CITY OF ASHLAND

LOCAL WETLANDS INVENTORY AND ASSESSMENT

& RIPARIAN CORRIDOR INVENTORY

CITY OF
ASHLAND

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City of Ashland Local Wetlands Inventory
& Riparian Corridor Inventory
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Summary

SWCA Environmental Consultants[1] (Fishman/SWCA), conducted a Local Wetlands Inventory and Assessment and Riparian Corridor Inventory for the City of Ashland. The study area included the Ashland city limits and urban growth boundary. Total study area boundary acreage is 4,959 acres or 7.75 square miles.

Fourteen wetland units (W1 – W14) were inventoried and assessed. Eight of these 13 units (W1, W4, W5, W6, W7, W11, W12 and W13) were not previously mapped in the National Wetlands Inventory or the City's GIS database. Eleven wetland units were associated with streams or were hydrologically connected to a stream via roadside or agricultural drainage ditches. Three (W2, W8 and W9) wetlands did not contain a surface water connection to a stream or other wetland and were therefore determined to be isolated. Total wetland acreage within the study area was calculated to be 28.31 acres.

Locally significant wetlands were identified using the Oregon Freshwater Wetland Assessment Method (OFWAM). Significance was determined based on a wetland's ability to provide high function in one or more of the following categories: wildlife habitat, fish habitat, water quality or hydrologic control, or the wetland's ability to provide medium water quality function if located within 0.25 mile of a DEQ water quality listed stream. Eleven wetland units were determined to be locally significant. The Ashland Demonstration Wetlands (W2) were not designated as locally significant due to their creation for the purpose of wastewater treatment per OAR 141-086-350(1). The Billings Ranch wetland (W3) and the Washington Street wetland (W11) were determined to be non-locally significant.

All riparian corridors were inventoried to evaluate general stream characteristics and hydrology, adjacent landform, and vegetation. Significant riparian corridors were determined using the Goal 5 Safe Harbor criteria. Riparian corridors along streams identified by the Oregon Department of Fish and Wildlife as being fish-bearing were determined to be significant according to the Safe Harbor criteria. Significant riparian corridors in the study area include Ashland Creek, Bear Creek, Emigrant Creek, Kitchen Creek, Neil Creek, and Tolman Creek.

Further information is included in the accompanying report, and the reader is referred to the appendices for wetland and riparian summary sheets, wetland sample plot data, OFWAM data sheets and other information.

[1] The Portland, Oregon office of SWCA Environmental Consultants was acquired from Fishman Environmental Services in 2004.

Project Purpose

The City of Ashland is required to update their Comprehensive Plan under periodic review for Goal 5 wetland resources. The Goal 5 rule requires the City to inventory its natural resources according to the general inventory process outlined in OAR 660-023-0030 as well as specific guidelines for wetlands (660-023-0100) and riparian corridors (OAR 660-023-0090). Fishman Environmental Services, a Division of SWCA Environmental Consultants (Fishman/SWCA), conducted a Local Wetlands Inventory (LWI) and Riparian Corridor Inventory (RCI) for the City of Ashland to meet statewide planning Goal 5 requirements. The LWI was prepared to meet the Department of State Lands (formerly the Division of State Lands) Local Wetlands Inventory Standards and Guidelines (OAR 141-086-0180 through 141-086-0240; effective July 1, 2001). Significant riparian corridors were mapped using the Safe Harbor criteria identified under OAR 660-023-0090(5). The LWI and RCI are required to be submitted to the Oregon Department of State Lands (DSL) and the Department of Land Conservation and Development (DLCD) for review and approval before they can be adopted by the City and used to develop a land use program to conserve and protect significant Goal 5 resources.

Background Information

Study Area

The study area for the Local Wetlands Inventory and Riparian Corridor Inventory includes the City of Ashland city limits and the urban growth boundary. Total study area boundary acreage is 4,959 acres or 7.75 square miles. The study area is located in Township 38 South, Range 1 East, Sections 31, 32, and 33 and Township 39 South, Range 1 East, Sections 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 22, and 23. An index map of the study area is included in Appendix 1. The study area is contained on 12 base maps.

Drainage Basin

The City of Ashland is located within the Rogue River basin. The study area is contained entirely within the Bear Creek watershed. The study area contains two major drainages: Bear Creek in the north and Ashland Creek in the west.

Topography

Topography of the study area consists of steeply sloped foothills in the south, a relatively flat central portion that is highly developed, and the Bear Creek floodplain in the north. Streams in the higher elevation areas are confined within steep V-shaped drainages, and streams in lower elevation areas are typically confined within a well-defined stream channel. Therefore, stream-associated wetlands are generally either not present or are limited to a narrow fringe along the stream channel. Fishman/SWCA obtained two-foot contours of the study area from the City of Ashland. Two-foot contours were not available for the northwest portion of the study area in Sections 31 and 32.

Vegetation

Wetland indicator status is according to the U.S. Fish and Wildlife Service National List of Plant Species that Occur in Wetlands: Northwest (Region 9).

Soils

Soils were mapped in the Soil Survey of Jackson County Area, Oregon (USDA SCS 1993). The vast majority of the study area is mapped as containing hydric soil inclusions. The only area of mapped hydric soils in the study area is located along Kitchen Creek.

National Wetlands Inventory & Previous Wetland Inventory

Approximately fifty wetlands were mapped in the National Wetlands Inventory (NWI) on the Ashland, Oregon NWI quadrangle. A few mapped wetlands are associated with streams, but the majority of wetlands appear to be isolated. A field survey of Ashland's wetlands was conducted by two Southern Oregon University students in 1990. The 1990 study area generally coincided with the study area of the present inventory, with the exception of that the previous inventory did not include the area located outside the City limits and inside the UGB in Sections 5, 31, and 32. The 1990 inventory focused almost exclusively on field verifying the presence of NWI-mapped wetlands, collecting sample plot data, and photodocumenting the wetlands.

Floodplain

The floodplain was mapped by the Federal Emergency Management Agency on the Flood Insurance Rate Map for the City of Ashland, Oregon. A 100-year floodplain is mapped along Ashland, Bear, Clay, Emigrant, Hamilton, and Neil creeks. The City of Ashland modified the FEMA floodplain boundaries following the 1997 flood, including mapping the 100-year floodplain adjacent to Cemetery Creek.

Department of State Lands Files

Fishman/SWCA obtained copies of wetland determinations, delineations, and permit applications within the study area from the Department of State Lands. A list of the DSL files obtained along with their approximate locations and current status of these wetlands is included in Appendix 2. Wetland delineation boundaries from maps included in DSL files were hand mapped onto aerial photograph base maps and were field verified where permission to access was granted.

Aerial Photographs & GIS Data

Fishman/SWCA obtained black and white aerial photographs dated April 16, 1998, which showed spring hydrology, and color aerial photographs dated July 2001 from the City of Ashland. The 1998 aerial photos were previously used by the City of Ashland Geographic Information Department to prepare a Geographic Information System (GIS) layer of streams, ditches and ponds in the study area.

Scope of Work

Local Wetlands Inventory

A Local Wetlands Inventory has been prepared in accordance with the Department of State Lands Local Wetlands Inventory Standards and Guidelines (OAR 141-086-0180 through 141-086-0240; effective July 1, 2001). Fishman/SWCA mapped all wetlands greater than 0.5 acre according to the LWI rules. The approximate locations of many wetlands less than 0.5 acre in size were also mapped. These small wetlands are identified as "possible wetlands" on the LWI maps. Many isolated man-made ponds are present in the study area, most of which are less than 0.5 acre. Man-made ponds were also included on the LWI maps. Mapping protocol follows the DSL LWI rules and wetland boundaries have been digitized in an ESRI-compatible format for use by the City and DSL.

Wetland Assessment and Determination of Locally Significant Wetlands

Wetlands greater than 0.5 acre in size have been assessed using the Oregon Freshwater Wetland Assessment Method (OFWAM) as required by the LWI rules. The OFWAM assessment consisted of evaluating Wildlife Habitat, Fish Habitat, Water Quality, and Hydrologic Control functions. Per the Department of State Lands Administrative Rules for Identifying Significant Wetlands (OAR 141-86-300 through 141-86-350), if the assessed wetland unit provided diverse wildlife habitat, intact fish habitat, intact water quality function, or intact hydrologic control function, then the wetland was determined to be significant.

Wetlands not meeting the significance criterion based upon the OFWAM assessment were also evaluated according to the other criteria for determining Locally Significant Wetlands established by DSL. These criteria include (but are not limited to): the wetland or a portion of the wetland is within a horizontal distance less than one-fourth mile from a water quality limited water body (DEQ's 303(d) list) and its water quality function is intact or impacted or degraded; the wetland contains one or more rare plant communities; the wetland is inhabited by any species listed by the federal government as threatened or endangered or listed by the state as sensitive, threatened or endangered; or the wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids and the wetland is determined to have intact or impacted or degraded fish habitat function.

Riparian Corridor Inventory

Although the Goal 5 Rule is very specific regarding Local Wetlands Inventory methodology, the Goal 5 Rule does not include a prescribed method for the preparation of a Riparian Corridor Inventory. Discretion provided to local communities through the Goal 5 rule allows for inventory methods which are created by the City, reviewed by its' citizens, and implemented in a manner that best fits with the local natural resources.

The process of determining an exact location of a riparian corridor requires an on-site resource delineation. Even among the experts, the definition of "riparian" and the position of the boundary is often debated.

Determination of Significant Riparian Corridors

Goal 5 provides a Safe Harbor optional course of action rather than following the standard Goal 5 process, including the ESEE decision process. The Safe Harbor criteria identified under OAR 660-023-0090(5) establish a standard setback distance from all fish-bearing lakes and streams as follows:

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

Public Involvement Process

A newspaper article was published in the Ashland Daily Tidings on May 23, 2003 notifying the public of the onset of the Local Wetlands Inventory and Riparian Corridor Inventory. A second newspaper article appeared in the Medford Mail Tribune on July 23, 2003 describing the status of the inventory process.

Fishman/SWCA conducted two public open house meetings for the project. The first meeting was held on June 4, 2003 to present the Goal 5 requirements and inventory process. The second meeting was held on November 20, 2003 to present the draft inventory results and maps and to receive public comments on the draft maps. Approximately two dozen citizens attended the second meeting. A third public meeting will occur to present the final inventory and maps to the City planning commission.

Local Wetlands Inventory and Assessment (OAR 660-023-0090)

Wetland Definition

Wetlands are federally defined as "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" (Environmental Laboratory 1987). In other words, wetlands typically display three wetland criteria: a predominance of hydrophytic (wetland) vegetation, the presence of hydric (wet) soils, and wetland hydrology (ponding or near-surface saturated soils for at least 5 percent of the growing season; typically 11 days or so

during the growing season. According to the Jackson County soil survey, the growing season in Medford is April 7th through November 3rd (the growing season may vary annually).

Wetland Methodology

The Goal 5 rule is very specific in the method required for wetland inventories. The wetland inventory must be prepared using OAR 141-086-0210 through 0240. The product of the wetland inventory is a Local Wetlands Inventory (LWI). The Oregon Department of State Lands (DSL) must approve the LWI.

Prior to conducting field work, background information was reviewed in the office to identify possible wetland areas and to prioritize sites for field verification. Background information included USGS topographic map, national wetlands inventory map, Jackson County soil survey, and FEMA floodplain maps; DSL wetland determination/delineation and permit files; two-foot contour mapping from the City; and 1998 and 2001 aerial photos from the City. Field work included verification of the presence or absence of NWI mapped wetlands and wetlands previously identified in DSL files; identification of previously unmapped wetlands areas greater than 0.5 acre; and identification of possible wetlands less than 0.5 acre, even though these areas are not required to be mapped according to LWI standards. Identification of new (i.e. previously unmapped) wetland areas was facilitated by field visits of sites which contained either a topographic drainage on the 2-foot contour maps or a wetland hydrology signature visible on the aerial photographs.

Letters requesting permission to access were mailed to 1,513 property owners. The City sent out letters to the property owners requesting written permission to access these parcels. The list of parcels for which permission to access was requested was generated primarily based upon a GIS query identifying parcels containing either NWI or City mapped streams, wetlands or ponds, parcels mapped within the 100-year floodplain, and parcels located within 50 feet of any one of these mapped resource boundaries. In addition, several parcels which contained either a topographic drainage based upon 2-foot contours or a wetland hydrology signature on the aerial photographs were also included on the list. Of the approximately 1,500 letters, the City received 589 yes responses and 104 no responses. Field work was conducted on June 3, 4, 5, 24, 25, and 26, 2003.

Properties for which on-site data collection was allowed were identified on a tax lot base map which was color coded to identify publicly-owned parcels as well as properties for which permission to access was either granted or granted with conditions (i.e. call to notify property owner prior to site visit). On-site data collection consisted of either preparation of wetland determination sample plot data sheets documenting vegetation, soils, hydrology, and topography (included in Appendix 3) or field notes recording our visual observations of one or more of these parameters. No on-site data was collected on parcels for which permission to access was not granted or for which no response to the public notice requesting permission to access was received by the City. For areas where permission to access was not granted, off-site data was collected where possible by viewing the site with the use of binoculars from adjacent roads, parking lots or public

properties. Base maps used for field work and mapping consisted of 2001 color aerial photographs plotted at a scale of 1 inch to 300 feet. The City's stream, ditches and ponds GIS layer, which was created based on interpretation of 1998 aerial photographs, and the NWI mapping were overlayed onto the aerial photographs. Wetland and riparian boundaries, sample plots, and off-site observation points were hand mapped on the aerial photograph base maps in the field.

Wetlands were identified based on the methodology contained in the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987), used by the Department of State Lands. Wetlands generally include swamps, marshes, bogs, and similar areas, but also include seasonally wet meadows, farmed wetlands and other areas that may not appear "wet" at all times throughout the year. Aerial photograph signatures of wetland habitat types were groundtruthed at the start of the inventory at publicly owned sites including the Ashland Demonstration Wetlands and adjacent BMX park and at the North Mountain Nature Park. Wetland habitat types were labeled according to Cowardin class. Wetland habitat types present in the study area include: palustrine scrub-shrub (PSS), palustrine emergent (PEM), and palustrine open water (POW).

Wetland boundaries, sample plot locations, and field observation points were mapped by hand on the color aerial photo base maps. Wetland boundaries and other data were then digitized onto digital aerial photographs in a Geographic Information System. The GIS attribute tables contain data for each wetland polygon including unique polygon ID number, wetland unit number, habitat type, wetland acreage, and DSL file number (if any).

The locations of several isolated wetlands that were too small to be inventoried according to DSL rules (<0.5 acre) were mapped approximately as "possible wetlands". In addition, several other areas that appeared to be wetland from off-site, but for which the presence of wetland could not be field verified since permission to access these properties was not granted, were also mapped as possible wetlands. Many isolated man-made ponds are present in the study area, most of which are less than 0.5 acre. Man-made ponds were mapped separately from possible wetlands and wetlands greater than 0.5 acre.

Wetland summary sheets have been prepared for each wetland unit. Wetland summary sheets include the site name, site code, general location, Township, Range, and Section location, DSL file number (if any), acreage, Cowardin (NWI) classification, hydrogeomorphic classification, hydrologic basin, mapped soils, sample plot numbers (if any), date(s) of field work, dominant vegetation, primary hydrology source, OFWAM summary, significance determination, and general wetland description including basis for wetland boundary determination. Wetland summary sheets are included in Appendix 4.

The approximate locations of potential wetland mitigation/restoration sites are also required to be identified according to DSL's local wetlands inventory standards and guidelines. According to OAR 141-086-210 (19), "Vacant, former wetlands, consisting mostly of relict (dewatered) hydric soils, which are five (5) acres or larger in size shall be identified and mapped as potential wetland mitigation or restoration sites...." No sites

within the study area meeting these criteria were identified; therefore, a map of potential wetland mitigation/restoration sites is not included in the LWI.

Wetland Assessment Criteria

Wetlands were assessed using the Oregon Freshwater Wetland Assessment Methodology (OFWAM; Roth et al. 1996), which evaluates wetland functions and values relative to other wetlands within the study area. The four functions listed below were assessed for each OFWAM unit, and each function was rated high, medium or low based on how many of the criteria listed below for each function were met. OFWAM evaluation sheets are included in Appendix 5. OFWAM wetlands of special interest for protection and wetland characterization evaluation sheets which evaluate general watershed characteristics are included in Appendix 6.

Wildlife Habitat - The following criteria contribute to wetlands having high wildlife habitat function: two or more Cowardin wetland classes (i.e. forested, scrub-shrub, emergent) are present; woody vegetation is the dominant wetland vegetation cover type; there is high interspersion among Cowardin classes; more than one acre of open water is present; the wetland is connected to other wetlands or bodies of water by surface water (stream, lake, pond, ditch, or culvert); no upstream or adjacent stream reaches are listed as water quality limited; the dominant existing land use within 500 feet of the wetland's edge is exclusive forest use or open space; and greater than 40 percent of the wetland's edge is bordered by a vegetated buffer at least 25 feet wide.

Fish Habitat - The following criteria contribute to wetlands having high fish habitat function: more than 75 percent of the stream is shaded by stream-side (riparian) vegetation; the stream is in a natural channel, or modified portions of the stream are returning to a natural channel; more than 25 percent of the entire stream contains instream structures such as large woody debris, floating submerged vegetation, large rocks, or boulders; no upstream or adjacent stream reaches are listed as water quality limited; the dominant existing land use within 500 feet of the wetland's edge is exclusive forest use or open space; and salmon, trout or sensitive species are present in a stream, lake or pond associated with the wetland at some time during the year.

Water Quality Protection - The following criteria contribute to wetlands having high water quality protection function: the wetland's primary source of water is surface flow, including streams and ditches, or precipitation; there is evidence of flooding or ponding during a portion of the growing season; wetland vegetation cover is greater than 60 percent; the wetland is greater than 5 acres in size or is between 0.5 acre and 5 acres in size and is connected to other wetlands within a 3 miles radius by surface water (stream, ditch, canal or lake); the dominant existing land use within 500 feet of the wetland's edge is developed uses or agriculture; and one or more upstream or adjacent stream reaches are listed as water quality limited.

Hydrologic Control - The following criteria contribute to wetlands having high hydrologic control function: the wetland is located within the 100-year floodplain or within an enclosed basin; there is evidence of flooding or ponding during a portion of the

growing season; the wetland is greater than 5 acres in size; waterflow out of the wetland is restricted (beaver dam, concrete structure, undersized culvert) or the wetland has no outlet; woody vegetation is the dominant wetland vegetation cover type; the dominant existing land use within 500 feet of the wetland on the downstream or downslope edge of the wetland is developed uses; and the dominant land use in the watershed upstream from the assessment area is urban or urbanizing.

OFWAM Units

Fourteen wetland units (W1 – W14) were inventoried and assessed. Wetland units are listed below along with their Township, Range and Section, general location, Cowardin wetland habitat classification, and wetland acreage. Wetland units may contain one or more wetland areas. Wetlands along the same stream reach with the same hydrology source and adjacent land use are grouped into the same OFWAM unit for assessment purposes. Similarly, if a wetland is bisected by a road crossing and each wetland area contains similar characteristics, they are grouped into the same wetland unit. Eleven wetland units were associated with streams or were hydrologically connected to a stream via roadside or agricultural drainage ditches. Three (W2, W8 and W9) wetlands did not contain a surface water connection to a stream or other wetland and were therefore determined to be isolated. Narrow wetland fringes, ranging from 1 to 5 feet wide, were present along several streams within the study area. These wetland fringes were much smaller than 0.5 acre (the minimum wetland size required by DSL to be mapped) and are not included in the OFWAM units in the table below. It was not possible to map wetland fringes given the map scale of a wetland inventory. Wetland fringes were included within the riparian corridor mapping along streams in the study area, including forested wetland fringes along Ashland Creek and Bear Creek.

TABLE 1. OFWAM UNITS, WETLAND HABITAT TYPES & ACREAGES

Wetland Unit	TRS	Location	Habitat Type*	Wetland Acreage
W1	T39S, R1E, S4	Ashland Creek/BMX Park	PEM	2.23
W2	T39S, R1E, S4	Ashland Demonstration Wetlands	POW/PEM	0.64
W3	T39S, R1E, S5	Billings Ranch	PEM	1.83
W4	T39S, R1E, S10	Cemetery Creek	PEM	3.86
W5	T39S, R1E, S4 & 9	Clear Creek Village	PEM/POW	1.29
W6	T39S, R1E, S11	Knoll Creek	PEM	1.71
W7	T39S, R1E, S4	North Mountain Nature Park	PEM/POW	3.25
W8	T39S, R1E, S4	NWI Wetland 4G	PSS	0.90
W9	T39S, R1E, S10	NWI Wetland 10B	PEM	5.38
W10	T39S, R1E, S13	NWI Wetland 13B & 13C	PEM	2.12

TABLE 1. OFWAM UNITS, WETLAND HABITAT TYPES & ACREAGES				
Wetland Unit	**TRS**	**Location**	**Habitat Type***	**Wetland Acreage**
W11	T39S, R1E, S14	Washington Street	PEM	0.85
W12	T39S, R1E, S10	West of Cemetery Creek	PEM	1.68
W13	T39S, R1E, S11	West of Hamilton Creek	PEM	1.41
W14	T38S, R1E, S33	Ashland Creek, near sewage treatment plant	POW/PEM	1.16
			Total Wetland Acreage	28.31

* PEM = palustrine, emergent; POW = palustrine, open water; PSS = palustrine, scrub-shrub

Determination of Significance for Wetland Areas

The 14 wetland units listed above were evaluated using the Oregon Freshwater Wetland Assessment Methodology (OFWAM) as required by the LWI rules. The OFWAM assessment consisted of evaluating Wildlife Habitat, Fish Habitat, Water Quality, and Hydrologic Control functions. Per the Department of State Lands Administrative Rules for Identifying Significant Wetlands (OAR 141-86-300 through 141-86-350), if the assessed wetland unit provided diverse wildlife habitat, intact fish habitat, intact water quality function, or intact hydrologic control function, then the wetland was determined to be locally significant. Wetlands W1, W4-W9 and W12-W14 were determined to be locally significant wetlands according to this methodology. Although Wetland W2 displays intact water quality function, it is excluded from the locally significant wetland criteria according to OAR 141-086-0350(1) "Exclusions. Regardless of their standing in relation to the criteria in OAR 141-086-0350(2) or (3) of these rules, wetlands shall not be designated as locally significant if they fall within any one of the following categories:...(E) Of any size and created for the purpose of wastewater treatment...."

Three wetlands (W3, W10 and W11) did not meet the significance criterion based upon the OFWAM assessment and were therefore evaluated according to the other criteria for determining Locally Significant Wetlands established by DSL. These criteria include: the wetland or a portion of the wetland is within a horizontal distance less than one-fourth mile from a water quality limited water body (DEQ's 303(d) list) and its water quality function is intact or impacted or degraded; the wetland contains one or more rare plant communities; the wetland is inhabited by any species listed by the federal government as threatened or endangered or listed by the state as sensitive, threatened or endangered; or the wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids and the wetland is determined to have intact or impacted or degraded fish habitat function.

Wetland W10 was determined to be locally significant based on rating medium for water quality function and occurring within ¼ mile of a water-quality limited stream listed by DEQ on the 303(d) list. Wetlands W3 and W11 did not meet any of these criteria and were therefore determined to be non-locally significant.

The table below summarizes the wetland function ratings and wetland significance for each OFWAM unit. OFWAM evaluation sheets for each unit are included in Appendix 5, and OFWAM wetlands of special interest for protection and wetland characterization evaluation sheets are included in Appendix 6. A complete list of all vegetation observed in wetlands and uplands in the study area is included in Appendix 7.

TABLE 2. LOCAL WETLANDS INVENTORY DETERMINATION OF LOCALLY SIGNIFICANT WETLANDS

Wetland Unit	OFWAM FUNCTIONS[1]				SIGNIFICANT[2]
	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	
1	M	L	H	M	Y
2	M	L	H	M	N[3]
3	M	L	M	M	N
4	M	M	H	M	Y
5	M	M	H	H	Y
6	M	H	H	M	Y
7	H	M	H	H	Y
8	M	L	M	H	Y
9	M	L	H	H	Y
10	M	L	M	M	Y[4]
11	M	L	M	M	N
12	M	L	H	M	Y
13	M	L	H	M	Y
14	H	M	M	H	Y

[1] Wildlife Habitat Function: H = Diverse wildlife habitat, M = Habitat for some species, L = Lost or not present. Fish Habitat, Water Quality and Hydrologic Control Functions: H = Intact, M = Impacted or degraded, L = lost or not present

[2] Wetlands which score high in at least one of the four functions evaluated are determined to be locally significant according to DSL rules, except as noted below.

[3] Wetlands of any size that were created for the purpose of wastewater treatment shall not be designated as locally significant per OAR 141-086-350(1).

[4] Wetland W10 was determined to be locally significant based on rating medium for water quality function and occurring within ¼ mile of a water-quality limited stream listed by DEQ on the 303(d) list.

Status of National Wetlands Inventory Mapped Wetlands

We attempted to field verify the presence or absence of all wetlands mapped on the NWI in the study area. Several of the larger NWI-mapped wetlands have been incorporated into the wetlands mapped in the local wetlands inventory, including units W3, W8, W9, W10 and W13. Many of the NWI-mapped wetlands were determined to be man-made ponds and are mapped as ponds on the local wetlands inventory maps. Several wetlands mapped as less than 0.5 acre in size on the NWI could not be field verified due to lack of permission to access the sites and are therefore identified as Possible Wetlands (PW) on the local wetlands inventory maps. The local wetlands inventory maps replace the national wetlands inventory maps and the City's stream, ditches and ponds GIS layer and

provide the most accurate inventory of wetlands inside the Ashland urban grown boundary.

Riparian Corridor Inventory (OAR 660-023-0090)

Riparian Corridor Definition

Goal 5 definitions:

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

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

"Riparian corridor boundary" is an imaginary line that is a certain distance upland from the top of bank...

Riparian Corridor Methodology

The method for conducting a riparian corridor inventory is not prescribed. The Goal 5 Rule permits the application of a "Safe Harbor" setback distance to all fish bearing lakes and streams. The standard setback is 50 feet for streams with more than 1000 cubic feet per second (cfs) stream flow and 50 feet for fish bearing lakes and streams with less than 1000 cfs. The rule also lists the following resources that must be consulted when completing the riparian corridor inventory:

- Oregon Department of Forestry stream classification maps
- USGS 7.5-minute quadrangle map
- National Wetland Inventory Maps
- Oregon Department of Wildlife (ODFW) maps indicating fish habitat
- Federal Emergency Management Agency (FEMA) flood maps
- Aerial photographs

Fishman/SWCA has prepared the riparian corridor inventory using a modified on-site method. Time and budget constraints typically make it unfeasible to conduct an on-site delineation of all riparian corridors in the City. Therefore, we conducted brief on-site field visits to document vegetation and topography adjacent to streams at several locations along each stream to determine the approximate location of the riparian corridor. The location of the riparian corridor was hand mapped on the aerial photo base map (photo date 2001, scale 1 inch to 300 feet). Two foot contour data and vegetation signatures on the aerial photos were used to approximate the location of the riparian corridor for areas that were not field verified. For areas where permission to access was not granted, off-site data was collected if possible by viewing the site with the use of binoculars from adjacent roads, parking lots or public properties. No field data was collected for Strawberry Creek or Twin Creek since permission to access the properties

containing these small sections of stream was not granted, and the streams were not visible from adjacent public roads. Field work was conducted on June 3, 4, 5, 24, 25, and 26, 2003.

Riparian summary sheets include the site name, Township, Range, and Section location, sample plot numbers (if any), dates(s) of field work, dominant vegetation, and general riparian corridor description. Riparian summary sheets are included in Appendix 8.

Riparian Corridor Units

Riparian corridors were mapped along all streams in the study area, which include:

- Ashland Creek
- Ashland Creek Tributary 1
- Beach Creek
- Bear Creek
- Bear Creek Tributary 1
- Cemetery Creek
- Clay Creek
- Clear Creek
- Emigrant Creek
- Fordyce Creek
- Golf Course Creek
- Hamilton Creek
- Hamilton Creek Tributaries 1 & 2
- Kitchen Creek
- Knoll Creek
- Mountain Creek
- Neil Creek
- Paradise Creek
- Paradise Creek East
- Pinecrest Creek
- Roca Creek
- Strawberry Creek
- Tolman Creek
- Twin Creek
- Wrights Creek
- Wrights Creek Tributaries 1 - 5

Determination of Significance for Riparian Corridor Areas

Significant riparian corridors mapped using the Safe Harbor criteria identified under OAR 660-023-0090(5). The Safe Harbor criteria establish a standard setback distance from all fish-bearing lakes and streams as follows:

> a) Along all streams with average annual stream flow greater than 1,000 cubic feet per second (cfs) the riparian corridor boundary shall be 75 feet upland from the top of each bank. (Top of bank is defined by the DSL as "bankfull stage," and in the absence of obvious tops of bank can be approximated by the two-year flood

elevation. Most streams in the City of Ashland have well-defined channels and the top of bank is in most cases easily observed in the field.)

b) Along all lakes, and fish-bearing streams with average annual stream flow less than 1,000 cfs, the riparian corridor boundary shall be 50 feet from the top of bank.

c) Where the riparian corridor includes all or portions of a significant wetland, the standard distance to the riparian corridor boundary shall be measured from, and include, the upland edge of the wetland.

d) In areas where the top of each bank is not clearly defined, or where the predominant terrain consists of steep cliffs, local governments shall apply OAR 660-23-030 (the inventory process defined in the subject document) rather than apply the safe harbor provisions.

Fish-bearing streams were determined based upon ODFW StreamNet data and a map from the Oregon Department of Fish and Wildlife showing stream segments where fish presence was documented based upon ODFW observations during electroshocking and snorkel surveys conducted in 1997 through 2000. The ODFW map identifies Ashland Creek, Bear Creek, Emigrant Creek, Kitchen Creek, Neil Creek, and Tolman Creek as being fish-bearing within the study area. According to the Safe Harbor criteria, a 50 foot buffer is required adjacent to these streams.

Most of the streams in Ashland are not documented as fish-bearing, and therefore would not be protected under the safe harbor requirements. Short sections of Clay Creek, Hamilton Creek and Wrights Creek located downstream of the study area were mapped as fish-bearing; however, the streams are not documented as being fish-bearing within the study area, so a safe harbor has not been applied to these streams. The City currently requires 10 to 20 foot buffers adjacent to all streams within the Ashland urban growth boundary, including those that are not fish-bearing. The City of Ashland is currently discussing alternatives for additional inventory, assessment, and regulation of riparian corridors not addressed under the Safe Harbor.

Staff Qualifications

As required by LWI rules, technical staff qualifications are described below.

Project Manager: Daniel Stark, AICP, Natural Resource Planner / GIS Program Manager

Responsibilities: Dan provided project management and coordination with the City of Ashland Planning Staff, provided coordination of the GIS database development, and assisted in preparing the Goal 5 report.

Dan Stark is certified by the American Institute of Certified Planners and provides land use expertise and public service sector personal experience. Dan's specialties include natural resource planning, GIS, and land use planning. Dan had more than five years

experience as a Planner and GIS Analyst for Marion County, Oregon where he developed and maintained the County Planning Division GIS using ArcInfo, ArcView and Map Objects. Dan has developed tools using AML (Arc Macro Language) to analyze the county groundwater consumption rates and determine compliance with the county groundwater ordinance. His GIS database included tax lot-level analyses of soils, wetlands, floodplains, other natural resource features and urban infrastructure. Dan also participated in the long-range planning program at Marion County by providing support to the periodic review tasks including Goals 3, 4, 5, 7, 14 and others. Since joining Fishman/SWCA in November of 1999, Dan has managed several large inventory and assessment projects including the City of Hillsboro Local Wetlands, Riparian Corridor, and Wildlife Habitat Inventory and Assessment (Goal 5 project), Watersheds 2000 stream assessment for Clean Water Services (Washington County's stormwater management agency), and has also assisted with the City of Wilsonville's Goal 5 Inventory, Title 3 Compliance, and ESA Compliance project.

Field Inventory Staff: Stacy N. Benjamin, Wetland Ecologist
Responsibilities: Stacy managed the field inventory, prepared the wetland and riparian corridor maps, conducted OFWAM, prepared the resource site summary sheets and summary tables, and prepared the Goal 5 report. Stacy provided review and quality control of GIS map products.

Stacy Benjamin is experienced in wetland determination and delineation, wetland permitting, mitigation design, wetland monitoring, and natural resource assessment. Stacy's Goal 5 experience includes conducting local wetlands inventories for the Cities of Hillsboro and Lakeside; wetland, riparian and upland habitat function and value assessments; and updating the natural resource inventory (riparian and upland resources) for the Lane Council of Governments. Stacy is experienced in both on-site and off-site wetland inventory methodology, aerial photograph interpretation and mapping, and conducting function and value assessments for wetland, riparian, and upland areas. Stacy has completed training in the 1987 Wetlands Delineation Manual and has been conducting wetland determinations and delineations since she joined Fishman/SWCA in 1996.

Field Inventory Staff: C. Mirth Walker, PWS, CWD, Wetlands Program Manager
Responsibilities: Mirth assisted with the field inventory and provided review and quality assurance for all inventory and assessment products.

Mirth Walker is responsible for coordination of wetland work orders and provides wetland delineation QA/QC and project management. She is certified as a Professional Wetland Scientist (PWS) by the Society of Wetland Scientists and is a provisionally certified Wetland Delineator by the Seattle District U.S. Army Corps of Engineers. Mirth's specialties include wetland determinations and delineations, wetland mitigation and monitoring, permit coordination, aerial photograph interpretation, wetland training, and natural resource inventories. Mirth managed and conducted the City of Wilsonville LWI / RCI / Upland Wildlife Habitat Inventory and Assessment, the Lakeside LWI, the

La Grande LWI, and she assisted with the Cities of Hillsboro, Tualatin, Tigard, and Stayton wetland inventories and assessments.

Geographic Information System Management: Rafael Gutierrez, GIS Analyst
Responsibilities: Preparation of GIS maps and management of the GIS database

Rafael's specialties include ESRI's ArcView and ArcInfo software, Global Positioning Systems, database design and development, and cartographic design. He has a firm understanding of projection, datum, and coordinate system concepts. Rafael also has four years experience in web development and design including client/server administration, PHP and MySQL database construction and CGI programming. Many of Rafael's projects include digitizing, editing and topological operations, area calculations, transforming datasets to and from various projections and coordinate systems, and spatial analysis using raster datasets. Other project experience includes using dynamic segmentation for linear surveys, multiple criteria analyses, and integrating large relational database management systems with GIS.

Project / Contract Oversight: Paul A. Fishman, CEP, Principal Ecologist
Responsibilities: Paul provided contract management oversight and assistance as necessary in this project, and assisted with public involvement

Paul is a Certified Environmental Professional by the Academy of Board Certified Environmental Professionals. Paul has over 34 years management experience in natural resource assessment and planning. He has managed small and large, individual consultant and multi-discipline team efforts for dozens of clients in the western U.S. Paul has organized and/or participated in community-based processes to guide and implement these efforts. He has developed an extensive network in the environmental community, including resource and regulatory agencies, local jurisdictions, consultants, and public groups. He has developed his company as a key consultant to local jurisdictions for natural resource inventory and planning projects. Paul has a history of providing training and educational seminars to a variety of audiences: in 1996, he conducted a half-day wetland training to help attendees understand the basic requirements for wetland issues; in 1999, Paul provided an educational program for recognizing wetlands, Goal 5 criteria and conducting assessments for the Endangered Species Act.

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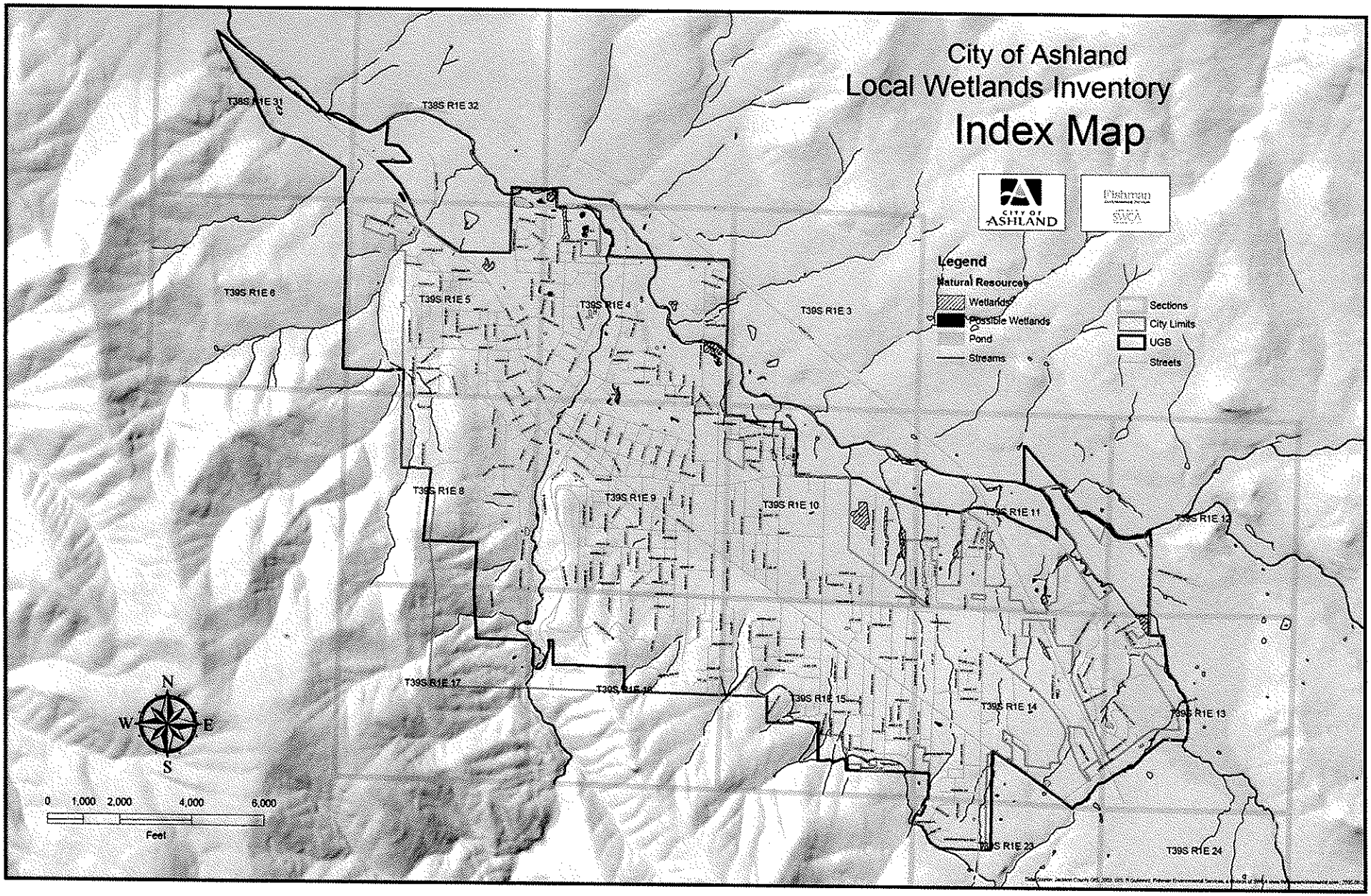
Enclosures:
City of Ashland Local Wetlands Inventory Maps

APPENDICES

Appendix 1: Local Wetlands Inventory Index Map & Detail Maps
Appendix 2: List of DSL Wetland Determination and Permit Files
Appendix 3: Wetland Determination Sample Plot Data Sheets
Appendix 4: Wetland Summary Sheets
Appendix 5: OFWAM Evaluation Sheets
Appendix 6: OFWAM Wetlands of Special Interest for Protection & Wetland Characterization Sheets
Appendix 7: Vegetation List
Appendix 8: Riparian Corridor Summary Sheets


City of Ashland
Local Wetlands Inventory
Index Map
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Pinhorn
Legend
Natural Resources
Wetlands
Possible Wetlands
Pond
Streams
Sections
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UGB
Streets
T38S R1E 31
T39S R1E 32
T39S R1E 6
T39S R1E 5
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CITY OF ASHLAND

City of Ashland

Local Wetlands Inventory

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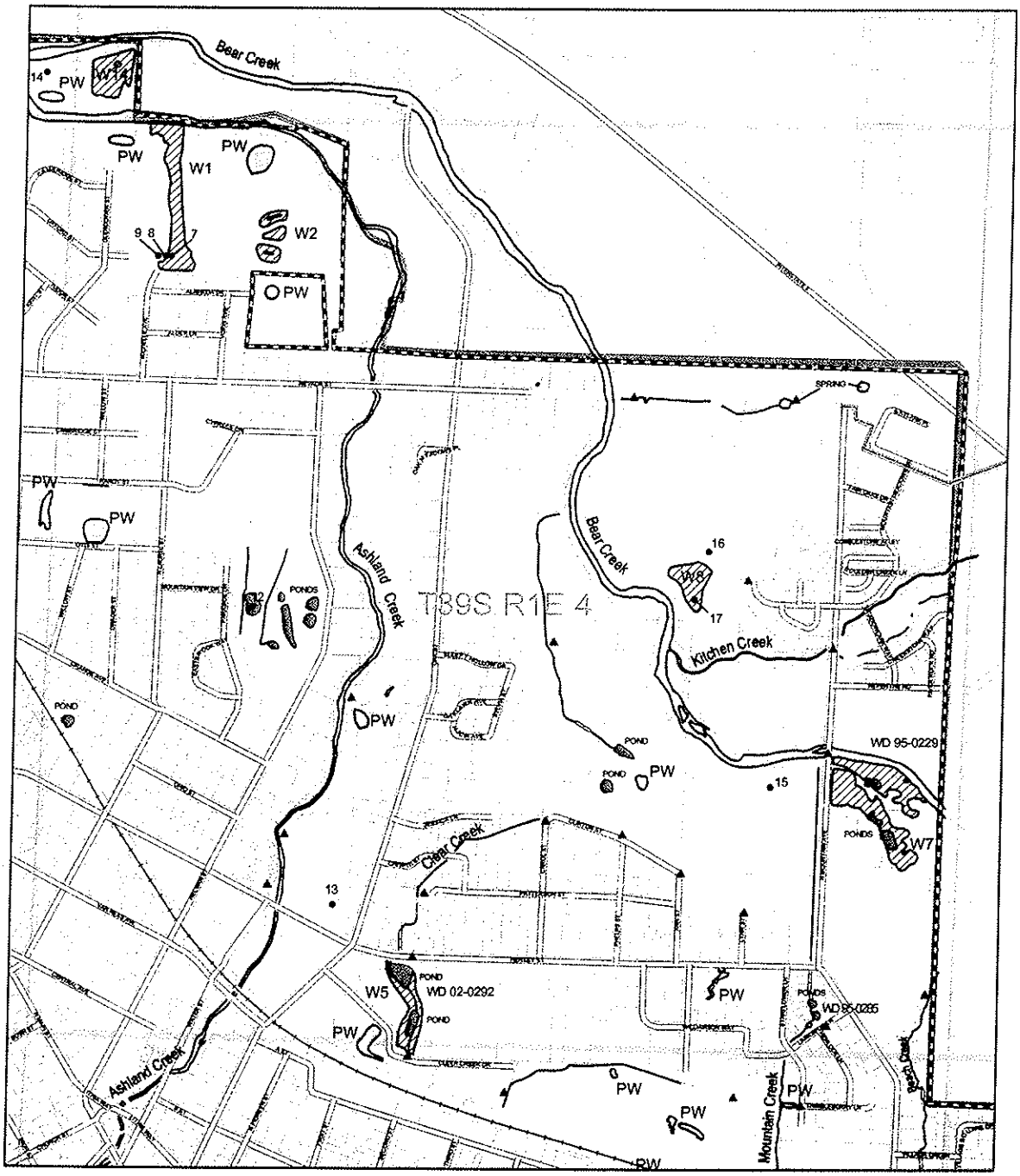

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- Possible Wetlands
- Pond
- Riparian Corridor Safe Harbor (50 feet)
- Sample Plot
- Observation Point
- Taxlots
- Urban Growth Boundary
- City Limits
- Sections
- Streets
- Railroad
- Streams, intermittent drainages, and ditches
- Laterals
- Talent Irrigation District Canal
- Culverted Streams
- W1-W14 Wetland Unit

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The local wetlands inventory has been prepared in accordance with OAR 141-086-0180 through 141-086-0240 and OAR 141-086-0300 through 141-086-0350 by SWCA, Inc.

Maps here been prepared using:
City of Ashland digital orthophotos.
Photos are SID format.
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Date of Photography: July 2001

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Standard Parallel 2: 44.000000
Latitude Of Origin: 41.666667

GCS North American 1983
Print date: 12/12/05; Prepared By: R. Gutierrez

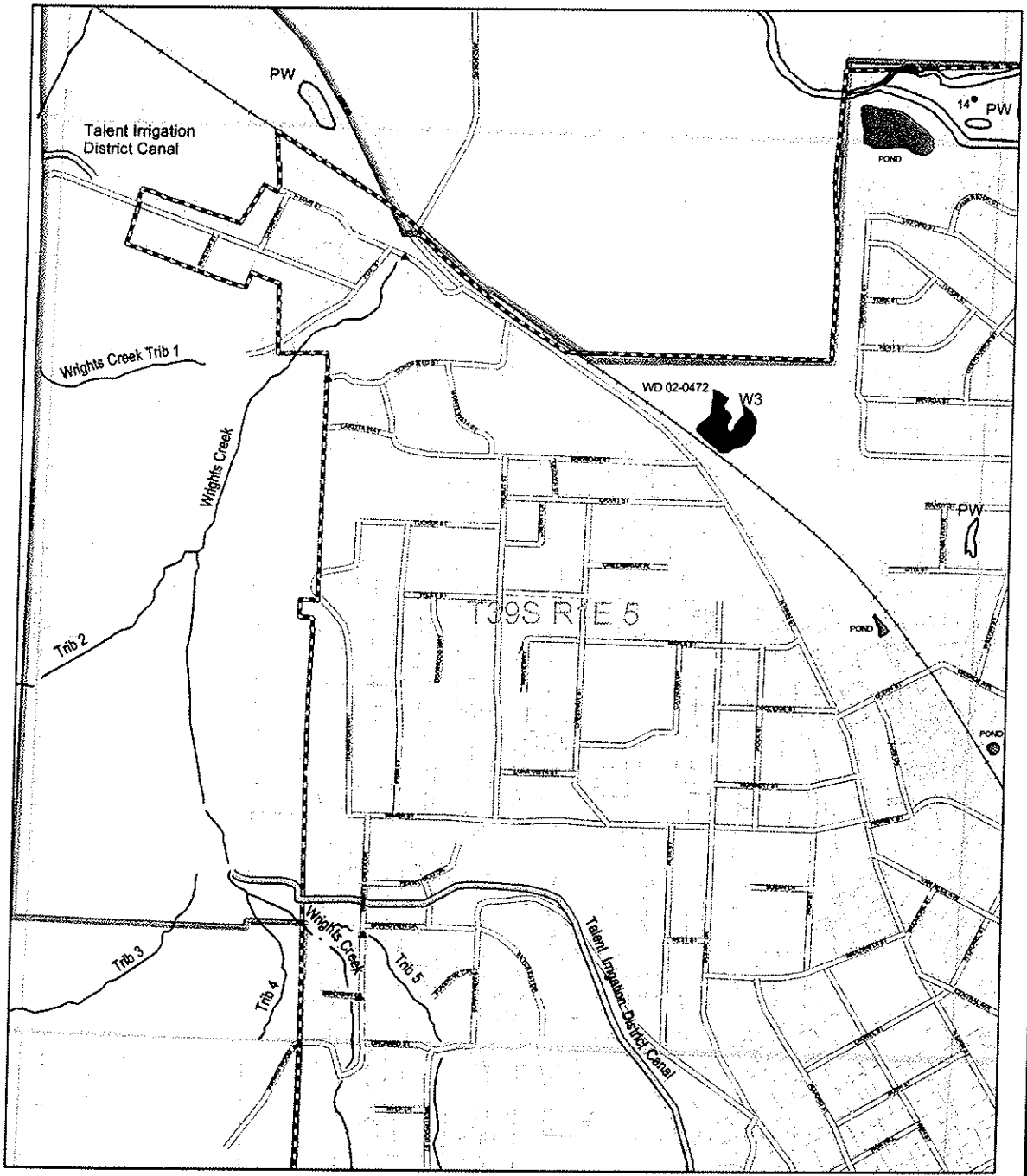
Study area is contained within the Bear Creek watershed

CITY OF ASHLAND

City of Ashland

Local Wetlands Inventory

T39S R1E 5



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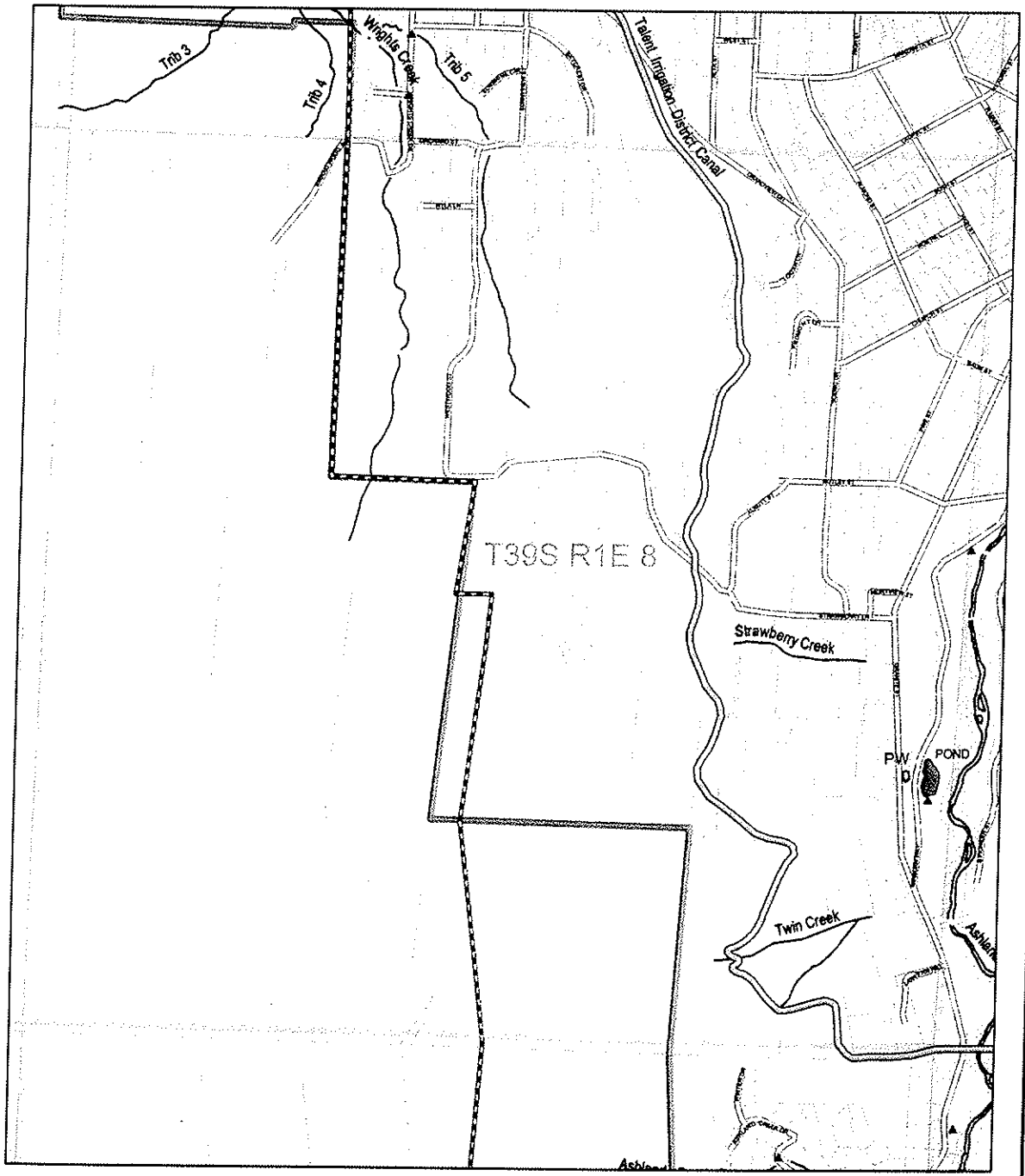
City of Ashland

Local Wetlands Inventory

T39S R1E 8



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Study area is contained within the Bear Creek watershed

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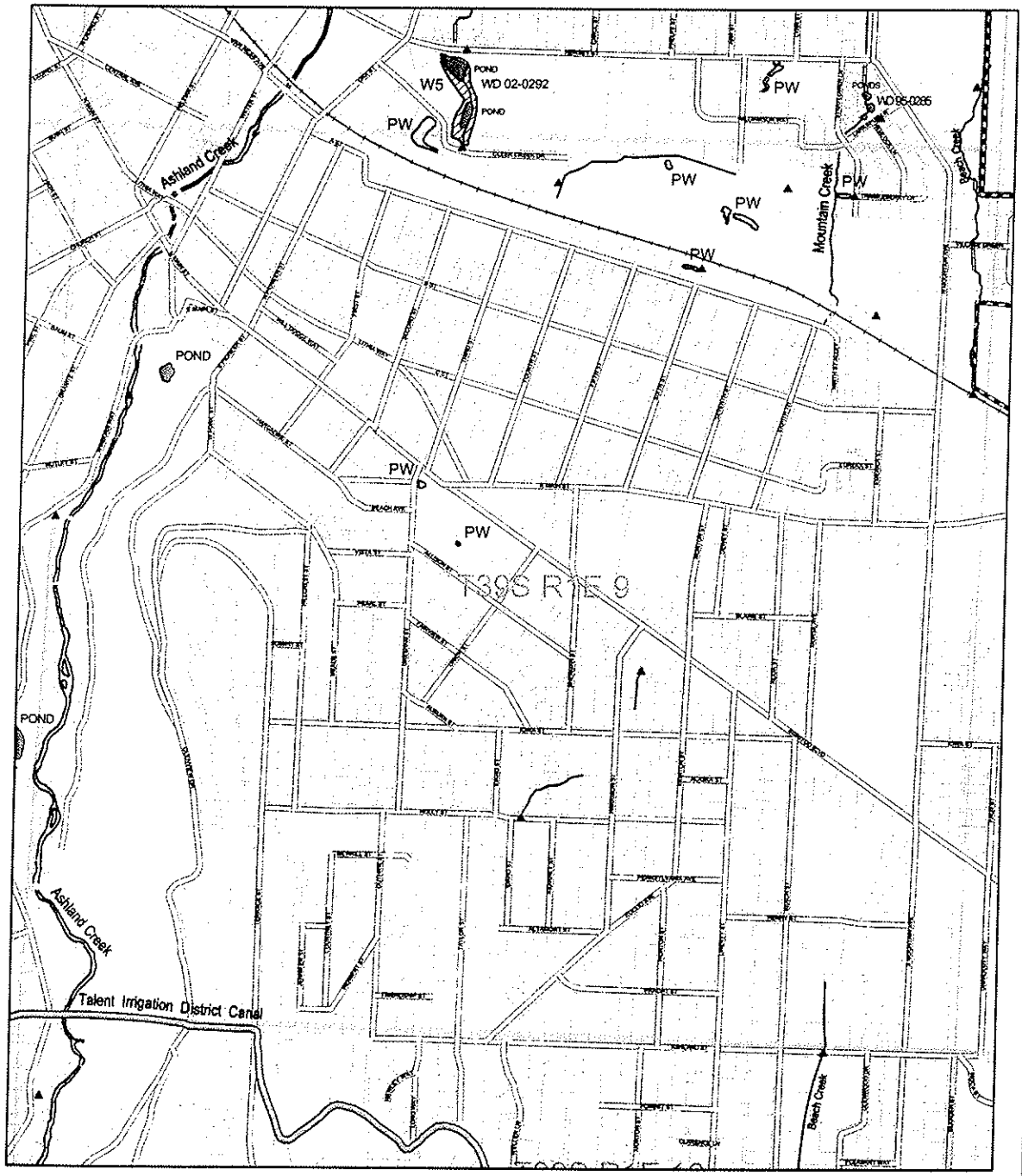
City of Ashland

Local Wetlands Inventory

T39S R1E 9



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GCS North American 1983
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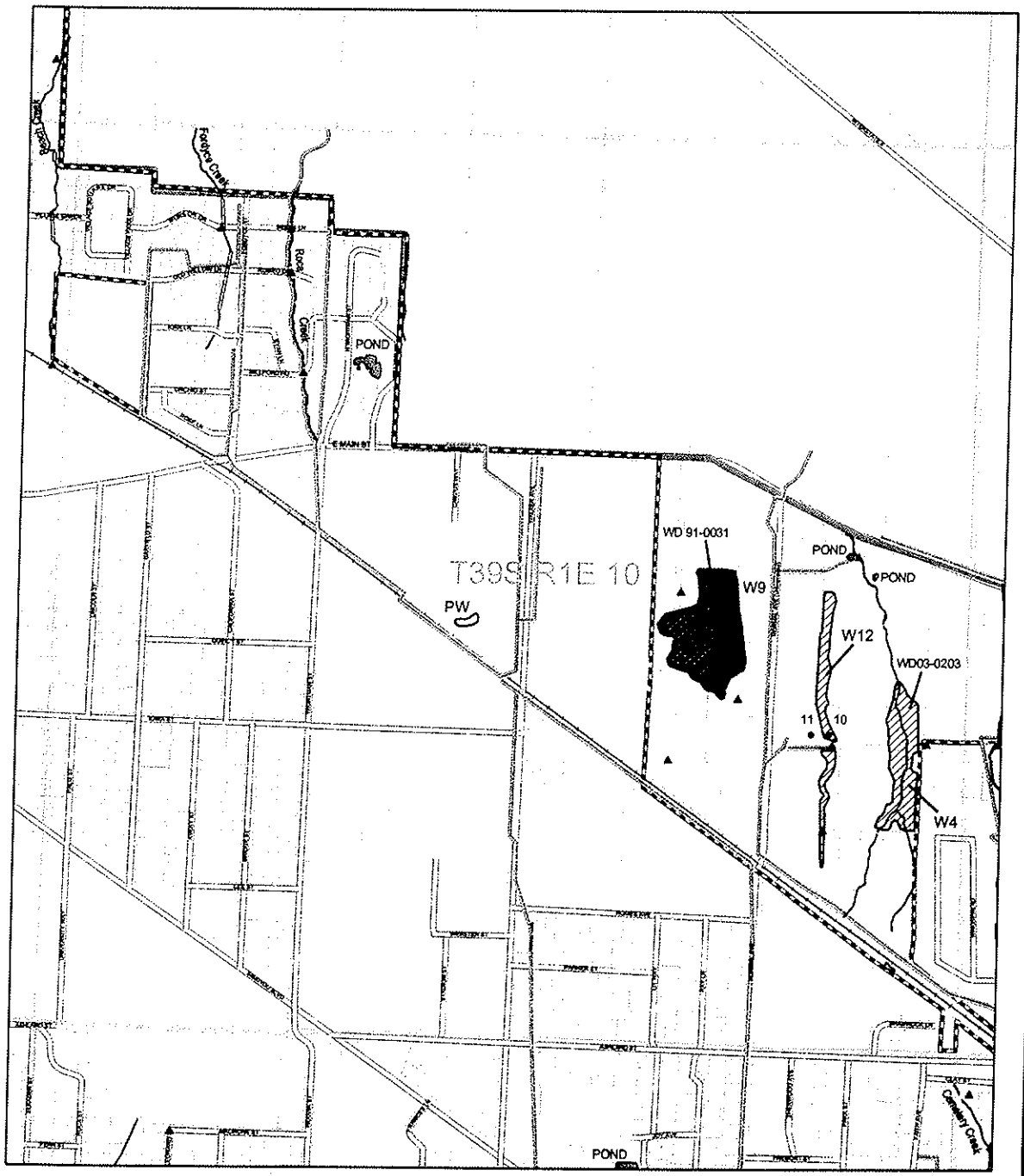
Study area is contained within the Bear Creek watershed

CITY OF ASHLAND

City of Ashland

Local Wetlands Inventory

T39S R1E 10



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OCS North American 1983
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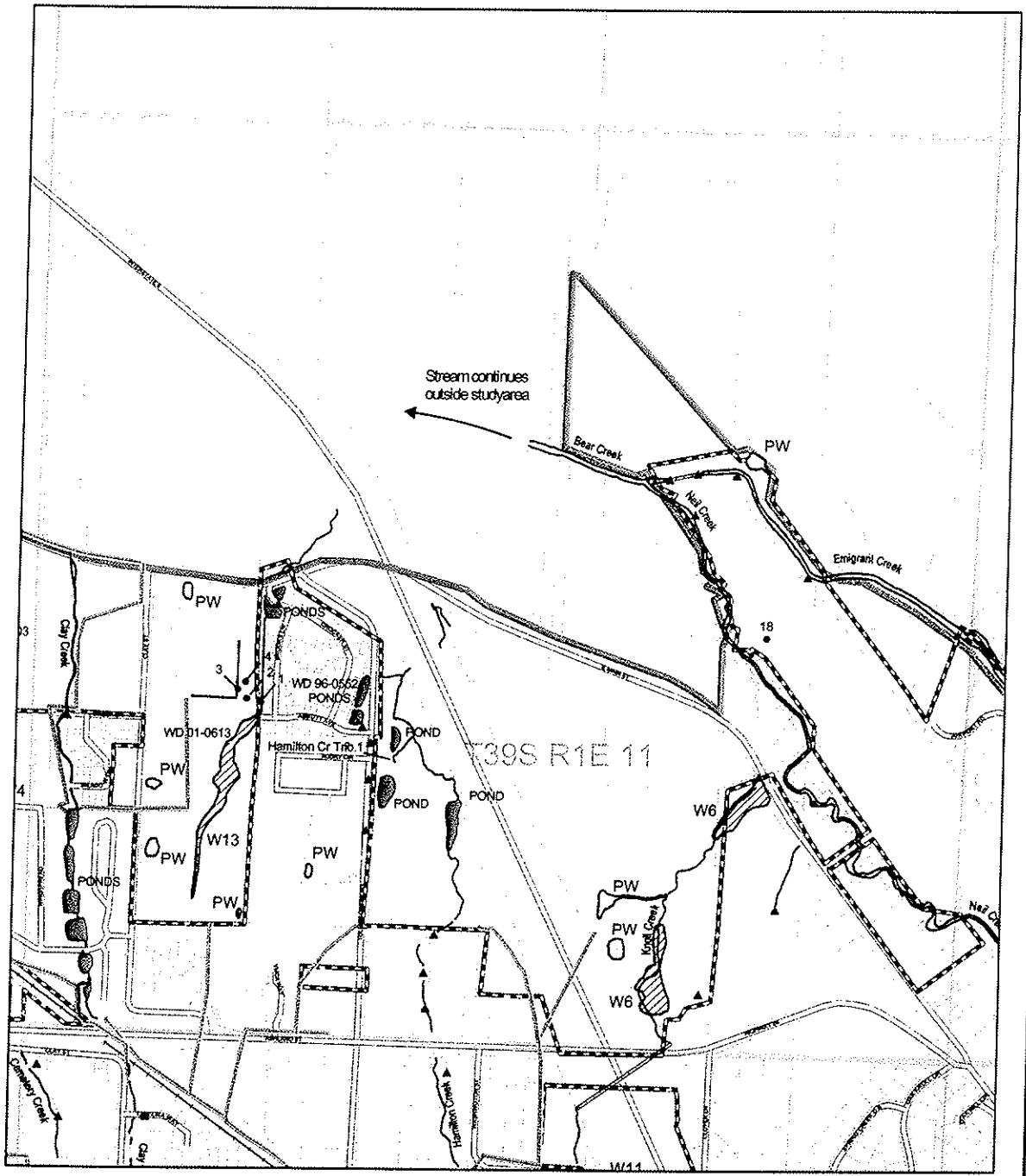
Study area is contained within the Bear Creek watershed

CITY OF ASHLAND

City of Ashland

Local Wetlands Inventory

T39S R1E 11



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GCS North American 1983
Print date: 12/12/06. Prepared By: R. Gutierrez

Study area is contained within the Bear Creek watershed

CITY OF ASHLAND

City of Ashland

Local Wetlands Inventory

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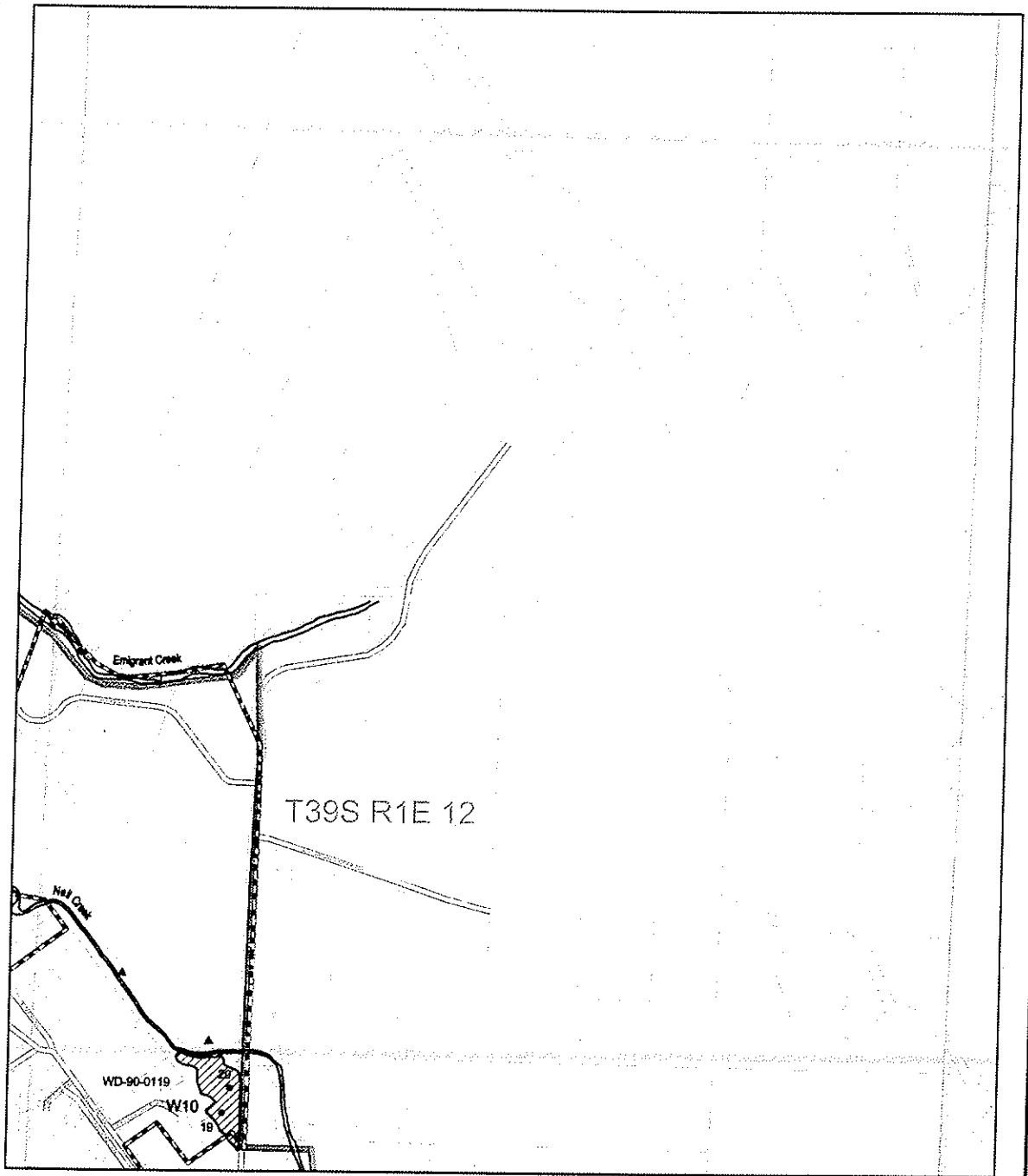

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- Wetlands, field verified
- Wetlands, not field verified
- Possible Wetlands
- Pond
- Riparian Corridor Safe Harbor (50 feet)
- Sample Plot
- Observation Point
- Taxlots
- Urban Growth Boundary
- City Limits
- Sections
- Streets
- Railroad
- Streams, intermittent drainages, and ditches
- Laterals
- Talent Irrigation District Canal
- Culverted Streams
- W1-W14 Wetland Unit

Study area is contained within the Bear Creek watershed

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Photos are SID format
Pixel Resolution: 1' pixel
Date of Photography: July 2001

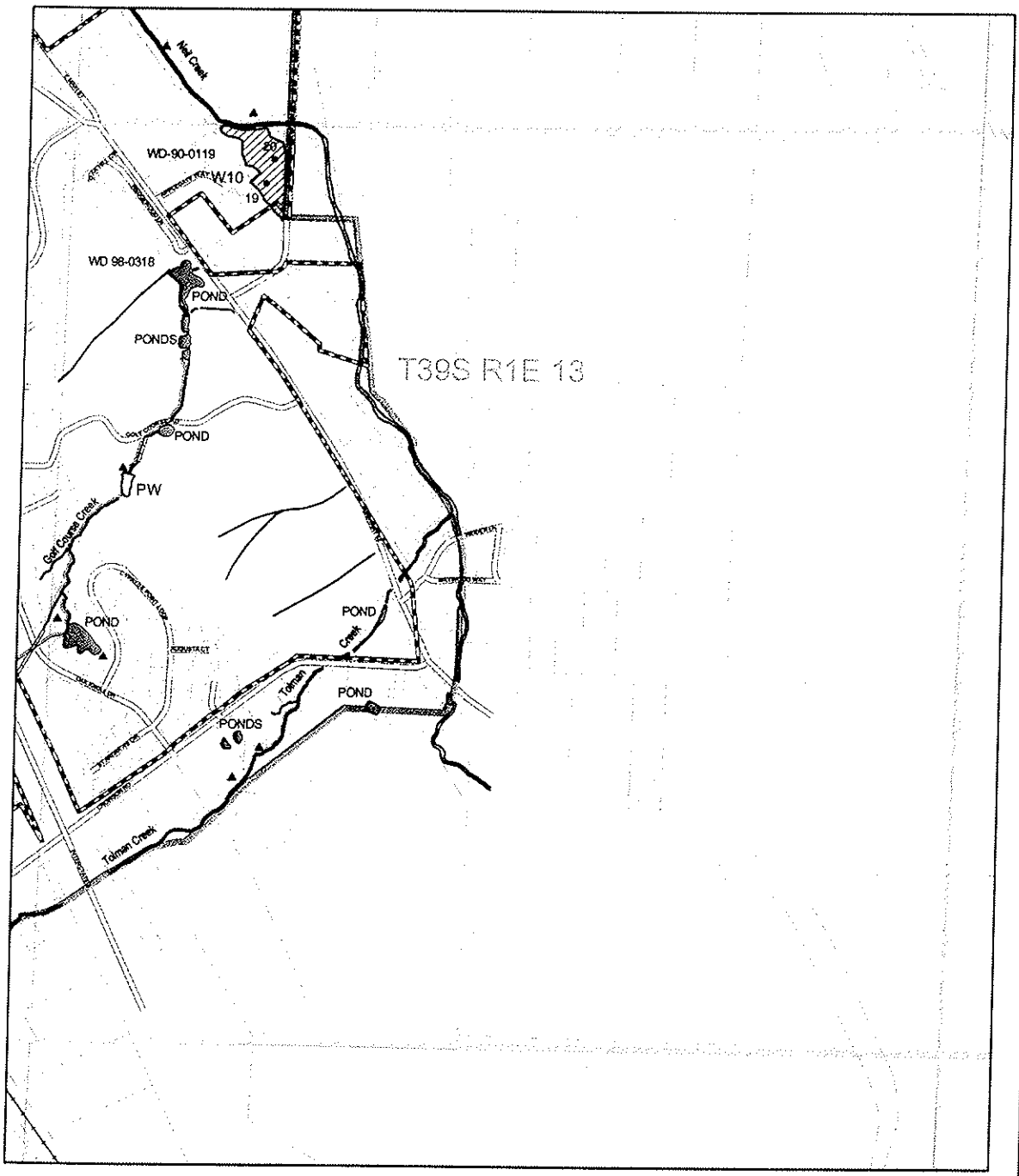
Projection Information:
NAD 1983 StatePlane Oregon South FIPS 3602 Feet
Lambert Conformal Conic
False Easting: 4921250.000000
False Northing: 0.000000
Central Meridian: -120.500000
Standard Parallel 1: 42.333333
Standard Parallel 2: 44.000000
Latitude Of Origin: 41.666667

GCS North American 1983
Print date: 12/12/06; Prepared By: R. Gutierrez

City of Ashland

Local Wetlands Inventory

T39S R1E 13



Legend

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- W1-W14 Wetland Unit

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Lambert Conformal Conic
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False Northing: 0.000000
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Latitude Of Origin: 41.666667

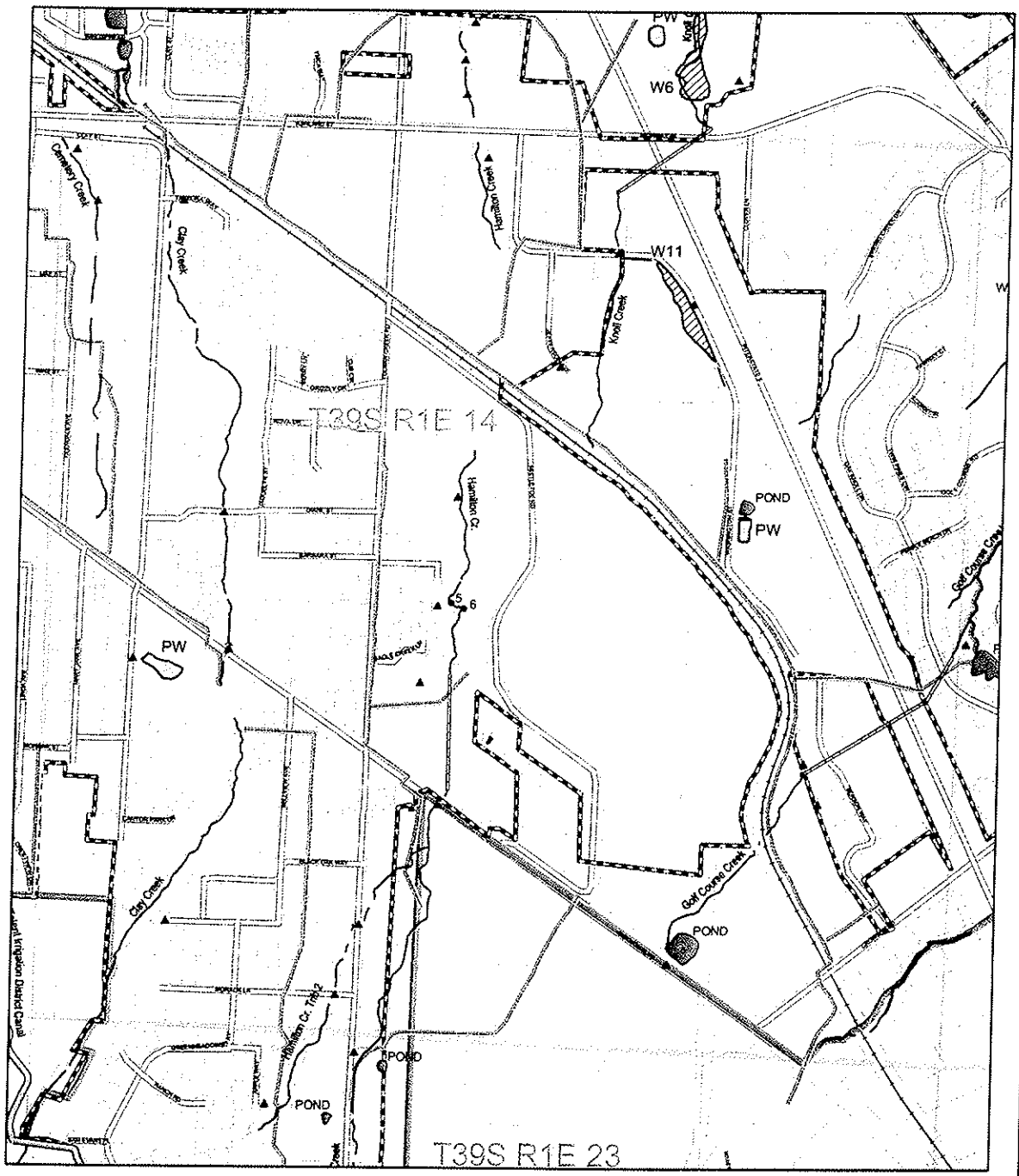
GCS North American 1983
Print date: 12/13/06; Prepared By: R. Gutierrez

CITY OF ASHLAND

City of Ashland

Local Wetlands Inventory

T39S R1E 14



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Maps have been prepared using
City of Ashland digital orthophotos
Photos are BIG format
Pixel Resolution: 1' pixel
Date of Photography: July 2001

Projection Information:
NAD 1983 StatePlane Oregon South FIPS 3602 Feet
Lambert Conformal Conic
False Easting: 4921250.000000
False Northing: 0.000000
Central Meridian: -120.500000
Standard Parallel 1: 42.333333
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Latitude Of Origin: 41.666667

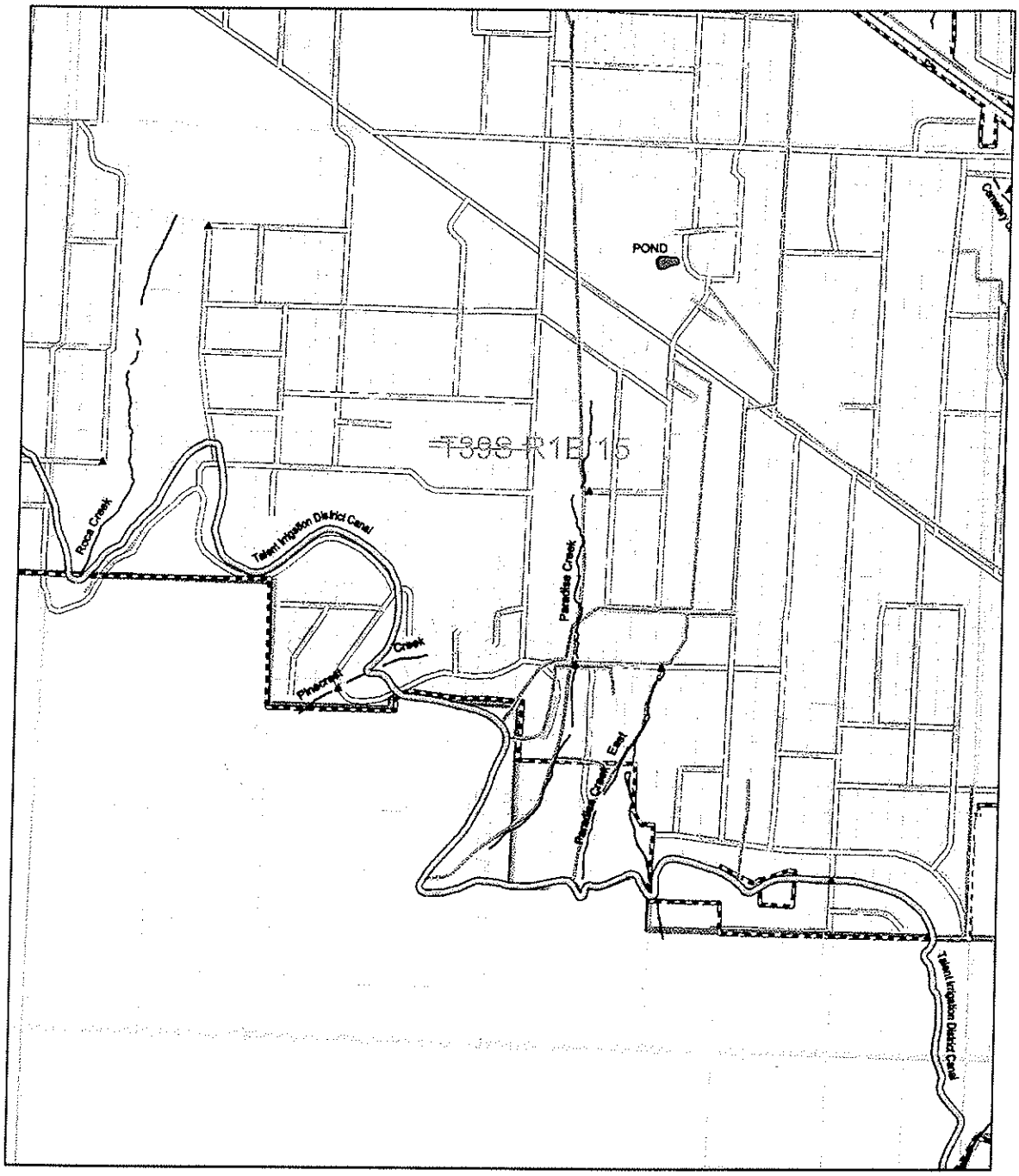
GCS North American 1983
Print date: 12/12/06; Prepared By: R. Gutierrez

CITY OF ASHLAND

City of Ashland

Local Wetlands Inventory

T39S R1E 15



Legend

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Photos are BW format
Pixel Resolution: 4' pixel
Date of Photography: July 2001

Projection Information:
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Lambert Conformal Conic
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Standard Parallel 1: 42.333333
Standard Parallel 2: 44.000000
Latitude Of Origin: 41.666667

GCS North American 1983
Print date: 12/12/01; Prepared By: R. Gutierrez

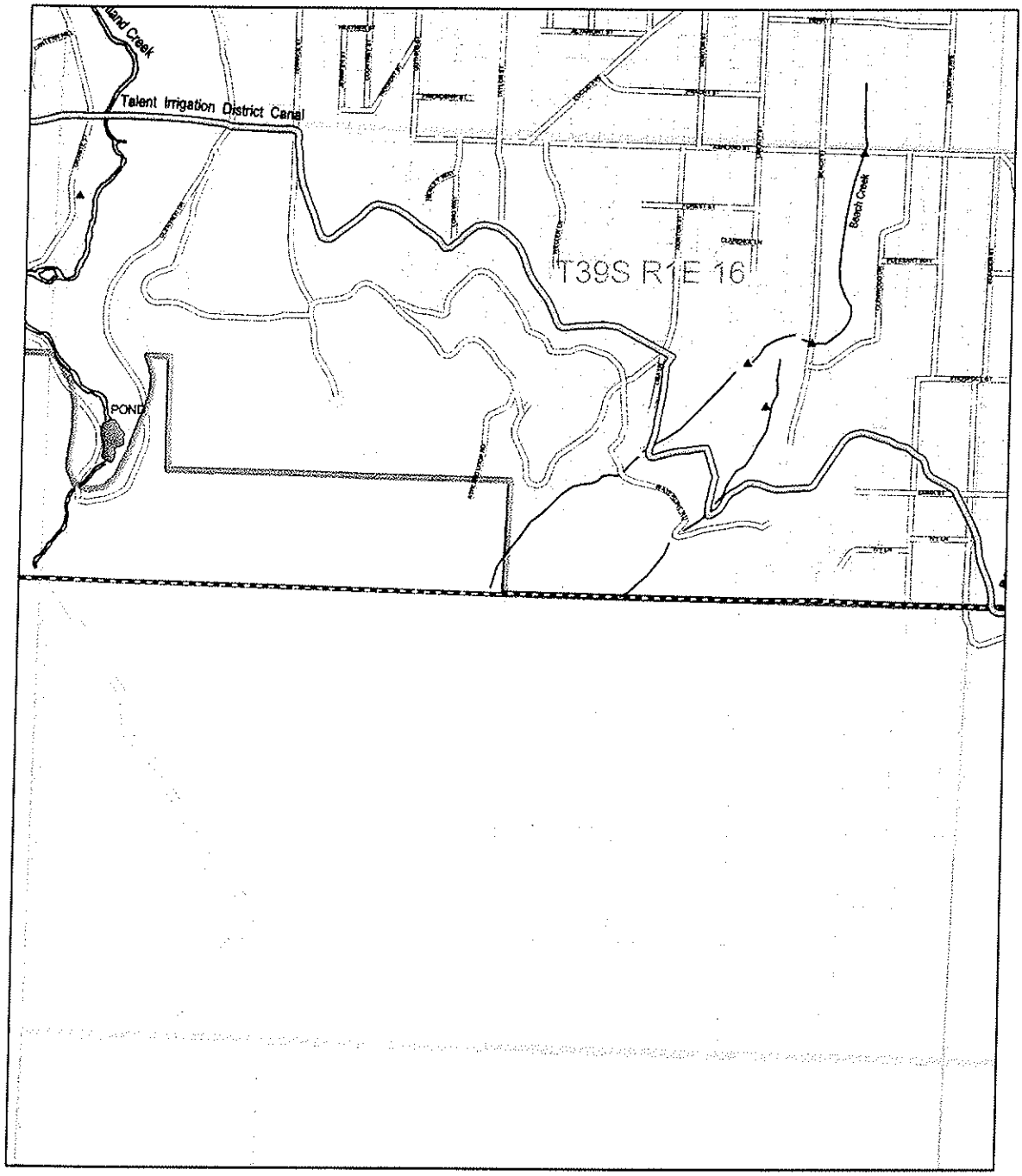
Study area is contained within the Bear Creek watershed

CITY OF ASHLAND

City of Ashland

Local Wetlands Inventory

T39S R1E 16



Legend

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City of Ashland digital orthophotos
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Lambert Conformal Conic
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Latitude Of Origin: 41.666667

GCS North American 1983
Print date: 12/12/06; Prepared By: R. Gutierrez

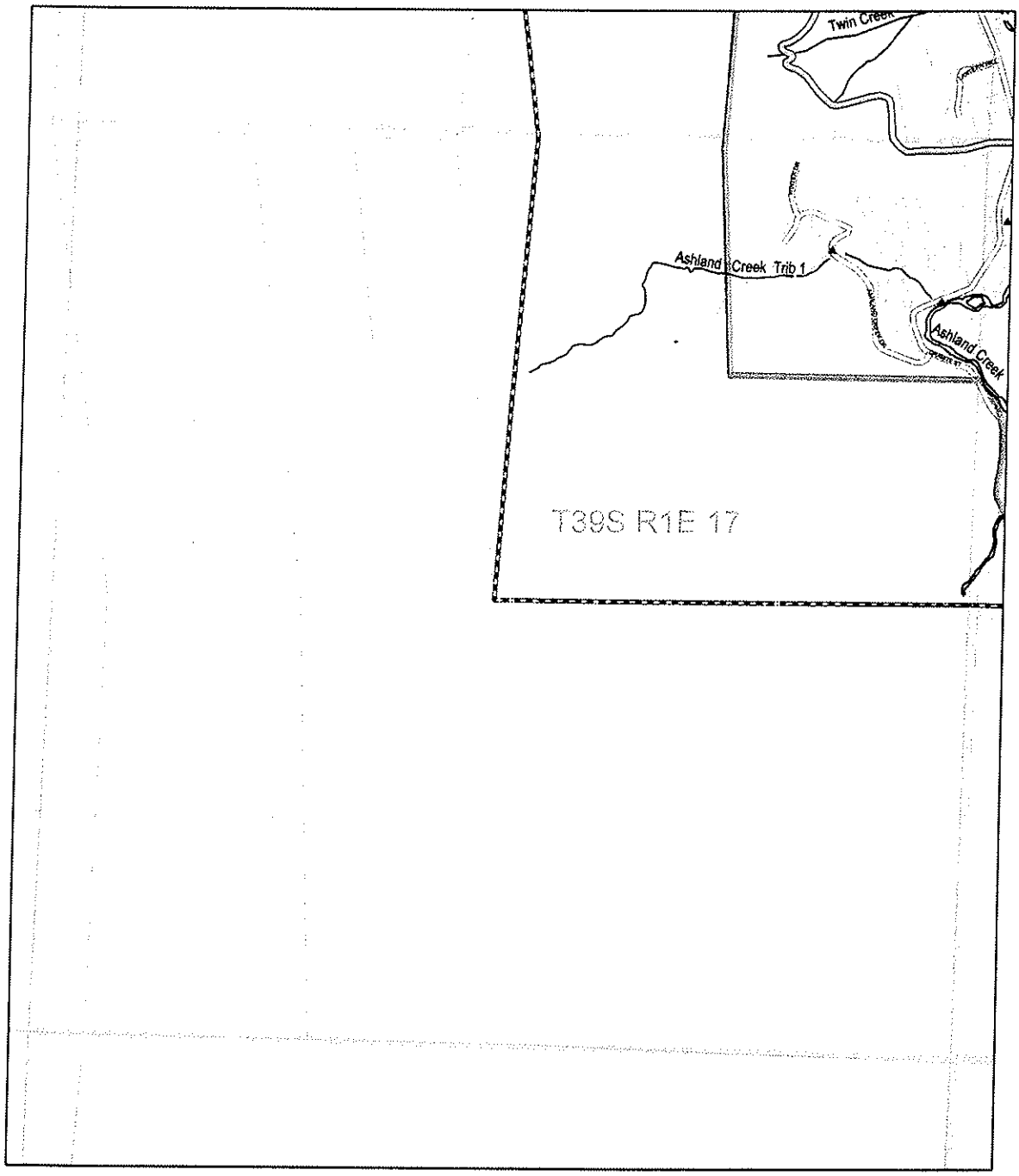
Study area is contained within the Bear Creek watershed

CITY OF ASHLAND

City of Ashland

Local Wetlands Inventory

T39S R1E 17



Legend

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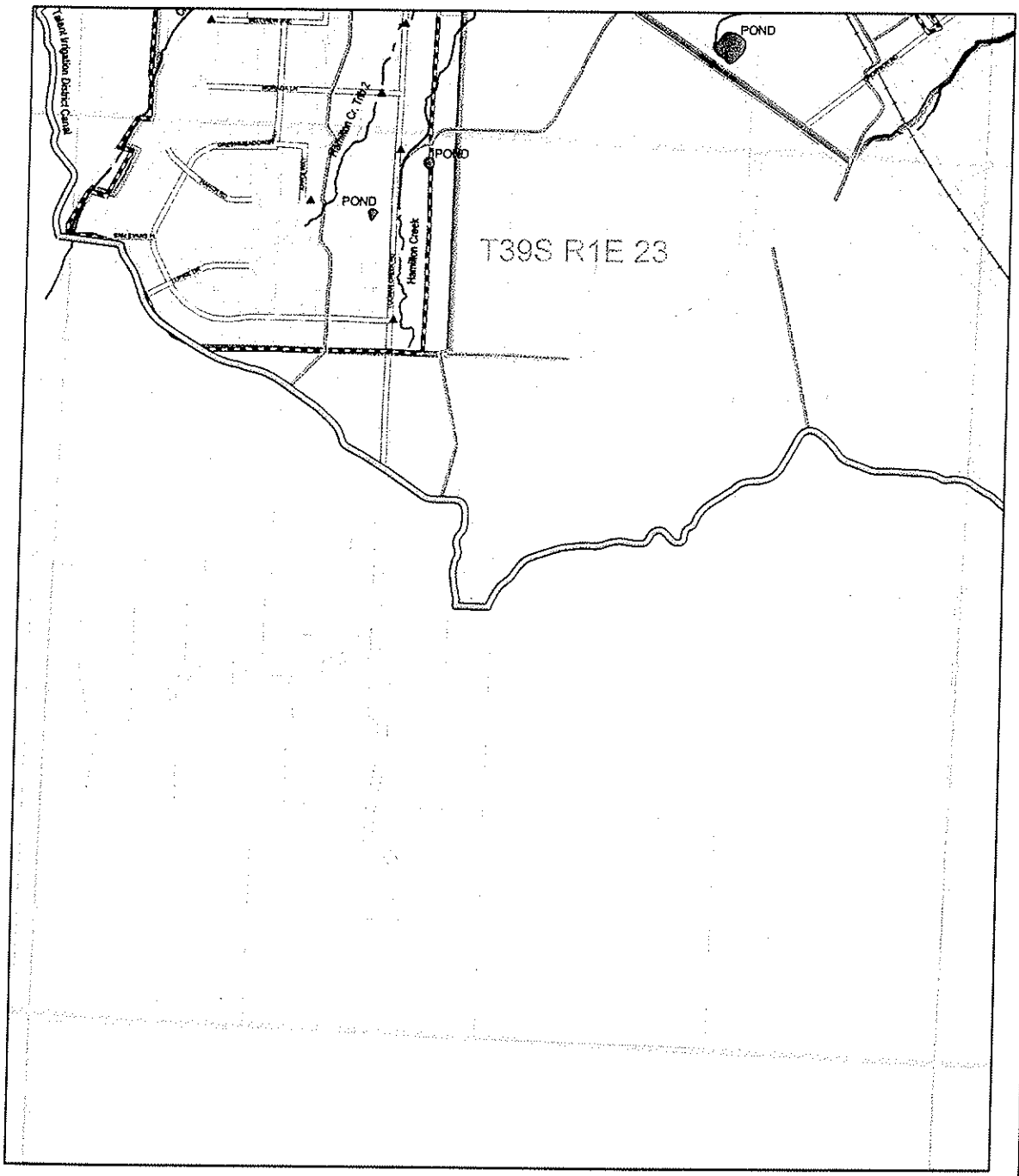
GCS North American 1983
Print date: 12/12/06. Prepared By: R. Gutierrez

City of Ashland

Local Wetlands Inventory

T39S R1E 23



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Latitude Of Origin: 41.666667

GCS North American 1983
Print date: 12/12/06; Prepared By: R. Gutierrez

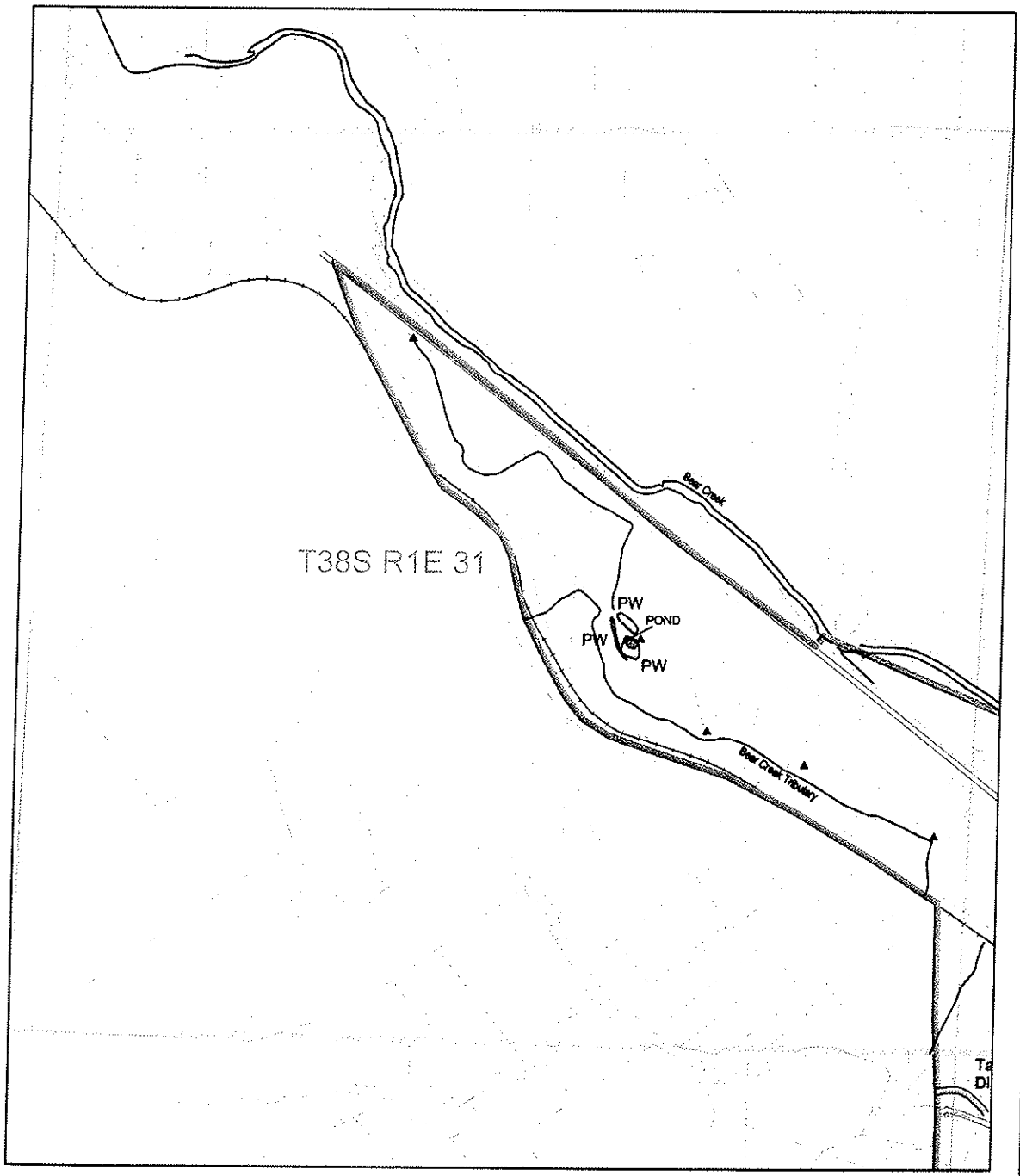
Study area is contained within the Bear Creek watershed

CITY OF ASHLAND

City of Ashland

Local Wetlands Inventory

T38S R1E 31



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Projection Information: NAD 1983 StatePlane Oregon South FIPS 3602 Feet. Lambert Conformal Conic. False Easting: 4921250.000000. False Northing: 0.000000. Central Meridian: -120.500000. Standard Parallel 1: 42.333333. Standard Parallel 2: 44.000000. Latitude Of Origin: 41.666667.

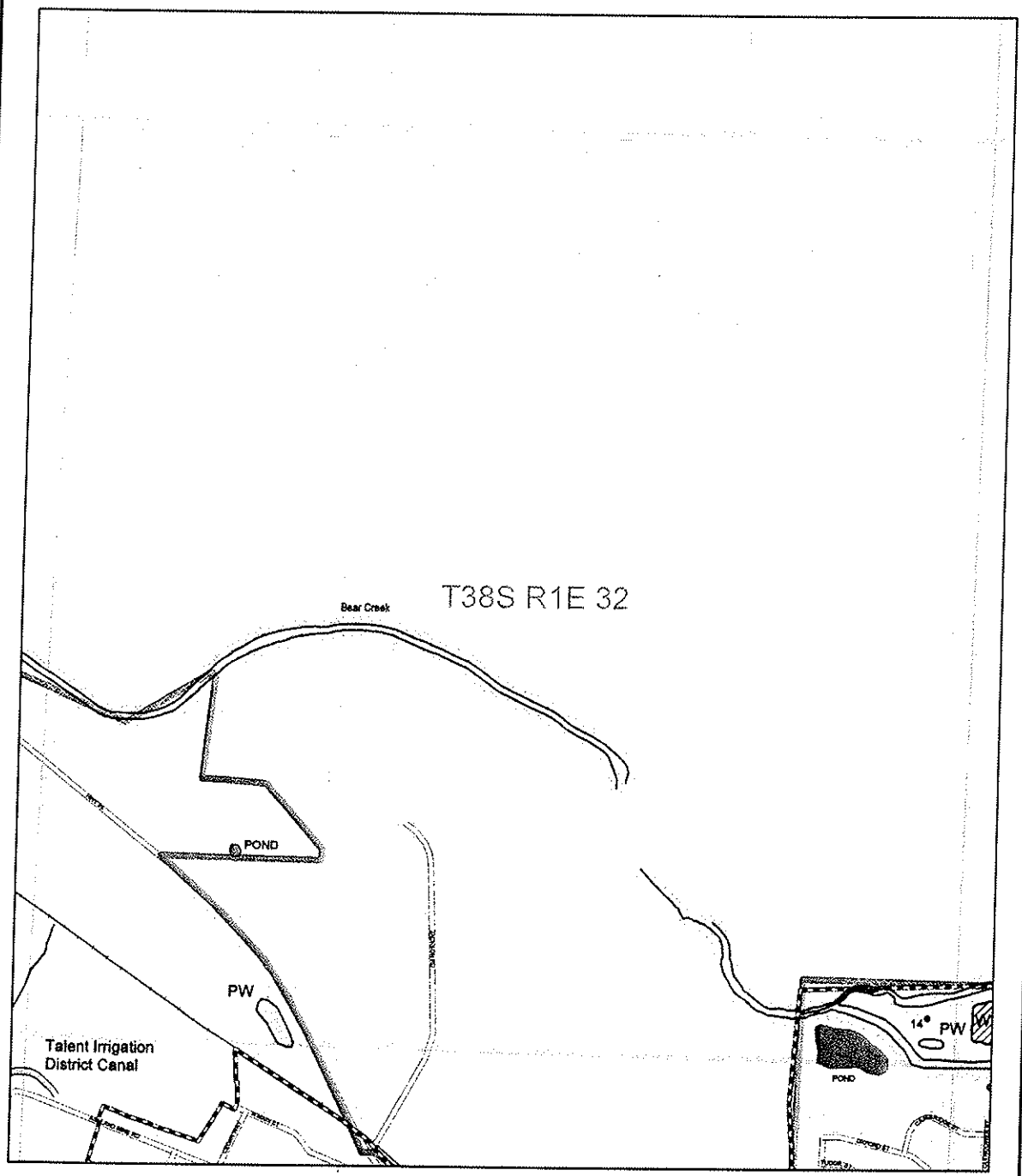
GCS North American 1983. Print date: 12/12/06; Prepared By: R. Gutierrez

CITY OF ASHLAND

City of Ashland

Local Wetlands Inventory

T38S R1E 32



Legend

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GCS North American 1983
Print date: 12/12/06, Prepared By: R. Gutierrez

Study area is contained within the Bear Creek watershed

WETLAND SUMMARY SHEETS
TABLE OF CONTENTS

Site: Wetland 1

Site Code: **W1**
Location: South of Ashland Creek, west of sewage treatment plant, east of BMX park
Township **39S** Range **1E** Section **4** Quarter **NW**
Tax Map Tax lot(s) 391E04BB 102 & 200
DSL #: none

Approximate size (acres): 2.23
Cowardin classification: PEM
HGM classification: Slope Valley
Hydrologic basin: Ashland Creek
Soil type(s): Brader-Debenger, Barron

Sample Plot Number(s): 7, 8 & 9
Field verification date(s): 6/4/03

Dominant Plant Species (Common Names):
Trees:

Shrubs:

Herbs: cattail, poison hemlock, and creeping spikerush

Other:

Primary hydrology source:
(including hydrology source and use of artificially created wetlands; any potential non-jurisdictional status)
Precipitation & groundwater seeps

OFWAM Summary:

Function	Rating	Rationale
Wildlife Habitat:	Medium	1 Cowardin class, no woody vegetation, <0.5 acre open water
Fish Habitat:	Low	wetland does not include a stream, lake or pond
Water Quality:	High	evidence of ponding, high veg. cover, Ashland Creek is WQ limited
Hydrologic Control:	Medium	unrestricted outlet, no woody veg., upstream land use is developed

Determination of Goal 5 Locally Significant Wetland: Significant

Description of the wetland, including topographic position, land uses, alterations, and the basis for the wetland boundary determination:
This emergent wetland is dominated by cattail, poison hemlock (a noxious species) and creeping spikerush. Other species noted in the wetland include meadow foxtail, teasel, Himalayan blackberry, willow-herb, soft rush, sedge and bedstraw. The wetland is connected to Ashland Creek at its downslope edge. Adjacent uplands are dominated by ryebrome, downy cheat grass, tall fescue, geranium and hairy vetch.

Site: Wetland 2

Site Code: **W2**
Location: Ashland Demonstration Wetlands, south of Ashland Creek, east of sewage treatment plant
Township **39S** Range **1E** Section **4** Quarter **NW**
Tax Map Tax lot(s) 391E04BB 200
DSL #: none

Approximate size (acres): 0.16 + 0.22 + 0.26 = 0.64
Cowardin classification: POW/PEM HGM classification: Depressional Closed Nonpermanent
Hydrologic basin: Isolated
Soil type(s): Brader-Debenger

Sample Plot Number(s): none Field verification date(s): 6/4/03 & 6/24/03

Dominant Plant Species (Common Names):
Trees:

Shrubs:

Herbs: narrow-leaf cattail, hardstem bulrush

Other:

Primary hydrology source:
(including hydrology source and use of artificially created wetlands; any potential non-jurisdictional status)
Precipitation

OFWAM Summary:

Function	Rating	Rationale
Wildlife Habitat:	Medium	sparse woody veg., low interspersion, <0.5 acre open water, isolated
Fish Habitat:	Low	small seasonal ponds with no connection to stream, no cover or shade
Water Quality:	High	evidence of ponding, high veg. cover, Ashland Creek is WQ limited
Hydrologic Control:	Medium	outside floodplain, no woody veg., upstream land use is developed

Determination of Goal 5 Locally Significant Wetland: Not locally significant, not subject to state jurisdiction. Note: although Wetland W2 displays intact water quality function, it is excluded from the locally significant wetland criteria according to OAR 141-086-0350(1) since it was created for the purpose of wastewater treatment. The wetland is also non-jurisdictional since it was created in upland soils and is smaller than 1 acre.

Description of the wetland, including topographic position, land uses, alterations, and the basis for the wetland boundary determination:
The Ashland Demonstration Wetlands consist of 3 excavated ponds, 0.16, 0.22 and 0.26 acre in size, dominated by narrow-leaf cattail and hardstem bulrush. The upper pond also contained poison hemlock (noxious) and floating pennywort with red-osier dogwood, rose and willow shrubs planted on the side slopes. The middle pond also contained globepodded hoarycress, a noxious species. The ponds were constructed in 1996 and were lined and planted. The ponds were built as an experimental system to determine their effectiveness for removing

Wetland 2, continued

phosphorous from the City's wastewater. The ponds received 10,000 gallons per day from the sewage treatment plant until 1998 or 1999 when the experiment was discontinued since preliminary results revealed that this type of natural treatment system would not be adequate to meet DEQ's phosphorous standard given the volume of the City's wastewater and small size of the treatment ponds. The wetland/upland boundaries are well-defined by topography and a change to non-hydrophytic vegetation surrounding the ponds consisting of ripgut brome, ryebrome, tall fescue, hairy vetch, and two-color lupine.

Three rectangular areas were excavated immediately north of the Ashland Demonstration Wetlands to provide stormwater infiltration. These areas are currently dominated by non-hydrophytic vegetation and do not meet the wetland criteria. The upper two excavated areas are dominated by dead giant reed (invasive in California), and the lower excavated area is dominated by a brome species. These three excavated areas are not included in the mapping for wetland unit 2.

Site: Wetland 3

Site Code: W3
Location: Billings Ranch, north of railroad, just south of City limits
Township **39S** Range **1E** Section **5** Quarter **NE**
Tax Map Tax lot(s) 391E05 200
DSL #: WD 02-0472; RF-30032

Approximate size (acres): 1.83
Cowardin classification: PEM
Hydrologic basin: Bear Creek
Soil type(s): Shefflein, Coker

HGM classification: Slope Valley

Sample Plot Number(s): none (recent delineation)

Field verification date(s): 6/25/03 (off-site)

Dominant Plant Species (Common Names):
Trees:

Shrubs:

Herbs: common velvetgrass, grass species, bulrush and cattail

Other:

Primary hydrology source:
(including hydrology source and use of artificially created wetlands; any potential non-jurisdictional status)
Precipitation & groundwater seeps (seeps noted in wetland delineation report)

OFWAM Summary:

Function	Rating	Rationale
Wildlife Habitat:	Medium	1 Cowardin class, no woody veg., <0.5 acre open water
Fish Habitat:	Low	wetland does not include a stream, lake or pond
Water Quality:	Medium	primary water source = groundwater, evidence of ponding, high veg. cover
Hydrologic Control:	Medium	outside floodplain, unrestricted outlet, upstream land use is developed

Determination of Goal 5 Locally Significant Wetland: Not locally significant but still jurisdictional

Description of the wetland, including topographic position, land uses, alterations, and the basis for the wetland boundary determination:
The Billings Ranch residential subdivision site was under construction at the time of the site visit. This wetland was viewed from off-site from Nevada Street using binoculars. Grading activity was occurring, and orange construction fencing was present adjacent to the wetland area. Vegetation was dominated by grasses, including common velvetgrass (all species could not be identified with binoculars). Trace amounts of teasel, hardstem bulrush, rush and dock were also noted. The wetland delineation report describes the portion of the wetland to be impacted as being dominated by upland and wetland grasses (often facultative wetland grasses) with lesser amounts of rushes and sedges. The portion of the wetland to be protected is described as having bulrush and cattails.

Wetland 3, continued

This site was delineated in 2002 (DSL WD 2002-0472). A portion of this wetland is slated to be filled under permit (DSL RF-30032), with mitigation to occur adjacent to Billings Pond just north of this wetland. The size of the wetland to remain after permitted impacts is 1.14 acres.

Site: Wetland 4

Site Code: **W4**
Location: Cemetery Creek, north of railroad, south of Main Street
Township **39S** Range **1E** Section **10** Quarter **SE**
Tax Map Tax lot(s) 391E10D 201; 391E10DA 3200, 3500 & 3600
DSL #: WD 03-0203 (east side of tax lot 3600 only)

Approximate size (acres): 3.86
Cowardin classification: PEM
HGM classification: Riverine Flow-Through
Hydrologic basin: Cemetery Creek
Soil type(s): Kubli

Sample Plot Number(s): none (no permission to access)
Field verification date(s): 6/3/03

Dominant Plant Species (Common Names):
Trees:

Shrubs: Pacific willow, weeping willow

Herbs: reed canarygrass, cattail

Other:

Primary hydrology source:
(including hydrology source and use of artificially created wetlands; any potential non-jurisdictional status)
Cemetery Creek, also stormwater input from adjacent residential development to east noted

OFWAM Summary:

Function	Rating	Rationale
Wildlife Habitat:	Medium	1 Cowardin class, no woody veg., <0.5 acre open water
Fish Habitat:	Medium	low shading and cover, adjacent land use is agriculture
Water Quality:	High	evidence of ponding, high veg. cover, adjacent land use is agriculture
Hydrologic Control:	Medium	outside floodplain, unrestricted outlet, upstream land use is developed

Determination of Goal 5 Locally Significant Wetland: Significant

Description of the wetland, including topographic position, land uses, alterations, and the basis for the wetland boundary determination:
This wetland unit is associated with Cemetery Creek. Vegetation is dominated by reed canarygrass (invasive) and cattail, with areas of Pacific willow and weeping willow shrubs. Himalayan blackberry and white poplar shrubs were also noted in areas. A few black cottonwood trees are also present along the stream. The wetland is closely bordered by residential development along its east edge. The western wetland boundary is defined by a change to upland grasses. A wetland fill violation occurred at the west end of Creek Drive, and an on-site wetland determination was conducted by the Division of State Lands in April 2003 (DSL WD 03-0203).

Site: Wetland 5

Site Code: **W5**
Location: Clear Creek Village mitigation site, north of Chegar Street, south of Hersey Street
Township **39S** Range **1E** Section **4** Quarter **SW**
Tax Map Tax lot(s) 391E04CD 1904
DSL #: WD 02-0292

Approximate size (acres): 1.29
Cowardin classification: PEM/POW
Hydrologic basin: Clear Creek
Soil type(s): Coker

HGM classification: Riverine Impounding

Sample Plot Number(s): none

Field verification date(s): 6/3/03

Dominant Plant Species (Common Names):
Trees:

Shrubs: Oregon ash, red-osier dogwood, Douglas spirea, willow, red elderberry

Herbs: cattail, hardstem bulrush, rush, blue wildrye, tufted hairgrass, buttercup

Other:

Primary hydrology source:
(including hydrology source and use of artificially created wetlands; any potential non-jurisdictional status)
Stormwater runoff, wetland is the headwaters of Clear Creek

OFWAM Summary:

Function	Rating	Rationale
Wildlife Habitat:	Medium	mod. interspersion, <0.5 acre open water, adjacent land use = developed
Fish Habitat:	Medium	low shading and cover, adjacent land use is developed
Water Quality:	High	evidence of ponding, high veg. cover, adjacent land use is developed
Hydrologic Control:	High	enclosed basin, evidence of ponding, upstream land use is developed

Determination of Goal 5 Locally Significant Wetland: Significant

Description of the wetland, including topographic position, land uses, alterations, and the basis for the wetland boundary determination:
A wetland delineation of the Clear Creek Village mitigation site was recently conducted by Integrated Environmental Design (DSL WD 02-0292). Two on-line ponds are present on Clear Creek. The site contains a diverse vegetation community in the emergent wetland area and native shrub plantings should develop into a scrub-shrub wetland community over time. Wetland boundaries are well-defined by topography and a change to non-hydrophytic vegetation.

Site: Wetland 6

Site Code: **W6**
Location: Knoll Creek, north of Interstate-5, south of East Main Street
Township **39S** Range **1E** Section **11** Quarter **SE**
Tax Map Tax lot(s) 391E11D 100, 300, 900 & 1000
DSL #: none

Approximate size (acres): 1.71
Cowardin classification: PEM HGM classification: Riverine Flow-Through
Hydrologic basin: Knoll Creek
Soil type(s): Kubli, Brader-Debenger, Central Point

Sample Plot Number(s): none (no permission to access) Field verification date(s): 6/4/03 (off-site)

Dominant Plant Species (Common Names):
Trees:

Shrubs:

Herbs: cattail, rush

Other:

Primary hydrology source:
(including hydrology source and use of artificially created wetlands; any potential non-jurisdictional status)
Knoll Creek

OFWAM Summary:

Function	Rating	Rationale
Wildlife Habitat:	Medium	sparse woody vegetation, moderate interspersion, <0.5 acre open water
Fish Habitat:	High	natural stream channel, adjacent land use is undeveloped
Water Quality:	High	surface water-driven, evidence of ponding, high veg. cover
Hydrologic Control:	Medium	outside floodplain, unrestricted outlet, upstream land use is developed

Determination of Goal 5 Locally Significant Wetland: Significant

Description of the wetland, including topographic position, land uses, alterations, and the basis for the wetland boundary determination:
This unit was viewed from off-site from the Windmill Inn parking lot using binoculars. Two stream-associated wetlands are present along Knoll Creek. The wetlands are predominantly emergent with a minor scrub-shrub component. Vegetation is dominated by cattail and rush, with a few willow, black cottonwood, Oregon ash and rose shrubs also present. Adjacent uplands are dominated by Himalayan blackberry and upland grasses.

Site: Wetland 7

Site Code: **W7**
Location: North Mountain Nature Park, south of Bear Creek, east of Mountain Avenue
Township **39S** Range **1E** Section **4** Quarter **SE**
Tax Map Tax lot(s) 391E04DA 300; 391E04DD 100 & 400
DSL #: WD 95-0229

Approximate size (acres): 3.25
Cowardin classification: PEM/POW
Hydrologic basin: Bear Creek
Soil type(s): Camas-Newberg-Evans

HGM classification: Riverine Impounding

Sample Plot Number(s): none

Field verification date(s): 6/24/03

Dominant Plant Species (Common Names):
Trees:

Shrubs: Douglas spirea, Oregon ash, sandbar willow, black hawthorn and black cottonwood

Herbs: cattail, hardstem bulrush, soft rush, sedge, meadow foxtail, bentgrass and creeping buttercup

Other:

Primary hydrology source:
(including hydrology source and use of artificially created wetlands; any potential non-jurisdictional status)
Beach Creek (ponds) & precipitation (emergent wetlands)

OFWAM Summary:

Function	Rating	Rationale
Wildlife Habitat:	High	connected to Beach & Bear Creeks, moderate interspersion, wide buffer
Fish Habitat:	Medium	low shading and cover, stream channel modified (on-line ponds)
Water Quality:	High	surface water-driven, evidence of ponding, high veg. cover
Hydrologic Control:	High	within floodplain, evidence of ponding, upstream land use is developed

Determination of Goal 5 Locally Significant Wetland: Significant

Description of the wetland, including topographic position, land uses, alterations, and the basis for the wetland boundary determination:
Three on-line ponds (upper, middle and lower ponds) are present on Beach Creek. We refer to the pond at the downstream end of Beach Creek as the lower pond and to the pond further upstream on Beach Creek the upper pond, although the North Mountain Park informational brochure refers to the lower pond as the upper pond and vice versa. The ponds are fringed by emergent wetlands containing cattail, hardstem bulrush, soft rush, sedge, and meadow foxtail with Douglas spirea, Oregon ash, sandbar willow, black hawthorn, and black cottonwood shrubs. The lower wetlands are located in the floodway of Bear Creek. Floating aquatic vegetation in the ponds includes lesser duckweed and Mexican water fern. Western pond turtle were observed in the upper pond. Additional emergent wetland vegetation observed in the non-ponded areas included meadow foxtail, bentgrass, creeping buttercup, teasel, Watson's willow-herb, and rush.

Site: Wetland 8

Site Code: **W8**
Location: North of Bear Creek, west of Mountain Avenue
Township **39S** Range **1E** Section **4** Quarter **NE**
Tax Map Tax lot(s) 391E04AC 900
DSL #: none

Approximate size (acres): 0.90
Cowardin classification: PSS HGM classification: Slope Valley
Hydrologic basin: Isolated, no apparent connection to Bear Creek
Soil type(s): Camas-Newberg-Evans, Darow, Medford

Sample Plot Number(s): 16 & 17 Field verification date(s): 6/24/03

Dominant Plant Species (Common Names):
Trees:

Shrubs: sandbar willow, Pacific willow and Himalayan blackberry

Herbs:

Other:

Primary hydrology source:
(including hydrology source and use of artificially created wetlands; any potential non-jurisdictional status)
Precipitation, may be spring-fed

OFWAM Summary:

Function	Rating	Rationale
Wildlife Habitat:	Medium	1 Cowardin class, <0.5 acre open water, isolated
Fish Habitat:	Low	wetland does not include a stream, lake or pond
Water Quality:	Medium	no evidence of ponding, high veg. cover, Bear Creek is WQ limited
Hydrologic Control:	High	restricted outlet, woody veg., upstream land use is developed

Determination of Goal 5 Locally Significant Wetland: Significant

Description of the wetland, including topographic position, land uses, alterations, and the basis for the wetland boundary determination:
This scrub-shrub wetland is dominated by sandbar willow and Pacific willow shrubs surrounded by a dense Himalayan blackberry thicket. One Oregon ash tree was also present in the wetland, along with trace amounts of soft rush, spreading rush and teasel (invasive). This wetland is bordered on the south and west by a gravel road, and no culvert was observed under the road that would connect the wetland with Bear Creek to the south. Upland vegetation adjacent to the wetland is dominated by yellow starthistle (noxious), ripgut brome, tumblemustard, poison hemlock (noxious), teasel and Himalayan blackberry and hairy.

Site: Wetland 9

Site Code: **W9**
Location: North of railroad, south of East Main Street, west of Cemetery Creek
Township **39S** Range **1E** Section **10** Quarter **NE & SE**
Tax Map Tax lot(s) 391E10D 903, 909, 910, 913 & 1000
DSL #: WD 91-0031

Approximate size (acres): 5.38
Cowardin classification: PEM
Hydrologic basin: Isolated
Soil type(s): Kubli

HGM classification: Slope Valley

Sample Plot Number(s): none (difficult access)

Field verification date(s): 6/25/03 (off-site)

Dominant Plant Species (Common Names):
Trees:

Shrubs: Himalayan blackberry is around the perimeter

Herbs: (from 1991 delineation) fine grass, cattail, soft rush, creeping buttercup, common velvetgrass

Other:

Primary hydrology source:
(including hydrology source and use of artificially created wetlands; any potential non-jurisdictional status)
Precipitation, apparently spring-fed

OFWAM Summary:

Function	Rating	Rationale
Wildlife Habitat:	Medium	1 Cowardin class, <0.5 acre open water, isolated
Fish Habitat:	Low	wetland does not include a stream, lake or pond
Water Quality:	High	evidence of ponding, high veg. cover, adjacent land use is developed
Hydrologic Control:	High	evidence of ponding, outlet restricted, upstream land use is developed

Determination of Goal 5 Locally Significant Wetland: Significant

Description of the wetland, including topographic position, land uses, alterations, and the basis for the wetland boundary determination:
This wetland was difficult to view from off-site due to the presence of berms bordering much of the site and the lack of viewing points from adjacent roads. The south portion of the wetland was partially viewed from a permission to access parcel on Normal Street and was observed to be surrounded by dense blackberry with a few a few willow and black cottonwood. A portion of this wetland was delineated in 1991 (DSL WD 91-0031). Wetland vegetation on the wetland data sheets included a fine grass, cattail, soft rush, creeping buttercup, common velvetgrass and Himalayan blackberry.

Site: Wetland 10

Site Code: **W10**
Location: North of Highway 66, south of Neil Creek
Township **39S** Range **1E** Section **13** Quarter **NW**
Tax Map Tax lot(s) 391E13B 2001
DSL #: WD 90-0119

Approximate size (acres): 2.12
Cowardin classification: PEM HGM classification: Slope Valley
Hydrologic basin: Neil Creek
Soil type(s): Barron, Kubli, Camas-Newberg-Evans

Sample Plot Number(s): 19 & 20 Field verification date(s): 6/25/03 & 6/26/03

Dominant Plant Species (Common Names):
Trees:

Shrubs:

Herbs: reed canarygrass, poison hemlock, teasel

Other:

Primary hydrology source:
(including hydrology source and use of artificially created wetlands; any potential non-jurisdictional status)
Precipitation

OFWAM Summary:

Function	Rating	Rationale
Wildlife Habitat:	Medium	1 Cowardin class, no woody vegetation, <0.5 acre open water
Fish Habitat:	Low	wetland does not include a stream, lake or pond
Water Quality:	Medium	no evidence of ponding, high veg. cover, Neil Creek is WQ limited
Hydrologic Control:	Medium	within floodplain, unrestricted outlet, upstream land use is developed

Determination of Goal 5 Locally Significant Wetland: Significant

Description of the wetland, including topographic position, land uses, alterations, and the basis for the wetland boundary determination:
This wetland is dominated by reed canarygrass (invasive), poison hemlock (noxious) and teasel (invasive). A few willow, white alder and Oregon ash shrubs are also present. Soils are hummocky, indicating possible prior agricultural use. The wetland appears to be connected to Neil Creek at its downslope end. Adjacent uplands consist of quack grass, ripgut brome, downy cheat grass, yellow starthistle (noxious), globepodded hoarycress (noxious) and Himalayan blackberry.

Historically this site appears to have been upland, per the 1990 wetland determination; however, recent normal hydrologic conditions present for several years support a revised finding that it is now jurisdictional wetland.

Site: Wetland 11

Site Code: **W11**
Location: Southwest of Washington Street & Interstate-5, north of railroad
Township **39S** Range **1E** Section **14** Quarter **NE**
Tax Map Tax lot(s) 391E14A 1102 & 1104
DSL #: none

Approximate size (acres): 0.85
Cowardin classification: PEM
HGM classification: Slope Valley
Hydrologic basin: Knoll Creek
Soil type(s): Kubli

Sample Plot Number(s): none (no permission to access)
Field verification date(s): 6/5/03

Dominant Plant Species (Common Names):
Trees:

Shrubs:

Herbs: meadow foxtail

Other:

Primary hydrology source:
(including hydrology source and use of artificially created wetlands; any potential non-jurisdictional status)
Precipitation

OFWAM Summary:

Function	Rating	Rationale
Wildlife Habitat:	Medium	1 Cowardin class, no woody vegetation, <0.5 acre open water
Fish Habitat:	Low	wetland does not include a stream, lake or pond
Water Quality:	Medium	no evidence of ponding, high veg. cover, adjacent land use is developed
Hydrologic Control:	Medium	outside floodplain, no evidence of ponding, upstream land use developed

Determination of Goal 5 Locally Significant Wetland: Not locally significant but still jurisdictional

Description of the wetland, including topographic position, land uses, alterations, and the basis for the wetland boundary determination:
This wetland was viewed from off-site from Washington Street with binoculars. This wetland consists of a roadside emergent wetland along the southwest side of Washington Street, dominated by meadow foxtail, with lesser amounts of blue wildrye, birdsfoot-trefoil and catchweed bedstraw. This wetland is connected to Knoll Creek via a roadside ditch at its downstream end. The wetland boundary is defined by a change to upland grasses.

Site: Wetland 12

Site Code: **W12**
Location: West of Cemetery Creek, north of railroad, south of East Main Street
Township **39S** Range **1E** Section **10** Quarter **NE & SE**
Tax Map Tax lot(s) 391E10D 201, 203, 204, 300 & 700
DSL #: none

Approximate size (acres): 1.68
Cowardin classification: PEM
HGM classification: Slope Valley
Hydrologic basin: Cemetery Creek
Soil type(s): Kubli

Sample Plot Number(s): 10 & 11
Field verification date(s): 6/5/03

Dominant Plant Species (Common Names):
Trees:

Shrubs:

Herbs: cattail, meadow foxtail, water foxtail and soft rush

Other:

Primary hydrology source:
(including hydrology source and use of artificially created wetlands; any potential non-jurisdictional status)
Precipitation & TID

OFWAM Summary:

Function	Rating	Rationale
Wildlife Habitat:	Medium	1 Cowardin class, no woody vegetation, <0.5 acre open water
Fish Habitat:	Low	wetland does not include a stream, lake or pond
Water Quality:	High	evidence of ponding, high veg. cover, adjacent land use is agriculture
Hydrologic Control:	Medium	outside floodplain, unrestricted outlet, upstream land use is developed

Determination of Goal 5 Locally Significant Wetland: Significant

Description of the wetland, including topographic position, land uses, alterations, and the basis for the wetland boundary determination:
This wetland swale originates in a horse pasture north of the railroad tracks and is located approximately 400 feet west of Cemetery Creek. The wetland is dominated by cattail, meadow foxtail, water foxtail and soft rush. Lesser amounts of western buttercup, forget-me-not, common velvetgrass, spreading rush and creeping spikerush were also present, with a few black cottonwood trees also present in the northern portion. Adjacent uplands contain Mediterranean barley, ryebrome, tall fescue, yellow clover and mayweed chamomile.

Site: Wetland 13

Site Code: **W13**
Location: West of Hamilton Creek, north of Ashland Street, south of East Main Street
Township **39S** Range **1E** Section **11** Quarter **SW**
Tax Map Tax lot(s) 391E11C 2500; 391E11CA 2762 & 12761; 391E11CB 1000 & 1100
DSL #: WD 01-0613

Approximate size (acres): 1.41
Cowardin classification: PEM
Hydrologic basin: Bear Creek
Soil type(s): Kubli

HGM classification: Slope Valley

Sample Plot Number(s): 1 - 4

Field verification date(s): 6/3/03

Dominant Plant Species (Common Names):
Trees:

Shrubs:

Herbs: common velvetgrass, meadow foxtail, Kentucky bluegrass, soft rush, cattail and spearmint

Other:

Primary hydrology source:
(including hydrology source and use of artificially created wetlands; any potential non-jurisdictional status)
Precipitation & TID

OFWAM Summary:

Function	Rating	Rationale
Wildlife Habitat:	Medium	1 Cowardin class, no woody vegetation, <0.5 acre open water
Fish Habitat:	Low	wetland does not include a stream, lake or pond
Water Quality:	High	evidence of ponding, high veg. cover, adjacent land use is agriculture
Hydrologic Control:	Medium	outside floodplain, unrestricted outlet, upstream land use is developed

Determination of Goal 5 Locally Significant Wetland: Significant

Description of the wetland, including topographic position, land uses, alterations, and the basis for the wetland boundary determination:
This wetland is the headwaters of a small unnamed tributary to Bear Creek that flows behind a residential subdivision. The wetland consists of a gentle topographic swale trending north through several agricultural properties. A portion of this wetland was previously delineated (DSL WD 01-0613) and the adjacent area was partially plowed up to the edge of wetland. The wetland is described as containing common velvetgrass, meadow foxtail, Kentucky bluegrass, soft rush, cattail and spearmint in the wetland delineation report. Several Canada geese were observed on the headwater area in this area from off-site. Uplands are meadow foxtail, brome, tall fescue and orchard grass.

Site: Wetland 14

Site Code: **W14**
Location: East pond between Ashland Creek & Bear Creek, downstream of sewage treatment plant
Township **38S** Range **1E** Section **33** Quarter **SW**
Tax Map Tax lot(s) 391E05 100
DSL #:

Approximate size (acres): 1.16
Cowardin classification: POW/PEM HGM classification: Depressional Closed Nonpermanent
Hydrologic basin: Ashland Creek
Soil type(s): Camas-Newberg-Evans

Sample Plot Number(s): Field verification date(s): 6/24/03

Dominant Plant Species (Common Names):
Trees:

Shrubs: Himalayan blackberry, Oregon ash, willow and black cottonwood

Herbs: cattail, knotweed (*Polygonum* species), yellow iris, poison hemlock and willow-herb

Other:

Primary hydrology source:
(including hydrology source and use of artificially created wetlands; any potential non-jurisdictional status)
Inlet from Ashland Creek

OFWAM Summary:

Function	Rating	Rationale
Wildlife Habitat:	High	>1 acre open water (seasonal) & emergent veg., connected to Ashland Cr.
Fish Habitat:	Medium	low shading and cover, Ashland Creek is water quality limited
Water Quality:	Medium	moderate veg. cover, adj. land use undeveloped, Ashland Cr. WQ limited
Hydrologic Control:	High	within floodplain, evidence of ponding, restricted outlet

Determination of Goal 5 Locally Significant Wetland: Significant

Description of the wetland, including topographic position, land uses, alterations, and the basis for the wetland boundary determination:
This wetland is a seasonal open water pond located near the confluence of Ashland Creek with Bear Creek just downstream of the Ashland sewage treatment plant. The pond is signed as the "Ashland Sediment Passive Treatment Pond" and was reportedly constructed in 1987 as a settlement pond to divert water from Ashland Creek during sluicing of the upstream Reader Reservoir. Sluicing last occurred in 1985. The pond is connected to Ashland Creek and contains both an inlet and outlet structure. The pond bottom and side slopes are comprised of granite sediment. Pond depth appeared to range from 1 to 6 feet. Vegetation fringing the pond includes cattail, yellow iris, poison hemlock, willow-herb, a few Oregon ash, willow and black cottonwood shrubs. Dense Himalayan blackberry is present along the north side adjacent to Bear Creek. Small diameter

Wetland 14, continued

branches and woody debris were present in the pond. The pond dries up in the summer and becomes an emergent wetland dominated by knotweed in the middle and other emergents around the perimeter. Wildlife use included the following birds: wood duck, mallard, barn swallow, tree swallow, red-winged blackbird, and great blue heron.

RIPARIAN SUMMARY SHEETS
TABLE OF CONTENTS

Site: Ashland Creek

Township **38S** Range **1E** Section **32**; Township **39S** Range **1E** Sections **4, 9, 16 & 17**

Sample Plot Number(s): 13 (upland) Field verification date(s): 6/4/03, 6/5/03, 6/24/03, 6/26/03

Dominant Plant Species (Common Names):
Trees:
White alder, black cottonwood, big-leaf maple, Oregon ash, and Pacific willow; with lesser amounts of weeping willow, choke cherry, incense cedar, and Douglas fir

Shrubs:
Oregon ash, Pacific willow, sandbar willow, red-osier dogwood, and Himalayan blackberry, with lesser amounts of snowberry, mock orange, Pacific ninebark, bittersweet nightshade, Pacific yew, thimbleberry, oceanspray, beaked hazelnut, madrone, and California myrtle

Herbs:
English ivy, periwinkle, sword fern

Other:

Description:
Ashland Creek originates outside the study area in the steep hillside south of Ashland. The Granite Street Reservoir is present on Ashland Creek at the upstream end of the study area. The reservoir is surrounded by a fringe of Himalayan blackberry with black cottonwood, white alder, Pacific willow, Oregon ash, Oregon white oak and big-leaf maple trees.

The upstream portion of Ashland Creek meanders through Lithia Park for approximately 1 mile. Ashland Creek receives flow from Lithia Springs. The stream channel ranges from 15 to 30 feet wide and generally widens as it trends downstream. Cobbles, boulders, and woody debris provide good in-stream structure, and the stream is well shaded by a riparian and upland forest consisting of white alder, big-leaf maple, and Oregon ash. Invasive species including Himalayan blackberry and English ivy are present in a few areas along Ashland Creek. The stream channel is confined by well-defined stream banks in Lithia Park. No wetland benches were noted; however, a few off-channel shallow water areas were created during the 1996 flood. These shallow water areas contain mannagrass, common velvetgrass, American speedwell, sawbeak sedge, and willow-herb. Two off-line ponds are present adjacent to Ashland Creek. Both ponds have concrete lined sides with embedded boulders and contain floating "Lake Restorer" islands designed to improve water quality. The upper pond is the larger pond and is used by wood ducks, mallards, and turtles. A few topographic draws were noted in the steep hillside above Ashland Creek, indicating that intermittent drainages may flow downslope to Ashland Creek. At the downstream end of Lithia Park beginning at the bridge at Calle Guanajuato Way, Ashland Creek is confined within a series of concrete sidewalls, some with adjacent planter boxes containing red-osier dogwood and willow shrubs.

The downstream portion of Ashland Creek ranges from 10 to 20 feet wide and is bordered predominantly by residential development, a few agricultural parcels and the Ashland Community Garden. Ashland Creek contains good in-stream structure with many cobbles and boulders as well as

Ashland Creek, continued

in-stream woody debris in some areas. Portions of the stream channel bottom are comprised of bedrock. Ashland Creek is confined within its stream banks due to topography of the adjacent side slopes and armoring of banks with riprap and boulders in some areas; therefore, wetland benches are generally not present along Ashland Creek. A riparian and upland forest corridor generally ranging from 50 to 150 feet wide is present along Ashland Creek. Development along Ashland Creek has resulted in some fragmentation and open canopy areas, but the stream is well-shaded in many areas. Dominant riparian vegetation consists of white alder, black cottonwood, Oregon ash, Pacific willow, sandbar willow, weeping willow and red-osier dogwood. Some areas of Himalayan blackberry and English ivy were noted, although invasive species are not generally dominant along the stream corridor.

Two large man-made open water ponds are present near the confluence of Ashland Creek with Bear Creek just downstream of the Ashland sewage treatment plant. The east pond is seasonal and becomes an emergent wetland in the summer and was therefore mapped as wetland unit W14.

The west pond (1.9 acres) is accessible from a trail off the end of Glendower and appears to be a diversion pond from Ashland Creek. The pond was reported to have been constructed approximately 30 years ago. An overflow structure to Ashland Creek was noted at the west end. The pond contains a fringe of reed canarygrass, teasel, and poison hemlock with scattered black cottonwood, sandbar willow, Oregon ash and rose shrubs. This pond appears to contain water year-round and was therefore mapped as a pond rather than a wetland. Wildlife use noted includes wood duck, mallards and western pond turtle.

Site: Ashland Creek Tributary 1

Township **39S** Range **1E** Section **17**

Sample Plot Number(s): none

Field verification date(s): 6/26/03

Dominant Plant Species (Common Names):
Trees:

Shrubs:
Willow, Himalayan blackberry, Oregon ash

Herbs:
Common horsetail, soft rush, periwinkle, sword fern, hosta, columbine

Other:

Description:
The headwaters of this tributary to Ashland Creek are located in the steep hillside to the west of Ashland Creek. The stream channel is confined within steep side slopes and is 2 to 5 feet wide with large cobbles. The stream was not flowing during the June site visits. Riparian side slopes contained a mixture of native and ornamental species in the herb layer. Adjacent uplands contain paintbrush, oceanspray, poison oak, madrone, and Oregon white oak.

Site: Beach Creek

Township **39S** Range **1E** Sections **4, 9 & 16**

Sample Plot Number(s): none

Field verification date(s): 6/4/03, 6/24/03

Dominant Plant Species (Common Names):
Trees:
Big-leaf maple, Oregon white oak

Shrubs:
Oregon ash, Pacific willow, willow

Herbs:
cattail, curve-pod yellow-cress, poison hemlock, spearmint, teasel, bittersweet nightshade, yellow starthistle

Other:

Description:
The downstream section of Beach Creek daylights north of the railroad tracks where the stream is confined within steep Himalayan blackberry covered slopes. A weir structure is present on Beach Creek at the BPA substation site. Sedimentation has occurred upstream of the weir and a narrow wetland fringe is present containing cattail, curve-pod yellow-cress, poison hemlock and Pacific willow. A few Oregon ash and willow shrubs are also present, along with planted big-leaf maple and Oregon white oak saplings. Downstream vegetation along the stream channel consists of spearmint, teasel, bittersweet nightshade and yellow starthistle. Uplands consist of downy cheat grass, blue wildrye, Italian ryegrass, and planted big-leaf maple saplings. Downstream of the BPA substation, Beach Creek and an emergent wetland swale flow northwest through the North Mountain Nature Park to Bear Creek. Three on-line ponds (upper, middle and lower ponds) are present on Beach Creek. These ponds and associated wetlands were mapped as wetland unit 7.

The headwaters of Beach Creek originate in the steep hillside south of Ashland Street. Much of the stream is culverted through residential development. Beach Creek is intermittent where it is daylighted above Ashland Street. Downstream of Beach Street, the stream is bordered by steep side slopes with dense Himalayan blackberry and Pacific willow, black cottonwood and weeping willow trees in the riparian area. Adjacent uplands contain catchweed bedstraw, periwinkle, Himalayan blackberry, Oregon white oak and ponderosa pine. Upstream of Beach Street, Beach Creek is forked. The east fork is approximately 1 foot wide and flows through a rock and flagstone water feature through a backyard area and then continues upslope where it is confined at the bottom of steep Himalayan blackberry covered side slopes with tall fescue, bulbous bluegrass, and Oregon white oak further upslope. The west fork is an undefined channel at the bottom of a steep topographic ravine with very sparse herb layer that had been recently cleared of blackberry. Oregon white oak, madrone, big-leaf maple, Douglas fir and ponderosa pine were present in the tree canopy.

Site: Bear Creek

Township **38S** Range **1E** Sections **31 & 32**; Township **39S** Range **1E** Sections **4 & 11**

Sample Plot Number(s): 14 (upland) Field verification date(s): 6/5/03, 6/24/03, 6/26/03

Dominant Plant Species (Common Names):
Trees:
black cottonwood, white alder, Oregon ash, weeping willow

Shrubs:
Himalayan blackberry, Pacific willow, sandbar willow, Piper's willow, black hawthorn

Herbs:
cattail, soft rush, common horsetail, curve-pod yellow-cress, buttercup, poison hemlock, teasel, hardstem bulrush

Other:

Description:
Bear Creek originates at the confluence of Emigrant Creek and Neil Creek just downstream of the airport. The downstream portion of Bear Creek varies from 30 to 75 feet wide. Bear Creek was observed at the Mountain Avenue bridge and the Bear Creek Greenway Trail bridge (Talent-Ashland Trail segment). The portion of Bear Creek located within the study area is bordered mostly by undeveloped land. Bear Creek has good in-stream structure with many cobbles and nice channel meanders. Bear Creek is topographically confined within its stream banks; therefore, wetland benches are generally not present. The stream is well-shaded by its riparian corridor which contains a mixture of native trees and shrubs and is generally dominated by black cottonwood, white alder, and Oregon ash in the tree canopy and by Pacific willow, sandbar willow and Piper's willow in the shrub layer. The stream channel is inaccessible in many areas due to dense thickets of Himalayan blackberry in the riparian corridor. An approximately 20 foot wide wetland bench containing cattail, yellow iris, American speedwell and soft rush is present on the north bank, downstream of Mountain Avenue. The stream channel is confined in this location by a steep Himalayan blackberry covered slope on the south bank. Two great blue heron nests with herons were observed in black cottonwood trees in the riparian corridor near Mt. Meadows Drive. Adjacent uplands contain a variety of upland pasture grasses, yellow starthistle, poison hemlock, Himalayan blackberry, oak and ponderosa pine.

The North Mountain Nature Park borders Bear Creek to the south at the northeast edge of the study area. The 14 acre park is being managed and enhanced by planting a variety of native species with the goal of improving the quality of fish and wildlife habitat in the Bear Creek riparian corridor. Bear Creek adjacent to the North Mountain Nature Park was approximately 30 to 35 feet wide and was flowing 1 to 2 feet deep and contained many in-stream cobbles and boulders.

Site: Bear Creek Tributary 1

Township **38S** Range **1E** Section **31**

Sample Plot Number(s): none

Field verification date(s): 6/5/03, 6/26/03

Dominant Plant Species (Common Names):
Trees:
Oregon ash, white alder

Shrubs:
Himalayan blackberry, Pacific willow, Piper's willow, cherry

Herbs:
Cattail, curve-pod yellow-cress, reed canarygrass, soft rush, common horsetail, hardstem bulrush, poison hemlock, mannagrass, buttercup, forget-me-not

Other:

Description:
This Bear Creek tributary is located in the northwest corner of the study area, outside the city limits and inside the UGB. The headwaters of the tributary originate in the steep hillslope south of the study area. The tributary flows northwesterly along the bottom of the hillslope behind several car dealerships and the Lithia Springs Inn. The stream is culverted under West Jackson Road, heads northerly through the Jackson Hot Springs RV Park, then continues northwesterly prior to being culverted under Highway 99 and joining Bear Creek. The stream varies from 3 to 10 feet wide and is bordered by a narrow emergent wetland fringe behind the Lithia Springs Inn. Wetland vegetation consists of cattail, curve-pod yellow-cress, reed canarygrass, soft rush, common horsetail, hardstem bulrush, poison hemlock, mannagrass, buttercup, forget-me-not with areas of Himalayan blackberry, willow and cherry shrubs. Oregon ash and white alder trees are present along the downstream portion. Adjacent uplands consist of brome, Himalayan blackberry, Oregon white oak, big-leaf maple, ponderosa pine, and Douglas fir.

Hydrology of the triburary is partially fed by sulfur springs, one of which was observed at the rear of the Lithia Springs Inn property. Sulfur springs also appear to be feeding a small concrete-lined pond south of West Jackson Road. Two-foot contours and black and white aerial photo coverage was not available for this area, and mapping the stream location was difficult in areas due to tree canopy cover and lack of permission to access the area.

Site: Cemetery Creek

Township **39S** Range **1E** Sections **10 & 14**

Sample Plot Number(s): none

Field verification date(s):6/3/03, 6/5/03, 6/25/03

Dominant Plant Species (Common Names):
Trees:
Weeping willow, Pacific willow, black cottonwood

Shrubs:
Himalayan blackberry, sandbar willow, Pacific willow, choke cherry

Herbs:
Cattail, meadow foxtail, water foxtail, reed canarygrass, creeping buttercup, small-fruited bulrush, western buttercup, creeping spikerush, forget-me-not, velvetgrass

Other:

Description:
The headwaters of Cemetery Creek originate north of Siskiyou Boulevard. The stream channel is approximately 10 feet wide at the Clay Street Park with a narrow fringe of cattail, creeping buttercup and bittersweet nightshade. The riparian area contained Himalayan blackberry, sandbar willow, Pacific willow, choke cherry and black cottonwood. Adjacent uplands consisted of Himalayan blackberry, and mowed lawn (park) with a few pine and ornamental maple trees.

The stream channel is forked to the north of the railroad tracks. Emergent wetlands are associated with Cemetery Creek along this downstream section and were mapped as wetland unit 4. A wetland fill violation has been reported at the west end of Creek Drive (DSL WD 03-0203). Cemetery Creek generally ranges from 1 to 5 feet wide and is bordered by agricultural fields. The downstream portion is channelized through a landscaped yard where it is bordered by mowed lawn, the escaped ornamental periwinkle (*Vinca* species) and a few Piper's willow and weeping willow. Three small landscaped ponds are present adjacent to the stream.

Site: Clay Creek

Township **39S** Range **1E** Sections **11 & 14**

Sample Plot Number(s): none Field verification date(s): 6/3/03, 6/25/03

Dominant Plant Species (Common Names):
Trees:
white alder, Pacific willow, weeping willow, black cottonwood, black locust

Shrubs:
white alder, Pacific willow, Himalayan blackberry, Japanese knotweed, tree of heaven

Herbs:
Mannagrass, American speedwell, reed canarygrass, cattail, soft rush, sawbeak sedge, waterweed, monkey-flower, forget-me-not, English ivy

Other:

Description:
Clay Creek is labeled on the USGS and NWI maps as Hamilton Creek (Hamilton Creek the next stream east of Clay Creek). The headwaters of Clay Creek are located outside the study area in the steep hillside south of Ashland. The upstream section of Clay Creek, south of Ashland Street, is channelized through residential development and is generally 5 feet wide. A narrow wetland fringe of reed canarygrass, cattail, and soft rush is present along the stream channel, and riparian vegetation consists of Himalayan blackberry, white alder, Pacific willow, weeping willow, and black cottonwood. Invasive species including English ivy and Japanese knotweed were noted adjacent to Siskiyou Boulevard. Adjacent uplands contain tall fescue, orchard grass, Mediterranean barley, tall oatgrass, hairy vetch, Himalayan blackberry, snowberry, Oregon white oak, California black oak, ponderosa pine, and madrone.

Downstream of Ashland Street, six on-line ponds are present on Clay Creek in the Wingspread Mobile Home Park. These ponds are characterized as open water ponds, some of which have a narrow fringe of cattail or contain a small island with a few willlow. The ponds are connected by concrete spillways and are bordered by mowed lawn.

Much of the riparian vegetation along Clay Creek was removed in the Meadowbrook Park Estates and the side slopes adjacent to the stream are covered with bark dust. Downstream of this subdivision, the riparian corridor is more natural, although some clearing has occurred at the top of slope within the riparian buffer, and contains Pacific willow and black cottonwood on the side slopes and mannagrass, American speedwell, sawbeak sedge and waterweed (*Elodea* species) in and along the stream channel.

Site: Clear Creek

Township **39S** Range **1E** Section **4**

Sample Plot Number(s): none

Field verification date(s): 6/4/03, 6/26/03

Dominant Plant Species (Common Names):
Trees:
Oregon ash, weeping willow, black cottonwood

Shrubs:
Himalayan blackberry

Herbs:
Cattail, soft rush

Other:

Description:
Clear Creek originates just north of Clear Creek Drive at the Clear Creek Village wetland mitigation site (DSL App. #12783; wetland unit 5) that was under construction during the June site visits. Just downstream and north of Hersey Street, Clear Creek is channelized through residential development and is approximately 3 feet wide with a narrow fringe of cattail and soft rush and is bordered by mowed lawns with a few weeping willow and black cottonwood at the top of bank. A section of Clear Creek is culverted north of Clinton Street and then daylights as an approximately 5 foot wide channel surrounded by dense Himalayan blackberry and an Oregon ash overstory. This section of Clear Creek, as well as two off-line ponds, are reported to receive flow from an irrigation ditch fed by Ashland Creek. Adjacent uplands consist of Himalayan blackberry with poison hemlock, Canada thistle and hairy vetch.

Site: Emigrant Creek

Township **39S** Range **1E** Sections **11 & 12**

Sample Plot Number(s): none

Field verification date(s): 6/25/03

Dominant Plant Species (Common Names):
Trees:
white alder, black cottonwood, Pacific willow

Shrubs:
Himalayan blackberry, Oregon ash, Pacific willow, bittersweet nightshade

Herbs:
cattail, common horsetail, hardstem bulrush, mannagrass, water foxtail, meadow foxtail

Other:

Description:
Emigrant Creek originates east of the Ashland city limits and enters the study area at the northeast corner of the airport property, northwest of Dead Indian Memorial Road. Emigrant Creek is culverted through the mowed field at the northwest end of the runway in a very large (15 to 20 feet diameter) culvert. The stream is approximately 25 to 30 feet wide with abundant cobbles and boulders and occasional woody debris in the stream channel. The stream was flowing several feet deep during the June site visit, and channel meanders were noted in some areas. A narrow fringe of cattail, common horsetail, hardstem bulrush, mannagrass, water foxtail, meadow foxtail, bittersweet nightshade is present along the stream in a few areas. The stream is confined within steep side slopes with Himalayan blackberry, white alder, black cottonwood, Oregon ash and Pacific willow in the riparian area. Stream banks are armored with riprap in areas. Adjacent uplands consist of downy cheatgrass, ripgut brome, tall oatgrass, bulbous bluegrass, tumblemustard.

Site: Fordyce Creek

Township **39S** Range **1E** Section **10**

Sample Plot Number(s): None

Field verification date(s): 6/4/03, 6/26/03

Dominant Plant Species (Common Names):
Trees:

Shrubs:

Herbs:
Yellow nut-sedge, common velvetgrass, curve-pod yellow-cress

Other:

Description:
The majority of the Fordyce Creek has been culverted through residential development. Two small, unculverted stream sections remain south of Munson Drive and north and south of Kirk Lane. These remnant stream segments are 1 to 2 feet wide and consist of either a mowed grass channel or have rock lined sides with a fringe of emergent vegetation. The stream channel is bordered by mowed lawns and bark dust.

Site: Golf Course Creek

Township **39S** Range **1E** Sections **13 & 14**

Sample Plot Number(s): none

Field verification date(s): 6/5/03, 6/25/03

Dominant Plant Species (Common Names):
Trees:
Weeping willow

Shrubs:
Pacific willow, sandbar willow, white alder

Herbs:
cattail, soft rush, hardstem bulrush, yellow iris, buttercup, American speedwell, curve-pod yellow-cress, sawbeak sedge

Other:

Description:
The headwaters of Golf Course Creek are located south of Highway 99, outside the UGB. An on-line pond (LWI –mapped wetland 14A) is present on Golf Course Creek at the upstream end of the study area. The pond contains a fringe of soft rush and is bordered by mowed grass up to the edge. Some woody debris and branches were present in the edge of the pond, and Canada goose were noted using the site.

Golf Course Creek receives flow from an off-line pond reportedly fed by TID water located in the residential subdivision north of Crowson Road and east of I-5. The pond has riprap sides with crushed gravel at the top of slope with a few Oregon white oak, ponderosa pine and black cottonwood surrounding the pond. Canada goose, wood ducks, great blue heron, and bullfrogs were noted at the pond. Golf Course Creek downslope from the pond was approximately 3 feet wide with a wetland fringe of curve-pod yellow-cress, birdsfoot trefoil, Watson's willow-herb and reed canarygrass and a few weeping willow. The stream was bordered by a mowed lawn with oak located further upslope.

On the Oak Knoll Golf Course, the stream is 2 to 3 feet wide with a narrow wetland fringes containing cattail, soft rush, hardstem bulrush, yellow iris, buttercup, American speedwell, curve-pod yellow-cress, sawbeak sedge, and a few willow shrubs. An on-line pond mapped on the NWI has been mostly filled (DSL Det. #98-0318) and several smaller on-line ponds were created on the downstream portion as wetland mitigation. Several very small seasonal drainages are visible on the golf course in the black and white aerial photographs. These drainages were visible during the site visit as very slight drainage patterns that followed site topography which decreases to the northeast. Uplands consist of mowed lawn with a few large weeping willow trees along the stream.

Upstream of Interstate-5, Golf Course Creek has a narrow riparian fringe consisting of a few willow and white alder shrubs. Adjacent uplands consist of orchard grass, hairy vetch, tumblemustard, Himalayan blackberry, and Oregon white oak.

Site: Hamilton Creek

Township **39S** Range **1E** Sections **11, 14 & 23**

Sample Plot Number(s): 5, 6 (upland) Field verification date(s): 6/3/03, 6/25/03

Dominant Plant Species (Common Names):
Trees:
Black cottonwood

Shrubs:
Pacific willow, sandbar willow, Himalayan blackberry

Herbs:
Broad-leaved cattail, soft rush, yellow iris, white waterlily, giant reed

Other:

Description:
Hamilton Creek is generally confined within a moderately steeply sloped riparian corridor. Narrow wetland benches (up to 5 feet wide) are present along the stream channel in downstream areas where topography adjacent to the stream channel is less steep (see sample plot 5). Wetland benches contain several species including mannagrass, reed canarygrass, buttercup, soft rush, American speedwell, curve-pod yellow-cress, cattail and willow. Periwinkle (*Vinca major*), an escaped ornamental species, was noted along the stream channel in the upstream portion that is bordered by residential development. A large on-line pond is present in the downstream portion. A small tributary (Hamilton Creek tributary 1) and several ponds are present downstream of the on-line pond. These ponds include two emergent wetland stormwater ponds north of Abbott Avenue in a residential subdivision as well as two ponds east of Tolman Road which contain a fringe of cattail and yellow iris and 2 clumps of giant reed (invasive in California). Uplands contain tall fescue, ryebrome, ripgut brome, medusahead rye, bulbous bluegrass, perennial ryegrass, oak, ponderosa pine, walnut and incense cedar, with dense thickets of Himalayan blackberry present in disturbed areas.

The upstream portion of Hamilton Creek, above Siskiyou Boulevard, is generally 2 to 3 feet wide and is bordered by a fringe of reed canarygrass, soft rush and mannagrass with Himalayan blackberry on the side slopes. Adjacent upland areas are dominated by tall fescue, sweatpea, ripgut brome, Himalayan blackberry, Oregon white oak, and ponderosa pine. A small tributary (Hamilton Creek tributary 2) joins Hamilton Creek a few hundred feet upstream of Siskyou Boulevard. A section of Hamilton Creek flows along Tolman Creek Road where it is confined between the road fill slope and an adjacent mowed lawn. Further upstream, the channel is confined within steep side slopes with a narrow riparian fringe of reed canarygrass, common horsetail and willow. Adjacent uplands contain Himalayan blackberry, beaked hazelnut, western crabapple and Oregon white oak.

The headwaters of Hamilton Creek originate outside the study area boundary.

Site: Kitchen Creek

Township **39S** Range **1E** Section **4**

Sample Plot Number(s): None

Field verification date(s): 6/4/03

Dominant Plant Species (Common Names):
Trees:
black cottonwood, Pacific willow, white alder

Shrubs:
Himalayan blackberry

Herbs:
hardstem bulrush, cattail, creeping buttercup, meadow foxtail

Other:

Description:
The headwaters of Kitchen Creek originate outside the study area. Kitchen Creek is forked in the upstream portion through residential development. The north fork is 3 to 5 feet wide and contains a narrow wetland fringe of hardstem bulrush, creeping buttercup, and meadow foxtail with black cottonwood, Pacific willow and white alder along the streambanks. The south fork is 5 to 10 feet wide and contains a small on-line pond with a fringe of hardstem bulrush and cattail. A small putting green and a mowed lawn is present between the two forks. Non-landscaped upland areas adjacent to Kitchen Creek contain ripgut brome, ryebrome, tall fescue, orchard grass, California poppy and a few oak. The two forks of Kitchen Creek join below Mountain Avenue, and the stream flows to Bear Creek through a steeply sloped riparian corridor dominated by Himalayan blackberry with a few Pacific willow.

Site: Knoll Creek

Township **39S** Range **1E** Sections **11 & 14**

Sample Plot Number(s): none

Field verification date(s):6/4/03, 6/25/03

Dominant Plant Species (Common Names):
Trees:
Black cottonwood, Pacific willow

Shrubs:
Himalayan blackberry

Herbs:
Common horsetail, meadow foxtail

Other:

Description:
Knoll Creek is generally confined within steep Himalayan blackberry covered slopes with a few black cottonwood and Pacific willow present in the riparian corridor. Adjacent uplands are dominated by Himalayan blackberry and Oregon white oak. Two stream associated emergent wetlands are present north of I-5 and west of the Windmill Inn and were mapped as wetland unit 6.

Site: Mountain Creek

Township **39S** Range **1E** Sections **4 & 9**

Sample Plot Number(s): none

Field verification date(s): 6/3/03, 6/24/03

Dominant Plant Species (Common Names):
Trees:
Oregon ash, weeping willow

Shrubs:
Sandbar willow, Himalayan blackberry

Herbs:
knotweed, willow-herb, cattail, hardstem bulrush

Other:

Description:
The majority of the historic upstream portion of the stream has been culverted through residential development, although two small unculverted sections remain north of Holly Street and north of Iowa Street. The section of Mountain Creek north of Holly Street is a 2 to 3 foot wide stream channel confined at the bottom of steep Himalayan blackberry covered slopes. The upper portion of the slopes contain periwinkle, English ivy, cherry, black cottonwood, and big-leaf maple. The section of Mountain Creek located north of Iowa Street flows through a rock lined channel bordered by English ivy, sword fern and English laurel shrubs.

Mountain Creek is daylighted north of the railroad tracks along the east edge of the Southern Pacific Railroad property. The riparian corridor along Mountain Creek contains Oregon ash, sandbar willow, weeping willow and Himalayan blackberry. Two small on-line ponds are present in the residential subdivision south of Hersey Street and contain cattail, and a scrub-shrub wetland fringe of sandbar willow, Pacific willow, weeping willow, white alder and black cottonwood. North of Hersey Street, Mountain Creek is confined to a roadside ditch until it joins Bear Creek. A 6 to 10 foot wide intermittent drainage containing knotweed, willow-herb and small amounts of cattail and hardstem bulrush originates west of Mountain Creek on the Southern Pacific site and may be culverted to Mountain Creek. Uplands contain ripgut brome, bulbous bluegrass, tall oatgrass, and vetch.

Site: Neil Creek

Township **39S** Range **1E** Sections **11, 12 & 13**

Sample Plot Number(s): 18 (upland) Field verification date(s): 6/25/03

Dominant Plant Species (Common Names):
Trees:
Oregon ash, Pacific willow, black cottonwood

Shrubs:
Himalayan blackberry, Oregon ash, sandbar willow, black hawthorn

Herbs:
creeping buttercup, yellow iris, mint, soft rush, reed canarygrass, teasel

Other:

Description:
Neil Creek originates southeast of the Ashland city limits and enters the study area at the southeast corner of the airport property, on the west side of Dead Indian Memorial Road. The downstream section of Neil Creek is approximately 10 to 12 feet wide and was flowing approximately 6 to 12 inches deep during the June site visit, with a narrow wetland fringe of creeping buttercup, yellow iris, mint, soft rush, reed canarygrass, and teasel. Cobbles were observed in one section of stream where the stream channel was not obscured by Himalayan blackberry. The stream channel is confined at the bottom of steep side slopes dominated by Himalayan blackberry in most areas. Oregon ash, Pacific willow, sandbar willow, black hawthorn, and black cottonwood trees and shrubs are also present in the riparian corridor. A berm is present at the top of the slope along the west edge of the airport runway and is dominated by ripgut brome, hairy vetch, tumblemustard, yellow starthisle, poison hemlock, and redstem filaree.

The upstream portion of Neil Creek, just prior to its confluence with Emigrant Creek, is approximately 20 to 25 feet wide. Adjacent uplands are dominated by Himalayan blackberry, rattail fescue and tumblemustard.

Site: Paradise Creek

Township **39S** Range **1E** Section **15**

Sample Plot Number(s): none

Field verification date(s): 6/25/03

Dominant Plant Species (Common Names):
Trees:
white alder

Shrubs:
Himalayan blackberry

Herbs:
creeping buttercup, curve-pod yellow-cress, soft rush, common velvetgrass, American speedwell, sedge, cattail

Other:

Description:
The headwaters of Paradise Creek are located outside the study area in the steep hillside south of Ashland. Paradise Creek is daylighted in the south portion of the study area; however, the majority of the downstream portion, below Clarke Avenue, has been culverted due to development. The upstream portion of Paradise Creek, above Peachey Road, is 2 to 3 feet wide with a fringe of creeping buttercup, curve-pod yellow-cress, soft rush, common velvetgrass, American speedwell, sedge, and cattail. Side slopes above the stream are dominated by Himalayan blackberry and white alder. Adjacent uplands consist of tall fescue, ripgut brome, hare's-foot clover, tumblemustard, hairy vetch, Oregon white oak and ponderosa pine.

The downstream portion of Paradise Creek and its riparian area, adjacent to Sunset Avenue, have been encroached upon by residential development. Portions of the stream channel are confined within a rock lined channel and the stream is bordered by mowed grass, ornamental species, and other landscaping.

Site: Paradise Creek East

Township **39S** Range **1E** Section **15**

Sample Plot Number(s): none

Field verification date(s): 6/25/03

Dominant Plant Species (Common Names):
Trees:

Shrubs:
Himalayan blackberry, Piper's willow, Pacific willow

Herbs:
common velvetgrass

Other:

Description:
The headwaters of Paradise Creek East are located outside the study area in the steep hillside south of Ashland. A small section of Paradise Creek East is daylighted in the south portion of the study area. Paradise Creek East, above Peachey Road, is topographically confined within a 2 to 3 foot wide stream channel with a fringe of common velvetgrass. A small off-line pond is present just west of Peachey Road. The riparian area contains Himalayan blackberry, Piper's willow and Pacific willow shrubs. Adjacent uplands consist of tall fescue, Himalayan blackberry, Oregon white oak, ponderosa pine and backyard areas. Further upslope, Paradise Creek East becomes a forked drainage.

Site: Pinecrest Creek

Township **39S** Range **1E** Section **15**

Sample Plot Number(s): none

Field verification date(s): 6/25/03

Dominant Plant Species (Common Names):
Trees:

Shrubs:
snowberry, Himalayan blackberry

Herbs:
tall oatgrass, false Solomon's seal

Other:

Description:
The headwaters of Pinecrest Creek are located just outside the study area in the steep hillside south of Ashland. A small section of Pinecrest Creek is daylighted in the south portion of the study area upslope of Oneida circle. The majority of Pinecrest Creek has been culverted due to development. The upstream portion of Pinecrest Creek at Pinecrest Terrace is a narrow 6 to 12 inch wide channel that is not very well defined by topography. The stream channel was dry during the June site visit, with leaves in the bottom of the channel and only a trace amount of riparian vegetation consisting of tall oatgrass, false Solomon's seal, snowberry, and Himalayan blackberry. Adjacent uplands were steeply sloped with hare's-foot clover, Oregon grape, Himalayan blackberry, California black oak, ponderosa pine, and madrone.

Site: Roca Creek

Township **39S** Range **1E** Sections **10 & 15**

Sample Plot Number(s): None Field verification date(s): 6/4/03, 6/25/03, 6/26/03

Dominant Plant Species (Common Names):
Trees:
white alder, black cottonwood, Pacific willow, weeping willow

Shrubs:
white alder, black cottonwood, Pacific willow, Oregon ash, bittersweet nightshade, red-osier dogwood, big-leaf maple

Herbs:
Reed canarygrass, soft rush, hardstem bulrush

Other:

Description:
The headwaters of Roca Creek are located outside the study area in the steep hillside south of Ashland. The upstream daylighted portion of Roca Creek, above Madrone Street, is 2 to 3 feet wide and is confined at the bottom of very steep side slopes. Riparian vegetation consists of white alder, black cottonwood and Pacific willow shrubs and trees. Adjacent uplands are dominated by orchard grass, ripgut brome, charming barley, hare's-foot clover, common oat, hairy vetch, Himalayan blackberry, and Oregon white oak.

The majority of the downstream portion of Roca Creek has been culverted due to development. The stream daylights north of East Main Street in a residential subdivision. A small on-line pond is present on Roca Creek with a water control structure. A patch of hardstem bulrush is present at the upper end of the pond, and red-osier dogwood, white alder and big-leaf maple plantings are present on the side slopes. Downstream from the pond, the stream channel ranges from 3 to 6 feet wide and contains a narrow fringe of reed canarygrass, bittersweet nightshade, and soft rush with a few willow shrubs. The stream channel is bordered by mowed lawn with a few planted Oregon ash and big-leaf maple saplings. A portion of the stream channel consists of a mowed grass channel with a few weeping willow and Pacific willow, bordered by mowed lawn.

Roca Creek downstream of Seena Lane is approximately 10 feet wide and contains dense reed canarygrass in and adjacent to the stream channel, along with bittersweet nightshade, willow and Oregon ash shrubs.

Strawberry Creek

Township **39S** Range **1E** Section **8**

Sample Plot Number(s): none

Field verification date(s): 6/26/03

Dominant Plant Species (Common Names):
Trees:

Shrubs:

Herbs:

Other:

Description:
Strawberry Creek is located in the steep hillside to the west of Ashland Creek. No field data was collected since permission to access was not granted, and Strawberry Creek is not visible from adjacent public roads.

Site: Tolman Creek

Township **39S** Range **1E** Sections **13 & 14**

Sample Plot Number(s): none

Field verification date(s): 6/5/03

Dominant Plant Species (Common Names):
Trees:

Shrubs:
Pacific willow

Herbs:
yellow iris, American speedwell, buttercup, curve-pod yellow-cress

Other:

Description:
Tolman Creek on the Oak Knoll Golf Course is 3 to 5 feet wide and is bordered by a narrow wetland fringe of yellow iris, American speedwell, buttercup, curve-pod yellow-cress and a few Pacific willow shrubs. A small on-line pond is present. Adjacent uplands contain tall fescue, catchweed bedstraw, Himalayan blackberry, and a few white alder.

Site: Twin Creek

Township **39S** Range **1E** Section **8**

Sample Plot Number(s): none

Field verification date(s): 6/26/03

Dominant Plant Species (Common Names):
Trees:

Shrubs:

Herbs:

Other:

Description:
Twin Creek is located in the steep hillside to the west of Ashland Creek. No field data was collected since permission to access was not granted, and Twin Creek is not visible from adjacent public roads.

Site: Wrights Creek

Township **39S** Range **1E** Sections **5, 6 & 8**

Sample Plot Number(s): none

Field verification date(s): 6/5/03

Dominant Plant Species (Common Names):
Trees:
Big-leaf maple, Pacific willow, ponderosa pine, quaking aspen

Shrubs:
Snowberry, serviceberry, Oregon ash, western wahoo, Himalayan blackberry

Herbs:
English ivy

Other:

Description:
Wrights Creek is confined within tall steep slopes and no wetland benches were observed at several road crossings. The stream channel is approximately 10 feet wide and contains many cobbles and boulders in the downstream portion. The riparian corridor contains good tree and shrub cover. Himalayan blackberry is present in open canopy areas. Uplands upslope of the riparian corridor contain downy cheat grass, tall fescue, tall oatgrass and hairy vetch.

Five tributaries to Wrights Creek are also included in this unit. Tributaries are similarly confined within steep side slopes, but the stream channels are narrower and contain more Himalayan blackberry than the mainstem of Wrights Creek. Adjacent uplands contain downy cheat grass, bulbous bluegrass, blue wildrye, common oat, hairy vetch, and catchweed bedstraw.