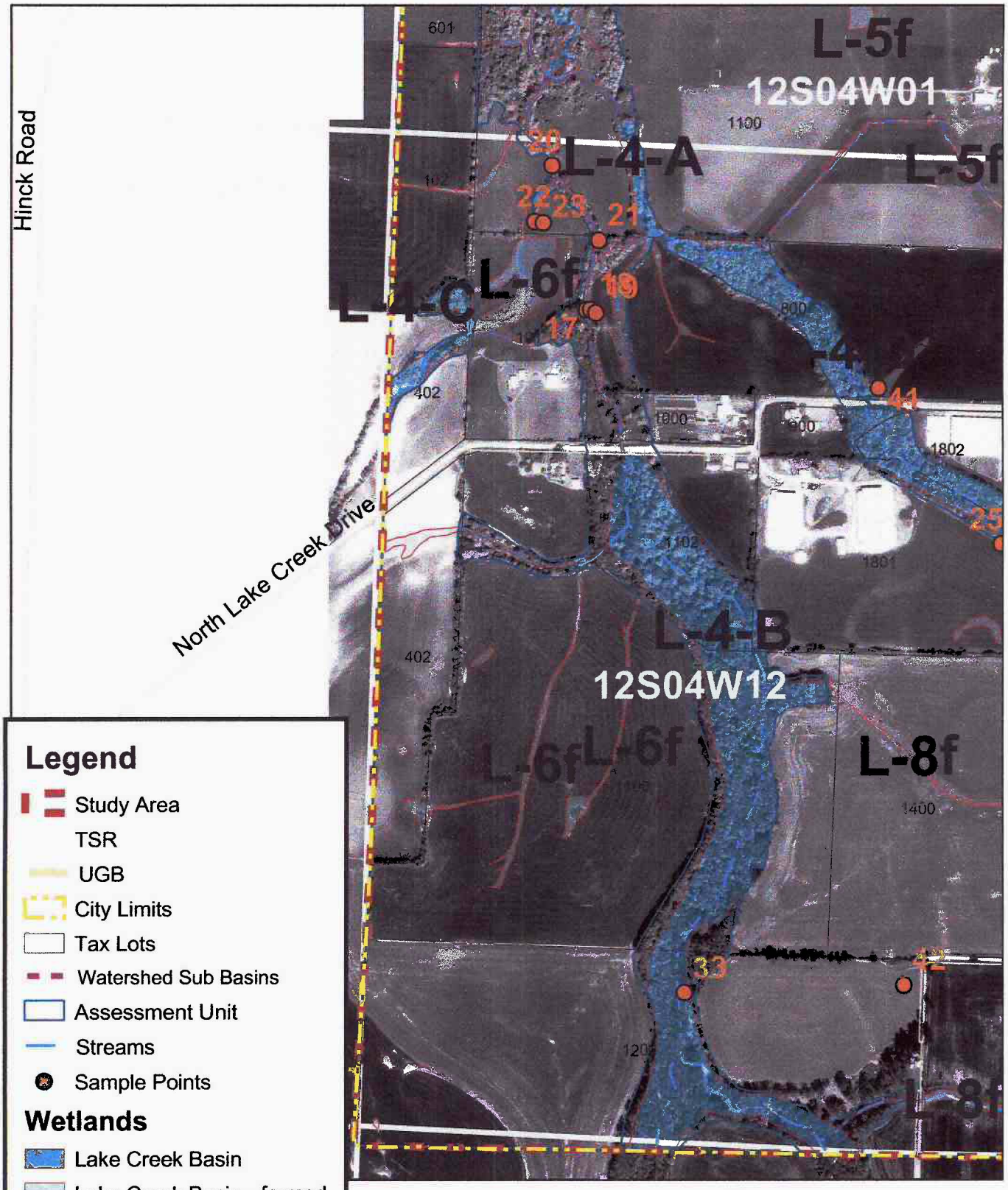

DETAIL MAP L-6f
City of Tangent
October 2002

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WETLAND L-7f

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	19.0 ACRES
TAX LOTS:	T.12S-R.03W-S.07-D-00100 T.12S-R.03W-S.07-00 -00101, -00102, -00200, -00300, -00302, -00303, -00409, -03000
LOCATION:	EAST OF HIGHWAY 99; NORTH (MOSTLY) AND SOUTH OF TANGENT DRIVE; NORTH OF OLD OAK DRIVE; SOUTH OF HIGHWAY 34
FIELD DATES:	7/02/01, 02/27/02
SAMPLING POINT #S:	4-5
VEGETATION COMMUNITY:	FARMED WETLAND (GRASS PRODUCTION)
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, DAYTON SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf (FARMED)
HGM CLASSIFICATION:	SLOPE / FLATS (FARMED)* WITH RIVERINE IMPOUNDING (FARMED SURFACE DRAINAGES) AND RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION AND AERIAL PHOTOGRAPH INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-7f
WETLAND ACREAGE	19.0 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/02/01, 2/27/02
Data Sheet Numbers: 4, 5
Investigator(s): Greta Murdoff, Chad Hoffman, and Colin McArthur

Wetland Mapping Code: **L-7f**
Size (acres): 19.0
Cowardin Classification*: PEMf
%PSS: %PEMf: 100 %PFO:
HGM Classification**: S / F with RI and RFT

Location:

T-R-S: 12-03-07-D, 12-03-07
Physical: East of Highway 99E, North (mostly) and South of Tangent Drive, North of Old Oak Drive and South of Highway 34
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.03W-S.07-D-00100
T.12S-R.03W-S.07-00 -00101, -00102, -00200, -00300, -00302, -00303, -00409, -03000

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (33) Dayton Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Precipitation, Surface Runoff, Groundwater, Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash *(Fraxinus latifolia)*			Active Agricultural Field (Grass Production)
Douglas' Hawthorn (*Crataegus douglasii*)			

Comments:

Tree species are rooted at the fencelines between agricultural fields

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water
**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 5/30/07
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-7F
Plot ID: SP4

VEGETATION

At t-0-b on Reach AE 1,20 N of SO 5

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Poa trivialis	H	FACW	45	50					
*	Convolvulus arvensis	H	NOL	55	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50%

Criterion Met? Yes Remarks: Marginal

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No Remarks:

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-10"	10 YR 3/2			Silty clay Loam
10-18"	10 YR 4/1	5 YR 3/3-3/4	common, medium, distinct	Silty clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes, marginal
Wetland hydrology present? No
Hydric soils present? Yes, Marginal
Remarks
Is this sampling point within a wetland? No

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
normal circumstances exist on the site?
the site significantly disturbed (Atypical Situation?)
Is the area a potential Problem Area (If needed, explain on reverse)?

Date: 5/30/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-TF
Plot ID: SP 5

VEGETATION

W/in channel; 20' S of SP 4

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Polygonum punctatum?	H	OBL	85	100					
Eleocharis palustris	H	OBL	13	15					
Alisma plantago-aquatica	H	OBL	2	2					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes
Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil 7 18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators @ >1"
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes
Remarks: W/in channel

SOILS

Map unit name (Series and phase) (33) Dayton Silt Loam
Taxonomy (subgroup) Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-8"	10 YR 2/2	5 YR 4/6	Many Medium Distinct	Silty clay loam
8-18"	10 YR 4/1			clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes
Remarks
Is this sampling point within a wetland? Yes

Gem

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** / Farmed Areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited not listed
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow channelized + somewhat restricted by small culverts

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
(A): yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?** Probably
(A): yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
(C): no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, (B): Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, (B): Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, (B): Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: - Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
★ Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, (B): Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), (B): groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?** channel
A: no, (B): perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
(A): >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
(A): >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, (B): potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
★ Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, (C): no

Q2: **Visible hazards to public?**
A: no, (B): 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, (B): do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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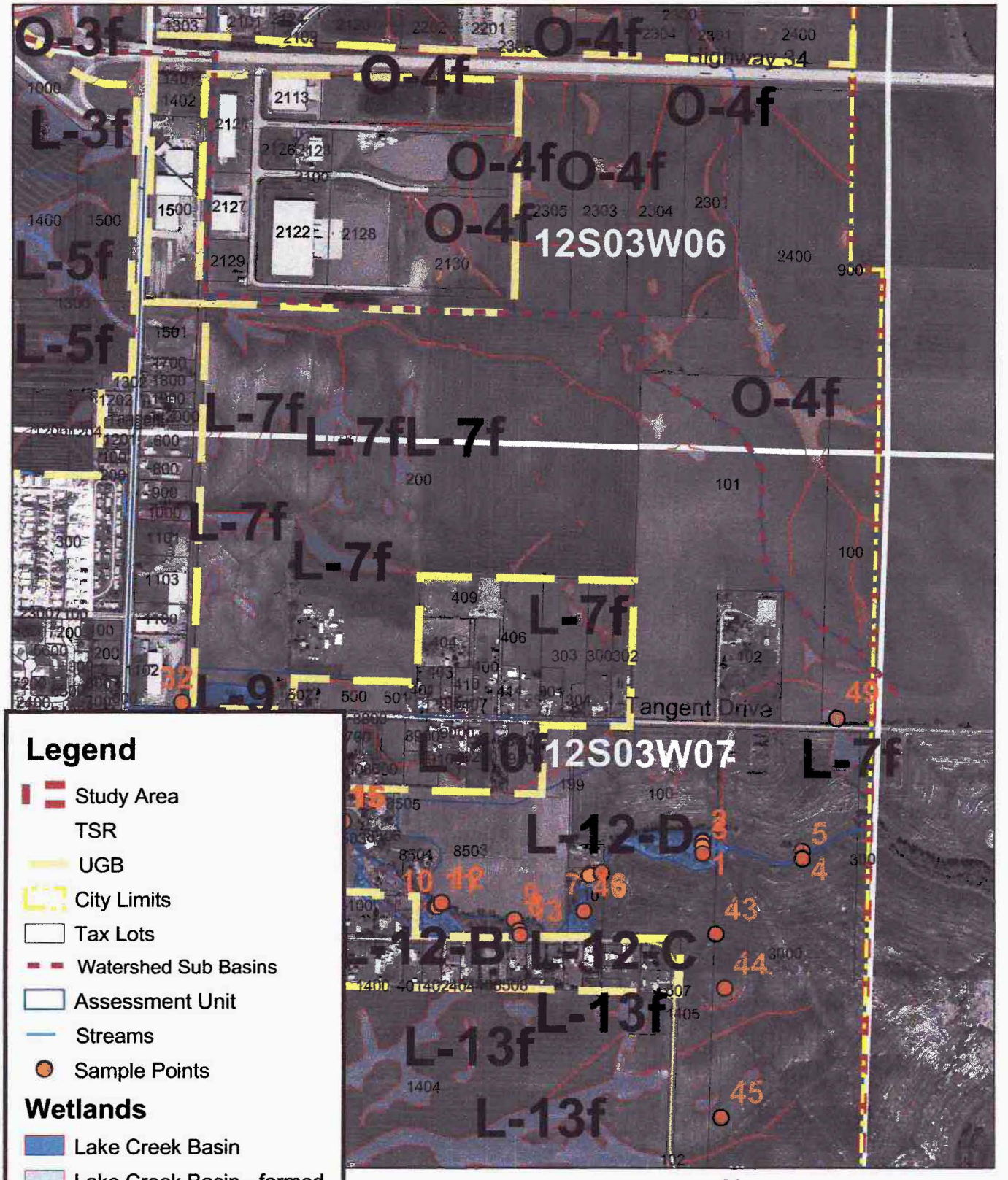

DETAIL MAP L-7f
City of Tangent
October 2002

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WETLAND L-9

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	1.4 ACRES
TAX LOTS:	T.12S-R.03W-S.07-00-00200
LOCATION:	EAST OF HIGHWAY 99 NORTH OF TANGENT DR.
FIELD DATES:	7/02/01
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	TUFTED HAIRGRASS
HYDROLOGY:	LAKE CREEK
SOILS:	CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEM
HGM CLASSIFICATION:	SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	**L-9**
WETLAND ACREAGE	1.4 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Moderately pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/02/01
Data Sheet Numbers: None (off-site)
estigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-9**
Size (acres): 1.4
Cowardin Classification*: PEM
%PSS: %PEM: 100 %PFO:
HGM Classification**: S / F

Location:

T-R-S: 12-03-07
Physical: East of Highway 99 and North of Tangent Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
-00200

Soils:

Mapped Series: (28) Conser Silty Clay Loam(3), (33) Dayton Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek, Precipitation, Surface Run-off, and Groundwater

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
	Douglas' Hawthorn (*Crataegus douglasii*)		Tufted Hair Grass (*Deschampsia cespitosa*)
			Grass field

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: (A) 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, (C) Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, (B) Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, (C) <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, (B) no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
(A) W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, (B) 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A - channel appears to have been moved to along roadside

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-9

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: High >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public?
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A; yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A; natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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L-9



View northeast from railroad tracks.



View east from railroad tracks.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 11, 2001

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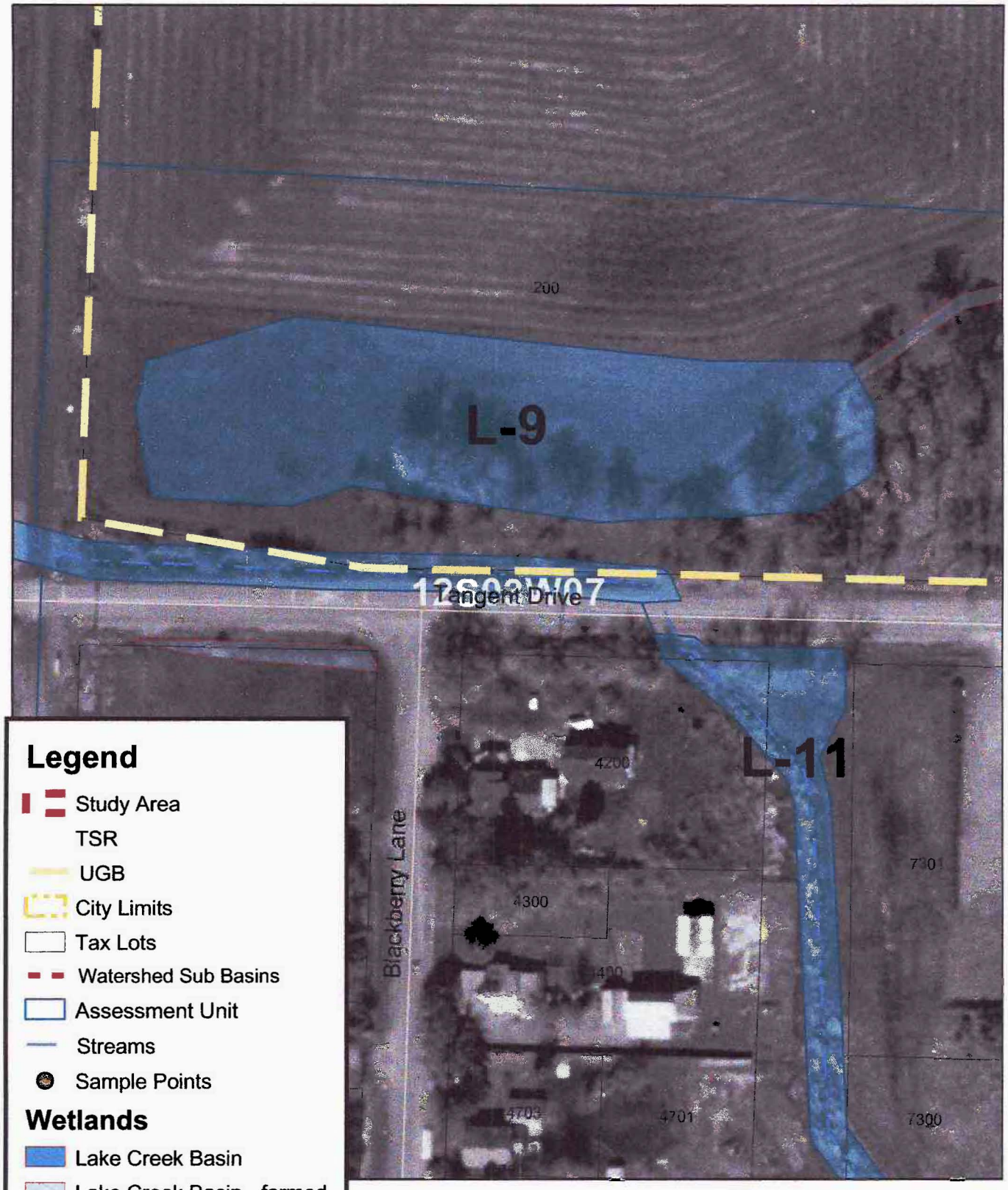

DETAIL MAP L-9
City of Tangent
October 2002

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WETLAND O-1f

DRAINAGE BASIN:	OAK CREEK / NORTH BASIN
WETLAND ACREAGE:	8.3 ACRES
TAX LOTS:	T.11S-R.04W-S.36-D-00300, -00309, -00310
LOCATION:	NORTH OF HIGHWAY 34, NEAR GRIFFITH DRIVE
FIELD DATES:	7/13/01, 02/27/02
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	COTTONWOOD / ROSE / SOFT RUSH
HYDROLOGY:	OAK CREEK TRIBUTARY, PRECIPITATION, SURFACE RUN-OFF, GROUNDWATER
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, CONSER SILTY CLAY LOAM, WALDO SILTY CLAY LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMd* / PEMf*
HGM CLASSIFICATION:	RIVERINE IMPOUNDING*
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	O-1f
WETLAND ACREAGE	8.3 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Sensitive
ENHANCEMENT POTENTIAL	Little potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/13/02, 2/27/02
Data Sheet Numbers: None (off-site)
Investigator(s): Greta Murdoff, Chad Hoffman, and Colin McArthur

Wetland Mapping Code: **O-1f**
Size (acres): 8.3
Cowardin Classification*: PEMf / PEMd
%PSS: %PEM: 100 %PFO:
HGM Classification**: RI

Location:

T-R-S: 11-04-36-D
Physical: North of Highway 34, Near Griffith Drive
Hydrologic Basin: Oak Creek North

Tax Lot(s):
-00309,
-00310

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (28) Conser Silty Clay Loam, (98) Waldo Silty Clay Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Oak Creek Tributary, Precipitation, Surface Run-off and Groundwater

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
* Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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6-1f

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
*Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A:) surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A:) yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, (B:) Mod 60%, Low <60%

Q4: **Wetland area in acres**
(A:) >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C:) Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B:) 1+ stream upstr/adj in moderate condition BTJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
*Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A:) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A:) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
(A:) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, (B:) minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, (B:) Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C:) Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B:) ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
*Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: *Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
·Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
* Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public?
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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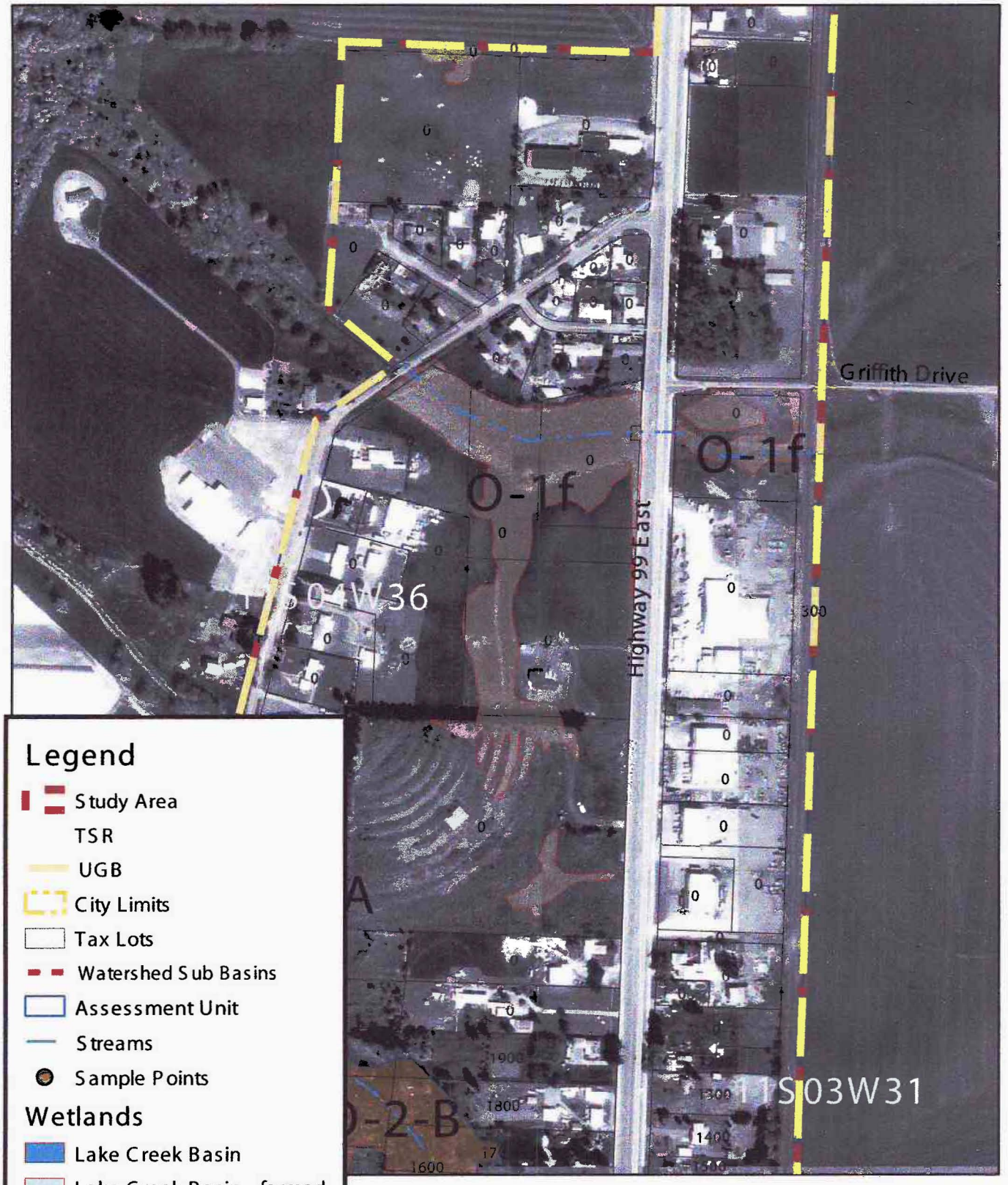

DETAIL MAP O-1f
City of Tangent
October 2002

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WETLAND O-2A

DRAINAGE BASIN:	OAK CREEK / NORTH BASIN
WETLAND ACREAGE:	3.1 ACRES
TAX LOTS:	T.11S-R.04W-S.36-D-00801, -00802, -00803, -00804, -00900, -01000, -01100
LOCATION:	EAST OF N. McFARLAND RD.
FIELD DATES:	7/06/01
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	ASH
HYDROLOGY:	OAK CREEK TRIBUTARY
SOILS:	CONSER SILTY CLAY LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO* / PEMf / PEMd
HGM CLASSIFICATION:	RIVERINE IMPOUNDING*
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- MAP

WETLAND NUMBER	O-2A
WETLAND ACREAGE	3.1 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/06/01
Data Sheet Numbers: None (off-site)
Investigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **O-2A**
Size (acres): 3.1
Cowardin Classification*: PFO / PEMf / PEMd
%PSS: %PEM: 20 %PFO: 75
HGM Classification**: RI

Location:

T-R-S: 11-04-36-D
Physical: East of N. McFarland Road
Hydrologic Basin: Oak Creek North

Tax Lot(s):
-00801, -00804, -01100
-00802, -00900,
-00803, -01000,

Soils:

Mapped Series: (28) Conser Silty Clay Loam, Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Oak Creek Tributary, Precipitation, Surface Run-off, and Groundwater

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash *(Fraxinus latifolia)*			

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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UCH

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE (offsite)
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, (B) 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, (C) Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, (C) <0.5 ac

Q5: **How is wetland connected to another body of water?**
(A) by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
(A) W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
(A) >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: (A) >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, (B) portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, (C) <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, (C) no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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O-2A

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A) surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A) yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
(A) high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, (B) 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, (B) 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, (C) unrestricted flow

Q5: **Dominant veg cover**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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O-2A

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
(A) yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
A: yes, (B) unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
(C) no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
(A) Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
(A) Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
(A) 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
(A) Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
(A) no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, (B) 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
(A) >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, (B) potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, (C) no

Q2: **Visible hazards to public?**
(A) no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, (B) do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, (C) no

Q5: **Is there public access within 250' of wetland edge?**
(A) yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, (B) no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
(A) yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, (C) no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, (C) no

Q4: **Wildlife habitat index:**
A: diverse habitat, (B) habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, (B) no, or not applicable

Q6: **Hunting allowed?**
A; yes, (B) no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, (C) 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, (C) <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, (C) visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, (B) landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, (B) unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, (B) continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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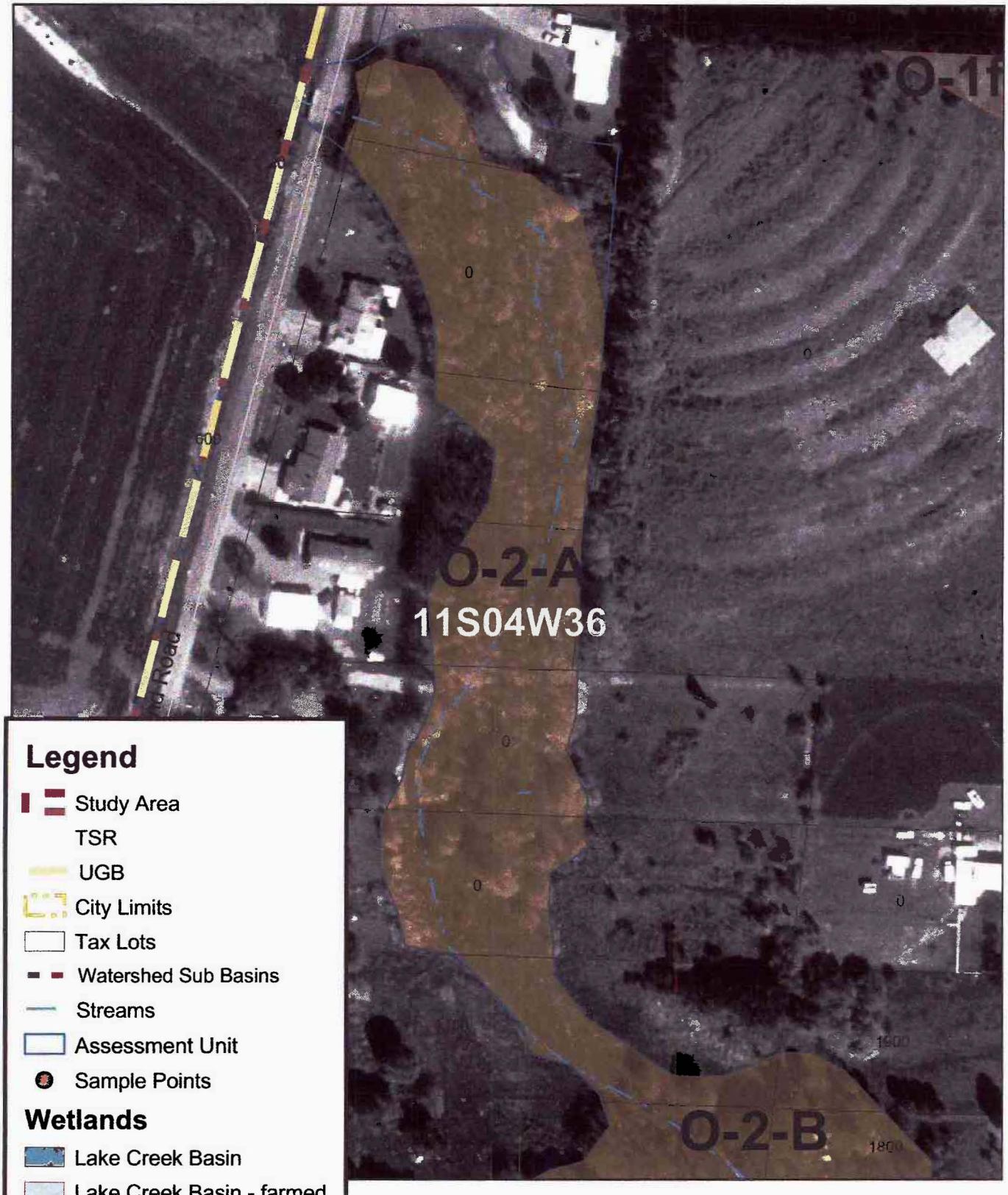

DETAIL MAP O-2-A
City of Tangent
October 2002

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WETLAND O-2B

DRAINAGE BASIN:	OAK CREEK / SOUTH BASIN
WETLAND ACREAGE:	6.4 ACRES
TAX LOTS:	T.11S-R.04W-S.36-D-01100, -01200, -01300, -01500, -01600, -01700, -01800, -01900; T.12S-R.04W-S.01-00-00101, -00114, -00125, -00188
LOCATION:	EAST OF N. McFARLAND RD. AND WEST OF HIGHWAY 99E
FIELD DATES:	7/06/01
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	ASH / FARMED & PASTURED
HYDROLOGY:	OAK CREEK TRIBUTARY, PRECIPITATION, SURFACE RUN-OFF, GROUNDWATER
SOILS:	CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WILLAMETTE SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO* / PEM* / PEMf
HGM CLASSIFICATION:	RIVERINE IMPOUNDING*
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- MAP

WETLAND NUMBER	O-2B
WETLAND ACREAGE	6.4 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	Intact
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/06/01
Data Sheet Numbers: None (off-site)
'estigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **O-2B**
Size (acres): 6.4
Cowardin Classification*: PEM, PFO, PEMf
%PSS: %PEM: 50 %PFO: 50
HGM Classification**: RI

Location:

T-R-S: 11-04-36-D, 12-04-01
Physical: East of north McFarland Road and west of Highway 99E
Hydrologic Basin: Oak Creek North

Tax Lot(s):
T.11S-R.04W-S.36-D-01100, -01200, -01300, -01500, -01600, -01700, -01800, -01900;
T.12S-R.04W-S.01-00-00101, -00114, -00125, -00188

Soils:

Mapped Series: (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (151) Willamette Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Oak Creek Tributary, Precipitation, Surface Run-off, and Groundwater

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia*)			Managed Grass Fields
			Managed Drainages

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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O-2D

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE (offsite)
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, (B) 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, (B) Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, (C) <0.5 ac

Q5: **How is wetland connected to another body of water?**
(A) by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
(A) W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, (B) 10-40%, C: <10% mostly bordered by yards

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
☆ Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, (C) <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, (B) portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, (C) <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, (C) no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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O-2B

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A) surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, (B) unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, (B) Mod 60%, Low <60%

Q4: **Wetland area in acres**
(A) >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
(A) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, (B) minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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O-23

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
(A) yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?** unlikely
A: yes, (B) unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
(C) no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
(A) Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
(A) Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
(A) 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
(A) Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
(A) no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
(A) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, (B) 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, (B) potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, (C) no

Q2: **Visible hazards to public?**
(A) no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, (B) do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, (C) no

Q5: **Is there public access within 250' of wetland edge?**
(A) yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, (B) no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
(A) yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, (C) no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, (C) no

Q4: **Wildlife habitat index:**
A: diverse habitat, (B) habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, (B) no, or not applicable

Q6: **Hunting allowed?**
A; yes, (B) no

Assessment: Provides recreational opp if Q1, 2 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, (B) 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, (C) <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, (C) visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, (B) landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, (B) unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, (B) continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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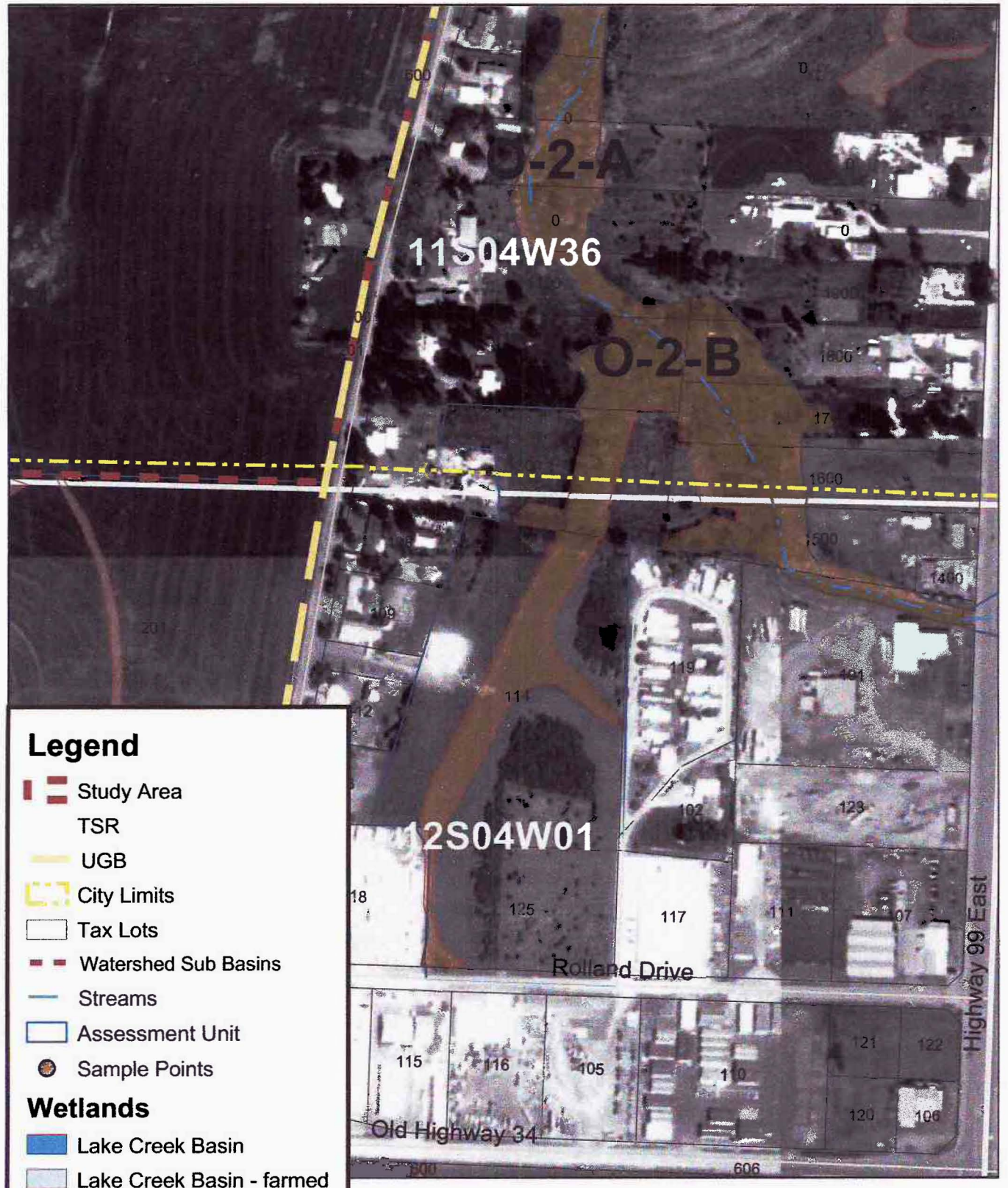

DETAIL MAP O-2-B
City of Tangent
October 2002

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WETLAND O-2C

DRAINAGE BASIN:	OAK CREEK / NORTH BASIN
WETLAND ACREAGE:	1.0 ACRES
TAX LOTS:	T.11S-R.03W-S.31-01600, T.12S-R.03W-S.06-00500
LOCATION:	NORTH OF HIGHWAY 34, EAST OF HIGHWAY 99E
FIELD DATES:	7/06/01
SAMPLING POINT #S:	31
VEGETATION COMMUNITY:	ASH / HAWTHORNE / SOFT RUSH
HYDROLOGY:	OAK CREEK TRIBUTARY, PRECIPITATION, SURFACE RUN-OFF, GROUNDWATER
SOILS:	BASHAW SILTY CLAY, CONSER SILTY CLAY LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO*
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* WITH RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	O-2C
WETLAND ACREAGE	0.97 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Moderately pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/06/01
Data Sheet Numbers: Sp 31
'estigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **O-2C**
Size (acres): 1.0
Cowardin Classification*: PFO
%PSS: %PEM: %PFO: 100
HGM Classification**: RI

Location:

T-R-S: 11-03-31, 12-03-06
Physical: North of Highway 34, East of Highway 99E
Hydrologic Basin: Oak Creek North

Tax Lot(s):
T.11S-R.03W-S.31-01600,
T.12S-R.03W-S.06-00500

Soils:

Mapped Series: (8) Bashaw Silty Clay, (28) Conser Silty Clay Loam, (106A) Woodburn Silty Loam 0 to 3 % slopes

Hydrology:

Hydrologic Source: Oak Creek Tributary, Precipitation, Surface Run-off, and Groundwater

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia*)	Douglas' Hawthorn (*Crataegus douglasii*)		Soft Rush (*Juncus effusus*)
			Reed Canary Grass (*Phalaris arundinacea*)
			Dense Sedge (*Carex densa*)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
) normal circumstances exist on the site? Yes
.) the site significantly disturbed (Atypical Situation)? No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 7/6/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-O-2C
Plot ID: SO31

VEGETATION

~25' N of building; ~250' from Hwy 99

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Dipsacus fullonum	H	FAC		5	Carex densa	H	OBL		5
★ Fraxinus latifolia	T	FACW	100	50	Juncus effusus	H	FACW		20 ★
★ Phalaris arundinacea	H	FACW		50					
Crataegus douglasii	S	FAC	100	5					
Urtica sp.	H	—		10					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators Save @ 2-6"
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks:

SOILS

Map unit name (Series and phase): (28) Conser Silty Clay Loam
Taxonomy (subgroup): Fine, mixed, mesic Typic Argiaquoll
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10 YR 2/1	10 YR 4/3	Many, Medium Faint	Silty clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☑ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

GM

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O-2c

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: Number of Cowardin wetland classes
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(A): Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: Cowardin class interspersion (edge effect)
A: High, (B): Moderate, C> Low

Q4: Acres of unvegetated open water
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
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Q5: How is wetland connected to another body of water?
(A): by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: How connected to other wetlands?
(A): W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: What is water quality condition upstream/adjacent to wetland?
(A): no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: What is dominant land use w/in 500' of wetland?
A: Exclusive forest/open space, B: Agricultural, (C): Developed

Q9a: Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q9b: Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, (C): <10%

Assessment:
Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
(4) Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: % of stream shaded by riparian veg:
W. Oregon: A: >75%, (B): 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: What is physical characteristic of stream channel:
A: natural, or modified portions returning to natural, (B): portions modified, C: Mod or non-veg channel, pipe

Q3: % of entire stream w/instream structures (natural)
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C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

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A: Exclusive forest/open space, B: Agricultural, (C): Developed

Q6: Are fish present in stream/lake/wetland pond
A: salmon, trout, or sensitive sp some time of the year, (B): other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: Does pond/lake contain deep and shallow water?
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
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A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
☆ Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A) surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A) yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
(A) high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, (B) 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
✗ Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, (B) 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, (B) minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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O-2C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
(A) yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?** likely
A: yes, (B) unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
(C) no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
(A) Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
(A) Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
(A) 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
(A) Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
(A) no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, (B) 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, (C) <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, (B) potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, (C) no

Q2: **Visible hazards to public?**
A: no, (B) 1-2 present, C: 2+ present near train tracks

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, (B) do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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Sp 31



Sp 31.



View north near channel within forested area.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 6, 2001

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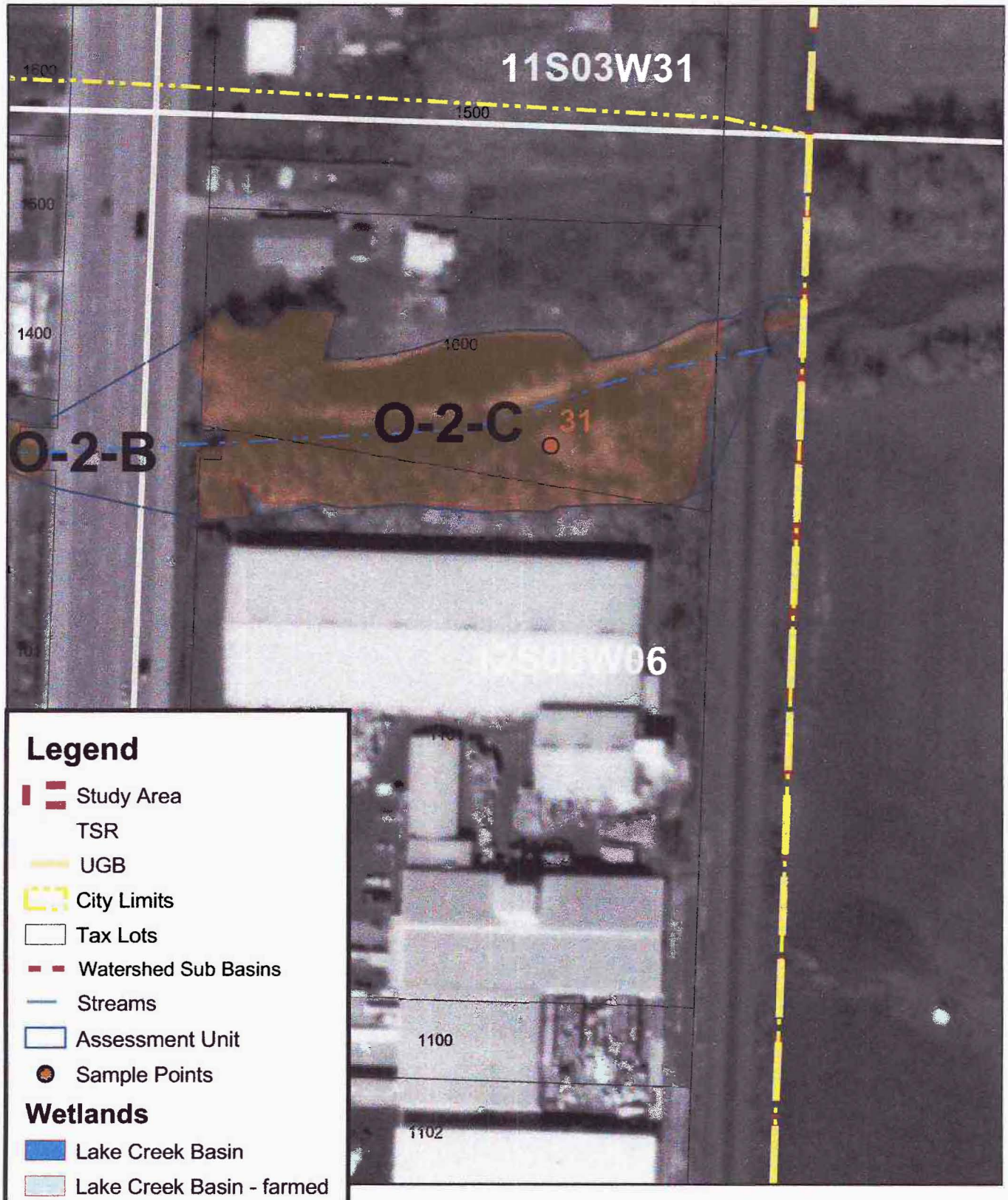

DETAIL MAP O-2-C
City of Tangent
October 2002

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WETLAND O-3f

DRAINAGE BASIN:	OAK CREEK / NORTH BASIN
WETLAND ACREAGE:	3.7 ACRES
TAX LOTS:	T.12S-R.04W-S.01-00-00200, -002012, 00202, -00600, -00606, HWY 34 RIGHT OF WAY
LOCATION:	NORTH OF HIGHWAY 34 AND WEST OF HIGHWAY 99
FIELD DATES:	02/27/02
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	GRASS (FARMED, PASTURED, AND MOWN)
HYDROLOGY:	OAK CREEK TRIBUTARY, PRECIPITATION, SURFACE RUN-OFF, GROUNDWATER
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, DAYTON SILT LOAM, WILLAMETTE SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf*
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* (FARMED SURFACE DRAINAGES)*WITH SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	O-3f
WETLAND ACREAGE	3.7 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 02/27/02
Data Sheet Numbers: None (off-site)
estigator(s): Chad Hoffman and Colin McArthur

Wetland Mapping Code: **O-3f**
Size (acres): 3.7
Cowardin Classification*: PEMf
%PSS: %PEM: 100 PFO:
HGM Classification**: RI

Location:

T-R-S: 12-04-01
Physical: North of Highway 34 and West of Highway 99E
Hydrologic Basin: Lake Creek North

Tax Lot(s):
-00200, -00606,
-00202, -02012,
-00600, -HWY 34 R-O-W

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (33) Dayton Silt Loam, (151) Willamette Silt Loam, Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Precipitation, Surface Run-off, and Groundwater, Oak Creek Tributary

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash *(Fraxinus latifolia)*			

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
= Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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0-5+

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** Farmed Areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment:
Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
* Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A -- Farmed Wetlands

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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O-5+

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), (B) precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A) yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, (B) Mod 60%, Low <60%

Q4: **Wetland area in acres**
(A) >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition BTS
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
(A) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, (B) minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, (B) Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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O-34

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
(A) yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
(A) yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
(C) no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, (B) Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, (B) Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, (C) Em veg or wet meadow / Farmed

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, (B) Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, (C) precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, (B) perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
(A) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
(A) >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, (B) potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, (C) no

Q2: Visible hazards to public?
A: no, B: 1-2 present, (C) 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, (B) do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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DETAIL MAP O-3f
City of Tangent
October 2002

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WETLAND O-4f

DRAINAGE BASIN:	OAK CREEK / NORTH BASIN
WETLAND ACREAGE:	18.5 ACRES
TAX LOTS:	T.12S-R.04W-S.06-00-00100, -00101, -00102, -00200, -02100, -02105, -02120, -02125, -02130, -02201, -02202, -02204 -02300, -02301, 02303, -02304, -02305, -2400, HWY 34 RIGHT OF WAY
LOCATION:	EAST OF HIGHWAY 99E AND NORTH / SOUTH OF HIGHWAY 34; NORTH OF TANGENT DRIVE
FIELD DATES:	02/27/02
SAMPLING POINT #S:	49
VEGETATION COMMUNITY:	GRASS (MOWN, FARMED, PASTURED)
HYDROLOGY:	OAK CREEK TRIBUTARY, PRECIPITATION, SURFACE RUN-OFF, GROUNDWATER
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, DAYTON SILT LOAM, HOLCOMB SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf*
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* (FARMED SURFACE DRAINAGES) WITH SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OM-SITE DETERMINATION WITH AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	O-4f
WETLAND ACREAGE	18.5 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 02/27/02
Data Sheet Numbers: 49
estigator(s): Chad Hoffman and Colin McArthur

Wetland Mapping Code: **O-4f**
Size (acres): 18.5
Cowardin Classification*: PEMf
%PSS: %PEM: 100% PFO:
HGM Classification**: RI with S / F

Location:

T-R-S: 12-04-06,
Physical: East of north McFarland Road
Hydrologic Basin: Lake Creek North

Tax Lot(s):

-00100,	-02100,	-02130,	-02301,
-00101,	-02105,	-02201,	-02303,
-00102,	-02120,	-02202,	-02304,
-00200,	-02125,	-02204,	-02305,
-02400,	HWY 34 R-O-W		

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (33) Dayton Silt Loam, (46) Holcomb Silt Loam, Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Precipitation, Surface Run-off, and Groundwater, Oak Creek Tributary

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash *(Fraxinus latifolia)*			Managed Grass Fields

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water
**HGM Classifications:
= Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

SATRE ASSOCIATES

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
'estigators: *Chad Hoffman and Colin McArthur*
Date: 2/27/02
County: Linn
State: Oregon
normal circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation?) NO
Is the area a potential Problem Area (If needed, explain on reverse)? NO
Community ID: O-4f
Transect ID:
Plot ID: SP 49

VEGETATION

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Populus trichocarpa	T	FAC	50	20					
Crataegus douglasii	T	FAC	50	20					
Bare Ground	-	-	-	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: N/A

Criterion Met? NO

Remarks: Fencline species; Sample Point is taken w/in a tilled field

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water None
Depth to free water >18"
Depth to saturated soil @ 12"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks: W/in potential Farmed Wetland Area

SOILS

Map unit name(s) (Series and phase): Amity Silt Loam
Drainage class: Poorly Drained
Taxonomy (subgroup): Fine, montmorillonitic, Mesic Typic Albaqualf
Field observations confirm mapped type? NO

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10 YR 3/2	2.5 YR 4/8	Common, Coarse, Distinct	Silty clay // Silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Inclusions only

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? NO
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks: Hydrology & Aerial Photos indicate Farmed wetland

Is this sampling point within a wetland? Yes*

LH

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, (C) 1 w/<5 plant species

Q2: **Dominant Veg** Farmed Areas
A: Woody, (B) Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, (C) Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, (C) <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, (B) no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
(B) not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
(A) >40%, B: 10-40%, C: <10%

Assessment:
Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
★ Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A - Farmed Wetland Areas

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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G-4f

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition EPT
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow / Farmed

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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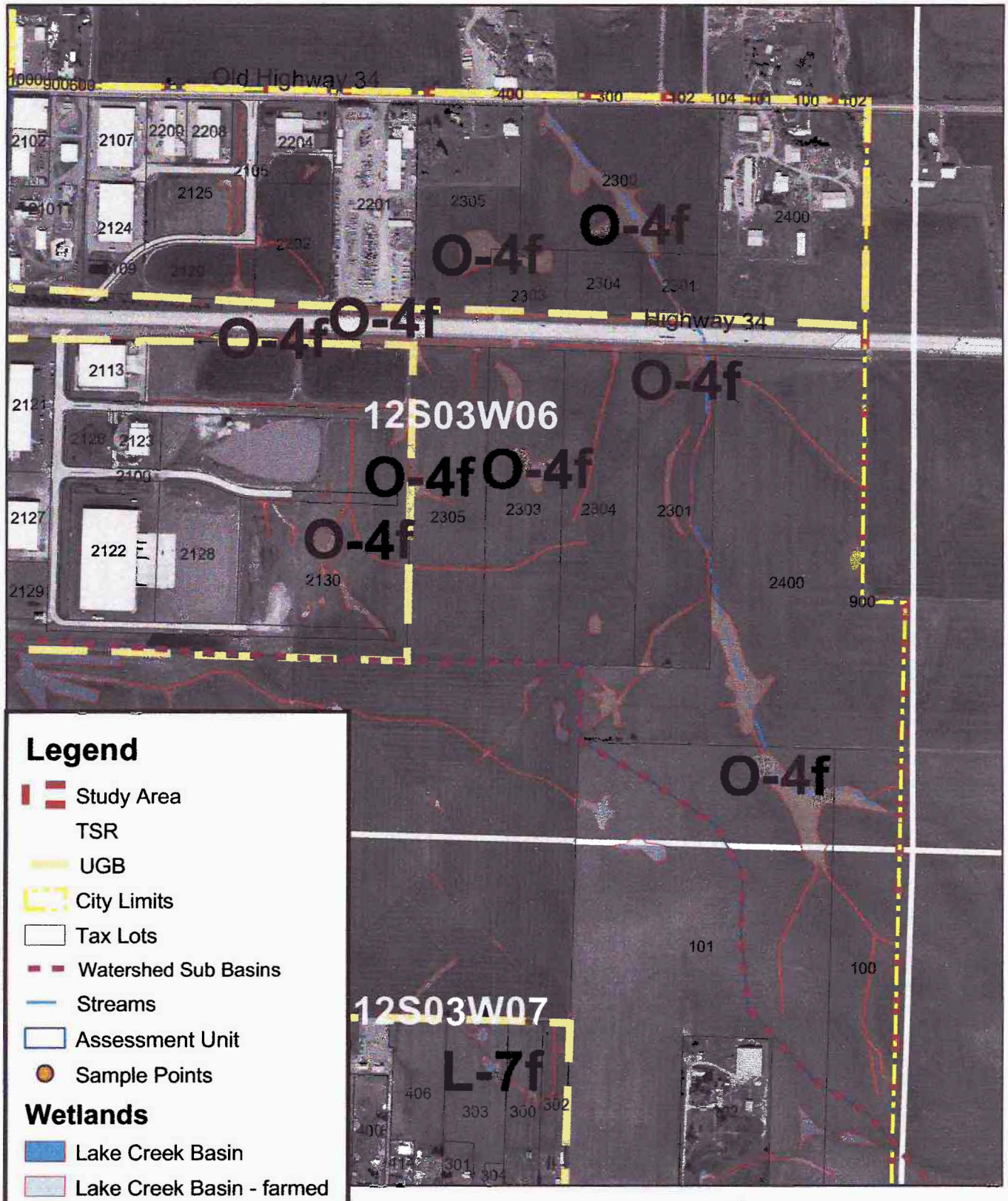

DETAIL MAP O-4f
City of Tangent
October 2002

SATRE ASSOCIATES

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WETLAND L-8f

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	5.3 ACRES
TAX LOTS:	T.12S-R.04W-S.12-00-01200, -01300, -01400, -01801
LOCATION:	WEST OF HIGHWAY 99, SOUTH OF NORTH LAKE CREEK DRIVE, NORTH AND SOUTH OF GLASS DRIVE
FIELD DATES:	7/02/01, 02/27/02
SAMPLING POINT #S:	24, 42
VEGETATION COMMUNITY:	FARMED WETLAND (GRASS PRODUCTION);
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, CONCORD SILT LOAM, CONSER SILTY CLAY LOAM, DAYTON SILT LOAM, WILLAMETTE SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf (FARMED)
HGM CLASSIFICATION:	RIVERINE IMPOUNDING (FARMED SURFACE DRAINAGES) WITH SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-8f
WETLAND ACREAGE	5.3 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	No use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/02/01, 02/27/02
Data Sheet Numbers: 24, 42
estigator(s): Greta Murdoff, Chad Hoffman, and Colin McArthur

Wetland Mapping Code: **L-8f**
Size (acres): 5.3
Cowardin Classification*: PEMf
%PSS: %PEMf: 100 %PFO:
HGM Classification**: RI with S / F

Location:

T-R-S: 12-04-12
Physical: West of Highway 99E, South of N. Lake Creek Drive, and North and South of Glass Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
-01200, -01801
-01300,
-01400,

Soils:

Mapped Series: (3) Amity Silt Loam, (27) Concord Silt Loam, (28) Conser Silty Clay Loam, (33) Dayton Silt Loam, (151) Willamette Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Precipitation, Surface Run-off, Groundwater, Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
			Active Agricultural Field (Grass Production)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/29/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-SF
Plot ID: SO Z4

VEGETATION

At Fenceline btwn 2 Ag Fields

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Rubus ursinus	V	FACU	100	40					
* Crataegus douglasii	T	FAC	100	90					
Rosa hutteana	S	FAC-	100	5					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50%

Criterion Met? No

Remarks: no

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water None
Depth to free water >14"
Depth to saturated soil >14"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks: W/in area mapped on NWI
no hydrologic source

SOILS

Map unit name (Series and phase): (106a) Woodburn silt loam, 0-3% slopes
Drainage class: Moderately well drained
Taxonomy (subgroup): Fine-silty, mixed, mesic Aquultic Argixeroll
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-14"	10YR 3/2			silt loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List (Inclusions only)
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? No

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? No
Hydric soils present? No

Remarks: No evidence as to why this area is mapped as PEMAd on NWI; Surround by ag. fields, dd fenceline w/hawthorn, oaks & blackberry

Is this sampling point within a wetland? No

*Fenceline Species, Sp is adjacent to potential Ag. wetlands areas based on aerial-Photo-Interpretation

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Chad Hoffman and Colin McArthur
normal circumstances exist on the site? No
Is the site significantly disturbed (Atypical Situation?) Yes
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 2/27/02
County: Linn
State: Oregon
Community ID: T-L-SF
Transect ID:
Plot ID: SP 42

VEGETATION

SW (Reference Characterization Point)

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Crataegus douglasii	S	FAC	100	10					
Bare Ground	–	–	–	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: N/A

Criterion Met? No

Remarks: Tilled Field

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No

Remarks:

SOILS

Map unit name (Series and phase) (106A) Woodburn Silt Loam, 0-3% slopes
Drainage class Moderately well-Drained
Taxonomy (subgroup) Fine-silty, mixed mesic Aquultic Argixeroll
Field observations confirm mapped type? No

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10 YR 4/2	10 YR 5/8	Few, Faint, Medium	Silty Clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List (Inclusions only)
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? N/A
Wetland hydrology present? No
Hydric soils present? Yes

Remarks: No Hydrology

Is this sampling point within a wetland? NO

CH

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L-8F

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** Farmed Areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
*Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A Farmed Area

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: no species, B: other species present some time of the year, C: salmon, trout, or sensitive sp some time of the year

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), (B:) precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A:) yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, (B:) Mod 60%, Low <60%

Q4: **Wetland area in acres**
(A:) >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B:) Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B:) 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A:) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A:) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
(A:) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, (B:) minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, (B:) Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B:) Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B:) ag., C: forested or natural

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L-8F

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
*Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
*Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
*Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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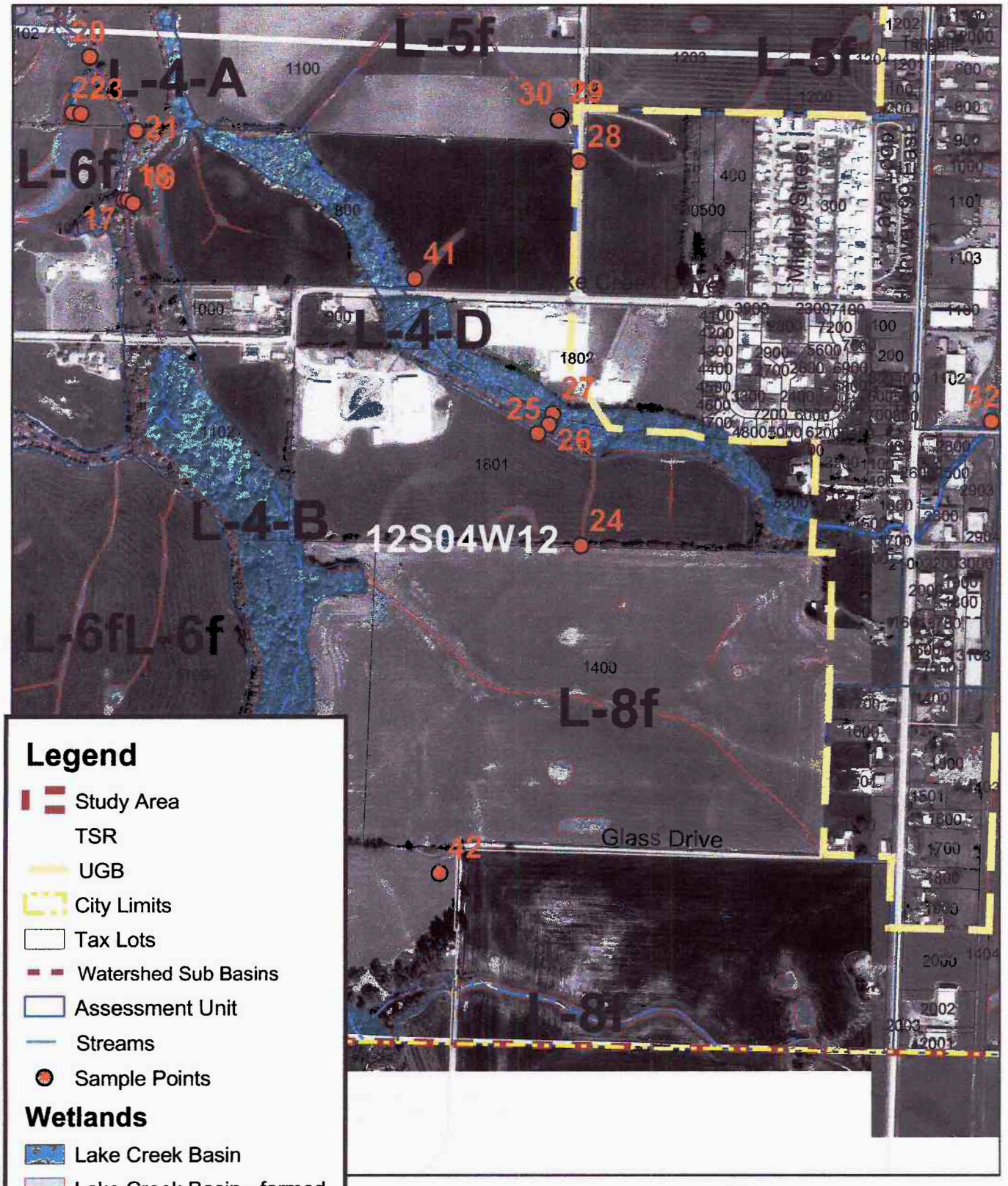

DETAIL MAP L-8f
City of Tangent
October 2002

SATRE ASSOCIATES

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WETLAND L-12C

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	1.6 ACRES
TAX LOTS:	T.12S-R.03W-S.07-D-00101; T.12S-R03W-S.07-C-08503
LOCATION:	NORTH OF OLD OAK DR.
FIELD DATES:	5/30/01, 02/27/02
SAMPLING POINT #S:	6, 7, 46
VEGETATION COMMUNITY:	ASH / HAWTHORNE / MANNAGRASS HIMALAYAN BLACKBERRY
HYDROLOGY:	LAKE CREEK
SOILS:	DAYTON SILT LOAM
COWARDIN CLASSIFICATION:	PFO* / PEMd
HGM CLASSIFICATION:	RIVERINE FLOW-THROUGH*
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM FUNCTION AND CONDITION SUMMARY
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-12C
WETLAND ACREAGE	1.6 acres
WILDLIFE HABITAT	Provides diverse habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Intact
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Moderately pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 5/30/01, 2/27/02
Data Sheet Numbers: Sp 6, 7, 46
Investigator(s): Greta Murdoff, Chad Hoffman, and Colin McArthur

Wetland Mapping Code: **L-12C**
Size (acres): 1.6
Cowardin Classification*: PFO, PEMd
%PSS: %PEM: 20 %PFO: 80
HGM Classification**: RI

Location:

T-R-S: 12-03-07-D, 12-03-07-C
Physical: North of Old Oak Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.03W-S.07-D-00101;
T.12S-R03W-S.07-C-08503

Soils:

Mapped Series: (33) Dayton Silt Loam

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia*)	Douglas' Hawthorn (*Crataegus douglasii*)	Himalayan Blackberry (*Rubus discolor*)	Teasel (*Dipsacus fullonum*)
	Nootka Rose (*Rosa nutkana*)		Meadow Foxtail (*Alopecurus pratensis*)
			Reed Canary Grass (*Phalaris arundinacea*)
			Tall Mannagrass (*Glyceria elata*)
			Bittersweet Nightshade (*Solanum dulcamara*)
			Wild Oat (*Avena fatua*)
			Creeping Spike Rush (*Eleocharis palustris*)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water
**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 5/30/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-12C
Plot ID: SP 6

VEGETATION

W/in Channel; 30' W'd Ag. Field

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Solanum dulcamara	H	FAC+	20	15					
* Glyceria elata	H	FACW+	80	60					
bare ground	–	–	–	50					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes
Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water 15"
Depth to saturated soil 12"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes
Remarks: Water was present here on first field visit

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? No, clayey

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-7"	10YR3/1	5YR 3/2	few, medium, distinct	Silty Clay Loam
7-15"	2.5Y 5/2			Clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 5/30/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-6-12C
Plot ID: SP 7

VEGETATION

40' W of SP 6 w/in riparian area

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
★ Rosa nutkana	S	FAC	20	20	Poa trivialis	H	FACW	88	50 ★
★ Crataegus douglasii	S	FAC	80	80	Galium sp	H	-	9	5
Cornus sericea occidentalis	H	FACW	3	2					
Corylus cornuta	T	FACU	17	15					
★ Fraxinus latifolia	T	FACW	83	75					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes. Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water None
Depth to free water >18"
Depth to saturated soil 7 18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes

Remarks: This area is usually flooded in the wet season (see previous riparian inventory)

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-10"	10 YR 3/1	7.5 YR 4/4	Many Medium Distinct	silty clay loam
10-18"	10 YR 5/1	7.5 YR 5/6	Many Coarse Distinct	silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☑ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes. Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes-marginal
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Chad Hoffman and Colin McArthur*
normal circumstances exist on the site?
Is the site significantly disturbed (Atypical Situation?)
Is the area a potential Problem Area (If needed, explain on reverse)?

Date: 2/27/02
County: Linn
State: Oregon
Community ID:
Transect ID:
Plot ID: SF 46

VEGETATION

w/in Potential Forested Wetland Area

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Populus trichocarpa	T	FAC	100	30					
*	Rosa pisocarpa	S/V	FAC	64	35					
*	Rubus discolor	S/V	FACU	36	20					
	Dactylis glomerata	H	FACU	100	10					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: Color 5/0

Criterion Met? Yes

Remarks: Forested Community adjacent to Drainage TOB

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water @ 8"
Depth to saturated soil @ 6"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks: Adjacent to Drainage Feature

SOILS

Map unit name (Series and phase) (33) Dayton Silt Loam
Taxonomy (subgroup)
Drainage class Poorly Drained
Field observations confirm mapped type?

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10 YR 3/1	5 YR 5/6	Many, Fines, Distinct	Silty Clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

CH

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L-12C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin-class interspersion (edge effect)**
A: High, B: Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited - not listed
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: *Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-12C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition DPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-12C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated? Probably
A: yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public?
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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L-12C

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B) no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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Sp 6, 7



View west towards Sp 6.



View north from Sp 7.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
May 30, 2001

SATRE ASSOCIATES

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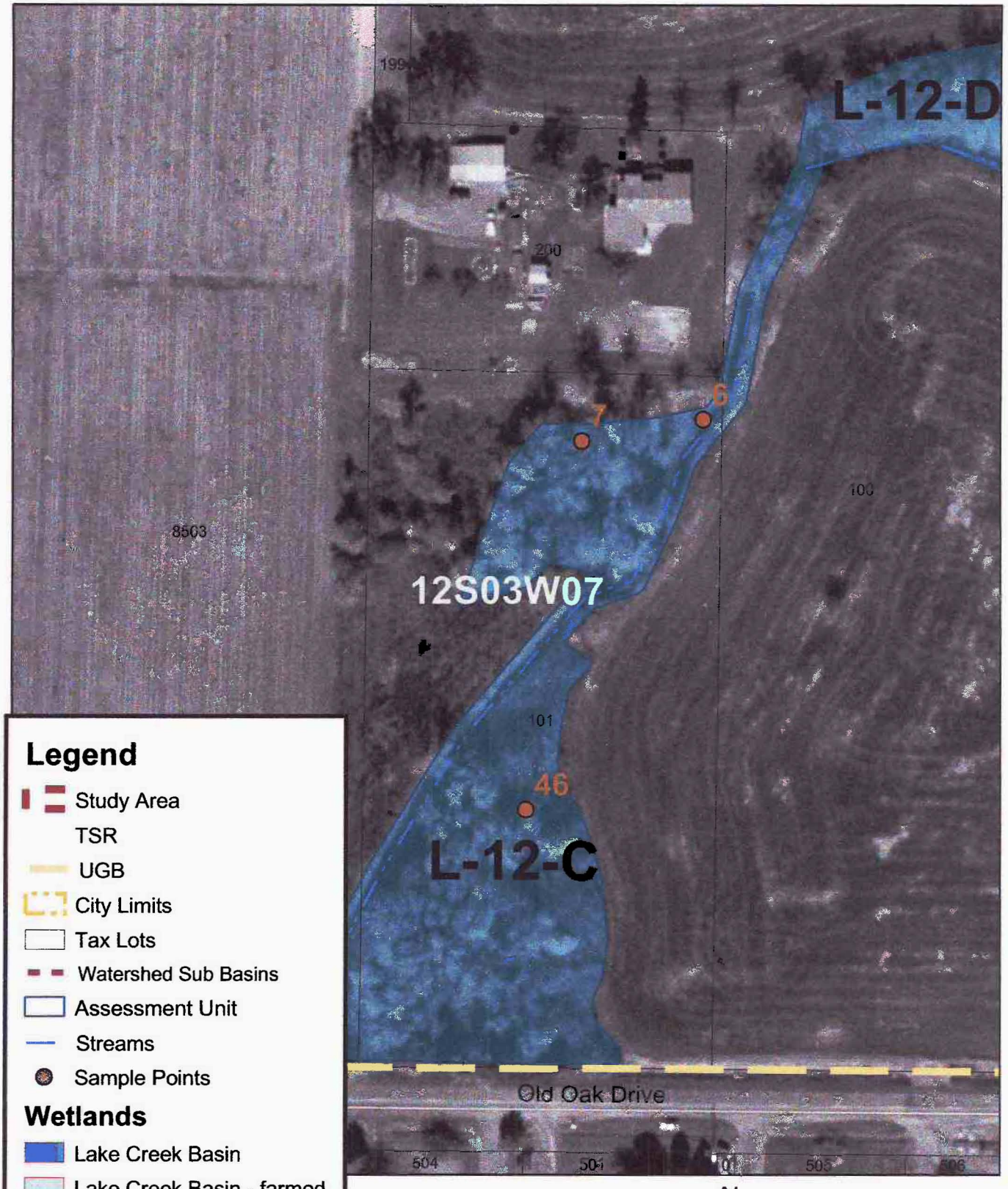

DETAIL MAP L-12-C
City of Tangent
October 2002

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WETLAND L-12D

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	3.3 ACRES
TAX LOTS:	T.12S-R.03W-S.07-D-00100; T.12S-R.03W-S.07-03000
LOCATION:	NORTH OF OLD OAK DR.
FIELD DATES:	5/08/02, 5/21/01
SAMPLING POINT #S:	1-3
VEGETATION COMMUNITY:	ASH / ROUGH BLUEGRASS
HYDROLOGY:	LAKE CREEK
SOILS:	AMITY SILT LOAM, DAYTON SILT LOAM
COWARDIN CLASSIFICATION:	PFO* / PEMd
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* WITH RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-12D
WETLAND ACREAGE	3.3 acres
WILDLIFE HABITAT	Provides diverse habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Intact
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 5/08/01, 5/21/01
Data Sheet Numbers: Sp 1-3
estigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-12D**
Size (acres): 3.3
Cowardin Classification*: PFO, PEMd
%PSS: %PEM: 10 %PFO: 90
HGM Classification**: RI

Location:

T-R-S: 12-03-07, 12-03-07-D
Physical: North of Old Oak Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.03W-S.07-D-00100;
T.12S-R.03-S.07-03000

Soils:

Mapped Series: (3) Amity Silt Loam, (33) Dayton Silt Loam

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia*)		Himalayan Blackberry (*Rubus discolor*)	Soft Rush (*Juncus effusus*)
			Velvet Grass (*Holcus lanatus*)
			Rough Bluegrass (*Poa pratensis*)
			Cusick's Sedge (*Carex cusickii*)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water
**HGM Classifications:
' = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner: N/A
Investigators: Greta Murdoff and Chad Hoffman
normal circumstances exist on the site? Yes
.. the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 5/8/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-12D
Plot ID: SP-1

VEGETATION

15' N of drainage

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Juncus effusus	H	FACW	12	10	Poa pratensis	H	FAC	12	10
* Holcus lanatus	H	FAC	59	50					
* Fraxinus latifolia	T	FACW	100	75					
Carex cusickii	H	OBL	17	15					
Rubus discolor	S	FACU	100	5					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes
Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water 7/8"
Depth to saturated soil 7/8"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (landscape position)

Criterion Met? Yes
Remarks: On slight slope of creek bank, annually flooded

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? No, clayey

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-6"	10 YR 3/1	7.5 YR 3/4	Many Med. Distinct	silty clay
6-18"	10 YR 4/1	7.5 YR 3/4	Many Med. Distinct	clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes, marginal
Hydric soils present? Yes
Remarks
Is this sampling point within a wetland? Yes

yem

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
Date: 5/21/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-12D
Plot ID: SP 2

normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

VEGETATION

Up bank from creek · 30' S of SP1

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Tellima grandiflora	H	NI	5	5	Rosa nutkana	S	FAC-	43	15
* Fraxinus latifolia	T	FACW	100	80	Poa trivialis	H	FACW	76	80 *
* Phalaris arundinacea	H	FACW	19	20					
* Crataegus douglasii	S	FAC	57	20					
Rubus discolor	V	FACU	100	10					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes
Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes
Remarks: This area is flooded in the winter months (see previous riparian inventory)

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonite, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-10"	10YR 3/2	7.5YR 4/6	Few Med. Distinct	silty clay loam
10-18"	10YR 4/1	7.5YR 3/3	Many Med. Distinct	silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes, marginal
Hydric soils present? Yes

Remarks: Next to large debris pile (probably not water driven, too large - 15' high - for this stream)

Is this sampling point within a wetland? Yes

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 5/21/61
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-12D
Plot ID: SP3

VEGETATION

40' Eupharx of SP2

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
★ Poa trivialis	H	FACW	74	80	Fraxinus latifolia	T	FACW	100	80 ★
Juncus effusus	H	FACW	14	15	Carex lenticularis	H	FACW	5	5
Cerastium arvense	H	FACU	2	2	Carex sp	H	-	5	5
Rubus discolor	V	FACU	100	15	Rosa nutkana	S	FAC-	43	15
★ Crataegus douglasii	S	FAC	57	20					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes
Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☑ Other (Landscape position Zone)

Criterion Met? Yes
Remarks: W/in seasonally flooded

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? No, clayey

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-5"	10YR 3/1			Silty Clay Loam
5-14"	10YR 4/1	7.5YR 2.5/2	Many, Medium, Faint	Silty clay
		7.5YR 4/6	Many, Med., Distinct	
14-18"	10YR 4/1	7.5YR 4/6	Many, Med., Distinct	Clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes, marginal
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

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L-12 D

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited not listed
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-12D 2

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-12 D

3

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?** Probable
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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L-12D 4

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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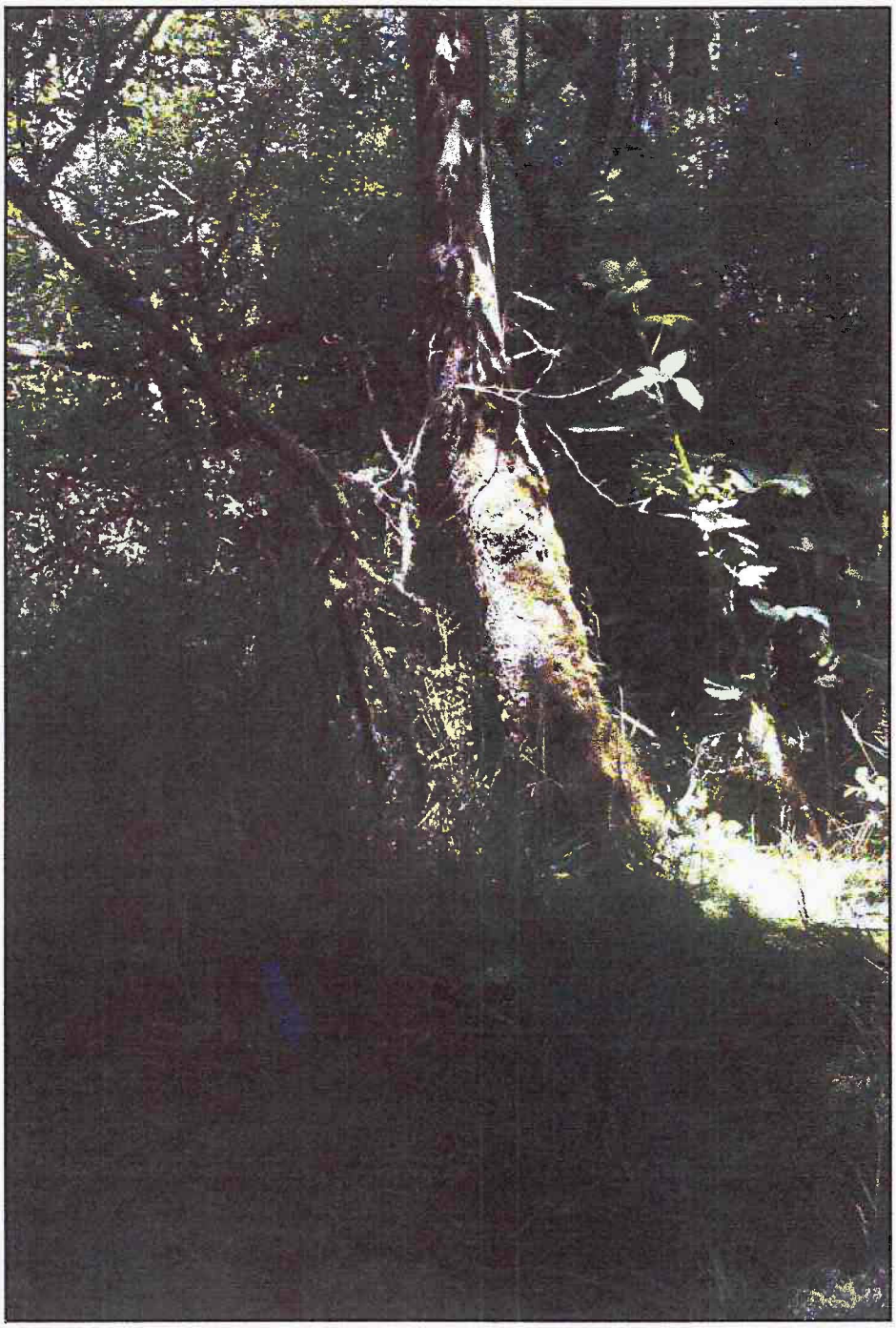
Sp 3



View west at Sp 3.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
May 21, 2001

SATRE ASSOCIATES

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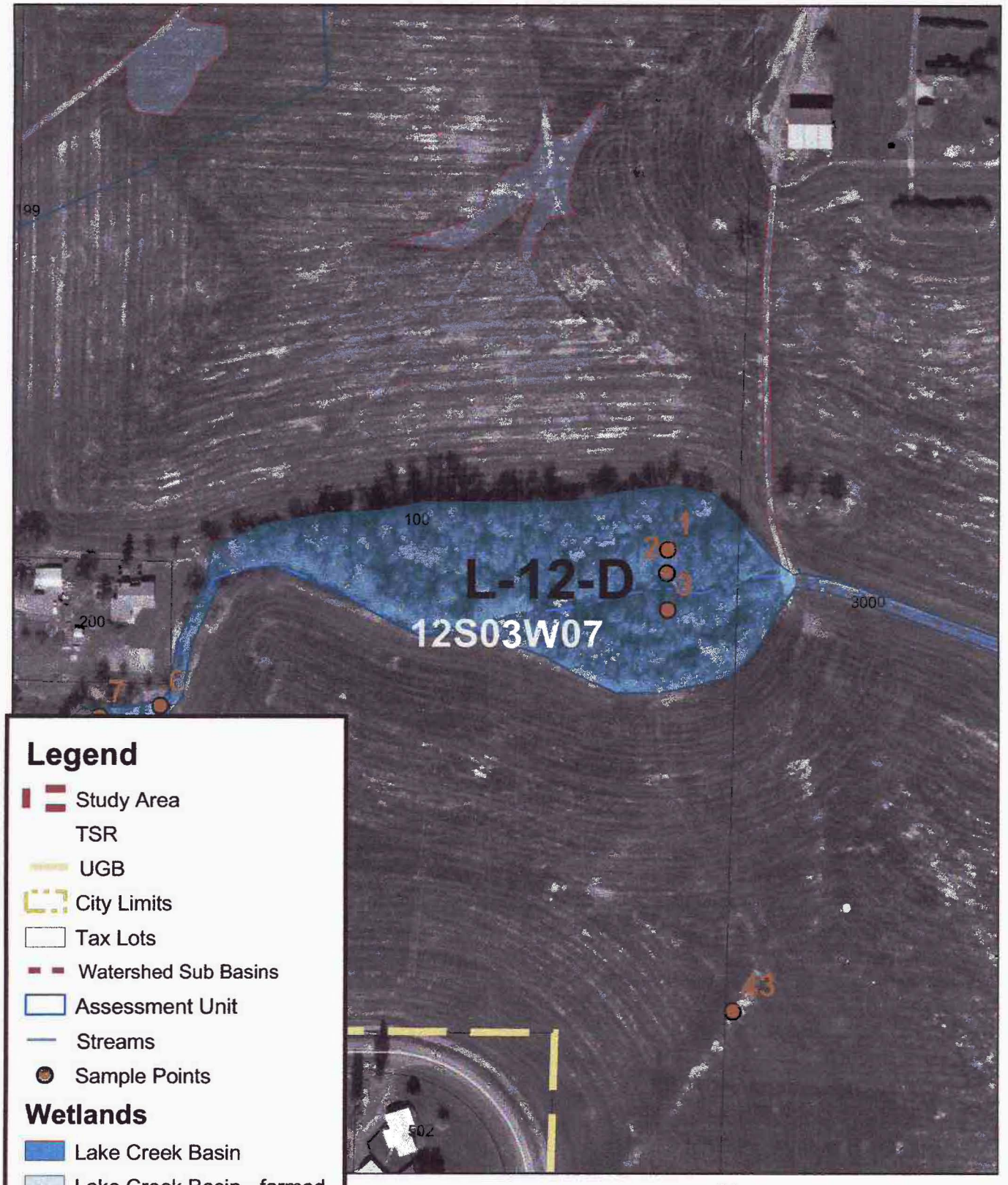

DETAIL MAP L-12-D
City of Tangent
October 2002

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WETLAND L-1

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	1.4 ACRES
TAX LOTS:	T.12S-R.04W-S.01-00-00300, -00301, 00302, -00400
LOCATION:	NORTH OF HIGHWAY 34
FIELD DATES:	2/27/02
SAMPLING POINT #S:	37-40
VEGETATION COMMUNITY:	REED CANARY GRASS / JUNCUS
HYDROLOGY:	PRECIPITATION, SURFACE RUN-OFF, GROUNDWATER, LAKE CREEK
SOILS:	AMITY SILT LOAM, DAYTON SILT LOAM
COWARDIN CLASSIFICATION:	PEMd / PEM
HGM CLASSIFICATION:	RIVERINE FLOW THROUGH* / RIVERINE IMPOUNDING
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-1
WETLAND ACREAGE	1.4 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Little potential
EDUCATION	Potential use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 2/27/02
Data Sheet Numbers: SP 37-40
Investigator(s): Chad Hoffman and Colin McArthur

Wetland Mapping Code: **L-1**
Size (acres): 1.4
Cowardin Classification*: PEMd / PEM
%PSS: %PEM(d) 100% PFO:
HGM Classification**: RFT with RI areas

Location:

T-R-S: 12-04-01
Physical: North of Highway 34
Hydrologic Basin: Lake Creek South

Tax Lot(s):
-00300 -00400
-00301
-00302

Soils:

Mapped Series: (3) Amity Silt Loam, (33) Dayton Silt Loam

Hydrology:

Hydrologic Source: Lake Creek, Precipitation, Surface Runoff, Groundwater

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
			Reed Canary Grass (*Phalaris arundinacea*)
			Dagger-leaf Rush *(Juncus ensifolius)*
			Redtop Bentgrass (*Agrostis alba*)

Comments:

Drainage feature lined with Reed Canary Grass

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Chad Hoffman and Colin McArthur*
Normal circumstances exist on the site? yes
Is the site significantly disturbed (Atypical Situation?) NO
Is the area a potential Problem Area (If needed, explain on reverse)? NO

Date: 2/27/02
County: Linn
State: Oregon
Community ID:
Transect ID: T-21
Plot ID: SP 37

VEGETATION

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Agrostis alba	H	FAC	59	60					
*	Madia glomerata	H	FACU+	39	40					
	Epilobium sp.	H	N/A	02	2					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50%

Criterion Met? No

Remarks: Madia covers much of the area in question

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water 0"
Depth to free water @ 6"
Depth to saturated soil @ surface

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks: Very Hummocky

SOILS

Map unit name (Series and phase) (3) Amity Silt Loam
Drainage class Somewhat poorly Drained
Taxonomy (subgroup) Fine, montmorillonitic, mesic Vertic Albaqualf
Field observations confirm mapped type?

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0 - 1/2"				Organics
1/2" - 4"	2.5 Y 3/2			Silty clay Loam
4" - 18"	2.5 Y 3/2	7.5 YR 5/6	Many, Medium, Distinct	Silty clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List Inclusions only
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? yes
Hydric soils present? yes

Remarks: Area most likey was wet in the past, but roads, development has disconnected the area.

Is this sampling point within a wetland? No

CH

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WETLAND DELINEATION DATA FORM

Project/Site:	Tangent LWI	Date:	2/27/02
Applicant/Owner:		County:	Linn
Investigators:	*Chad Hoffman and Colin McArthur*	State:	Oregon
Normal circumstances exist on the site?	yes	Community ID:	
Is the site significantly disturbed (Atypical Situation?)	no	Transect ID:	T-L1
Is the area a potential Problem Area (If needed, explain on reverse)?	no	Plot ID:	SP 38

VEGETATION

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Phalaris arundinacea	H	FACW	100	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? yes

Remarks: ~25'-30' roadside drainage swale/impoundment water area

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
- Depth of surface water none
- Depth to free water @ 8"
- Depth to saturated soil @ 6"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? yes

Remarks:

SOILS

Map unit name (3) Amity Silt Loam
(Series and phase) Fine, montmorillonitic, mesic Vertic Albaqualf
Taxonomy (subgroup)

Drainage class Somewhat Poorly drained
Field observations confirm mapped type? No

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-1"				Organic Matter
1"-6"	2.5 Y 3/2			Silty Clay Loam
6"-18"	2.5 Y 4/2	7.5 Y/5 5/8	Many, Fine, Distinct	Silty Clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List — Inclusions only
- ☑ Listed on National Hydric Soils List
- ☐ Other (

Criterion Met? yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present? yes Wetland hydrology present? yes Hydric soils present? yes	Remarks	Is this sampling point within a wetland?	yes

CH

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Eugene, Oregon 97401

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Chad Hoffman and Colin McArthur*
Normal circumstances exist on the site?
Is the site significantly disturbed (Atypical Situation?)
Is the area a potential Problem Area (If needed, explain on reverse)?

Date: 2/27/02
County: Linn
State: Oregon
Community ID:
Transect ID: T-L1-A
Plot ID: SP 39

VEGETATION

w/in R-O-W northside of Highway 34

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Phalaris arundinacea	H	FACW	100	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No Remarks:

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Drainage class: Poorly Drained
Taxonomy (subgroup): Fine, montmorillonitic, mesic, Typic Albaqualf
Field observations confirm mapped type?

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-1"				Organics
1"-18"	10 YR 3/2			Silty Clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Remarks:

WETLAND DETERMINATION

Wetland vegetation present? yes
Wetland hydrology present? No
Hydric soils present? No

Remarks

Is this sampling point within a wetland? No

CH

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Chad Hoffman and Colin McArthur*
Normal circumstances exist on the site? yes
Is the site significantly disturbed (Atypical Situation?) ND
Is the area a potential Problem Area (If needed, explain on reverse)? yes

Date: 2/27/02
County: Linn
State: Oregon
Community ID:
Transect ID: T-L1-A
Plot ID: SP 4D

VEGETATION

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Phalaris arundinacea	H	FACW	40	30					
*	Juncus ensifolius	H	FACW	33	25					
*	Agrostis alba	H	FAC	27	20					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? yes Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water ½"
Depth to free water @ surface
Depth to saturated soil @ surface

Primary Wetland Hydrology Indicators:
- ☑ Inundated
- ☑ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☐ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? yes Remarks:

SOILS

Map unit name (Series and phase) (33) Dayton Silt Loam Drainage class Poorly Drained
Taxonomy (subgroup) Fine, montmorillonitic, mesic Typic Albaqualf Field observations confirm mapped type?

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-0.5"				Organics
0.5"-6"	10 YR 3/2			Silty Clay Loam
6"-18"	10 YR 4/2	5 YR 5/8	Many, Medium, Distinct	Silty Clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☐ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? yes Remarks:

WETLAND DETERMINATION

Wetland vegetation present? yes
Wetland hydrology present? yes
Hydric soils present? yes

Remarks

Is this sampling point within a wetland? yes

CH

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
* Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams N/A

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds N/A

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A): surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A): yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, (B): Mod 60%, Low <60%

Q4: **Wetland area in acres**
(A): >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B): Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition BPJ - not listed
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, (B): no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A): yes, B: unable to determine, C; no

Q3: **Wetland acreage**
(A): >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
(A): yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, (B): Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B): Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B): ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
A: yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?**
A: yes, B: unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?**
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, B: yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
A: no, B: 1-2 present, C: 2+ present Heavy Traffic

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: yes, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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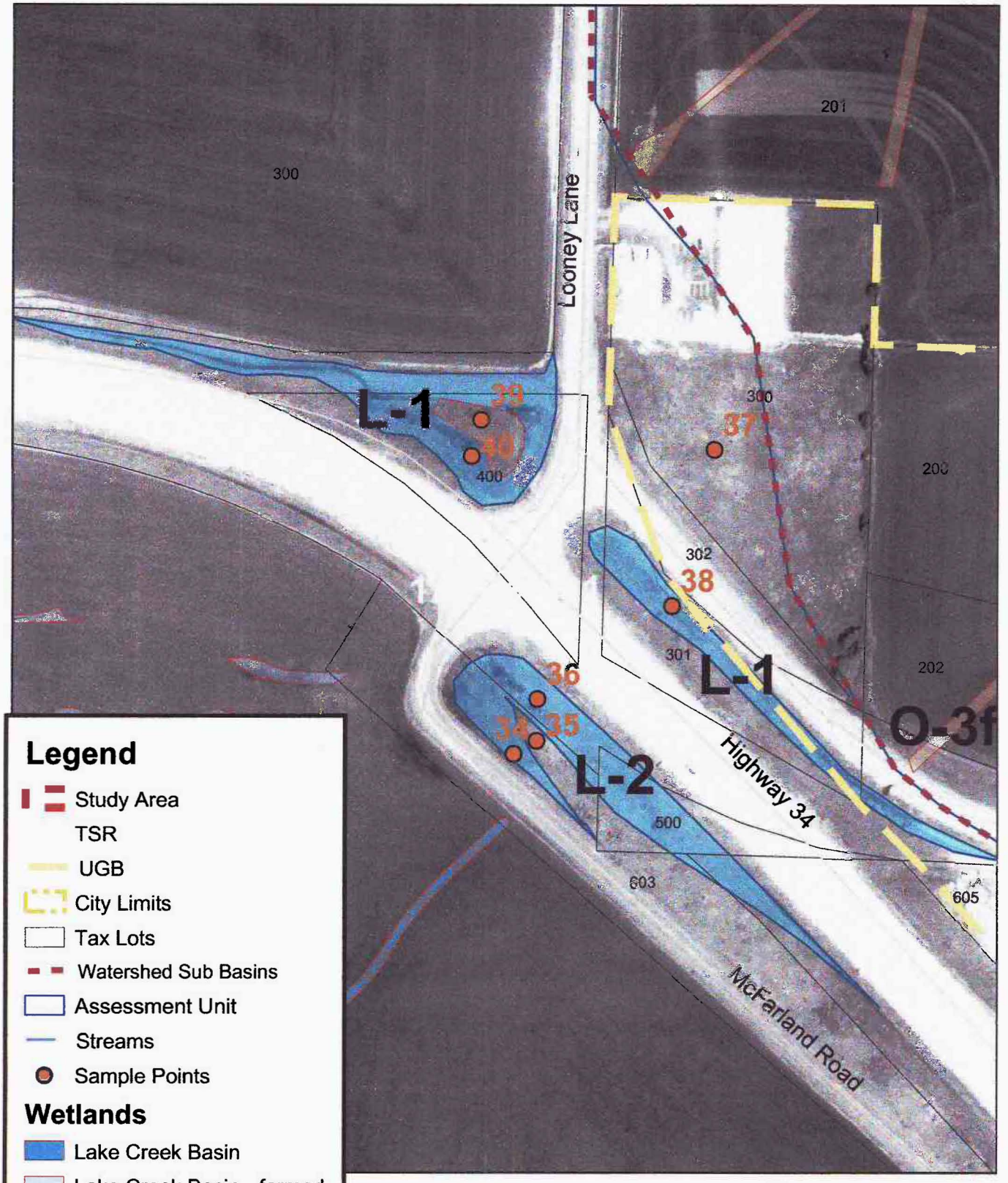

DETAIL MAP L-1
City of Tangent
October 2002

SATRE ASSOCIATES

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WETLAND L-10f

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	1.0 ACRES
TAX LOTS:	T.12S-R.03W-S.07-C-08503, -08600, -08700, -08800, -09100, -09200, -09300, -09400 T.12S-R.03W-S.07-D-00100, -00199 T.12S-R.03W-S.07-00-00200, -00500, -00502
LOCATION:	EAST OF HIGHWAY 99; NORTH AND SOUTH OF TANGENT DRIVE
FIELD DATES:	7/02/01, 02/27/02
SAMPLING POINT #S:	OFF SITE
VEGETATION COMMUNITY:	FARMED WETLAND (GRASS PRODUCTION)
HYDROLOGY:	LAKE CREEK
SOILS:	CONCORD SILT LOAM, DAYTON SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PEMf (FARMED)
HGM CLASSIFICATION:	RIVERINE IMPOUNDING (FARMED SURFACE DRAINAGES)* WITH SLOPE / FLATS
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (OFF SITE FIELD DETERMINATION / AERIAL PHOTO INTERPRETATION)

- WETLAND CHARACTERIZATION SHEET
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	**L-10f**
WETLAND ACREAGE	1.0 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	N/A
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	Moderate potential
EDUCATION	Potential use
RECREATION	No value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/02/01, 02/27/02
Data Sheet Numbers: None (off-site)
estigator(s): Greta Murdoff, Chad Hoffman, and Colin McArthur

Wetland Mapping Code: **L-10f**
Size (acres): 1.0
Cowardin Classification*: PEM(f)
%PSS: %PEMf: 100 %PFO:
HGM Classification**: RI with S / F

Location:

T-R-S: 12-03-07, 12-03-07-C, 12-03-07-D
Physical: East of Highway 99 and North and South of Tangent Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.03W-S.07-C-08503, -08600, 08700, -08800, 09100, -09200, -09300, -09400
T.12S-R.03W-S.07-D-00100, -00199
T.12S-R.03W-S.07-00-00200, -00500, -00502

Soils:

Mapped Series: (27) Concord Silt Loam, (33) Dayton Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
			Agricultural Field (Grass Production)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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L-104

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg** Farmed Areas
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment:
Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
* Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-104

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
X Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A) surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A) yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, (B) Mod 60%, Low <60%

Q4: **Wetland area in acres**
(A) >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
X Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
(A) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, (B) minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, (B) Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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L-104

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public?
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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L-104

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 2 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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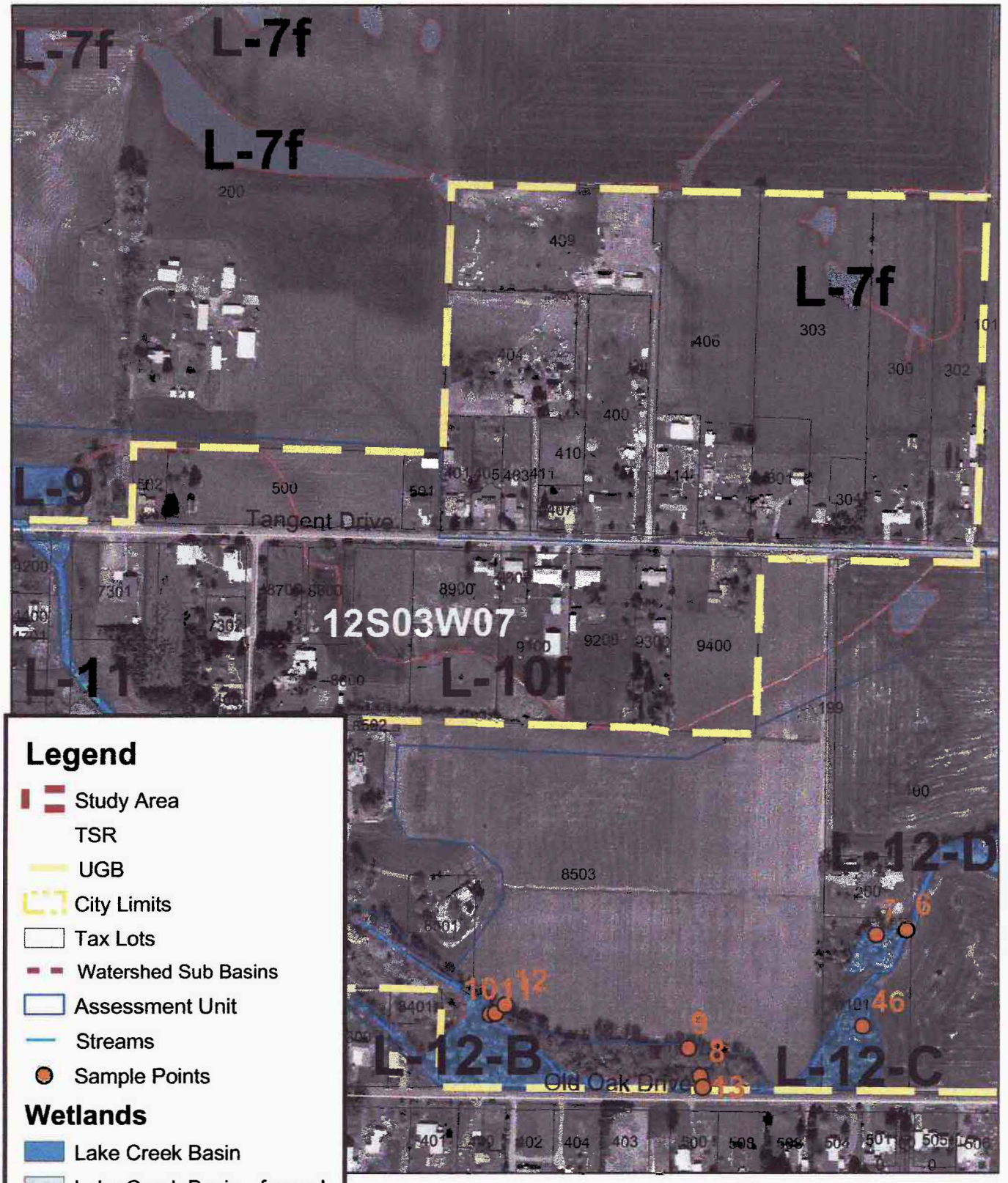

DETAIL MAP L-10f
City of Tangent
October 2002

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WETLAND L-11

DRAINAGE BASIN:	LAKE CREEK
WETLAND ACREAGE:	1.5 ACRES
TAX LOTS:	T.12S-R.03W-S.07-00-01102, -02300; T.12S-R.03W-S.07-C-02300, -02500, -02903, -07300
LOCATION:	EAST OF HIGHWAY 99, NEAT TANGENT DR.
FIELD DATES:	7/11/01
SAMPLING POINT #S:	32
VEGETATION COMMUNITY:	REED CANARY GRASS / SPEEDWELL
HYDROLOGY:	LAKE CREEK
SOILS:	CONSER SILTY CLAY LOAM
COWARDIN CLASSIFICATION:	PEMf (FARMED WETLAND)* / PEMd* / PEM (5%)
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* (INCLUDING FARMED SURFACE DRAINAGES)
LOCALLY SIGNIFICANT WETLAND:	NO

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-11
WETLAND ACREAGE	1.5 acres
WILDLIFE HABITAT	Provides some habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Not pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 7/11/01
Data Sheet Numbers: Sp 32
ɜstigator(s): Greta Murdoff and Chad Hoffman

Wetland Mapping Code: **L-11**
Size (acres): 1.5
Cowardin Classification*: PEM, PEMf, PEMd
%PSS: %PEM: 100 %PFO:
HGM Classification**: RI

Location:

T-R-S: 12-03-07, 12-03-07-C
Physical: East of Highway 99, Neat Tangent Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
T.12S-R.03W-S.07-00-01102, -02300;
T.12S-R.03W-S.07-C-02300, -02500, -02903, -07300

Soils:

Mapped Series: (28) Conser Silty Clay Loam

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
			Reed Canary Grass (*Phalaris arundinacea)*
			Pennyroyal (*Mentha pulegium*)
			American Brooklime (*Veronica americana*)
			Agricultural Field (Grass Production)

Comments:

Small emergent wetland in basin surrounded by road, railroad, and parking lot.

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water
**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 7/11/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-11
Plot ID: sp 32

VEGETATION

(corner btwn R.R. & Tangent dr.

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Mentha pulegium	H	OBL	38	50					
	Populus trichocarpa	T	FAC	100	5					
	bare ground	–	–	–	10					
*	Veronica americana	H	OBL	31	40					
*	Phalaris arundinacea	H	FACW	31	40					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☑ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks: ~30' N of drainageway

SOILS

Map unit name (Series and phase) (28) Coreser Silty Clay Loam
Taxonomy (subgroup) Fine, mixed, mesic Typic Argiaquoll
Drainage class Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-14"	10 YR 3/1	5 YR 4/6	Many Med. Distinct	silty clay loam
14-18"	10 YR 4/1			clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks: some cobbles

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks: banks surrounding wetland are steep & rocky (no upland point)

Is this sampling point within a wetland? Yes

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C: Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A) surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A) yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, (B) Mod 60%, Low <60%

Q4: **Wetland area in acres**
(A) >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
(A) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, (B) minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, (B) Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
(A) yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated? likely
A: yes, (B) unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
(C) no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
(A) Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
(A) Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, (B) Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
(A) 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
(A) Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
(A) no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
(A) >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, (B) 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, (B) potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, (B) yes, with owners' permission, C: no

Q2: Visible hazards to public? near r.r. & roads
A: no, (B) 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, (B) do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, (B) no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
(A) yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, (B) no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
(A) yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, (C) no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, (C) no

Q4: **Wildlife habitat index:**
A: diverse habitat, (B) habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, (B) no, or not applicable

Q6: **Hunting allowed?**
A; yes, (B) no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, (C) 1

Q2: **How much of wetland visible from viewing area?**
(A) >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, (C) visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, (B) landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, (B) unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, (B) continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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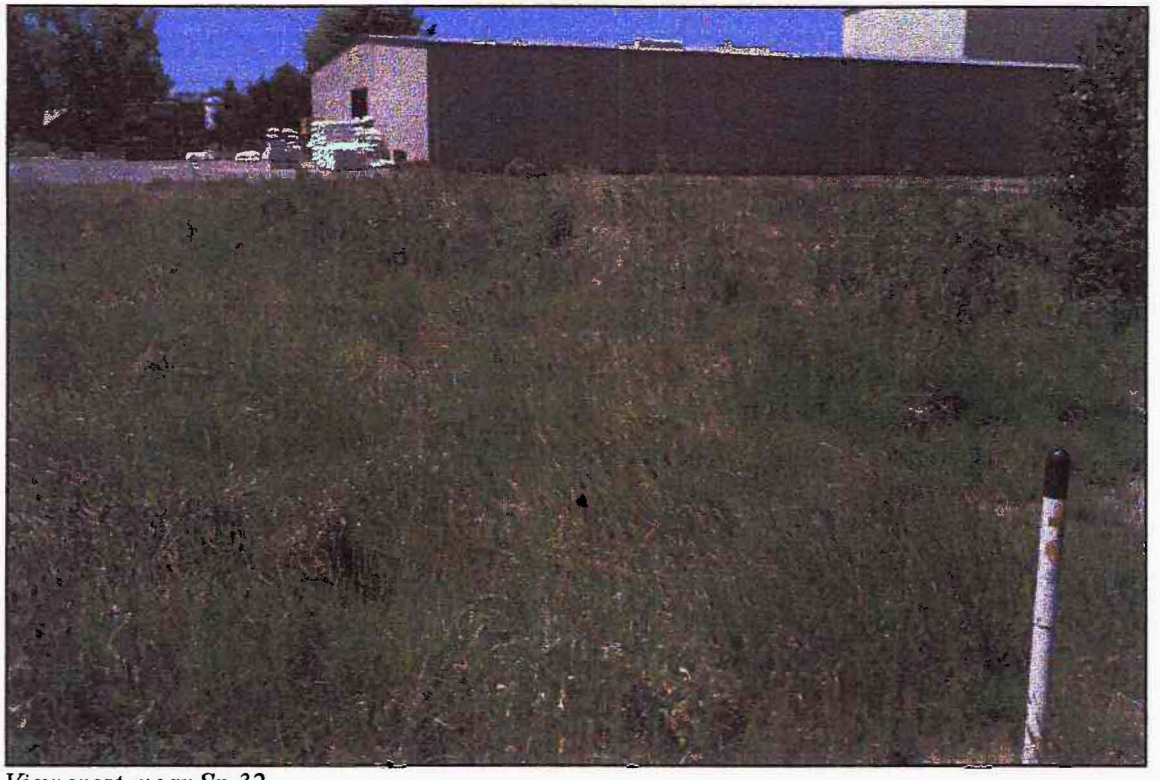
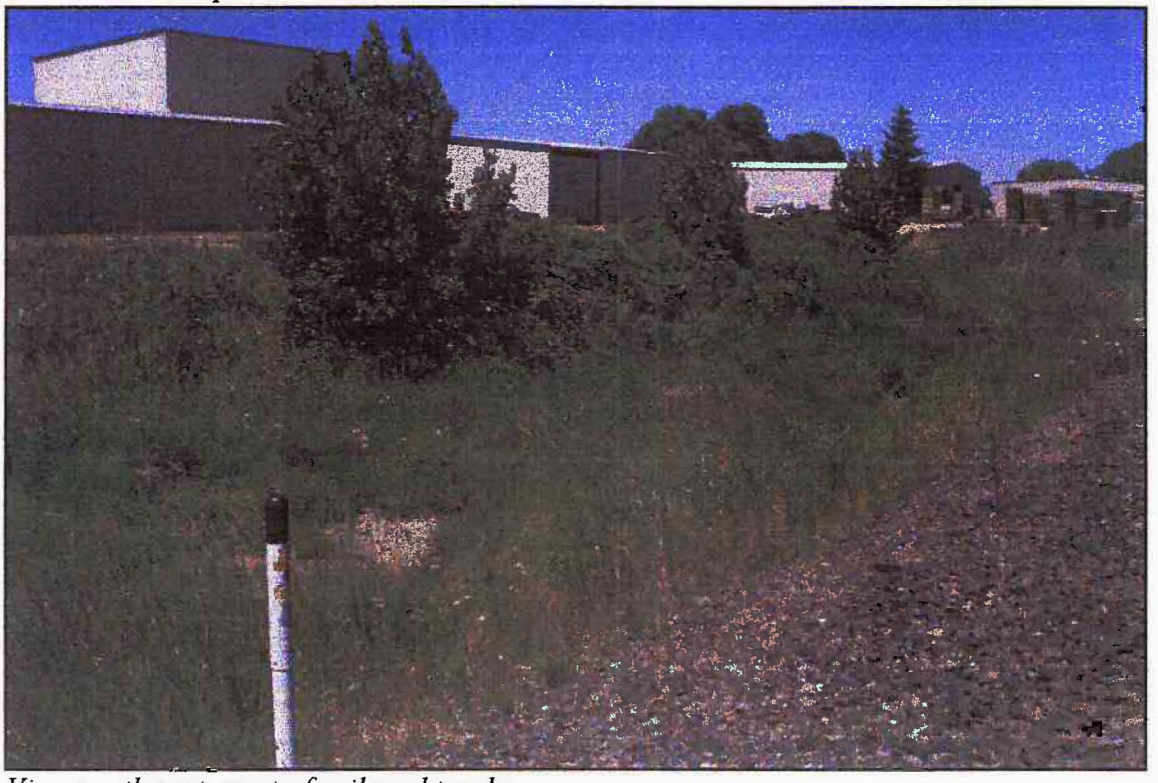
Sp 32



View west, near Sp 32.



View northwest, west of railroad tracks.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
July 11, 2001

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DETAIL MAP L-11
City of Tangent
October 2002

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WETLAND L-12A

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	0.6 ACRES
TAX LOTS:	T.12S-R.03W-S.07-C-08503
LOCATION:	SOUTH OF BIRDFOOT DR.
FIELD DATES:	6/06/01
SAMPLING POINT #S:	14-16
VEGETATION COMMUNITY:	ASH / TALL FESCUE
HYDROLOGY:	LAKE CREEK
SOILS:	DAYTON SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO* / PEMd
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* WITH RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-12A
WETLAND ACREAGE	0.6 acres
WILDLIFE HABITAT	Provides diverse habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Impacted or degraded
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Moderately pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 6/6/01
Data Sheet Numbers: Sp 14-16
Investigator(s): Greta Murdoff, Chad Hoffman and Mike Shippey

Wetland Mapping Code: **L-12A**
Size (acres): 0.6
Cowardin Classification*: PFO, PEMd
%PSS: %PEM: 20 %PFO: 80
HGM Classification**: RI with RFT

Location:
T-R-S: 12-03-07-C
Physical: South of Birdfoot Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
08503

Soils:
Mapped Series: (33) Dayton Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:
Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon Ash (*Fraxinus latifolia*)	Clustered Rose (*Rosa pisocarpa*)		Rough Bluegrass (*Poa trivialis*)
	Snowberry (*Symphoricarpos albus*)		Tall Fescue (*Festuca arundinacea*)
			Stinging Nettle (*Urtica dioica*)
			Nipplewort (*Lapsana communis*)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
Are normal circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/6/01
County: Linn
State: Oregon
Community ID: T-L-12A
Transect ID:
Plot ID: SP 15

VEGETATION

25' from channel

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Fraxinus latifolia	T	FACW	100	95	* Poa trivialis	H	FACW	50	40 *
					* Festuca arundinacea	H	FAC-	50	40 *
		--							

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 67

Criterion Met? Yes

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☑ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations: None @ this time
Depth of surface water
Depth to free water >10"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☒ Water-stained leaves
- ☑ Local soil survey data
- ☒ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes

Remarks:

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Drainage class: Poorly drained
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqual
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-12"				organics
12"-16"	10YR 3/1			silty clay loam
16"-14"	10YR 4/1	7.5 YR 3/4	Many Med. Distinct	silty clay loam
14"-18"	10YR 4/1	7.5 YR 3/4	Many Med. Distinct	silty clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☒ Reducing conditions
- ☒ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☒ Listed on Local Hydric Soils List
- ☒ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes

Remarks:

WETLAND DETERMINATION

Wetland vegetation present?	Remarks	Is this sampling point within a wetland?
Wetland hydrology present? Yes		Yes
Hydric soils present? Yes		

WW

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
.. the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/6/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-L-12A
Plot ID: SP16

VEGETATION

40' West of SP15

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Fraxinus latifolia	T	FACW	100	15					
Poa annua	H	FAC	16	15					
Ranunculus	-	-	-	20					
* Lawn grasses	H	-	56	50					
x Trifolium sp	H	-	28	25					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: No

Criterion Met? No Remarks: Lawn area

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☒ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes Remarks:

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? No

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0 - 10"	10 YR 4/2	10 YR 3/4	Many Fine distinct	Silty clay Loam
10 - 18"	10 YR 4/1	10 YR 3/4	Many, coarse distinct	Silty clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes Remarks:

WETLAND DETERMINATION

Wetland vegetation present? No
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks: Moist throughout

Is this sampling point within a wetland? No

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: (A) 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, (B) Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, (B) 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
(A) by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
(A) W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
(A) no reaches listed as water quality limited not listed
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
(A) >40%, B: 10-40%, C: <10%

Assessment: (A) Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, (C) <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, (B) portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, (C) <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
(A) no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, (C) Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, (C) no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "a"

Water Quality

Q1: **Primary source of water**
A: surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
A: yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
A: high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, B: 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition BP J
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
A: yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
A: yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, C: unrestricted flow

Q5: **Dominant veg cover**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, B: ag., C: forested or natural

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L-12A 3

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: Has stream flow or bank been modified by humans less than 1 mi. above wetland?
A: yes, B: no

Q2: Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?
A: yes, B: unable to determine, C: no

Q3: Water quality condition of stream reaches upstream/adjacent to wetland
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q4: Dominant existing land use within 500' of wetland's edge:
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q5: Dominant zoned land use within 500':
A: Developed, B: Agricultural, C: Exclusive forest/open space

Q6: Dominant Veg cover
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: What are assessment results for wildlife hab, fish hab, water qual, and hydro control?
A: 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: What is wetland's primary source of water?
A: Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: If primary source of water is surface flow, is water flow into the wetland restricted?
A: no, B: perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: Wetland area in acres
A: >5 ac, B: 0.5-5 ac, C: <0.5 ac

Q5a: Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide
A: >40%, B: 10-40%, C: <10%

Q5b: Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide
A: >40%, B: 10-40%, C: <10%

Q6: What is result of sensitivity to impact index?
A: wetland not sensitive to impacts, B: potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: Is wetland site open to public for direct access/observation?
A: yes, B: yes, with owners' permission, C: no

Q2: Visible hazards to public?
A: no, B: 1-2 present, C: 2+ present

Q3: What are results of wildlife and fish habitat assessment?
A: diverse, B: do not meet A or C, C: lost/ not intact

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OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 2 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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Sp 15, 16



View west at Sp 15, within forested area.



View west towards Sp 16 and 15.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
June 06, 2001

SATRE ASSOCIATES

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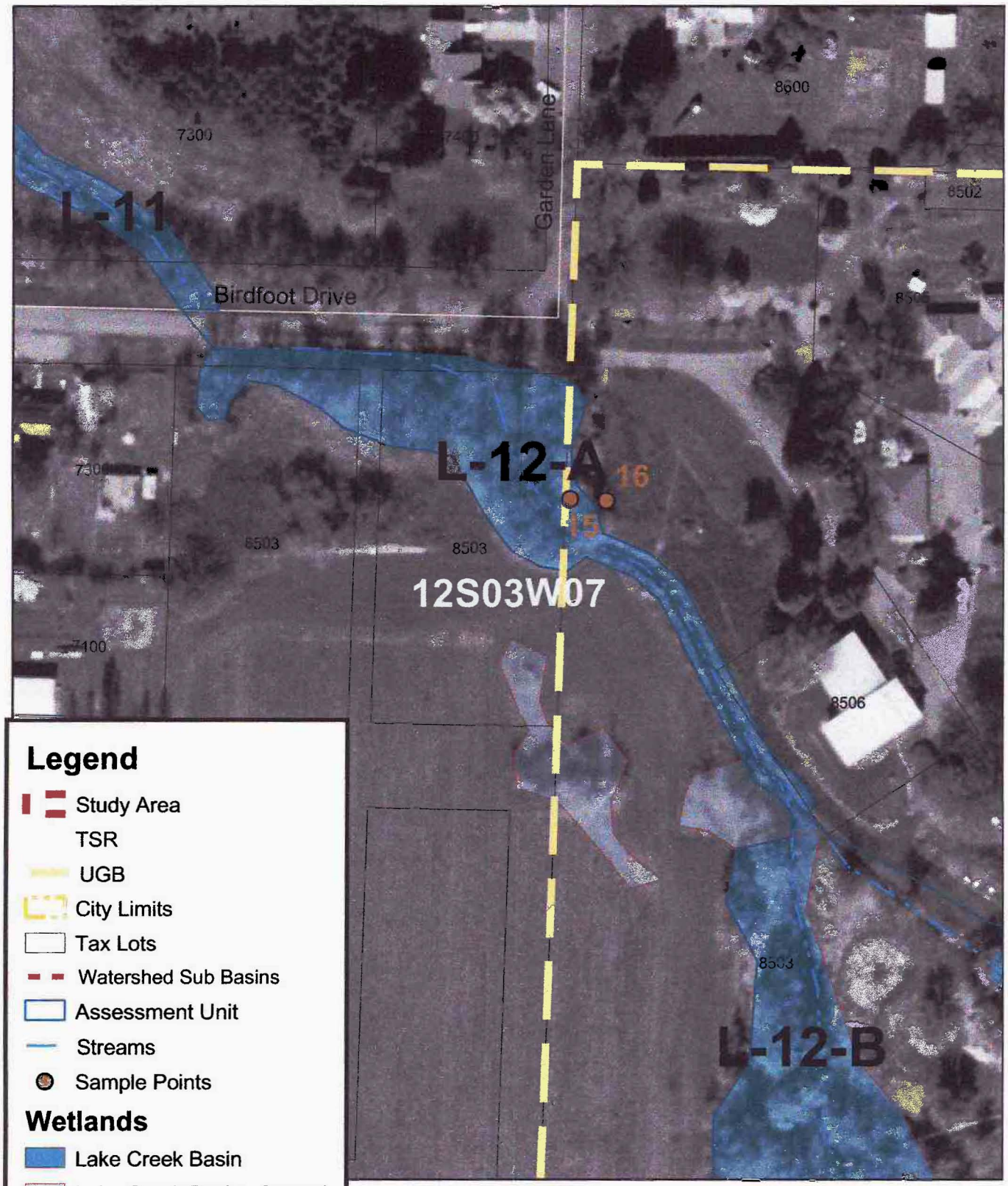

DETAIL MAP L-12-A
City of Tangent
October 2002

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WETLAND L-12B

DRAINAGE BASIN:	LAKE CREEK / SOUTH BASIN
WETLAND ACREAGE:	3.1 ACRES
TAX LOTS:	T.S12-R.03W-S.07-C-08100, -08300, -08503, -08400, -08401, -08501
LOCATION:	NORTH OF OLD OAK DR.
FIELD DATES:	6/06/01
SAMPLING POINT #S:	8-13
VEGETATION COMMUNITY:	ASH / OAK / ROSE / SEDGE
HYDROLOGY:	LAKE CREEK
SOILS:	DAYTON SILT LOAM, WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES
COWARDIN CLASSIFICATION:	PFO* / PEMd
HGM CLASSIFICATION:	RIVERINE IMPOUNDING* WITH RIVERINE FLOW-THROUGH
LOCALLY SIGNIFICANT WETLAND:	YES

* = DOMINANT

CONTENTS: (ON SITE FIELD DETERMINATION)

- WETLAND CHARACTERIZATION SHEET
- WETLAND DELINEATION FORMS
- OFWAM QUESTIONNAIRE
- SITE PHOTOGRAPHS AND MAPS

WETLAND NUMBER	L-12B
WETLAND ACREAGE	3.1 acres
WILDLIFE HABITAT	Provides diverse habitat
FISH HABITAT	Impacted or degraded
WATER QUALITY	Intact
HYDROLOGIC CONTROL	Impacted or degraded
SENSITIVITY TO FUTURE	Potentially sensitive
ENHANCEMENT POTENTIAL	High potential
EDUCATION	Potential use
RECREATION	Potential value
AESTHETIC QUALITY	Moderately pleasing

WETLAND CHARACTERIZATION SHEET
Tangent Local Wetland Inventory

Date(s) of Field Verification: 6/6/01
Data Sheet Numbers: Sp 8-13
Investigator(s): Greta Murdoff, Chad Hoffman, and Mike Shippey

Wetland Mapping Code: **L-12B**
Size (acres): 3.1
Cowardin Classification*: PFO, PEMd
%PSS: %PEM: 5 %PFO: 95
HGM Classification**: RI

Location:

T-R-S: 12-03-07-C
Physical: SE Tangent, North of Old Oak Drive
Hydrologic Basin: Lake Creek South

Tax Lot(s):
-08100 -08401
-08300 -08501
-08400 -08503

Soils:

Mapped Series: (33) Dayton Silt Loam, (106A) Woodburn Silt Loam, 0 to 3 % Slopes

Hydrology:

Hydrologic Source: Lake Creek

Dominant Vegetation:

TREES	SHRUBS	VINES	HERBS
Oregon White Oak (*Quercus garryana)*	Douglas' Hawthorn (*Crataegus douglasii*)	Trailing Blackberry (*Rubus ursinus*)	Canada Thistle (*Cirsium vulgare*)
Oregon Ash (*Fraxinus latifolia)*	Clustered Rose (*Rosa pisocarpa*)		Ribwort (*Plantago lanceolata*)
	Himalayan Blackberry (*Rubus discolor*)		Queen Anne's Lace (*Daucus carota*)
	Snowberry (*Symphoricarpos albus*)		Teasel (*Dipsacus fullonum*)
			Bittersweet Nightshade (*Solanum dulcamara*)
			Slough Sedge (*Carex obnupta*)
			Rough Bluegrass (*Poa trivialis*)

Comments:

*Cowardin Classifications:
PFO = Palustrine Forested PSS = Palustrine Scrub-Shrub PEM = Palustrine Emergent POW = Palustrine Open Water

**HGM Classifications:
RI = Riverine Impounding RFT = Riverine Flow-through D = Depressional S = Slope F = Flats

SATRE ASSOCIATES

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/6/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-12B
Plot ID: SP 8

VEGETATION

50' N of Road

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Symphoricarpos albus	S	FACU	36	45	Rubus ursinus	V	FACU	100	2
* Fraxinus latifolia	T	FACW	55	60					
* Crataegus douglasii	S	FAC	64	80					
* Quercus garryana	T	UPL	45	50					
bare ground	—	—	-	70					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 50%

Criterion Met? No
Remarks: Marginal

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water 7/8"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No
Remarks: This area probably floods during the winter

SOILS

Map unit name (Series and phase): (33) Dayton silt loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-14"	10YR 3/1	7.5YR 4/4	Many Med. Distinct	silt loam
14-18"	10YR 3/1	7.5YR 4/6		silty clay loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? No
Remarks:

WETLAND DETERMINATION

Wetland vegetation present?	Remarks	Is this sampling point within a wetland?
Wetland hydrology present?		No
Hydric soils present?		
No		

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation)? No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/6/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-12B
Plot ID: SP 9

VEGETATION

50' N & SP 8

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
4 Fraxinus latifolia	T	FACW	100	70					
Epilobium sp	H	—	100	2					
bare ground	—	—	—	100					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100 %

Criterion Met? Yes
Remarks: At edge of Ag. field

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? No
Remarks:

SOILS

Map unit name (Series and phase): (33) Dayton Silt loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-18"	10YR 3/2			silt loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☐ Reducing conditions
- ☐ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? No
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes-marginal
Wetland hydrology present? No
Hydric soils present? No
Remarks
Is this sampling point within a wetland? No

9/01

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/6/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-12B
Plot ID: Sp 10

VEGETATION

30' S of Ag. field

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Crataegus douglasii	S	FAC	19	10	Rhamnus purshiana	T	FAC-	5	5
* Symphoricarpos albus	S	FACU	79	40	Toxicodendron diversiloba	S	Nov	4	2
* Carex obnupta	H	OBL	89	50	Poa trivialis	H	FACW	2	1
Carex sp	H	-	9	5	Quercus garryana	T	Nov	15	15
* Fraxinus latifolia	T	FACW	80	80					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 67 %

Criterion Met? Yes
Remarks: W/in forested area

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☑ FAC-neutral test
- ☐ Other ( )

Criterion Met? Yes
Remarks: 20' E of drainageway

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-8"	10YR 3/1			silt loam
8-13"	10YR 3/1	7.5YR 4/6	Many Med. Distinct	silt loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present?	Remarks	Is this sampling point within a wetland?
Wetland hydrology present? Yes		Yes
Hydric soils present? Yes		

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/6/01
County: Linn
State: Oregon
Community ID:
Transect ID: T-12B
Plot ID: SD 11

VEGETATION

25' W of SD10

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
Solanum dulcamara	H	FAC+	100	2	bare ground	—	—	—	100
* Fraxinus latifolia	T	FACW	91	50					
* Rubus ursinus	V	FACU	100	20					
* Crataegus douglasii	S	FAC	100	90					
Rhamnus purshiana	T	FAC-	9	5					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 67%

Criterion Met? Yes Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil >18"

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☑ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes Remarks: W/in drainageway
water beetles

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? No

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-6"	10 YR 3/1	7.5 YR 4/4	Many Med. Faint	silty clay loam
		5 YR 3/4		
6-12"	10 YR 4/1	7.5 YR 4/6	Few Med. Distinct	silty clay
12-18"	2.5 Y 4/3			clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☑ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? Yes

YOM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: Greta Murdoff and Chad Hoffman
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/6/01
County: Linn
State: Oregon
Community ID: T-12B
Transect ID:
Plot ID: SP 12

VEGETATION

50' N of SP 10 - Edge of Ag field

Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
* Fraxinus latifolia	T	FACW	100	60					
Rubus discolor	V	FACU	100	10					
* Epilobium sp.	H	–	95	40					
Bare ground	–	–	–	80					
Limnanthes douglasii	H	OBL	5	2					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: ≥ 50 %

Criterion Met? Yes
Remarks: Outside forested area

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water > 18"
Depth to saturated soil > 18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☐ Other ( )

Criterion Met? NO
Remarks:

SOILS

Map unit name (Series and phase): (33) Dayton Silt Loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0 - 10	10YR 3/2			Silt Loam
10 - 16"	10 YR 2/2			Silty clay Loam
16" - 18"	10YR 4/1	10YR 4/4	Many, Medium, Distinct (30% mottles)	Silty clay Loam

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☒ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? No
Hydric soils present? Yes

Remarks

Is this sampling point within a wetland? No

GEM

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WETLAND DELINEATION DATA FORM

Project/Site: Tangent LWI
Applicant/Owner:
Investigators: *Greta Murdoff and Chad Hoffman*
normal circumstances exist on the site? Yes
the site significantly disturbed (Atypical Situation?) No
Is the area a potential Problem Area (If needed, explain on reverse)? No

Date: 6/6/01
County: Linn
State: Oregon
Community ID:
Transect ID: L-12B
Plot ID: SO 13

VEGETATION

15' N of road; ≈50' SW of SO 8

	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall	Plant species	Stratum	Indicator Status	% Cover Stratum	% Cover Overall
*	Rosa pisocarpa	S	FAC	42	25	bare ground	—	—	-	80
*	Crataegus douglasii	S	FAC	58	35	Stachys cooleyae	H	FACW	100	15
	Quercus garryana	T	NOV	38	15					
*	Fraxinus latifolia	T	FACW	63	25					
	Rubus discolor	V	FACU	100	10					

* = Dominant. Percent of dominant species that are OBL, FACW, or FAC: 100%

Criterion Met? Yes
Remarks: little vegetation w/in channel

HYDROLOGY

Recorded Data (Describe in Remarks):
- ☐ Stream, lake, or tide gauge
- ☐ Aerial photographs
- ☐ Other
- ☐ No recorded data available

Field Observations:
Depth of surface water none
Depth to free water >18"
Depth to saturated soil 7 18"

Primary Wetland Hydrology Indicators:
- ☐ Inundated
- ☐ Saturated in upper 12 inches/30 cm
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment deposits
- ☐ Drainage patterns in wetlands

Secondary Wetland Hydrology Indicators
- ☐ Oxidized root channels in upper 12 in/30 cm
- ☐ Water-stained leaves
- ☑ Local soil survey data
- ☐ FAC-neutral test
- ☑ Other (Landscape position)

Criterion Met? Yes
Remarks: Roadside drainageway

SOILS

Map unit name (Series and phase): (33) Dayton silt loam
Taxonomy (subgroup): Fine, montmorillonitic, mesic Typic Albaqualf
Drainage class: Poorly drained
Field observations confirm mapped type? Yes

Profile Description: Depth	Matrix colors (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance/contrast	Texture, concretions, structure, et cetera
0-6"	10YR 3/1	5YR 4/6	Many Medium Distinct	Silty clay loam
6-11"	10YR 4/1	10YR 5/6	Few Medium Distinct	Silty clay
11-18"	10YR 5/1	10YR 5/4	Common Med Faint	clay

Hydric Soil Indicators
- ☐ Histosol
- ☐ Histic epipedon
- ☐ Sulfidic odor
- ☐ Aquic moisture regime
- ☑ Reducing conditions
- ☑ Gleyed or low chroma colors
- ☐ Concretions
- ☐ High organic content in surface layer in sandy soils
- ☐ Organic streaking in sandy soils
- ☑ Listed on Local Hydric Soils List
- ☑ Listed on National Hydric Soils List
- ☐ Other ( )

Criterion Met? Yes
Remarks:

WETLAND DETERMINATION

Wetland vegetation present? Yes
Wetland hydrology present? Yes - marginal
Hydric soils present? Yes

Remarks: No water in the channel at this time of year

Is this sampling point within a wetland? Yes

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L-12 15

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Wildlife Habitat:

Q1: **Number of Cowardin wetland classes**
Rural: A: 3-4, B: 2, C: 1
Urban: A: 2+, B: 1 w/5+ plant species, C: 1 w/<5 plant species

Q2: **Dominant Veg**
A: Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q3: **Cowardin class interspersion (edge effect)**
A: High, B: Moderate, C> Low

Q4: **Acres of unvegetated open water**
Rural: A: >3 ac, B: 0.5-3 ac, C: <0.5 ac
Urban: A: >1 ac, B: 0.5-1 ac, C: <0.5 ac

Q5: **How is wetland connected to another body of water?**
A: by surface water, B: no connection, but others w/in 1 mi., C: no connection, no others w/in 1 mi.

Q6: **How connected to other wetlands?**
A: W/in 3-mi. radius by per/int stream, ditch, culvert, canal, lake
B: not connected, but others w/in 3-mi. radius
C: not connected, and no others w/in 3-mi. radius

Q7: **What is water quality condition upstream/adjacent to wetland?**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q8: **What is dominant land use w/in 500' of wetland?**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q9a: **Rural: % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q9b: **Urban: % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
A: >40%, B: 10-40%, C: <10%

Assessment: Wetland provides diverse wildlife habitat if at least 4 Q are "a" and no more than 1 is "c"
Wetland provides some wildlife habitat if answers do not satisfy above or below criteria
Wetland provides no wildlife function if all Q are "c"

Fish Habitat: Streams

Q1: **% of stream shaded by riparian veg:**
W. Oregon: A: >75%, B: 50-75%, C: <50%
E. Oregon: A: >50%, B: 25-50%, C: <25%

Q2: **What is physical characteristic of stream channel:**
A: natural, or modified portions returning to natural, B: portions modified, C: Mod or non-veg channel, pipe

Q3: **% of entire stream w/instream structures (natural)**
A: >25%, B: 10-25%, C: <10%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: no reaches listed as water quality limited
B: 1+ stream upstr/adj in moderate condition
C: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants

Q5: **Dominant existing land use:**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in stream/lake/wetland pond**
A: salmon, trout, or sensitive sp some time of the year, B: other species present some time of the year, C: no species.

Fish Habitat: Ponds

Q1: **Does pond/lake contain deep and shallow water?**
A: yes, B: cannot determine, C: no

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L-12 B

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q2: **% of wetland complex containing cover objects**
A: >25%, B: 10-25%, C: <10%

Q3: **% shoreline forested or scrub/shrub**
A: >60%, B: 20-60%, C: <20%

Q4: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
C: no reaches listed as water quality limited

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, B: Agricultural, C: Developed

Q6: **Are fish present in lake/wetland pond**
A: salmon, trout, or sensitive sp some time of year, B: other species present some time of year, C: no species

Assessment: Wetland provides diverse fish habitat if at least 3 Q are "a" and no more than 1 is "c"
Fish habitat function is impacted or degraded if answers do not satisfy above or below criteria
Fish habitat function lost if all Q are "c"

Water Quality

Q1: **Primary source of water**
(A) surface flow (including streams and ditches), B: precip or sheet flow, C: groundwater, including seeps and springs

Q2: **Evidence of flooding or ponding during a portion of growing season?**
(A) yes, B: unable to determine, C: no

Q3: **Degree of wetland veg cover**
(A) high >60%, B: Mod 60%, Low <60%

Q4: **Wetland area in acres**
A: >5 ac, (B) 0.5-5 ac, but connected to others w/in 3-mi. radius, C: <0.5 ac, and not connected to others

Q5: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q6: **Water quality condition of reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
(B) 1+ stream upstr/adj in moderate condition BPJ
C: no reaches listed as water quality limited

Assessment: Water quality function intact if Q1 is "a" or "b", Q2 and Q3 are "a". And others are "a" or "b"
Water quality function is impacted or degraded if answers do not satisfy above or below criteria
Water quality function lost if 4 out of 6 Q are "c"

Hydrologic Control

Q1: **Is all/part of wetland located w/in 100-yr. floodplain, or w/in enclosed basin?**
(A) yes, B: no

Q2: **Is there evidence of flooding or ponding during a portion of growing season**
(A) yes, B: unable to determine, C; no

Q3: **Wetland acreage**
A: >5 ac, (B) 0.5-5 ac, C: <0.5 ac

Q4: **Is water flow out of wetland restricted i.e.) beaver dam, undersized culvert, concrete structure**
A: yes, restricted or no outlet, B: minor restrictions, (C) unrestricted flow

Q5: **Dominant veg cover**
(A) Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Q6: **Dominant existing land use within 500':**
A: Exclusive forest/open space, (B) Agricultural, C: Developed

Q7: **Dominant land use in watershed upstream**
A: urban or urbanizing, (B) ag., C: forested or natural

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L-12B

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Assessment: Hydrologic control function intact if 4+ Q are "a"
Hydrologic control function is impacted or degraded if answers do not satisfy above or below criteria
Hydrologic control function lost or not present if 4+ Q are "c"

Sensitivity to Future Impacts

Q1: **Has stream flow or bank been modified by humans less than 1 mi. above wetland?**
(A): yes, B: no

Q2: **Is water being taken out of stream through active diking, drainage, or irrigation districts upstream, or is wetland isolated?** likely
A: yes, (B): unable to determine, C: no

Q3: **Water quality condition of stream reaches upstream/adjacent to wetland**
A: 1+ stream upstr/adj listed as water quality limited or sever wq for nonpt source pollutants
B: 1+ stream upstr/adj in moderate condition
(C): no reaches listed as water quality limited

Q4: **Dominant existing land use within 500' of wetland's edge:**
A: Developed, (B): Agricultural, C: Exclusive forest/open space

Q5: **Dominant zoned land use within 500':**
A: Developed, (B): Agricultural, C: Exclusive forest/open space

Q6: **Dominant Veg cover**
(A): Woody, B: Emergent veg and ponding, or open water only, C: Em veg or wet meadow

Assessment: Wetland is sensitive to future impacts if Q1,2,3 are "a", and one other Q is "a"
Wetland is potentially sensitive to future impacts if answer does not satisfy above/below
Wetland is not sensitive to future impacts if Q1,2 are "b" and no other Q are "a"

Enhancement Potential

Q1: **What are assessment results for wildlife hab, fish hab, water qual, and hydro control?**
(A): 1+ functions impacted or degraded, B: Wetland has lost 1+ functions, or 1+ function is not present

Q2: **What is wetland's primary source of water?**
(A): Surface (incl streams and ditches), B: groundwater, incl springs and seeps, C: precipitation or sheet flow

Q3: **If primary source of water is surface flow, is water flow into the wetland restricted?** channel diverted to roadside?
A: no, (B): perm blockage, but may be breached, or a new channel has created, C: flow restricted and cannot be restored

Q4: **Wetland area in acres**
A: >5 ac, (B): 0.5-5 ac, C: <0.5 ac

Q5a: **Rural: what % of wetland's edge bordered by upland wildlife habitat at least 150' wide**
A: >40%, B: 10-40%, C: <10%

Q5b: **Urban: what % of wetland's edge bordered by upland wildlife habitat at least 25' wide**
(A): >40%, B: 10-40%, C: <10%

Q6: **What is result of sensitivity to impact index?**
A: wetland not sensitive to impacts, (B): potentially sensitive, C: sensitive

Assessment: Wetland has high enhancement potential is Q1 is "a" and no more than 1 other is "c"
Wetland has mod potential if answers do not meet above/below criteria
Wetland has little enhancement potential if Q1 is "b" and 2+ are "c"

Education

Q1: **Is wetland site open to public for direct access/observation?**
A: yes, (B): yes, with owners' permission, C: no

Q2: **Visible hazards to public?**
(A): no, B: 1-2 present, C: 2+ present

Q3: **What are results of wildlife and fish habitat assessment?**
A: diverse, (B): do not meet A or C, C: lost/ not intact

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L-128

OREGON FRESHWATER ASSESSMENT METHODOLOGY (OFWAM) QUESTIONNAIRE
Tangent Local Wetland Inventory

Q4: **Existing public access to other features?**
A: y es, or easily created, B: no, but observations can be made, C: no

Q5: **Is there public access within 250' of wetland edge?**
A: yes, B: yes, but not maintained, C: no

Q6: **Is there limited mobility access?**
A: yes, B: no

Assessment: Appropriate for ed. use if Q1,2 are "a'< and Q3,4,5 are "a" or "b"
Potential for ed. use if answer not satisfy criteria above/below
Not appropriate is Q1,2 are "c"

Recreation

Q1: **Public access w/in 250'?**
A: yes, and maintained, B: yes, not maintained, C: no

Q2: **Accessible by boat?**
A: yes, w/in ½ mi., B: potential, or >1/2 mile, C: no

Q3: **Trails, viewing areas, or other structure to encourage use?**
A: yes, and developed, B: yes, undeveloped, C: no

Q4: **Wildlife habitat index:**
A: diverse habitat, B: habitat for some wildlife, C: wildlife function lost, or not present

Q5: **Fishing allowed?**
A: yes, B: no, or not applicable

Q6: **Hunting allowed?**
A; yes, B: no

Assessment: Provides recreational opp if Q1, 1 are "a" and at least one other Q is "a"
Potential if answer not satisfy above/below criteria
No rec. opportunities if Q1, 2 are "c" or Q3, 4 are "c", and Q5,6 are "b"

Aesthetic

Q1: Number of Cowardin classes visible
A: >2, B: 2, C: 1

Q2: **How much of wetland visible from viewing area?**
A: >50%, B: 25-50%, C: <25%

Q3: **General appearance**
A: no visual detractors, B: visual detractors exist, but can be removed, C: visual detractors exist

Q4: **Extent of visual contrast with surrounding landscape (rural) or visual character of surrounding area (urban)**
Rural: A: significant contrast, B: limited contrast, C: little contrast
Urban: A: open or natural landscape, B: landscaped by people, CL developed with no landscaping

Q5: **Odors present?**
A: natural and pleasant, B: unpleasant at times, C: unpleasant always

Q6: **Noises present?**
Rural: A: bird and wildlife sounds, B: some traffic and other noises, C: continuous traffic etc. noises
Urban: A: some traffic etc. plus natural sounds, B: continuous traffic and natural sounds, C: no natural sounds

Assessment: Wetland pleasing if Q1,2 are "a" and all others are "a" or "b"
Wetland moderately pleasing if answer do not satisfy above/below criteria
Wetland not pleasing if 2+ Q are "c"

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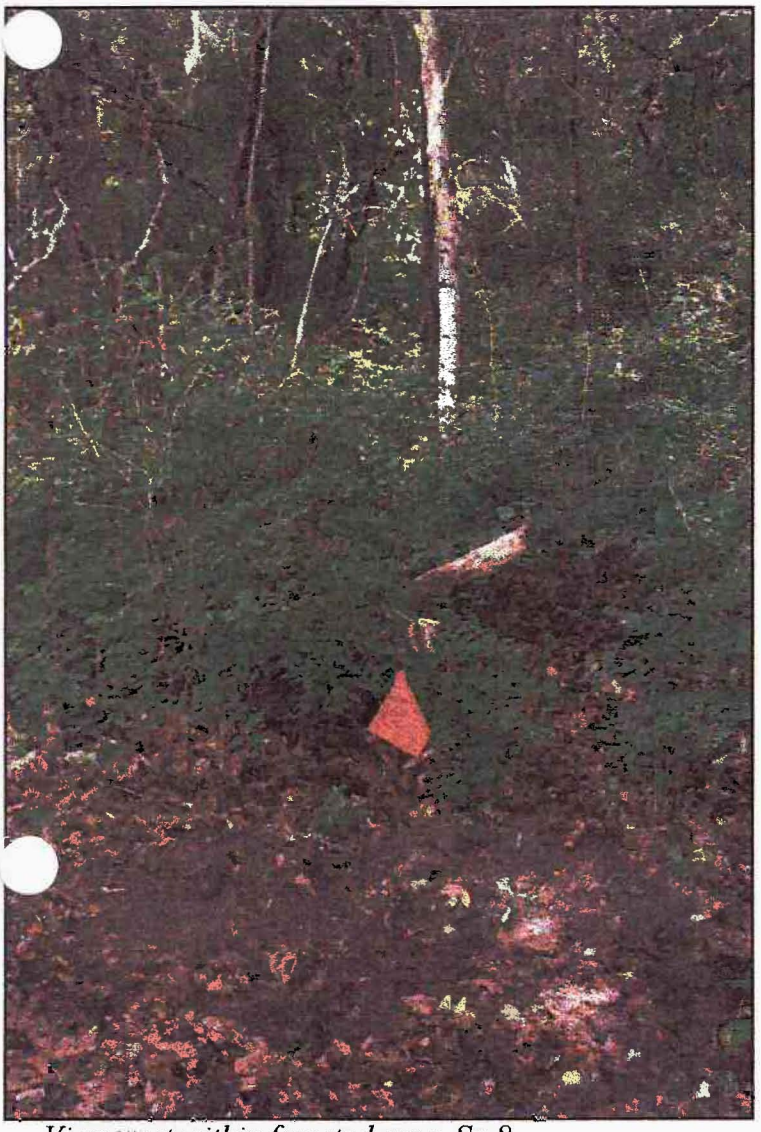
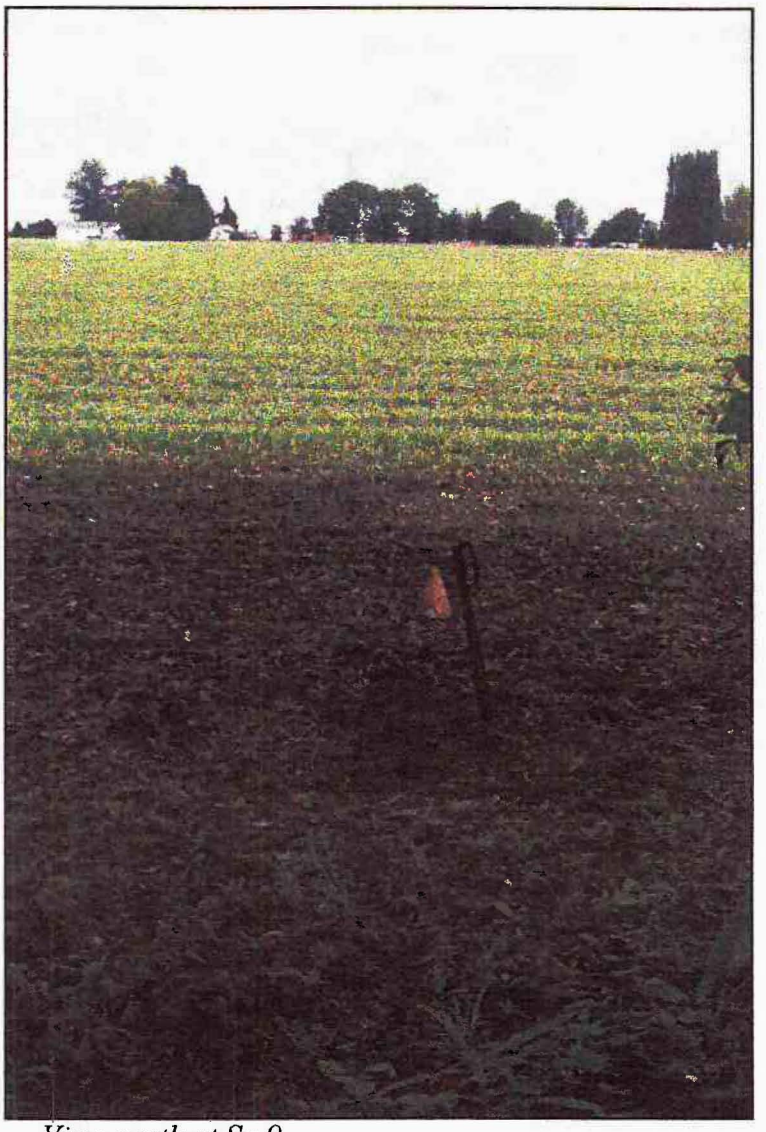


View west within forested area, Sp 8.



View north at Sp 9.

SITE PHOTOGRAPHS
Tangent LWI
City of Tangent
June 06, 2001

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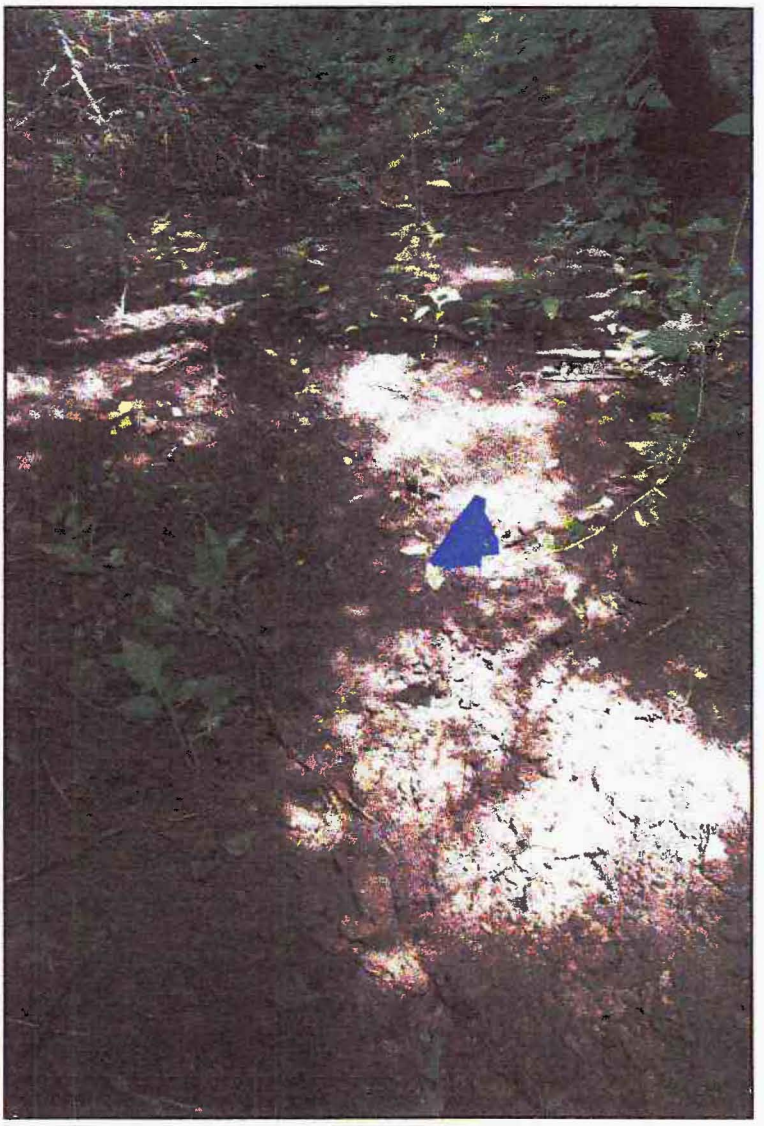
Sp 10, 11



View southeast at Sp 10.



Within channel at Sp 11.

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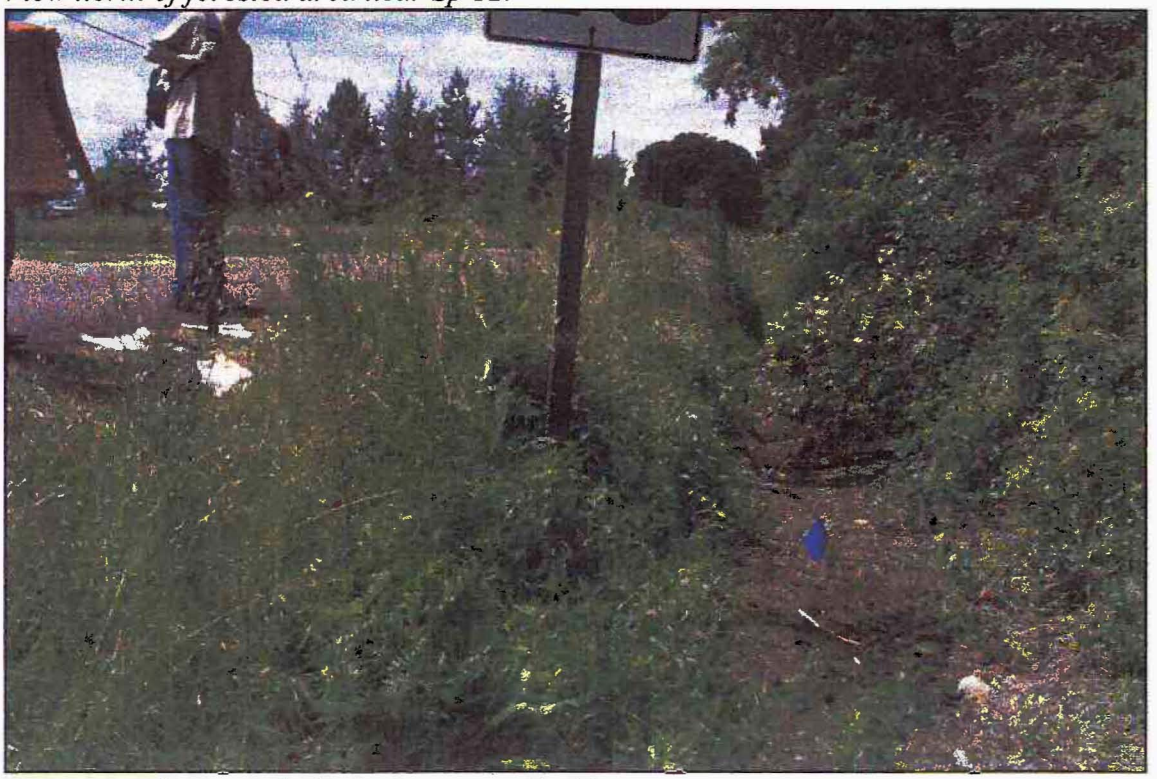
Sp 12, 13



View north of forested area near Sp 12.



View west along roadside drainageway, Sp 13.

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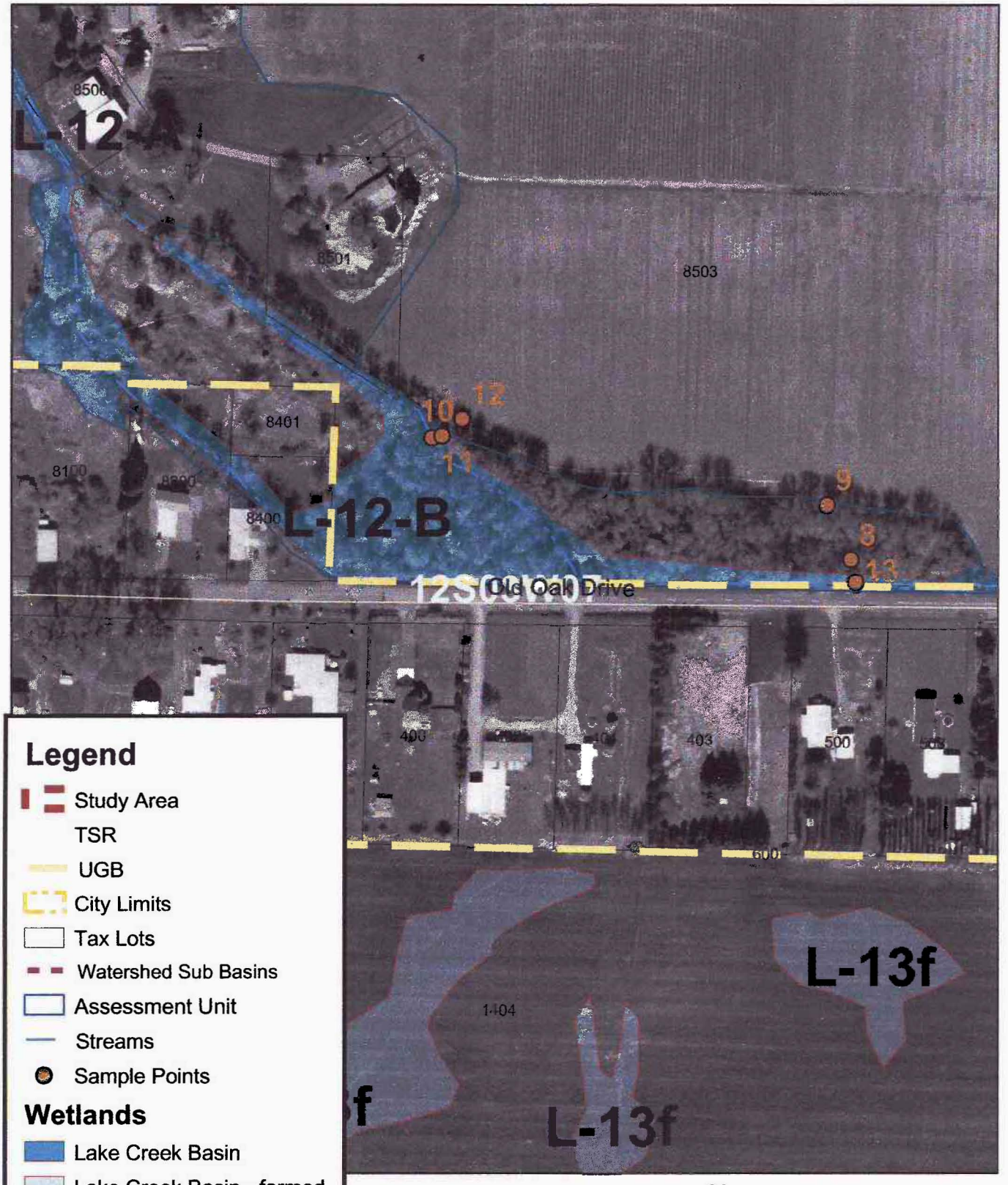

DETAIL MAP L-12-B
City of Tangent
October 2002

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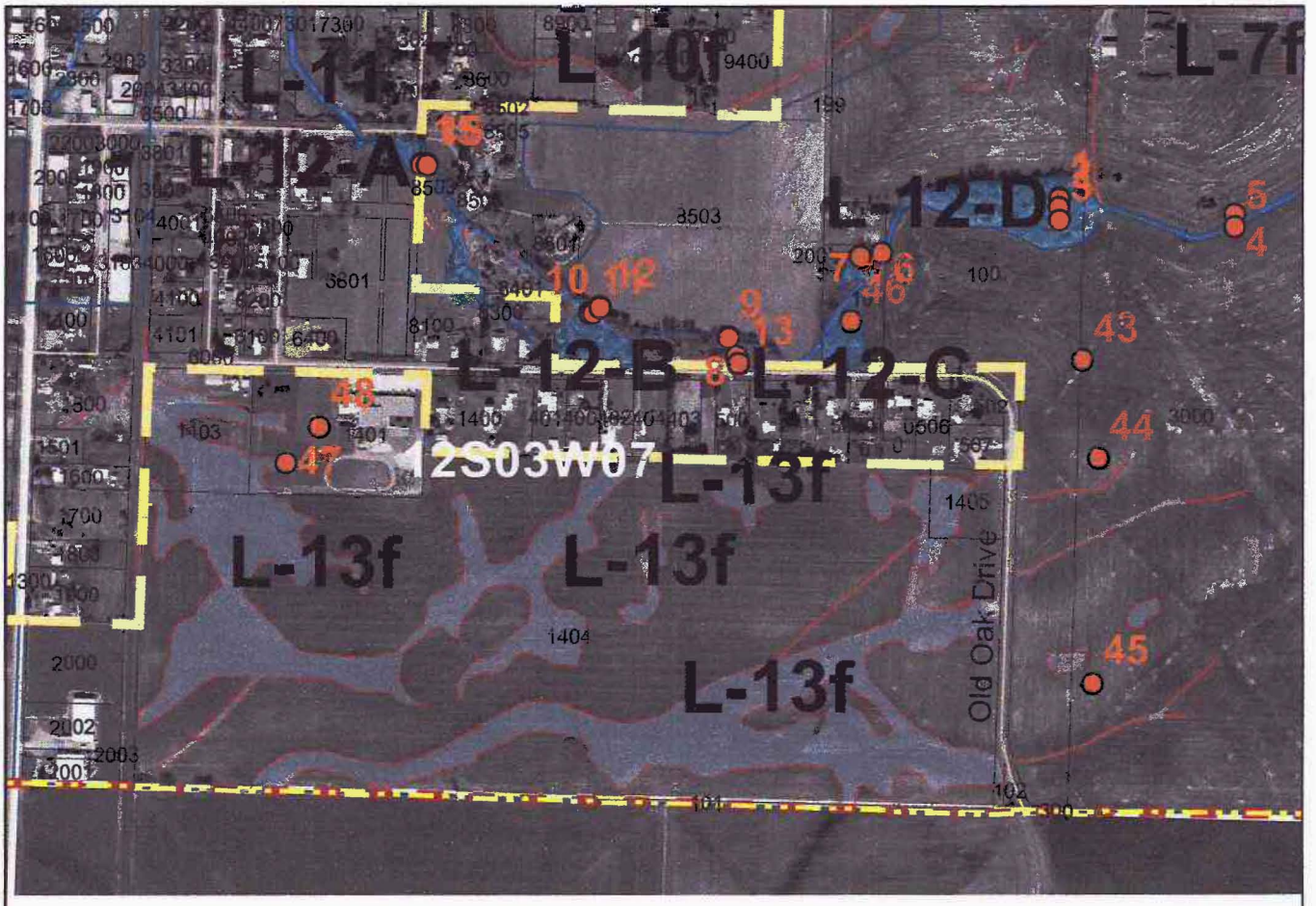

Legend

- Study Area
- TSR
- UGB
- City Limits
- Tax Lots
- Watershed Sub Basins
- Assessment Unit
- Streams
- Sample Points

Wetlands

- Lake Creek Basin
- Lake Creek Basin - farmed
- Oak Creek Basin
- Oak Creek basin - farmed

0 250 500 1,000 1,500 Feet

N

DETAIL MAP L-13f
City of Tangent
October 2002

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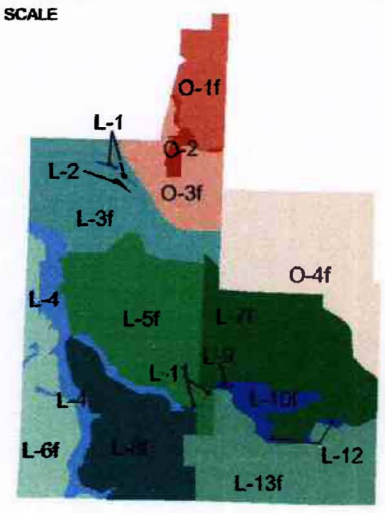
TANGENT LOCAL WETLAND INVENTORY

Wetland Function Assessment Unit Key Map

NOT TO SCALE



LEGEND

- Sub-Basin Boundary
- Section Lines
- Urban Growth Boundary
- City Limits
- Tax Lots
- Study Area Boundary
- Road Network
- Streams & Drainages
- Sample Points
- Assessment Units
- Assessment Unit Division
- Tax Lots with DSL Delineations
- Tax Lots with On-site Access

Wetlands

- Lake Creek Basin
- Lake Creek Basin - farmed
- Oak Creek Basin
- Oak Creek basin - farmed

OAK CREEK WATERSHED

LAKE CREEK WATERSHED

NOTE: Information shown on this map is for planning purposes only. Wetland information is subject to change. There may be unmapped wetlands subject to regulation, and all wetland boundaries shown are approximate. Most farmed fields have a complex wetland-upland pattern. Farmed wetlands shown on map illustrate wetland presence, not precise location and extent. In all cases, actual field conditions determine wetland boundaries, and a wetland delineation is generally needed prior to site development. You are advised to contact the Oregon division of State Lands and the Army Corps of Engineers with any regulatory questions.

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500 0 500 1000 1500 2000 2500 Feet

1" = 500'

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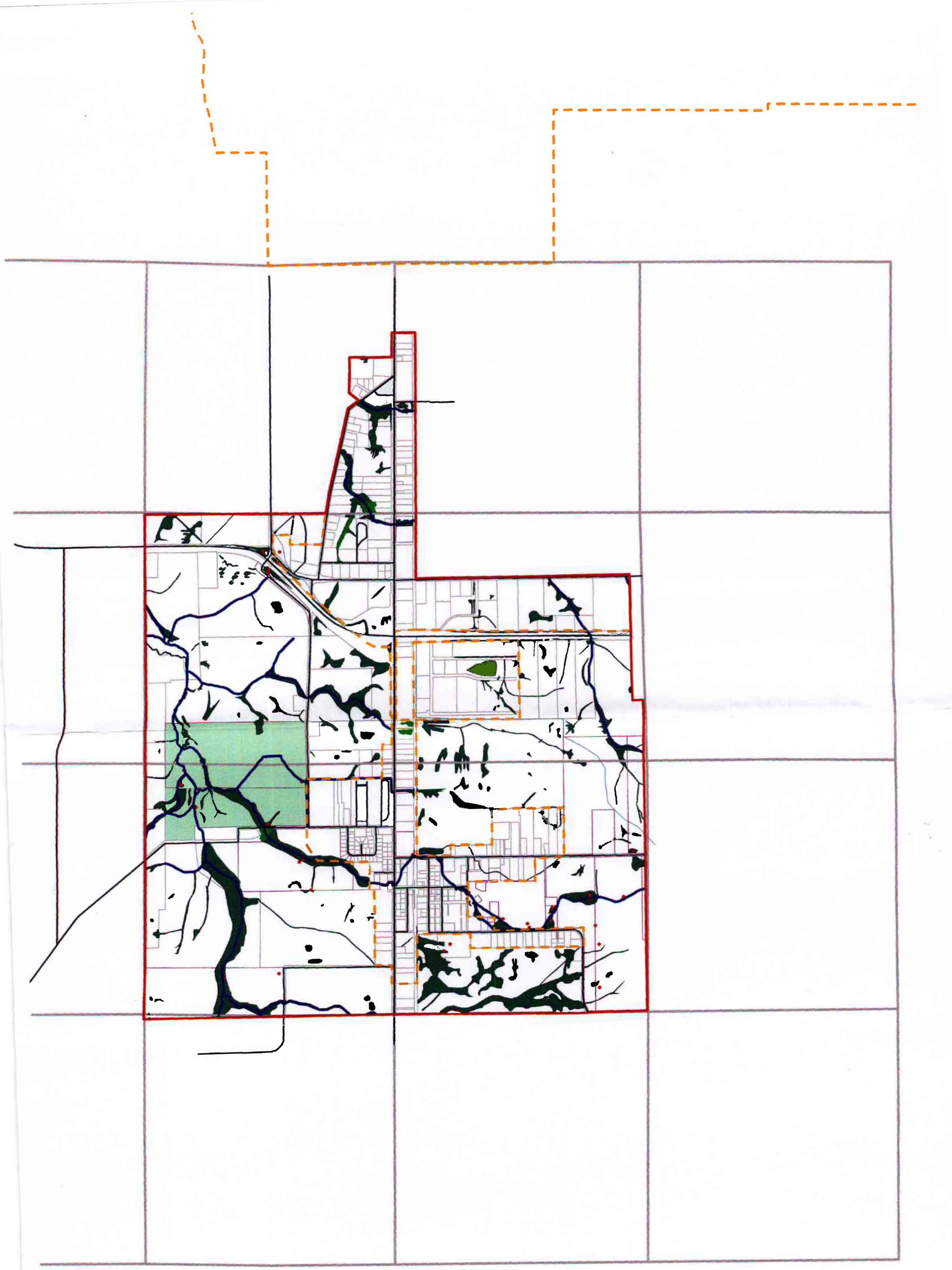

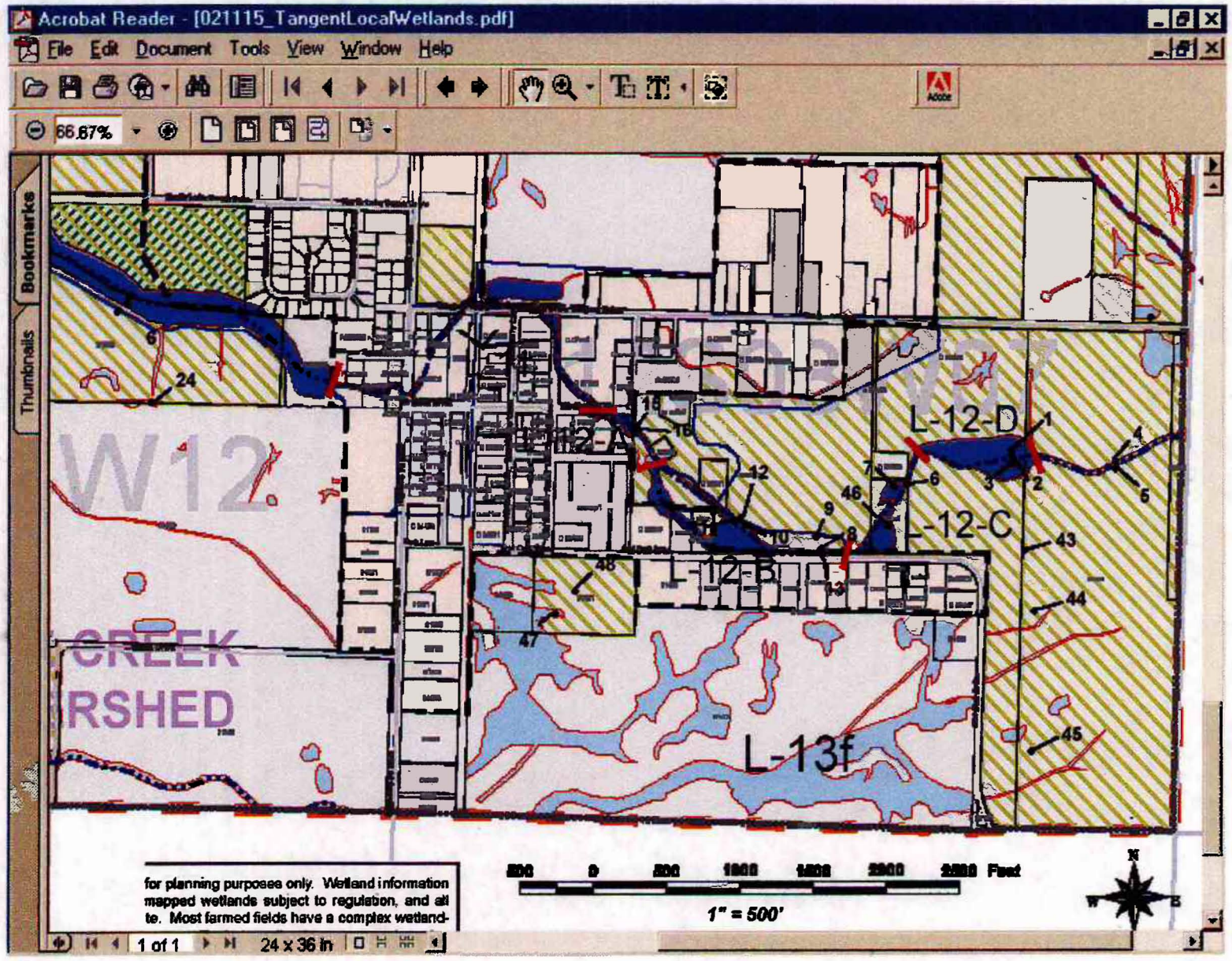
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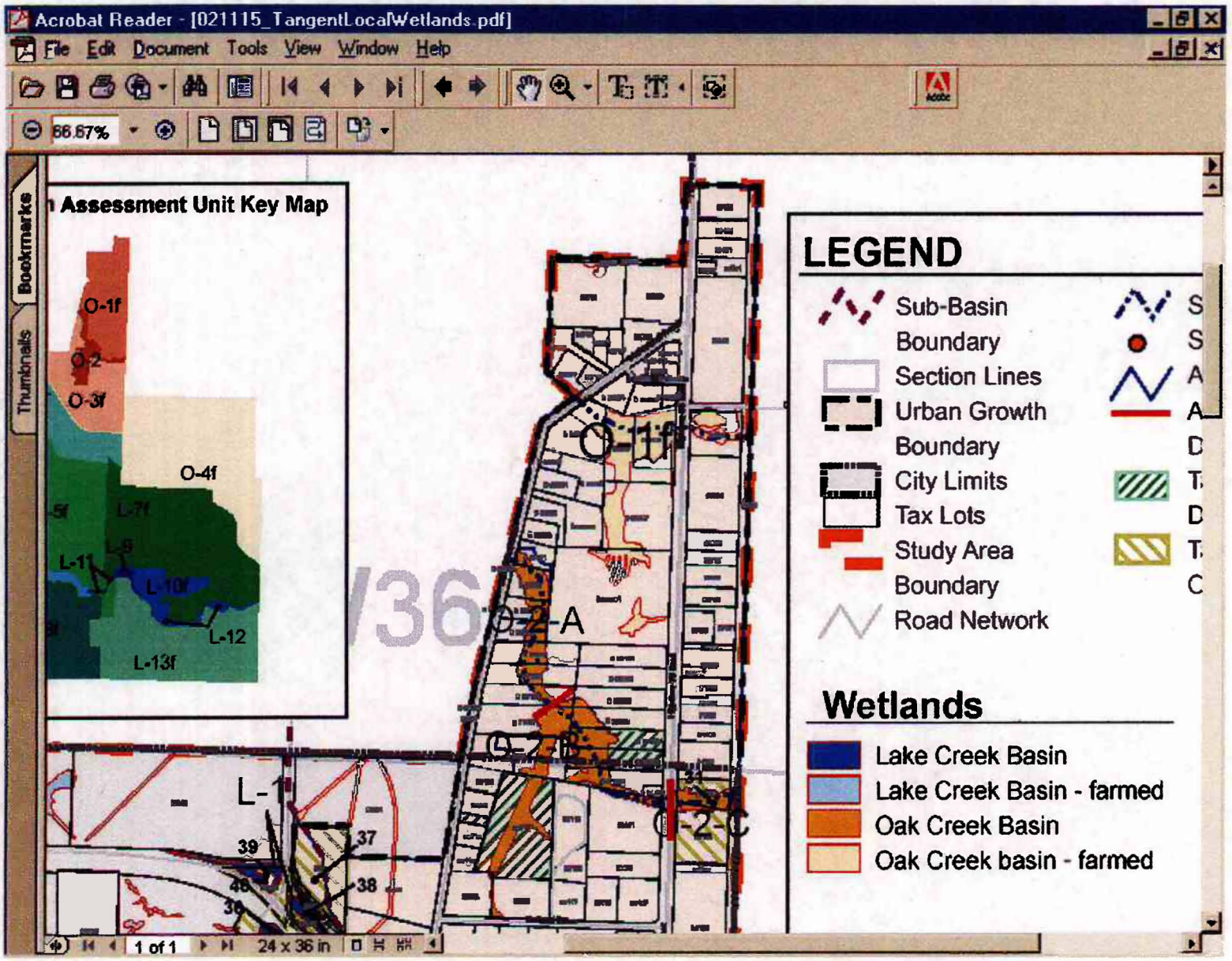
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Assessment Unit Key Map
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LEGEND
Sub-Basin Boundary
Section Lines
Urban Growth Boundary
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1 of 1
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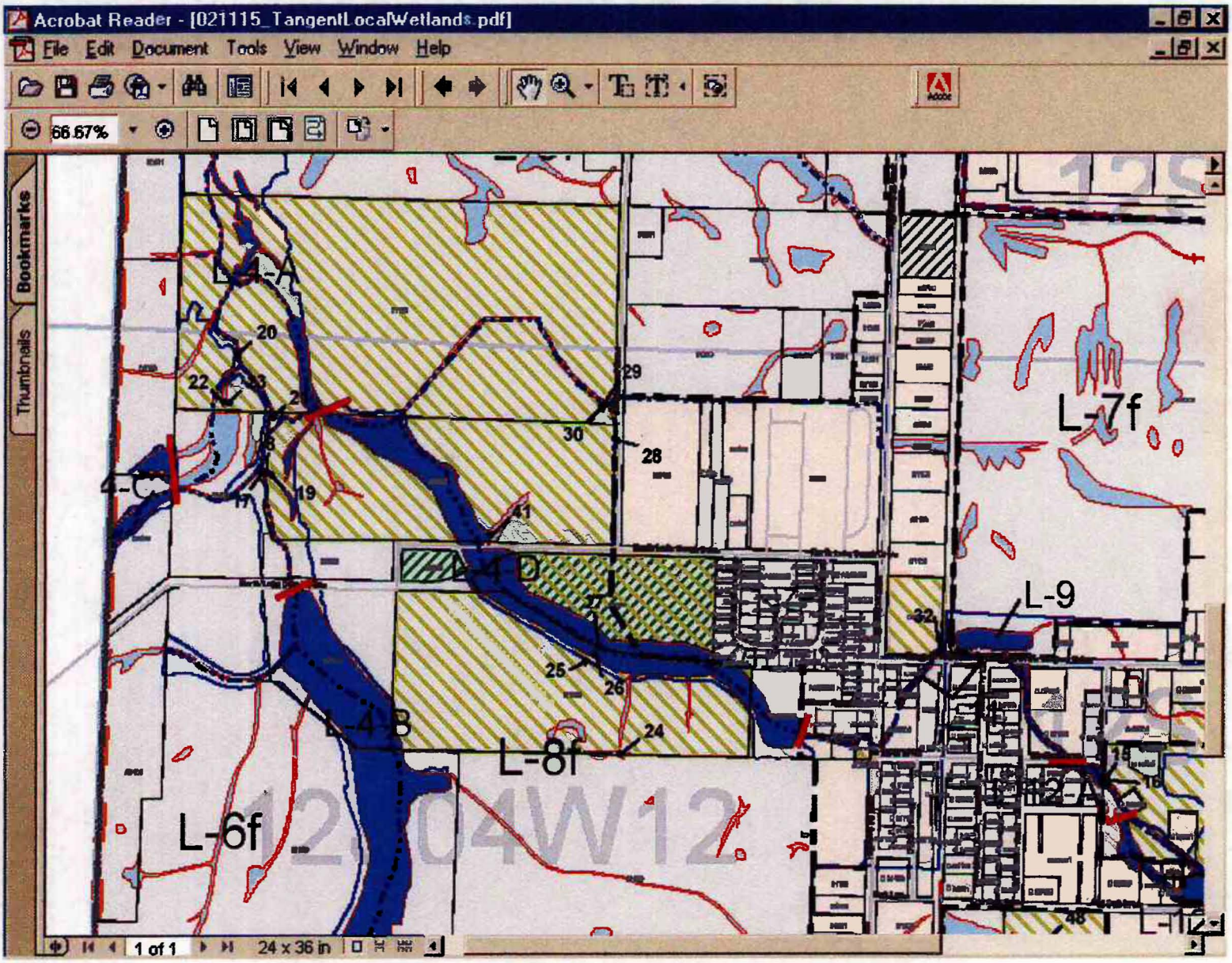
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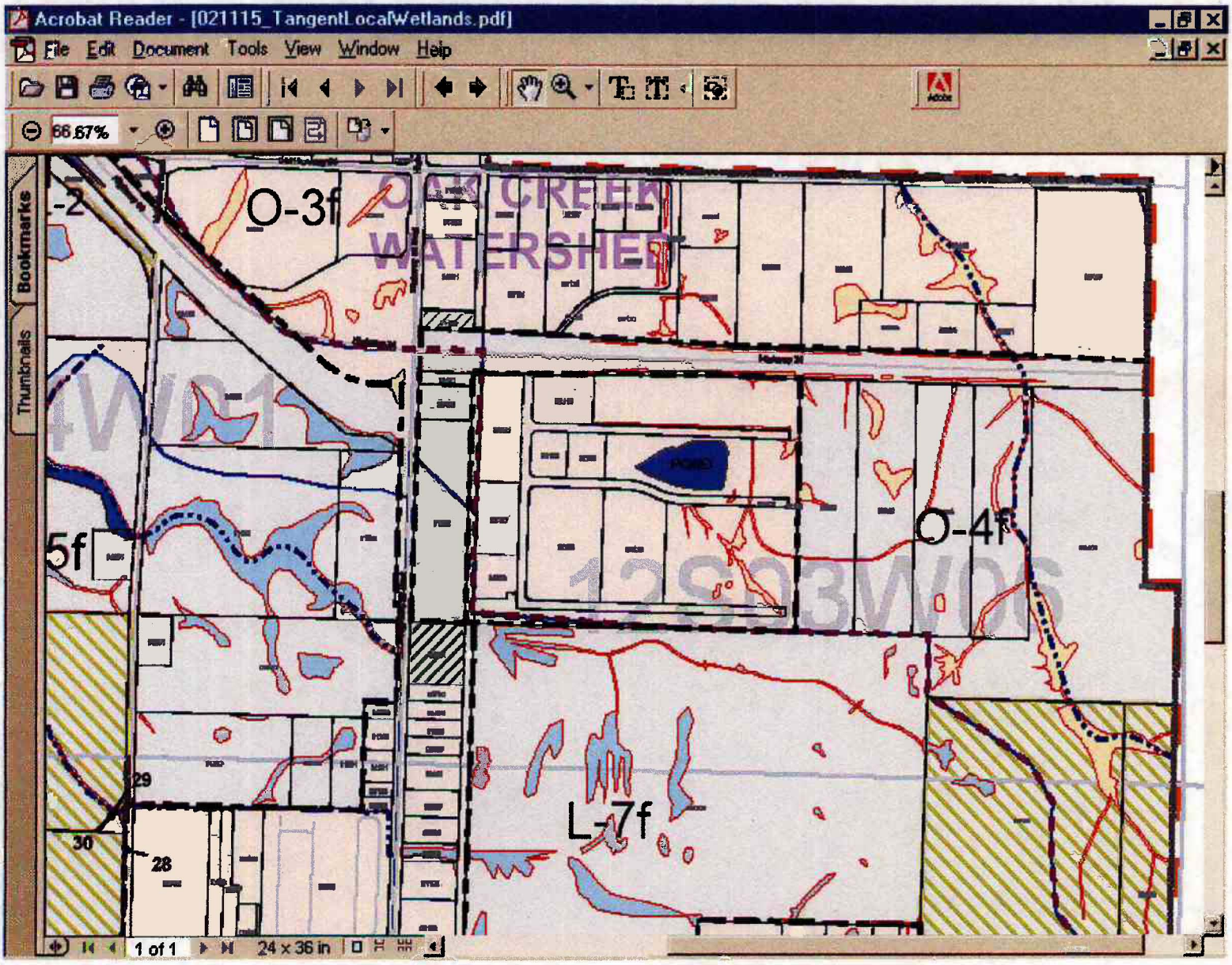
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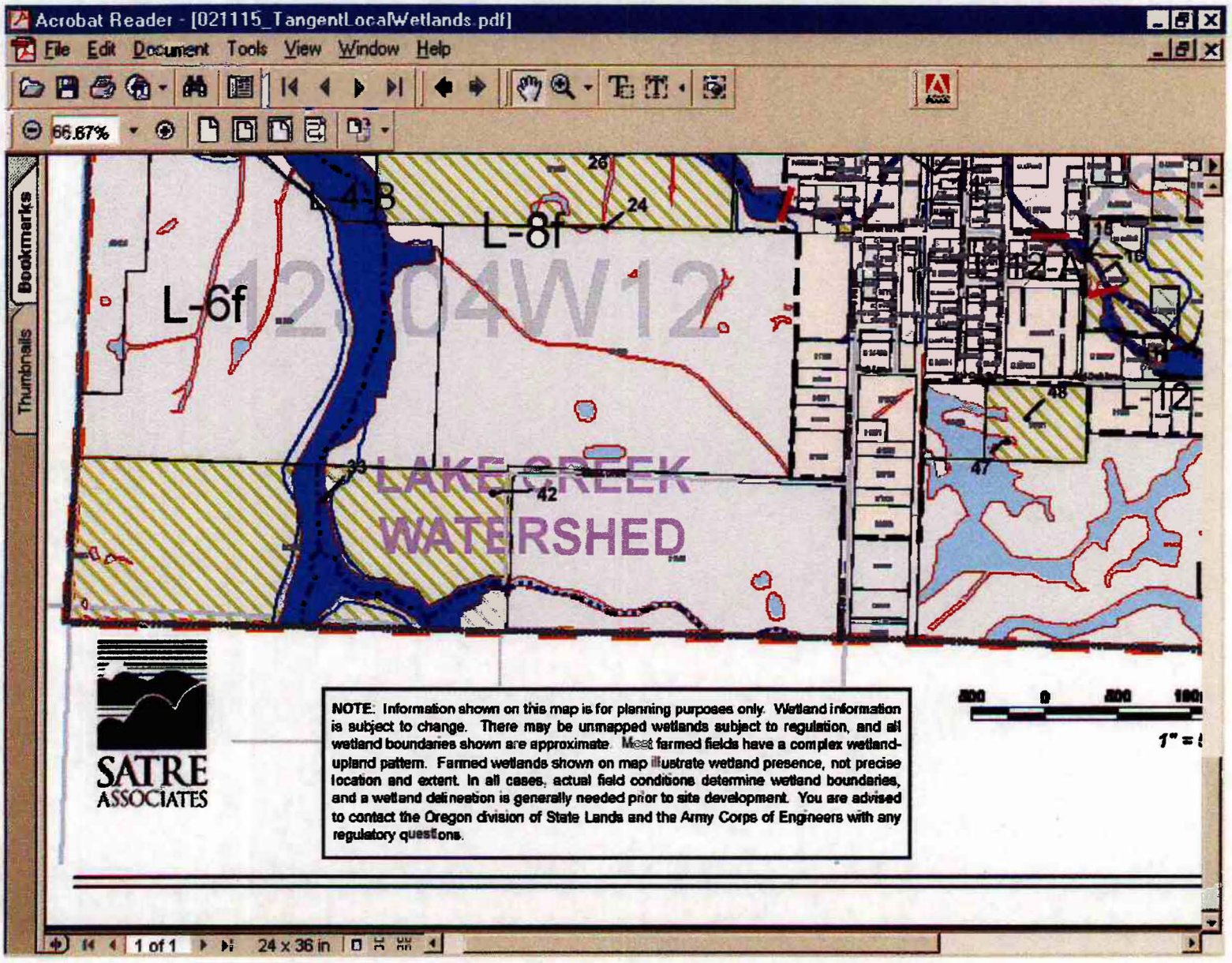
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LAKE CREEK
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