Oregon
Theodore R. Kulongoski, Governor

Division of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 378-3805
FAX (503) 378-4844
www.oregonstatelands.us.

August 7, 2003

Don Thwing, Mayor
City of Hubbard
P. O. Box 380
Hubbard, OR 97032

Re: Approval of the City of Hubbard Local Wetlands Inventory and Assessment

Dear Mr. Thwing:

I am pleased to notify you that the Division of State Lands has approved your Local Wetlands Inventory (LWI) and assessment. We appreciate the Mid-Willamette Valley Council of Government planning staff working closely with our staff to ensure that the inventory meets state LWI requirements (OAR 141-86-180 to 240) and the city's needs. The Division has made some final edits to the map, so please update your copies with the attached approved version. The final inventory requirement is for the city to notify property owners with wetlands mapped on their property within 120 days of this approval. Please provide us with a copy of the landowner notification, indicating the date of notification, when notification has been completed. To keep your LWI updated, it will be important to annotate your map (and associated database, if any) as new wetland delineations are completed and approved by the Division.

Approval by the Division means that the LWI becomes part of the Statewide Wetlands Inventory. The LWI must now be used by the city instead of the National Wetlands Inventory for the Wetland Land Use Notification Process (ORS 227.350). The LWI and functional assessment also form the foundation for your wetland planning under Statewide Planning Goal 5, and the LWI must be adopted by the city per the Goal 5 requirements. All of the wetlands mapped by the LWI have been determined to be locally "significant wetlands." Please note that "significant" and "non-significant" wetlands are still subject to state and federal permit requirements.

While considerable effort has been made to accurately identify most wetlands within the study area, the Division's approval does not guarantee that all regulated wetlands have been mapped. Also, exact wetland boundaries have not been surveyed, and there are inherent limitations in mapping accuracy. The Division advises that persons proposing land alteration on parcels containing mapped wetlands first contact the Division, or obtain a wetland boundary delineation by a qualified consultant and submit it to the Division for approval prior to the land alteration.

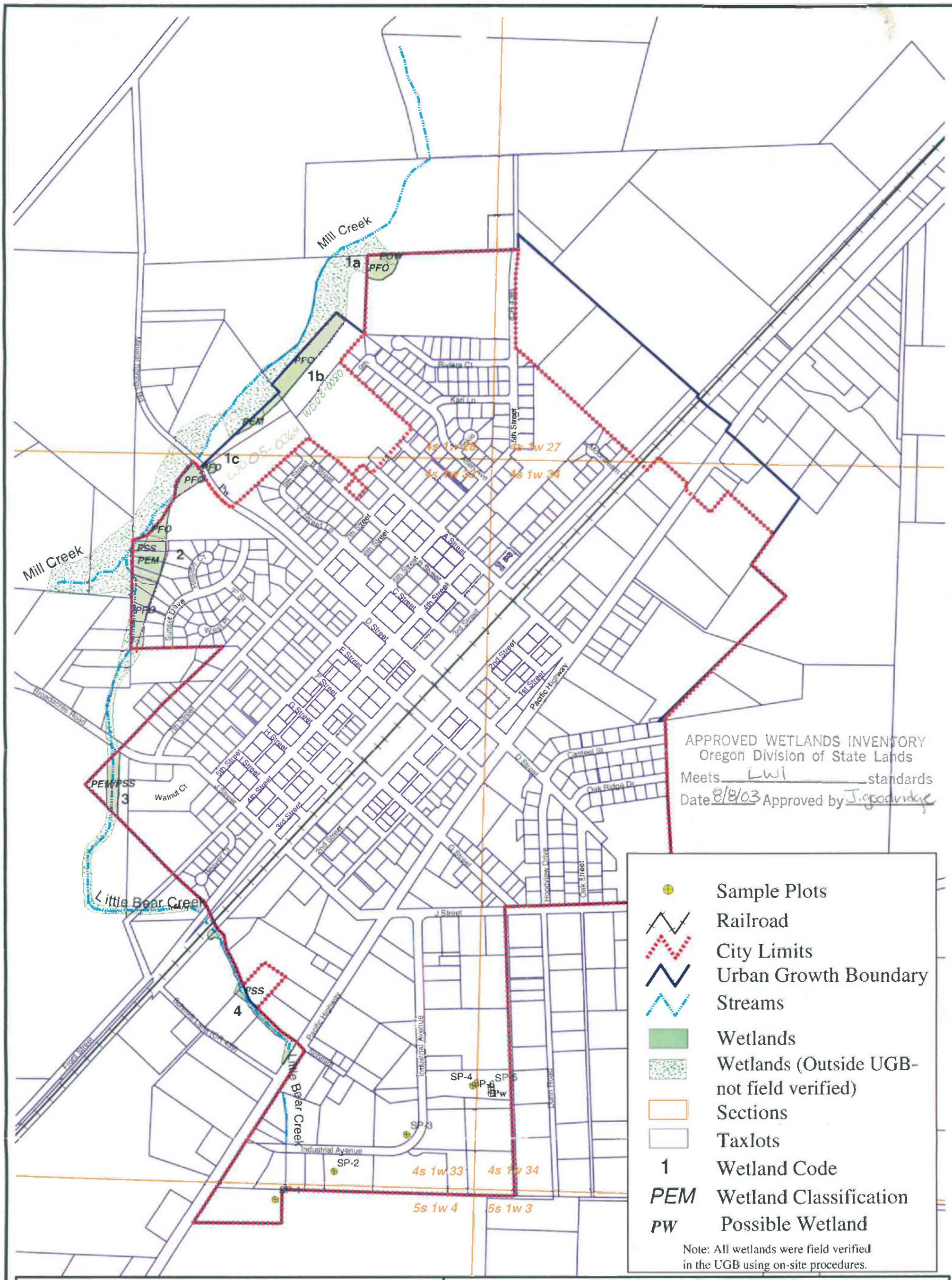
We are pleased that the City of Hubbard has conducted a thorough wetlands inventory and has made wetland planning a high priority. We look forward to working with you and your staff as you continue on the Goal 5 wetland planning effort. Please feel free to contact Jennifer Goodridge at extension 233 with any questions you may have about the LWI or its use.

Sincerely,

Ann Hanus

Ann Hanus
Director

cc: Mark Fancey, Mid-Willamette Valley Council of Governments
Rob Hallyburton, DLCD
Yvonne Vallette, EPA
Jim Goudzwaard, Corps of Engineers
Mark Everett, Corp of Engineers
John Marshall, FWS, Portland Field Office
Patty Snow, ODFW
Tom Melville, DEQ
Jon Hall, FWS Regional Office
Ed Emrick DSL
John Lilly, DSL



Title:

Figure 2.
Hubbard Local Wetland Inventory Map

Mid-Willamette Valley Council of Governments

Prepared by:	Date:	Revision:
LH	May 11, 2001	3

Filename:
R:/common/naturalres/wetlands/hubbard_lwi/hublwi.apr

Information shown on this map is for planning purposes only, and wetland information is subject to change. There may be unmapped wetlands subject to regulation and all wetland boundary mapping is approximate. In all cases, actual field conditions determine wetland boundaries. You are advised to contact the Oregon Division of State Lands and the U.S. Army Corps of Engineers with any regulatory questions.

State Plane Coordinates, Oregon North, North American Datum, 1983

370 185 0 370 Feet

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Received 6/12/01

Janet Morlan, Wetlands Program Leader
Division of State Lands
775 Summer Street NE Suite 100
Salem, OR 97301-1279

RE: CITY OF HUBBARD LOCAL WETLAND INVENTORY

Dear Janet:

Enclosed is the draft City of Hubbard Local Wetland Inventory, Wetland Functional Assessment and Wetland Significance Determination submitted for Division of State Lands review as specified in Oregon Administrative Rules 141-060-0228. The Local Wetland Inventory (LWI) map is Figure 9 of the report. I've included an extra copy of the map. I've also included the six aerial photo base maps and overlays used to compile the inventory. A few notes:

- There are fewer sample plots than is typical for an LWI. This was due to the limited budget available for this project and because the wetlands and their boundaries were generally obvious and distinct. Wetlands 1 and 2 have publicly owned portions; these were walked and wetland indicators noted. A portion of Wetland 1 was also recently delineated by Pacific Habitat Services, Inc. This delineation was provided to the City of Hubbard. It has not been submitted to DSL to my knowledge. Wetlands 3 and 4 were observed from adjacent roads and railroad embankments.
- There are no areas that meet the definition in 141-086-0210(19) as "potential wetland mitigation or restoration sites". The mapped hydric Concord soil unit along the south edge of the urban growth boundary was presumably a wetland swale prior to settlement and may have been as large as 10 acres in size; however, due to construction of Industrial Way and several commercial and industrial facilities there are now only separate 1-2 acre undeveloped remnants.
- The Oregon Freshwater Wetland Assessment Methodology functional assessment was limited to wildlife habitat, fish habitat, water quality, hydrologic control and education as allowed in DSL's letter to the Mid-Willamette Valley Council of Governments dated December 1, 2000. A copy of the letter is in Appendix G of the LWI report.
- The City of Hubbard has provided opportunity for public review and comment on the LWI. Enclosed are the text of the notice that was published in the Woodburn Independent newspaper and the text of the notice that was sent to Hubbard

property owners with wetlands, other waters and significant riparian corridors as required under Measure 56. Comments received from the public will be provided to DSL.

- LWI map digital data will be provided to DSL within the next few weeks.

I look forward to your comments!

Joel Shaich

Joel Shaich
Natural Resource Planner

Enclosures: City of Hubbard Local Wetland Inventory, Wetland Functional Assessment and Wetland Significance Determination
Extra LWI Map Sheet
Aerial Photo Base Maps & Overlays (6 sheets)
Woodburn Independent newspaper notice text
Measure 56 notice text

c: Mark Fancey, City of Hubbard Planner (w/o enclosures)

CITY OF HUBBARD

Local Wetland Inventory, Wetland Functional Assessment, and Wetland Significance Determination

Prepared for the City of Hubbard

by the

Mid-Willamette Valley Council of Governments

May 31, 2001

Contents

Figures

Tables

1.0 Introduction

This report describes the study methodology and results for the City of Hubbard local wetland inventory, wetland functional assessment and wetland significance determination. The goal of the study was to address the wetland inventory and assessment requirements of Statewide Planning Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces. The study included determining the location and extent of wetlands; assessing selected wetland functions; and determining which of the wetlands are significant and require protection under comprehensive plan provisions and land use regulations.

1.1 Report Format

The report includes the following chapters and appendices:

Chapter 1. Introduction: Study purpose and goals, report format, definitions, and technical staff and their qualifications.

Chapter 2. Study Methods: Methods used for the local wetland inventory, wetland functional assessment and wetland significance determinations.

Chapter 3. Study Area Characteristics: Study area location, community description, landscape setting and topography, hydrology, soils and vegetation.

Chapter 4. Local Wetland Inventory Results: Results of the local wetland inventory including probable wetlands identified, wetlands field verified and mapped, and wetland descriptions.

Chapter 5. Wetland Functional Assessment Results: Results of the Oregon Freshwater Wetland Assessment Methodology (OFWAM) wetland functional assessment including identification of wetlands of special interest for protection and wetland functional assessment results for individual wetlands.

Chapter 6. Significant Wetland Determination Results: Results of the application of the Goal 5 wetland significance criteria for individual wetlands.

Chapter 7. Study Area Summary: Summary of study area total acreage, total wetland acreage, number of wetlands and number of significant wetlands.

Chapter 8. References

Glossary: Definitions of technical terms and acronyms.

Appendix A. Wetland Summary Sheets: Wetland characteristics for each individual wetland including size, location, classification, description and functions.

Appendix B. Sample Plot Data Sheets: Sample plot data on hydrology, soils, and vegetation used to make wetland determinations at selected sites.

Appendix C. Wetland Characterization Results: Information collected to characterize the wetlands and surrounding watershed.

Appendix D. Wetland Function Questions: Answer Sheet: Responses to questions specific to each of the functions assessed. Used to determine if the particular function is being provided by the wetland.

Appendix E. Wetland Function Summary Sheets: Narrative summary of each wetland's functions.

Appendix F. Significance Determination Summary Sheets: Checklist results of the application of the significance criteria to each wetland.

Appendix G. DSL Letter Approving OFWAM Adjustments

Appendix H. Project Staff and Technical Qualifications

1.2 Definitions

Wetland science, management and regulation include a variety of technical terms and acronyms used to describe the resources and the pertinent agencies, laws and regulations. Terms and acronyms used in this report are defined in the glossary.

1.3 Using the Results

The local wetland inventory (LWI), wetland functional assessment, and wetland significance determination are used to meet state requirements for local land use planning for wetlands and riparian corridors under Goal 5 of the statewide land use planning program. The LWI is also used for the wetland land use notification process. The LWI can assist landowners, developers, resource managers, watershed planners and others who need information on wetland location, condition and functions.

1.3.1 Division of State Lands Review and Approval

State administrative rules require that the LWI be submitted for review and approval by the Division of State Lands (DSL) as part of the Goal 5 process. The local government is required to use the LWI in place of the National Wetland Inventory for wetland planning.

1.3.2 Local Wetland Inventory Map

The Hubbard LWI map shows approximate location, size, and boundaries of wetlands and streams in the study area. The map should be used only for general planning purposes. The minimum threshold for wetland mapping was 0.5 acres as specified in state rules. Properties that appear to contain wetlands smaller than 0.5 acres were labeled "PW" for "Possible Wetland." There may be other small unmapped wetlands within the study area. The wetland mapping does not have site-specific accuracy and is not adequate for regulatory purposes. Wetland boundaries should be located and marked in the field prior to site development or alteration activities such as clearing, grading, fill material placement or other potentially regulated activities. On-site wetland delineation by qualified professionals may be required to meet state and federal regulatory requirements. In all cases on-site conditions determine wetland jurisdictional locations for regulatory purposes.

1.3.3 Goal 5

Local governments are required to use the LWI and list of significant wetlands to complete the requirements of Goal 5 under the safe harbor or standard process.

1.3.4 Wetland Land Use Notification

Local governments are required to review wetland inventories when reviewing development proposals and notify the applicant, landowner and DSL when a proposed development site contains a mapped wetland (ORS 215.418, ORS 227.350). Local governments are required to use the LWI in place of the National Wetlands Inventory for wetland land use notification following approval by DSL.

1.4 Project Staff

Joel Shaich, MWVCOG Natural Resource Planner, managed the project. He conducted the wetland field verification, field mapping, functional assessment, and significance determinations and wrote and formatted this report.

Lesley Hegewald, MWVCOG GIS Analyst, provided cartographic oversight of the mapping process and produced the Local Wetland Inventory maps.

A summary of project staff technical qualifications is in Appendix H.

2.0 Study Methods

Methods for local wetland inventories, wetland functional assessments and wetland significance determinations to meet the requirements of Goal 5 are provided in the following Oregon Administrative Rules (OARs):

- *Procedures and Requirements for Complying With Goal 5* (OAR 660-23-100)
- *Local Wetland Inventory Standards and Guidelines* (OAR 141-86-180 to 240)
- *Identifying Significant Wetlands* (OAR 141-86-300 to 350)

2.1 Local Wetland Inventory

A Local Wetland Inventory (LWI) is a systematic survey of an area to identify, characterize, and map the approximate boundaries of wetland resources. Inventory methodology is defined in OAR 141-86-110 through 141-86-240. Wetland determinations and delineations were made using the Corps of Engineers Wetland Delineation Manual and applicable federal and state guidance documents. Inventory tasks include identifying possible wetlands from existing information sources and field reconnaissance, conducting field verification of probable wetlands, mapping verified wetlands, and producing a descriptive summary of the mapped wetlands.

2.1.1 Identification of Probable Wetlands

The following information sources were used to identify probable wetlands:

- Woodburn, Oregon Quadrangle, 7.5 minute quadrangle
- National Wetlands Inventory (NWI) map, Woodburn, Oregon
- Soil Survey of Marion County, Oregon, US Department of Agriculture, 1972
- Existing wetland delineation and determination reports
- City of Hubbard Storm Drainage Masterplan
- Color photography, July 2, 1996, 1" = 200', Spencer B. Gross, Inc.
- A windshield survey of the entire study area

2.1.2 Field Verification of Probable Wetlands

Field verification of probable wetlands was conducted using a combination of off-site and on-site methods. Off-site field verification is based on observations of wetland characteristics from aerial photography and adjacent publicly accessible sites. On-site verification includes observations from probable wetland sites including collection of data on vegetation, soils and hydrology from sample plots.

Twenty-one tax lots containing probable wetlands were identified and the owners sent a mailing with information about the project and a request for permission to access the property for on-site field verification. Access permission was granted for 12 tax lots. An additional seven tax lots containing probable wetlands are owned by the city and were accessible.

2.1.3 Wetland Mapping

The Hubbard LWI map shows approximate location, size, and boundaries of wetlands and streams in the study area. The map should be used only for general planning purposes. The minimum threshold for wetland mapping was 0.5 acres as specified in state rules; there may be smaller unmapped wetlands within the study area. The wetland mapping does not have site-specific accuracy and is not adequate for regulatory purposes. Wetland boundaries should be located and marked in the field prior to site development or alteration activities such as clearing, grading, fill material placement or other potentially regulated activities. On-site wetland delineation by qualified professionals may be required to meet state and federal regulatory requirements. In all cases on-site conditions determine wetland jurisdictional locations for regulatory purposes.

Wetlands, possible wetlands, streams and sample plots were mapped by hand on mylar overlays of GIS generated base maps at a scale of 1"=200'. The base maps included true color 1996 aerial photographs and tax lots. The wetland, possible wetland, stream and sample plot mapping was then hand-digitized and registered with other Hubbard GIS map layers to produce the final wetland map.

2.1.4 Wetland Descriptions

Wetland characteristics were noted including size, location, classification, boundary characteristics, hydrology, soils, dominant vegetation, and field verification status. A summary sheet was prepared for each mapped wetland.

2.2 Wetland Functional Assessment

Wetland functions were assessed using the Oregon Freshwater Wetland Assessment Methodology (OFWAM). The steps in completing the assessment are shown in Figure 1. OFWAM characterizes wetlands by collecting information in a systematic manner. The characterization includes a watershed section based on existing information and a site-specific wetland section that requires field observation and measurement. The watershed section includes questions regarding watershed setting, drainage basin, topography, hydrologic profile, land uses within the watershed, water quality, and biologic characteristics of the watershed. The wetland section focuses on individual sites and includes questions regarding wetland structure and relationship to surrounding landscape, wetland habitat, fisheries habitat, streams connected with a wetland, lakes or ponds, wetland hydrology, and public access to the wetland site.

Wetlands that are uncommon, already in a resource management plan, or protected by regulatory rules or statutes are categorized as "wetlands of special interest for protection" by OFWAM. The methodology uses ten questions to identify these types of wetlands which include: wetlands that contain or provide critical habitat for species that are rare, threatened, or endangered with extinction; wetlands dedicated as a state or federal natural area or natural heritage conservation area; wetlands dedicated as a Nature Conservancy Preserve, wetlands of regional or national significance for migratory birds; wetlands protected by local management plans under Goal 5 or 17; wetlands that are designated a State Outstanding Resource Water; wetlands that are in a protected area in a park management plan; wetlands in a protected mitigation site; wetlands in a federal

restoration or conservation reserve program; or wetlands that are rare or unique in Oregon.

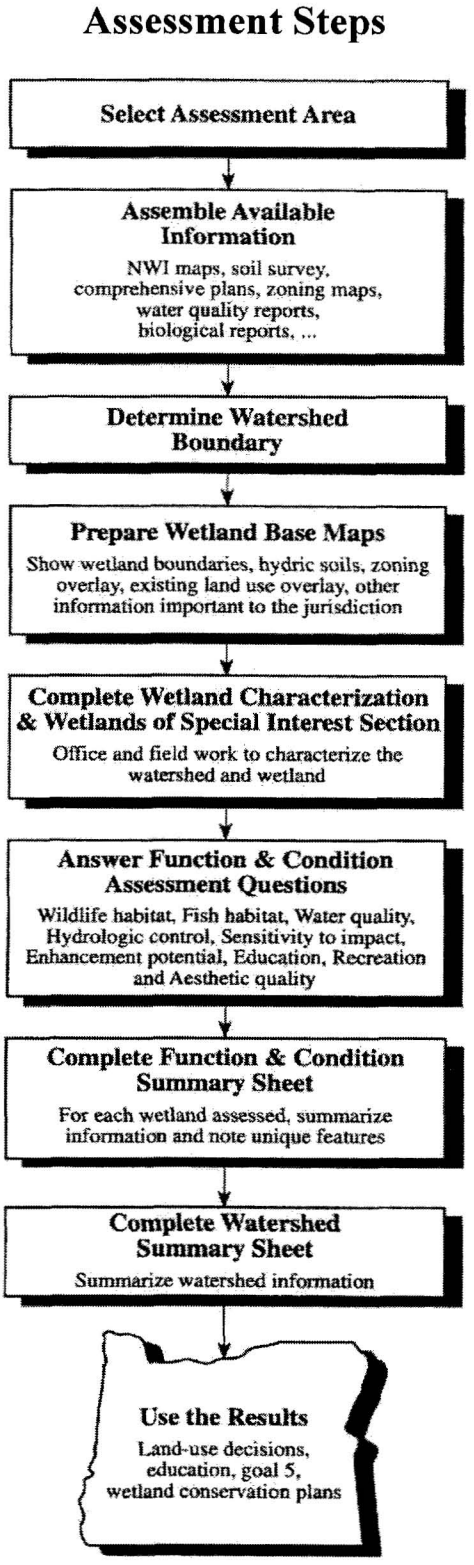


Figure 1. OFWAM Process

OFWAM evaluates wetlands for nine functions and conditions including wildlife habitat, fish habitat, water quality, hydrologic control, education, recreation, aesthetic quality, sensitivity to impact and enhancement potential. An adjustment to OFWAM was obtained from the Division of State Lands to evaluate only wildlife habitat, fish habitat, water quality, hydrologic control and education (on publicly owned lands only), the five wetland functions that are used in the wetland significance determination (see DSL letter in Appendix G). These five wetland functions are defined in OFWAM as follows:

- *Wildlife habitat*: Evaluates the habitat diversity for species typically associated with wetlands and wetland edges. No single species is emphasized. The OFWAM assessment characterizes the wetland wildlife habitat function at one of three levels: the wetland provides diverse habitat for wildlife, the wetland provides habitat for some wildlife species, or the wetland's wildlife habitat function is lost or not present.
- *Fish habitat*: Evaluates how the wetland contributes to fish habitat in streams, ponds or lakes associated with the wetland either warmwater and coldwater fisheries. No single species or group of species is emphasized. The OFWAM assessment characterizes the wetland fish habitat function at one of three levels: the wetland's fish habitat function is intact, the wetland's fish habitat function is impacted or degraded, or the wetland's fish habitat function is lost or not present.
- *Water Quality*: Evaluates the potential of a wetland to reduce the impacts that excess nutrients in storm water runoff will have on downstream waters. The OFWAM assessment characterizes the wetland water quality function at one of three levels: the wetland's water quality function is intact, the wetland's water quality function is impacted or degraded, or the wetland's water quality function is lost or not present.
- *Hydrologic control*: Evaluates the effectiveness of a wetland in storing floodwaters and reducing downstream flood peaks. The OFWAM assessment characterizes the wetland's hydrologic control function at one of three levels: the wetland's hydrologic control function is intact, the wetland's hydrologic control function is impacted or degraded, or the wetland's hydrologic control function is lost or not present.
- *Education*: Evaluates the suitability of a wetland as a site for an "outdoor classroom." The OFWAM assessment characterizes the wetland's education function at one of three levels: the wetland has educational uses, the wetland has potential for educational uses, or the wetland site is not appropriate for educational use. OFWAM Assessment Process

The information gathered during the watershed and wetland characterization was used to assess the 5 functions described above for each individual wetland and assign a descriptive relative value to each function. For example, wildlife habitat can be assessed as diverse, providing some habitat, or lost or not present. Some questions have different criteria depending upon whether the wetland is in an urban or rural setting, usually defined by the location within or outside of an urban growth boundary.

still w/in UGB for assessment

Hubbard's wetlands straddle the UGB and have both urban and rural characteristics. For this assessment Wetlands 1, 3 and 4 were considered rural because they were contained within wetland assessment units that were predominately surrounded by agricultural land. Wetland 2 was considered urban because it was within a wetland assessment unit predominately surrounded by developed land.

2.3 Significance Determination

Wetlands were reviewed to determine if they met state criteria for "significance" The criteria for significant wetlands rely on the results of the OFWAM assessment, and other information, to identify locally significant wetland resources. Certain types of wetlands are excluded outright and not reviewed under the significance criteria. These include certain artificially created wetlands, ponds, and ditches as well as wetlands contaminated with hazardous materials. All other wetlands are reviewed for significance. Table 1 includes a simplified version of the criteria; see the administrative rule for the complete set of criteria.

Table 1. Goal 5 Wetland Significance Criteria

Mandatory Criteria	**Optional Criteria**
(a) The wetland performs at any of the following functional levels based on the OFWAM assessment: (A) "Diverse" wildlife habitat; or (B) "Intact" fish habitat; or (C) "Intact" water quality function; or (D) "Intact" hydrologic control function. (b) The wetland or a portion of the wetland occurs within one-fourth mile from a water quality limited water body DEQ (303 (d) list), and the wetland's water quality function is described as "intact" or "impacted or degraded" using OFWAM. (c) The wetland contains one or more rare plant communities. (d) The wetland is inhabited by any species listed by the state or federal government as sensitive, threatened or endangered. (e) 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 using OFWAM.	At the discretion of the local government, wetlands that meet one or more of the following criteria may be identified as locally significant wetlands: (a) The wetland represents a locally unique native plant community: wetland is or contains the only representative of a particular native wetland plant community in the UGB/UUC (b) The wetland is publicly owned and determined to "have educational uses" using OFWAM, and such use by a school or organization is documented for that site.

Source: OAR 141-86-350

3.0 Study Area Characteristics

3.1 Location

The study area is the City of Hubbard Urban Growth Boundary (UGB) and is located in Marion County, Oregon (Township 4 South, Range 1 West, sections 27, 28, 33, 34, and Township 5 South, Range 1 West, section 4; Willamette Meridian) (Figure 2).

3.2 Community Description

Hubbard was incorporated in 1891 and was historically an agricultural community. Principal industries today include agriculture, clothing, steel and manufacturing. Hubbard is a 25-35 minute commute to job opportunities in the nearby Portland and Salem metropolitan areas. Estimated population in 2000 was 2,285, a 20% increase from 1990 (PSU 2001).

The Hubbard UGB is roughly diamond shaped and follows the city limits on the southwest (with one small exception) and southeast sides (Figure 3). The UGB includes some areas outside the city limits on the northwest and northeast sides. The area within the UGB is approximately 446 acres. Hubbard is bisected from northeast to southwest by state route 99E and by a Southern Pacific rail line that parallels the highway. Much of the area within the UGB has been developed (Figure 4). Single-family homes dominate the areas west of the railroad tracks and east of Highway 99E. The central area along the railroad and highway is the historical commercial and industrial center. New industrial and commercial development is occurring in the area south of J Street, along Industrial Way and Highway 99E. Undeveloped areas remain around the edges of the UGB, primarily along Industrial Way and outside the city limits on the northwest and northeast edges of the UGB. Andrew Commons, a 13-acre residential subdivision, has been proposed for the north edge of the UGB on the west side of 5th Street.

3.3 Landscape Setting and Topography

Hubbard is located within the French Prairie region of the Willamette Valley (Figure 5). Most of the terrain in the UGB is flat. The ravines of Little Bear Creek and Mill Creek, respectively, form the west and northwest edges of the UGB. Slopes along the ravines are 12 – 20 %. Elevations range from approximately 185 feet NGVD in the highest areas of the UGB to approximately 130 feet along Mill Creek. The majority of the study area is between 177 and 180 feet.

3.4 Hydrology

3.4.1 Watershed

Hubbard is located entirely within the Senecal Creek/Mill Creek watershed in the Molalla-Pudding River hydrologic unit of the Willamette River Basin (Figure 2). The watershed is approximately 55 square miles in size.

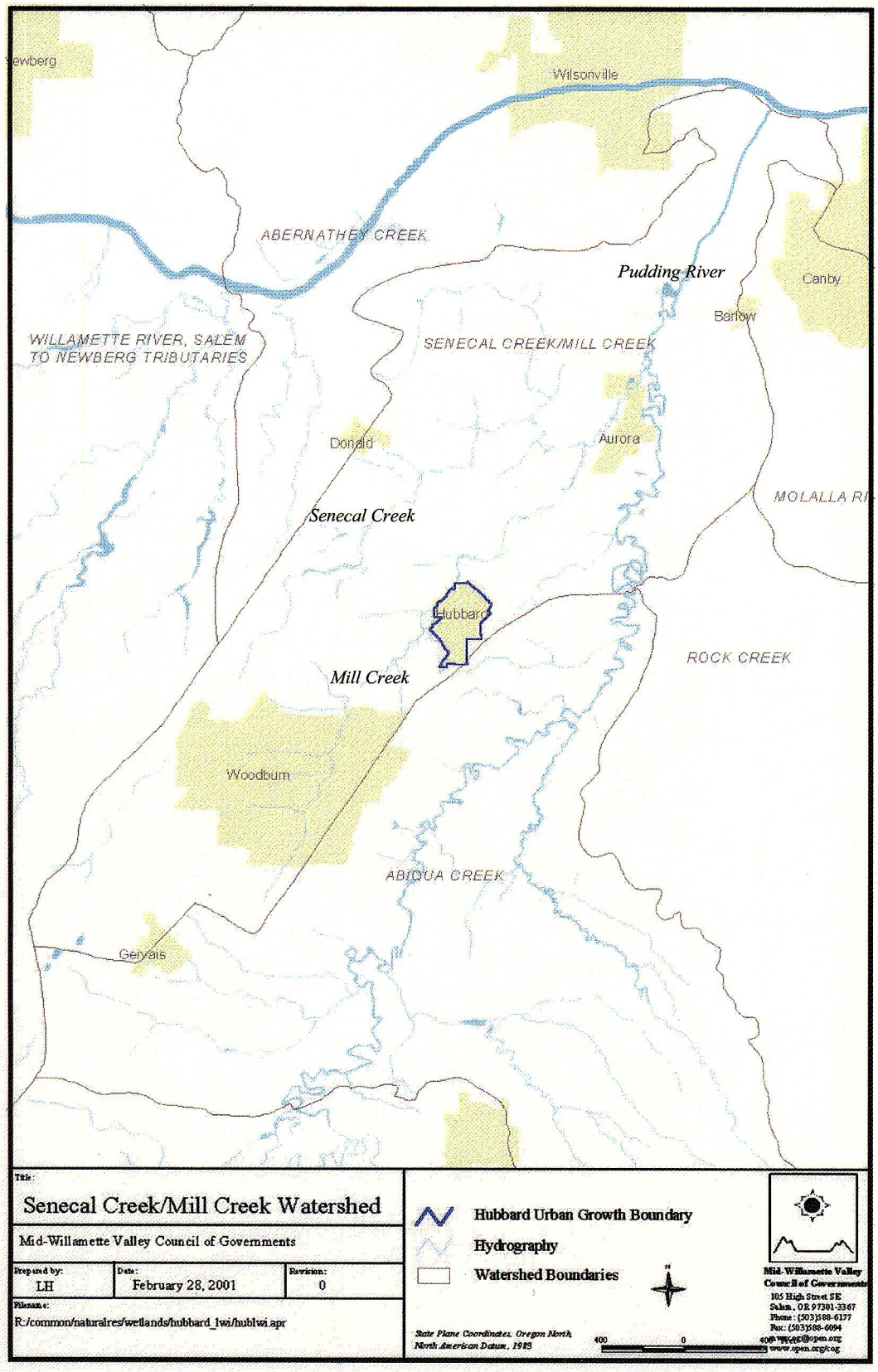
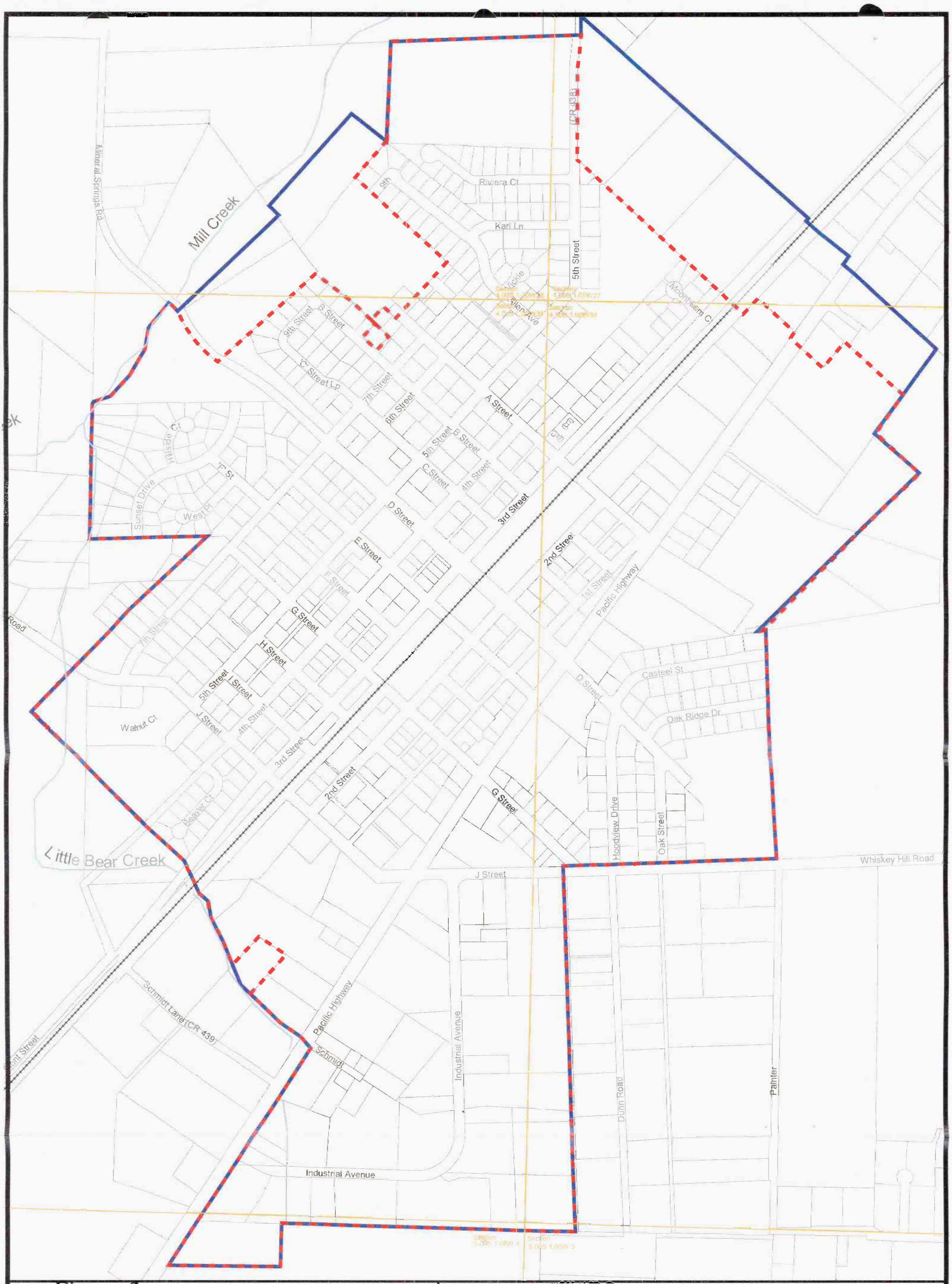


Figure 2. Senecal Creek/Mill Creek Watershed



Title: Figure 3.
City of Hubbard Base Map

Mid-Willamette Valley Council of Governments

Prepared by:	Date:	Revision:
LH	February 28, 2001	0

Filename:
R:/common/naturalres/wetlands/hubbard_lwi/hublwi.apr

Railroad
City Limits
Urban Growth Boundary
Streams
Sections
Taxlots

N

State Plane Coordinates, Oregon North, North American Datum, 1983

400 0 400 Feet

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Salem, OR 97301-3367
Phone: (503)588-6177
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mwvcog@open.org
www.open.org/cog

Figure 4. July 2, 1996 Aerial Photograph

Source: Spencer B. Gross, Inc. Portland, Oregon

NORTH
approximate scale 1"=500'

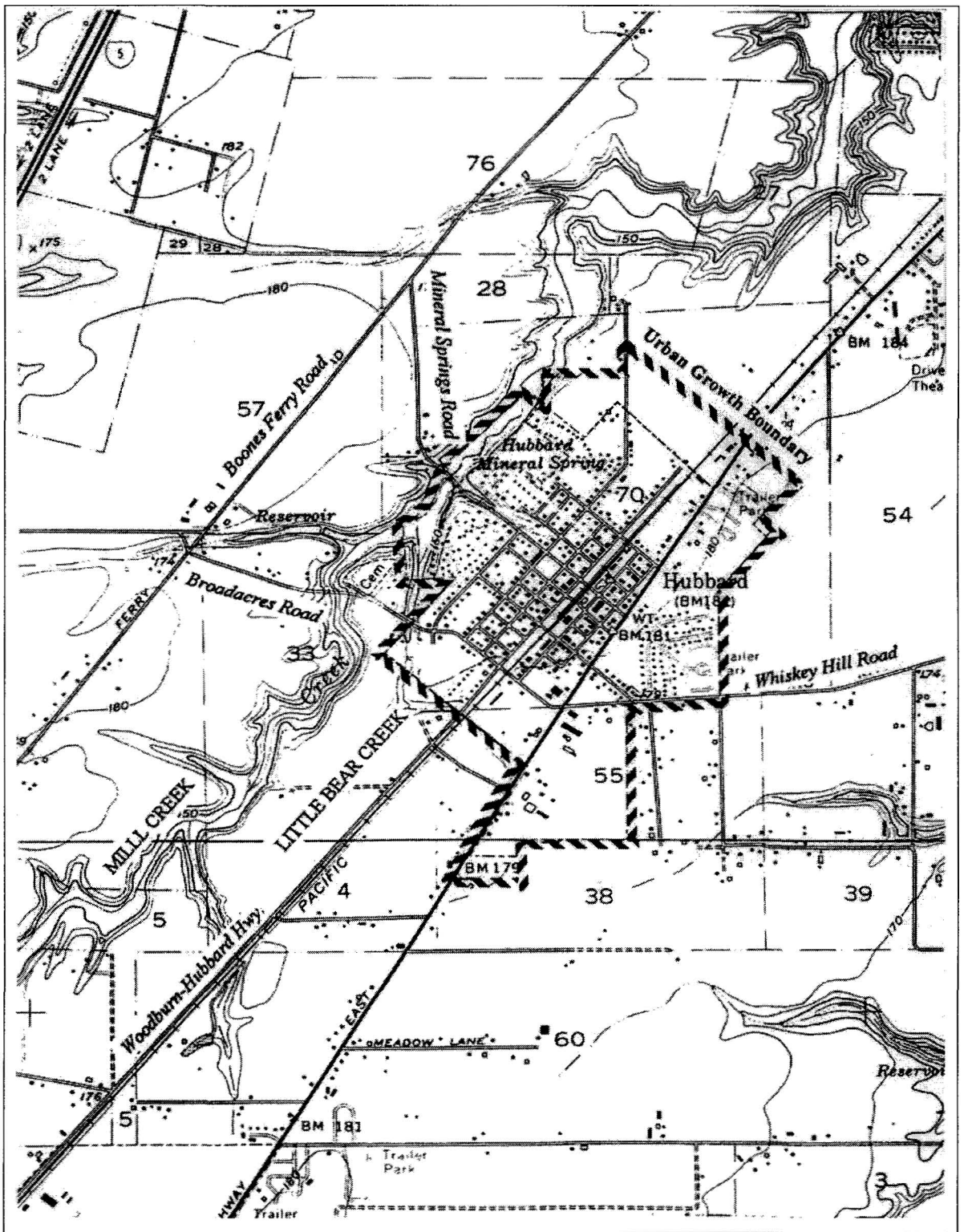


Figure 5. Woodburn, Oregon 7.5' Quadrangle

NORTH

Source: U.S. Geological Survey. 1970 (photorevised 1985)

1:24,000

3.4.2 Climate, Precipitation and Growing Season

The Hubbard area has a modified marine climate. Average annual precipitation is approximately 40-45 inches with more than 70 percent falling as rain from November through March. Summers are dry with less than 7 percent of total annual precipitation falling in June, July, and August. Stream flows in the watershed begin to increase rapidly in October, peak in January-February, and are lowest in August. The growing season is approximately 263 days long, from early March to late November (USDA 72).

3.4.3 Surface Hydrology

Mill Creek, a perennial stream, flows northward and runs along the northwest edge of the study area. Little Bear Creek, an intermittent tributary of Mill Creek, originates at the south edge of the study area, flows along the southwest and west edges of the study area and enters Mill Creek on the west edge of the study area. The streams are located in ravines. The Mill Creek ravine has steep forested slopes that drop approximately 30-40 feet to a broad flat bottomland containing the stream channel. Little Bear Creek has a similar ravine in its lower half. There are no documented stream gages on Mill Creek or Little Bear Creek (WRD 2001). The only other surface hydrology features in Hubbard are several small created ponds within the Mill Creek floodplain.

Storm water from developed areas is collected and discharged into Little Bear and Mill Creeks (KPFF Consulting Engineers 1996) at several locations. The Hubbard sewage treatment plant discharges treated wastewater into Mill Creek just upstream from Mineral Springs Road.

Physical modifications to the streams include areas of culverting, diversion, and removal of riparian vegetation. Mill Creek is culverted where it passes under Mineral Springs Road. Little Bear Creek is culverted where it passes under Broadacres Road, Woodburn-Hubbard Road (3rd Street), the railroad grade, Highway 99E, and Industrial Way. The headwaters section of the creek south of Industrial Way appears to have been culverted and filled at some time in the past. The USGS quad map shows a reservoir on the stream upstream from Broadacres Road, apparently created by damming the stream. Field inspection determined that the stream was flowing around the diversion structure and only limited ponding was occurring behind it.

3.4.4 Flood Mapping

Federal Emergency Management Agency (FEMA) mapping shows the flat bottomland and lower slopes along Mill Creek and the lowest portion of Little Bear Creek within the 100-year floodplain. The flat bottomland area along Mill Creek is also mapped as, "floodway." The remainder of Little Bear Creek upstream to Highway 99E is mapped as, "Other Flood Areas: Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than one square mile..." The rest of the Hubbard UGB is mapped as being outside the 500-year floodplain.

3.4.5 National Wetland Inventory Mapping

The National Wetland Inventory has mapped wetlands within the study area. Wetlands are mapped within the floodplains of Mill Creek and Little Bear Creek and include palustrine forested, emergent and open water wetlands (Figure 6).

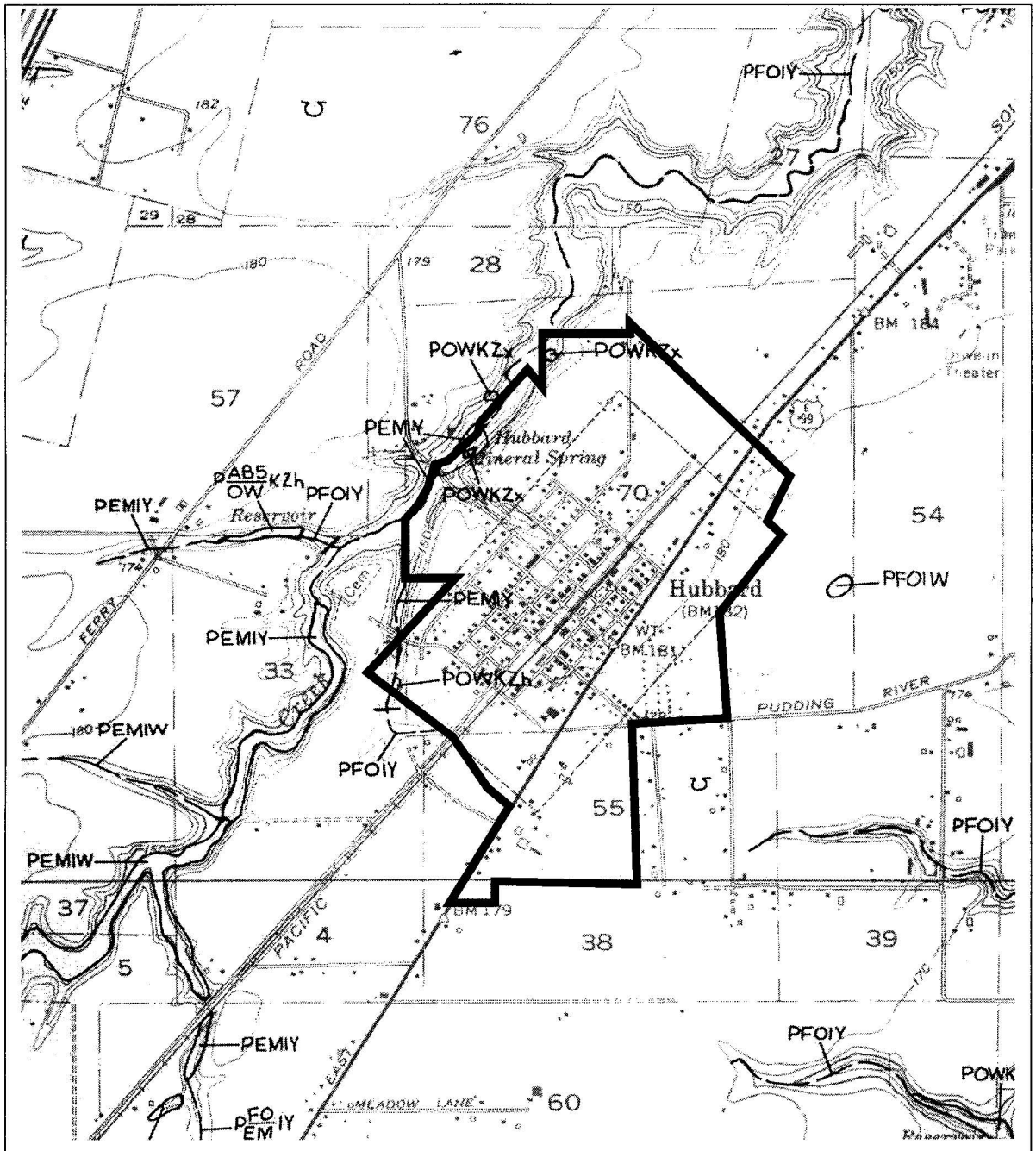


Figure 6. National Wetland Inventory Map

NORTH
1:24,000

Source: U.S. Fish and Wildlife Service. 1983

3.4.6 Wetland Determination and Delineation Reports

Wetland determination files of the Division of State Lands were reviewed; no wetland determinations or delineations in Hubbard were identified. A wetland delineation report has been submitted to the City of Hubbard for the proposed Andrew Commons Subdivision at the north edge of the UGB. The report identifies wetlands in the northwest corner of the property, within the Mill Creek floodplain). The wetlands are described as Reed Canarygrass dominated palustrine emergent wetlands containing an excavated irrigation supply pond.

3.5 Soils

Soil units mapped in Hubbard are shown in Table 2 and Figure 7. Concord, Dayton and Labish soils are hydric soils. Amity Silt Loam can have inclusions of hydric Concord. Woodburn Silt Loam, 0-3% slopes, can have inclusions of somewhat poorly drained soils. Most of the study area is mapped as Woodburn soils with a large area of mapped Amity soils east of Highway 99E. Terrace Escarpments and the steeper phases of Woodburn soils are found on the slopes of the Mill Creek and Little Bear Creek ravines. Hydric Concord, Dayton and Labish soils are mapped in the Mill Creek and Little Bear Creek floodplains. Concord soil is also mapped in two areas along the southeast edge of the study area.

Table 2. Soils Mapped in Hubbard

Name	Map Code	Hydric Component
Amity Silt Loam	Am	Inclusions: Concord
Concord Silt Loam	Co	All
Dayton Silt Loam	Da	All
Labish Silty Clay Loam	La	All
Terrace Escarpments	Te	--
Woodburn Silt Loam, 0-3% slopes	WuA	Inclusions: Somewhat poorly drained soils
Woodburn Silt Loam, 3-12% slopes	WuC	--
Woodburn Silt Loam, 12-20% slopes	WuD	--

3.6 Vegetation

3.6.1 Presettlement Vegetation

The Oregon Natural Heritage Program has compiled maps of vegetation communities in the Willamette Valley at the time of settlement based on surveyor notes from the initial 19th century General Land Office surveys (Figure 8). The maps indicate that plant communities in the Hubbard area were predominately non-wetland types including Douglas Fir savanna, White Oak savanna, and upland prairie.

Figure 7. Marion County Soil Survey Map

NORTH
1:20,000

Source: USDA, SCS in cooperation with Oregon Agricultural Experiment Station. 1972

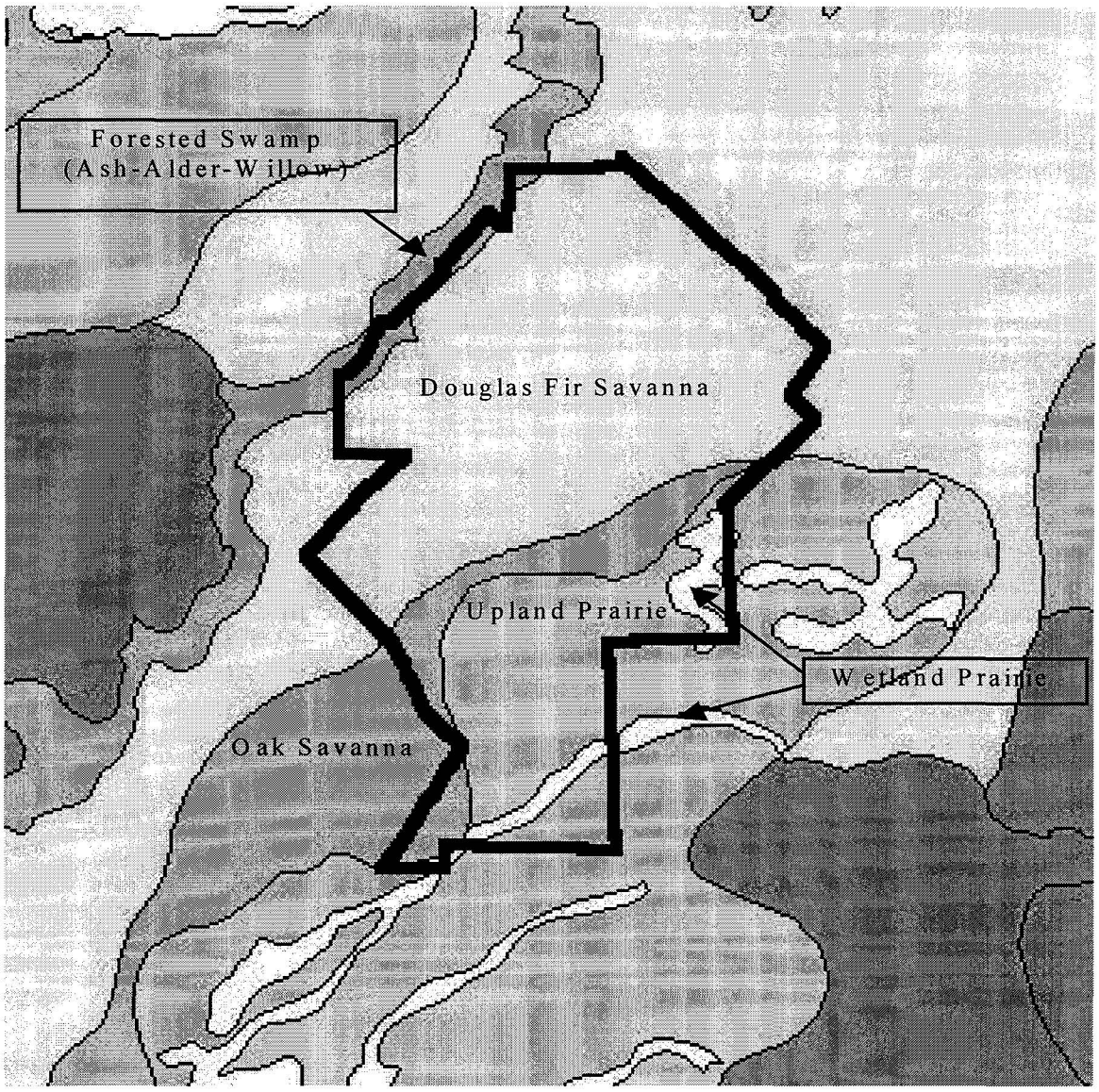


Figure 8. Presettlement Vegetation (1851)

Source: Oregon Natural Heritage Program. The Nature Conservancy of Oregon. 1999

NORTH
no scale

The Mill Creek area is mapped as riparian and wetland forest composed of ash-alder-willow swamp. Small areas along the southeast edge of the study area are mapped as seasonally wet prairie.

3.6.2 Existing Vegetation

Current land use patterns in the Willamette Valley have substantially altered the pre-settlement vegetation patterns. Presently, the Willamette Valley is dominated by vegetation associated with farming. Woodlots and urbanized areas are interspersed within

the agricultural lands. Riparian forests and wetlands persist in limited areas along rivers and streams.

Aerial photographs and field observations show that vegetation in Hubbard has been altered by agriculture and urban development activities. Residential areas are dominated by lawn grasses and ornamental shrubs and trees. Vacant fields are dominated by introduced pasture and seed grasses. The ravine slopes and floodplains of Mill Creek and Little Bear Creek are less actively managed and contain a mix of upland and wetland forest, shrub and emergent communities. The ravine slopes are predominately Douglas Fir dominated forest. In more developed areas the slopes often make up the back yards of homes and include lawn grasses and ornamentals. Stream floodplains are a mixture of alder, ash and willow wetland forest, willow, spirea and stream dogwood shrub wetland, and Reed Canarygrass dominated emergent wetland.

4.0 Local Wetland Inventory Results

4.1 Probable Wetland Identification

Probable wetlands were identified in the floodplains of Mill Creek and Little Bear Creek based on topography, presence of streams, ponds and springs, mapped hydric soils, NWI mapping, and the Andrew Commons Subdivision wetland delineation report. Probable wetlands were also identified along the southeast edge of the UGB in two areas of mapped hydric soils.

4.2 Field Verification and Wetland Mapping

4.2.1 Wetlands

see JD data plots

Wetlands were field-verified within the floodplain of Mill Creek for its entire length within the study area and within the floodplain of Little Bear Creek from its mouth up to Highway 99E (Figure 9). Four wetland units were mapped and characterized. All of the wetlands extended outside the UGB. Wetland acreage within the Hubbard UGB is approximately 8 acres.

4.2.2 Other Waters

Other waters field verified in the study area and mapped included the channels of Mill Creek, a perennial stream, and Little Bear Creek, an intermittent stream. The USGS and NWI maps showed a large in-channel pond on Little Bear Creek, locally known as Bronec Reservoir. The pond is no longer there. The diversion structure created to back up water has been breached by the stream. Two other excavated ponds are shown on the NWI along the east side of Mill Creek. The pond at the Hubbard Mineral Springs is just outside the UGB. The second pond is an abandoned irrigation supply pond within wetlands on the site of the proposed Andrew Commons Subdivision.

4.2.3 Non-wetlands

Probable wetlands were also identified by hydric soil mapping along the southeast edge of the UGB in two areas of mapped hydric Concord soils and along the upper reaches of Little Bear Creek (mapped hydric Dayton soils) upstream of Highway 99E.

The southern of the two mapped hydric Concord soil areas includes the headwaters of Little Bear Creek and extends to the east as a possible headwaters source of Brandy Creek. The area has been highly altered by the construction of Industrial Way and the construction of several large industrial, warehouse and office buildings. Broad berms run along both sides of Industrial Way, apparently created from material excavated during the construction of the street. Undeveloped areas are grass fields. An on-site wetland determination was made of this area. Sample plots were established at 6 locations to characterize hydrology, soils and vegetation (Figure 9). Sample plot data sheets are in Appendix B.

Sample plots SP-1, 2 and 3 were located in a mowed hay field at the western end of the area in grass fields. All three of the sample plots had hydric soil characteristics but had no

wetland hydrology indicators and did not meet the hydrophytic vegetation criteria. No wetlands were identified.

Sample plots SP-4, 5 and 6 were located in a hay field at the eastern end of the area. The field contained a shallow linear depression in the center that was approximately 150' by 10'. The depression appeared to have been created by plowing and grading of the field. SP-4 was located in the west end of this depression at the lowest elevation in the field. SP-5 was located in the depression at the opposite end. SP-6 was located outside the depression. Hydric soil characteristics were observed at all 3 sample points. Indicators of wetland hydrology at SP-4 included oxidized rhizospheres with live roots, cracked soils and the topographic position. However, vegetation did not meet wetland criteria. SP-5 had no indicators of wetland hydrology and the vegetation was 50% hydrophytic. SP-6 had no wetland hydrology indicators and 0-50% hydrophytic vegetation. The depression did not meet wetland criteria. Wetland determinations for these sample plots were made difficult by the mowed vegetation and the dry time of year.

Farmed wetland?

The northern mapped hydric Concord soil area is along the east end of D Street. The entire area is occupied by the Hoodview Mobile Estates manufactured home subdivision. A drive through of the subdivision was conducted. The area consists of paved streets and driveways, manufactured homes and maintained yards. Vegetation was lawn grasses and exotic ornamental shrubs and trees. No evidence of wetlands was observed.

The upper reach of Little Bear Creek extends south from Highway 99E and is mapped as hydric Dayton soils. A channelized intermittent stream was present from Highway 99E to Industrial Way that did not meet wetland criteria. No water was present during field visits in July, August, October and November. Vegetation in the channel and on the banks was dominated by upland and facultative species including *Holcus lanatus* (FAC), *Cirsium arvense* (FACU+), *Rubus discolor* (FACU), and *Cytisus scoparius* (NOL). South of Industrial Way there was no channel as it apparently was filled (and possibly culverted) at some time in the past. Vegetation in the area was dominated by *Festuca arundinacea* (FAC-) and *Daucus carota* (NOL). No evidence of wetlands was observed.

The remainder of the study area was observed during the windshield survey and no wetland indicators were noted.

4.3 Wetland Descriptions

Wetland areas are a mix of palustrine forested, scrub-shrub, emergent and open water. Wetland summary sheets are in Appendix A. Characteristics of individual wetlands are described below.

Wetland 1

This 2.78 acre wetland (portion within UGB only, the wetland extends beyond the UGB) includes portions of the Mill Creek floodplain from the north edge of the UGB south to Mineral Springs Road. Wetland 1 includes sub-units 1a, 1b and 1c. 1a is located on the site of the proposed Andrew Commons Subdivision. It is a palustrine emergent wetland containing an excavated pond. 1b is the central portion of Wetland 1 and is primarily palustrine forested wetland with an emergent wetland pasture at the south end. An excavated pond associated with the Hubbard Mineral Springs is just outside the UGB. 1c is adjacent to Mineral Springs Road and at the base of the east slope above the Mill Creek

floodplain. It is a section of the Mill Creek floodplain that has been isolated by fill material placed for a gravel access road. 1c is palustrine forested wetland. The wetland is bordered by forested upland slopes along the east side and a mix of rural development and agriculture on the west side.

Wetland 2

This 3.56 acre wetland (portion within UGB only, the wetland extends beyond the UGB) is the portion of the Mill Creek floodplain from Mineral Springs Road south to the mouth of Little Bear Creek and the Little Bear Creek floodplain from its mouth south towards Broadacres Road. The wetland is primarily palustrine forested with a large patch of emergent wetland at the confluence of Little Bear Creek and Mill Creek and smaller patches of scrub-shrub wetland. The wetland is bordered on the east side by forested upland slopes and the Hubbard sewage treatment facility at its north end and by residential backyards on the slopes at the south end. The west side is bordered by forest and agricultural lands.

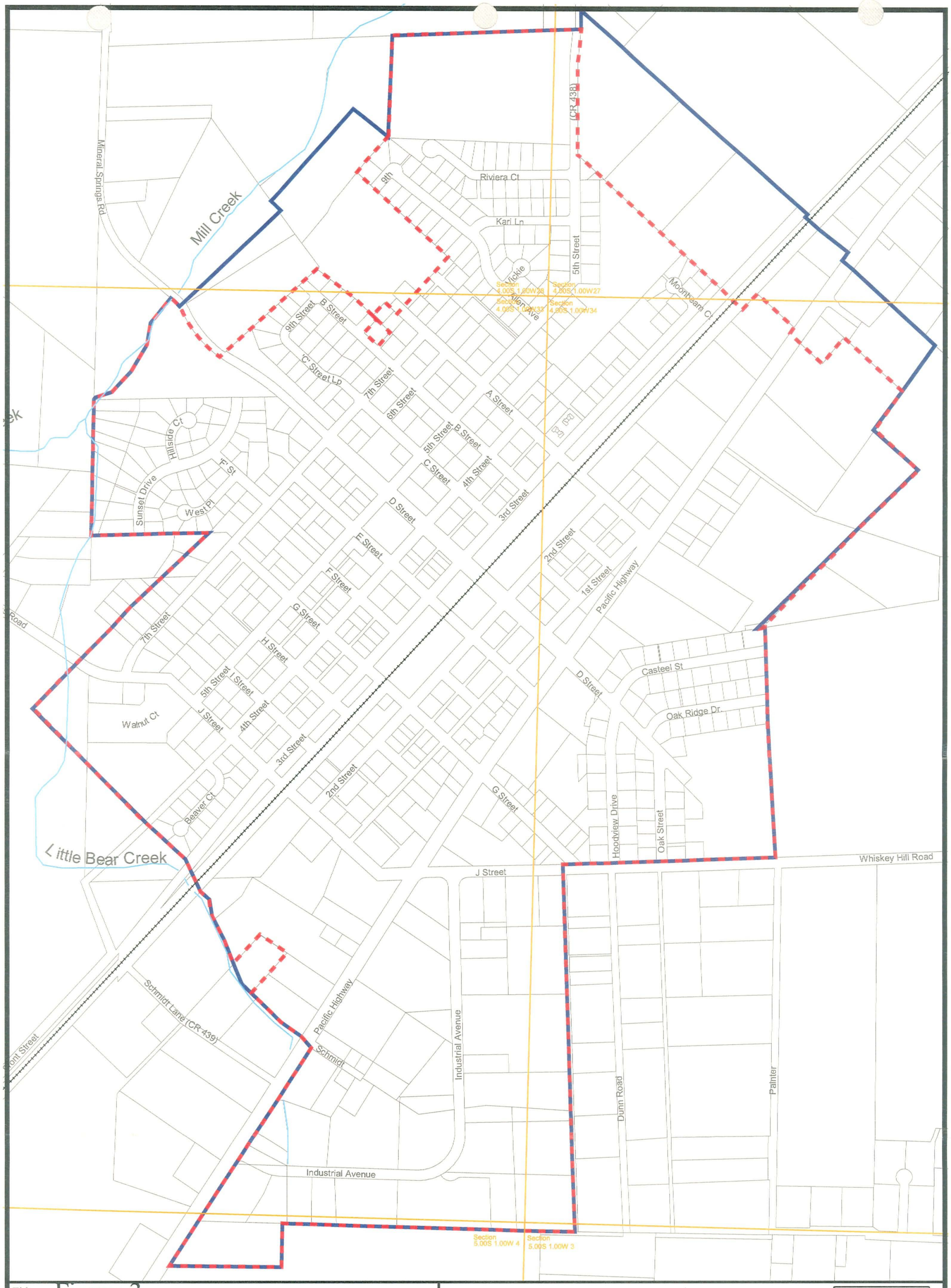
Wetland 3

This 0.70 acre wetland (portion within UGB only, the wetland extends beyond the UGB) is the portion of the Little Bear Creek floodplain from Broadacres Road south approximately 500 feet to where it exits the UGB. The wetland is a mixture of palustrine emergent and scrub-shrub wetland. USGS maps show a pond at the south end of this wetland, apparently created by damming Little Bear Creek. Field inspection determined that the stream was flowing around the diversion structure and only limited ponding was occurring behind it. The wetland is surrounded by forested upland slopes.

Wetland 4

This 0.98 acre wetland is the portion of the Little Bear Creek floodplain from the railroad tracks upstream to Highway 99E. The wetland straddles the city limits and UGB (which are coincident for the length of Wetland 4 except for one small area where the UGB includes a lot outside the city limits). Most of Wetland 4 is outside the UGB. It is palustrine scrub-shrub wetland. The wetland is contained within the stream banks. It is highly altered including channelization of the stream and placement of fill material along both banks. The north side of the wetland includes a city water tank and a mix of developed and vacant land. The south side is an agricultural field.

Appendix H. Technical Staff and Qualifications



Title: Figure 3.
City of Hubbard Base Map

Mid-Willamette Valley Council of Governments

Prepared by:	Date:	Revision:
LH	February 28, 2001	0

Filename:
R:/common/naturalres/wetlands/hubbard_lwi/hublwi.apr

Railroad
City Limits
Urban Growth Boundary
Streams
Sections
Taxlots

N

State Plane Coordinates, Oregon North, North American Datum, 1983

400 0 400 Feet

Mid-Willamette Valley Council of Governments
105 High Street SE
Salem, OR 97301-3367
Phone: (503)588-6177
Fax: (503)588-6094
mwvcog@open.org
www.open.org/cog

Technical Staff and Qualifications

Joel Shaich: Project Manager and Wetland Scientist

Joel Shaich, Natural Resource Planner at the Mid-Willamette Valley Council of Governments (MWVCOG), is a certified Professional Wetland Scientist with over 10 years wetland regulatory and management experience in Oregon for government agencies at the local, state and federal levels and in the private sector. He has conducted wetland delineations, local wetland inventories, OFWAM assessments and wetland significance determinations. In addition, he has conducted state and federal agency oversight reviews for technical and regulatory adequacy of wetland delineations, local wetland inventories, OFWAM assessments and wetland significance determinations. Mr. Shaich contributed to state administrative rules for wetland and waterway jurisdictional determinations and wetland significance determinations. He has participated on assessment teams helping develop OFWAM, the Oregon Wetland-Riparian Assessment Project, and the Washington State Wetlands Function Assessment Project. Related natural resource experience includes stream assessment team leader, 401 water quality certification reviewer and NEPA reviewer for water quality, aquatic habitat and wetlands issues. Mr. Shaich's educational background includes an M.S. in Environmental Science with a focus on wetlands management and professional training in wetland delineation and wetland plant identification.

Lesley Hegewald: GIS Analyst

Lesley Hegewald, GIS Analyst with MWVCOG has 9 years experience in cartography and geographical information systems using ArcInfo GIS, ArcInfo Macro Language (AML), and Microstation. She has completed numerous local and regional scale natural resource inventory and mapping projects including wetlands, riparian areas, wildlife habitat, flood hazards, groundwater, and contaminant sources. Ms. Hegewald has a B.A. in Sociology from California State University.

Appendix A. Wetland Summary Sheets

WETLAND SUMMARY SHEET

Wetland Code: 1	**Significance Determination:** SIGNIFICANT
Hydrologic Basin(s): Mill Creek	**Size (acres):** 2.78 (portion within UGB)
Legal: T4S R1W 28 SE ¼, 33 NE 1/4	**Affected Tax Lot(s):**
Street Address/Description: From north edge of UGB south to Mineral Springs Road, along west edge of UGB.	28D 400 28D 1200 28DD 101 33AB 100
Field Verification Date(s): 8/29/00, 11/8/00	**Verification Type:** Off-site
Sample Plot Numbers: None	**Investigator(s):** Shaich

Landscape Position and Boundary Characteristics: Wetland occupies Mill Creek floodplain/bottomland and extends outside UGB. Total wetland area is approximately 7.7 acres. Boundaries are base of slope at floodplain/bottomland edge. Mineral Springs Road is south boundary. Sub-unit 1c has been isolated from the floodplain by a gravel road embankment on the west side of the sub-unit. Wetland-upland boundaries are identified by topographic changes from flat floodplain/bottomland to steep ravine slopes or road fill slopes and by vegetation changes from wetland pasture and forest vegetation communities to upland forest communities.

Land Use and Site Alterations: Sub-unit 1a is not in active use; it was probably cleared of woody vegetation in the past. There is a small (0.16 acre) excavated irrigation pond (no longer in use) in wetland. Sub-unit 1b is forested on the north portion (North Marion School District property). The southern privately owned portion is actively grazed pasture and contains the Hubbard Mineral Springs that discharge into a small (0.03 acre) pond in the wetland. Sub-unit 1c is a forested portion of the wetland that has been isolated from the floodplain by a gravel road embankment on the west side of the sub-unit.

HGM Classification(s): Valley Slope, Riverine Impounding	**Cowardin Classification(s):** PFO, PEM, POW
Hydrology Source(s): Overbank flooding (Mill Creek and Little Bear Creek), groundwater discharge, stormwater discharge	**Soil-Mapped Series:** Labish silty clay loam (La)

DOMINANT WETLAND VEGETATION

Trees	Shrubs	Vines	Herbs
Oregon ash	Creek dogwood		Reed canarygrass
Red alder			Stinging nettle
Willow species			Slough sedge

OFWAM WETLAND FUNCTIONAL ASSESSMENT

Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
Habitat for some species	Impacted	Intact	Intact	Potential

Comments: The proposed Andrew Commons subdivision is located on tax lot 28DD 101. Wetlands on that property were delineated by Pacific Habitat Services, Inc. in September, 2000. The delineation report had not been reviewed by DSL at the time of this report.

WETLAND SUMMARY SHEET

Wetland Code: 2	**Significance Determination:** SIGNIFICANT
Hydrologic Basin(s): Mill Creek	**Size (acres):** 3.56 (portion within UGB)
Legal: T4S R1W 33 NE ¼	**Tax Lot(s):**
Street Address/Description: Mineral Springs Road south towards Broadacres Road along west edge of UGB.	33AB 1200, 1400, 1500, 1600, 1700, 1800. 1900 33AC 4200, 4300, 4400
Field Verification Date(s): 8/29/00, 10/13/00	**Verification Type:** Off-site
Sample Plot Numbers: None	**Investigator(s):** Shaich

Landscape Position and Boundary Characteristics: Wetland occupies floodplain/bottomland at confluence of Mill Creek and Little Bear Creek and extends outside UGB. Total wetland area is approximately 11.4 acres. Boundaries are base of slope at floodplain/bottomland edge. North boundary is Mineral Springs Road. South boundary is Broadacres Road. Wetland-upland boundaries are identified by topographic changes from flat floodplain/bottomland to steep ravine slopes or road fill slopes and by vegetation changes from wetland pasture and forest vegetation communities to upland forest communities.

Land Use and Site Alterations: The wetland is managed as open space. The City of Hubbard wastwater treatment plant discharges into Mill Creek just upstream from Mineral Springs Road.

HGM Classification(s): Valley Slope, Riverine Impounding	**Cowardin Classification(s):** PFO, PEM, PSS
Hydrology Source(s): Overbank flooding (Mill Creek and Little Bear Creek), groundwater discharge, stormwater discharge, wastewater treatment plant discharge	**Soil-Mapped Series:** Labish silty clay loam (La)

DOMINANT WETLAND VEGETATION

Trees	Shrubs	Vines	Herbs
Oregon ash	Indian Plum	Himalayan blackberry	Reed canarygrass
Black cottonwood	Creek dogwood	English Ivy	Stinging nettle
Red alder		Morning glory	Horsetail species
Western red cedar		Bittersweet nightshade	Skunk cabbage

OFWAM WETLAND FUNCTIONAL ASSESSMENT

Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
Habitat for some species	Impacted	Intact	Intact	Potential

Comments:

WETLAND SUMMARY SHEET

Wetland Code: 3	**Significance Determination:** SIGNIFICANT
Hydrologic Basin(s): Mill Creek	**Size (acres):** 0.70 (portion within UGB)
Legal: T4S R1W 33 NE ¼ and SE ¼	**Affected Tax Lot(s):** 100
Street Address/Description: Broadacres Road south along Little Bear Creek to edge of UGB.	
Field Verification Date(s): 7/27/00, 11/8/00	**Verification Type:** Off-site
Sample Plot Numbers: None	**Investigator(s):** Shaich

Landscape Position and Boundary Characteristics: Wetland occupies floodplain/bottomland of Little Bear Creek and extends outside UGB. Total wetland area is approximately 2.53 acres. Boundaries are toe of slope at edge of creek floodplain/bottomland. Broadacres Road is the north boundary. Wetland follows Little Bear Creek upstream south and east to Woodburn-Hubbard Highway (3rd Street). Wetland-upland boundaries are identified by topographic changes from flat floodplain/bottomland to steep ravine slopes or road fill slopes and by vegetation changes from wetland pasture and forest vegetation communities to upland forest communities.

Land Use and Site Alterations: The wetland is currently managed as open space. A diversion on Little Bear Creek was used to create Bronec Reservoir but the stream has breached the diversion and drained the reservoir. The reservoir site is now dominated by woody vegetation. Limited ponding still occurs immediately behind the remnant structure.

HGM Classification(s): Riverine Impounding	**Cowardin Classification(s):** PEM, PSS
Hydrology Source(s): Overbank flooding (Little Bear Creek), groundwater discharge	**Soil-Mapped Series:** Dayton silt loam (Da)

DOMINANT WETLAND VEGETATION

Trees	Shrubs	Vines	Herbs
	Willow species		Reed canarygrass
	Douglas spirea		

OFWAM WETLAND FUNCTIONAL ASSESSMENT

Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
Habitat for some species	Impacted	Intact	Impacted	NA

Comments:

WETLAND SUMMARY SHEET

Wetland Code: 4	**Significance Determination:** SIGNIFICANT
Hydrologic Basin(s): Mill Creek	**Size (acres):** 0.98
Legal: T4S R1W 33 SE ¼	**Affected Tax Lot(s):**
Street Address/Description: Little Bear Creek from RR tracks to Highway 99E	33DB 2900, 3000 33DC 100, 300, 400, 500
Field Verification Date(s): 7/27/00	**Verification Type:** Off-site
Sample Plot Numbers: None	**Investigator(s):** Shaich

Landscape Position and Boundary Characteristics: Wetland is within stream banks of Little Bear Creek along edge of UGB. Most of wetland is outside UGB. Total wetland area is approximately 0.98 acres. Boundary on south side is bank at edge of agricultural field. North boundary is bank and/or fill slopes associated with development. West boundary is RR fill. East boundary is Highway 99E. Wetland-upland boundaries are identified by topographic changes from flat stream channel and narrow floodplain to steep banks and fill slopes and by vegetation changes from wetland/riparian vegetation to upland plant species.

Land Use and Site Alterations: The wetland is currently managed as a drainageway.

HGM Classification(s): Riverine Flow Through	**Cowardin Classification(s):** PSS
Hydrology Source(s): Overbank flooding (Little Bear Creek)	**Soil-Mapped Series:** Dayton silt loam (Da)

DOMINANT WETLAND VEGETATION

Trees	Shrubs	Vines	Herbs
Black cottonwood	Willow species		Reed canarygrass

OFWAM WETLAND FUNCTIONAL ASSESSMENT

Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
Habitat for some species	Impacted	Intact	Impacted	Potential

Comments:

Appendix B. Sample Plot Data Sheets

W/U

	Veg	Soils	Hydro
SP1	U	W	U
2	U	U	U
3	U	W	U
☆ 4	U	W	W
5	U(Juncus)	W	U
6	Unknown	W	U

This section contains data sheets 1-6 done by Joel & noted on the LWI map (in SE portion of study area) and it contains data plots 1-6 done by DSL (JG) location noted on map in here

WETLAND DETERMINATION SAMPLE PLOT DATA FORM

DATE: 10/13/00
SAMPLE PLOT NUMBER: **SP-1**
PROJECT: Hubbard Local Wetland Inventory
STAFF: Shaich
LEGAL DESCRIPTION: T5S R1W 4 TL200
COUNTY: Marion
LOCATION: NE corner of lot, 100' south of building on lot to north in grass field
RECENT WEATHER: rain
Do normal conditions exist: ☒YES/☐NO. If NO, explain:
Has ☐VEGETATION, ☐SOILS, ☐HYDROLOGY been significantly disturbed?
Explain: no disturbance

VEGETATION

SPECIES	Strata	Cover	Status	SPECIES	Strata	Cover	Status
Festuca arundinacea	H	100	FAC-				
Hypochaeris radicata	H	25	FACU				
Rubus discolor	S	35	FACU				

Percent of dominant species that are OBL, FACW, or FAC: 0% (0/3)

HYDROPHYTIC VEGETATION CRITERION MET: ☐YES ☒NO
Rationale/Comments: dominant species do not exceed 50% FAC or wetter

SOILS

Map Unit Name: Concord silt loam
Drainage Class: PD
Taxonomy: Typic ochraqualfs
On Hydric Soils List: ☒YES ☐NO

Depth	Horizon	Matrix Color	Redox Concentrations	Redox Depletions	Texture
0-18		10 YR 3/1			

Hydric Soil Indicators:
☐Histosol
☐Histic Epipedon
☐Sulfidic Odor
☐Reducing Conditions (test positive)
☐Gleyed
☒Redox. features (w/in 10")
☐Concretions/Nodules (w/in 3";>2mm)
☐High organic content in surface (sandy soils)
☐Organic streaking (sandy soils)
☐Organic pan (sandy soils)
☐On Hydric Soils List (and soil profile matches)
☐Other:

HYDRIC SOILS CRITERION MET: ☒YES ☐NO
Rationale/Comments: low chroma matrix

HYDROLOGY

Recorded Data: ☒Aerial Photos ☐Stream Gauge ☐Other:
Field Data: Inundation Depth: none Saturation Depth: >18" Free Water Depth: >18"

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

Secondary Indicators (2 or more required):
☐Oxidized root channels w/live roots (upper 12")
☐Water-stained leaves
☒Local soil survey data
☐FAC-neutral test
☐Other:

1987 CORPS MANUAL WETLAND HYDROLOGY CRITERIA MET: ☐YES ☒NO
NFSAM FARMED WETLAND HYDROLOGY CRITERIA MET: ☐YES ☐NO
Rationale/Comments:appears to be relict hydric soil, adjacent areas filled, tiled

JURISDICTIONAL WETLAND DETERMINATION

WETLAND: ☐YES ☒NO
Rationale/Comments:doesn't meet hydrophytic vegetation criterion, no hydrology indicators, probably drained

WETLAND DETERMINATION SAMPLE PLOT DATA FORM

DATE: 10/13/00
SAMPLE PLOT NUMBER: **SP-2**
PROJECT: Hubbard Local Wetland Inventory
STAFF: Shaich
LEGAL DESCRIPTION: T4S R1W 33DD TL 1100
COUNTY: Marion
LOCATION: 100' east of property boundary, center of lot (north-south) in grass field
RECENT WEATHER: rain
Do normal conditions exist: ☒YES/☐NO. If NO, explain:
Has ☐VEGETATION, ☐SOILS, ☐HYDROLOGY been significantly disturbed?
Explain: No disturbance

VEGETATION

SPECIES	Strata	Cover	Status		SPECIES	Strata	Cover	Status
Festuca arundinacea	H	100	FAC-					
Poa sp.	H	20						
Cirsium arvense	H	10	FACU+					

Percent of dominant species that are OBL, FACW, or FAC: 0-50% (0-1/2)

HYDROPHYTIC VEGETATION CRITERION MET: ☐YES ☒NO
Rationale/Comments: dominant species do not exceed 50% FAC or wetter

SOILS

Map Unit Name: Concord silt loam
Drainage Class: PD
Taxonomy: Typic Ochraqualfs
On Hydric Soils List: ☒YES ☐NO

Depth	Horizon	Matrix Color	Redox Concentrations	Redox Depletions	Texture
0-18		10 YR 3/2			

Hydric Soil Indicators:
☐Histosol
☐Histic Epipedon
☐Sulfidic Odor
☐Reducing Conditions (test positive)
☐Gleyed
☐Redox. features (w/in 10")
☐Concretions/Nodules (w/in 3";>2mm)
☐High organic content in surface (sandy soils)
☐Organic streaking (sandy soils)
☐Organic pan (sandy soils)
☐On Hydric Soils List (and soil profile matches)
☐Other:

HYDRIC SOILS CRITERION MET: ☐YES ☒NO
Rationale/Comments: No hydric soil indicators

HYDROLOGY

Recorded Data: ☒Aerial Photos ☐Stream Gauge ☐Other:
Field Data: Inundation Depth: none Saturation Depth: >18" Free Water Depth: >18"

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

Secondary Indicators (2 or more required):
☐Oxidized root channels w/live roots (upper 12")
☐Water-stained leaves
☐Local soil survey data
☐FAC-neutral test
☐Other:

1987 CORPS MANUAL WETLAND HYDROLOGY CRITERIA MET: ☐YES ☒NO
NFSAM FARMED WETLAND HYDROLOGY CRITERIA MET: ☐YES ☐NO
Rationale/Comments: no hydrology indicators

JURISDICTIONAL WETLAND DETERMINATION

WETLAND: ☐YES ☒NO
Rationale/Comments: no wetland indicators, doesn't meet any of the criteria

WETLAND DETERMINATION SAMPLE PLOT DATA FORM

DATE: 11/8/00
SAMPLE PLOT NUMBER: **SP-3**
PROJECT: Hubbard Local Wetland Inventory
STAFF: Shaich
LEGAL DESCRIPTION: T4S R1W 33DD TL1600
COUNTY: Marion
LOCATION: lowest point in grass field, ~75' in from curve of Industrial Way
RECENT WEATHER: below normal rainfall
Do normal conditions exist: ☒YES/☐NO. If NO, explain:
Has ☒VEGETATION, ☐SOILS, ☐HYDROLOGY been significantly disturbed?
Explain: mowed

VEGETATION

SPECIES	Strata	Cover	Status		SPECIES	Strata	Cover	Status
Festuca arundinacea	H	100	FACU+	FAC-				
Cirsium arvense	H	10						

Percent of dominant species that are OBL, FACW, or FAC: 0% (0/1)

HYDROPHYTIC VEGETATION CRITERION MET: ☐YES ☒NO
Rationale/Comments: dominant species do not exceed 50% FAC or wetter

SOILS

Map Unit Name: Concord silt loam
Drainage Class: PD
Taxonomy: Typic Ochraqualfs
On Hydric Soils List: ☒YES ☐NO

Depth	Horizon	Matrix Color	Redox Concentrations	Redox Depletions	Texture
0-18		10 YR 3/1	FFD @ 6"		

Hydric Soil Indicators:
☐Histosol
☐Histic Epipedon
☐Sulfidic Odor
☐Reducing Conditions (test positive)
☐Gleyed
☒Redox. features (w/in 10")
☐Concretions/Nodules (w/in 3";>2mm)
☐High organic content in surface (sandy soils)
☐Organic streaking (sandy soils)
☐Organic pan (sandy soils)
☐On Hydric Soils List (and soil profile matches)
☐Other:

HYDRIC SOILS CRITERION MET: ☒YES ☐NO
Rationale/Comments: redox. features throughout soil profile

HYDROLOGY

Recorded Data: ☒Aerial Photos ☐Stream Gauge ☐Other:
Field Data: Inundation Depth: none Saturation Depth: >18" Free Water Depth: >18"

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

Secondary Indicators (2 or more required):
☐Oxidized root channels w/live roots (upper 12")
☐Water-stained leaves
☐Local soil survey data
☐FAC-neutral test
☐Other:

1987 CORPS MANUAL WETLAND HYDROLOGY CRITERIA MET: ☐YES ☒NO
NFSAM FARMED WETLAND HYDROLOGY CRITERIA MET: ☐YES ☐NO
Rationale/Comments:no hydrology indicators

JURISDICTIONAL WETLAND DETERMINATION

WETLAND: ☐YES ☒NO
Rationale/Comments: doesn't meet vegetation or hydrology indicators, road isolates field from drainage patterns

WETLAND DETERMINATION SAMPLE PLOT DATA FORM

DATE: 8/29/01
SAMPLE PLOT NUMBER: **SP-4**
PROJECT: Hubbard Local Wetland Inventory
STAFF: Shaich
LEGAL DESCRIPTION: T4S R1W 33DD TL300
COUNTY: Marion
LOCATION: west end of linear depression, lowest point in field
RECENT WEATHER: dry
Do normal conditions exist: ☒YES/☐NO. If NO, explain:
Has ☒VEGETATION, ☐SOILS, ☐HYDROLOGY been significantly disturbed?
Explain: mowed

VEGETATION

SPECIES	Strata	Cover	Status	SPECIES	Strata	Cover	Status
Hypochaeris radicata	H	50	FACU				
Daucus carota	H	20	NOL				
unknown grass	H	20					
Cirsium arvense	H	T	FACU+				

Percent of dominant species that are OBL, FACW, or FAC: 0-33% (0-1/3)

HYDROPHYTIC VEGETATION CRITERION MET: ☐YES ☒NO
Rationale/Comments: dominant species do not exceed 50% FAC or wetter

SOILS

Map Unit Name: Concord siltt loam
Drainage Class: PD
Taxonomy: Typic Ochraqualfs
On Hydric Soils List: ☒YES ☐NO

Depth	Horizon	Matrix Color	Redox Concentrations	Redox Depletions	Texture
0-4		10 YR 3/2			
4-8		10 YR 3/2	7.5 YR 4/6 CMD		
>8-hard pan					

Hydric Soil Indicators:
☐Histosol
☐Histic Epipedon
☐Sulfidic Odor
☐Reducing Conditions (test positive)
☐Gleyed
☒Redox. features (w/in 10")
☐Concretions/Nodules (w/in 3";>2mm)
☐High organic content in surface (sandy soils)
☐Organic streaking (sandy soils)
☐Organic pan (sandy soils)
☐On Hydric Soils List (and soil profile matches)
☐Other:

HYDRIC SOILS CRITERION MET: ☒YES ☐NO
Rationale/Comments: redox features at 4"

HYDROLOGY

Recorded Data: ☒Aerial Photos ☐Stream Gauge ☐Other:
Field Data: Inundation Depth: none Saturation Depth: >8" Free Water Depth: >8"

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

Secondary Indicators (2 or more required):
☒Oxidized root channels w/live roots (upper 12")
☐Water-stained leaves
☐Local soil survey data
☐FAC-neutral test
☒Other: depression, cracked soil surface

1987 CORPS MANUAL WETLAND HYDROLOGY CRITERIA MET: ☒YES ☐NO
NFSAM FARMED WETLAND HYDROLOGY CRITERIA MET: ☐YES ☐NO
Rationale/Comments:two secondary indicators

JURISDICTIONAL WETLAND DETERMINATION

WETLAND: ☐YES ☒NO
Rationale/Comments:doesn't meet vegetation criteria, linear depression is "wettest" part of drained hydric soil area

WETLAND DETERMINATION SAMPLE PLOT DATA FORM

DATE: 10/13/00
SAMPLE PLOT NUMBER: **SP-5**
PROJECT: Hubbard Local Wetland Inventory
STAFF: Shaich
LEGAL DESCRIPTION: T4S R1W 33DD TL300
COUNTY: Marion
LOCATION: east end of linear depression
RECENT WEATHER: rain
Do normal conditions exist: ☒YES/☐NO. If NO, explain:
Has ☒VEGETATION, ☐SOILS, ☐HYDROLOGY been significantly disturbed?
Explain: mowed

VEGETATION

SPECIES	Strata	Cover	Status		SPECIES	Strata	Cover	Status
Hypochaeris radicata	H	80	FACU					
Juncus sp.	H	20	FACW					

Percent of dominant species that are OBL, FACW, or FAC: 50% (1/2)

HYDROPHYTIC VEGETATION CRITERION MET: ☐YES ☒NO
Rationale/Comments: dominant species do not exceed 50% FAC or wetter, FACU species much higher cover

SOILS

Map Unit Name: Concord silt loam
Drainage Class: PD
Taxonomy: Typic Ochraqualfs
On Hydric Soils List: ☒YES ☐NO

Depth	Horizon	Matrix Color	Redox Concentrations	Redox Depletions	Texture
0-18		10 YR 3/2	7.5 YR 4/6 CMD		

Hydric Soil Indicators:
☐Histosol
☐Histic Epipedon
☐Sulfidic Odor
☐Reducing Conditions (test positive)
☐Gleyed
☒Redox. features (w/in 10")
☐Concretions/Nodules (w/in 3";>2mm)
☐High organic content in surface (sandy soils)
☐Organic streaking (sandy soils)
☐Organic pan (sandy soils)
☐On Hydric Soils List (and soil profile matches)
☐Other:

HYDRIC SOILS CRITERION MET: ☒YES ☐NO
Rationale/Comments: redox features throughout soil profile

HYDROLOGY

Recorded Data: ☒Aerial Photos ☐Stream Gauge ☐Other:
Field Data: Inundation Depth: none Saturation Depth: >18" Free Water Depth: >18"

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

Secondary Indicators (2 or more required):
☐Oxidized root channels w/live roots (upper 12")
☐Water-stained leaves
☐Local soil survey data
☐FAC-neutral test
☐Other:

1987 CORPS MANUAL WETLAND HYDROLOGY CRITERIA MET: ☐YES ☒NO
NFSAM FARMED WETLAND HYDROLOGY CRITERIA MET: ☐YES ☐NO
Rationale/Comments: no hydrology indicators

JURISDICTIONAL WETLAND DETERMINATION

WETLAND: ☐YES ☒NO
Rationale/Comments: doesn't meet vegetation or hydrology criteria, linear depression is "wettest" part of this drained hydric soil area

WETLAND DETERMINATION SAMPLE PLOT DATA FORM

DATE: 10/13/00
SAMPLE PLOT NUMBER: **SP-6**
PROJECT: Hubbard Local Wetland Inventory
STAFF: Shaich
LEGAL DESCRIPTION: T4S R1W 33DD TL 300
COUNTY: Marion
LOCATION: 15' south of SP-5 on higher ground outside linear depression
RECENT WEATHER: rain
Do normal conditions exist: ☒YES/☐NO. If NO, explain:
Has ☒VEGETATION, ☐SOILS, ☐HYDROLOGY been significantly disturbed?
Explain: mowed

VEGETATION

SPECIES	Strata	Cover	Status	SPECIES	Strata	Cover	Status
unknown grass	H	100	?				
Hypochaeris radicata	H	20	FACU				

Percent of dominant species that are OBL, FACW, or FAC: 0-50?% (0-1/2)

HYDROPHYTIC VEGETATION CRITERION MET: ☐YES ☒NO
Rationale/Comments: dominant species do not exceed 50% FAC or wetter

SOILS

Map Unit Name: Concord silt loam
Drainage Class: PD
Taxonomy: Typic Ochraqualfs
On Hydric Soils List: ☒YES ☐NO

Depth	Horizon	Matrix Color	Redox Concentrations	Redox Depletions	Texture
0-18		10 YR 3/2	7.5 YR 4/6 CMD		

Hydric Soil Indicators:
☐Histosol
☐Histic Epipedon
☐Sulfidic Odor
☐Reducing Conditions (test positive)
☐Gleyed
☒Redox. features (w/in 10")
☐Concretions/Nodules (w/in 3";>2mm)
☐High organic content in surface (sandy soils)
☐Organic streaking (sandy soils)
☐Organic pan (sandy soils)
☐On Hydric Soils List (and soil profile matches)
☐Other:

HYDRIC SOILS CRITERION MET: ☒YES ☐NO
Rationale/Comments: redox features throughout profile

HYDROLOGY

Recorded Data: ☒Aerial Photos ☐Stream Gauge ☐Other:
Field Data: Inundation Depth: none Saturation Depth: >18" Free Water Depth: >18"

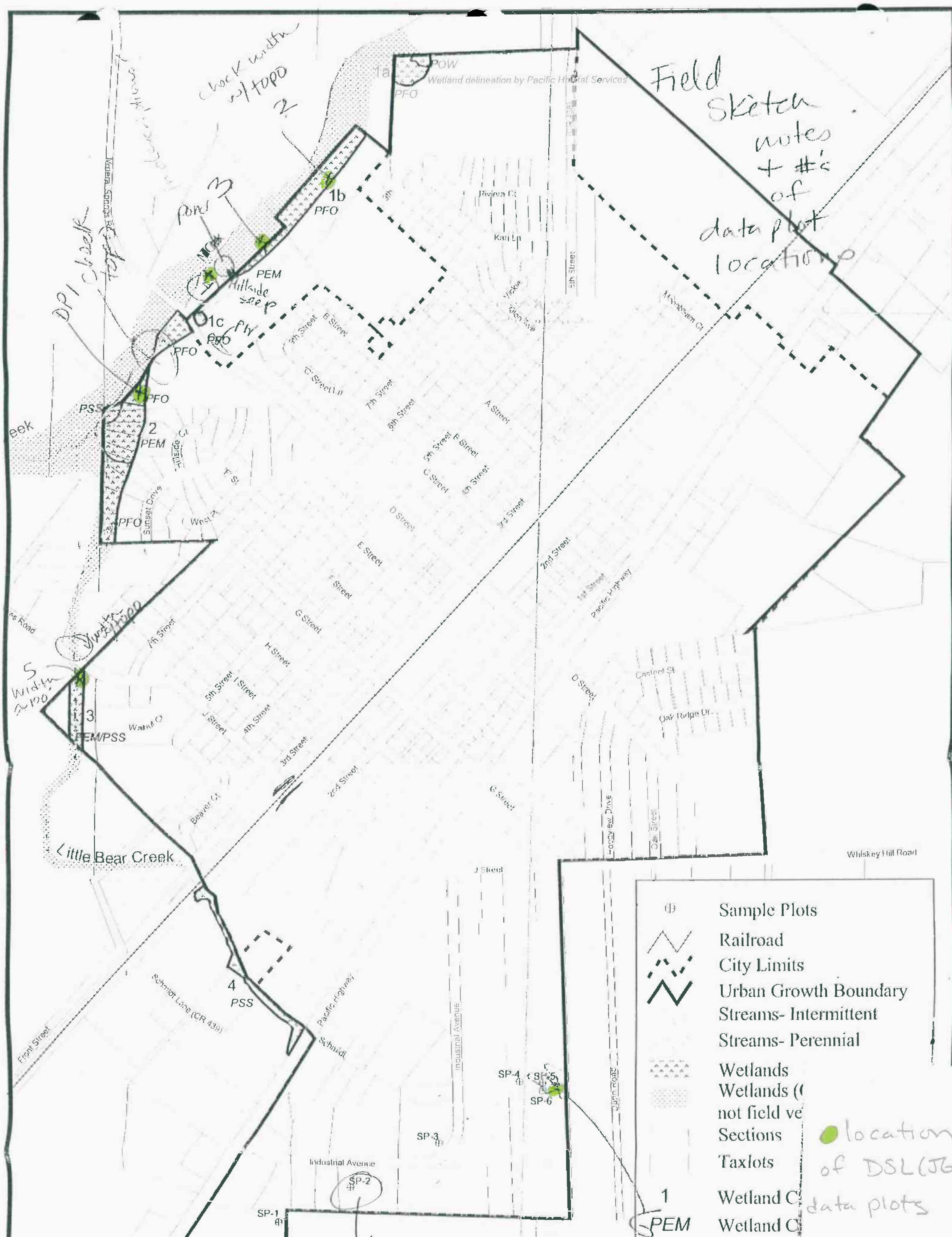
Primary Hydrology Indicators:
☐Inundated
☐Saturated in upper 12"
☐Water marks
☐Drift lines
☐Sediment deposits
☐Drainage patterns

Secondary Indicators (2 or more required):
☐Oxidized root channels w/live roots (upper 12")
☐Water-stained leaves
☐Local soil survey data
☐FAC-neutral test
☐Other:

1987 CORPS MANUAL WETLAND HYDROLOGY CRITERIA MET: ☐YES ☒NO
NFSAM FARMED WETLAND HYDROLOGY CRITERIA MET: ☐YES ☐NO
Rationale/Comments:no indicators

JURISDICTIONAL WETLAND DETERMINATION

WETLAND: ☐YES ☒NO
Rationale/Comments: doesn't meet vegetation or hydrology indicators, drained hydric soil area


Field Sketch notes + #'s of data plot locations
check width w/topo
Wetland delineation by Pacific Habitat Services
1a
POW
PFO
1b
PFO
PEM
Hillside seep
1c
PFO
PFO
PFO
PSS
2
PEM
PFO
3
PEM/PSS
4
PSS
Little Bear Creek
Riviera Ct
Kari Ln
5th Street
B Street
C Street
7th Street
6th Street
A Street
5th Street
4th Street
D Street
E Street
F Street
G Street
H Street
I Street
J Street
3rd Street
2nd Street
1st Street
Pacific Highway
Front Street
Schmidt Lane (CR 439)
Schmidt
Industrial Avenue
Whiskey Hill Road
Casteel St
Oak Ridge Dr.
Oak Street
Sunset Drive
Walnut Ct
Beaver Ct
SP-1
SP-2
SP-3
SP-4
SP-5
SP-6
looks lower
Sample Plots
Railroad
City Limits
Urban Growth Boundary
Streams- Intermittent
Streams- Perennial
Wetlands
Wetlands (
not field ve
Sections
Taxlots
1
Wetland C
PEM
Wetland C
Note: All wetlands were fiel
in the UGB using on-site pr
location of DSL(JG) data plots
note: see also JG field notes + photos in Hubbard review binder

Title: **Figure 9.**

Hubbard Local Wetland Inventory Map

Mid-Willamette Valley Council of Governments

Prepared by:	Date:	Revision:
LH	May 11, 2001	3

Filename:

R:/common/naturalres/wetlands/hubbard_lwi/hublwi.apr

Information shown on this map is for planning purposes onl[y] and wetland information is subject to change. There may be unmapped wetlands subject to regulation and all wetland boundary mapping is approximate. In all cases, actual field conditions determine wetland boundaries. You are advised [to] contact the Oregon Division of State Lands and the U.S. Arm[y] Corps of Engineers with any regulatory questions.

N

State Plane Coordinates, Oregon North, North American Datum, 1983

400 0 4

www.open.org/...

DIVISION OF STATE LANDS – WETLAND DETERMINATION DATA FORM

County: Hubbard LWI Date: 11/2/01 File #
Project/Contact: Det. by: goodridge
Plant Community: Plot # 1
Plot location: Wetland 2 PFO
Do normal environ. conditions exist? Y X N ___ Explain:
Has Veg. ___ Soil ___ Hydrology ___ been significantly disturbed?
Explain:

VEGETATION

Dominant Species	Status	% Cover
Tree Stratum		
Total Cover: 80		
1. Populus balsamifera	FAC	40
2. Fraxinus latifolia	FACW	30
3. Alnus rubra	FAC	30
4.		
Sapling/Shrub Stratum		
Total Cover: 20		
1. Hedera helix		50
2. Cornus sericea		50
3.		
4.		
5.		

Vine

Dominant Species	Status	% Cover
Herb Stratum		
Total Cover: 40		
1. Urtica dioica	FACt	30
2. Polystichum munitum	FACU	30
3. Tolmiea menziesii	FAC	30
4. Carex sp.		Tr
5. Equisetum arvense	FAC	Tr
6.		
7.		
8.		
9.		
10 Bare ground		60

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100
Other Notable Species:
Criteria Met? YES ___ NO ___

SOILS

Map Unit Name: Labish Drainage Class:
Taxonomy: On Hydric Soils List? Y X N ___

Depth	Horizon	Matrix Color	Redox Concentrations*	Redox Depletions*	Texture	Structure
0-12		10YR 2/1				

Hydric Soil Indicators:
- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Reducing Conditions (tests positive)
- ___ Gleyed
- ___ Redox. features (w/in 10")

Criteria Met? YES X NO ___

- ___ Concretions/Nodules (w/in 3"; > 2mm)
- ___ High organic content in surface (in Sandy Soils)
- ___ Organic streaking (in Sandy Soils)
- ___ Organic pan (in Sandy Soils)
- X Listed on Hydric Soils List
- X Other: low chroma matrix

* abund./size/contrast/color/location (matrix or pores/peds)

HYDROLOGY

Recorded Data
- ___ Recorded Data Available: ___ Aerial Photos ___ Stream gauge ___ Other
- ___ No Recorded Data Available

Field Data
Depth of inundation: ___ Depth to Saturation: ___ Depth to free water: ___

Primary Hydrology Indicators:
- ___ Inundated
- ___ Saturated in upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns

Criteria Met? YES X NO ___

Secondary Hydrology Indicators (2 or more required):
- ___ Oxidized Root Channels (upper 12")
- ___ Water-stained Leaves
- X Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other:

Soils moist

DETERMINATION

WETLAND? YES X NO ___ Comments:

DIVISION OF STATE LANDS – WETLAND DETERMINATION DATA FORM

County: Hubbard LWI Date: 11/2/01 File #
Project/Contact: Det. by: goodridge
Plant Community: Plot # 2
Plot location: In wetland 1b PFO
Do normal environ. conditions exist? Y X N ___ Explain: for surveying
Has Veg. X Soil ___ Hydrology ___ been significantly disturbed?
Explain: plot done in path where veg. cleared/blackberries cleared understory intact

VEGETATION

Dominant Species	Status	% Cover
Tree Stratum		
Total Cover: 20		
1. Populus trichocarpa	FAC	100
2.		
3.		
4.		
Sapling/Shrub Stratum (vine)		
Total Cover: 80		
1. Rubus discolor	FACW	80
2. Cornus sericea	FACW	10
3. Sambucus racemosa	FACU	10
4.		
5.		

Dominant Species	Status	% Cover
Herb Stratum		
Total Cover: 40		
1. Urtica dioica	FAC+	10
2. Denanthe sarmentosa	OBL	50
3. Athyrium felix-femina	FAC	30
4. Carex sp		Tr
5. Solanum dulcamara	FAC+	Tr
6.		
7.		
8.		
9.		
10		

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 2/3 66%
Other Notable Species:
Criteria Met? YES X NO ___

SOILS

Map Unit Name: Labish Drainage Class:
Taxonomy: On Hydric Soils List? Y X N ___

Depth	Horizon	Matrix Color	Redox Concentrations*	Redox Depletions*	Texture	Structure
0-12		10YR 3/1				

Hydric Soil Indicators:
- X Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Reducing Conditions (tests positive)
- ___ Gleyed
- ___ Redox. features (w/in 10")
- ___ Concretions/Nodules (w/in 3"; > 2mm)
- ___ High organic content in surface (in Sandy Soils)
- ___ Organic streaking (in Sandy Soils)
- ___ Organic pan (in Sandy Soils)
- X Listed on Hydric Soils List
- X Other: low chroma

Criteria Met? YES X NO ___
* abund./size/contrast/color/location (matrix or pores/peds)

HYDROLOGY

Recorded Data
- ___ Recorded Data Available: ___ Aerial Photos ___ Stream gauge ___ Other
- ___ No Recorded Data Available

Field Data
Depth of inundation: — Depth to Saturation: Surface Depth to free water: 8

Primary Hydrology Indicators:
- ___ Inundated
- X Saturated in upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns

Secondary Hydrology Indicators (2 or more required):
- ___ Oxidized Root Channels (upper 12")
- ___ Water-stained Leaves
- X Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other:

Criteria Met? YES X NO ___

DETERMINATION

WETLAND? YES X NO ___ Comments: Documents PFO wetlands @ base of slope - associated w/ Mill Creek
Abrupt soil/veg change @ bottom of slope to upland forest Acer, Polystichum etc.

DIVISION OF STATE LANDS – WETLAND DETERMINATION DATA FORM

County: Hubbard LW1 Date: 11/2/01 File #
Project/Contact: Det. by: goodridge
Plant Community: Plot # 3
Plot location: Wetland 16 PEM
Do normal environ. conditions exist? Y X N ___ Explain:
Has Veg. ___ Soil ___ Hydrology ___ been significantly disturbed?
Explain:

VEGETATION

Dominant Species	Status	% Cover
Tree Stratum		
Total Cover: 10		
1. Populus balsamifera	FAC	5
2. Fraxinus latifolia	FACW	5
3.		
4.		
Sapling/Shrub Stratum		
Total Cover:		
1.		
2.		
3.		
4.		
5.		

Dominant Species	Status	% Cover
Herb Stratum		
Total Cover: 100		
1. Phalaris arundinacea	FACW	70
2. Trifolium repens	FAC	20
3. Cirsium arvense	FACW	Tr
4. Poa sp.		10
5. Urtica dioica	FAC	Tr
6. Glecoma hederacea	FACU	Tr
7.		
8.		
9.		
10		

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100
Other Notable Species:
Criteria Met? YES X NO ___

SOILS

Map Unit Name: Labish Drainage Class:
Taxonomy: On Hydric Soils List? Y X N ___

Depth	Horizon	Matrix Color	Redox Concentrations*	Redox Depletions*	Texture	Structure
0-12		10YR 2/1				

Hydric Soil Indicators:
- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Reducing Conditions (tests positive)
- ___ Gleyed
- ___ Redox. features (w/in 10")

Criteria Met? YES X NO ___

- ___ Concretions/Nodules (w/in 3"; > 2mm)
- ___ High organic content in surface (in Sandy Soils)
- ___ Organic streaking (in Sandy Soils)
- ___ Organic pan (in Sandy Soils)
- X Listed on Hydric Soils List
- X Other: low Chroma

* abund./size/contrast/color/location (matrix or pores/peds)

HYDROLOGY

Recorded Data
___ Recorded Data Available: ___ Aerial Photos ___ Stream gauge ___ Other
___ No Recorded Data Available

Field Data
Depth of inundation: ___ Depth to Saturation: ___ Depth to free water: ___

Primary Hydrology Indicators:
- ___ Inundated
- ___ Saturated in upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns

Criteria Met? YES X NO ___

Secondary Hydrology Indicators (2 or more required):
- X Oxidized Root Channels (upper 12")
- ___ Water-stained Leaves
- X Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other:

Soils moist

DETERMINATION

WETLAND? YES X NO ___ Comments: Wet pasture

DIVISION OF STATE LANDS – WETLAND DETERMINATION DATA FORM

County: Hubbard LWI Date: 11/2/01 File #
Project/Contact: Det. by: goodridge
Plant Community: Plot #
Plot location: Upland S. of Wetland 2 PEM 4
Do normal environ. conditions exist? Y ___ N ___ Explain:
Has Veg. ___ Soil ___ Hydrology ___ been significantly disturbed?
Explain:

VEGETATION

Dominant Species	Status	% Cover
Tree Stratum		
Total Cover:		
1.		
2.		
3.		
4.		
Sapling/Shrub Stratum		
Total Cover:		
1.		
2.		
3.		
4.		
5.		

Dominant Species	Status	% Cover
Herb Stratum		
Total Cover:		100
① Trifolium repens	FAC	20
② Festuca arundinaceae	FAC-	55
3. Taraxicum officinale	FACU	5
④ Cirsium arvense	FACU	20
5.		
6.		
7.		
8.		
9.		
10		

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 1/3 33%
Other Notable Species:
Criteria Met? YES ___ NO X

SOILS

Map Unit Name: Labish Drainage Class:
Taxonomy: On Hydric Soils List? Y X N ___

Depth	Horizon	Matrix Color	Redox Concentrations*	Redox Depletions*	Texture	Structure
0-12		10YR 2/1	10YR 3/6		c/m/p	

Hydric Soil Indicators:
- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Reducing Conditions (tests positive)
- ___ Gleyed
- X Redox. features (w/in 10")

Criteria Met? YES X NO ___

- ___ Concretions/Nodules (w/in 3"; > 2mm)
- ___ High organic content in surface (in Sandy Soils)
- ___ Organic streaking (in Sandy Soils)
- ___ Organic pan (in Sandy Soils)
- X Listed on Hydric Soils List
- X Other: low Chroma matrix

* abund./size/contrast/color/location (matrix or pores/peds)

HYDROLOGY

Recorded Data
- ___ Recorded Data Available: ___ Aerial Photos ___ Stream gauge ___ Other
- ___ No Recorded Data Available

Field Data
Depth of inundation: / Depth to Saturation: / Depth to free water: /

Primary Hydrology Indicators:
- ___ Inundated
- ___ Saturated in upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns

Criteria Met? YES ___ NO X

Secondary Hydrology Indicators (2 or more required):
- ___ Oxidized Root Channels (upper 12")
- ___ Water-stained Leaves
- X Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other:

DETERMINATION

WETLAND? YES ___ NO X Comments: Likely this area was previously wetland but excavated pond to North has changed hydrology

DIVISION OF STATE LANDS – WETLAND DETERMINATION DATA FORM

County: Hubbard LWI Date: 11/2/01 File #
Project/Contact: Det. by: goodridge
Plant Community: PFO/PEM Plot # 5
Plot location: wetland 5 S. of Broadacres road
Do normal environ. conditions exist? Y ___ N ___ Explain:
Has Veg. ___ Soil ___ Hydrology ___ been significantly disturbed?
Explain:

VEGETATION

Dominant Species	Status	% Cover
Tree Stratum		
Total Cover: 40		
(1) Thuja plicata	FAC	100
2.		
3.		
4.		
Sapling/Shrub Stratum		
Total Cover: 15		
1. Spirea douglassii	FACW	60
2. Salix sp.		40
3.		
4.		
5.		

Dominant Species	Status	% Cover
Herb Stratum		
Total Cover: 80		
(1) Phalaris arundinaceae	FACW	80
2. Solanum dulcamara	FAC	Tr
3. Oenanthe sarmentosa	OBL	Tr
4. Equisetum arvense	FAC	Tr
5. Lysichiton americanum	OBL	Tr
6. Urtica diocia	FAC	Tr
7.		
8.		
9.		
10		

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 100%
Other Notable Species:
Criteria Met? YES X NO ___

SOILS

Map Unit Name: Labish Drainage Class:
Taxonomy: On Hydric Soils List? Y X N ___

Depth	Horizon	Matrix Color	Redox Concentrations*	Redox Depletions*	Texture	Structure
0-12		10YR3/1				

Hydric Soil Indicators:
- X Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Reducing Conditions (tests positive)
- ___ Gleyed
- ___ Redox. features (w/in 10")
- ___ Concretions/Nodules (w/in 3"; > 2mm)
- ___ High organic content in surface (in Sandy Soils)
- ___ Organic streaking (in Sandy Soils)
- ___ Organic pan (in Sandy Soils)
- X Listed on Hydric Soils List
- X Other: low chroma matrix

Criteria Met? YES X NO ___

* abund./size/contrast/color/location (matrix or pores/peds)

HYDROLOGY

Recorded Data
- ___ Recorded Data Available: ___ Aerial Photos ___ Stream gauge ___ Other
- ___ No Recorded Data Available

Field Data
Depth of inundation: 3" Depth to Saturation: surface Depth to free water: /

Primary Hydrology Indicators:
- X Inundated
- ___ Saturated in upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns

Criteria Met? YES X NO ___

Secondary Hydrology Indicators (2 or more required):
- ___ Oxidized Root Channels (upper 12")
- ___ Water-stained Leaves
- X Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other:

DETERMINATION

WETLAND? YES X NO ___ Comments:

DIVISION OF STATE LANDS – WETLAND DETERMINATION DATA FORM

County: Hubbard LWI Date: 11/2/01 File #
Project/Contact: Det. by: goodridge
Plant Community: Plot # 6
Plot location: near Joel's data plots 5 & 6
Do normal environ. conditions exist? Y X N ___ Explain:
Has Veg. ___ Soil ___ Hydrology ___ been significantly disturbed?
Explain:

VEGETATION

Dominant Species	Status	% Cover
Tree Stratum		
Total Cover:		
1.		
2.		
3.		
4.		
Sapling/Shrub Stratum		
Total Cover: 10		
1. Salix sitchensis only growing in one spot see photo		60
2. Rosa sp.		20
3. Rubus ursinus		20
4.		
5.		

Dominant Species	Status	% Cover
Herb Stratum		
Total Cover: 90		
(1) Festuca arundinaceae	FAC-	
2. Holcus lanatus	FAC	
3. Hypochaeris radicata	FACU	
4. Taraxicum officinale	FACU	
5. Daucus carota	FACU	
6. Prunella vulgaris	FACU	
7. Plantago lanceolata	FAC	
(8) Agrostis tenuis	FAC	
(9) Leontodon nodicaulis	NL	
10		

Percent of Dominant Species that are OBL, FACW, FAC (not FAC-): 1/3 33%
Other Notable Species:
Criteria Met? YES ___ NO X

SOILS

Map Unit Name: Coburg Drainage Class:
Taxonomy: On Hydric Soils List? Y X N ___

Depth	Horizon	Matrix Color	Redox Concentrations*	Redox Depletions*	Texture	Structure
0-12		10YR3/2	10YR3/4		m/f/d	

Hydric Soil Indicators:
___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Reducing Conditions (tests positive)
___ Gleyed
___ Redox. features (w/in 10")
Criteria Met? YES X NO ___

___ Concretions/Nodules (w/in 3"; > 2mm)
___ High organic content in surface (in Sandy Soils)
___ Organic streaking (in Sandy Soils)
___ Organic pan (in Sandy Soils)
X Listed on Hydric Soils List
___ Other:
* abund./size/contrast/color/location (matrix or pores/peds)

HYDROLOGY

Recorded Data
___ Recorded Data Available: ___ Aerial Photos ___ Stream gauge ___ Other
___ No Recorded Data Available

Field Data
Depth of inundation: / Depth to Saturation: / Depth to free water: /

Primary Hydrology Indicators:
___ Inundated
___ Saturated in upper 12 inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns
Criteria Met? YES X NO ___

Secondary Hydrology Indicators (2 or more required):
X Oxidized Root Channels (upper 12")
___ Water-stained Leaves
X Local Soil Survey Data
___ FAC-Neutral Test
___ Other:

no recent precip enough to raise water table

DETERMINATION

WETLAND? YES ___ NO X Comments: This site is dominated w/ Daucus in slightly higher areas & soils in these areas lack concentration and oxidized rhizospheres. The rest of the site is dominated by Leontodon & Festuca arundinaceae. Vegetation does not seem hydrophytic enough to be wetland.

5.0 Wetland Functional Assessment Results

The wetland functional assessment results described in this section include "Wetlands of Special Interest for Protection" and each mapped wetland's functional level for the five wetland functions assessed. OFWAM watershed and wetland characterization results are in Appendix C. Answers to wetland function questions are in Appendix D.

5.1 Wetlands of Special Interest for Protection

Wetlands that are uncommon, already in a resource management plan, or protected by regulatory rules or statutes are categorized as "wetlands of special interest for protection" by OFWAM. None of the wetlands in Hubbard met any of the criteria for wetlands of special interest for protection (Table 3).

Table 3. Wetlands of Special Interest for Protection

Criteria	In Hubbard?	Source/Comments
1. T&E species	No	ONHP, ODFW
2. Critical or essential habitat for T & E species	No	
3. Dedicated natural area, ACEC, RNA, etc.	No	ONHP/no federal land
4. Significant for migratory birds	No	ODFW/habitat quality
5. Goal 5, 17 protected	No	Hubbard Comprehensive Plan
6. Outstanding Resource Water	No	DEQ
7. Protected by govt. management plan	No	City of Hubbard
8. Protected mitigation sites	No	LWI fieldwork (no data available from DSL, COE)
9. Protected in WRP program	No	NRCS
10. Rare or unique wetland types	No	LWI fieldwork

5.2 OFWAM Wetland Functional Assessment Results

The results of the OFWAM wetland functional assessment are in Table 4. Wetland function summary sheets for each wetland are in Appendix E.

All of the wetlands provided habitat for some wildlife species due to a mix of Cowardin wetland types, dominant woody vegetation and by providing riparian corridors connecting wetland habitats. Limiting factors that prevent the wetlands from providing diverse wildlife habitat include a lack of open water and severe non-point source water pollution in the watershed.

Fish habitat function was present but impacted or degraded in all of the wetlands due the lack of instream structures, severe non-point source water pollution in the watershed and adjacent developed and agricultural land uses.

Water quality function was intact in all of the wetlands due to their location in floodplains along streams, flooding or ponding during the growing season, high vegetation cover, large size (Wetland 1 and 2 were greater than 5 acres in size); and through opportunities to improve water quality due to adjacent developed and agricultural land uses and severe non-point source pollution in the watershed.

Hydrologic control functions were intact in Wetlands 1 and 2 due to the wetlands' location in the floodway and 100-year floodplain, ponding or flooding during the growing season, large size (>5 acres), and dominant woody vegetation that slows flood flows. Hydrologic control functions were impacted or degraded in Wetlands 3 and 4 due to these wetlands' moderate size and limited opportunity for prevent flood damages to downstream areas dominated by open spaces.

Wetlands 1 and 2 had potential for educational uses because they are publicly owned in part (North Marion School District and the City of Hubbard, respectively), have amenities in addition to the wetlands including Mill Creek that flows through both sites and a mature second growth Douglas Fir forest with native understory adjacent to Wetland 2. Limits to educational use include access barriers, steep slopes, heavy brush and the sewage treatment plant outfall in Wetland 2. Both sites would need access points and trails to be suitable for educational use. Wetland 3 had no public ownership and was not assessed for this function per the adjustments to OFWAM authorized by DSL. Wetland 4 was determined to not be appropriate for educational use. Limiting factors for educational use included hazards of nearby roads and railroad, steep banks and impacted or degraded wildlife and fish habitat functions.

Table 4. OFWAM Results

	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
Wetland 1	Habitat for some species	Impacted	**Intact**	**Intact**	Potential
Wetland 2	Habitat for some species	Impacted	**Intact**	**Intact**	Potential
Wetland 3	Habitat for some species	Impacted	**Intact**	Impacted	NA (No public ownership)
Wetland 4	Habitat for some species	Impacted	**Intact**	Impacted	Not appropriate

6.0 Wetland Significance Determination Results

All four wetlands in Hubbard were determined to be significant based on wetland function performance levels identified in the OFWAM assessment (Table 5). Summary sheets showing how the wetlands rated for each of the significance criteria are in Appendix F. All of the wetlands have intact water quality functions. Wetlands 1 and 2 also have intact hydrologic control functions. None of the other significance criteria were applicable to any of the wetlands in Hubbard. Neither Mill Creek nor Little Bear Creek are on the DEQ 303(d) list of water quality limited water bodies (DEQ 1998). None of the wetlands contained rare plant communities or state or federally listed species. Neither Mill Creek nor Little Bear Creek have been mapped by ODFW as habitat for indigenous anadromous salmonids (DSL 1999). None of the wetlands have a locally unique native plant community. Wetlands 1, 2 and 4 have portions that are in public ownership but none were assessed by OFWAM as having "educational uses".

Table 5. Wetland Significance Determinations

Wetland No.	Acres	Significant	Not Significant	Rationale/Comments
1	2.78	X		Intact water quality function and intact hydrologic control function
2	3.55	X		Intact water quality function and intact hydrologic control function
3	0.70	X		Intact water quality function
4	0.98	X		Intact water quality function

7.0 Study Area Summary

Summary information for the study area is provided in Table 6.

Table 6. Study Area Summary	
Total acreage in Study Area (Hubbard UGB)	446 acres
Total wetland acreage	8 acres
Total number of wetlands	4
Total number of significant wetlands	4

8.0 References

Department of Environmental Quality. 1998. Water Quality Limited Streams 303(d) List. http://waterquality.deq.state.or.us/wq/303dlist/303dpage.htm

Department of Land Conservation and Development. 1996. Oregon Administrative Rules Chapter 660, Division 23. Procedures and Requirements for Complying With Goal 5. http://arcweb.sos.state.or.us/rules/OARS_600/OAR_660/660_023.html

Division of State Lands. 1994. Oregon Administrative Rules Chapter 141, Division 86. Local Wetlands Inventory (LWI) Standards and Guidelines. http://statelands.dsl.state.or.us/141-086.htm#lwi

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Glossary

Anadromous: Species of fish that hatch in fresh water, migrate to saltwater where they spend most of their adult lives, and return to fresh water to lay eggs.

Aquatic bed: A wetland class dominated by plants that are completely submerged or float on the water's surface.

Areal cover: A measure of dominance defining the degree to which the portions of plant above the gourd cover the ground surface.

Area of Special Flood Hazard means the land in the flood plain within a community subject to a one (1) percent or greater chance of flooding in any given year as defined by FEMA. Designation on maps always includes the letters A or V.

Bankful Stage- Defined in OAR 141-85-010 (definitions for removal fill permits) as the stage or elevation at which water overflows the natural banks of a stream or other waters of the state and begin to inundate upland areas. In the absence of physical evidence, the two-year recurrent flood elevation may be used to approximate the bank full stage.

Base flood: The flood having a 1-percent probability of being equaled or exceeded in any given year; also referred to as the 100-year flood.

Base flood elevation: the height of the base flood (100-year) flood in relation to a specified datum, usually the National Geodetic Vertical Datum or North American Vertical Datum.

Channel: An open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.

Channel bank: The sloping land bordering a channel. The bank has a steeper slope than the bottom of the channel and is usually steeper than the land surrounding the channel.

Channelize: To straighten bed or banks of a stream or river or to line them with concrete or other materials.

Comprehensive Plan: A local document that guides a community's land use, conservation of natural resources, economic development, and public services. Plans contain data and information called the inventory, and the policy element. The policy element sets forth the community's long-range objectives and the policies by which they will be achieved. The plan in adopted by ordinance and has the force of law.

DEQ: Department of Environmental Quality

Deep-water habitat: Aquatic habitat, such as portions of lakes, rivers, estuaries, and marine water, where surface water is permanent and deeper than 6.6 feet most of the year.

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

Delineation: identifying and marking the wetland/upland boundary of wetlands.

Detention: Temporary storage of water.

Determination: identifying an area as wetland or upland.

DLCD: Department of Land Conservation and Development, the State of Oregon's land use planning agency.

Dominant: The species controlling the environment.

DSL: Division of State Lands. State agency that administers Oregon's state-owned lands and regulates removal and fill in waterways and wetlands.

EPA: Environmental Protection Agency

Ecosystem: An organic community of plants and animals, viewed within its physical environment (habitat). The ecosystem results from the interaction between soil, climate, vegetation, and animal life.

Emergents: Erect, rooted herbaceous plants that can tolerate flooded soil conditions, but cannot tolerate being submerged for extended periods; e.g. cattails, reeds and pickerel weeds.

Emergent wetland: A wetland class dominated by emergent plants. Emergent wetlands include marshes and wet meadows.

FEMA: Federal Emergency Management Agency. The federal agency that manages emergency response and hazard mitigation planing. Administers the National Flood Insurance Program (NFIP); and creates or reviews maps that define the location and elevation of the 1-percent chance flood.

Floodway and floodway fringe: Components of the 100-year floodplain. Floodway is defined as the channel of a stream and the adjacent land areas reserved to discharge the 100-year flood without cumulatively increasing the elevation of the 100-year flood more than a specified height.

Flood hazard boundary map: Initial insurance map issued by FEMA that identifies approximate areas of 100-year flood hazard in a community.

Flood insurance rate map: Insurance and floodplain management map issued by FEMA that identifies areas of 100-year flood hazard in a community. In some areas, the map also shows base flood elevations and the 500-year floodplain boundaries and, and occasionally, regulatory floodway boundaries. These maps are referred to as FIRMs.

Forested wetland: A wetland class in which the soil saturate and often inundated, and woody plants taller that 20 feet form the dominant cover, e.g. Oregon ash, alders, and cottonwoods. Water-tolerant shrubs often form a second layer beneath the forest canopy, with a layer of herbaceous plants growing beneath the shrubs.

Function: A characteristic action or behavior associated with a wetland that contributes to a larger ecological condition such as wildlife habitat, water quality and/or flood control.

Groundwater: Water found at and beneath the water table in the zones of saturate soil and bedrock.

Habitat: The environment in which the requirements of a specific plant or animal are met.

Headwaters: Tributary stream located in upper portions of a watershed.

Herbaceous vegetation: A plant, whether annual, biennial, or perennial, with non-woody stems that die back to the ground at the end of the growing season.

Hydric soil: Saturated or water-logged soils creating low-oxygen (anaerobic) conditions. Strongly associated with wetlands.

Intermittent stream: A waterway that flows for part of the year.

Inventory: A systematic survey of an area to identify, classify, and map the approximate boundaries of a resource or natural hazard.

LCDC: Land Conservation and Development Commission, seven-member lay commission that oversees the statewide land use planning program and reviews and approves land use ordinances and plans.

Large woody debris: Dead material from trees and shrubs that is large enough to persist more than one season.

LWI: Local Wetland Inventory A Goal 5 resource inventory defined by OAR 141-86-110 through 141-86-240. Systematic survey of an area to identify, classify and map the approximate boundaries of wetlands, and includes the supporting documentation required by these rules.

Marsh: An emergent wetland that is flooded either seasonally or permanently. Marshes support the growth of emergent plants such as cattails, bulrushes, reeds, and sedges; floating-leaved plant such as pondweeds and submergents.

Nonpoint source: Pollution sources that are diffuse and do not have a single point of origin or are not introduced into a receiving stream from a specific outlet.

NWI: National Wetland Inventory, database designed and established by the United States Fish and Wildlife Service (USFWS) that maps and classifies wetlands in the United States.

Open water: A wetland class consisting of areas of water less that 6.6 feet deep. Submerged or floating-leaved plants often inhabit the shallower portions along the edges of the body of water.

OAR: Oregon Administrative Rules. A body of law that describes how legislation and other laws will be implemented.

ODFW: Oregon Department of Fish and Wildlife.

OFWAM: Oregon Freshwater Wetland Assessment Methodology is an assessment method that determines wetland functions and values. OFWAM was developed for planners, and public officials that are not technical specialists. OFWAM is intended for planning and educational uses and not detailed impact analysis on individual wetlands.

Palustrine: Palustrine wetlands included all freshwater wetlands dominated by trees, shrubs, emergents, mosses or lichens. They also include wetlands lacking such vegetation but with all of the following characteristics: areas less than 20 acres, lacking active wave-formed or bedrock shorelines, maximum water depth less than 6.6 feet, and salinity less that 0.5 percent.

Perennial Stream: A waterway where water flows throughout the year.

Riparian area: The area immediately adjacent to surface water such as rivers, streams, ponds, lakes, wetlands, and springs consisting of transition areas between an aquatic ecosystem to terrestrial ecosystem.

Riverine wetland: Wetland and deepwater habitats contained within the channel except: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and (2) habitat with water containing ocean derived salts in excess of 0.5 ‰. Water is usually flowing.

Runoff: That part of precipitation, snow melt, or irrigation that runs off land into streams or other surface water. It can carry pollutants from the air and land into the receiving waters.

Rural: Any area not included in a business, industrial, or residential zone of moderate or high density, whether or not it is within the boundaries of a municipality.

Scrub-shrub wetland: A wetland class dominated by shrubs and woody plants less than 20 feet tall, e.g. red-osier dogwoods, Douglas hawthorns, serviceberry, Pacific ninebark, etc. Water levels in shrub swamps can range from permanent to intermittent flooding.

Spring: A flow of water above ground level that occurs where the water-table (groundwater) intercepts the ground surface. Springs and lines of springs are often found at breaks in slope, at contacts between different types of rocks or soils, and along faults. Springs may be associated with wetland and/or riparian areas and increased hazard of unstable slopes.

Statewide Planning Goals: Nineteen statements of land use planning standards that establish broad policies that must me addressed through local comprehensive land use planning.

Statewide Planning Goal 5: Oregon's statewide planning goal that addresses open space, scenic and historic areas, and natural resources. The purpose of the goal is to conserve open space and protect natural and scenic resources.

Stream - A body of water moving over the earth's surface in a channel or bed, such as a creek, rivulet or river. It flows at least part of the year, including perennial and intermittent streams. Stream are dynamic in nature and their structure is maintained through build-up and loss of sediment. Streams that have been straightened and/or ditched are still considered streams.

Surface water: All water naturally open to the atmosphere (rivers, lakes, reservoirs, streams, impoundments, seas, estuaries) and all springs, wells, or other collectors that are directly influenced by surface water.

Submergent: Plants that grow and reproduce while completely submerged in water.

Swamp: A wetland in which the soil is saturated and often inundated and that is dominated by a woody cover.

Terrace: A nearly flat portion of the landscape terminated by a steep edge. Formed by a variety of processes including the action of rivers, glaciers, and soil movement.

Top of Bank - The same as "bankfull stage" defined in OAR 141-85-010(2).

UGB: Urban Growth Boundary. A line which drawn around a geographic area which separates urban use lands from resource, or rural, use lands; and shows where the city intends to grow.

Water table: The level of groundwater. The upper surface of the zone where all open spaces in the earth materials are filled with water.

Watershed: The area from which a surface water course receives its water. An area of land that contributes runoff to one specific delivery point. Large watersheds can be composed of several smaller "subwatersheds", each of which contributes runoff to different locations that ultimately combine at a delivery point.

Wet meadow: Emergent wetlands that are generally seasonally flooded and have saturated soils for much of the growing season. Wet meadows are dominated by grasses, sedges and rushes and are often cultivated or pastured.

Wetland: An area that is inundated or saturated by surface water or ground water at a frequency and duration to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wetland delineation: The process of using field indicators (vegetation, soils, hydrology) to determine the boundary between a wetland and an upland.

Woody vegetation: A plant with woody stems that persist throughout the growing season.

Appendix C. Wetland Characterization Results

...atershed identification Mill Creek

Wetland Characterization (Page 1 of 19)

Watershed setting

All questions pertaining to the watershed can be answered in the office from aerial photographs, U.S. Geological Service topographical maps, and other reference materials. (See Appendix A.)

Drainage basin

The Oregon Water Resources Department has divided the state into 18 drainage basins. Check the map in Appendix H to see which drainage basin contains the study site.

1. What is the name of the drainage basin that contains your assessment area?

Physical characteristics of the watershed being assessed (within the drainage basin)

Topography

2. What is the watershed's area in square miles? The watershed area is often much smaller than the drainage basin (see Appendix E).
3. Calculate the average slope of the watershed (see Appendix F).

Hydrologic profile

4. Is the stream flow in the watershed modified by dams, channelization or levees? (Choose all that are appropriate.)
   (a) Tributary streams to the main stem stream are modified.
   (b) Main stem stream is modified.
   c. Stream flow is not modified (free-flowing.)
5. Is water being taken out of the stream(s) through active diking, drainage or irrigation districts in the watershed upstream of the assessment area?
   (a) Yes.
   b. No.

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area?
   a. Urban.
   b. Urbanizing (mix of urban, agriculture and forest uses).
   (c) Agriculture (farming, ranching or grazing).
   d. Forested or natural area.

Watershed Notes

Willamette, Middle Basin
Pudding River sub-basin

USGS maps shows diversions (reservoir/ponds) on several tributaries. Main stem and tributaries have channelized sections.

Water Resources Department maps show several dozen water rights in the watershed.

Agriculture

Watershed identification _____

Wetland Characterization (Page 1 of 19)

Watershed Notes

Watershed setting

All questions pertaining to the watershed can be answered in the office from aerial photographs, U.S. Geological Service topographical maps, and other reference materials. (See Appendix A.)

Drainage basin

The Oregon Water Resources Department has divided the state into 18 drainage basins. Check the map in Appendix H to see which drainage basin contains the study site.

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4. Is the stream flow in the watershed modified by dams, channelization or levees? (Choose all that are appropriate.)
   a. Tributary streams to the main stem stream are modified.
   b. Main stem stream is modified.
   c. Stream flow is not modified (free-flowing.)
5. Is water being taken out of the stream(s) through active diking, drainage or irrigation districts in the watershed upstream of the assessment area?
   a. Yes.
   b. No.

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area?
   a. Urban.
   b. Urbanizing (mix of urban, agriculture and forest uses).
   c. Agriculture (farming, ranching or grazing).
   d. Forested or natural area.

Watershed identification Mill Creek

Wetland Characterization (Page 2 of 19)

Water quality *(Use more specific water quality information, if available. Contact local DEQ office, or call the DEQ lab at (503) 229-5983 for sampling information.)*

7. Consult the most recent State of Oregon Department of Environmental Quality 305(b) Report to determine whether any streams in the study area are listed as a *water quality limited.* (You may want to ask DEQ whether there are any proposed changes.) This information is included in Clean Water Act section 303(d) reporting.
   a. Streams or portions of streams within the study area are listed as *water quality limited.*
   (b) No streams or portions of streams within the study area are listed as *water quality limited.*

8. Consult the most recent *Oregon Statewide Assessment of Nonpoint Sources of Water Pollution* to determine the water quality condition of stream reaches in the watershed upstream from the assessment area. (If both "b" and "c" apply, choose "c.")
   a. All upstream reaches are listed as *no problem* (or no data available).
   b. One or more upstream reaches are listed in *moderate* water quality condition.
   (c) One or more upstream reaches are listed in *severe* water quality condition.

Biological characteristics of the watershed

9. Fisheries: Select all that are appropriate and list type if known. (Contact local Oregon Department of Fish and Wildlife office for this information.)

	Type
(a) Cold water.	Cutthroat Trout
(b) Warm water.	Steelhead
(c) Anadromous.	Chinook
(d) Wild population.	Coho
(e) Introduced or hatchery populations.	
f. None.	
g. Other (list).	

Watershed Notes

1998 303(d) list reviewed on DEQ web site.

Mill Creek
Severe: Water Quality affecting aquatic habitat
Moderate: Water Quality affecting fish

ODFW district bios say Cutthroat probable, other species possible.

DOF stream classification map shows fish presence in Mill Creek.

Local resident report catching Cutthroat and warm water fish in Mill Creek.

Watershed identification Mill Creek

Wetland Characterization (Page 3 of 19)

10. Are known sensitive, threatened or endangered fish species present in the watershed? If so, list which species.

    Species

    a. Yes.
    b. No.
    (c.) Unknown.

11. Wildlife species: Select all that are appropriate and list species if known. (Contact local Oregon Department of Fish and Wildlife office for this information.)

    Species

    (a.) Migratory birds.
    b. Big game.
    (c.) Nesting birds.

12. Are known sensitive, threatened or endangered plant species or wildlife species other than fish present in the watershed? If so, list which species. (Contact local ODFW office or Natural Heritage Council for this information.)

    Species

    (a.) Yes. Oregon Giant Earthworm (outside study area)
    b. No.
    c. Unknown.

13. Does the watershed provide a natural corridor for fish or wildlife movement? (Observe from aerial photographs.) **List whether for fish, wildlife or both.** Consider fences, dams and other barriers to travel. Aerial photographs of the watershed area are the best source of information. Fragmented systems have barriers to movement or a section where the natural area is broken by developed area.

    A corridor is a landscape feature that enables fish or wildlife species to travel between broad geographical areas. (See Figure 1.)

    a. There are contiguous natural areas that allow species movement, and if barriers exist, they do not stop animal or fish movement.
    b. The natural areas are fragmented, but species movement is still possible.
    c. The habitat system is fragmented, and there are barriers to species movement.

Watershed Notes

Listed species are in Pudding basin but have not been documented in Mill Creek watershed.

ODFW could not provide information on species presence. Migratory birds and nesting birds likely in the watershed.

Other species possible but not documented.

NA

Watershed identification Mill Creek

Wetland Characterization (Page 4 of 19)

Watershed Notes

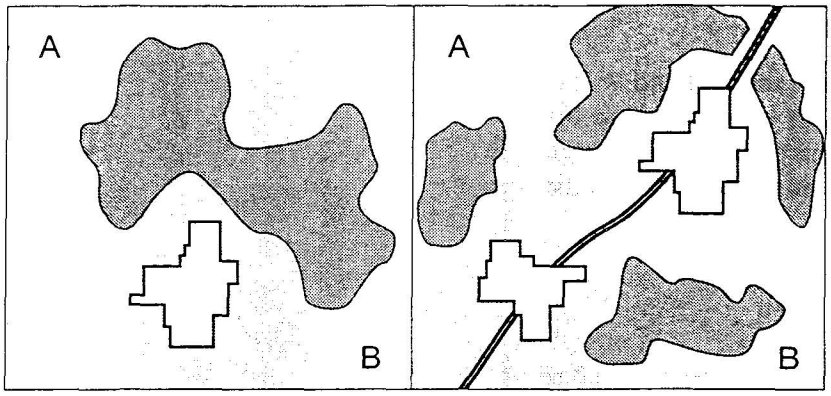


Figure 1. Watersheds as corridors for wildlife movement.
Areas A and B are the end points of a movement corridor through the watershed. Natural areas are shaded darkly, the irregular polygons represent highly developed areas, and the thick black line represents an impassable barrier such as an interstate highway. In the first part of the illustration, the contiguous natural area connects both ends of the corridor. The developed area is a barrier, but it does not obstruct species movement. The second half of the illustration shows fragmented natural areas with an impassable barrier. If the barrier stopped at the smaller developed area and did not continue off the lower left, species movement would still be possible.

14. What are the landscape features at both ends of the movement corridor? (These may lie outside the assessment area.) From an aerial photo, observation or local knowledge, determine whether there are large natural areas at either end of the movement corridor. The natural area does not have to be a wetland.
    a. Large natural habitat areas are at both ends.
    b. One end has a natural habitat area and the other end is developed.
    c. Both ends are developed.

NA

Watershed identification Mill Creek

Wetland Characterization (Page 5 of 19)

Individual wetland sites

Fill out this part of the characterization for each wetland in the assessment area. Some of the information can be gathered in the office; some must be gathered at the site. You may want to do a rough sketch of the site (doesn't have to be to scale) to refer to back in the office.

Wetland structure and relation to surrounding landscape

	Wetland 1	Wetland 2	Wetland 3	Wetland 4
✓15. What percentage of the area within 500 feet of the wetland's edge is dedicated to the land uses listed below? (From overlay 2 or in the field.)				
It is best to determine the land uses from a recent aerial photo. If an aerial photo is not available, measure 500 feet in the field to get an idea of distance to evaluate. Use the following ranges for your answers for each land-use category:				
a. Less than 20%.				
b. Between 20% and 50%.				
c. Greater than 50%.				
1. Open Space (includes natural areas, parks and developed recreation areas, but not land designated for Exclusive Forest Use).	1. b	1. a	1. a	1. a.
2. Agriculture (pasture, cropped lands, orchards, range land).	2. b	2. a	2. c	2. b.
3. Exclusive Forest Use lands.	3. a	3. b	3. a	3. a.
4. Developed uses (residential, commercial or industrial—rural and urban).	4. a	4. c	4. b	4. c.
5. Other (list).				
✓16. What is the dominant existing land use within 500 feet of the wetland on the **downstream or down-slope edge** of the wetland? Use the same land-use categories as question 15.	Agriculture	Agriculture	Open Space (wetland 2)	Open Space (wetland 3)
17. What is the wetland's area in acres? (Measure the entire area of contiguous wetland, not just the portion within the assessment area. Use the dimensions of the wetland as outlined on the base map.)				
a. Greater than 5 acres.	a. ~7 acres	a. 11+ acres	b. ~2.5 acres	b. 1 acre
b. Between 0.5 acres and 5 acres.				
c. Less than 0.5 acres.				

✓ *Questions preceded by a check mark can be completed in the field.*

Watershed identification Mill Creek

Wetla 4

Wetland Characterization (Page 6 of 19)

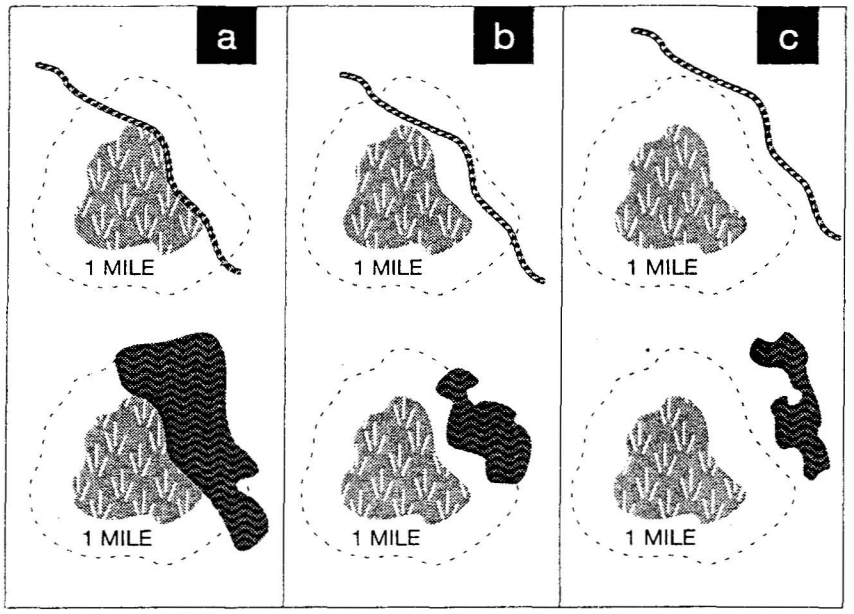


Figure 2. Connectivity to streams, lakes and ponds.
The lightly shaded area represents a wetland, the darkly shaded area represents a lake or pond and the dark line represents a stream. Part "a" shows the wetland connected to a stream, lake or pond, part "b" shows a stream, lake or pond within 1 mile but no surface connection, and part "c" shows no stream, lake or pond within 1 mile and no surface connection.

	Wetland 1	Wetland 2	Wetland 3	
18. How is the wetland connected to another body of water, such as a stream, lake or pond? (See Figure 2.) a. The wetland is connected by surface water to another body of water. This may be by a culvert, irrigation ditch, intermittent stream or perennial stream. b. No surface-water connection exists to another body of water, but other bodies of water lie within 1 mile of the wetland. c. No surface-water connection exists to another body of water, and no other bodies of water lie within 1 mile of the wetland.	a. Mill Creek runs through wetland	a. Mill Creek runs through wetland	a. Little Bear Creek runs through wetland	a. Little Bear Crek.
19. Is all or part of the wetland located within the 100-year floodplain (use floodplain maps to determine) or within an enclosed basin? An enclosed basin has no inlet or outlet. a. Yes. b. No.	a. Yes Zone AE on FEMA map	a. Yes Zone AE on FEMA map	a. Yes Zone AE on FCMA map	b. No

Watershed identification Mill Creek

Wetland Characterization (Page 7 of 19)

	Wetland 1	Wetland 2	Wetland 3	Wetland 4
20. What percentage of the area within 500 feet of the wetland's edge is **zoned** for each of the land uses listed below?	NA			
Use the following ranges for your answers: a. Less than 20% b. Between 20% and 50% c. Greater than 50%.				
1. Open Space (includes natural areas, parks and developed recreation areas, but not lands zoned for Exclusive Forest Use).				
2. Agriculture (pasture, cropped lands, orchards, range land).				
3. Exclusive Forest Use lands.				
4. Developed uses (residential, commercial, industrial).				
5. Other (list).				

Wetland habitat

✓21. What percentage of the wetland's area is covered by the following Cowardin wetland classes? (Cowardin wetland classes refer to a classification of wetland type by vegetation cover. See Appendix D.) Only list those that compose 10% or more of the overall wetland.				
The percentages can be estimated in the field or from aerial photographs. Use the following categories for your answers: a. Between 70% and 100%. b. 50% or more, but less than 70%. c. 20% or more, but less than 50%. d. 10% or more, but less than 20%.				
1. Open water (deep water habitat, greater than or equal to 6.6 feet or 2 meters).				
2. Emergent (includes floating aquatics—herbaceous plants that can tolerate flooding and living in wet soils).	2.c.	2.c	2.b	2.b.
3. Scrub-shrub (woody vegetation under 20 feet tall).	3.d.	3.d	3.~~d~~c	3.a.
4. Forested (woody vegetation 20 feet or taller).	4.b	4.b	4.–	
✓22. For urban areas, how many wetland plant species are present? (You need not list the species name.) a. More than 5 plant species. b. Between 2 and 5 plant species. c. 1 plant species (monotypic).	rural	a.75	rural	rural

Watershed identification Mill Creek

Wetland Characterization (Page 8 of 19)

	Wetland 1	Wetland 2	Wetland 3	Wetland 4
✓23. What is the dominant wetland vegetation cover type? a. Woody vegetation (forested and scrub-shrub). b. Emergent vegetation and ponding, or open water only. c. Emergent vegetation only or wet meadow.	a. woody PFO+PSS ave > 60%	a. woody PFO+PSS ave > 60%	c. emergent	a. PSS
✓24. Refer to the diagrams in Figure 3 and select the one that most closely resembles the interspersion of Cowardin wetland classes and, if present, upland inclusions. (An upland inclusion is an island or an upland area surrounded on three sides by wetland.). Wetlands composed of only one wetland class or with two wetland classes and a simple pattern have low interspersion. Wetland and upland complexes that have at least two wetland classes and a complex pattern have a moderate interspersion pattern. Wetlands with two or more wetland classes or upland inclusions with a complex pattern and lots of edge have a high interspersion pattern. If the wetland you are observing does not reflect any of the diagrams, use the above guidance to determine the complexity of the interspersion pattern and draw a sketch of the wetland. a. High. b. Moderate. c. Low.	b. Moderate	b. Moderate	c. Low	c. low

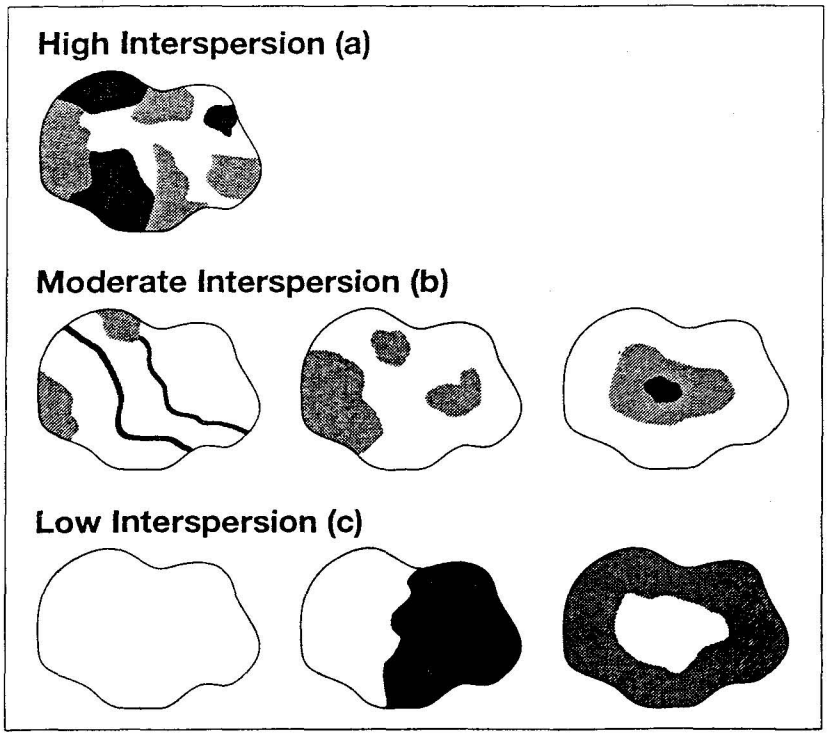


Figure 3. Interspersion of Cowardin classes and upland inclusions.

Watershed identification Mill Creek

Wetland Characterization (Page 9 of 19)

	Wetland 1	Wetland 2	Wetland 3	Wetland 4
25. For **rural areas:** What percentage of the wetland's edge is bordered by upland wildlife habitat that is at least 150 feet wide? Brush, woodland, non-farmed agricultural land and range land are considered upland habitat for this question. Actively farmed lands are not considered wildlife habitat. (See Figure 4.) a. Greater than 40%. b. Between 10% and 40%. c. Less than 10%.	a. >40%	urban	c. <10%	c. <10%
26. For **urban areas:** What percentage of the wetland's edge is bordered by a vegetative buffer at least 25 feet wide? A vegetative buffer consists of trees, bushes or vegetation that is not regularly mowed or farmed. (See Figure 5.) a. Greater than 40%. b. Between 10% and 40%. c. Less than 10%.	rural	a. >40%	rural	rural

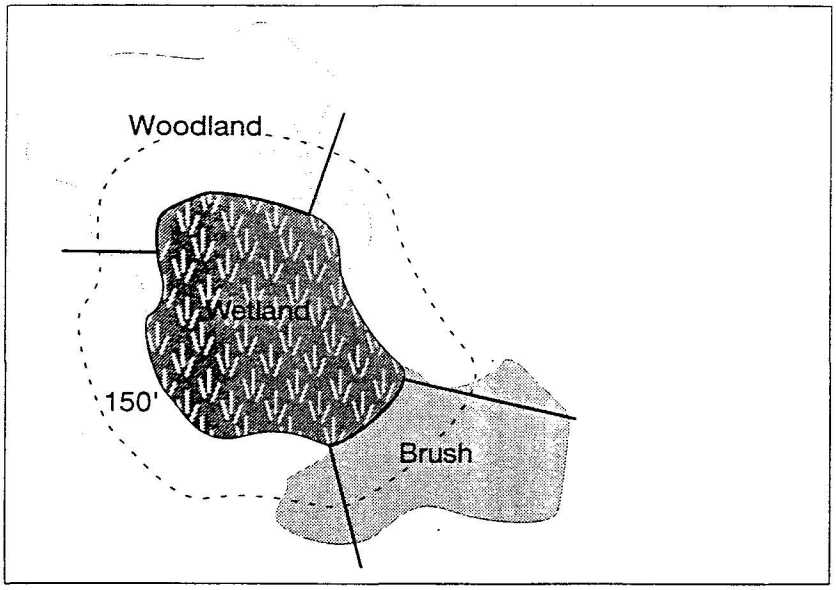


Figure 4. Percent of wetland edge bordered by upland habitat (for Question 25).
The dashed line delineates the area within 150 feet of the wetland; the "woodland" and "brush" areas are upland habitat; and the lines perpendicular to the wetland edge indicate where the upland habitat adjacent to the wetland habitat is at least 150 feet wide. The dark lines (portions of the wetland bordered by upland habitat at least 150 feet wide) make up roughly one-third (between 10% and 40%) of the wetland perimeter.

Watershed identification Mill Creek

Wetland Characterization (Page 10 of 19)

	Wetland 1	Wetland 2	Wetland 3	Wetland 4
27. How is the wetland connected to other wetlands? (Look at an aerial photo or map to determine this.) a. Connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, culvert, canal or lake. b. Not connected by surface waters, but other unconnected wetlands lie within a 3-mile radius. c. Not connected to other wetlands by surface waters, and no other unconnected wetlands lie within a 3-mile radius.	a. Mill Creek connects to wetlands upstream + down	a. Mill Creek connects to wetlands upstream + down	a. Little Bear Creek connects to wetlands upstream + down	a. Little Bear Creek
28. Estimate the area of unvegetated, open water within the wetland. a. More than 3 acres. b. Greater than 1 acre, up to 3 acres. c. Between 0.5 acre and 1 acre. d. Less than 0.5 acre.	d. <0.5 ac 3 small ponds total ~0.33 ac	d. <0.5 ac None	d. <0.5 ac None, Bronec Reservoir is drained, vegetated	d.

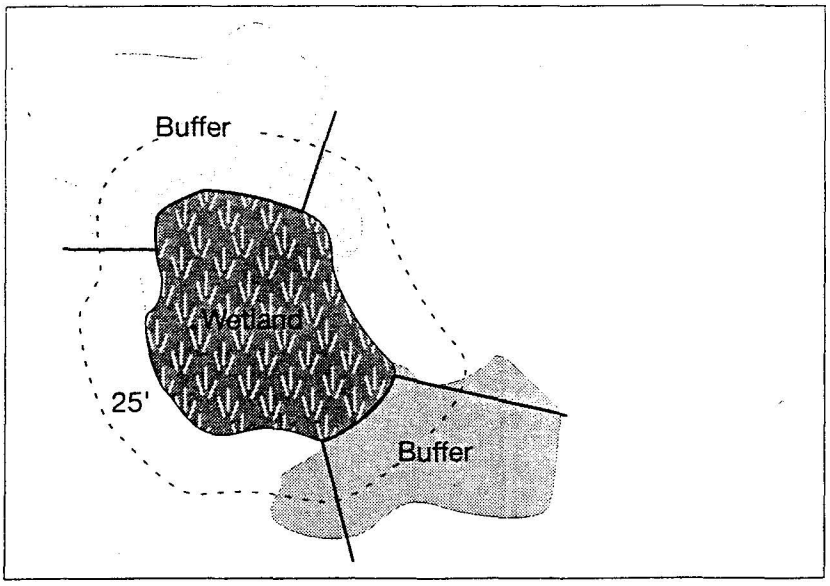


Figure 5. Percent of wetland edge bordered by vegetative buffer (for Question 26).
The dashed line delineates the area within 25 feet of the wetland; the vegetative buffer areas are labeled "buffer"; and the lines perpendicular to the wetland edge indicate where the vegetative buffer adjacent to the wetland habitat is at least 25 feet wide. The dark lines (portions of the wetland bordered by a vegetative buffer at least 25 feet wide) make up roughly one-third (between 10% and 40%) of the wetland perimeter.

Watershed identification Mill Creek

Wetland Characterization (Page 11 of 19)

Fisheries habitat

29. Are fish present in a stream, lake or pond connected to the wetland.
    a. Salmon, trout or sensitive species are present at some time during the year.
    b. Species not covered in "a" are present at some time during the year.
    c. No species are present at any time during the year.

Streams connected to the wetland

Complete this section only if the wetland being assessed has an unimpeded surface water connection to a stream.

✓30. What is the physical character of the stream channel? To observe stream channel modifications, look for built rock banks, cement sides, straightened areas or other human-created features.
    a. The stream is in a natural channel, or modified portions of the stream are returning to a natural channel.
    b. Only portions of the stream are modified.
    c. The stream is extensively modified or confined in a non-vegetated channel or pipe.

✓31. What percentage of the stream is shaded by streamside (riparian) vegetation?
    a. Greater than 75%.
    b. Between 50 and 75%.
    c. 25% or more, but less than 50%.
    d. Less than 25%.

✓32. What percentage of the stream contains instream structures such as large woody debris, floating or submerged vegetation, large rocks or boulders?
    a. Greater than 25%.
    b. Between 10% and 25%.
    c. Less than 10%.

Lakes or ponds (entire lake or pond and wetland complex)

Complete this section only if the wetland being assessed has a surface water connection to a lake or pond.

33. Does the lake or pond contain areas of deep and shallow water? ("Deep" is defined as more than 6.5 feet deep.)
    a. Yes.
    b. Cannot be determined.
    c. No.

Wetland 1	Wetland 2	Wetland 3	Wetland 4
a. Cutthroat probably present per ODFW in Mill Creek	a. Cutthroat probably present in Mill Creek per ODFW	a. Cutthroat probably present in Little Bear Creek per ODFW	a. Cutthroat present in Little Bear Creek per ODFW
a. No hardened banks. Channelized sections not being maintained	a. Stream is in natural channel	a. Stream is in natural channel. Bronec Reservoir diversion breached.	c. channelized entire length in wetland
b. 50-75%	a. 75%	a. 75%	b. 50-75%
c. No structures observed	c. No structures observed	c. No structures observed except remnant dam	c. <10%
NA			

Watershed identification _____

Wetland Characterization (Page 12 of 19)

	Wetland 1	Wetland 2	Wetland 3	Wetland 4
✓34. What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation? a. 60% or more. b. 20% or more, but less than 60%. c. Less than 20%.	NA			
✓35. What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders? a. Greater than 25% b. Between 10 and 25% c. Less than 10%	NA			

Wetland hydrology

36. What is the wetland's **primary** source of water? (Determine in the field or in the office. This may be difficult to determine. If a surface water connection exists—stream, lake, ditch—use it as the primary source. If no surface water connection is present, talk to local natural resource people for hints.) a. Surface flow, including streams and ditches. b. Precipitation or sheet flow. c. Groundwater, including springs or seeps.	a. Mill Creek	a. Mill Creek	a. Little Bear Creek	a. Little Bear Creek
✓37. Is there evidence of flooding or ponding during a portion of the growing season? Look for evidence of water fluctuation such as sediment stains on trees, drift lines, surface scour or sediment deposits. Also look at the location of the wetland. Is it in a distinct topographic depression or adjacent to a stream that is known to flood or fluctuate because of storm pulses? a. Yes (describe). b. Unable to determine or not applicable. c. No.	a. Ponding from seeps in forested areas observed in August	a. Ponding from seeps at toe of slope and from stream overbank flooding observed	a. Ponding behind old diversion structure	a. Wetland is in stream channe
✓38. Is water flow out of the wetland restricted (e.g., beaver dam, concrete structure, undersized culvert)? a. Yes, the outlet is restricted or the wetland has no outlet. b. Minor restrictions slow down the water (e.g., undersized culvert). c. No, the outlet has unrestricted flow.	c. No restrictions	b. Culvert under Mineral Springs Road is undersized per Stormwater Masterplan	c. No restrictions	c. No

Watershed identification _____

Wetland Characterization (Page 13 of 19)

	Wetland 1	Wetland 2	Wetland 3	Wetland 4
✓39. If the primary source of water is surface flow, is the water flow into the wetland restricted? a. Flow is not restricted, or if blocked, the obstruction can be removed easily. b. Permanent blockage to the flow exists but may be breached or a new flow channel created (engineering or earth moving solution). c. Flow is restricted and cannot be restored.	NA			
40. Has the stream flow or stream bank been modified by human activities less than 1 mile above the wetland? Modifications include dams, channelizations and levees, and confinement of the stream in a pipe. a. Yes. b. No.	NA			

Public access to wetland site *(select an appropriate area to observe the wetland to answer these questions.)*

41. Is the wetland site open to the public for direct access or observation? a. Yes, the wetland is open to the public. b. Yes, but wetland access is allowed only by permission of the landowner or managing entity. c. No, access is not allowed.	b. Undeveloped site owned by North Marion School District	a. City owns several parcels in wetland	NA (no public ownership)	c. No access
✓42. Are there visible hazards to the public at the wetland site? (Examples: busy road adjacent to the site, and no buffer or sidewalk exists; steep embankment; and contaminated water.) a. No. b. One or two visible safety hazards exist (describe). c. More than two visible safety hazards exist (describe).	b. Steep bank, heavy brush	b. Heavy brush, sewage plant outfall	NA	c. RR tracks, Hwy 99 nearby
✓43. Are there other natural landscape features, such as a stream, lake, pond, forest or agricultural land contiguous or adjacent to the wetland? a. Yes. (List type and extent.) b. No.	a. Mill Creek is in wetland. Slope above wetland is Douglas Fir forest with native understory	a. Mill Creek and Little Bear Creek are in wetland.	NA	a. Ag. land

Watershed identification Mill Creek

Wetland Characterization (Page 14 of 19)

	Wetland 1	Wetland 2	Wetland 3	Wetland 4
✓44. Is there existing physical public access to features listed in Question 43? If not, can such access be created easily, or can other habitats be observed from the site? For a stream, pond or lake, access may require dry ground to the water's edge. Stream access could also be at a road crossing, but consider the safety at such locations a. Public access to other habitats exists or can be created easily. b. Public access doesn't exist and can't be created easily, but observation of other features can be made from the site. c. Public access doesn't exist and can't be created easily. In addition, observation of other features can't be made from the site.	a. Access to forest is available. Access to stream would require trail construction.	a. Access to streams would require trail construction.	NA	c. No
✓45. Does it appear that access to a viewing spot or wetland edge is available for individuals with limited mobility? (To see whether the site meets ADA requirements, a more thorough examination should be done.) a. Yes. b. No. (List physical barriers.)	b. No; due to steep slopes and heavy brush	b. No; uneven ground, heavy brush	NA	b. No
✓46. Is there a public access point within 250 feet of the wetland's edge? Access points include parking lots, transit stops, bike lanes, trails and water courses. Maintained means that the area is designated as a car or transit area by the managing entity. Unmaintained would be a road pull-off or other area that people use but is not designated for such use. Describe the type of access. a. Yes, a maintained access point exists (describe). b. Yes, an unmaintained access point exists (describe). c. No access point exists, or the access point is hazardous.	b. End of 9th St. (dead end)	c. No safe access point exists.	NA	c. No

Recreation

✓47. Is the wetland accessible by boat? a. Boat launching areas or access points exist on site or within 1/2 mile on a connected lake, river, bay or other body of water. b. Potential to develop boat launching areas or access points exists, or such features are more than 1/2 mile but less than 1 mile from the wetland. c. No boat launching areas or access points exist within 1 mile of the wetland, and potential to develop launching areas or access points is limited.	NA			

Watershed identification Mill Creek

Wetland Characterization (Page 17 of 19)

	Wetland 1	Wetland 2	Wetland 3	Wetland 4
✓48. Are there trails, viewing areas or other structures that guide user movement to a particular area or areas in or around the wetland? a. Yes, developed or maintained trails or viewing areas exist. b. Yes, undeveloped trails or viewing areas exist that do not disrupt wildlife or plant habitat. c. No trails or viewing areas exist, or those that do disrupt wildlife or plant habitat.	NA			
49. Is fishing allowed at the wetland or connected water body? (Contact local Oregon Department of Fish and Wildlife office.) Answer "not applicable" if question 18 was answered "b" or "c," unless question 21 indicates that 10% or more of the wetland's area is covered by open water. a. Yes (either all or part of the year). b. No. c. Not applicable.	NA			
50. Is hunting allowed at the wetland? (If the wetland is within the city limits, hunting is not allowed. Otherwise, contact the local Oregon Department of Fish and Wildlife office for this information.) a. Yes (either all or part of the year). b. No.	NA			

Aesthetics

✓51. For **rural areas**, what is the extent of visual contrast with the surrounding landscape? (See Figure 6.) a. Significant contrast with surrounding landscape. b. Limited contrast with surrounding landscape. c. Little or no contrast with surrounding landscape.	NA			
✓52. For **urban areas,** what is the visual character of the surrounding area? (See Figure 7.) a. Open space or naturally landscaped areas. b. Areas landscaped or manipulated by people. c. Developed with no landscaping.	NA			
✓53. Are there visual detractors at the wetland site such as abandoned cars, litter, shopping carts or other objects that distract the viewer from the wetland? a. Yes. b. No.	NA			

Appendix D. Wetland Assessment Questions: Answer Sheets

Wetland Assessment Questions: Answer Sheet				
Wetland identifier	**1**	**2**	**3**	**4**
Wildlife habitat				
Question 1	a	a	b	b
Question 2	a	a	a	a
Question 3	b	b	c	c
Question 4	c	c	c	c
Question 5	a	a	a	a
Question 6	a	a	a	a
Question 7	c	c	c	c
Question 8	b	c	b	c
Question 9	a	a	c	c
Assessment descriptor	Habitat for some wildlife speciest	Habitat for some wildlife speciest	Habitat for some wildlife speciest	Habitat for some wildlife speciest
Fish habitat				
Streams and rivers				
Question 1	b	a	a	c
Question 2	a	a	a	b
Question 3	c	c	c	c
Question 4	c	c	c	c
Question 5	b	c	b	c
Question 6	a	a	a	a
Lakes and ponds	NA	NA	NA	NA
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor	Impacted	Impacted	Impacted	Impacted
Water Quality				
Question 1	a	a	a	a
Question 2	a	a	a	a
Question 3	a	a	a	a
Question 4	a	a	b	b
Question 5	b	a	b	a
Question 6	a	a	a	a
Assessment descriptor	Intact	Intact	Intact	Intact

Wetland Assessment Questions: Answer Sheet				
Wetland identifier	**1**	**2**	**3**	**4**
Hydrologic control				
Question 1	a	a	a	b
Question 2	a	a	a	a
Question 3	a	a	b	b
Question 4	c	b	c	c
Question 5	a	a	a	a
Question 6	b	b	c	c
Question 7	b	b	b	b
Assessment descriptor	Intact	Intact	Impacted	Impacted
Sensitivity to future impacts	NA	NA	NA	NA
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				
Enhancement potential	NA	NA	NA	NA
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				
Education				
Question 1	b	a	NA	b
Question 2	b	b		c
Question 3	b	b		b
Question 4	a	a		b
Question 5	b	c		c
Question 6	b	b		b
Assessment descriptor	Potential	Potential		Not appropriate

Appendix E. Wetland Function Summary Sheets

Function summary sheet for OFWAM

Wetland 1

Function	Assessment Descriptor	Rationale
Wildlife habitat	Provides habitat for some wildlife species	Wildlife habitat function is provided for some species because the wetland has a mix of Cowardin wetland types, is dominated by woody vegetation, is part of a riparian corridor connected to other wetlands and has a mature forested upland buffer on the east side. The lack of open water and severe non-point source pollution of Mill Creek prevent the wetland from providing diverse wildlife habitat.
Fish habitat	Impacted or degraded	Fish habitat function has been impacted by the lack of in-stream structures, severe non-point source pollution of Mill Creek and partial loss of riparian cover.
Water Quality	Intact	Water quality function is provided through the wetland's location in the floodplain along Mill Creek, flooding or ponding during the growing season, extensive vegetation cover, large size (>5 acres); and through opportunities to improve water quality due to adjacent agricultural land uses and severe non-point source pollution in the watershed.
Hydrologic control	Intact	Hydrologic control function is provided by the wetland's location in the floodway and 100-year floodplain, ponding or flooding during the growing season, large size (>5 acres), and dominant woody vegetation that slows flood flows.
Education	Potential	The wetland has potential for educational use because it is owned by a public educational entity (North Marion School District), has amenities of Mill Creek and adjacent mature Douglas Fir forest with native understory and has an existing unmaintained access at the end of 9th Street. Limits to educational use include access barriers and hazards of steep slopes and heavy brush.

Narrative description of overall wetland functions

The wetland's large size, landscape position, and vegetation communities support a number of wetland functions. The location in the floodway and 100-year floodplain of Mill Creek supports water quality and hydrologic control functions and provides a riparian corridor for wildlife. The extensive woody vegetation cover supports water quality, hydrologic control and wildlife functions. The adjacent mature Douglas Fir forest with native understory provides upland wildlife habitat and an amenity for potential educational use. Wildlife habitat diversity could be improved by increasing open water habitat and/or improving the water quality of Mill Creek. Fish habitat could be restored by adding in-stream structures, restoring riparian cover and/or improving the water quality of Mill Creek. Educational use could be provided by construction of a maintained access point and an access trail in the forest.

Function summary sheet for OFWAM

Wetland 2

Function	Assessment Descriptor	Rationale
Wildlife habitat	Provides habitat for some wildlife species	Wildlife habitat function is provided for some species because the wetland has a mix of Cowardin wetland types, is dominated by woody vegetation, is part of a riparian corridor connected to other wetlands and has upland buffers. The lack of open water, severe non-point source pollution of Mill Creek, and adjacent urban land uses along the east side and south end prevent the wetland from providing diverse wildlife habitat.
Fish habitat	Impacted or degraded	Fish habitat function is supported by an intact riparian canopy but has been impacted by the lack of in-stream structures, severe non-point source pollution of Mill Creek and adjacent developed land uses.
Water Quality	Intact	Water quality function is provided through the wetland's location in the floodplain along Mill Creek and Little Bear Creek, flooding or ponding during the growing season, high vegetation cover, large size (>5 acres); and through opportunities to improve water quality due to adjacent developed land uses and severe non-point source pollution in the watershed.
Hydrologic control	Intact	Hydrologic control function is provided by the wetland's location in the floodway and 100 year floodplain, ponding or flooding during the growing season, large size (>5 acres), and dominant woody vegetation that slows flood flows.
Education	Potential	The wetland has potential for educational use because several parcels are owned by the City of Hubbard and it includes the amenity of Mill Creek. Limits to educational use include lack of access, heavy brush and a sewage outfall.

Narrative description of overall wetland functions

The wetland's large size, landscape position, and vegetation communities support a number of wetland functions. The location in the floodway and 100-year floodplain of Mill Creek and Little Bear Creek and the extensive woody vegetation cover support intact water quality and hydrologic control functions and provide a riparian corridor for wildlife. Wildlife habitat diversity could be improved by increasing open water habitat and/or improving the water quality of Mill Creek and Little Bear Creek. Fish habitat could be restored by adding in-stream structures and/or improving the water quality of Mill Creek and Little Bear Creek. Educational use could be provided by construction of a maintained access point and an access trail.

Function summary sheet for OFWAM

Wetland 3

Function	Assessment Descriptor	Rationale
Wildlife habitat	Provides habitat for some wildlife species	Wildlife habitat function is provided for some species because the wetland is dominated by woody vegetation and is part of a riparian corridor connected to other wetlands. The lack of open water, severe non-point source pollution of the Mill Creek watershed, and limited upland wildlife habitat prevent the wetland from providing diverse wildlife habitat.
Fish habitat	Impacted or degraded	Fish habitat function is supported by an intact riparian canopy but has been impacted by the lack of in-stream structures and severe non-point source pollution of the Mill Creek watershed.
Water Quality	Intact	Water quality function is provided through the wetland's location in the floodplain along Little Bear Creek, flooding or ponding during the growing season, high vegetation cover, and through opportunities to improve water quality due to adjacent agricultural land uses and severe non-point source pollution in the watershed.
Hydrologic control	Impacted or degraded	Hydrologic control function is limited by the wetland's moderate size (2.7 acres) and lack of opportunity to prevent flood damages to downstream areas managed as open space.
Education	NA	No public ownership
Narrative description of overall wetland functions		
The location in the 100-year floodplain of Little Bear Creek and the extensive woody vegetation cover support intact water quality function, limited hydrologic control functions and fish habitat and provide a riparian corridor for wildlife. Fish habitat could be restored by adding in-stream structures and/or improving the water quality of Little Bear Creek.		

Function summary sheet for OFWAM

Wetland 4

Function	Assessment Descriptor	Rationale
Wildlife habitat	Provides habitat for some wildlife species	Wildlife habitat function is provided for some species because the wetland is dominated by woody vegetation and is part of a riparian corridor connected to other wetlands. The lack of open water, severe non-point source pollution of the Mill Creek watershed, and lack of upland wildlife habitat and buffer prevent the wetland from providing diverse wildlife habitat.
Fish habitat	Impacted or degraded	Fish habitat function has been impacted by the lack of in-stream structures, channel modification (maintenance), adjacent developed and agricultural land uses and severe non-point source pollution of the Mill Creek watershed.
Water Quality	Intact	Water quality function is provided through the wetland's location within the banks of Little Bear Creek, flooding or ponding during the growing season, high vegetation cover, and through opportunities to improve water quality due to adjacent developed and agricultural land uses and severe non-point source pollution in the watershed.
Hydrologic control	Impacted or degraded	Hydrologic control function is limited by the wetland's location outside the 100-year floodplain, moderate size (1 acre) and lack of opportunity to prevent flood damages to downstream areas managed as open space.
Education	Potential	Wetland 4 was determined to not be appropriate for educational use. Limiting factors for educational use included hazards of nearby roads and railroad, steep banks and impacted or degraded wildlife and fish habitat functions
Narrative description of overall wetland functions		
This wetland is highly degraded but does provide intact water quality function due to its location within the banks of Little Bear Creek and woody vegetation. Wildlife habitat function, fish habitat function and hydrologic control function are present but degraded or limited due to the wetland's small size and adjacent agricultural and developed land uses.		

Appendix F. Significance Determination Summary Sheets

LSW Criteria Checklist

Evaluating Wetland # 1 City: Hubbard

A. "OUT" Test

Wetlands that score "Yes" in any of the following categories do NOT proceed to Section B:

Y	N	
	✓	Wetlands ARTIFICIALLY CREATED ENTIRELY FROM UPLAND that are: (a) created for the purpose of controlling, storing, or maintaining stormwater; (b) active surface mining or active log ponds; (c) ditches without free & open connection to waters of the state AND w/o fish (d) < 1 acre and unintentionally created from irrigation leak or construction activity (e) created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard
	✓	Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")

B. "IN" Those that meet ONE OR MORE of the following criteria are LSWs.

Y	N	
✓		Wetlands that score the highest rank (stated in italics below) for <u>any</u> of the four ecological functions addressed by OFWAM or equivalent methodology: ___ *diverse* wildlife habitat, ___ *intact* fish habitat, X *intact* water quality, or X *intact* hydrologic control.
	✓	Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), <u>AND</u> that occur within 1/4 mile of a water quality-limited stream listed by DEQ.
	✓	Contain one or more rare/uncommon wetland plant communities in Oregon. (Most concise list is found as Appendix G in OFWAM).
	✓	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation w/appropriate agency deems the site not important for the maintenance of the species).
	✓	Wetland rates in the second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
	✓	*Optional Criterion* (local discretion): Wetland represents a *locally* unique plant community.
	✓	*Optional Criterion* (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposes by a school or organization.

LSW Criteria Checklist

Evaluating Wetland # 2 City: Hubbard

A. "OUT" Test

Wetlands that score "Yes" in any of the following categories do NOT proceed to Section B:

Y	N	
	✓	Wetlands ARTIFICIALLY CREATED ENTIRELY FROM UPLAND that are: (a) created for the purpose of controlling, storing, or maintaining stormwater; (b) active surface mining or active log ponds; (c) ditches without free & open connection to waters of the state AND w/o fish (d) < 1 acre and unintentionally created from irrigation leak or construction activity (e) created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard
	✓	Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")

B. "IN" Those that meet ONE OR MORE of the following criteria are LSWs.

Y	N	
✓		Wetlands that score the highest rank (stated in italics below) for <u>any</u> of the four ecological functions addressed by OFWAM or equivalent methodology: ___ *diverse* wildlife habitat, ___ *intact* fish habitat, X *intact* water quality, or X *intact* hydrologic control.
	✓	Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), <u>AND</u> that occur within 1/4 mile of a water quality-limited stream listed by DEQ.
	✓	Contain one or more rare/uncommon wetland plant communities in Oregon. (Most concise list is found as Appendix G in OFWAM).
	✓	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation w/appropriate agency deems the site not important for the maintenance of the species).
	✓	Wetland rates in the second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
	✓	*Optional Criterion* (local discretion): Wetland represents a *locally* unique plant community.
	✓	*Optional Criterion* (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposes by a school or organization.

LSW Criteria Checklist

Evaluating Wetland # 3 City: Hubbard

A. "OUT" Test

Wetlands that score "Yes" in any of the following categories do NOT proceed to Section B:

Y	N	
	✓	Wetlands ARTIFICIALLY CREATED ENTIRELY FROM UPLAND that are: (a) created for the purpose of controlling, storing, or maintaining stormwater; (b) active surface mining or active log ponds; (c) ditches without free & open connection to waters of the state AND w/o fish (d) < 1 acre and unintentionally created from irrigation leak or construction activity (e) created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard
	✓	Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")

B. "IN" Those that meet ONE OR MORE of the following criteria are LSWs.

Y	N	
✓		Wetlands that score the highest rank (stated in italics below) for <u>any</u> of the four ecological functions addressed by OFWAM or equivalent methodology: ___ *diverse* wildlife habitat, ___ *intact* fish habitat, X *intact* water quality, or ___ *intact* hydrologic control.
	✓	Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), <u>AND</u> that occur within 1/4 mile of a water quality-limited stream listed by DEQ.
	✓	Contain one or more rare/uncommon wetland plant communities in Oregon. (Most concise list is found as Appendix G in OFWAM).
	✓	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation w/appropriate agency deems the site not important for the maintenance of the species).
	✓	Wetland rates in the second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
	✓	*Optional Criterion* (local discretion): Wetland represents a *locally* unique plant community.
	✓	*Optional Criterion* (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposes by a school or organization.

LSW Criteria Checklist

Evaluating Wetland # 4 City: Hubbard

A. "OUT" Test

Wetlands that score "Yes" in any of the following categories do NOT proceed to Section B:

Y	N	
	✓	Wetlands ARTIFICIALLY CREATED ENTIRELY FROM UPLAND that are: (a) created for the purpose of controlling, storing, or maintaining stormwater; (b) active surface mining or active log ponds; (c) ditches without free & open connection to waters of the state AND w/o fish (d) < 1 acre and unintentionally created from irrigation leak or construction activity (e) created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard
	✓	Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")

B. "IN" Those that meet ONE OR MORE of the following criteria are LSWs.

Y	N	
✓		Wetlands that score the highest rank (stated in italics below) for <u>any</u> of the four ecological functions addressed by OFWAM or equivalent methodology: ___ *diverse* wildlife habitat, ___ *intact* fish habitat, X *intact* water quality, or ___ *intact* hydrologic control.
	✓	Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), <u>AND</u> that occur within 1/4 mile of a water quality-limited stream listed by DEQ.
	✓	Contain one or more rare/uncommon wetland plant communities in Oregon. (Most concise list is found as Appendix G in OFWAM).
	✓	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation w/appropriate agency deems the site not important for the maintenance of the species).
	✓	Wetland rates in the second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
	✓	*Optional Criterion* (local discretion): Wetland represents a *locally* unique plant community.
	✓	*Optional Criterion* (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposes by a school or organization.

Appendix G. DSL Letter Approving OFWAM Adjustments

Oregon
John A. Kitzhaber, M.D., Governor

Division of State Lands
775 Summer Street NE, Suite No. 100
Salem, OR 97301-1279
(503) 378-3805
FAX (503) 378-4844
http://statelands.dsl.state.or.us

December 1, 2000

Joel Shaich
Natural Resource Planner
Mid-Willamette Valley Council of Governments
105 High Street, SE
Salem, OR 97301-3667

Dear Joel:

I have reviewed your request for the Division's approval to make certain adjustments to the *Oregon Freshwater Wetland Assessment Methodology* (OFWAM) for the purpose of completing the wetland and condition assessment necessary for identifying locally significant wetlands as allowed in OAR 141-86-340(2)(b). Your request is specific to work the COG is conducting for the cities of Detroit, Hubbard, Idanha, Scotts Mills and Falls City.

The rationale that you have provided is sound. I agree that for the safe harbor option of Goal 5, the wetland and watershed characterization questions that you wish to omit (questions 2, 3, 13, 14, 20, 39, 40, and 47-58) are not essential to completing the assessment. Likewise, it is not necessary to complete function and condition assessment for the five OFWAM sections listed in your request. The only mandatory sections are Wildlife Habitat, Fish Habitat (where applicable), Water Quality and Hydrologic Control.

Please include a short section specifying the adjustments in the final Goal 5 wetland report for each of the affected cities. Thank you for requesting agency approval.

Sincerely,

Janet C. Morlan

Janet C. Morlan, PWS
Wetlands Program Leader

cc: Mel Lucas, DLCD
Mark Fancey, MMVCOG
City of Detroit
City of Falls City
City of Hubbard
City of Idanha
City of Scotts Mills

K:\Wetlands\Janet\LWI.Goal5.wcp\ofwam adjust.doc

APPENDIX G-1

2.211 REQUIREMENTS FOR WETLANDS

2.211.01 Purpose and Intent

The purpose of this ordinance is to protect and restore wetlands and the multiple social and environmental functions and benefits these areas provide individual property owners, the community, and the watershed. The ordinance is based on the "safe harbor" approach as defined in Oregon Administrative Rules 660-23-100(4)(b). Specifically, this ordinance is intended to:

A. Protect habitat for fish and other aquatic life,
B. Protect habitat for wildlife,
C. Protect water quality for human uses and aquatic life,
D. Control erosion and limit sedimentation,
E. Provide a stream "right of way" to accommodate lateral migration of the channel and protect the stream and adjacent properties,
F. Reduce the effects of flooding,
G. Promote recharge of shallow aquifers,
H. Provide opportunities for recreation and education,
I. Protect open space, and
J. Minimize the economic impact to affected property owners.

The intent of the ordinance is to meet these goals by modifying the location, but not the intensity of development, where possible. The ordinance restricts filling, grading, excavation, and vegetation removal in wetlands for their protection. The ordinance excludes new structures from wetlands in Hubbard. The ordinance provides procedures for correcting map errors, for hardship variances, and for granting a variance for parcels that have no buildable site through application of this ordinance.

2.211.02 Definitions

As used in this ordinance, the following words and phrases, unless the context otherwise requires, shall mean:

A. Enhancement: An activity that improves one or more specific functions or values of an existing wetland.

B. Functions and Values: Functions refers to the environmental roles served by wetlands and buffer areas including, but not limited to, water quality protection and enhancement, fish and wildlife habitat, flood storage, nutrient attenuation, and sediment trapping. Values refer to the qualities ascribed to a wetland such as educational and recreational opportunities, open space, and visual aesthetic qualities.

C. Mitigation: Taking one or more of the following actions listed in order of priority:

1. Avoiding the impact altogether by not taking a certain development action or part of that action;

2. Minimizing impacts by limiting the degree or magnitude of he development action and its implementation;

3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

4. Reducing or eliminating the impact over time by preservation and maintenance operation during the life of the development action by monitoring and taking appropriate corrective measures;

5. Compensating for the impact by replacing or providing comparable substitute resources or environments.

D. Restoration: To improve a disturbed wetland by returning wetland parameters that may be missing; adding soils, water, or plants. The restoration may return a missing or damaged wetland function to achieve a desired outcome.

E. Wetland: An area that is inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

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

2.211.03 Procedures for Identifying Significant Wetlands

The wetland regulations contained in this ordinance apply to those wetlands identified and mapped as significant in the City of Hubbard Local Wetlands Inventory, Wetland Functional Assessment, and Wetland Significance Determination. Significance determination is based on criteria contained in OAR 14 1-86-300 through 350 as adopted by the Division of State Lands.

Precise wetland boundaries may vary from those shown on the map. For any proposed development impacting a significant wetland or within 25 feet of an identified significant wetland, the applicant shall conduct a wetland delineation. The purpose of this delineation is to determine the precise wetland boundary for application of the Removal-Fill Law, and if applicable, the nature and extent of development impacts on adjacent wetlands. The more precise boundary obtained through a wetland delineation can be identified, mapped, and used for review and development without a change in the wetland inventory mapping. All developments proposed within a designated wetland area shall be subject to the provisions of this ordinance.

2.211.04 Land Use and Permit Requirements

A. Permitted Uses. The following uses are permitted within wetlands identified as locally significant.

1. Passive recreation activities that require no structures, such as bird watching, canoeing, or nature walks;

2. Fishing or hunting consistent with state, local and federal law;

3. Educational uses or research;

4. Nature interpretative centers and wetland research facilities, when specified in, or consistent with, adopted plans and policies;

5. Construction of trails, boardwalks, viewing platforms, information kiosks, and trail signs;

6. Construction of bikeways and other paved pathways;

7. Wetland and waterway restoration;

8. Removal of vegetation using non-motorized tools;

9. Removal of non-native vegetation;

10. Removal of trees that are a hazard to life or structures;

11. Mowing grass to comply with local or state fire prevention requirements;

12. Planting or replanting with native plant species;

13. Channel maintenance to maintain storm water conveyance and flood control capacity, as required by local policies, state and federal regulations, or intergovernmental agreements;

14. Emergency repairs by the City or other public agencies to protect life and property;

15. Compensatory mitigation required by state of federal permit;

16. Removal of fill material or any refuse that is in violation of local, state, or federal regulations;

17. Maintenance of existing structures within the existing footprint of the structure;

18. Construction of access roads for maintenance of channels, wetlands, and other natural resource areas; and

19. Construction of discharge outlets for treated stormwater or wastewater;

20. Normal and accepted farming and ranching practices other than construction of buildings or structures, occurring on land zoned for exclusive farm use and existing in the wetland since prior to the date of adoption of this ordinance.

B. Prohibited Uses. Within locally significant wetlands, practices that are specifically not allowed and would adversely affect wetland functions and values include, but are not limited to the following:

1. New development or expansion of existing development;

2. Placement of fill material, grading, or excavation;

3. Road construction;

4. Construction of stormwater or wastewater management or treatment facilities;

5. Construction of new septic drainfields;

6. Channelizing or straightening natural waterways;

7. Storage or use of chemical pesticides, fertilizers, or other hazardous or toxic materials; and

8. Clearing of trees or brush with motorized equipment including, but not limited to, chain saws and bulldozers.

C. Compliance With State and Federal Regulations. All activities wholly or partially within wetlands are subject to Division of State Lands permit requirements under the Removal-Fill Law and U.S. Army Corps of Engineers permit requirements under Section 404 of the Clean Water Act. Where there is a difference between local, state or federal regulations, the more restrictive regulations shall apply.

D. Division of State Lands Notification Required. The City shall provide notice to the Division of State Lands, the applicant, and the owner of record, within five working days of the acceptance of any complete application for the following activities that are wholly or partially within areas identified as wetlands on the Local Wetlands Inventory or within 25 feet of such areas:

1. Subdivisions;

2. Building permits for new structures;

3. Other development permits and approvals that allow physical alteration of the land involving excavation and grading, including permits for removal or fill, or both, or development in floodplains and floodways;

4. Conditional use permits and variances that involve physical alterations to the land or construction of new structures; and

5. Planned unit development approvals.

E. The provisions of this section do not apply if a permit from the Division of State Lands has been issued for the proposed activity.

F. Written City approval of any activity described in this section shall include one of the following statements:

1. Issuance of a permit under ORS 196.600 to 196.905 by the Division of State Lands is required for the project before any physical alteration takes place within the wetlands;

2. Notice from the Division of State Lands that no permit is required; or

3. Notice from the Division of State Lands is required until specific proposals to remove, fill, or alter the wetlands are submitted.

G. If the Division of State Lands fails to respond to any notice provided under subsection (F) of this section within 30 days of notice, the City approval may be issued with written notice to the applicant and the owner of record that the proposed action may require state or federal permits.

H. The City may issue local approval for parcels identified as or including wetlands on the Local Wetlands Inventory upon providing to the applicant and the owner of record of the affected parcel a written notice of the possible presence of wetlands and the potential need for state and federal permits and providing the division with a copy of the notification of comprehensive plan map or zoning map amendments for specific properties.

2.211.05 Appeals

Any decision by the City on a land use application concerning the wetland protection requirements herein may be appealed to Hubbard's Development Regulations.

2.211.06 Variances

In cases where the application of this ordinance is demonstrated to render an existing lot or parcel unbuildable, a property owner may request a variance from the wetland

protection requirements. Granting of a variance requires findings that satisfy all of the following criteria:

A. The proposed development requires deviation from the wetland protection requirements;

B. Strict adherence to the wetland protection requirements and other applicable standards would effectively preclude a use of the parcel that could reasonably be expected to occur in the zone, and

C. The property owner would be denied a substantial property right enjoyed by a majority of the landowners in the vicinity.

2.211.07 Violations

Any activities within a significant wetland not authorized under this ordinance are a violation. Violators shall be subject to the enforcement procedures pursuant to Hubbard's Development Code. A violation of this ordinance shall be considered a separate offense for each day the violation continues.

2.211.08 Conflicts

To best protect important functions and values of wetlands in the event that the requirements of this section conflict with other ordinance requirements, the City shall apply the requirements that best provide for the protection of the resource.

2.211.09 Severability

The sections and subsections of this ordinance are severable. The invalidity of one section or subsection shall not affect the validity of the remaining sections, or permit approvals and prosecutions brought pursuant to this section.

PUBLIC HEARING
LEGISLATIVE AMENDMENT 01-01

NOTICE IS HEREBY GIVEN that on **Tuesday, June 19, 2001, at 6:30 p.m. Hubbard City Hall, 3720 2nd Street,** the Hubbard City Council and Planning Commission will conduct a joint public hearing to consider adoption of amendments to the City of Hubbard Comprehensive Plan, Comprehensive Plan Map, Zoning Map, and Development Code. The proposed amendments would:

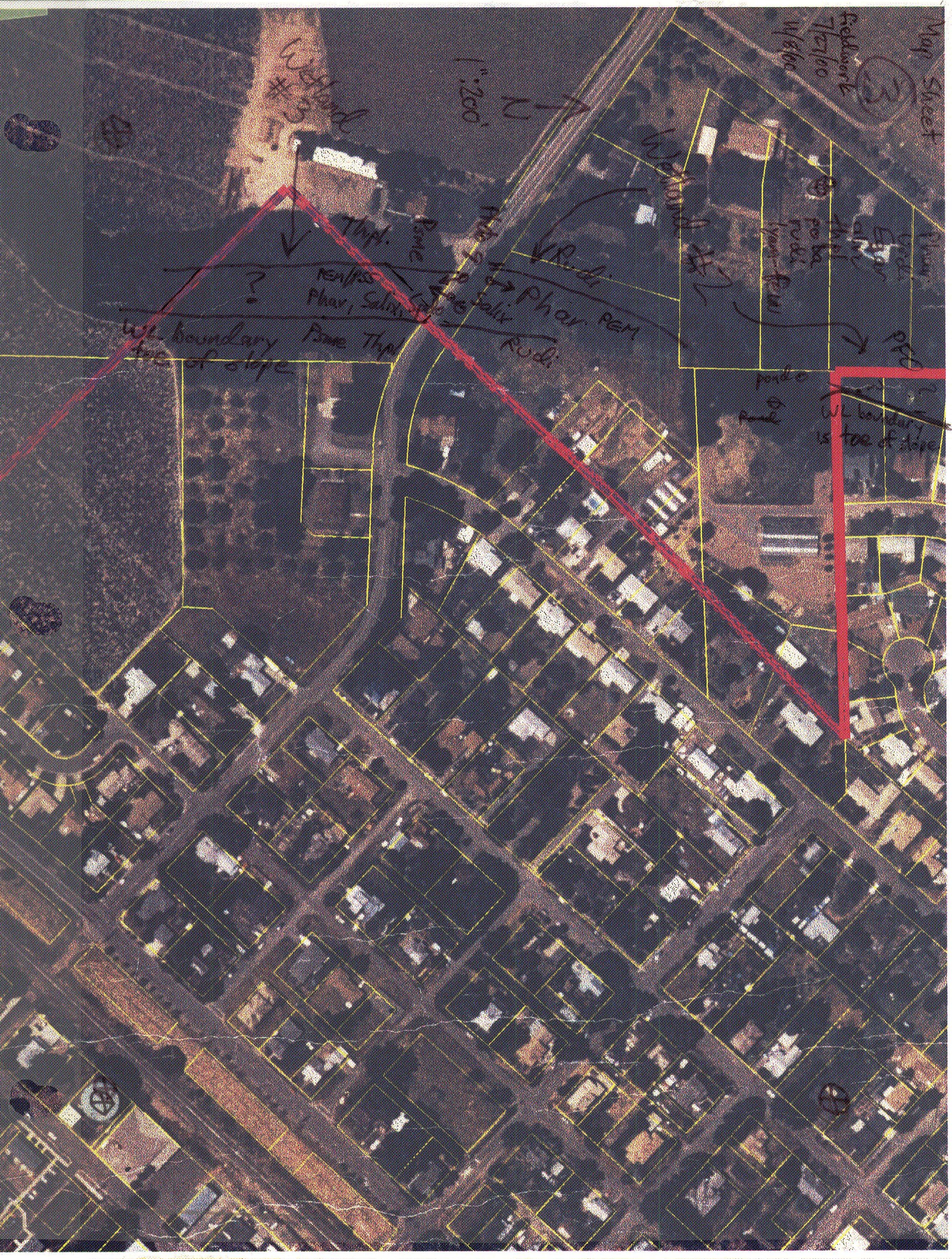
- Amend the Land Use, Housing, Economics, and Natural Resources elements of the Comprehensive Plan;
- Add a Local Wetland Inventory to the Comprehensive Plan;
- Add a Requirements for Wetlands chapter to the Development Code;
- Add a Requirements for Riparian Corridors chapter to the Development Code;
- Amend the Comprehensive Plan Map by re-designating three (3) properties from Low-Density Residential to Medium Density Residential;
- Amend the Comprehensive Plan Map by re-designating one (1) property from Low-Density Residential to High Density Residential;
- Amend the Comprehensive Plan Map by re-designating one (1) property from Public to Medium Density Residential;
- Amend the Comprehensive Plan Map by re-designating one (1) property from Manufactured Home Park to Medium Density Residential;
- Rezone one property from Low-Density Residential (R-1) to Medium Density Residential (R-2);
- Rezone one property from Manufactured Home District (MHD) to Medium Density Residential (R-2);

The Planning Commission will consider the proposed amendments and make a recommendation to the Hubbard City Council. The City Council then makes the final decision in the matter.

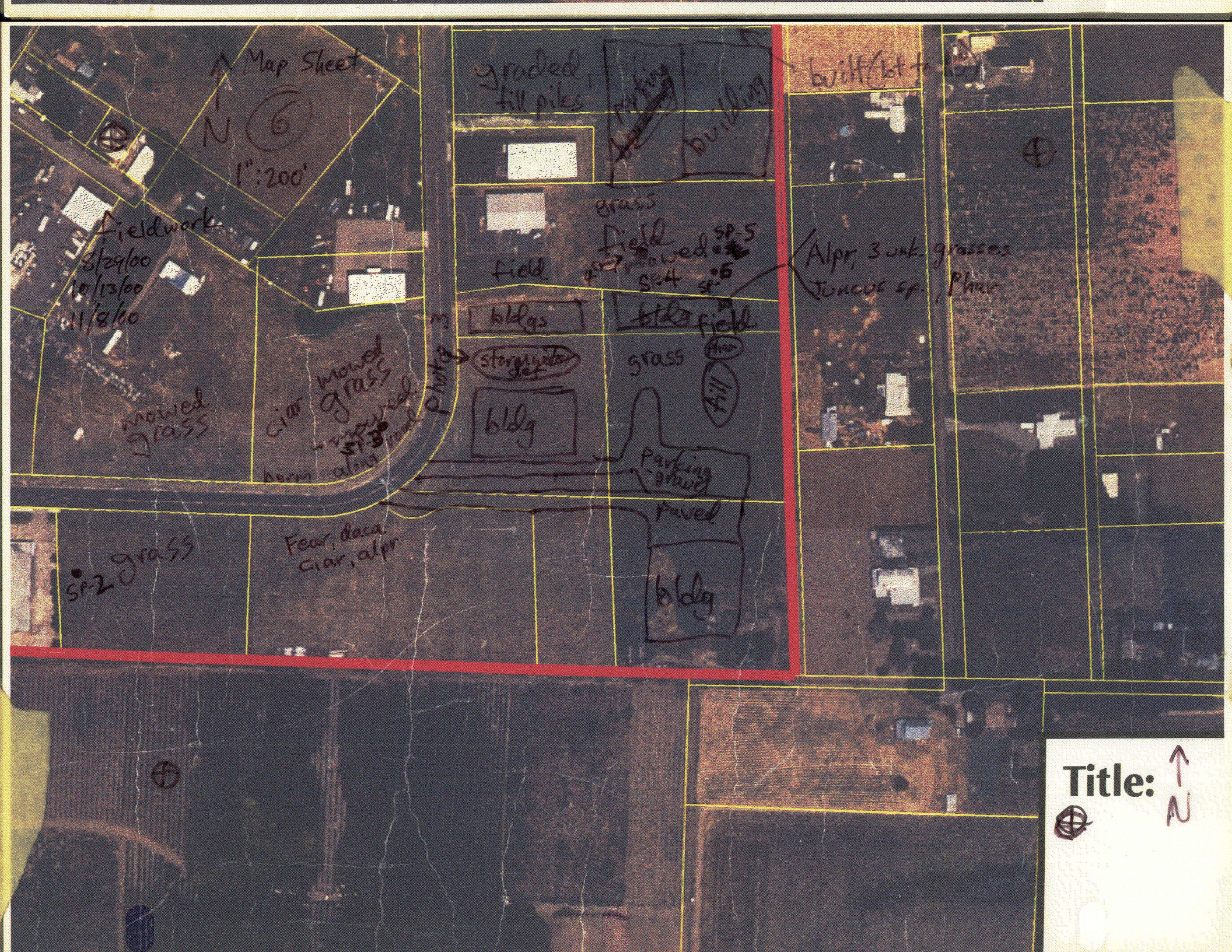
Person wishing to participate in the public hearing may appear in person or by representative at the date and time listed above. Written comments may also be submitted by mailing information to P.O. Box 380, Hubbard, OR 97032.

One week prior to the hearing, a copy of amendments will be available for inspection at the City Hall located at 3720 2nd Street. A copy of the amendments may be purchased at a reasonable cost.

For further information, please contact Mark Fancey, City Planner, at (503) 588-6177.



Map Sheet
3
fieldwork
7/27/00
Wetland #3
1" : 200'
N
Wetland #2
Thyl.
PEM/SS
Phar, Salix, Spp
Phar PEM
Rudi
WL boundary
toe of slope
PFO
WL boundary is toe of slope


Map Sheet
N
6
1":200'
Fieldwork
8/29/00
10/13/00
11/8/00
mowed grass
clear
mowed grass
-watered
ST-3
berm along road
graded fill pile
building
grass
field
mowed
ST-5
ST-4
ST-6
Alpr, 3 unk. grasses
Juncus sp., Phal
bldgs
bldgs
field
storm water det
grass
bldg
fill
parking
paved
bldg
ST-2
grass
Fear, daca, Car, alpr
Title:
N

Map Sheet 2
N
1" : 200'
9/29/00 fieldwork
10/13/00
11/9/00
Wetland #2
poba
coca
phar
PFO
Phar, PSS
PEM
rudi - steep slope
mowed yards
PFO
stream
Lyam
Frla
Salix
Phar
PEM
PFO
Great blue heron
stream
PEM
Wetland 1b
PFO
Wetland #1

Map sheet (1)
N
1" : 200'
8/29/00 fieldwork
11/8/00
Wetland #1
Wetland 1a
? WL PFO PEM Psme
Use map from PHS delineation of this parcel
Picul Group
grass field
Daca
Wetland 1b
Phar PEM
alru salix
SP-7
PFO
hemlock d'urcob Fihn, Lysam, Cose
WL bdy - base of slope
Mature forest
Psme, coco, pomi, acma, tegr, Indian Plum, ruur
field edge
field
Trpr
Park


Map Sheet
4
Aerial Fieldwork
N
1" = 200'
Dry channel
Wetland #4
Filled
Channel #2


field work
7/27/00
10/13/00
Map Sheet
5
1" : 200'
ditch
filled to lot edge
Rudi
Photo 5
Rvcr - Possible WL all outside UGB
Photo 4
culvert
7/27/00
8-12' wide ditch, dry
Hole, Rudi, Ciar
Pyfu ?
Cys
End ditch
Daca,
overgrown, Rudi
lot not visible
culvert junction box
* - possible hydric soil on lot