Appendix A

Oregon Local Wetlands Inventory Administrative Rules

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LOCAL WETLANDS INVENTORY (LWI) STANDARDS AND GUIDELINES

141-086-0180

Purpose

Pursuant to ORS 196.674 pertaining to the Statewide Wetlands Inventory (SWI), these rules establish a system for uniform wetland identification and comprehensive mapping. These rules also establish wetlands inventory standards for cities or counties developing a wetland conservation plan (WCP) pursuant to ORS 196.678. A Local Wetlands Inventory (LWI) is developed for all or a portion of a city or county according to the standards and guidelines contained in these rules (OAR 141-086-0180 through 141-086-0240).

Stat. Auth.: ORS 196.674 – 196.681 & 196.692
Stats. Implemented: ORS 196.668 – 196.692
Hist.: LB 11-1991, f. & cert. ef. 11-15-91; LB 9-1994, f. & cert. ef. 12-15-94; DSL 2-2001, f. & cert. ef. 2-26-01

141-086-0185

Applicability

(1) Once approved by the Department of State Lands (Department), the LWI must be used in place of the National Wetlands Inventory (NWI) and is incorporated into the SWI.

(2) The approved LWI must be used by cities and counties in lieu of the NWI for notifying the Department of land use applications affecting mapped wetlands and other waters (ORS 215.418 and 227.350).

(3) An LWI fulfills the wetlands inventory requirements for Goal 5 and Goal 17 (OAR 660-015 and 660-023). An LWI that meets the additional WCP requirements specified in these rules must be used as the wetlands inventory basis for a WCP.

(4) A wetland function and condition assessment of mapped wetlands must be conducted as part of the LWI using the *Oregon Freshwater Wetland Assessment Methodology* (*OFWAM*) published by the Department in 1996. An equivalent functional assessment methodology may be used or adjustments may be made to OFWAM upon written approval by the Director. The assessment results are used to determine the relative quality (functions, values, and condition) of the mapped wetlands and to designate significant wetlands (OAR 141-086-0300 through 141-086-0350) as required for Goal 5, or to assess wetland functions and values for a WCP.

(5) An LWI is used by the Department, other agencies and the public to help determine if wetlands or other waters are present on particular land parcels.

(6) An LWI provides information for planning purposes on the location of potentially regulated wetlands and other waters such as lakes and streams, but is not of sufficient detail for permitting purposes under the state Removal-Fill Law (ORS 196.800 through 196.990). Smaller wetlands may not be mapped, and wetlands may be missed due to lack of onsite access, tree canopy cover and other constraints. A wetland delineation or determination report may be needed for parcels without LWI-mapped wetlands. A Department-approved wetland delineation report for wetlands identified in an LWI is usually needed prior to site development.

(7) All wetlands inventory procedures and products are subject to review and approval by the Department before the products:

(a) Are incorporated into the SWI;

(b) Can be used in lieu of the NWI for Wetland Land Use Notification purposes; or

(c) Can be used by a city or county for Goal 5, Goal 17 or WCP purposes.

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 196.674 - 196.681 & 196.692
Stats. Implemented: ORS 196.668 - 196.692
Hist.: LB 11-1991, f. & cert. ef. 11-15-91; LB 9-1994, f. & cert. ef. 12-15-94, Renumbered from 141-086-0190(1) & (4); DSL 2-2001, f. & cert. ef. 2-26-01; DSL 11-2008, f. 12-12-08, cert. ef. 1-1-09

141-086-0200

Definitions

(1) "Cowardin class or subclass" means the wetland classification according to the U.S. Fish and Wildlife Service's *Classification of Wetlands and Deepwater Habitats of the United States*, Cowardin et al., 1979.

(2) "Director" means the Director of the Oregon Department of State Lands or designee.

(3) "Department" means the Oregon Department of State Lands.

(4) "Georeferenced" means linking geographic data to known coordinates on the surface of the earth.

(5) "GIS" or "Geographic Information System" means a system of hardware, software and data storage that allows for the analysis and display of information that has been geographically referenced.

(6) "HGM class and subclass" means the hydrogeomorphic classification of the wetland based upon its landscape position and hydrology characteristics, according to the HGM classification developed by the Department.

(7) "Indicator" means the soil, vegetation, and hydrology characteristics or other field evidence that indicate that wetlands are present.

(8) "Inventory" means a systematic survey of an area to identify, classify and map the approximate boundaries of wetlands, and includes the supporting documentation required by these rules.

(9) "Mapping" means representing the identified wetlands and their approximate boundaries on a map.

(10) "Offsite Determination" means a wetland determination conducted without field verification using NWI maps, soils maps, and aerial photographs.

(11) "Other Waters" means waters of the state other than wetlands, such as streams and non-vegetated ponds.

(12) "Probable Wetland" or “PW” means an area noted during the course of LWI development that appears to meet wetland criteria but is less than one half of an acre in size or is small and of undetermined size, and is mapped as a point rather than a polygon on the LWI maps.

(13) "Sample Plot" means a specific area on the ground where soils, vegetation and hydrology data are recorded on a field data form per OAR 141-90-0035(14) in order to make a wetland determination.

(14) "Statewide Wetlands Inventory" or "SWI" means an inventory that contains at minimum the location, type (e.g. classification) and approximate extent of wetlands in the State of Oregon. This inventory is continually revised as additional information is received or obtained by the Department.

(15) "Stream" means a watercourse created by natural processes, or one that would be in a natural state if it were not for human-caused alterations. Stream includes a channelized or relocated stream.

(16) “Visually confirm” or “visual confirmation” means to walk over and/or visually check an area to make a wetland determination and map wetlands and other waters.

(17) "Wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (ORS 196.800(16)).

(18) "Wetland Delineation Report" means a written document that contains the methods, data, conclusions and maps used to determine if wetlands and/or other waters of the state are present on a land parcel and, if so, describes and maps their location and geographic extent. A wetland determination report documenting wetland presence or absence is included within this definition (OAR 141-090 et seq.).

(19) "Wetland Determination" means a decision that a site may, does, is unlikely to, or does not contain wetlands. A determination does not include the precise location or boundaries of any wetlands determined to be present (OAR 141-090 et seq).

(20) "Wetland Mosaic" means a complex of several wetlands that are interspersed between areas of non-wetland each less than one half of an acre in size, or less than one tenth of an acre in size for a WCP, making them difficult to map.

Stat. Auth.: ORS 196.674 - 196.681 & 196.692
Stats. Implemented: ORS 196.668 - 196.692
Hist.: LB 11-1991, f. & cert. ef. 11-15-91; LB 9-1994, f. & cert. ef. 12-15-94; DSL 2-2001, f. & cert. ef. 2-26-01; DSL 11-2008, f. 12-12-08, cert. ef. 1-1-09

141-086-0210

Inventory Development Process and Standards

(1) Wetland determinations conducted for the purpose of developing the LWI must be conducted according to the criteria, methodologies and guidance currently accepted by the Department (OAR 141-090 et seq.).

(2) Sources of inventory information must include:

(a) U.S.D.A. Natural Resources Conservation Service county soil survey and county list of hydric soils and soils with hydric inclusions, or other available soil surveys;

(b) NWI maps;

(c) USGS topographic maps;

(d) Federal Emergency Management Act floodplain maps, where available;

(e) Other available local wetlands inventories or wildlife habitat inventories that include wetlands;

(f) Department wetland determination/delineation files; and

(g) High resolution (1 meter or finer) color and color infrared (where available) aerial photos taken within five years of inventory initiation. The minimum photo scale must be 1 inch = 200 feet unless another scale is approved by the Department.

(3) Sources of inventory information may include but are not limited to:

(a) LIDAR (Light Detection and Ranging) topographic data;

(b) Irrigation drainage district maps;

(c) Local knowledge of area (e.g., residents);

(d) Oregon State University Institute for Natural Resources Oregon Explorer data;

(e) Department permit files; and

(f) Resource agencies, including the Oregon Department of Fish and Wildlife and U.S. Fish and Wildlife Service.

(4) Before beginning fieldwork, prepare a field map using an aerial photograph and include the approximate location of:

(a) Any wetlands, deepwater habitats, and streams from the NWI;

(b) Any wetlands from the Department's wetland determination/delineation files or from other inventories;

(c) Hydric soils and soils with hydric inclusions (each coded separately);

(d) Wetlands or potential wetlands identified on aerial photos;

(e) Sites to visually confirm based on other leads; and

(f) Properties where access was granted.

(5) Aerial photo interpretation must be tested early in the inventory process by interpreting several wetland types, ground truthing the interpretations, and then completing the aerial photo interpretations.

(6) The local government must be responsible for requesting property access permission from landowners in the study area for parcels identified by inventory staff and/or the Department as possibly containing wetlands.

(7) All potential wetlands that are not assessed with a sample plot and other waters identified through the process described in OAR 141-086-0210(1) through (4) must be visually confirmed to the extent practicable.

(8) Where property access is granted, sample plot data must be provided according to the following minimum standards:

(a) Verify each wetland with at least one sample plot that best characterizes the wetland;

(b) Verify with at least one sample plot each potential wetland where land use activities such as ditching, water diversion, or agricultural practices are likely to have significantly altered site conditions, making observations from a distance or a site walk-over unreliable; and

(c) Verify with at least one-sample plot potential wetlands with unreliable indicators (e.g., one dominant plant that grows in both wetlands and non-wetlands, such as *Phalaris arundinacea*).

(9) If the LWI will be used for a WCP, in addition to the requirements in OAR 141-086-0210(7) and (8), a minimum of one sample plot must be provided that best characterizes each dominant wetland plant community.

(10) If the landowner denies access permission and if visual confirmation from an adjacent property or road is not possible, employ off-site wetland determination methods.

(11) All wetlands greater than or equal to one half of an acre and all wetlands identified in a Department-approved wetland delineation report must be identified and mapped as polygons. Wetlands that are less then [sic] one half of an acre may be mapped as polygons or as probable wetlands. Probable wetlands must be represented as points on the appropriate parcel(s) and should be labeled as "PW" on the maps. No further characterization or assessment is required for probable wetlands in the LWI. Probable wetlands will trigger cities and counties to notify the Department of proposed land use activities affecting mapped wetlands and other waters (ORS 215.418 and 227.350). For a WCP, all wetlands one-tenth acre and larger shall be identified and mapped as polygons.

(12) The aim of the LWI is to map the location of wetlands at an accuracy of approximately 5 meters (16.4 feet). However, the actual accuracy may be less for some wetlands such as seasonal or forested wetlands that could not be visually confirmed.

(13) Each wetland must be assigned a unique identification code.

(14) All previously delineated wetlands from the Department's files must be field-verified, if possible, to determine if wetlands are still present and are approximately the same size and configuration as when delineated.

(15) All identified wetlands must be classified:

(a) To the class level of Cowardin (and to subclass for scrub-shrub and forested classes) and must include water regime and special modifiers (e.g., "farmed" or "diked/impounded); and

(b) By dominant HGM class and subclass.

(16) When a wetland contains more than one adjoining Cowardin classification, different classes or subclasses greater than 0.25 acres in size must be mapped and labeled as separate polygons.

(17) Artificially created wetlands or other waters (such as irrigation canals and drains, industrial ponds, log ponds, golf course features, and storm water detention ponds that are greater than one half of an acre in size) must be included in the inventory regardless of their jurisdictional status, and their original purpose must be labeled on the inventory maps.

(18) Where a wetland mosaic occurs, the site must be labeled as a wetland/upland mosaic on all inventory maps and so described on the wetland summary sheet.

(19) Streams and other waters must be mapped, but no further documentation such as wetland summary sheets or OFWAM assessment is required. If an existing stream geospatial dataset is used, it may be necessary to adjust the layer to align with riparian or other linear wetlands.

(20) Using OFWAM, each wetland in its entirety must be assessed for all four ecological functions: water quality, hydrologic control, wildlife habitat and fish habitat. Any wetlands that may qualify as a Locally Significant Wetland due to education or recreation use must also be evaluated for those social functions (values) in OFWAM. The remaining functions and conditions in OFWAM do not need to be applied to any of the wetland assessment units. Contiguous wetlands or those in close proximity and assigned different codes may be grouped into a single OFWAM assessment unit based upon the guidance in OFWAM and/or in consultation with the Department.

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 196.674 - 196.681 & 196.692
Stats. Implemented: ORS 196.668 - 196.692
Hist.: LB 11-1991, f. & cert. ef. 11-15-91; LB 9-1994, f. & cert. ef. 12-15-94; DSL 2-2001, f. & cert. ef. 2-26-01; DSL 11-2008, f. 12-12-08, cert. ef. 1-1-09

141-086-0220

LWI Reports

(1) A report that meets the requirements in OAR 141-086-0220 (2) and (3) must be developed and submitted to the Department for approval. A minimum of two sets of the final Department-approved LWI report in both paper and electronic format (.pdf file format) must be prepared; one set must be provided to the Department for inclusion in the SWI and the other must be provided to the local government.

(2) The report must document the inventory and mapping processes and results, and include the following information:

(a) A general description of the study area including a description of the landscape setting;

(b) A description of the wetland inventory process including the public involvement process; the inventory methods including the date(s) and scale(s) of source maps and aerial photos used; the offsite and onsite wetland determination procedures including procedures used for visual confirmation and probable wetland identification; and all mapping and map transfer procedures used;

(c) A summary of the inventory results including the total acreage of the study area and the total number and acreage of wetlands identified within the study area, excluding the acreage of deepwater habitat and artificially created wetlands such as detention ponds or aggregate extraction ponds;

(d) A discussion of the OFWAM assessment process (e.g. how assessment units were defined) and the results;

(e) A summary of Locally Significant Wetlands, if identified (may be in table format); and

(f) All figures, with the study area clearly outlined.

(3) Appendices must include:

(a) Sample plot data on standard field data forms per OAR 141-090 et seq.

(b) A summary sheet for each wetland that must at a minimum include:

(A) The unique wetland code;

(B) Street address or equivalent location description;

(C) Township, Range, Section, Quarter Quarter Section and tax lot(s) that contain the mapped wetland;

(D) Approximate wetland size (in acres);

(E) Cowardin classification(s);

(F) HGM classification(s);

(G) Mapped soil unit(s);

(H) Watershed boundaries at the 6th field Hydrologic Unit Code scale as defined by the US Geological Survey or finer;

(I) Sample plot numbers, if any;

(J) Department wetland determination or delineation file numbers, where applicable;

(K) Scientific and common names of dominant plant species;

(L) Primary hydrology sources;

(M) Sampling or visual confirmation date(s) and method;

(N) Locally Significant Wetland determination, if made; and

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

(c) OFWAM assessment results for each wetland assessment unit that must include:

(A) Wetlands of Special Interest for Protection (OFWAM, Chapter Five);

(B) Wetland Characterization results (OFWAM, Appendix B);

(C) Assessment results represented in table format;

(D) Answer sheets for all wetland assessment questions (OFWAM, Appendix C);

(E) Function and condition summary sheets for fish habitat, wildlife habitat, water quality, hydrologic control and, if applicable, education and recreation (OFWAM, Appendix C); and

(F) Watershed summary sheet (OFWAM, Appendix C).

(d) Technical staff members and qualifications.

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 196.674 - 196.681 & 196.692
Stats. Implemented: ORS 196.668 - 196.692

Hist.: LB 11-1991, f. & cert. ef. 11-15-91; LB 9-1994, f. & cert. ef. 12-15-94; DSL 2-2001, f. & cert. ef. 2-26-01; DSL 11-2008, f. 12-12-08, cert. ef. 1-1-09

141-086-0222

Paper Map Standards

(1) Maps that meet the requirements in OAR 141-086-0222(2) through (5) must be developed and submitted to the Department for approval. A minimum of two sets of the final Department-approved LWI maps in both paper and electronic format (.pdf file) must be prepared; one set must be provided to the Department for inclusion in the SWI and the other must be provided to the local government.

(2) If the study area is covered by more than one wetland map, a single, smaller scale reference map of the complete study area is required. The reference map shall be indexed to the individual, large-scale maps and show, at a minimum, the Public Land Survey System grid, the location and code of all identified wetlands, streams, the study area boundary, and major, named streets.

(3) Wetland maps must include:

(a) Map name;

(b) Scale bar;

(c) Geographic reference to the Public Land Survey System;

(d) Roads, with major roads named, and railroads;

(e) Streams and stream names;

(f) Artificially created wetlands and other waters labeled with their purpose (e.g. storm water pond);

(g) Tax lot lines;

(h) Watershed boundaries at the 6th field Hydrologic Unit Code scale as defined by the US Geological Survey or finer;

(i) Legend that explains all map symbols, line work, and patterns;

(j) Map date (month and year final map prepared);

(k) All wetlands, clearly and accurately drawn and clearly identified by a unique wetland code that relates each wetland to field data forms, tables, databases, wetland summary sheets, and OFWAM summary forms;

(l) Cowardin classification(s) of each wetland per 141-086-0210(15a & 16);

(m) Disclaimer that reads: "Information shown on this map is for planning purposes, represents the conditions that exist at the map date, and is subject to change. The location and extent of wetlands and other waters is approximate. There may be unmapped wetlands and other waters present that are subject to regulation. A current Oregon Department of State Lands-approved wetland delineation is required for state removal-fill permits. You are advised to contact the Department of State Lands and the U.S. Army Corps of Engineers with any regulatory questions."

(n) Numbered sample plots; and

(o) Study area boundary as defined by the local government.

(4) Minimum map scale must be 1 inch = 200 feet (1:2,400).

Stat. Auth.: ORS 196.674 - 196.681 & 196.692
Stats. Implemented: ORS 196.668 - 196.692
Hist.: DSL 11-2008, f. 12-12-08, cert. ef. 1-1-09

141-086-0225

Digital Data Standards

(1) A minimum of two sets of the final Department-approved LWI geospatial datasets must be prepared; one set must be provided to the Department for inclusion in the SWI and the other must be provided to the local government.

(2) A georeferenced ArcGIS compatible dataset with attribute tables and metadata must be developed for each of the following:

(a) Wetland polygons with a unique wetland identification label, Cowardin classification code(s) and modifiers, HGM classification, approximate wetland size, Locally Significant Wetland significance determination (if made), whether it was visually confirmed, and the Department's wetland delineation report file number, if any.

(b) Probable wetland points with PW label;

(c) Streams with unique identification labels and, where available, names;

(d) Other natural bodies of water with names;

(e) Artificially created wetlands and water features (such as irrigation canals and ditches, industrial ponds, log ponds, golf course features, and storm water detention ponds) uniquely identified and purpose of artificially-created feature, if known;

(f) Watershed boundaries (6th order Hydrologic Unit Code scale or finer);

(g) Study area boundary;

(h) Tax lot lines and numbers;

(i) Sample plot dataset with unique identification labels that correspond to the field data form; and

(j) Major streets with name labels.

(3) All georeferenced data sets must be projected using the Oregon Geographic Information Council-endorsed state standard: Oregon Lambert conformal conic (Datum: NAD 83; Units: International feet: 3.28084; Spheroid: GRS1980).

(4) Metadata must be completed for each layer, conform to the current Oregon Geographic Information Council Metadata Standard, and must include a disclaimer as described in OAR 141-086-0222(3m).

Stat. Auth.: ORS 273.045
Stats. Implemented: ORS 196.668 - 196.686 & 196.692
Hist.: DSL 2-2001, f. & cert. ef. 2-26-01; DSL 11-2008, f. 12-12-08, cert. ef. 1-1-09

141-086-0228

Review and Approval Process

(1) A draft of all the LWI products required in OAR 141-086-0210 through -0225 of these rules must be provided to the Department (if the inventory was not developed by the Department) and the local government(s) for review.

(2) The local government must provide opportunity for public review of and comment on the draft LWI products.

(3) Public and local government comments on draft LWI products must be provided to the Department. The Department will request in writing from the party responsible for preparing the LWI any revisions or additions required in order for the LWI to be approved.

(4) The Department will review final products to ensure that all changes requested by the Department have been adequately addressed.

(5) If the final LWI products meet the requirements in these rules, the Department will send a letter of approval to the local government.

Stat. Auth.: ORS 273.045
Stats. Implemented: ORS 196.668 - 196.686 & 196.692
Hist.: DSL 2-2001, f. & cert. ef. 2-26-01; DSL 11-2008, f. 12-12-08, cert. ef. 1-1-09

141-086-0230

Revisions

(1) A city or county may elect to or may be required by the Department of Land Conservation and Development (DLCD) to revise their LWI. An LWI revision consists of either expanding the study area of an existing LWI or incorporating new wetland location and information into an existing LWI study area. The provisions in subsections (a) through (d) must be followed when an LWI is being revised.

(a) All Urban Growth Boundary expansion areas or other areas not included in the original LWI study area must be inventoried according to the requirements in these rules. If the original LWI area is not updated at the same time, it may still be necessary to update the LWI area adjacent to the new LWI area in order to align wetlands that are continuous between the two areas.

(b) When an LWI is being updated, newly identified wetlands or wetland boundary changes equal to or greater than one half of an acre must be identified, mapped and assessed using OFWAM.

(c) Sources of information for review of the previous study area to update the LWI must at a minimum include:

(A) Wetland delineation reports approved by the Department or map errors verified by the Department after the date of the approved LWI;

(B) Aerial photos approved by the Department, taken within five years of inventory revision initiation; and

(C) A field reconnaissance of the study area.

(d) Wetlands not previously mapped on the LWI must be verified by establishing a sample plot or by visual confirmation as required in OAR 141-086-0210(7) and (8) of this rule; previously mapped wetlands no longer apparent on aerial photos must also be verified with a sample plot or visually confirmed as necessary to confirm their absence.

(2) A draft of the revised LWI products as required in OAR 141-086-0228(1) through (5) must be provided to the Department and is subject to Department review and approval.

(3) If the LWI was used as the basis for an approved WCP, the local jurisdiction must instead:

(a) Provide to the Department, as part of the annual report (OAR 141-086-0035), a revised map and report indicating wetlands filled and wetlands restored, enhanced or created for mitigation; and

(b) Every five years, in conjunction with the Department's five year WCP review (ORS 196.684(6)), conduct an LWI review and incorporate new information, as required in OAR 141-086-0230(1)(b) through (1)(d).

(4) Newly-identified wetlands as identified by a Department-approved wetland delineation report or a removal-fill permit must not be added to the Department-approved Local Wetlands Inventory map without following the procedures outlined by OAR 141-086-0230(1)(a) through (d).

(5) Refinements to the location, extent, and/or absence of wetlands mapped on the LWI, as identified by a Department-approved wetland delineation or a Department wetland determination report, may be made at any time through an administerial process, by annotating the approved LWI or by creating a separate geospatial dataset containing the boundary adjustments, preserving the approved LWI mapping.

Stat. Auth.: ORS 196.674 - 196.681 & 196.692
Stats. Implemented: ORS 196.668 - 196.692
Hist.: LB 11-1991, f. & cert. ef. 11-15-91; LB 9-1994, f. & cert. ef. 12-15-94; DSL 2-2001, f. & cert. ef. 2-26-01; DSL 11-2008, f. 12-12-08, cert. ef. 1-1-09

141-086-0240

Landowner Notification

(1) When the LWI is approved by the Department, the local jurisdiction must notify by mail within one hundred twenty (120) calendar days all landowners of record whose parcel contains or abuts a mapped wetland or probable wetland.

(2) The local jurisdiction must provide one copy of the landowner notification letter to the Department.

Stat. Auth.: ORS 196.674 - 196.681 & 196.692
Stats. Implemented: ORS 196.668 - 196.692
Hist.: LB 11-1991, f. & cert. ef. 11-15-91; LB 9-1994, f. & cert. ef. 12-15-94; DSL 2-2001, f. & cert. ef. 2-26-01; DSL 11-2008, f. 12-12-08, cert. ef. 1-1-09

IDENTIFYING SIGNIFICANT WETLANDS

141-086-0300

Purpose

ORS 197.279 (3) directs the Division of State Lands to establish these criteria and procedures for the identification of significant wetlands under Statewide Planning Goal 5. Local governments will use these technical standards to complete their planning responsibilities for wetlands, which are established by the Land Conservation and Development Commission (OAR 660-023-0100).

Stat. Auth.: ORS 273 .360
Stats. Implemented: ORS 197.299
Hist.: LB 7-1996, f. 12-13-96, cert. ef. 1-1-97

141-086-0310

Policy

To protect the state's wetland resources, the functions and services they provide, and all interests, it is important that clear and consistent criteria be used to identify significant wetlands for planning purposes.

Stat. Auth.: ORS 273 .360
Stats. Implemented: ORS 197.299
Hist.: LB 7-1996, f. 12-13-96, cert. ef. 1-1-97

141-086-0320

Uses and Applicability

(1) These rules provide standard criteria for local governments to use to meet their obligations for freshwater wetland planning as set forth by the Land Conservation and Development Commission (LCDC) in Goal 5. These rules do not address planning requirements for estuarine wetlands, which are covered under Statewide Planning Goal 16.

(2) Local governments shall apply the criteria for identifying locally significant wetlands (LSW). As specified in LCDC's Goal 5 rules (OAR 660-023-0100), the use of these criteria is required within urban growth boundaries (UGBs) and urban unincorporated communities (UUCs). The Goal 5 rules also authorize an option for counties to conduct detailed wetland planning in areas outside of UGBs and UUCs. Should a county choose to do so, the same rules and procedures as for UGBs and UUCs shall apply, including these criteria for significant wetlands.

(3) As provided by LCDC's Goal 5 rules (OAR Chapter 660, Division 23), local government planning and zoning responsibilities include the determination, designation, and protection of significant wetlands. A community that has identified significant wetlands prior to this rule should proceed under the provisions of OAR 660-023-0250.

Stat. Auth.: ORS 273 .360
Stats. Implemented: ORS 197.299
Hist.: LB 7-1996, f. 12-13-96, cert. ef. 1-1-97

141-086-0330

Definitions

(1) "Director" means the Director of the Division of State Lands or the Director's designee.

(2) "Division" means the Division of State Lands.

(3) "Indigenous Anadromous Salmonids" are chum, sockeye, Chinook and Coho salmon, and steelhead and cutthroat trout, that are members of the family Salmonidae and are listed as sensitive, threatened or endangered by a state or federal authority.

(4) "Inhabited by" means that a plant or animal species uses the site for rearing, feeding, or breeding or as a migration or dispersal corridor. This does not include incidental use of the site by an animal species.

(5) "Locally Significant Wetlands" or "LSW" are those wetland sites that provide functions or exhibit characteristics that are pertinent to community planning decisions made at a local scale, for example within a UGB. These wetland sites shall be identified by local governments according to the criteria and procedures in sections 141-086-0340 and 141-086-0350.

(6) "Native Plant Community" is used here to indicate a recognized assemblage of plant species indigenous to Oregon. All such wetland plant communities are listed in the most recent version of Classification and Catalog of Native Wetland Plant Communities in Oregon (Oregon Natural Heritage Program).

(7) "Rare Plant Community" is defined as relictual, uncommon or unique in Oregon, determined by number of occurrences and threats following national heritage program criteria (i.e., rarity ranking of G1-G3 or S1-S3). The most concise listing of wetland plant communities in Oregon that meet this standard for rarity is found in Appendix G of the Oregon Freshwater Wetland Assessment Methodology (Oregon Division of State Lands, 1996). The rarity rank of all wetland plant communities is also listed in the most recent version of Classification and Catalog of Native Wetland Plant Communities in Oregon (Oregon Natural Heritage Program).

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

Stat. Auth.: ORS 273 .360
Stats. Implemented: ORS 197.299
Hist.: LB 7-1996, f. 12-13-96, cert. ef. 1-1-97

141-086-0340

Procedures for Identifying Locally Significant Wetlands

(1) LSW criteria are applied by the local government.

(2) The following base information is required prior to applying the LSW criteria:

(a) An approved Local Wetlands Inventory (OAR 141-086-0110 through 141-086-0240) covering the plan area; and

(b) A function and quality assessment of all inventoried wetlands using the Oregon Freshwater Wetland Assessment Methodology (OFWAM; Oregon Division of State Lands, 1996). Functional assessment descriptors from OFWAM

appear in quotation marks in section 146-086-0350 of these rules. An equivalent functional assessment methodology may be used, or adjustments may be made, upon written approval by the Director. If a different assessment methodology is approved, then equivalent terminology will be set out in the Division's letter of approval.

Stat. Auth.: ORS 273 .360
Stats. Implemented: ORS 197.299
Hist.: LB 7-1996, f. 12-13-96, cert. ef. 1-1-97

141-086-0350

Locally Significant Wetland Criteria

(1) Exclusions. Regardless of their standing in relation to the criteria in OAR 141-086-0350(2) or (3) of these rules, wetlands shall not be designated as locally significant if they fall within any one of the following categories:

(a) Wetlands artificially created entirely from upland that are:

(A) Created for the purpose of controlling, storing, or maintaining stormwater; or

(B) Active surface mining or active log ponds; or

(C) Ditches without a free and open connection to natural waters of the state (as defined in OAR 141-085-0010(9)) and which do not contain food or game fish (as defined in ORS 496.009); or:

(D) Less than one acre in size and created unintentionally as the result of:

(i) Irrigation water overflow or leakage; or

(ii) Construction activity not related to compensatory mitigation for permitted wetland impacts; or

(E) Of any size and created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.

(b) Wetlands or portions of wetlands that are contaminated by hazardous substances, materials or wastes as per the following conditions:

(A) The wetland is documented as contaminated on either the U.S. Environmental Protection Agency's (EPA) National Priority List (NPL, also known as the "superfund list"), or the Department of Environmental Quality's (DEQ) Inventory of Hazardous Substance Sites (ORS 465.225).

(B) Only the portion of the wetland affected by such hazardous substances or wastes shall be excluded from the LSW analysis. Affected portions shall be delineated in consultation with EPA and DEQ, and shall include areas potentially disturbed by clean-up activities.

(C) Contaminated wetlands that have subsequently been removed from the NPL or DEQ Inventory following clean-up shall be re-evaluated under the LSW criteria at the next periodic review.

(2) Mandatory LSW Criteria. A local government shall identify a wetland as locally significant if it meets one or more of the following criteria:

(a) The wetland performs any of the following functions at the levels indicated below using the Oregon Freshwater Wetland Assessment Methodology:

(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 a horizontal distance less than one-fourth mile from a water body listed by the Department of Environmental Quality as a water quality limited water body (303 (d) list), and the wetland's water quality function is described as "intact" or "impacted or degraded" using OFWAM. The 303(d) list specifies which parameters (e.g., temperature, pH) do not meet state water quality standards for each water body. A local government may determine that a wetland is not significant under this subsection upon documentation that the wetland does not provide water quality improvements for the specified parameter(s).

(c) The wetland contains one or more rare plant communities, as defined in this rule.

(d) The wetland is inhabited by any species listed by the federal government as threatened or endangered, or listed by the state as sensitive, threatened or endangered, unless the appropriate state or federal agency indicates that the wetland is not important for the maintenance of the species.

(A) The use of the site by listed species must be documented, not anecdotal. Acceptable sources of documentation may include but are not limited to: field observations at the wetland sites during the local wetlands inventory and functional assessments, and existing information on rare species occurrences at agencies such as the Oregon Natural Heritage Program, Oregon Department of Fish and Wildlife, Oregon Department of Agriculture and the U.S. Fish and Wildlife Service.

(B) Input originating from other locally knowledgeable sources constitutes "documentation" if verified by one of the above agencies or a university or college reference collection.

(e) The wetland has a direct surface water connection to a stream segment mapped by the Oregon Department of Fish and Wildlife as habitat for indigenous anadromous salmonids, and the wetland is determined to have "intact" or "impacted or degraded" fish habitat function using OFWAM.

(3) Optional LSW Criteria. 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, which is only applicable if the entire UGB/UUC is inventoried. To be identified as a LSW, such a wetland must also have been assessed to perform at least one of the following functions at the levels indicated below using OFWAM:

(A) Its wildlife habitat descriptor is either "provides diverse habitat", or "provides habitat for some wildlife species"; or

(B) Its fish habitat descriptor is either "intact", or "impacted or degraded"; or

(C) Its water quality function descriptor is either "intact", or "impacted or degraded"; or

(D) Its hydrologic control function descriptor is either "intact", or "impacted or degraded".

(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.

Stat. Auth.: ORS 273 .360
Stats. Implemented: ORS 197.299
Hist.: LB 7-1996, f. 12-13-96, cert. ef. 1-1-97

141-086-0370

Definitions

(1) **"Classification"** means the designation of wetlands into hydrogeomorphic classes and subclasses. For example, "riverine" would be one class of wetlands.

(2) **"Director"** means the Director of the Division of State Lands or the Director's designee.

(3) **"Division"** means the Division of State Lands.

(4) **"Functional Assessment"** means the process by which the capacity of a wetland to perform a certain function or group of functions is measured. Such functions would include but are not limited to: surface water storage, sediment removal, and maintenance of characteristic plant communities.

(5) The "**Hydrogeomorphic Method"** or **"HGM"** is a scientific method of wetland classification and functional assessment based on a wetland's location in the landscape and the sources and duration of water flow. The HGM approach identifies the wetland classes present in each region, defines the functions that each class of wetlands performs, and establishes reference sites to define the range of functioning of each wetland class.

(6) **"Outstanding State Wetlands"** or **"OSWs"** are reference standard wetlands identified within each Oregon region.

(7) **"Reference Standard Wetlands"** are one component of an HGM and, for the purposes of these rules, are those sites that best exhibit the highest sustainable level of functional capacity for the functions performed by the regional wetland class or subclass.

(8) **"Region"** means an ecosystem-based geographical subdivision of the state, such as the Level III and IV Ecoregions of Oregon (e.g., the Willamette Valley) mapped by the U. S. Environmental Protection Agency.

(9) **"Wetlands"** means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Stat. Auth.: ORS 273 .045 & ORS 273 .051
Stats. Implemented: ORS 197.279(3), ORS 196.672 & ORS 196.674
Hist.: LB 4-1997, f. 4-15-97, cert. ef. 5-1-97

141-086-0380

Applicability

(1) These rules set forth the criteria and procedures by which the Division will identify outstanding state wetlands and provide the information to local governments. Due to the state's interest in OSWs and the expertise required for their identification, the Division is responsible for applying these rules.

(2) The Land Conservation and Development Commission will determine any local land use planning responsibilities regarding OSWs identified by the Division.

(3) OSWs identified according to these rules become part of the Statewide Wetlands Inventory.

Stat. Auth.: ORS 273 .045 & ORS 273 .051
Stats. Implemented: ORS 197.279(3), ORS 196.672 & ORS 196.674
Hist.: LB 4-1997, f. 4-15-97, cert. ef. 5-1-97

141-086-0390

Criteria and Procedures

(1) A wetland shall be identified as an OSW if it is judged by the Division to be a reference standard wetland as defined in sections 141-086-0370(7).

(2) The Division may convene one or more technical panel(s) of wetland scientists with expertise in wetland functions, wetland classification, and/or regional wetland types in Oregon. The technical panel(s) will assist the Division in developing the hydrogeomorphic classification and functional assessment method (HGM) for Oregon, identifying the regional wetland classes and subclasses, primary functions, and reference standard wetlands. The Oregon HGM will be developed in stages, region by region, as resources allow. The Oregon HGM will be developed in cooperation with the Army Corps of Engineers, Environmental Protection Agency, Natural Resources Conservation Service, state resource agencies, and others as appropriate, and will incorporate protocols developed by the U.S. Army Corps of Engineers Waterways Experiment Station (for example, Technical Report WRP-DE-9, R. D. Smith et al., 1995).

(3) Prior to designating a reference standard wetland as an OSW, the Division shall:

(a) Identify and map site boundaries;

(b) Develop management recommendations to conserve and protect the documented wetland functions of the site;

(c) Develop draft findings describing how the site has met the standards for an OSW;

(d) Provide public notice on the draft findings to the local government, affected landowners and land managers and other interested parties, and provide a 45-day public comment period;

(e) Hold at least one public meeting within the area of the proposed OSW(s) during the comment period; and

(f) Finalize the findings and site boundaries after consideration of public comment.

(4) The Division shall provide all maps, criteria findings and supporting information regarding an identified OSW to the appropriate local government(s) for their use in land use planning activities.

Stat. Auth.: ORS 273 .045 & ORS 273 .051
Stats. Implemented: ORS 197.279(3), ORS 196.672 & ORS 196.674
Hist.: LB 4-1997, f. 4-15-97, cert. ef. 5-1-97

Appendix B

Abbreviations and Definitions

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B.1. ABBREVIATIONS

AW00	Artificial Water number
BSC	Bear Creek South drainage basin
DEQ	Department of Environmental Quality
DLCD	Department of Land Conservation and Development
DSL	Department of State Lands
ESH	Essential Salmonid Habitat
ESU	Evolutionarily Significant Unit
°F	degrees Fahrenheit
FEMA	Federal Emergency Management Agency
GPS	global positioning system
H	High (OFWAM function)
HGM	Hydrogeomorphic Method of Wetland Assessment
HUC	Hydrologic Unit Code
L	Low (OFWAM function)
LCDC	Land Conservation and Development Commission
LiDAR	light detection and ranging
LPC	Lone Pine Creek drainage basin
LSC	Larson Creek drainage basin
LSW	Locally Significant Wetland
LWI	Local Wetland Inventory
M	Medium (OFWAM function)
MWC	Midway Creek drainage basin
NHD	National Hydrography Dataset (supplied by USGS)
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OAR	Oregon Administrative Rule
ODF	Oregon Department of Forestry
ODFW	Oregon Department of Fish and Wildlife
OFWAM	Oregon Freshwater Wetland Assessment Method
ORBIC	Oregon Biodiversity Information Center
P00	Plot number
PAB	Palustrine Aquatic Bed Wetland
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
PSS	Palustrine Scrub-Shrub Wetland
PUB	Palustrine Unconsolidated Bottom Wetland
PW	Probable Wetland
SWCA	SWCA Environmental Consultants
UGB	Urban Growth Boundary
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
W00	Wetland number
WA00	Natural Waterbody number

B.2. DEFINITIONS

Wetlands

Wetlands are federally defined as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratory 1987). In other words, wetlands typically display three wetland criteria: a predominance of hydrophytic (wetland) vegetation, the presence of hydric (wet) soils, and wetland hydrology (ponding or near-surface saturated soils for at least 5% of the growing season; typically 11 to 14 consecutive days during the growing season (Environmental Laboratory 1987). The regional supplement manual (USACE 2010) provides a technical standard for water-table monitoring for highly disturbed or problematic sites. It states that wetland hydrology is present when 14 or more consecutive days of flooding or ponding, or a water table 12 inches or less below the soil surface, during the growing season at a minimum frequency of 5 years in 10 (50 percent or higher probability).

Goal 5

Goal 5 is one of Oregon's Statewide Planning Goals and Guidelines for Natural Resources, Scenic and Historic Areas, and Open Spaces (OAR 660-015-0000(5) and 660-023-0000). To protect natural resources and conserve scenic and historic areas and open spaces, local governments shall adopt programs that will protect natural resources and conserve scenic, historic, and open space resources for present and future generations. These resources promote a healthy environment and natural landscape that contributes to Oregon's livability. The following resources shall be inventoried:

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

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

Goal 5 Safe Harbor provides an inventory method for riparian corridors, including water and riparian areas and fish habitat, wetlands, and wildlife habitat. A "safe harbor" approach allows local governments to identify "significant" habitats using the safe harbor criteria, which, for example, has required buffer setbacks from streams based on water flow and fish presence. The rule states:

As a safe harbor in order to address the requirements under OAR 660-023-0030, a local government may determine the boundaries of significant riparian corridors within its jurisdiction using a standard setback distance from all fish-bearing lakes and streams shown on ODF stream classification maps, USGS 7.5-minute quadrangle maps, NWI maps, ODFW maps indicating fish habitat, FEMA flood maps; and/or aerial photographs, as follows (http://arcweb.sos.state.or.us/rules/OARS_600/OAR_660/660_023.html):

(a) Along all streams with average annual stream flow greater than 1,000 cubic feet per second (cfs) the riparian corridor boundary shall be 75 feet upland from the top of each bank.

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

(c) Where the riparian corridor includes all or portions of a significant wetland as set out in OAR 660-023-0100, the standard distance to the riparian corridor boundary shall be measured from, and include, the upland edge of the wetland.

(d) In areas where the top of each bank is not clearly defined, or where the predominant terrain consists of steep cliffs, local governments shall apply OAR 660-023-0030 rather than apply the safe harbor provisions of this section.

B-3 COWARDIN WETLAND CLASSIFICATION (ADAPTED FROM COWARDIN ET AL., 1979)

Palustrine System (P)

Definition. The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ‰. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2 m at low water; and (4) salinity due to ocean-derived salts less than 0.5 ‰.

Limits. The Palustrine System is bounded by upland or by any of the other four systems: Marine (ocean), Estuarine (estuary), Riverine (freshwater rivers and their tributaries), or Lacustrine (open water greater than 8 ha (20 acres) in size).

Description. The Palustrine System was developed to group the vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie, which are found throughout the United States. It also includes the small, shallow, permanent or intermittent water bodies often called ponds. Palustrine wetlands may be situated shoreward of lakes, river channels, or estuaries; on river floodplains; in isolated catchments; or on slopes. They may also occur as islands in lakes or rivers. The erosive forces of wind and water are of minor importance except during severe floods.

The emergent vegetation adjacent to rivers and lakes is often referred to as “the shore zone” or the “zone of emergent vegetation”, and is generally considered separately from the river or lake. As an example, one researcher wrote in reference to riverine habitats, “We will not here consider the long list of emergent plants which may occur along the banks out of the current, as they do not belong, strictly speaking, to the running water habitat.” There are often great similarities between wetlands lying adjacent to lakes or rivers and isolated wetlands of the same class in basins without open water.

Subsystems. None.

Classes. Rock Bottom, Unconsolidated Bottom, Aquatic Bed, Unconsolidated Shore, Moss-Lichen Wetland, Emergent Wetland, Scrub-Shrub Wetland, and Forested Wetland.

Classes

EMERGENT WETLAND (EM)

Definition. The Emergent Wetland Class is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. All water regimes are included except subtidal and irregularly exposed.

Description. In areas with relatively stable climatic conditions, Emergent Wetlands maintain the same appearance year after year. In other areas, such as the prairies of the central United States, violent climatic fluctuations cause them to revert to an open water phase in some years. Emergent Wetlands are found throughout the United States and occur in all Systems except the Marine. Emergent Wetlands are known by many names, including marsh, meadow, fen, prairie pothole, and slough. Areas that are dominated by pioneer plants which become established during periods of low water are not Emergent Wetlands and should be classified as Vegetated Unconsolidated Shores or Vegetated Streambeds.

Subclasses and Dominance Types:

Persistent (1). Persistent Emergent Wetlands are dominated by species that normally remain standing at least until the beginning of the next growing season. This Subclass is found only in the Estuarine and Palustrine Systems.

Persistent Emergent Wetlands dominated by saltmarsh cordgrass (*Spartina alterniflora*), saltmeadow cordgrass (*S. patens*), big cordgrass (*S. cynosuroides*), needlerush (*Juncus roemerianus*), narrowleaved cattail (*Typha angustifolia*), and southern wild rice (*Zizaniopsis miliacea*) are major components of the Estuarine systems of the Atlantic and Gulf Coasts of the United States. On the Pacific Coast, common pickleweed (*Salicornica virginica*), sea blite (*Suaeda californica*), arrow grass (*Triglochin maritimum*), and California cordgrass (*Spartina foliosa*) are common dominants.

Palustrine Persistent Emergent Wetlands contain a vast array of grass-like plants such as cattails (*Typha* spp.), bulrushes (*Scirpus* spp.), saw grass (*Cladium jamaicense*), sedges (*Carex* spp.); and true grasses such as reed (*Phragmites australis*), manna grasses (*Glyceria* spp.), slough grass (*Beckmannia syzigachne*), and whitetop (*Scolochloa festucacea*). There is also a variety of broadleaved persistent emergents such as purple loosestrife (*Lythrum salicaria*), dock (*Rumex mexicanus*), waterwillow (*Decodon verticillatus*), and many species of smartweeds (*Polygonum*).

Nonpersistent (2). Wetlands in this Subclass are dominated by plants which fall to the surface of the substrate or below the surface of the water at the end of the growing season so that, at certain seasons of the year, there is no obvious sign of emergent vegetation. For example, wild rice (*Zizania aquatica*) does not become apparent in the North Central States until midsummer and fall, when it may form dense emergent stands. Nonpersistant emergents also include species such as arrow arum (*Peltandra virginica*), pickerelweed (*Pontederia cordata*), and arrowheads (*Sagittaria* spp.). Movement of ice in Estuarine, Riverine, or Lacustrine Systems often removes all traces of emergent vegetation during the winter. Where this occurs the area should be classified as Nonpersistant Emergent Wetland.

SCRUB-SHRUB WETLAND (SS)

Definition. The Class Scrub-Shrub Wetland includes areas dominated by woody vegetation less than 6 meters (m [20 feet]) tall. The species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. All water regimes except subtidal are included.

Description. Scrub-Shrub Wetlands may represent a successional stage leading to Forested Wetland, or they may be relatively stable communities. They occur only in the Estuarine and Palustrine Systems, but are one of the most widespread classes in the United States. Scrub-Shrub Wetlands are known by many names, such as shrub swamp, shrub carr, bog, and pocosin. For practical reasons the class also includes forests composed of young trees less than 6 m tall.

Subclasses and Dominance Types:

Broad-leaved Deciduous (1). In Estuarine System Wetlands the predominant deciduous and broadleaved trees or shrubs are plants such as sea-myrtle (*Baccharis halimifolia*) and marsh elder (*Iva frutescens*). In the Palustrine System typical Dominance Types are alders (*Alnus* spp.), willows (*Salix* spp.), buttonbush (*Cephalanthus occidentalis*), red-osier dogwood (*Cornus stolonifera*), honeycup (*Zenobia pulverulenta*), spirea (*Spiraea douglasii*), bog birch (*Betula pumila*), and young trees of species such as red maple (*Acer rubrum*) or black spruce (*Picea mariana*).

Needle-leaved Deciduous (2). This Subclass, consisting of wetlands where trees or shrubs are predominantly deciduous and needleleaved, is represented by young or stunted trees such as tamarack or bald cypress (*Taxodium distichum*).

Broad-leaved Evergreen (3). In the Estuarine System, vast wetland acreages are dominated by mangroves (*Rhizophora mangle, Languncularia racemosa, Conocarpus erectus*, and *Avicennia germinans*) that are less than 6 m tall. In the Palustrine System, the broad-leaved evergreen species are typically found on organic soils. Northern representatives are labrador tea (*Ledum groenlandicum*), bog rosemary (*Andromeda glaucophylla*), bog laurel (*Kalmia polifolia*), and the semi-evergreen leatherleaf (*Chamaedaphne calyculata*). In the south, fetterbush (*Lyonia lucida*), coastal sweetbells (*Leucothoe axillaris*), inkberry (*Ilex glabra*), and the semi-evergreen black ti-ti (*Cyrilla racemiflora*) are characteristic broad-leaved evergreen species.

Needle-leaved Evergreen (4). The dominant species in Needle-leaved Evergreen Wetlands are young or stunted trees such as black spruce or pond pine (*Pinus serotina*).

Dead (5). Dead woody plants less than 6 m tall dominate Dead Scrub-Shrub Wetlands. These wetlands are usually produced by a prolonged rise in the water table resulting from impoundment of water by landslides, man, or beavers. Such wetlands may also result from various other factors such as fire, salt spray, insect infestation, air pollution, and herbicides.

FORESTED WETLAND (FO)

Definition. The Class Forested Wetland is characterized by woody vegetation that is 6 m tall or taller. All water regimes are included except subtidal.

Description. Forested Wetlands are most common in the eastern United States and in those sections of the West where moisture is relatively abundant, particularly along rivers and in the mountains. They occur only in the Palustrine and Estuarine Systems and normally possess an overstory of trees, an understory of young trees or shrubs, and an herbaceous layer. Forested Wetlands in the Estuarine System, which include the mangrove forests of Florida, Puerto Rico, and the Virgin Islands, are known by such names as

swamps, hammocks, heads, and bottoms. These names often occur in combination with species names or plant associations such as cedar swamp or bottomland hardwoods.

Subclasses and Dominance Types:

Broad-leaved Deciduous (1). Dominant trees typical of Broadleaved Deciduous Wetlands, which are represented throughout the United States, are most common in the South and East. Common dominants are species such as red maple, American elm (*Ulmus americana*), ashes (*Fraxinus pennsylvanica* and *F. nigra*), black gum (*Nyssa sylvatica*), tupelo gum (*N. aquatica*), swamp white oak (*Quercus bicolor*), overcup oak (*Q. lyrata*), and basket oak (*Q. michauxii*). Wetlands in this subclass generally occur on mineral soils or highly decomposed organic soils.

Needle-leaved Deciduous (2). The southern representative of the Needle-leaved Deciduous Subclass is bald cypress (*Taxodium distichum*), which is noted for its ability to tolerate long periods of surface inundation. Tamarack is characteristic of the Boreal Forest Region, where it occurs as a dominant on organic soils. Relatively few other species are included in this Subclass.

Broad-Leaved Evergreen (3). In the Southeast, Broadleaved Evergreen Wetlands reach their greatest development. Red bay (*Persea borbonia*), loblolly bay (*Gordonia lasianthus*), and sweet bay (*Magnolia virginiana*) are prevalent, especially on organic soils. This Subclass also includes red mangrove, black mangrove (*Avicennia germinans*), and white mangrove (*Languncularia racemosa*), which are adapted to varying levels of salinity.

Needle-leaved Evergreen (4). Black spruce, growing on organic soils, represents a major dominant of the Needle-leaved Evergreen Subclass in the North. Though black spruce is common on nutrient poor soils, Northern white cedar (*Thuja occidentalis*) dominates northern wetlands on more nutrient rich sites. Along the Atlantic Coast, Atlantic white cedar (*Chamaecyparis thyoides*) is one of the most common dominants on organic soils. Pond pine is a common needle-leaved evergreen found in the Southeast in association with dense stands of broad-leaved evergreen and deciduous shrubs.

Dead (5). Dead Forested Wetlands are dominated by dead woody vegetation taller than 6 m (20 feet). Like Dead Scrub-Shrub Wetlands, they are most common in, or around the edges of, man-made impoundments and beaver ponds. The same factors that produce Dead Scrub-Shrub Wetlands produce Dead Forested Wetlands.

AQUATIC BED AND UNCONSOLIDATED BOTTOM (AB / UB)

Definition. The Class Aquatic Bed includes wetlands and deepwater habitats dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Water regimes include subtidal, irregularly exposed, regularly flooded, permanently flooded, intermittently exposed, semi-permanently flooded, and seasonally flooded.

Description. Aquatic Beds represent a diverse group of plant communities that requires surface water for optimum growth and reproduction. They are best developed in relatively permanent water or under conditions of repeated flooding. The plants are either attached to the substrate or float freely in the water above the bottom or on the surface.

UNCONSOLIDATED BOTTOM (UB)

Definition. The Class Unconsolidated Bottom includes all wetland and deepwater habitats with at least 25% cover of particles smaller than stones, and a vegetative cover less than 30%. Water regimes are restricted to subtidal, permanently flooded, intermittently exposed, and semi-permanently flooded.

Description: Unconsolidated Bottoms are characterized by the lack of large stable surfaces for plant and animal attachment. They are usually found in areas with lower energy than Rock Bottoms and may be very unstable. Exposure to wave and current action, temperature, salinity, and light penetration determines the composition and distribution of organisms. Most macroalgae attach to the substrate by means of basal hold-fast cells or discs; in sand and mud, however, algae penetrate the substrate and higher plants can successfully root if wave action and currents are not too strong. Most animals in unconsolidated sediments live within the substrate, e.g., *Macoma* and the amphipod *Melita*. Some, such as the polychaete worm *Chaetopterus*, maintain permanent burrows, and others may live on the surface, especially in coarse-grained sediments.

In the Marine and Estuarine Systems, Unconsolidated Bottom communities are relatively stable. They vary from the Arctic to the tropics, depending largely on temperature, and from the open ocean to the upper end of the estuary, depending on salinity.

In the Riverine System, the substrate type is largely determined by current velocity, and plants and animals exhibit a high degree of morphologic and behavioral adaptation to flowing water. Certain species are confined to specific substrates and some are at least more abundant in one type of substrate than in others. One researcher commented "The larger the stones, and hence the more complex the substratum, the more diverse is the invertebrate fauna."

In the Lacustrine and Palustrine Systems, there is usually a high correlation, within a given water body, between the nature of the substrate and the number of species and individuals. For example, in the profundal bottom of eutrophic lakes where light is absent, oxygen content is low, and carbon dioxide concentration is high, the sediments are ooze-like organic materials and species diversity is low. Each substrate type typically supports a relatively distinct community of organisms.

NONTIDAL WATER REGIME MODIFIERS

Though not influenced by oceanic tides, nontidal water regimes may be affected by wind or seiches in lakes. Water regimes are defined in terms of the growing season, which we equate to the frost-free period. The rest of the year is defined as the dormant season, a time when even extended periods of flooding may have little influence on the development of plant communities.

Permanently Flooded (H). Water covers the land surface throughout the year in all years. Vegetation is composed of obligate hydrophytes.

Intermittently Exposed (Z). Surface water is present throughout the year except in years of extreme drought.

Semi-permanently Flooded (F). Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface.

Seasonally Flooded (C). Surface water is present for extended periods especially early in the growing season, but is absent by the end of the season in most years. When surface water is absent, the water table is often near the land surface.

Saturated (B). The substrate is saturated to the surface for extended periods during the growing season, but surface water is seldom present.

Temporarily Flooded (A). Surface water is present for brief periods during the growing season, but the water table usually lies well below the soil surface for most of the season. Plants that grow both in uplands and wetlands are characteristic of the temporarily flooded regime.

Intermittently Flooded (J). The substrate is usually exposed, but surface water is present for variable periods without detectable seasonal periodicity. Weeks, months, or even years may intervene between periods of inundation. The dominant plant communities under this regime may change as soil moisture conditions change. Some areas exhibiting this regime do not fall within our definition of wetland because they do not have hydric soils or support hydrophytes.

Artificially Flooded (K). The amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams. The vegetation growing on these areas cannot be considered a reliable indicator of water regime. Examples of artificially flooded wetlands are some agricultural lands managed under a rice-soybean rotation, and wildlife management areas where forests, crops, or pioneer plants may be flooded or dewatered to attract wetland wildlife. Neither wetlands within or resulting from leakage from man-made impoundments, nor irrigated pasture lands supplied by diversion ditches or artesian wells, are included under this modifier.

SPECIAL MODIFIERS

Many wetlands and deepwater habitats are man-made, and natural ones have been modified to some degree by the activities of man or beavers. Since the nature of these modifications often greatly influences the character of such habitats, special modifying terms have been included here to emphasize their importance. The following modifiers should be used singly or in combination wherever they apply to wetlands and deepwater habitats.

Excavated (x)
Lies within a basin or channel excavated by man.

Impounded (h)
Created or modified by a barrier or dam which purposefully or unintentionally obstructs the outflow of water. Both man-made dams and beaver dams are included.

Diked (h)
Created or modified by a man-made barrier or dike designed to obstruct the inflow of water.

Partially drained/ditched (d)
The water level has been artificially lowered, but the area is still classified as wetland because soil moisture is sufficient to support hydrophytes. Drained areas are not considered wetlands if they can no longer support hydrophytes.

Farmed (f)
The soil surface has been mechanically or physically altered for production of crops, but hydrophytes will become reestablished if farming is discontinued.

Artificial substrate (r)

Refers to substrates classified as Rock Bottom, Unconsolidated Bottom, Rocky Shore, and Unconsolidated Shore that were emplaced by man, using either natural materials such as dredge spoil or synthetic materials such as discarded automobiles, tires, or concrete. Jetties and breakwaters are examples of Artificial Rocky Shores. Man-made reefs are an example of Artificial Rock Bottoms.

B-4 HGM WETLAND CLASSIFICATION - KEY TO OREGON SUBCLASSES

(Key from the Guidebook for Hydrogeomorphic (HGM)–based Assessment of Oregon Wetland and Riparian Sites: Statewide Classification and Profiles by Adamus, P.R. 2001)

Note: Frequently, areas belonging to one HGM subclass will be situated within or adjacent to an area belonging to another HGM subclass. Normally, each area should be assessed separately. However, for practical purposes the areas may be combined into one site (assessment unit) if the smaller of the two areas comprises less than 20% of their total combined acreage. An example is a perennial channel (Riverine Flow-through subclass) that bisects an ash swale (Slope subclass) and which, even including the channel's 2-year floodplain, occupies less than 20% of their combined acreage. In this example, for most purposes the entire site should be classified as Slope.

Exposed at least annually to tidal surface water. Note that salinity is not considered in this determination.

1.

YES: **Estuarine** class, go to 2 (Note that salinity is not considered in this determination).
NO: Go to 3

2. Site receives significant marine-sourced water during all or part of the year. Often located within or along the fringes of a major estuarine embayment or a slough off the embayment, rather than adjacent to a narrower tidal river channel. Typically located within zones classified as "Marine" or "Brackish" on maps published by Hamilton (1984), the National Estuarine Inventory (NOAA 1988), and/or as "Estuarine"on maps of the National Wetland Inventory. The site and its immediate receiving waters have one or more of the following indicators suggestive of marine water: barnacles, stranded seaweed, salt marsh plant species, springtide high tide minimum salinities of >5 ppt, or a preponderance (in adjacent flats) of rounded sediment particles indicative of recent marine-derived sediments
YES: Estuarine Marine-sourced (EMS) subclasses (High Marsh EMS and Low Marsh EMS)
NO: Estuarine River-sourced (EMR) subclass

3. Closely associated with a channel or floodplain. Upland wetted edge of site expands at least once every other year (biennial flood) primarily as a result of overbank flow, channel inflow, or pumped water from a nearby and/or connected or bisecting channel. Includes active(2-yr) floodplain wetlands, sloughs, and riparian areas.
On NWI maps, includes many sites labeled R or PUB, PEM, PSS, or PFO with –A, –C, -F, or -H water regime codes appended, and others.
YES: **Riverine** class, Go to 4
NO: Go to 5

4. Water throughout most of site flows visibly during most of wet season. The site may be a channel, an island in a channel, or border a channel or ditch. It should include any channel to the 2 m depth. It often bisects or is bordered by a wetland in another HGM subclass.
YES: **Riverine Flow-through (RFT)** subclass, Figure 2
Includes scoured floodplains with no seasonal ponding of flood water, wetlands that comprise entire islands within channels, and some ditches and channels.
NO: **Riverine Impounding (RI)** subclass, Figure 2
Includes sloughs connected (seasonally or permanently) to main channels, channels dammed by beavers or humans (such wetlands may be broader at their downhill/ outlet side), wetlands sustained

primarily by water diverted or pumped from offsite channels, river alcoves with seasonally stagnant conditions, and depressions or temporarily ponded areas within active biennial floodplains.

5. Consists mostly of permanent or seasonal standing water with pH>8. Situated in a depression or lake basin without an outlet channel. Includes areas that are shallower than 2 m during annual maximum inundation.

   YES: **Depressional Alkaline (DA)** subclass
   NO: Go to 6

6. Located on margin of or within a lake, i.e., a body of permanent standing water that is deeper than 2 m over an area of >8 hectares (20 acres).
   On NWI maps, includes most sites labeled "L" and others with –A, -C, -F, or –H water regime codes that border an L site.
   YES: **Lacustrine Fringe** class, go to 7

   NO: Go to 8

7. Located in headwater position (i.e., closer to a region's major drainage divides than to lowlands in the region) and usually higher than the mean elevation of the region[1].
   YES: **Lacustrine Fringe Headwater (LFH)** subclass
   NO: **Lacustrine Fringe Valley (LFV)** subclass

8. Consists of >10% cover of Sphagnum moss over an area of >0.25 acre, and has a mean annual water pH of <5.5. Usually situated in a depression with little if any standing water.
   YES: **Depressional Bog (DB)** subclass
   NO: Go to 9

9. Lacks permanent inlet channel. Has a surface water outlet that connects to a permanent river or lake less than once every 2 years. Not located on a noticeable slope. Water level fluctuations are mainly in response to runoff and direct precipitation.
   YES: **Depressional Outflow (DO)** subclass

   NO: Go to 10

10. Located on, or near base of, a slope, but the slope may be barely perceptible. Inlet channel absent or very short. Outlet channel frequently present. Downhill-flowing sheet flow may be visible at land surface, especially during wet months. Downhill side of site sometimes partly blocked by berm or dam (natural or manmade). Fed by runoff and precipitation but with a proportionally large (compared with other wetlands) component of lateral subsurface flow or discharging groundwater. Soil moisture (and surface water, if present and shallow) tends to persist more into the summer than in other wetlands of similar size, depth, climate, and soil type. Ratio of wetland surface area to area of the apparently contributing watershed is relatively large. Includes springs, seeps, sites sustained in summer mainly by seepage (not runoff) from upslope irrigated fields, some sites with water impounded seasonally by push-up dams at their downhill side, and some ash swales.
    On NWI maps, includes many sites labeled PEM, PSS, or PFO with –B water regime codes, and less often with –A, -C, or –F codes.

[1] Approximate mean elevations of regions (in meters): Blue Mountains= 1351, Basin & Range= 1515, Columbia Basin= 539, Coast/Range= 256, East Cascades Slope= 1435, Klamath Mountains= 734, High Lava Plains= 1179, Owyhee Uplands= 1269, West Cascade Slope= 1037, Western Interior (Willamette) Valley= 191.

YES: **Slope** class, Go to 11
NO: Go to 12.

11. Outlet channel is present (but may be small and partly dammed by beaver, roads, slides). Slope may be slight but is always noticeable. No inlet channel. Located in topographically high or intermediate positions such as stream heads, montane wet meadows, avalanche chutes. Usually closer to a region's major drainage divides than to lowlands in the region, and usually higher than the average elevation of the region.
YES: **Slope Headwater (SH)**
NO: **Slope Valley (SV)**

12. Fed mainly by direct precipitation, secondarily by lateral subsurface flow or surface runoff. Precipitation may be "ponded" at the site due to surrounding natural levees, ridge-swale topography, humocks or constructed dikes; and/or due to soils with subsurface layers that strongly impede infiltration; and/or due to high water table due to subsurface seepage from nearby river, lake, or irrigated fields. Usually in a shallow (<2 ft.) basin situated on a broad flat terrace. Includes wet prairie, wet wooded flats, some fens and some ash swales. On NWI maps, includes many sites labeled PUS, PEM, PFO, or PSS with –A, -B, or -C water regime codes.
YES: **Flats class**. No subclasses defined yet.
Many are inundated only seasonally. Altered (diked) flats sites may function similar to depressional class sites, but their only significant water comes from runoff from dike surfaces and precipitation.
NO: **Depressional class**, Go to 13
Fed mainly by overland runoff (sheet flow) which enters from all 3 or 4 compass directions, and/or by stormwater pipes, drainage ditches. Usually in a deep (>2 ft.) basin, which may have been deepened by excavation. Usually is inundated permanently. Often in natural depressions in rolling or mountainous terrain. On NWI maps, includes many of the sites labeled PUB or PAB, some L, and a few others.

13. More than 0.25 acre of standing water remains in the basin during the driest season of most years.
YES: **Depressional Closed Permanent (DCP)** subclass

B-5 OFWAM FUNCTIONS

Diverse Wildlife Habitat. Two or more Cowardin wetland classes (i.e., Forested, Scrub-Shrub, Emergent) are present; woody vegetation is the dominant wetland vegetation cover type; there is high interspersion among Cowardin classes; more than 1 acre of open water is present; the wetland is connected to other wetlands or bodies of water by surface water (stream, lake, pond, ditch, or culvert); no upstream or adjacent stream reaches are listed as water quality limited; the dominant existing land use within 500 feet of the wetland's edge is exclusive forest use or open space; and greater than 40% of the wetland's edge is bordered by a vegetated buffer at least 25 feet wide.

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

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

Intact Hydrologic Control. The wetland is located within the 100-year floodplain or within an enclosed basin; there is evidence of flooding or ponding during a portion of the growing season; the wetland is greater than 5 acres in size; waterflow out of the wetland is restricted (beaver dam, concrete structure, undersized culvert) or the wetland has no outlet; woody vegetation is the dominant wetland vegetation cover type; the dominant existisng land use within 500 feet of the wetland on the downstream or downslope edge of the wetland is developed uses; and the dominant land use in the watershed upstream from the assessment area is urban or urbanizing.

Appendix C

Vegetation List and Sample Plot Data Forms

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City or Medford Urban Reserve Local Wetland Inventory
Vegetation List
April 6-9 and 20-23, 2015

Common Name	Scientific Name	Wetland Indicator Status	Native and Invasive, Noxious
WETLANDS			
American deerweed	*Acmispon americanus*	FACU	native
spreading bent	*Agrostis stolonifera*	FAC	native
field meadow-foxtail	*Alopecurus pratensis*	FAC	non-native
clustered field sedge	*Carex praegracilis*	FACW	native
Fuller's teasel	*Dipsacus fullonum*	FAC	invasive
needle spike-rush	*Eleocharis acicularis*	OBL	native
common spike-rush	*Eleocharis palustris*	OBL	native
fescue	*Festuca species*	FAC to NOL	-
Baltic rush	*Juncus balticus*	FACW	native
lamp rush	*Juncus effusus*	FACW	native
spreading rush	*Juncus patens*	FACW	native
garden bird's-foot-trefoil	*Lotus corniculatus*	FAC	non-native
toothed medick	*Medicago polymorpha*	FACU	non-native
reed canary grass	*Phalaris arundinacea*	FACW	invasive
balsam poplar	*Populus balsamifera*	FAC	native
creeping buttercup	*Ranunculus repens*	FAC	non-native
Himalayan blackberry	*Rubus armeniacus*	FACU	invasive, noxious
Scouler's willow	*Salix scouleriana*	FAC	native
Lemmon's willow	*Salix lemmonii*	FACW	native
tall false rye grass / tall fescue	*Schedonorus arundinaceus*	FAC	non-native
broad-leaf cat-tail	*Typha latifolia*	OBL	native
neckweed	*Veronica peregrina*	OBL	native
vetch	*Vicia species*	FAC to UPL	-
UPLANDS			
American deerweed	*Acmispon americanus*	FACU	native
spreading bent	*Agrostis stolonifera*	FAC	native
wild onion or wild garlic	*Allium species*	OBL to NOL	-
field meadow-foxtail	*Alopecurus pratensis*	FAC	non-native
ripgut brome	*Bromus diandrus*	NOL	non-native
small camas	*Camassia quamash*	FACW	native
hairy bittercress	*Cardamine hirsuta*	FACU	non-native
clustered field sedge	*Carex praegracilis*	FACW	native
bull thistle	*Cirsium vulgare*	FACU	invasive, noxious
poison-hemlock	*Conium maculatum*	FAC	noxious
tufted hair grass	*Deschampsia caespitosa*	FACW	native
Fuller's teasel	*Dipsacus fullonum*	FAC	invasive
filaree	*Erodium cicutarium*	NOL	non-native
fescue	*Festuca species*	FAC to NOL	-
cutleaf geranium	*Geranium dissectum*	NOL	non-native
dovefoot geranium	*Geranium molle*	NOL	non-native
prickly lettuce	*Lactuca serriola*	FACU	non-native
great Basin lyme grass	*Leymus cinereus*	FAC	native

Common Name	Scientific Name	Wetland Indicator Status	Native and Invasive, Noxious
two-color lupine	*Lupinus bicolor*	NOL	native
toothed medick	*Medicago polymorpha*	FACU	non-native
reed canary grass	*Phalaris arundinacea*	FACW	invasive
English plantain	*Plantago lanceolata*	FACU	non-native
bulbous blue grass	*Poa bulbosa*	FACU	non-native
bluegrass	*Poa species*	FAC ?	-
sagebrush buttercup	*Ranunculus glaberrimus*	FACU	native
creeping buttercup	*Ranunculus repens*	FAC	non-native
Himalayan blackberry	*Rubus armeniacus*	FACU	invasive, noxious
curly dock	*Rumex crispus*	FAC	non-native
tall false rye grass / tall fescue	*Schedonorus arundinaceus*	FAC	non-native
red clover	*Trifolium pratense*	FACU	non-native
white clover	*Trifolium repens*	FAC	non-native
broad-leaf cat-tail	*Typha latifolia*	OBL	native
neckweed	*Veronica peregrina*	OBL	native
Persian speedwell	*Veronica persica*	NOL	non-native
American purple vetch	*Vicia americana*	FAC	native
tiny vetch	*Vicia hirsuta*	NOL	non-native
vetch	*Vicia species*	FAC to UPL	-
desert fescue	*Vulpia microstachys*	NOL	native

Wetland Indicator Status and taxonomy for the Western Mountains, Valleys, and Coast Region per the National Wetland Plant List 2014v1. Accessed April 2015. http://rsgisias.crrel.usace.army.mil/NWPL/

Native per Hitchcock & Cronquist 1973 and http://plants.usda.gov/

Invasive per Clean Water Services 2008: http://www.cleanwaterservices.org/PermitCenter/DesignAndConstruction/default.aspx

Noxious per ODA 2015: http://www.oregon.gov/ODA/PLANT/WEEDS/lists.shtml

WETLAND INDICATOR STATUS (WIS)	
OBL	**Obligate Wetland** Plant – Almost always occurs in wetlands (hydrophyte), rarely in uplands
FACW	**Facultative Wetland** Plant - Usually occur in wetlands (hydrophyte), but may occur found in non-wetlands
FAC	**Facultative** Plant – Occurs in wetlands (hydrophyte) and uplands (nonhydrophyte)
FACU	**Facultative Upland** Plant - Usually occur in non-wetlands (non-hydrophyte), but may occur in wetlands
UPL	**Upland** Plant - Almost always occurs in uplands (non-hydrophyte), almost never occurs in wetlands. UPL plants have a WIS in other regions
NOL	**Not Listed** - Plants that are not on the National Wetland Plant List are assumed to be UPL and have no WIS in any region

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/6/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P01**

Investigator(s): Clare Kenny, Taya K. MacLean, C. Mirth Walker | Section, Township, Range: Section 34, T37S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): 3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.302070 | Long: -122.813100 | Datum: NAD 1983

Soil Map Unit Name: Unit 33: Coker clay | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** Yes **X** No ____
Hydric Soil Present?	Yes **X**	No ____	
Wetland Hydrology Present?	Yes **X**	No ____	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
PEM wetland located in flood irrigated pasture - Wetland W01. Signatures visible on multiple imagery.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Alopecurus pratensis*	70%	Yes	FAC
2. *Agrostis stolonifera*	10%	No	FAC
3. *Eleocharis acicularis*	10%	No	OBL
4. *Carex praegracilis*	5%	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 5%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 10	x 1 =	10
FACW species 5	x 2 =	10
FAC species 80	x 3 =	240
FACU species 0	x 4 =	0
UPL species 0	x 5 =	0
Column Totals: 95 (A)		260 (B)

Prevalence Index = B/A = 2.74

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No ____

Remarks:

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P01**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	80	2.5YR 3/6	20	C	M	C	
5-20+	10YR 3/1	80	2.5YR 3/6	20	C	M, PL	C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	X	No	_____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes	X	No	_____	Depth (inches): surface

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seeps at 4" and free water.

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/6/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P02**

Investigator(s): Clare Kenny, Taya K. MacLean, C. Mirth Walker | Section, Township, Range: Section 34, T37S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): convex | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.302450 | Long: -122.811700 | Datum: NAD 1983

Soil Map Unit Name: Unit 33: Coker clay | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?**	Yes ____ No **X**
Hydric Soil Present?	Yes **X**	No ____		
Wetland Hydrology Present?	Yes ____	No **X**		

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
Flood irrigated pasture - ditches in place to the north. Obvious signature on multiple imagery.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Alopecurus pratensis*	75%	Yes	FAC
2. *Poa bulbosa*	10%	No	FACU
3. *Geranium dissectum*	5%	No	NOL
4. *Medicago polymorpha*	3%	No	FACU
5. *Veronica persica*	3%	No	NOL
6. *Cardamine hirsuta*	2%	No	FACU
7. *Lactuca serriola*	2%	No	FACU
8.			
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	17	x 4 =	68
UPL species	8	x 5 =	40
Column Totals:	100 (A)		333 (B)

Prevalence Index = B/A = 3.33

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No ____

Remarks: Entered by: tkm QC by: cmw

Planted pasture grasses. Subdominant vegetation not hydrophytic. Vegetation in this area was distinctively different than in wetland area to the north - this is also visible on aerial imagery from 2005, 2010, 2013 and 2014.

SOIL

Sampling Point: **P02**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR 2.5/3	100					CL	rooty
3-16+	7.5YR 3/2	95	7.5YR 4/6	5	C	M	C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Redox is likely present as a result of ongoing flood irrigation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): >16	**Wetland Hydrology Present?**	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): >16	**Yes** ___	**No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: tkm QC by: cmw
Water would not be held in this landscape location.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/6/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P03**

Investigator(s): Clare Kenny, Taya K. MacLean, C. Mirth Walker | Section, Township, Range: Section 34, T37S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.302040 | Long: -122.810300 | Datum: NAD 1983

Soil Map Unit Name: Unit 33: Coker clay | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** Yes **X** No ____
Hydric Soil Present?	Yes **X**	No ____	
Wetland Hydrology Present?	Yes **X**	No ____	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:

Wetland W02_A and W02_B PEM wetland

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Alopecurus pratensis*	80%	Yes	FAC
2. *Juncus balticus*	5%	No	FACW
3. *Eleocharis acicularis*	5%	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 10%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	5	x 1 =	5
FACW species	5	x 2 =	10
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		255 (B)

Prevalence Index = B/A = 2.83

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No ____

Remarks:

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P03**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/2	100					L	roots
5-14	10YR 2/1	98	5YR 3/4	2	C	M	C	very stiff

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	X	No	_____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes	X	No	_____	Depth (inches): surface

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Seeps at 2".

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/7/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P04**

Investigator(s): Clare Kenny, Taya K. MacLean, C. Mirth Walker | Section, Township, Range: Section 31, T36S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): none | Slope (%): 0

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.399160 | Long: -122.868200 | Datum: NAD 1983

Soil Map Unit Name: Unit 35A: Cove clay (hydric) | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	
Hydric Soil Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Wetland Hydrology Present?	Yes ____	No **X**	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
Upland

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Poa species*	40%	Yes	FAC ?
2. *Leymus cinereus*	30%	Yes	FAC
3. *Bromus diandrus*	10%	No	NOL
4. *Festuca species*	10%	No	FAC*
5. *Geranium dissectum*	10%	No	NOL
6. *Rumex crispus*	1%	No	FAC
7. *Poa bulbosa*	1%	No	FACU
8. *Vicia americana*	1%	No	FAC
9.			
10.			
11.			
	103% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	82	x 3 =	246
FACU species	1	x 4 =	4
UPL species	20	x 5 =	100
Column Totals:	103 (A)		350 (B)

Prevalence Index = B/A = 3.40

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No ____

Remarks: * or ? = Assumed FAC.

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P04**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): >14	**Wetland Hydrology Present?**	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): >14	**Yes** ___	**No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/7/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P05**

Investigator(s): Clare Kenny, Taya K. MacLean, C. Mirth Walker | Section, Township, Range: Section 31, T36W, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): <2

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.394580 | Long: -122.861800 | Datum: NAD 1983

Soil Map Unit Name: Unit 141A: Phoenix clay (hydric) | NWI classification: PEMC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?**	**Yes X** **No** ____
Hydric Soil Present?	Yes **X**	No ____		
Wetland Hydrology Present?	Yes **X**	No ____		

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
PEM wetland W04. Hydrologically connected to vernal pool mosaic.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Alopecurus pratensis*	85%	Yes	FAC
2. *Vicia species*	5%	No	FAC*
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 10%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	90	x 3 =	270
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		270 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes X** **No** ____

Remarks: * = Assumed FAC.

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P05**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/2	100					C	thick roots
3-20	10YR 4/1	98	7.5YR 4/6	2	C	M, PL	C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Common 1"-4" gravels and cobbles.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- X Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): >18	**Wetland Hydrology Present?**	
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 18	**Yes** X	**No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: tkm QC by: cmw
Hummocks. Obvious green signature in 2010. Signature also visible in 2013 and 2014 imagery.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/7/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P06**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 32, T36S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): none | Slope (%): <2

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.396690 | Long: -122.851500 | Datum: NAD 1983

Soil Map Unit Name: Unit 33: Coker clay | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No _____	
Hydric Soil Present?	Yes _____	No **X**	**Is the Sampled Area within a Wetland?** Yes _____ No **X**
Wetland Hydrology Present?	Yes _____	No **X**	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
Upland. Flood irrigated hay pasture with extensive ditching. See also P23, collected on 4/22/15 during site re-visit.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Alopecurus pratensis*	95%	Yes	FAC
2. *Carex praegracilis*	5%	No	FACW
3. *Ranunculus glaberrimus*	1%	No	FACU
4. *Poa species*	1%	No	FAC ?
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	102% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 5	x 2 =	10
FAC species 96	x 3 =	288
FACU species 1	x 4 =	4
UPL species 0	x 5 =	0
Column Totals: 102 (A)		302 (B)
Prevalence Index = B/A =		2.96

Hydrophytic Vegetation Indicators:

- _____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- _____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- _____ 5 - Wetland Non-Vascular Plants[1]
- _____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No _____

Remarks: ? = Assumed FAC.

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P06**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 3/2	100					C	root layer
2-17	7.5YR 4/1	100					C	very stiff

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Extremely stiff soil - dry throughout.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): >17	**Wetland Hydrology Present?**	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): >17	**Yes** ___	**No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/7/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P07**

Investigator(s): Clare Kenny, Taya MacLean, C. Mirth Walker | Section, Township, Range: Section 32, T36S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): <2

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.397740 | Long: -122.846600 | Datum: NAD 1983

Soil Map Unit Name: Unit 33: Coker clay | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No **X**
Hydric Soil Present?	Yes ____	No **X**
Wetland Hydrology Present?	Yes ____	No **X**

Is the Sampled Area within a Wetland? Yes ____ No **X**

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
Upland plot collected to investigate green signature.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Schedonorus arundinaceus*	40%	Yes	FAC
2. *Bromus diandrus*	40%	Yes	NOL
3. *Alopecurus pratensis*	10%	No	FAC
4. *Dipsacus fullonum*	3%	No	FAC
5. *Trifolium pratense*	3%	No	FACU
6. *Geranium dissectum*	2%	No	NOL
7. *Cirsium vulgare*	2%	No	FACU
8. *Acmispon americanus*	1%	No	FACU
9.			
10.			
11.			
	101% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	53	x 3 =	159
FACU species	6	x 4 =	24
UPL species	42	x 5 =	210
Column Totals:	101 (A)		393 (B)

Prevalence Index = B/A = 3.89

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No **X**

Remarks:

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P07**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): >14	**Wetland Hydrology Present?**	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): >14	**Yes** ___	**No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/8/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P08**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 32, T36S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): none | Slope (%): 0

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.392390 | Long: -122.846200 | Datum: NAD 1983

Soil Map Unit Name: Unit 35A: Cove clay (hydric) | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No _____	**Is the Sampled Area within a Wetland?**	**Yes X** **No** _____
Hydric Soil Present?	Yes **X**	No _____		
Wetland Hydrology Present?	Yes **X**	No _____		

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:

PEM Wetland W09. Connected to Swanson creek and to wetlands offsite (including WD2009-0470). Cattle present. This portion of the site is not a hay pasture.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Juncus patens*	50%	Yes	FACW
2. *Carex praegracilis*	25%	Yes	FACW
3. *Agrostis stolonifera*	5%	No	FAC
4. *Alopecurus pratensis*	5%	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 15%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 75	x 2 =	150
FAC species 10	x 3 =	30
FACU species 0	x 4 =	0
UPL species 0	x 5 =	0
Column Totals: 85 (A)		180 (B)

Prevalence Index = B/A = 2.12

Hydrophytic Vegetation Indicators:

- _____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- _____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- _____ 5 - Wetland Non-Vascular Plants[1]
- _____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes X** **No** _____

Remarks: Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P08**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					CL	
3-12	5Y 2.5/1	98	10YR 4/6	2	C	M	C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches):	___
Water Table Present?	Yes X	No ___	Depth (inches):	surface
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	surface

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

1-2" of water in hoof prints and between hummocks in and adjacent to plot.

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/8/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P09**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 5, T37S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.387490 | Long: -122.851300 | Datum: NAD 1983

Soil Map Unit Name: Unit 139A: Padigan clay (hydric) | NWI classification: PEMC, PFOC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** Yes **X** No ____
Hydric Soil Present?	Yes **X**	No ____	
Wetland Hydrology Present?	Yes **X**	No ____	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
Wetland W10 in WD2007-0106. Approx. 15' from stream. Broad depression.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Juncus patens*	40%	Yes	FACW
2. *Festuca species*	40%	Yes	FAC*
3. *Medicago polymorpha*	2%	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	82% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 18%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	40	x 3 =	120
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	82 (A)		208 (B)

Prevalence Index = B/A = 2.54

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No ____

Remarks: * = Assumed FAC.

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P09**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100					SiCL	
2-15	10YR 4/1	77	7.5YR 4/3	20	C	M	C	
			7.5YR 4/6	3	C	M, PL		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- X Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches): ___
Water Table Present?	Yes	X	No	___	Depth (inches): surface
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): surface

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Ponded water within hoof prints in plot.

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/8/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P10**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 9, T37S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): <5

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.372640 | Long: -122.834200 | Datum: NAD 1983

Soil Map Unit Name: Unit 139A: Padigan clay (hydric) | NWI classification: PABHx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** Yes **X** No ____
Hydric Soil Present?	Yes **X**	No ____	
Wetland Hydrology Present?	Yes **X**	No ____	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
PEM wetland W11. Former pear orchard. Mapped hydric soil unit runs diagonally through parcel.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Typha latifolia*	75%	Yes	OBL
2. *Eleocharis palustris*	10%	No	OBL
3. *Festuca species*	10%	No	FAC*
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 5%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 85	x 1 =	85
FACW species 0	x 2 =	0
FAC species 10	x 3 =	30
FACU species 0	x 4 =	0
UPL species 0	x 5 =	0
Column Totals: 95 (A)		115 (B)

Prevalence Index = B/A = 1.21

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No ____

Remarks: * = Assumed FAC.
Mowed vegetation.

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P10**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100					SiC	Roots and OM.
3-16	10YR 4/1	80	7.5YR 4/6	20	C	M	C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches): ___
Water Table Present?	Yes	___	No	X	Depth (inches): >16
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): 4

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Water table may have been present if pit was left to fill.

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/8/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P11**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 34, T37S, R1W

Landform (hillslope, terrace, etc.): shoulder | Local relief (concave, convex, none): concave | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.312010 | Long: -122.797100 | Datum: NAD 1983

Soil Map Unit Name: Unit 27: Carney clay | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	
Hydric Soil Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Wetland Hydrology Present?	Yes ____	No **X**	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
Former pond created in upland. Water likely used for irrigation of landscaping for adjacent home as evidenced by irrigation pipes.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1. *Salix lemmonii*	10%	Yes	FACW
2.			
3.			
4.			
5.			
	10% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Alopecurus pratensis*	95%	Yes	FAC
2. *Rumex crispus*	2%	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	97% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 3%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	97	x 3 =	291
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	107 (A)		311 (B)

Prevalence Index = B/A = 2.91

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No ____

Remarks:
Salix sp. May be relict of wetter hydrology in the past.

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P11**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	100					CL	roots
2-5	10YR 3/2	95	7.5YR 4/6	5	C	M	CL	
5-16	10YR 3/2	100					C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
"Redox" / color mottles in 2-5" layer could possibly be pond lining material. Not F8, Redox Depressions, because it does not meet the landform definition.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	
Water Table Present?	Yes ___	No X	Depth (inches):	>16
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	>16

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/8/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P12**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 5, T37S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.387570 | Long: -122.852700 | Datum: NAD 1983

Soil Map Unit Name: Unit 33: Coker clay | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	
Hydric Soil Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Wetland Hydrology Present?	Yes **X**	No ____	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
Adjacent to/within area of swales, depressions and subtle mounding. Our observations were consistent with WD2007-0106.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Deschampsia caespitosa*	65%	Yes	FACW
2. *Poa species*	10%	No	FAC*
3. *Ranunculus repens*	5%	No	FAC
4. *Allium species*	5%	No	FAC*
5. *Lactuca serriola*	5%	No	FACU
6. *Medicago polymorpha*	5%	No	FACU
7. *Camassia quamash*	2%	No	FACW
8.			
9.			
10.			
11.			
	97% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 3%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 67	x 2 =	134
FAC species 20	x 3 =	60
FACU species 10	x 4 =	40
UPL species 0	x 5 =	0
Column Totals: 97 (A)		234 (B)

Prevalence Index = B/A = 2.41

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No ____

Remarks: * = Assumed FAC.

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P12**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100					CL	
3-14	7.5YR 2.5/1	100					C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- X Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): >14	**Wetland Hydrology Present?**	
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 11	**Yes** **X**	**No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: tkm QC by: cmw

Moist throughout. High amount of precipitation previous day may account for hydrology present at 11". This is an area of patterned swales, depressions and mounds.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/9/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P13**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 26, T37S, R1W

Landform (hillslope, terrace, etc.): ravine | Local relief (concave, convex, none): concave | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.325370 | Long: -122.782700 | Datum: NAD 1983

Soil Map Unit Name: Unit 27: Carney clay | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No _____	**Is the Sampled Area within a Wetland?** Yes **X** No _____
Hydric Soil Present?	Yes **X**	No _____	
Wetland Hydrology Present?	Yes **X**	No _____	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
PSS wetland W14. Medford City parcel - leased for ranching cattle.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1. *Salix species*	50%	Yes	FAC*
2.			
3.			
4.			
5.			
	50% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Dipsacus fullonum*	25%	Yes	FAC
2. *Agrostis stolonifera*	25%	Yes	FAC
3. *Juncus effusus*	5%	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 45%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		310 (B)

Prevalence Index = B/A = 2.95

Hydrophytic Vegetation Indicators:

- _____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- _____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- _____ 5 - Wetland Non-Vascular Plants[1]
- _____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No _____

Remarks: * = Assumed FAC.
Grazed and impacted by cattle hooves.

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P13**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/1	80	7.5YR 5/8	20	C	M	C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches): ___
Water Table Present?	Yes	X	No	___	Depth (inches): 9
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): surface

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Ponded water observed.

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/20/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P14**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 33, T37S, R1W

Landform (hillslope, terrace, etc.): terrace drainage | Local relief (concave, convex, none): concave | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.302050 | Long: -122.825500 | Datum: NAD 1983

Soil Map Unit Name: Unit 43: Darow silty clay loam | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	
Hydric Soil Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** Yes **X** No ____
Wetland Hydrology Present?	Yes **X**	No ____	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
PEM wetland W17 - long linear feature in golf course, east of paved path. This weltand was partially captured in WD2004-0551.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus balsamifera*	15%	Yes	FAC
2.			
3.			
4.			
	15% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1. *Salix scouleriana*	20%	Yes	FAC
2.			
3.			
4.			
5.			
	20% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Carex praegracilis*	60%	Yes	FACW
2. *Eleocharis acicularis*	15%	No	OBL
3. *Alopecurus pratensis*	5%	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 20%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	15	x 1 =	15
FACW species	60	x 2 =	120
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		255 (B)

Prevalence Index = B/A = 2.22

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No ____

Remarks:

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P14**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-0.5	10YR 3/2	100					muck	
0.5-5.5	2.5Y 4/2	95	10YR 4/4	5	C	M	CL	Gravels, roots.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Gravel fill at 5.5" caused shovel refusal and prevented us from being able to confirm the 6" thickness requirement for A11. Gravels likely from construction of irrigation system. Muck may be from build-up of fertilizer and organic material under wet conditions. BPJ was used to check A11.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches): ___
Water Table Present?	Yes	X	No	___	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches): surface

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: tkm QC by: cmw
Strong algal matting, likely a result of golf green management practices.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/20/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P15**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 33, T37S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.304000 | Long: -122.827100 | Datum: NAD 1983

Soil Map Unit Name: Unit 33: Coker clay | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No **X**	
Hydric Soil Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Wetland Hydrology Present?	Yes ____	No **X**	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
WD2004-0551 wetland polygons are located north and southwest of sample plot. It is likely that golf course management has altered the hydrology in the 11 years since.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Geranium molle*	30%	Yes	NOL
2. *Vulpia microstachys*	30%	Yes	NOL
3. *Lupinus bicolor*	10%	No	NOL
4. *Medicago polymorpha*	10%	No	FACU
5. *Alopecurus pratensis*	10%	No	FAC
6. *Vicia americana*	5%	No	FAC
7. *Poa bulbosa*	5%	No	FACU
8.			
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 15	x 3 =	45
FACU species 15	x 4 =	60
UPL species 70	x 5 =	350
Column Totals: 100 (A)		455 (B)

Prevalence Index = B/A = 4.55

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ____ 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No **X**

Remarks:
Relict *A. pratensis* hummocks.

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P15**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	95	10YR 4/6	5	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Recently drained as a result of golf course management. Redox may be relict from prior to golf course construction/drainage. Redox has distinct boundaries.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): >12	**Wetland Hydrology Present?**	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): >12	**Yes** ___	**No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: tkm QC by: cmw
Surface soil cracks are worn and likely remnant from before draining.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/21/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P16**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 6, T38S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): none | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.299270 | Long: -122.870600 | Datum: NAD 1983

Soil Map Unit Name: Unit 33: Coker clay | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No **X**	
Hydric Soil Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Wetland Hydrology Present?	Yes ____	No **X**	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
South of pond that has had some seepage. Pond water level low and owner mentioned that pond is no longer in use and will be plugged since the orchard was removed.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Geranium molle*	30%	Yes	NOL
2. *Lactuca serriola*	10%	No	FACU
3. *Typha latifolia*	5%	No	OBL
4. *Cardamine hirsuta*	3%	No	FACU
5. *Dipsacus fullonum*	2%	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	50% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 50%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 5	x 1 =	5
FACW species 0	x 2 =	0
FAC species 2	x 3 =	6
FACU species 13	x 4 =	52
UPL species 30	x 5 =	150
Column Totals: 50 (A)		213 (B)

Prevalence Index = B/A = 4.26

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ____ 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No **X**

Remarks:
T. latifolia not growing back in this season and is stunted due to lack of hydrology from pond.

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P16**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 3/1	80	5YR 4/6	20	C	M, PL	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Hydric soil are likely relict of previous hydrological regime when pond was filled and in active use.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): >12	**Wetland Hydrology Present?**	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): >12	**Yes** ___	**No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: tkm QC by: cmw
Downslope of pond. Was receiving hydrology from pond seepage prior to decommissioning of pond and orchard.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/21/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P17**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 31, T37S, R1W

Landform (hillslope, terrace, etc.): floodplain terrace | Local relief (concave, convex, none): concave | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: | Long: | Datum: NAD 1983

Soil Map Unit Name: Unit 23A: Camas-Newberg-Evans complex | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)

Are Vegetation ,Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ,Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
PEM wetland W18 - SW corner of Bear Creek greenway. Plot placed on study area boundary in wetland because most of wetland surrounded by impenetrable blackberry. Near 'BCVSA' sign and water line manhole. Wetland receives hydrology from Bear Creek floodplain.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus balsamifera*	30%	Yes	FAC
2.			
3.			
4.			
	30% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1. *Rubus armeniacus*	20%	Yes	FACU
2.			
3.			
4.			
5.			
	20% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Phalaris arundinacea*	65%	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 35%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	30	x 3 =	90
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	115 (A)		300 (B)

Prevalence Index = B/A = 2.61

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- 5 - Wetland Non-Vascular Plants[1]
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes X** **No**

Remarks: Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P17**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					SCL	
4-10	10YR 3/1	85	7.5YR 4/4	15	C	M	SC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Shovel refusal at 10" due to large cobbles.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	___
Water Table Present?	Yes ___	No X	Depth (inches):	>10
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	>10

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Moist throughout.

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/20/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P18**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 33, T37S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.302120 | Long: -122.823300 | Datum: NAD 1983

Soil Map Unit Name: Unit 43: Darow silty clay loam | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No **X**	
Hydric Soil Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Wetland Hydrology Present?	Yes ____	No **X**	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
Recently drained by golf course management practices. No clear connection to S08 mapped ditch.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Geranium molle*	30%	Yes	NOL
2. *Vulpia microstachys*	20%	Yes	NOL
3. *Medicago polymorpha*	20%	Yes	FACU
4. *Lupinus bicolor*	10%	No	NOL
5. *Alopecurus pratensis*	5%	No	FAC
6. *Vicia americana*	5%	No	FAC
7. *Poa bulbosa*	5%	No	FACU
8.			
9.			
10.			
11.			
	95% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 5%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	25	x 4 =	100
UPL species	60	x 5 =	300
Column Totals:	95 (A)		430 (B)

Prevalence Index = B/A = 4.53

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ____ 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No **X**

Remarks:

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P18**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	95	10YR 4/6	5	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Hydric soils are likely relict due to recent changes in hydrological regime.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): >12	**Wetland Hydrology Present?**	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): >12	**Yes** ___	**No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Dry.

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/22/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P20**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 5, T38S, R1W

Landform (hillslope, terrace, etc.): floodplain terrace | Local relief (concave, convex, none): concave | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.293770 | Long: -122.850400 | Datum: NAD 1983

Soil Map Unit Name: Unit 76A: Gregory silty clay loam (hydric) | NWI classification: PEMC, PUBHx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** Yes **X** No ____
Hydric Soil Present?	Yes **X**	No ____	
Wetland Hydrology Present?	Yes **X**	No ____	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:

Wetland W19_A. Low area adjacent to stream and well-defined topographically. Recieves surface flow from adjacent uplands and overflow from stream.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Juncus effusus*	25%	Yes	FACW
2. *Schedonorus arundinaceus*	10%	No	FAC
3. *Eleocharis palustris*	10%	No	OBL
4. *Lotus corniculatus*	5%	No	FAC
5. *Veronica peregrina*	5%	No	OBL
6. *Ranunculus repens*	3%	No	FAC
7. *Carex praegracilis*	2%	No	FACW
8.			
9.			
10.			
11.			
	60% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 40%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 15	x 1 =	15
FACW species 27	x 2 =	54
FAC species 18	x 3 =	54
FACU species 0	x 4 =	0
UPL species 0	x 5 =	0
Column Totals: 60 (A)		123 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No ____

Remarks:

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P20**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/1	100					C	
7-16	10YR 2/1	95	5YR 3/3	3	C	M	C	
			10YR 3/2	2	C	M	C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	_____	No	X	Depth (inches): _____
Water Table Present?	Yes	_____	No	X	Depth (inches): >16
Saturation Present? (includes capillary fringe)	Yes	_____	No	X	Depth (inches): >16

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/22/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P21**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 5, T38S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.293580 | Long: -122.849500 | Datum: NAD 1983

Soil Map Unit Name: Unit 127A: Medford silty clay loam | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?**	**Yes X** **No** ____
Hydric Soil Present?	Yes **X**	No ____		
Wetland Hydrology Present?	Yes **X**	No ____		

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
Wetland W20. Recieves hydrology from surrounding topography and surface flow. May have subsurface connection to W19.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Eleocharis palustris*	50%	Yes	OBL
2. *Carex praegracilis*	30%	Yes	FACW
3. *Ranunculus repens*	20%	Yes	FAC
4. *Acmispon americanus*	5%	No	FACU
5. *Schedonorus arundinaceus*	5%	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	110% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	50	x 1 =	50
FACW species	30	x 2 =	60
FAC species	25	x 3 =	75
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	110 (A)		205 (B)

Prevalence Index = B/A = 1.86

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes X** **No** ____

Remarks:
Stunted vegetation.

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P21**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/1	100					C	Dense clay.
7-16	10YR 2/1	95	5YR 3/3	3	C	M	C	
			10YR 3/2	2	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):		
Water Table Present?	Yes ___	No X	Depth (inches):	>16	**Wetland Hydrology Present?**
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	>16	**Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/22/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P22**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 35, T37S, R2W

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): none | Slope (%):

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.313100 | Long: -122.904200 | Datum: NAD 1983

Soil Map Unit Name: Unit 76A: Gregory silty clay loam (hydric) | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	**Yes** **No X**
Hydric Soil Present?	Yes	No X		
Wetland Hydrology Present?	Yes	No X		

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
Decomissioned pear orchard. No longer irrigated.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1. *Rubus armeniacus*	20%	Yes	FACU
2.			
3.			
4.			
5.			
	20% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Erodium cicutarium*	25%	Yes	NOL
2. *Phalaris arundinacea*	20%	Yes	FACW
3. *Dipsacus fullonum*	8%	No	FAC
4. *Plantago lanceolata*	4%	No	FACU
5. *Lactuca serriola*	2%	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	59% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 41%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	8	x 3 =	24
FACU species	26	x 4 =	104
UPL species	25	x 5 =	125
Column Totals:	79 (A)		293 (B)
Prevalence Index = B/A =			3.71

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0[1]
- 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- 5 - Wetland Non-Vascular Plants[1]
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **No X**

Remarks:
Dominated by non-hydric vegetation and differs slightly from adjacent upland vegetation community.

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P22**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
In mapped hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): >12	**Wetland Hydrology Present?**	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): >12	**Yes** ___	**No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: tkm QC by: cmw
Previuously irrigated but irrigation system now decomissioned.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/22/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P23**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 32, T36S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): none | Slope (%): 0

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.396650 | Long: -122.852600 | Datum: NAD 1983

Soil Map Unit Name: Unit 33: Coker clay | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No **X**
Hydric Soil Present?	Yes ____	No **X**
Wetland Hydrology Present?	Yes ____	No **X**

Is the Sampled Area within a Wetland? Yes ____ No **X**

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
Flood irrigated hay pasture.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Geranium dissectum*	20%	Yes	NOL
2. *Vicia hirsuta*	20%	Yes	NOL
3. *Schedonorus arundinaceus*	20%	Yes	FAC
4. *Poa species*	20%	Yes	FAC ?
5. *Plantago lanceolata*	15%	No	FACU
6. *Veronica persica*	5%	No	NOL
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	15	x 4 =	60
UPL species	45	x 5 =	225
Column Totals:	100 (A)		405 (B)

Prevalence Index = B/A = 4.05

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ____ 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No **X**

Remarks: * = Assumed FAC.
Poa assumed FAC. Vegetation highly disturbed due to historical land use.

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P23**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					C	Dense clay, roots.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): >12	**Wetland Hydrology Present?**	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): >12	**Yes** ___	**No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/23/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P24**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 32, T36S, R1W

Landform (hillslope, terrace, etc.): slight depression | Local relief (concave, convex, none): concave | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.397.86 | Long: -122.847600 | Datum: NAD 1983

Soil Map Unit Name: Unit 33: Coker clay | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No _____	
Hydric Soil Present?	Yes _____	No **X**	**Is the Sampled Area within a Wetland?** Yes _____ No **X**
Wetland Hydrology Present?	Yes _____	No **X**	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
Flood irrigated pasture. Sample collected in area of low topography.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Schedonorus arundinaceus*	40%	Yes	FAC
2. *Alopecurus pratensis*	30%	Yes	FAC
3. *Carex praegracilis*	20%	Yes	FACW
4. *Ranunculus repens*	5%	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 5%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	75	x 3 =	225
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		265 (B)

Prevalence Index = B/A = 2.79

Hydrophytic Vegetation Indicators:

- _____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- _____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- _____ 5 - Wetland Non-Vascular Plants[1]
- _____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No _____

Remarks:

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P24**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 3/2	100					C	Many roots.
2-13	7.5YR 4/1	100					C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)
Dense clay w/ dense roots present in 0-2" layer.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	
Water Table Present?	Yes ___	No X	Depth (inches):	>13
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	>13

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: tkm QC by: cmw
Dry throughout. Saturated signature on past aerial photographs is result of flood irrigation.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/23/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P25**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 5, T37S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): <3

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.378590 | Long: -122.852800 | Datum: NAD 1983

Soil Map Unit Name: Unit 139A: Padigan clay (hydric) | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	
Hydric Soil Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Wetland Hydrology Present?	Yes ____	No **X**	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
Slight ditch to south/downslope. Previously mapped as wetland (WD2007-0106). May have received hydrology from orchard irrigation which is now decommissioned.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Conium maculatum*	75%	Yes	FAC
2. *Dipsacus fullonum*	10%	No	FAC
3. *Agrostis stolonifera*	2%	No	FAC
4. *Poa bulbosa*	1%	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	88% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 12%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 87	x 3 =	261
FACU species 1	x 4 =	4
UPL species 0	x 5 =	0
Column Totals: 88 (A)		265 (B)

Prevalence Index = B/A = 3.01

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No ____

Remarks:
Vegetation dominated by facultative species. Highly disturbed vegetation.

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P25**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					C	trace sands

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___	
Water Table Present?	Yes ___	No X	Depth (inches): >16	**Wetland Hydrology Present?**
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): >16	**Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Dry. In large topographic swale.

Entered by: tkm QC by: cmw

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Medford Urban Reserve LWI | City/County: Medford UR / Jackson | Sampling Date: 4/23/2015

Applicant/Owner: City of Medford | State: OR | Sampling Point: **P26**

Investigator(s): Clare Kenny, Taya K. MacLean | Section, Township, Range: Section 31, T36S, R1W

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): concave | Slope (%): <2

Subregion (LRR): A, Northwest Forests and Coast | Lat: 42.395050 | Long: -122.862300 | Datum: NAD 1983

Soil Map Unit Name: Unit 35A: Cove clay (hydric) | NWI classification: PEMC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No _____	**Is the Sampled Area within a Wetland?** Yes **X** No _____
Hydric Soil Present?	Yes **X**	No _____	
Wetland Hydrology Present?	Yes **X**	No _____	

Precipitation prior to fieldwork: Dry spring evaluation

Remarks:
PEM wetland W04. Sample collected in NW corner of parcel, in lowest area of topography. Roadside ditch feeds to wetland.

VEGETATION

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' r)			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Alopecurus pratensis*	98%	Yes	FAC
2. *Dipsacus fullonum*	2%	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 10' r)			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

- _____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- _____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- _____ 5 - Wetland Non-Vascular Plants[1]
- _____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes **X** No _____

Remarks:

Entered by: tkm QC by: cmw

SOIL

Sampling Point: **P26**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	95	7.5YR 4/6	5	C	M	C	
4-16	10YR 4/1	95	7.5YR 4/6	5	C	M	C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes **X** No ___

Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	
Water Table Present?	Yes ___	No X	Depth (inches):	>16
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	>16

Wetland Hydrology Present? Yes **X** No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Entered by: tkm QC by: cmw

Recieves hydrology from upslope, road ditch, and is connected to adjacent vernal pool mosaic.

Appendix D

Wetland Summary Sheets

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MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W01

OFWAM Grouping Code: BCS-1

(B) Wetland Location (Centroid): Lat: 42.3027 Long: -122.813 **Figure Number:** F-69

(C) Location: Tax Lot(s): 371W345300, 371W345200, 371W345100

T, R, S(s): T37S R01W Section 34, T38S R01W Section 03

QQ(s): L13, L14, SWSW, SESW, NWNW

(D) Wetland Size (acres): 2.16 **(E) Cowardin Class:** PEMCh *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Coker clay, Darow silty clay loam

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): P01, P02
Plot date (if any): 4/6/2015
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
spreading bent	*Agrostis stolonifera*
needle spike-rush	*Eleocharis acicularis*

(L) Primary hydrology sources: Drain and ditch

(N) Locally Significant Wetland Determination: LSW? No **LSW Criteria:** none

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland is located in a flood irrigated pasture dominated by meadow foxtail. It is connected to W02 by a ditch line that runs along the southern boundary of the parcel.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W02-A

OFWAM Grouping Code: BCS-1

(B) Wetland Location (Centroid): Lat: 42.3020 Long: -122.811 **Figure Number:** F-68, F-69

(C) Location: Tax Lot(s): 381W03300

T, R, S(s): T37S R01W Section 34, T38S R01W Section 03

QQ(s): SESW, NENW, NWNW

(D) Wetland Size (acres): 0.50 **(E) Cowardin Class:** PEMCh *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Coker clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): P03
Plot date (if any): 4/6/2015
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
Baltic rush	*Juncus balticus*
needle spike-rush	*Eleocharis acicularis*

(L) Primary hydrology sources: Ditch

(N) Locally Significant Wetland Determination: LSW? No **LSW Criteria:** none

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland is located in a flood irrigated pasture dominated by meadow foxtail. It is connected to W01 by ditches.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W02-B

OFWAM Grouping Code: BCS-1

(B) Wetland Location (Centroid): Lat: 42.3023 Long: -122.809 **Figure Number:** F-68

(C) Location: Tax Lot(s): 381W03300

T, R, S(s): T37S R01W Section 34, T38S R01W Section 03

QQ(s): SESW, NENW

(D) Wetland Size (acres): 0.17 **(E) Cowardin Class:** PEMCh *Cowardin breakdown if multiple =*

(F) HGM Class: RI

(G) Mapped Soil Units: Coker clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): P03
Plot date (if any): 4/6/2015
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
Baltic rush	*Juncus balticus*
needle spike-rush	*Eleocharis acicularis*

(L) Primary hydrology sources: Ditch

(N) Locally Significant Wetland Determination: LSW? No **LSW Criteria:** none

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland is located in a flood irrigated pasture dominated by meadow foxtail. It is connected to W02 by ditches.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W03

OFWAM Grouping Code: BCS-9

(B) Wetland Location (Centroid): Lat: 42.3023 Long: -122.807 **Figure Number:** F-68

(C) Location: Tax Lot(s): 371W345300, 381W03300

T, R, S(s): T37S R01W Section 34, T38S R01W Section 03

QQ(s): SWSE, L12, L13, SESW, NWNE, NENW

(D) Wetland Size (acres): 2.33 **(E) Cowardin Class:** PEMBh *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Brader-Debenger, Coker clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any): N/A		**Visual date (if any):**	4/6/2015 and 7/1/2015
Method: USACE; WMVC supplement		**Method (if any):**	Viewed from Medford Irrigation District canal dike.

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail *Alopecurus pratensis*

(L) Primary hydrology sources: Medford Irrigation District Canal

(N) Locally Significant Wetland Determination: LSW? No **LSW Criteria:** none

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland is located in a flood irrigated pasture dominated by meadow foxtail. Obvious wetland signature observed on 4/6/15 from west of irrigation canal.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W04-A

OFWAM Grouping Code: MWC-1

(B) Wetland Location (Centroid): Lat: 42.3946 Long: -122.862 **Figure Number:** F-8

(C) Location: Tax Lot(s): 361W31D1700, 361W31D1800

T, R, S(s): T36S R01W Section 31D

QQ(s): NWSE

(D) Wetland Size (acres): 1.67 **(E) Cowardin Class:** PEMCd *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Coker clay, Cove clay, Phoenix clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): P05, P26
Plot date (if any): 4/7/2015, 4/23/2015
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
spreading rush	*Juncus patens*
Fuller's teasel	*Dipsacus fullonum*

(L) Primary hydrology sources: Ditch

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland is located south of Justice Road. Standing water was present in northwest corner of wetland where it recieves ditch inflow. This wetland connects to W04-B via a ditch line, and is likely connected hydrologically to W04-Mosaic via hummocky microtopography to the southeast.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W04-B

OFWAM Grouping Code: MWC-1

(B) Wetland Location (Centroid): Lat: 42.3947 Long: -122.860 **Figure Number:** F-8

(C) Location: Tax Lot(s): 361W31D1900

T, R, S(s): T36S R01W Section 31D

QQ(s): NESE

(D) Wetland Size (acres): 0.15 **(E) Cowardin Class:** PEMCh *Cowardin breakdown if multiple =*

(F) HGM Class: RI

(G) Mapped Soil Units: Phoenix clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A
Plot date (if any):	N/A
Method: USACE; WMVC supplement	

(M) If no plot - Visually confirmed?	Yes
Visual date (if any):	4/7/2015
Method (if any):	Confirmed during site visit without sample plot

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

lamp rush *Juncus effusus*

(L) Primary hydrology sources: Ditch

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland is depressional (marked by Medford City Marsh points) and fed by ditch inflow. It is distinct from the mosaic complex, but connected hydrologically to W04-A via roadside ditch.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W04-Mosaic

OFWAM Grouping Code: MWC-1

(B) Wetland Location (Centroid): Lat: 42.3939 Long: -122.861 **Figure Number:** F-8

(C) Location: Tax Lot(s): 361W31D1800, 361W31D1900

T, R, S(s): T36S R01W Section 31D

QQ(s): NWSE, NESE

(D) Wetland Size (acres): 6.20 **(E) Cowardin Class:** PEMC *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Coker clay, Phoenix clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any):	N/A	**Visual date (if any):**	4/7/2015
Method: USACE; WMVC supplement		**Method (if any):**	Site visit and walk around

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*	goldfields	*Lasthenia species*
navarretia	*Navarretia species*		
peppergrass	*Lepidium species*		
popcorn-flower	*Plagiobothrys species*		

(L) Primary hydrology sources: None

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control.

Wetland of Special Interest for Protection (rare / unique)

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland appears to be a vernal pool/wetland mosaic. No plot was collected due to the dominance of hard pan soil (and to avoid disturbance). The northeast corner of the feature has been graded and has a selection of flowering vernal pool herbs. Vernal pools are listed as a strategy habitat in the ODFW Oregon Conservation Strategy (2006).

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W06

OFWAM Grouping Code: MWC-2

(B) Wetland Location (Centroid): Lat: 42.3965 Long: -122.865 **Figure Number:** F-7, F-8

(C) Location: Tax Lot(s): 361W31A2800, 361W31D1400, 361W31A800

T, R, S(s): T36S R01W Section 31A, 31D

QQ(s): SWNE, NWSE

(D) Wetland Size (acres): 0.30 **(E) Cowardin Class:** PSS1C *Cowardin breakdown if multiple =*

(F) HGM Class: RI

(G) Mapped Soil Units: Cove clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any): N/A		**Visual date (if any):**	4/7/2015
Method: USACE; WMVC supplement		**Method (if any):**	Observed from start of dirt road at Justice Lane

(J) DSL determination / delineation number (if any): WD2012-0181

(K) Dominant Vegetation (Common and Scientific Name)

Tree	
willow	*Salix species*
narrow-leaf willow	*Salix exigua*
Shrub	
Himalayan blackberry	*Rubus armeniacus*
Herb	
field meadow-foxtail	*Alopecurus pratensis*

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Fish Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

SWCA expanded the WD wetland polygon based on review of historical aerial imagery which suggested the wetland has grown in size since 2012.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W07

OFWAM Grouping Code: MWC-3

(B) Wetland Location (Centroid): Lat: 42.4028 Long: -122.858 **Figure Number:** F-4, F-5

(C) Location: Tax Lot(s): 361W31A200, 361W31A100

T, R, S(s): T36S R01W Section 31A

QQ(s): NENE

(D) Wetland Size (acres): 1.35 **(E) Cowardin Class:** PEMBh

(F) HGM Class: SV

Cowardin breakdown if multiple =

(G) Mapped Soil Units: Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any): N/A		**Visual date (if any):**	4/7/2015
Method: USACE; WMVC supplement		**Method (if any):**	WD wetland confrmed visually during site visit

(J) DSL determination / delineation number (if any): WD2005-0692

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
lamp rush	*Juncus effusus*
creeping wild rye	*Elymus repens*
Fuller's teasel	*Dipsacus fullonum*

(L) Primary hydrology sources: Ditch

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Water Quality

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland connects to wetland W38 to the west.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W08

OFWAM Grouping Code: MWC-4

(B) Wetland Location (Centroid): Lat: 42.3939 Long: -122.852 **Figure Number:** F-9, F-10

(C) Location: Tax Lot(s): 361W32C500, 361W32C100

T, R, S(s): T36S R01W Section 32C

QQ(s): NWSW, NESW

(D) Wetland Size (acres): 1.76

(E) Cowardin Class: PEMB

(F) HGM Class: SV

Cowardin breakdown if multiple =

(G) Mapped Soil Units: Cove Clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A

Plot date (if any): N/A

Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No

Visual date (if any):

Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

not field verified

Shrub

not field verified

Herb

not field verified

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland is located north of Swanson Creek and associated riparian vegetation, within a hydric soil unit. Connected to W39-A and W41.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W09

OFWAM Grouping Code: MWC-4

(B) Wetland Location (Centroid): Lat: 42.3926 Long: -122.846 **Figure Number:** F-10

(C) Location: Tax Lot(s): 361W32C2400, 361W32C100

T, R, S(s): T36S R01W Section 32, 32C

QQ(s): NWSE, SESW, SWSE, NESW

(D) Wetland Size (acres): 11.52 **(E) Cowardin Class:** PEMBh *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Cove clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	P08	**(M) If no plot - Visually confirmed?**	N/A
Plot date (if any):	4/8/2015	**Visual date (if any):**	
Method: USACE; WMVC supplement		**Method (if any):**	

(J) DSL determination / delineation number (if any): WD2009-0470

(K) Dominant Vegetation (Common and Scientific Name)

Tree			
unknown species			
willow	*Salix species*		
Shrub			
Oregon ash	*Fraxinus latifolia*	red osier	*Cornus alba*
currant or gooseberry	*Ribes species*		
Herb			
field meadow-foxtail	*Alopecurus pratensis*	See WD2009-0470 for more species.	
spreading rush	*Juncus patens*		
clustered field sedge	*Carex praegracilis*		
spreading bent	*Agrostis stolonifera*		

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland extends offsite to the northeast and flows into Swanson Creek. Site visit confirmed that a portion of the wetland was on map lot 361W32C2400 (accessible). The portion of the wetland from the DSL wetland delineation data on 361W32C100 was not accessible. Connected to W39-A.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W10-A

OFWAM Grouping Code: MWC-5

(B) Wetland Location (Centroid): Lat: 42.3880 Long: -122.851 **Figure Number:** F-11, F-112

(C) Location: Tax Lot(s): 371W05300, 371W05313

T, R, S(s): T37S R01W Section 05

QQ(s): NWNW, SWNW, NENW

(D) Wetland Size (acres): 3.06 **(E) Cowardin Class:** PEMCd *Cowardin breakdown if multiple =*

(F) HGM Class: RFT

(G) Mapped Soil Units: Carney clay, Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): P09

Plot date (if any): 4/8/2015

Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A

Visual date (if any):

Method (if any):

(J) DSL determination / delineation number (if any): WD2007-0106

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
spreading rush	*Juncus patens*
fescue	*Festuca species*
toothed medick	*Medicago polymorpha*

(L) Primary hydrology sources: Stream

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Polygon was copied from the DSL wetland delineation data.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W10-B

OFWAM Grouping Code: N/A

(B) Wetland Location (Centroid): Lat: 42.3875 Long: -122.852 **Figure Number:** F-11

(C) Location: Tax Lot(s): 371W05300

T, R, S(s): T37S R01W Section 05

QQ(s): NWNW

(D) Wetland Size (acres): 0.05 **(E) Cowardin Class:** PEMB **(F) HGM Class:** SV

Cowardin breakdown if multiple =

(G) Mapped Soil Units: Coker clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): P09
Plot date (if any): 4/8/2015
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): WD2007-0106

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
spreading rush	*Juncus patens*
fescue	*Festuca species*
toothed medick	*Medicago polymorpha*

(L) Primary hydrology sources: None

(N) Locally Significant Wetland Determination: LSW? N/A **LSW Criteria:** N/A

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland was an upland/wetland mosaic area that was previously delineated. P09 is the representative plot located in the ajacent polygon W10-A. Excluded from OFWAM because <0.5 acre.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W10-C

OFWAM Grouping Code: N/A

(B) Wetland Location (Centroid): Lat: 42.3871 Long: -122.852 **Figure Number:** F-11

(C) Location: Tax Lot(s): 371W05300

T, R, S(s): T37S R01W Section 05

QQ(s): NWNW

(D) Wetland Size (acres): 0.05 **(E) Cowardin Class:** PEMB **(F) HGM Class:** SV

Cowardin breakdown if multiple =

(G) Mapped Soil Units: Coker clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): P09
Plot date (if any): 4/8/2015
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): WD2007-0106

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
spreading rush	*Juncus patens*
fescue	*Festuca species*
toothed medick	*Medicago polymorpha*

(L) Primary hydrology sources: None

(N) Locally Significant Wetland Determination: LSW? N/A **LSW Criteria:** N/A

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland was dominated by an upland/wetland mosaic. P09 is the representative plot located in the ajacent polygon W10-A. Excluded from OFWAM because <0.5 acre.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W10-D

OFWAM Grouping Code: MWC-5

(B) Wetland Location (Centroid): Lat: 42.3869 Long: -122.853 **Figure Number:** F-11

(C) Location: Tax Lot(s): 371W05300, 371W05313

T, R, S(s): T37S R01W Section 05

QQ(s): NWNW

(D) Wetland Size (acres): 0.60 **(E) Cowardin Class:** PEMC *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): P09
Plot date (if any): 4/8/2015
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): WD2007-0106

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
spreading rush	*Juncus patens*
fescue	*Festuca species*
toothed medick	*Medicago polymorpha*

(L) Primary hydrology sources: None

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland polygon was copied from the DSL wetland delineation data. P09 is the representative plot located in the ajacent polygon W10-A. Connected to W10-E and W22.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W10-E

OFWAM Grouping Code: MWC-5

(B) Wetland Location (Centroid): Lat: 42.3867 Long: -122.854 **Figure Number:** F-11

(C) Location: Tax Lot(s): 371W05313

T, R, S(s): T37S R01W Section 05

QQ(s): NWNW

(D) Wetland Size (acres): 0.61 **(E) Cowardin Class:** PEMC *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Carney clay, Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): P09
Plot date (if any): 4/8/2015
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): WD2007-0106

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
spreading rush	*Juncus patens*
fescue	*Festuca species*
toothed medick	*Medicago polymorpha*

(L) Primary hydrology sources: None

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland polygon was copied from the DSL wetland delineation data. P09 is the representative plot located in the ajacent polygon W10-A. Connected to W22.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W10-F

OFWAM Grouping Code: MWC-5

(B) Wetland Location (Centroid): Lat: 42.3814 Long: -122.852 **Figure Number:** F-13, F-14

(C) Location: Tax Lot(s): 371W05900

T, R, S(s): T37S R01W Section 05

QQ(s): NWSW

(D) Wetland Size (acres): 3.80

(E) Cowardin Class: PEMFh

(F) HGM Class: DCNP

Cowardin breakdown if multiple =

(G) Mapped Soil Units: Carney clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A

Plot date (if any): N/A

Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? Yes

Visual date (if any): 4/8/2015

Method (if any): Site walk through

(J) DSL determination / delineation number (if any): WD2007-0106

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
spreading rush	*Juncus patens*
fescue	*Festuca species*
toothed medick	*Medicago polymorpha*

(L) Primary hydrology sources: Stream ?

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Historically present pond no longer present due to decomissioning of orchard and associated irrigation

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W10-G

OFWAM Grouping Code: MWC-5

(B) Wetland Location (Centroid): Lat: 42.3847 Long: -122.851 **Figure Number:** F-11, F-12, F-13, F-14

(C) Location: Tax Lot(s): 371W05300, 371W05600

T, R, S(s): T37S R01W Section 05

QQ(s): SWNW, SENW

(D) Wetland Size (acres): 1.84 **(E) Cowardin Class:** PABHh *Cowardin breakdown if multiple =*

(F) HGM Class: DCP

(G) Mapped Soil Units: Carney clay, Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any):	N/A	**Visual date (if any):**	4/8/2015
Method: USACE; WMVC supplement		**Method (if any):**	Site walk through

(J) DSL determination / delineation number (if any): WD2007-0106

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
spreading rush	*Juncus patens*
fescue	*Festuca species*
toothed medick	*Medicago polymorpha*

(L) Primary hydrology sources: Stream

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Polygon from previously mapped DSL wetland delineation data was separated in to water and wetland areas. Connected to W10-A and AW32.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W11

OFWAM Grouping Code: MWC-6

(B) Wetland Location (Centroid): Lat: 42.3730 Long: -122.833 **Figure Number:** F-16, F-17

(C) Location: Tax Lot(s): 371W09800

T, R, S(s): T37S R01W Section 09

QQ(s): L1, L2

(D) Wetland Size (acres): 0.98 **(E) Cowardin Class:** PEMCx *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Carney clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): P10
Plot date (if any): 4/8/2015
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

broad-leaf cat-tail	*Typha latifolia*
common spike-rush	*Eleocharis palustris*
fescue	*Festuca species*

(L) Primary hydrology sources: Surface flow. Potential groundwater. Drains to AW17.

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland located within a former orchard. This wetland is connected to AW17 (man-made pond).

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W13

OFWAM Grouping Code: BCS-2

(B) Wetland Location (Centroid): Lat: 42.3082 Long: -122.791 **Figure Number:** F-65, F-66

(C) Location: Tax Lot(s): 371W35126

T, R, S(s): T37S R01W Section 35

QQ(s): NESW

(D) Wetland Size (acres): 0.96 **(E) Cowardin Class:** PEMCx *Cowardin breakdown if multiple =*

(F) HGM Class: RFT

(G) Mapped Soil Units: Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any):	N/A	**Visual date (if any):**	4/8/2015
Method: USACE; WMVC supplement		**Method (if any):**	Viewed from Santa Barbara Drive to the west.

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
lamp rush	*Juncus effusus*
broad-leaf cat-tail	*Typha latifolia*

(L) Primary hydrology sources: East lateral canal and associated ditches. Connects to Larson Creek Reservoir.

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Within 1/4 mile of Larson Creek (water quality limited stream)

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland is located in a valley and was viewed from Santa Barbara Drive to the west. Polygon was coppied from NWI mapping data. Connected to AW21 (Larson Reservoir). W66 is nearby.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W14

OFWAM Grouping Code: LSC-1

(B) Wetland Location (Centroid): Lat: 42.3229 Long: -122.783 **Figure Number:** F-57, F-58

(C) Location: Tax Lot(s): 371W26104

T, R, S(s): T37S R01W Section 26

QQ(s): NWSE

(D) Wetland Size (acres): 0.59

(E) Cowardin Class: PSS1A/PEMA

(F) HGM Class: RI

Cowardin breakdown if multiple = PSS: 90% PEM: 10%

(G) Mapped Soil Units: Carney clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): P13
Plot date (if any): 4/9/2015
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

willow	*Salix species*

Herb

lamp rush	*Juncus effusus*
Fuller's teasel	*Dipsacus fullonum*
spreading bent	*Agrostis stolonifera*

(L) Primary hydrology sources: Stream/Drain

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Water Quality

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Sample plot was taken in a small PEM wetland component. The road separates this wetland from W15.
Grazed and impacted by cattle. Ponding water present.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W15

OFWAM Grouping Code: LSC-2

(B) Wetland Location (Centroid): Lat: 42.3204 Long: -122.784 **Figure Number:** F-57, F-58

(C) Location: Tax Lot(s): 371W26104

T, R, S(s): T37S R01W Section 26

QQ(s): SWSE

(D) Wetland Size (acres): 2.05 **(E) Cowardin Class:** PSS1d *Cowardin breakdown if multiple =*

(F) HGM Class: RFT % PEM unknown

(G) Mapped Soil Units: Carney clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): P13

Plot date (if any): 4/9/2015

Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A

Visual date (if any):

Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Geyer's willow *Salix geyeriana*

Herb

lamp rush *Juncus effusus*

(L) Primary hydrology sources: Stream in flow

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Water Quality

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland connects to Mud Creek. Wetland appears to be identical to W14, with PEM component present as understory. The willow signature and contours were used for desktop delineation. Potential willow signature within the riparian corridor of Mud Creek was used to "connect" W15 to W63. Ground truthing would be helpful for this location. Plot P13 is located in polygon to the north - wetland characteristics identical, except for open PEM component.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W17

OFWAM Grouping Code: BCS-6

(B) Wetland Location (Centroid): Lat: 42.3030 Long: -122.826 **Figure Number:** F-71, F-72

(C) Location: Tax Lot(s): 371W33CD4700

T, R, S(s): T37S R01W Section 33, 33CD

QQ(s): SESW, SWSE

(D) Wetland Size (acres): 0.87 **(E) Cowardin Class:** PEMCx *Cowardin breakdown if multiple =*

(F) HGM Class: RI

(G) Mapped Soil Units: Coker clay, Darow silty clay loam

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): P14
Plot date (if any): 4/20/2015
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): WD2004-0551

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
needle spike-rush	*Eleocharis acicularis*
clustered field sedge	*Carex praegracilis*

(L) Primary hydrology sources: None

(N) Locally Significant Wetland Determination: LSW? No **LSW Criteria:** none

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland is located within a golf course. Recent alteration to hydrology and wetland shape exists from golf course management.
Strong algal matting, likely a result of golf green management practices.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W18

OFWAM Grouping Code: BCS-5

(B) Wetland Location (Centroid): Lat: 42.2889 Long: -122.827 **Figure Number:** F-74

(C) Location: Tax Lot(s): 381W04401

T, R, S(s): T38S R01W Section 04

QQ(s): NESW, SWSE

(D) Wetland Size (acres): 0.96 **(E) Cowardin Class:** PFO1Ch *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Camas-Newberg-Evans, Medford silty clay loam, Pits, gravel

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): P17
Plot date (if any): 4/21/2015
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

balsam poplar *Populus balsamifera*

Shrub

Himalayan blackberry *Rubus armeniacus*

Herb

reed canary grass *Phalaris arundinacea*

(L) Primary hydrology sources: Bear Creek and surface flow from adjacent pedestrian / bike path.

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Fish habitat

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Bear Creek Greenway wetland from ODOT Salmon Resource and Sensitive Area Mapping survey (SRSAM) in 2004 was confirmed with a sample plot. This wetland extends offsite and connects to W79 (inaccessible). Impenetrable vegetation prevented confirmation of upland exclusion within the riparian vegetation.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W19-A

OFWAM Grouping Code: BCS-7

(B) Wetland Location (Centroid): Lat: 42.2963 Long: -122.850 **Figure Number:** F-76

(C) Location: Tax Lot(s): 381W054800, 381W05B2000, 381W05B1300, 381W052400

T, R, S(s): T38S R01W Section 05, 05B

QQ(s): SENW, SWNW, NESW, NWSW

(D) Wetland Size (acres): 6.75 **(E) Cowardin Class:** PEMCd *Cowardin breakdown if multiple =*

(F) HGM Class: SH

(G) Mapped Soil Units: Coleman loam, Gregory silty clay loam, Medford silty clay loam

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): P20
Plot date (if any): 4/22/2015
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

lamp rush	*Juncus effusus*	neckweed	*Veronica peregrina*
tall fescue	*Schedonorus arundinaceus*	creeping buttercup	*Ranunculus repens*
common spike-rush	*Eleocharis palustris*	clustered field sedge	*Carex praegracilis*
garden bird's-foot-trefoil	*Lotus corniculatus*		

(L) Primary hydrology sources: Groundwater, ditches, adjacent impervious surfaces.

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located over a large area with varying topography. It is fed by groundwater and ditches in some portions. It is connected to W19-B via a culvert under Reed Lane.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W19-B

OFWAM Grouping Code: BCS-7

(B) Wetland Location (Centroid): Lat: 42.2951 Long: -122.851 **Figure Number:** F-76

(C) Location: Tax Lot(s): 381W054800, 381W05B2100, 381W05B2200, 381W05C800

T, R, S(s): T38S R01W Section 05, 05B, 05C

QQ(s): SWNW

(D) Wetland Size (acres): 0.49 **(E) Cowardin Class:** PSS1 *Cowardin breakdown if multiple =*

(F) HGM Class: DCP

(G) Mapped Soil Units: Coleman loam, Gregory silty clay loam

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any): N/A		**Visual date (if any):**	4/22/2015
Method: USACE; WMVC supplement		**Method (if any):**	Observed from parcel to the east.

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree	
balsam poplar	*Populus balsamifera*
Shrub	
Himalayan blackberry	*Rubus armeniacus*
Scouler's willow	*Salix scouleriana*
Herb	
lamp rush	*Juncus effusus*

(L) Primary hydrology sources: Groundwater, W19_A and associated ditches.

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland was inaccessible and viewed from adjacent parcel to the east and from Reed Lane. It is connected to W19-A via a culvert.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W20

OFWAM Grouping Code: BCS-8

(B) Wetland Location (Centroid): Lat: 42.2939 Long: -122.849 **Figure Number:** F-76

(C) Location: Tax Lot(s): 381W054800, 381W05C700, 381W05B1700, 381W05C600, 381W05C500

T, R, S(s): T38S R01W Section 05, 05B, 05C

QQ(s): SENW, NESW

(D) Wetland Size (acres): 3.77 **(E) Cowardin Class:** PEMC *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Gregory silty clay loam

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): P21
Plot date (if any): 4/22/2015
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

common spike-rush	*Eleocharis palustris*	tall fescue	*Schedonorus arundinaceus*
clustered field sedge	*Carex praegracilis*		
creeping buttercup	*Ranunculus repens*		
American deerweed	*Acmispon americanus*		

(L) Primary hydrology sources: Ditch

(N) Locally Significant Wetland Determination: LSW? No **LSW Criteria:** none

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is connected to a ditch along the eastern boundary of the parcel. Could not confirm connection to W19-A. (If connected then it would be an LSW).

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W21

OFWAM Grouping Code: MWC-6

(B) Wetland Location (Centroid): Lat: 42.3649 Long: -122.824 **Figure Number:** F-22, F-23

(C) Location: Tax Lot(s): 371W092600, 371W092700

T, R, S(s): T37S R01W Section 09

QQ(s): NWSE

(D) Wetland Size (acres): 2.06 **(E) Cowardin Class:** PFOd/PABFx *Cowardin breakdown if multiple =* unknown

(F) HGM Class: SV

(G) Mapped Soil Units: Carney clay, Coker clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any):	N/A	**Visual date (if any):**	4/23/2015
Method: USACE; WMVC supplement		**Method (if any):**	Observed from N Foothill Rd.

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

willow	*Salix species*

Herb

broad-leaf cat-tail	*Typha latifolia*
Fuller's teasel	*Dipsacus fullonum*
Himalayan blackberry	*Rubus armeniacus*
lamp rush	*Juncus effusus*

(L) Primary hydrology sources: Pond WA28, and irrigation

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

A culvert was observed under N Foothill Road at the southern extent of the wetland finger. Unable to visually confirm pond WA28 due to upland area obscuring view on west side of N Foothill Road. Connected to W53.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W22

OFWAM Grouping Code: MWC-5

(B) Wetland Location (Centroid): Lat: 42.3877 Long: -122.854 **Figure Number:** F-11

(C) Location: Tax Lot(s): 371W05313

T, R, S(s): T37S R01W Section 05

QQ(s): NWNW

(D) Wetland Size (acres): 1.49 **(E) Cowardin Class:** PEMC *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Coker claym, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A
Plot date (if any):	N/A
Method: USACE; WMVC supplement	

(M) If no plot - Visually confirmed?	Yes
Visual date (if any):	4/8/2015
Method (if any):	Observed from ajoining fence (east and south sides)

(J) DSL determination / delineation number (if any): Connected to WD2007-0106

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
fescue	*Festuca species*

(L) Primary hydrology sources: None

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Observed from eastern edge of parcel. Identical characteristics to P09 plot / W10 complex. Connected to W10-D and W10-E.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W23

OFWAM Grouping Code: MWC-2

(B) Wetland Location (Centroid): Lat: 42.4032 Long: -122.877 **Figure Number:** F-2

(C) Location: Tax Lot(s): 361W31B500, 362W36A102

T, R, S(s): T36S R01W Section 31B, T36S R02W Section 25D, 36A

QQ(s): NWNW, SESE, NENE

(D) Wetland Size (acres): 6.41 **(E) Cowardin Class:** PEMA *Cowardin breakdown if multiple =*

(F) HGM Class: RI

(G) Mapped Soil Units: Cove clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

not field verified

Shrub

Herb

field meadow-foxtail *Alopecurus pratensis* (likely)

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Fish Habitat, Water Quality, Hydrologic Control.

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland incorporates a City of Medford Marsh data point.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W24

OFWAM Grouping Code: MWC-2

(B) Wetland Location (Centroid): Lat: 42.4018 Long: -122.877 **Figure Number:** F-2

(C) Location: Tax Lot(s): 362W36A102

T, R, S(s): T36S R02W Section 36A

QQ(s): NENE

(D) Wetland Size (acres): 0.19 **(E) Cowardin Class:** PEMA *Cowardin breakdown if multiple =*

(F) HGM Class: RI

(G) Mapped Soil Units: Cove clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A

Plot date (if any): N/A

Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No

Visual date (if any):

Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail *Alopecurus pratensis* (likely)

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Fish Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Mapped by the City of Medford as water; however, recent historical imagery does not show inundation, and, therefore, was mapped as a wetland. Connected to W86, the riparian wtland along Swanson Creek, and the water WA12.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W25

OFWAM Grouping Code: MWC-8

(B) Wetland Location (Centroid): Lat: 42.3989 Long: -122.878 **Figure Number:** F-1, F-2, F-6

(C) Location: Tax Lot(s): 362W36A600, 362W36A700

T, R, S(s): T36S R02W Section 36A

QQ(s): SENE

(D) Wetland Size (acres): 7.71 **(E) Cowardin Class:** PEMA *Cowardin breakdown if multiple =*

(F) HGM Class: Flats

(G) Mapped Soil Units: Agate-Winlo complex, Coker clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree
not field verified

Shrub
not field verified

Herb
not field verified

(L) Primary hydrology sources: Ditches and surface flow

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

Wetland of Special Interest for Protection (rare / unique).

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is a vernal pool/wetland mosaic that was not apparent on aerials.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W29

OFWAM Grouping Code: N/A

(B) Wetland Location (Centroid): Lat: 42.3932 Long: -122.875 **Figure Number:** F-6

(C) Location: Tax Lot(s): 361W31C1700

T, R, S(s): T36S R01W Section 31C

QQ(s): NWSW

(D) Wetland Size (acres): 0.19

(E) Cowardin Class: PSS1/PEM

(F) HGM Class: SV

Cowardin breakdown if multiple = unknown

(G) Mapped Soil Units: Coker clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree
not field verified

Shrub
not field verified

Herb
not field verified

(L) Primary hydrology sources: Ditch

(N) Locally Significant Wetland Determination: LSW? N/A **LSW Criteria:** N/A

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).
Mapped by the City of Medford as water; however, this is likely a wetland feature and extends offsite.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W30

OFWAM Grouping Code: N/A

(B) Wetland Location (Centroid): Lat: 42.3932 Long: -122.875 **Figure Number:** F-6

(C) Location: Tax Lot(s): 361W31C1700

T, R, S(s): T36S R01W Section 31C

QQ(s): NWSW

(D) Wetland Size (acres): 0.14

(E) Cowardin Class: PEMB

(F) HGM Class: SV

Cowardin breakdown if multiple =

(G) Mapped Soil Units: Coker clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree
not field verified

Shrub
not field verified

Herb
not field verified

(L) Primary hydrology sources: Ditch and surface flow

(N) Locally Significant Wetland Determination: LSW? N/A **LSW Criteria:** N/A

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland incorporates a City of Medford Marsh data point

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W31

OFWAM Grouping Code: MWC-9

(B) Wetland Location (Centroid): Lat: 42.3923 Long: -122.869 **Figure Number:** F-7

(C) Location: Tax Lot(s): 361W31C2500, 361W31C2400, 361W31C2300, 361W31C2900, 361W31C3100, 361W31C30(

T, R, S(s): T36S R01W Section 31C

QQ(s): NESW, SESW

(D) Wetland Size (acres): 0.52 **(E) Cowardin Class:** PEMA *Cowardin breakdown if multiple =*

(F) HGM Class: RI

(G) Mapped Soil Units: Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? Yes
Visual date (if any): 4/7/2015
Method (if any): Observed from Peace Lane to the west

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

lamp rush	*Juncus effusus*	(likely)

(L) Primary hydrology sources: Ditch

(N) Locally Significant Wetland Determination: LSW? No **LSW Criteria:** none

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Wetland was inaccessible, however Juncus sp. (rush) was observed from Peace Lane.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W32

OFWAM Grouping Code: N/A

(B) Wetland Location (Centroid): Lat: 42.3920 Long: -122.866 **Figure Number:** F-7

(C) Location: Tax Lot(s): 361W31C2400, 361W31C3100

T, R, S(s): T36S R01W Section 31C

QQ(s): SESW

(D) Wetland Size (acres): 0.49 **(E) Cowardin Class:** PEMA *Cowardin breakdown if multiple =*

(F) HGM Class: Flats

(G) Mapped Soil Units: Padigan clay, Phoenix clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): WD2012-0181

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail *Alopecurus pratensis* (likely)

(L) Primary hydrology sources: Surface flow, and potentially ditch.

(N) Locally Significant Wetland Determination: LSW? N/A **LSW Criteria:** N/A

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland may connect offsite to an existing county-mapped wetland.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W33

OFWAM Grouping Code: N/A

(B) Wetland Location (Centroid): Lat: 42.4011 Long: -122.867 **Figure Number:** F-3

(C) Location: Tax Lot(s): 361W31B1800

T, R, S(s): T36S R01W Section 31B

QQ(s): NENW

(D) Wetland Size (acres): 0.14 **(E) Cowardin Class:** PUBFx *Cowardin breakdown if multiple =*

(F) HGM Class: Flats

(G) Mapped Soil Units: Coker clay, Cove clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail *Alopecurus pratensis* (likley)

(L) Primary hydrology sources: None

(N) Locally Significant Wetland Determination: LSW? N/A **LSW Criteria:**

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

NWI mapped a waterbody at this location; however, recent historical imagery does not show inundation, and, therefore, was mapped as a wetland.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W34

OFWAM Grouping Code: MWC-2

(B) Wetland Location (Centroid): Lat: 42.3979 Long: -122.866 **Figure Number:** F-3

(C) Location: Tax Lot(s): 361W31B2600

T, R, S(s): T36S R01W Section 31B

QQ(s): SENW

(D) Wetland Size (acres): 0.41 **(E) Cowardin Class:** PSS1F *Cowardin breakdown if multiple =*

(F) HGM Class: RFT

(G) Mapped Soil Units: Cove clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any):	N/A	**Visual date (if any):**	4/8/2015
Method: USACE; WMVC supplement		**Method (if any):**	Observed from road to the east

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree	
balsam poplar	*Populus balsamifera*
Oregon ash	*Fraxinus latifolia*
Shrub	
willow	*Salix species*
Himalayan blackberry	*Rubus armeniacus*
Herb	
not field verified	

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** All four criteria (Wildlife, Habitat, Water Quality, Hydrologic Control)

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Swanson Creek riparian wetland, closely associated with W35. Dominant species based on observations south of the sample plot P04.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W35

OFWAM Grouping Code: MWC-2

(B) Wetland Location (Centroid): Lat: 42.3982 Long: -122.867 **Figure Number:** F-3

(C) Location: Tax Lot(s): 361W31B2500

T, R, S(s): T36S R01W Section 31B

QQ(s): SENW

(D) Wetland Size (acres): 0.66 **(E) Cowardin Class:** PSS1F *Cowardin breakdown if multiple =*

(F) HGM Class: RFT

(G) Mapped Soil Units: Cove clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any): N/A		**Visual date (if any):**	4/8/2015
Method: USACE; WMVC supplement		**Method (if any):**	Observed from road to the east

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree			
balsam poplar	*Populus balsamifera*		
Oregon ash	*Fraxinus latifolia*		
Shrub			
black hawthorn	*Crataegus douglasii*	willow	*Salix species*
Himalayan blackberry	*Rubus armeniacus*		
Herb			
field meadow-foxtail	*Alopecurus pratensis*		

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** All four criteria (Wildlife, Habitat, Water Quality, Hydrologic Control)

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Swanson Creek riparian wetland, closely associated with W34. Dominant species based on observations south of the sample plot P04.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W36

OFWAM Grouping Code: MWC-1

(B) Wetland Location (Centroid): Lat: 42.3932 Long: -122.863 **Figure Number:** F-8

(C) Location: Tax Lot(s): 361W31D1800, 361W31D1700

T, R, S(s): T36S R01W Section 31D

QQ(s): NWSE

(D) Wetland Size (acres): 0.28 **(E) Cowardin Class:** PEMCx *Cowardin breakdown if multiple =*

(F) HGM Class: RI

(G) Mapped Soil Units: Coker clay, Phoenix clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any):	N/A	**Visual date (if any):**	4/7/2015
Method: USACE; WMVC supplement		**Method (if any):**	Site walk through

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail	*Alopecurus pratensis*
Fuller's teasel	*Dipsacus fullonum*

(L) Primary hydrology sources: Surface flow and ditch.

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland incorporates a City of Medford Marsh data point. Plots P05 and P26 in the adjacent W04-A wetland are representative.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W37

OFWAM Grouping Code: N/A

(B) Wetland Location (Centroid): Lat: 42.3998 Long: -122.864 **Figure Number:** F-4

(C) Location: Tax Lot(s): 361W31A900

T, R, S(s): T36S R01W Section 31A

QQ(s): SWNE

(D) Wetland Size (acres): 0.12 **(E) Cowardin Class:** PSS1C *Cowardin breakdown if multiple =*

(F) HGM Class: LFV

(G) Mapped Soil Units: Coker clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree
not field verified

Shrub
not field verified

Herb
not field verified

(L) Primary hydrology sources: WA13

(N) Locally Significant Wetland Determination: LSW? N/A **LSW Criteria:** N/A

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).
This wetland is located on the west bank of waterbody WA13.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W38

OFWAM Grouping Code: MWC-3

(B) Wetland Location (Centroid): Lat: 42.4033 Long: -122.863 **Figure Number:** F-4

(C) Location: Tax Lot(s): 361W31A200

T, R, S(s): T36S R01W Section 30D, 31A

QQ(s): SWSE, NWNE, NENE

(D) Wetland Size (acres): 5.90 **(E) Cowardin Class:** PEMCd *Cowardin breakdown if multiple =*

(F) HGM Class: RFT / SV

(G) Mapped Soil Units: Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any):	4/7/2015	**Visual date (if any):**	4/7/2015
Method: USACE; WMVC supplement		**Method (if any):**	Observed from Peace Lane and west edge of W07

(J) DSL determination / delineation number (if any): WD2012-0181 on very western extent

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail *Alopecurus pratensis*
lamp rush *Juncus effusus*

(L) Primary hydrology sources: Ditches and surace flow

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Water Quality

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This area was labelled by the City of Medford as "marsh". Mapped area incorporates DSL wetland delineation data polygon at the west end of the City of Medford data. Visual confirmation was made from a distance. Connected to W07 to the east on Figures F-4 and F-5.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W39-A

OFWAM Grouping Code: MWC-4

(B) Wetland Location (Centroid): Lat: 42.3940 Long: -122.848 **Figure Number:** F-10

(C) Location: Tax Lot(s): 361W32C100

T, R, S(s): T36S R01W Section 32C

QQ(s): NESW, NWSE

(D) Wetland Size (acres): 3.61 **(E) Cowardin Class:** PSS1/PEM

(F) HGM Class: RFT / SV

Cowardin breakdown if multiple = PSS: 90% PEM: 10%

(G) Mapped Soil Units: Coker clay, Cove clay, Padigan clay, Phoenix clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any): N/A		**Visual date (if any):**	4/8/2015
Method: USACE; WMVC supplement		**Method (if any):**	Visually confirmed W39-B which is connected (E).

(J) DSL determination / delineation number (if any): WD2009-0470

(K) Dominant Vegetation (Common and Scientific Name)

Tree	
Oregon ash	*Fraxinus latifolia*
Shrub	
willow	*Salix species*
Herb	
spreading rush	*Juncus patens*
field meadow-foxtail	*Alopecurus pratensis*
clustered field sedge	*Carex praegracilis*
spreading bent	*Agrostis stolonifera*

(L) Primary hydrology sources: Swanson Creek and surface flow

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Riparian vegetation along banks of Swanson Creek. Connected to W08 and W09.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W39-B

OFWAM Grouping Code: MWC-4

(B) Wetland Location (Centroid): Lat: 42.3925 Long: -122.847 **Figure Number:** F-10, F-12

(C) Location: Tax Lot(s): 361W32C2400, 361W32C100

T, R, S(s): T36S R01W Section 32, 32C

QQ(s): SWSE, NESW, SESW

(D) Wetland Size (acres): 0.97 **(E) Cowardin Class:** PSS1F *Cowardin breakdown if multiple =*

(F) HGM Class: RFT

(G) Mapped Soil Units: Cove clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any): N/A		**Visual date (if any):**	4/8/2015
Method: USACE; WMVC supplement		**Method (if any):**	Swanson creek crossed during site visit.

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree	
Oregon ash	*Fraxinus latifolia*
willow	*Salix species*
Shrub	
none	
Herb	
clustered field sedge	*Carex praegracilis*
spreading rush	*Juncus patens*

(L) Primary hydrology sources: Swanson creek and surface flow

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Swanson Creek riparian wetland, dominated by Salix sp. (willow) and Fraxinus latifolia (ash). Connected to W41.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W40

OFWAM Grouping Code: MWC-4

(B) Wetland Location (Centroid): Lat: 42.3950 Long: -122.850 **Figure Number:** F-10

(C) Location: Tax Lot(s): 361W32C100

T, R, S(s): T36S R01W Section 32C

QQ(s): NWSW, NESW

(D) Wetland Size (acres): 0.29 **(E) Cowardin Class:** PEMB *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A

Plot date (if any): N/A

Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No

Visual date (if any):

Method (if any):

(J) DSL determination / delineation number (if any): WD2009-0470

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail *Alopecurus pratensis* (likely)

(L) Primary hydrology sources: Ditch

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

<0.5 acre area was mapped using DSL wetland delineation data. It is potentially connected to W09 via a ditch.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W41

OFWAM Grouping Code: MWC-4

(B) Wetland Location (Centroid): Lat: 42.3939 Long: -122.852 **Figure Number:** F-9, F-10

(C) Location: Tax Lot(s): 361W32C500, 361W32C100

T, R, S(s): T36S R01W Section 32C

QQ(s): NWSW, NESW

(D) Wetland Size (acres): 1.80 **(E) Cowardin Class:** PSSF *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Coker clay, Cove clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Oregon ash *Fraxinus latifolia*

Shrub

willow *Salix species*

Herb

not field verified

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is a part of the Swanson Creek riparian wetland complex. Connected to W39-B and W43.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W42

OFWAM Grouping Code: MWC-4

(B) Wetland Location (Centroid): Lat: 42.3946 Long: -122.852 **Figure Number:** F-9, F-10

(C) Location: Tax Lot(s): 361W32C500

T, R, S(s): T36S R01W Section 32C

QQ(s): NWSW

(D) Wetland Size (acres): 0.58 **(E) Cowardin Class:** PEMCh *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A

Plot date (if any): N/A

Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No

Visual date (if any):

Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail *Alopecurus pratensis* (likely)

(L) Primary hydrology sources: Surface flow

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located north of the Swanson Creek riparian corridor and is connected hydrologically by surface flow.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W43

OFWAM Grouping Code: MWC-4

(B) Wetland Location (Centroid): Lat: 42.3933 Long: -122.853 **Figure Number:** F-9

(C) Location: Tax Lot(s): 361W32C500

T, R, S(s): T36S R01W Section 32C

QQ(s): NWSW

(D) Wetland Size (acres): 0.63 **(E) Cowardin Class:** PSS1B *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree
not field verified

Shrub
not field verified

Herb
not field verified

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located south of the Swanson Creek riparian corridor and directly abuts W41 PSS wetland.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W44

OFWAM Grouping Code: N/A

(B) Wetland Location (Centroid): Lat: 42.3903 Long: -122.852 **Figure Number:** F-11

(C) Location: Tax Lot(s): 361W32C1700

T, R, S(s): T36S R01W Section 32C

QQ(s): SWSW

(D) Wetland Size (acres): 0.15 **(E) Cowardin Class:** PEMC *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

not field verified

(L) Primary hydrology sources: None

(N) Locally Significant Wetland Determination: LSW? N/A **LSW Criteria:** N/A

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This isolated wetland is located in a pasture.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W45

OFWAM Grouping Code: N/A

(B) Wetland Location (Centroid): Lat: 42.3893 Long: -122.853 **Figure Number:** F-11

(C) Location: Tax Lot(s): 361W32C1600, 361W32C1700

T, R, S(s): T36S R01W Section 32C

QQ(s): SWSW

(D) Wetland Size (acres): 0.16 **(E) Cowardin Class:** PEMCx *Cowardin breakdown if multiple =*

(F) HGM Class: RI

(G) Mapped Soil Units: Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

not field verified

(L) Primary hydrology sources: Ditch

(N) Locally Significant Wetland Determination: LSW? N/A **LSW Criteria:** N/A

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This isolated wetland is located on a ditch line. Mapping data was derived from ODOT SRSAM survey in 2004.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W46

OFWAM Grouping Code: MWC-6

(B) Wetland Location (Centroid): Lat: 42.3683 Long: -122.845 **Figure Number:** F-19

(C) Location: Tax Lot(s): 371W08800

T, R, S(s): T37S R01W Section 08

QQ(s): SWNE

(D) Wetland Size (acres): 1.34 **(E) Cowardin Class:** PABHh *Cowardin breakdown if multiple =*

(F) HGM Class: DO

(G) Mapped Soil Units: Coker clay, Padigan clay, Water

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree
not field verified

Shrub
not field verified

Herb
not field verified

(L) Primary hydrology sources: WA14, and ditch line

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located at the headwaters of Midway Creek (Upton Slough) and Swanson Creek, on the banks of WA14 pond inside converging arms of Hopkins Canal. Connected to W48.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W47

OFWAM Grouping Code: MWC-6

(B) Wetland Location (Centroid): Lat: 42.3685 Long: -122.837 **Figure Number:** F-16, F-17, F-20, F-21

(C) Location: Tax Lot(s): 371W081000, 371W092600, 371W09900

T, R, S(s): T37S R01W Section 08, 09

QQ(s): SENE, SWNW, NWSW

(D) Wetland Size (acres): 5.74 **(E) Cowardin Class:** PEMBd *Cowardin breakdown if multiple =*

(F) HGM Class: RFT

(G) Mapped Soil Units: Carney clay, Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

none

Shrub

not field verified

Herb

not field verified

(L) Primary hydrology sources: Ditches, streams, potential groundwater.

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located at the headwaters of Midway Creek (Upton Slough) and Swanson Creek. It connects to PSS dominated W49.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W48

OFWAM Grouping Code: MWC-6

(B) Wetland Location (Centroid): Lat: 42.3686 Long: -122.844 **Figure Number:** F-19

(C) Location: Tax Lot(s): 371W08900

T, R, S(s): T37S R01W Section 08

QQ(s): SWNE

(D) Wetland Size (acres): 0.39 **(E) Cowardin Class:** PSSC1h *Cowardin breakdown if multiple =*

(F) HGM Class: RFT

(G) Mapped Soil Units: Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree
not field verified

Shrub
not field verified

Herb
not field verified

(L) Primary hydrology sources: Ditch and upslope wetlands

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located at the headwaters of Midway Creek (Upton Slough) and Swanson Creek and upstream of WA14. It is connected directly to W46 and mapped based on NWI data.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W49

OFWAM Grouping Code: MWC-6

(B) Wetland Location (Centroid): Lat: 42.3696 Long: -122.837 **Figure Number:** F-16, F-19, F-20

(C) Location: Tax Lot(s): 371W08900, 371W081000, 371W09800, 371W09900

T, R, S(s): T37S R01W Section 08, 09

QQ(s): SWNW, SWNE, SENE, L1, NWNW

(D) Wetland Size (acres): 6.96 **(E) Cowardin Class:** PSS1Cd/PEMC *Cowardin breakdown if multiple =*

(F) HGM Class: RFT PSS: 80% PEM: 20%

(G) Mapped Soil Units: Carney clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

not field verified

Shrub

willow *Salix species*

Herb

not field verified

(L) Primary hydrology sources: Stream

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is potentially fed by nearby leaking pond and is connected to PEM W47.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W50

OFWAM Grouping Code: MWC-6

(B) Wetland Location (Centroid): Lat: 42.3715 Long: -122.840 **Figure Number:** F-16, F-19

(C) Location: Tax Lot(s): 371W08100, 371W081000

T, R, S(s): T37S R01W Section 08

QQ(s): NENE, SENE

(D) Wetland Size (acres): 2.04

(E) Cowardin Class: PUBHx/PSS1Bh

(F) HGM Class: SV

Cowardin breakdown if multiple = PUB: 50% PSS: 50%

(G) Mapped Soil Units: Carney clay, Coker clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? Yes
Visual date (if any): 4/8/2015
Method (if any): Observed from Coker Butte road and parcel to the east

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree
not field verified

Shrub
not field verified

Herb
not field verified

(L) Primary hydrology sources: Wetland is on banks of irrigation pond AW13, and is connected to wetland complex to the south by mapped ditch.

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).
NWI polygon re-sketched using offsite observation and desktop analysis. This wetland abuts W51 and is surrounded by former orchard.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W51

OFWAM Grouping Code: MWC-6

(B) Wetland Location (Centroid): Lat: 42.3709 Long: -122.841 **Figure Number:** F-16, F-19

(C) Location: Tax Lot(s): 371W081000, 371W08100, 371W08900

T, R, S(s): T37S R01W Section 08

QQ(s): NENE, SWNE, SENE

(D) Wetland Size (acres): 0.52 **(E) Cowardin Class:** PSS1Bh/PEMB *Cowardin breakdown if multiple =* PSS: 90% PEM: 10%

(F) HGM Class: SV

(G) Mapped Soil Units: Carney clay, Coker clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any): N/A		**Visual date (if any):**	4/8/2015
Method: USACE; WMVC supplement		**Method (if any):**	Observed from Coker Butte road and parcel to the east

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

not field verified

Herb

not field verified

(L) Primary hydrology sources: Potentially fed by leaking irrigation pond (AW13)

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

NWI mapped feature adjoins W50 and is adjacent to irrigation pond and former orchards.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W53

OFWAM Grouping Code: MWC-6

(B) Wetland Location (Centroid): Lat: 42.3658 Long: -122.824 **Figure Number:** F-22

(C) Location: Tax Lot(s): 371W092600

T, R, S(s): T37S R01W Section 09

QQ(s): NWSE

(D) Wetland Size (acres): 1.18 **(E) Cowardin Class:** PEMBd *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Carney clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any):	N/A	**Visual date (if any):**	4/23/2015
Method: USACE; WMVC supplement		**Method (if any):**	Observed from N Foothill Road

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

not field verified

Shrub

not field verified

Herb

broad-leaf cat-tail	*Typha latifolia*
Fuller's teasel	*Dipsacus fullonum*

(L) Primary hydrology sources: Potential downslope flow from irrigation canal located <300 feet east of the wetland and N Foothill road.

Surface flow from N Foothill road, and mapped ditches.

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located on the western foothill slope of Coker Butte, west of N Foothill Road. The upland area is dominated by oaks, which are visible on aerial imagery. Teasel (Dipsacus fullonum) is dominant in the area and also creates a distinctive visual signature on aerial imagery. There are mapped ditches throughout.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W54

OFWAM Grouping Code: MWC-6

(B) Wetland Location (Centroid): Lat: 42.3656 Long: -122.827 **Figure Number:** F-21, F-22

(C) Location: Tax Lot(s): 371W092600

T, R, S(s): T37S R01W Section 09

QQ(s): NWSE

(D) Wetland Size (acres): 2.25 **(E) Cowardin Class:** PEMB *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Carney clay, Coker clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any): N/A		**Visual date (if any):**	4/23/2015
Method: USACE; WMVC supplement		**Method (if any):**	Observed from N Foothill Road

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

lamp rush	*Juncus effusus*	(likely)

(L) Primary hydrology sources: Surface flow and potential seep or surface flow from wetland W53 (therefore grouped in to MWC-6 OFWAM assessment unit).

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located in a valley at the base of Coker Butte foothill. Juncus effusus (lamprush) creates distinctive signature on aerials.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W55

OFWAM Grouping Code: MWC-6

(B) Wetland Location (Centroid): Lat: 42.3654 Long: -122.830 **Figure Number:** F-21

(C) Location: Tax Lot(s): 371W092600

T, R, S(s): T37S R01W Section 09

QQ(s): NESW

(D) Wetland Size (acres): 0.51 **(E) Cowardin Class:** PEMBd

(F) HGM Class: SV

Cowardin breakdown if multiple =

(G) Mapped Soil Units: Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

lamp rush	*Juncus effusus*	(likely)

(L) Primary hydrology sources: Ditching from W21 and W53 to the east (therefore included in WMC-6 OFWAM assessment unit)

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located in a valley at the base of Coker Butte foothill. Juncus effusus (lamprush) creates distinctive signature on aerials.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W56

OFWAM Grouping Code: MWC-6

(B) Wetland Location (Centroid): Lat: 42.3662 Long: -122.831 **Figure Number:** F-21

(C) Location: Tax Lot(s): 371W092600

T, R, S(s): T37S R01W Section 09

QQ(s): NWSW, NESW

(D) Wetland Size (acres): 1.87 **(E) Cowardin Class:** PEMBd *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Carney clay, Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

lamp rush	*Juncus effusus*	(likely)

(L) Primary hydrology sources: Surface flow and ditches, connecting to adjacent wetlands (therefore included in MWC-6 OFWAM assessment unit)

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located in a valley at the base of Coker Butte foothill. Juncus effusus (lamprush) creates distinctive signature on aerials.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W57

OFWAM Grouping Code: MWC-6

(B) Wetland Location (Centroid): Lat: 42.3651 Long: -122.831 **Figure Number:** F-21

(C) Location: Tax Lot(s): 371W092600

T, R, S(s): T37S R01W Section 09

QQ(s): NWSW, NESW

(D) Wetland Size (acres): 0.65 **(E) Cowardin Class:** PEMBd *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Carney clay, Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

not field verified

Herb

lamp rush	*Juncus effusus*	(likely)

(L) Primary hydrology sources: Surface flow and mapped ditches. Therefore included in MWC-6 OFWAM assessment unit.

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located in a valley at the base of Coker Butte foothill. Juncus effusus (lamprush) creates distinctive signature on aerials.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W61

OFWAM Grouping Code: LPC-1

(B) Wetland Location (Centroid): Lat: 42.3368 Long: -122.819 **Figure Number:** F-50

(C) Location: Tax Lot(s): 371W21A1400, 371W22500

T, R, S(s): T37S R01W Section 21A, 21D

QQ(s): NESE

(D) Wetland Size (acres): 1.83

(E) Cowardin Class: PEMh/PSSh

(F) HGM Class: RI

Cowardin breakdown if multiple = PEM: 90% PSS: 10%

(G) Mapped Soil Units: Coker clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

willow Salix species (likely)

Herb

not field verified

(L) Primary hydrology sources: Irrigation canal, and other irrigation ditches

(N) Locally Significant Wetland Determination: LSW? No **LSW Criteria:** none

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

A small PSS component, likely with Salix sp. (willow), exists within this wetland. It is surrounded by intensive agriculture, orchards and pasture. Connected to the Phoenix Canal.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W62

OFWAM Grouping Code: LSC-4

(B) Wetland Location (Centroid): Lat: 42.3206 Long: -122.796 **Figure Number:** F-56

(C) Location: Tax Lot(s): 371W26103, 371W26105

T, R, S(s): T37S R01W Section 26

QQ(s): NWSW, SWSW

(D) Wetland Size (acres): 0.72 **(E) Cowardin Class:** PSS1d *Cowardin breakdown if multiple =*

(F) HGM Class: RFT

(G) Mapped Soil Units: Carney clay, Coker clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): N/A

Plot date (if any): N/A

Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No

Visual date (if any):

Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

not field verified

Shrub

not field verified

Herb

not field verified

(L) Primary hydrology sources: Drainage line

(N) Locally Significant Wetland Determination: LSW? No **LSW Criteria:** None

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is likely dominated by Salix sp. (willow).

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W63

OFWAM Grouping Code: LSC-3

(B) Wetland Location (Centroid): Lat: 42.3185 Long: -122.786 **Figure Number:** F-57

(C) Location: Tax Lot(s): 371W26104

T, R, S(s): T37S R01W Section 26

QQ(s): SWSE

(D) Wetland Size (acres): 2.31 **(E) Cowardin Class:** PEMBh

(F) HGM Class: RI

Cowardin breakdown if multiple =

(G) Mapped Soil Units: Carney clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): N/A

Plot date (if any): N/A

Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No

Visual date (if any):

Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

not field verified

Herb

not field verified

(L) Primary hydrology sources: East Lateral Canal

(N) Locally Significant Wetland Determination: LSW? No **LSW Criteria:** None

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located between Mud Creek and the East Lateral Irrigation Canal. The persistent signature that is visible on historical aerial imagery suggests the hydrology source may be leakage from the canal and not from overflow from the intermittent Mud Creek. Some willows were observed in the riparian corridor of Mud Creek (likely Salix exigua, viewed from E Barnett Avenue); however, aerial imagery suggests its distribution is limited; therefore, there is low likelihood of a PSS wetland existing here.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W64

OFWAM Grouping Code: LSC-3

(B) Wetland Location (Centroid): Lat: 42.3176 Long: -122.788 **Figure Number:** F-57, F-62

(C) Location: Tax Lot(s): 371W26104

T, R, S(s): T37S R01W Section 26

QQ(s): SESW, SWSE

(D) Wetland Size (acres): 5.19 **(E) Cowardin Class:** PEMBh *Cowardin breakdown if multiple =*

(F) HGM Class: RI

(G) Mapped Soil Units: Carney clay, Carney cobbly clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree
not field verified

Shrub
not field verified

Herb
not field verified

(L) Primary hydrology sources: East Lateral Canal

(N) Locally Significant Wetland Determination: LSW? No **LSW Criteria:** None

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Some willows were observed in the riparian corridor of Mud Creek (likely Salix exigua (narrow-leaf willow), viewed from E Barnett Avenue); however, aerial imagery suggests its distribution is limited; therefore, there is low likelihood of a PSS wetland existing here.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W66

OFWAM Grouping Code: BCS-2

(B) Wetland Location (Centroid): Lat: 42.3074 Long: -122.791 **Figure Number:** F-66

(C) Location: Tax Lot(s): 371W35126

T, R, S(s): T37S R01W Section 35

QQ(s): NWSW, NESW

(D) Wetland Size (acres): 0.79 **(E) Cowardin Class:** PEMCd *Cowardin breakdown if multiple =*

(F) HGM Class: RFT

(G) Mapped Soil Units: Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any): 4/8/2015
Method (if any): Not clearly observed from Santa Barbara Drive (wetland W13 was obvious)

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

none

Shrub

none

Herb

field meadow-foxtail *Alopecurus pratensis*

(L) Primary hydrology sources: Flood irrigation run-off from East Lateral Canal

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Within 1/4 mile of Larson Creek (water quality limited stream)

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located in a valley. No obvious wetland signature was observed from the adjacent road; however, this NWI mapped feature has been retained. It is near W13 and connected to Larson Reservoir (AW.)

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W68

OFWAM Grouping Code: BCS-3

(B) Wetland Location (Centroid): Lat: 42.3035 Long: -122.794 **Figure Number:** F-66

(C) Location: Tax Lot(s): 371W35602

T, R, S(s): T37S R01W Section 35

QQ(s): L 4

(D) Wetland Size (acres): 0.73 **(E) Cowardin Class:** PEMB *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Brader-Debenger, Carney clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): N/A

Plot date (if any): N/A

Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No

Visual date (if any):

Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

not field verified

Shrub

not field verified

Herb

not field verified

(L) Primary hydrology sources: Groundwater or precipitation

(N) Locally Significant Wetland Determination: LSW? No **LSW Criteria:** none

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located on a residential parcel, potentially fed by pond leakage from AW22. Obvious flow line to south connects this wetland to a Bear Creek tributary. No obvious active adjoining agriculture. Likely presence of oaks on site.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W69

OFWAM Grouping Code: N/A

(B) Wetland Location (Centroid): Lat: 42.3039 Long: -122.804 **Figure Number:** F-68

(C) Location: Tax Lot(s): 371W344102

T, R, S(s): T37S R01W Section 34

QQ(s): L 12

(D) Wetland Size (acres): 0.16 **(E) Cowardin Class:** PUBFx *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Brader-Debenger

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

none

Shrub

none

Herb

field meadow-foxtail *Alopecurus pratensis* (likely)

(L) Primary hydrology sources: Precipitation

(N) Locally Significant Wetland Determination: LSW? N/A **LSW Criteria:** N/A

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland was mapped using NWI data. A faint signature was present in the mown field.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W70

OFWAM Grouping Code: BCS-4

(B) Wetland Location (Centroid): Lat: 42.2922 Long: -122.823 **Figure Number:** F-74

(C) Location: Tax Lot(s): 381W04400, 381W04501

T, R, S(s): T38S R01W Section 04

QQ(s): NWSE

(D) Wetland Size (acres): 2.32 **(E) Cowardin Class:** PSS1Cd *Cowardin breakdown if multiple =*

(F) HGM Class: RI

(G) Mapped Soil Units: Darow silty clay loam, Medford silty clay loam, Padigan clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? Yes
Visual date (if any): 4/20/2015
Method (if any): Observed from golf course to the north, near AW27 pond

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

not field verified

Shrub

Willow species *Salix species*

Herb

not field verified

(L) Primary hydrology sources: Ditch inflow

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This NWI mapped feature is located east of I-5 in flood irrigated pasture, with extensive ditching throughout. Feature connects to WA08 and WA22.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W71

OFWAM Grouping Code: BCS-4

(B) Wetland Location (Centroid): Lat: 42.2917 Long: -122.825 **Figure Number:** F-74

(C) Location: Tax Lot(s): 381W04400

T, R, S(s): T38S R01W Section 04

QQ(s): NWSE, SWSE

(D) Wetland Size (acres): 2.51 **(E) Cowardin Class:** PEMC *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Darow silty clay loam, Medford silty clay loam, Padigan clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

not field verified

Herb

field meadow-foxtail *Alopecurus pratensis* (likely)

(L) Primary hydrology sources: Flood irrigation runoff

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is located on the southwest edge of a flood irrigated field which has extensive ditching throughout. Limited outlet exists due to I-5 bordering the western edge. SWCA edited polygon from ODOT SRSAM survey in 2004 to omit WA08 waterbody. Connected to W72.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W72

OFWAM Grouping Code: BCS-4

(B) Wetland Location (Centroid): Lat: 42.2926 Long: -122.827 **Figure Number:** F-74

(C) Location: Tax Lot(s): 381W04400

T, R, S(s): T38S R01W Section 04

QQ(s): NESW, NWSE

(D) Wetland Size (acres): 2.28 **(E) Cowardin Class:** PEMC *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Medford silty clay loam, Padigan clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

balsam poplar *Populus balsamifera*

Shrub

willow *Salix species*

Herb

not field verified

(L) Primary hydrology sources: Flood irrigation runoff

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland is from NWI map data and is located east of the I-5 corridor. It is interconnected with W71 (polygon from ODOT SRSAM 2004 survey) and is adjoined to WA23 and WA24. Salix sp. and Populus sp. (cottonwood) observed generally to the south from the golf course. Connected to W71.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W73

OFWAM Grouping Code: N/A

(B) Wetland Location (Centroid): Lat: 42.2937 Long: -122.826 **Figure Number:** F-74

(C) Location: Tax Lot(s): 381W04400

T, R, S(s): T38S R01W Section 04

QQ(s): NESW

(D) Wetland Size (acres): 0.35 **(E) Cowardin Class:** PEMC *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Brader-Debenger, Padigan clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

none

Shrub

Herb

field meadow-foxtail *Alopecurus pratensis* (likely)

(L) Primary hydrology sources: None

(N) Locally Significant Wetland Determination: LSW? N/A **LSW Criteria:** N/A

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This is a small NWI wetland included in the BSC-4 OFWAM assessment unit as it is potentially connected to W74, W71, WA23, WA24 via surface flow of flood irrigation runoff. Ground truthing would be helpful at this location. Faint aerial signature was observed. Excluded from OFWAM because <0.5 acre.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W74

OFWAM Grouping Code: BCS-4

(B) Wetland Location (Centroid): Lat: 42.2950 Long: -122.826 **Figure Number:** F-72, F-74

(C) Location: Tax Lot(s): 381W04400

T, R, S(s): T38S R01W Section 04

QQ(s): SWNE, NESW, NWSE

(D) Wetland Size (acres): 5.83 **(E) Cowardin Class:** PEMC *Cowardin breakdown if multiple =*

(F) HGM Class: SV

(G) Mapped Soil Units: Brader-Debenger, Coker clay, Padigan clay

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Herb

field meadow-foxtail *Alopecurus pratensis* (likely)

(L) Primary hydrology sources: Groundwater, ditch / water body inflow.

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This NWI wetland is located in a pasture and is connected to a ditch that runs along the southern edge of the parcel. It has potential for connection to WA25 to the east. It has outflow to the west via a ditch.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W79

OFWAM Grouping Code: BCS-5

(B) Wetland Location (Centroid): Lat: 42.2897 Long: -122.826 **Figure Number:** F-74

(C) Location: Tax Lot(s): 381W04401

T, R, S(s): T38S R01W Section 04

QQ(s): NESW, SWSE

(D) Wetland Size (acres): 2.82 **(E) Cowardin Class:** PFO1B/R3UB *Cowardin breakdown if multiple =* unknown

(F) HGM Class: RFT

(G) Mapped Soil Units: Brader-Debenger, Camas-Newberg-Evans, Medford silty clay loam, Pits, gravel

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? Yes
Visual date (if any): 4/21/2015
Method (if any): Observed from pedestrian/bike path on southern edge of feature

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree	
balsam poplar	*Populus balsamifera*
Shrub	
Scouler's willow	*Salix scouleriana*
sessile-leaf willow	*Salix sessilifolia*
Herb	
Himalayan blackberry	*Rubus armeniacus*
reed canary grass	*Phalaris arundinacea*

(L) Primary hydrology sources: Bear Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Fish Habitat

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This riparian wetland along Bear Creek is connected to wetland W18. It was originally delineated by the ODOT SRSAM survey in 2004. Impenetrable riparian and blackberry vegetation prevented collection of a sample plot; however, the wetland was visually confirmed from the southern boundary on the Greenway path.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W81

OFWAM Grouping Code: N/A

(B) Wetland Location (Centroid): Lat: 42.3333 Long: -122.903 **Figure Number:** F-87

(C) Location: Tax Lot(s): 372W234700

T, R, S(s): T37S R02W Section 23

QQ(s): SWSE

(D) Wetland Size (acres): 0.09 **(E) Cowardin Class:** PEMB **(F) HGM Class:** SV

Cowardin breakdown if multiple =

(G) Mapped Soil Units: Coleman loam, Gregory silty clay loam, Medford silty clay loam

(H) Watershed Boundary (6th Field HUC): Larson Creek-Bear Creek

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree
not field verified

Shrub
not field verified

Herb
not field verified

(L) Primary hydrology sources: Runoff

(N) Locally Significant Wetland Determination: LSW? N/A **LSW Criteria:** N/A

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This wetland polygon was derived from City of Medford Hydrography data and is labelled as a storm water management feature. This feature was not visible from vantage point on Maple Park Drive.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W82

OFWAM Grouping Code: MWC-2

(B) Wetland Location (Centroid): Lat: 42.4019 Long: -122.881 **Figure Number:** F-1, F-2

(C) Location: Tax Lot(s): 362W36A102, 362W36A103, 362W36A100, 362W36A104

T, R, S(s): T36S R02W Section 36A

QQ(s): NWNE, NENE

(D) Wetland Size (acres): 37.15 **(E) Cowardin Class:** PEMA *Cowardin breakdown if multiple =*

(F) HGM Class: Flats

(G) Mapped Soil Units: Agate-Winlo complex, Cove clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? Yes
Visual date (if any): 4/22/2015
Method (if any): Vernal pool characteristics observed from dirt road along southern edge

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

oak *Quercus species* (likely)

Shrub

Herb

field meadow-foxtail *Alopecurus pratensis* (likely)
not field verified

(L) Primary hydrology sources: Precipitation

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Fish Habitat, Water Quality, Hydrologic Control

Wetland of Special Interest for Protection (rare / unique).

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Vernal pool/wetland mosaic mapped by the Agate Desert Vernal Pool Planning Technical Advisory Committee (TAC 2000). The approximate percentage of vernal pools is unknown. SWCA extended the TAC 2000 polygon to the northwest, based on aerial interpretation. This feature crosses into the mapped 100-year floodplain of Swanson Creek. Could not reach landowner at 362W36A104. Two small waters are present within the mapped mosaic - AW10 (man made pond) and WA11 (potentially a natural water).

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W83

OFWAM Grouping Code: MWC-2

(B) Wetland Location (Centroid): Lat: 42.3992 Long: -122.869 **Figure Number:** F-3

(C) Location: Tax Lot(s): 361W31B2300

T, R, S(s): T36S R01W Section 31B

QQ(s): SENW

(D) Wetland Size (acres): 0.04 **(E) Cowardin Class:** PEMC *Cowardin breakdown if multiple =*

(F) HGM Class: RFT

(G) Mapped Soil Units: Cove clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any): N/A
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

willow *Salix species* (likely)
black hawthorn *Crataegus douglasii* (likely)

Herb

not field verified

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Fish Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

This is a component of a conservative desktop delineation of the Swanson Creek riparian corridor wetland. Aerial imagery suggests presence of a road crossing over Swanson Creek to the north. Surrounding land use is disturbed / residential / rural, and pasture. Connected to W84.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W84

OFWAM Grouping Code: MWC-2

(B) Wetland Location (Centroid): Lat: 42.4003 Long: -122.870 **Figure Number:** F-3

(C) Location: Tax Lot(s): 361W31B1700, 361W31B2000, 361W31B2300

T, R, S(s): T36S R01W Section 31B

QQ(s): NENW, SENW

(D) Wetland Size (acres): 0.47

(E) Cowardin Class: PSS1C/PEMC

(F) HGM Class: RFT

Cowardin breakdown if multiple = PSS: ~90% PEM: ~10%

(G) Mapped Soil Units: Cove clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A

Plot date (if any): N/A

Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No

Visual date (if any):

Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Oregon ash *Fraxinus latifolia*

balsam poplar *Populus balsamifera*

Shrub

Himalayan blackberry *Rubus armeniacus*

black hawthorn *Crataegus douglasii*

Herb

not field verified

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Fish Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Riparian wetland along Swanson Creek. The listed dominant vegetation is based on inspection of the corridor near sample plot P04. Connected to W83 and culverted under Peace Lane to W85.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W85

OFWAM Grouping Code: MWC-2

(B) Wetland Location (Centroid): Lat: 42.4016 Long: -122.872 **Figure Number:** F-2, F-3

(C) Location: Tax Lot(s): 361W31B1600, 361W31B1300, 361W31B700

T, R, S(s): T36S R01W Section 31B

QQ(s): NWNW

(D) Wetland Size (acres): 0.71

(E) Cowardin Class: PSS1C/PEMC

(F) HGM Class: RFT

Cowardin breakdown if multiple = PSS: ~90% PEM: ~10%

(G) Mapped Soil Units: Cove clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any):	N/A	**(M) If no plot - Visually confirmed?**	Yes
Plot date (if any): N/A		**Visual date (if any):**	4/8/2015
Method: USACE; WMVC supplement		**Method (if any):**	Small portion observed from Peace Lane to the east.

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree			
Oregon ash	*Fraxinus latifolia*		
balsam poplar	*Populus balsamifera*		
Shrub			
Scouler's willow	*Salix scouleriana*	Himalayan blackberry	*Rubus armeniacus*
black hawthorn	*Crataegus douglasii*		
Herb			
not field verified			

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Fish Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Riparian wetland along Swanson Creek. Listed dominant vegetation is based on inspection of the corridor near sample plot P04. Connected to W84 east of Peace Lane and to W86 to the west.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W86

OFWAM Grouping Code: MWC-2

(B) Wetland Location (Centroid): Lat: 42.4021 Long: -122.876 **Figure Number:** F-2

(C) Location: Tax Lot(s): 361W31B1300, 361W31B700, 361W31B1400, 361W31B1500, 361W31B600, 362W36A102

T, R, S(s): T36S R01W Section 31B, T36S R02W Section 36A

QQ(s): NWNW, NENE

(D) Wetland Size (acres): 1.87

(E) Cowardin Class: PSS1C/PEMC

(F) HGM Class: RFT

Cowardin breakdown if multiple = PSS: ~90% PEM: ~10%

(G) Mapped Soil Units: Cove clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No
Visual date (if any):
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

Scouler's willow	*Salix scouleriana*	black hawthorn	*Crataegus douglasii*	(listed vegetation - likely)
Himalayan blackberry	*Rubus armeniacus*			

Herb

not field verified

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Fish Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Riparian wetland along Swanson Creek. Listed dominant vegetation is based on inspection of the corridor near sample plot P04. The corridor was observed from a distance along the dirt road that borders the southern edge of the vernal pool/wetland mosaic. It connects to the water WA12 and wetland W24 (a PEM offshoot from the creek). Also connected to W85 to the east.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W87

OFWAM Grouping Code: MWC-2

(B) Wetland Location (Centroid): Lat: 42.3960 Long: -122.862 **Figure Number:** F-8

(C) Location: Tax Lot(s): 361W31D1200, 361W31D1300

T, R, S(s): T36S R01W Section 31D

QQ(s): NWSE

(D) Wetland Size (acres): 0.42

(E) Cowardin Class: PEMC/PSS1C

(F) HGM Class: RFT

Cowardin breakdown if multiple = PEM: ~90% PSS: ~10%

(G) Mapped Soil Units: Cove Clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A

Plot date (if any): N/A

Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? No

Visual date (if any):

Method (if any):

(J) DSL determination / delineation number (if any): WD2002-0010

(K) Dominant Vegetation (Common and Scientific Name)

Tree

Shrub

not field verified

Herb

not field verified

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Fish Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Mapped using the DSL wetland delineation data polygon along the disturbed banks of Swanson Creek, where riparian vegetation is largely absent. Surrounding land use is pasture land. Connected to W88 via culvert under fill road in pasture.

MEDFORD URBAN RESERVE LOCAL WETLANDS INVENTORY SUMMARY SHEET

(A) Wetland ID: W88

OFWAM Grouping Code: MWC-2

(B) Wetland Location (Centroid): Lat: 42.3963 Long: -122.860 **Figure Number:** F-8

(C) Location: Tax Lot(s): 361W31D1000, 361W31D900

T, R, S(s): T36S R01W Section 31D

QQ(s): NESE, NWSE, SENE

(D) Wetland Size (acres): 0.35 **(E) Cowardin Class:** PSS1C/PEMC *Cowardin breakdown if multiple =* unknown

(F) HGM Class: RFT

(G) Mapped Soil Units: Cove clay

(H) Watershed Boundary (6th Field HUC): Whetstone Creek-Rogue River

(I) Sample Plot Numbers (if any): N/A
Plot date (if any): N/A
Method: USACE; WMVC supplement

(M) If no plot - Visually confirmed? N/A
Visual date (if any): N/A
Method (if any):

(J) DSL determination / delineation number (if any): N/A

(K) Dominant Vegetation (Common and Scientific Name)

Tree				
Oregon ash	*Fraxinus latifolia*			
balsam poplar	*Populus balsamifera*			
Shrub				
Scouler's willow	*Salix scouleriana*	black hawthorn	*Crataegus douglasii*	(listed vegetation - likely)
Himalayan blackberry	*Rubus armeniacus*			
Herb				

not field verified

(L) Primary hydrology sources: Swanson Creek

(N) Locally Significant Wetland Determination: LSW? Yes **LSW Criteria:** Wildlife Habitat, Fish Habitat, Water Quality, Hydrologic Control

(O) Comments that describe the wetland, including topographic position, land uses and significant alterations (including agricultural).

Riparian wetland along Swanson Creek. Listed dominant vegetation is based on inspection of the corridor near sample plot P04. The adjoining land uses includes pasture and industrial. Connected to W87 via culvert under fill road in pasture.

Appendix E

OFWAM Wetland Characterization Questions, Function Answer Sheets, and Function and Condition Summary Sheets

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OREGON FRESHWATER WETLAND ASSESSMENT METHODOLOGY

APRIL 1996

Oregon

Freshwater Wetland Assessment Methodology

Prepared by:

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Natural Resources Conservation Service

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This manual is published by: Wetlands Program
Oregon Division of State Lands
775 Summer St. NE
Salem, OR 97310

Revised Edition, April 1996

The origins of this manual

The template for this evaluation method, the *Method for the Comparative Evaluation of Nontidal Wetlands in New Hampshire,* was published in 1991 by the New Hampshire Department of Environmental Services. The New Hampshire method was based on a similar method developed by the Connecticut Department of Environmental Protection. The *Oregon Freshwater Wetland Assessment Methodology* uses some of the same wetland functions developed in the previous two publications. A general wetland characterization, a wetlands of special interest for protection category, and sensitivity to impacts and enhancement potential sections have been added. Some functions used in the New Hampshire or Connecticut methodologies have been combined or removed. All were modified to reflect wetland types found in Oregon. The revised edition clarifies and rearranges some questions, directions and answers found in the December 1993 edition.

The methodology was written by an inter-agency group that worked together for two and a half years. The size and make-up of the group fluctuated, but the following people and other representatives from their agencies were authors of various sections:

Emily Roth
Oregon Division of State Lands

Patty Snow
Oregon Department of Fish and Wildlife

Richard Olsen (and **Mike Nixon**)
Oregon Department of Environmental Quality

Richard Sumner
U.S. Environmental Protection Agency, Corvallis

A July 1993 draft of the Oregon Method was field tested in four areas of the state located within Clatsop, Linn, Benton and Deschutes counties and the Portland metropolitan area. In each area, a group of wetlands experts selected an assortment of familiar wetlands. They evaluated the functions of each wetland based upon their best professional judgment. We then brought together a second group of individuals, including community planners and interested community members. They visited some of the same wetlands and conducted an evaluation using the Oregon Method. The results of their evaluation were then compared to those of the expert group. We used the information from the comparison test to refine the final document.

This edition of the *Oregon Freshwater Wetland Assessment Methodology* is a modification of the original. Changes reflect suggestions of numerous users. We appreciate any comments or suggestions you have concerning the methodology. Suggestions will be evaluated and incorporated into future editions.

Submit comments concerning the methodology or requests for additional copies of this manual to:

Wetlands Program
Oregon Division of State Lands
775 Summer St. N.E.
Salem, OR 97310
(503) 378-3805

The development of this methodology was funded in part by a grant from the U.S. Environmental Protection Agency.

The Oregon Method should be cited as follows:

> Roth, E.M., R.D. Olsen, P.L. Snow, and R.R. Sumner. 1993. *Oregon Freshwater Wetland Assessment Methodology.* Ed. by S.G. McCannell. Oregon Division of State Lands. Salem, OR.

Acknowledgments: second edition

The Oregon Freshwater Wetland Methodology had been in use for almost two years, at least two growing seasons, when we started these revisions. Coastal, central, eastern, Willamette Valley, and southern Oregon wetlands were assessed for either wetland inventories or training sessions. We learned that some clarifications needed to be made and responses simplified, but luckily, no one encountered any fatal flaws.

The revisions were made possible due to the invaluable critique and reasonable suggestions from:

- Lisa Heigh, a graduate student at Oregon State University, who put it through a consistency test, using it as a basis for her masters project.
- The consultant community, our main users, who gave feedback on both clarification and scientific value. I would especially like to thank Mirth Walker and Christie Galen of Fishman Environmental Services and John van Staveren of Pacific Habitat Services.
- Richard Sumner, one of the principal authors and grant wizard extraordinaire at EPA's Corvallis laboratory.

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My final thanks goes to the editor, Scott McCannell. As with the original, his patience persisted with my delays, revisions and the contracting process.

Cheers!

Emily Roth
NRCS/Community Resource Conservation Center
March 1996

Acknowledgments: first edition

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Finally, many thanks go to our editor, Scott McCannell of Word Design & Graphics, Inc. His patience with our delays, revisions and then requests for a "rush" to get the draft out may entitle him to "sainthood," or at least a good beer.

Cheers!

Emily Roth
Oregon Division of State Lands
November 1993

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Introduction

Over the past several decades an understanding of the importance of freshwater wetlands to the quality and integrity of the environment has spread from the scientific community to the public. Because of this increasing awareness, the once popular desire to drain and fill wetlands is being replaced with a desire to preserve and manage them for their natural values. As a result, new laws and regulations have been enacted to protect wetland resources.

While the overall significance of wetlands is recognized, the functions and conditions of specific wetland sites often remain undefined. A wetland *function* refers to the role a wetland plays in the environment. An individual wetland may perform many functions; for instance, it may serve as a wildlife habitat, a recreation area and an educational site. A wetland *condition* refers to a wetland's state or quality. For example, a wetland might be sensitive to impacts or it might be resilient.

The Oregon Method assesses four wetland ecological functions (wildlife habitat, fish habitat, water quality and hydrologic control) and three social functions (education, recreation and aesthetics). It also assesses the conditions of sensitivity to impacts and enhancement potential. Development pressure in wetland areas—and limited means to protect the wetlands—often requires communities to place relative priorities on the future use of these areas. It is essential that communities have available a practical means to assess their wetland resources to determine the level of protection to afford them.

Purpose of the Oregon Method

This manual provides a method of wetland assessment for planners, public officials and others who are familiar with wetlands but who are not necessarily wetland specialists. **It is intended for planning and educational uses, not for detailed impact analysis on individual wetlands.**

The *Oregon Freshwater Wetland Assessment Methodology* (hereafter referred to as the Oregon Method) was designed to be defensible if used for its intended purposes. Its end products are qualitative descriptions of wetland functions and conditions.

The Oregon Method is based on the idea that the functions and conditions of a wetland system and individual sites must be understood at the local, state and federal levels in order to make management decisions. Completion of this method provides the basic information. When more detailed information is needed, another method should be used.

Definition of wetlands in Oregon

For the purposes of the Oregon Method, wetlands comprise those areas defined as wetlands by the Oregon Division of State Lands for the removal-fill program (ORS 196.800):

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

Communities may choose to assess wetlands that the state does not regulate but that meet the above definition. These may include old log ponds, artificially created wetlands smaller than 1 acre or stormwater swales.

Wetland assessment versus wetland delineation

Confusion over the difference between wetland assessment and wetland delineation is common. Wetland delineation is the process of determining the boundary between wetland and upland. For federal and state jurisdictional purposes, delineation must be carried out following the guidelines in a manual approved for that purpose. Wetland delineation locates the wetland-upland boundary based on field indicators—vegetation, soils and hydrology—and is best accomplished by an experienced wetland scientist.

Wetland assessment is the process of determining a wetland's functions and conditions. An assessment may indicate, for example, that a wetland provides diverse habitat for wildlife. The Oregon Method is an assessment method and is independent of the delineation process.

Recommended uses of the Oregon Method

The Oregon Method was designed as a tool for the following purposes:

- To educate planners, city council members, county commissioners, planning commissions and members of the community about wetlands in their community
- To collect basic information about wetlands in an assessment area, which could be a community, a watershed or a region of the state
- To create a database containing information about functions and conditions and other wetland data
- To support the planning and decision-making process within a jurisdiction

It is necessary to remember that the Oregon Method is a planning tool. It is intended for assessing a number of wetlands in an assessment area, not for evaluating site-specific impacts.

For example, if an assessment of a community's wetlands using the Oregon Method indicates that a wetland provides diverse wildlife habitat, the community might require a developer to analyze in detail the impacts on wildlife habitat of a proposed project.

Before conducting the assessment, be sure to obtain landowner permission before entering public or private property. The use of this manual does not give the user permission to trespass.

Wetland protection

Although wetlands in Oregon are regulated by both the Oregon Division of State Lands and the U.S. Army Corps of Engineers, land-use decisions that affect wetlands are primarily made by local governments. Using the results of the Oregon Method, a community can protect wetlands it considers most important. For example, if members of a community decide that wetlands possessing great scenic beauty are particularly important, they could choose to protect the ones that an Oregon Method assessment determines to be aesthetically pleasing.

A community can use the following methods to protect its wetlands:

- Zoning and subdivision regulations—Wetlands can be protected by zoning ordinances and set-back requirements in subdivision regulations.
- Comments to the Oregon Division of State Lands and Corps of Engineers on wetland permits. Wetland permit processes at the state and federal level provide ample opportunity for local input into decisions that affect wetlands.
- State land-use laws—Under Oregon Revised Statutes, local jurisdictions can designate their wetlands as significant and protect them as Goal 5 or 17 resources in their local comprehensive plan. The advantage in designating protected wetlands is that these wetlands are given special consideration by regulatory agencies in permit application reviews.
- Acquisition of wetlands—Wetlands can be acquired as gifts, by fee-purchase, through the purchase of development rights, or by securing conservation easements on lands that contain wetlands.
- Wetland conservation planning—Local communities can choose to develop a wetland conservation plan (ORS 196.678-684). As part of the planning process, wetlands are designated for protection, conservation and development, and ordinances implement the planning decision.

Prioritizing wetland values within a community

The Oregon Method requires each wetland in the study area to be evaluated for the same functions and conditions. It does not determine the wetland's overall value. Using the results of the Oregon Method, communities can make informed decisions on the protection, conservation and best use of wetlands.

Not all functions need to be assessed. (If a function is left out, it should be omitted consistently throughout the assessment.) In practice, eliminating some functions may not save much time because the user must still collect basic data and conduct field visits.

Education

The Oregon Method is a good tool for teaching about wetland functions and conditions. Potential audiences include local government officials, interested members of the public, students, youth groups and environmental organizations.

Limitations of the Oregon Method

Using the Oregon Method out of context or beyond its intended purposes could result in misleading information, which could lead to poor decisions. The Oregon Method has the following limitations:

- The Oregon Method was designed as a planning-level assessment tool.
- The Oregon Method was designed for comparing the functions and conditions of a number of wetlands. It is not suitable for evaluating a single wetland, although the basic information collected during an assessment of a community's wetlands could be useful to wetland professionals undertaking a detailed assessment of individual wetlands.
- The Oregon Method was not designed for impact analysis. Impact analysis requires the judgment of a wetland professional who would be responsible for selecting a detailed method of assessment or conducting detailed on-site studies of wetland functions.
- The Oregon Method is not intended as a justification for adversely impacting wetlands that do not provide a particular function or group of functions. Wetland professionals agree that all wetlands have some value and that impacts to wetlands should be avoided, if possible, and mitigated where avoidance is not possible.
- The Oregon Method will not properly evaluate urban wetlands unless the urban criteria for specific indicators are used. (Urban unincorporated communities and areas within urban growth boundaries are considered urban areas.) These criteria take into account the increased value of urban wetlands due to their surroundings. For example, a small

urban wetland may provide limited wildlife habitat, but it may be the only wetland readily available for bird watching by residents in the urban area.

- The Oregon Method was not designed for use in legal proceedings that require detailed information about individual wetlands.

Training and professional assistance

Before city planners or a citizen group begin an assessment using the Oregon Method, they should contact the Division of State Lands about training in using the method.

Also, some communities may decide to employ the services of a wetland professional to assist in assessing their wetlands. The professional's involvement could vary depending on the community's needs:

- The wetland professional could act as a group leader, organizing data collection and supervising field work and completion of assessment questions.
- In addition to acting as a group leader, the wetland professional could complete all field work.
- The wetland professional could carry out the entire assessment.

Origin of the Oregon Method

The procedure described in this document is an adaptation of the *Method for the Evaluation of Nontidal Wetlands in New Hampshire*, developed by Alan Amman and Amanda Stone, and a similar methodology developed in Connecticut.

We are indebted to the authors of the New Hampshire and Connecticut methods. The Oregon Method differs from the New Hampshire method because it draws more heavily upon the discipline of landscape ecology. The Oregon Method helps the user characterize wetlands in terms of their landscape position and hydrologic regime, as well as the environmental risks associated with human actions.

The "Notes" column

Throughout the Oregon Method appears a column labeled "Notes." Here you can write explanatory comments regarding the methodology that may be useful for reference at a later date. This is especially useful in the Wetland Characterization, where users may want to illustrate or write notes concerning their observations.

Description of the Oregon Method

A general outline of the Oregon Method

When using the Oregon Method, you first gather information about the watershed and the individual wetlands from maps, reports and site visits. You use the information to answer questions about the various functions and conditions.

After answering all the questions, you evaluate the wetland's functions and conditions according to criteria provided. Given the "detection limits" of the Oregon Method, the assessment will give you an indication of whether a wetland function is 1) intact, 2) degraded or impacted or 3) lost or not present. The assessment criteria for wildlife habitat indicate whether the wetland 1) "provides diverse wildlife habitat," 2) "provides habitat for some wildlife species" or 3) whether the wetland's "wildlife habitat function is lost or not present."

A word of caution is in order. As with any form of land-use planning, there is no substitute for critical thinking, and nothing more potentially disastrous than uncritical adherence to a formula or procedure. Check the results of the assessment carefully to ensure that they make sense.

Wetland Characterization and assessment questions

At the heart of the Oregon Method is the Wetland Characterization. This is a set of questions about the watershed and about individual wetland sites. As indicated above, some information for the Characterization is assembled in the office, the rest is gathered from visits to wetland sites. In addition to the Wetland Characterization are the nine sets of function and condition assessment questions. Each set should be completed using information in the Wetland Characterization; they require no additional information gathering in the field or office. If you understand this relationship between the Characterization and the assessment questions, you're well on your way to a firm understanding of the Oregon Method.

The Oregon Method and landscape ecology

Questions 1 through 14 in the Wetland Characterization ask for information on the watershed. In order to set attainable goals for wetland protection, you must understand how wetlands fit within the framework of the surrounding landscape.

Natural forces, such as the flow of water through a stream bed, define an ecosystem's structure, what we call "physical structure." Plants and animals form what we call the "biological structure." Structure, in turn, determines how the area will function. By maintaining its structure, we promote an ecosystem's health and sustain its capability to survive disturbance.

Wetlands are part of an area's ecological structure or pattern. Wetland patches act as sources, sinks or channels for energy and materials. For example, a wetland might serve as a source area for a fishery, part of a channel for animal migration, or as a sink area for water-borne pollutants. Not all wetlands have the same ability to act as sources, sinks or channels. That depends on each wetland's physical and biological structure, as well as on its location. (Human disturbance can impair a wetland's function, and wetland enhancement can increase the ability of degraded wetland's to function.) A wetland's value depends upon its contribution toward maintaining the structure of the watershed.

Wetland functions and conditions

Wetlands provide many benefits to people and their environment. For example, wetlands function to help control floods, enhance water supplies, improve water quality and provide diverse wildlife habitat. A wetland may not perform all these functions, depending on the specific biological and physical features of its location.

The condition of the wetland—the integrity of its physical and biological structure—determines its ability to perform specific functions. The sensitivity to impacts, enhancement potential and aesthetic indices assess the wetland condition.

Most methods of wetland assessment, including the Oregon Method, describe a limited number of wetland functions and conditions. The results from the description are used to make management decisions.

The functions and conditions evaluated by the Oregon Method do not represent a complete list; others may be added later. For this reason, the Oregon Method is designed to be open-ended. Functions can be added and can be evaluated using published methods or methods developed by the user. Conversely, functions that are not important to the user can be dropped. The functions and conditions used in the Oregon Method are listed on the next page.

- **Wildlife habitat**—evaluates the habitat diversity for species typically associated with wetlands and wetland edges. No single species is emphasized.
- **Fish habitat**—evaluates how the wetland contributes to fish habitat in streams, ponds or lakes associated with the wetland for either warm-water or cold-water fisheries. No single species or group of species is emphasized.
- **Water quality**—evaluates the potential of the wetland to reduce the impacts that excess nutrients in runoff water will have on downstream waters.
- **Hydrologic control**—evaluates the effectiveness of the wetland in storing floodwaters and reducing downstream flood peaks.
- **Sensitivity to impact**—evaluates the susceptibility of a wetland to secondary effects of impacts.
- **Enhancement potential**—evaluates the suitability of a degraded wetland site for enhancement.
- **Education**—evaluates the suitability of the wetland as a site for an "outdoor classroom."
- **Recreation**—evaluates the suitability of the wetland and associated watercourses for non-powered boating, fishing and similar recreational activities.
- **Aesthetic quality**—evaluates the visual and aesthetic quality of the wetland.

Completing the Oregon Method

Completing the assessment may seem like a large and sometimes daunting task. By following these steps, the "task" can be broken down into several simpler tasks.

Step 1: determine the assessment area

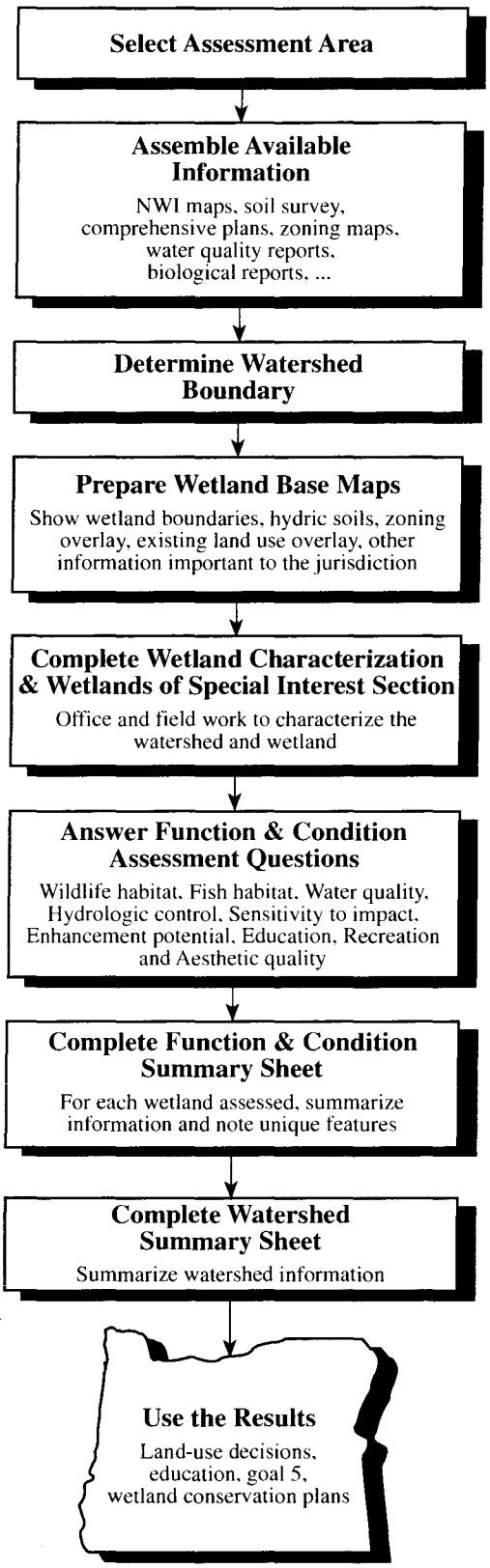
Draw the boundaries of the assessment area on a topographic map. This can be all or a portion of a jurisdiction, watershed, subbasin or a regional area. There is no minimum size, but you should select an area that is large enough to include numerous wetlands.

Step 2: assemble the available information

Below is a list of information that will help you complete the assessment. Refer to Appendix A for a complete list of information sources as well as the location where each can be obtained.

- Aerial photographs, low altitude
- Anadromous fish run information
- Drainage basin maps
- Endangered and threatened wildlife listing
- Endangered and threatened plants listing
- Endangered and threatened species by town
- Fish stocking information
- Flood hazard maps
- 1988 Oregon Statewide Assessment of Nonpoint Sources of Water Pollution
- Atlas of Oregon Lakes
- Lake water quality information
- Municipal Assessor's/tax maps
- Local comprehensive plan and zoning maps
- National Wetlands Inventory Maps
- Local Wetlands Inventory Maps
- Oregon Natural Heritage Plan
- Water Quality Report to Congress 305(b)
- Rare natural communities listing
- Soil survey maps (by county)
- USGS topographical maps

Steps in Completing the Assessment



Low altitude aerial photos of the assessment area are especially helpful for completing the assessment. If they aren't available for your community, you want to consider having them taken in early spring.

Notes

Step 3: determine the boundaries of the watershed that contains the wetlands being evaluated

Appendix E provides guidance for delineating watershed boundaries using topographic maps or information available from the Department of Water Resources. This will help you visualize the watershed containing the wetlands being assessed and put the assessment area into a broader ecological context.

Step 4: prepare the wetland base map and overlays

An essential part of the assessment procedure is the preparation of a wetland base map and overlays of the wetlands to be evaluated. Chapter IV provides guidance on determining wetland boundaries and suggested means for preparing the overlays. The information recorded on the map and overlays is used to answer questions in the Wetland Characterization (see Chapter V or Appendix B).

The information necessary to complete the base map and overlays can be obtained from field examination, local inquiry and by reference to prepared maps. (Refer to Appendix A for suggested information sources as well as the location where each can be obtained.)

Step 5: complete the Wetland Characterization and the Wetlands of Special Interest for Protection section

Fill out the portions of the characterization that should be completed in the office for all wetlands in the assessment area, and complete the Wetlands of Special Interest for Protection section. Both appear in Chapter V. Then fill out the portions of the Characterization that must be completed in the field. (*Portions of the Characterization that need to be filled out in the field are marked with a check.*) The Wetland Characterization is set up so data for three wetlands can be collected per sheet. Copies of both the Wetland Characterization and the Wetlands of Special Interest for Protection section appear in Appendix B. The questionnaires found in the appendix can be photocopied and taken into the field; this will help you avoid misplacing the instructions contained in the body of the manual.

Notes

Some questions in the Characterization require the evaluator to use a degree of judgment. In these cases, criteria are provided on which to base the judgment. The authors recognize the potential problems of introducing subjectivity into any assessment method. We feel it is unavoidable for several reasons. First and foremost is the necessity of keeping the Oregon Method simple enough to be of practical use by those for whom it is intended. Second, most of the communities that will use the Oregon Method simply do not have the financial resources or technical expertise to use the more sophisticated, data intensive methods of wetland assessment on a routine basis.

If the assessment is being performed by a larger group that will split up into smaller groups, each of which will evaluate several wetlands, we suggest that the whole group participate in filling out the characterization for the first few wetlands. This should have the effect of "calibrating" the thinking of group members so that when they split up to collect data for their assigned wetlands, they will answer the questions in a similar manner. This will increase the accuracy of comparisons made between wetlands upon completion of the assessment.

Step 6: answer function and condition assessment questions and apply assessment criteria

After you have collected all the data, answer the assessment questions for each function and condition (the questions are contained in Chapter VI). Record your answers on the answer sheet, then evaluate each function and condition, using the criteria provided.

The set of assessment questions for each function and condition is prefaced by an introduction describing how wetlands perform that function or what factors affect the condition. The introduction is followed by the assessment questions, a rationale, and instructions for answering the questions by using the information recorded on the Wetland Characterization. The evaluation criteria appear in a table at the end of each set of assessment questions.

As with the Wetland Characterization, use the margin for sketches or explanatory notes.

Appendix C, which contains the assessment questions and an answer sheet, is also designed to be detached and photocopied for use in the field. This will reduce the possibility of misplacing the instructions.

Step 7: complete a Function & Condition Summary Sheet for each wetland evaluated

The summary sheet is contained at the end of Chapter VI, following the sets of assessment questions. It provides a place for listing the results of all functions and conditions for a wetland. It also contains space for an overall narrative assessment of the wetland.

Step 8: complete the Watershed Summary Sheet

The Watershed Summary (at the end of Chapter VI and the end of Appendix C) provides a place for describing the general physical and biological features of the watershed that contains the assessment area. The Watershed Summary is a depiction of how wetlands in the assessment area fit within the surrounding environment. It is a place to describe the possible interactions of the wetlands with other ecosystems. Use all your answers to the first 14 questions in the Wetland Characterization and information you have learned in the field to help you address each of the following questions as you complete the narrative summary section.

- How might wetlands in the assessment area be influencing the sources of water and the flow of water within the watershed?
- How might wetlands in the assessment area be contributing to diversity of plant and animal life in the watershed?
- How might land-use practices within the watershed affect the ability of the wetlands to maintain the hydrology and biological diversity within the watershed?
- What management practices within the assessment area might increase the ability of its wetlands to control flood waters and provide for diversity of plant and animal life?
- How might the wetlands in the assessment area contribute to the recreation and educational opportunities in the watershed?

Step 9: use the results

The wetland information is now ready for use in wetland policy formulation and analysis, outdoor classroom siting and the local land-use decision-making process.

Notes

Preparation of base maps & overlays

An essential part of the assessment procedure is the preparation of a watershed map, wetland base maps and overlays for each wetland base map. The information recorded on the maps and overlays will be referred to frequently when answering the questions in the Wetland Characterization (Chapter V and Appendix B). The overlays can be created either on transparencies or on separate sheets. The maps may be prepared at any convenient scale, but for consistency it is suggested that the same scale the municipality uses for record keeping be used.

All maps and overlays should contain the following information:

- **Title block**—Include the watershed and wetland name or identification code and the community and county in which it is located. The investigator may use any convenient system of identification. Wetlands, for example, could be named for an associated stream or lake. Several wetlands on the same stream might be consecutively numbered, such as Newton Creek 1, Newton Creek 2, etc. Alternatively, wetlands could be named for nearby roads or landmarks. Whatever system is used, it is essential that the location of the wetland in the watershed be well documented so it can be easily located.
- **North arrow**—True north
- **Legend**—A key to wetland symbology on map
- **Scale**
- **Date of field check**
- **Sources of information**—Local soil survey maps; local comprehensive plan map; identification, date and scale of source air photos, etc.
- **Name of people responsible for map preparation**
- **Disclaimer**—A statement such as "Information shown on this map is of generalized nature" and "Wetland boundaries are approximate" (if not delineated).

Watershed map

The watershed map should include the following information:

- **Wetland locations**—The location and approximate boundaries of wetlands in the assessment area within the watershed. This will generally consist of the wetland base map described on pages 18 and 19.

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- **Designated land uses within the watershed**—Indicate the designated land uses from local comprehensive plan map for this area. Land-use designations to be used should at least include agriculture, open space, exclusive forest use lands, developed uses (or urban uses).
- **Watercourses** (including lakes and ponds)—This information can be obtained from U.S. Geological Survey topographic maps, water resource basin maps, or local comprehensive plans unless a newer source is available.
- **Water Quality Information**—This information can be obtained from the *1988 Oregon Statewide Assessment of Nonpoint Sources of Water Pollution.*

Wetland base map

The wetland base map should indicate the approximate wetland boundary and physical features associated with the wetland as listed below. A Local Wetlands Inventory map that meets standards developed by the Division of State Lands is an appropriate wetland base map for some purposes, such as urban planning. You may also select a map that best suits your needs (parcel map, zoning map, topographic map, etc.) and follow the procedures below to create your wetland base map.

- **Wetland identification**—One procedure to identify wetlands and their boundaries is to trace the wetland soil (hydric soil) units from the appropriate local soil survey map (published by the Natural Resources Conservation Service) and compare them with aerial photos and with the wetland boundaries on the National Wetlands Inventory map (published by the U.S. Fish and Wildlife Service). Field verification will be necessary to determine more accurate boundaries. Transfer the information from the soil survey and National Wetlands Inventory maps to the base map, which will be at a different scale.

  Because the width of a line on a National Wetlands Inventory map can represent from 20 to 40 feet on the ground, the base map may not be accurate on a site-by-site basis. In addition, the smallest wetlands mapped on National Wetlands Inventory maps are about 1 acre (see fact sheets in Appendix H), and on soil survey maps soil units may vary from 2 to 6 acres. (**Note:** Some forested wetlands do not appear on the National Wetlands Inventory maps because of mapping difficulties associated with these wetlands. Agricultural wetlands are not mapped on the National Wetlands Inventory maps.)

  Another procedure to identify wetlands is to rely on your local wetland and/or fish and wildlife experts. Ask them to assist you in identifying and mapping the wetlands in your area. Then go with them to verify the wetland location. This will greatly assist in accurately mapping the wetlands and determining their approximate boundaries. Or, have a wetland specialist map the wetlands in your community.

- **Determining wetland assessment boundaries**—The guidelines presented below will help in deciding where to locate the boundary of the wetland for assessment purposes, particularly in instances in which a wetland is bisected by a road or railroad, or where a wetland becomes narrow along a watercourse. The consistency provided by this guidance will make decisions less arbitrary, and hence, more defensible.

  A wetland bisected by a railroad or two-lane road is considered for the purpose of this analysis to be a single wetland site if:

  - Culverts permit free flow of surface water, and
  - The slope and drainage of the wetland are unidirectional.

  A wetland bisected by a railroad or two-lane road is treated as two separate wetland sites for the purpose of this analysis if either:

  - There is no culvert, or the culvert is permanently blocked (easily cleared debris jams do not count as permanent blockages), or
  - The slope and drainage of the wetland run in more than one direction away from the road.

  A wetland cut by a four-lane (or greater) highway is treated as two separate wetland sites.

  If a wetland extends beyond the boundary of the assessment area (community, watershed, etc.) the entire wetland should be mapped and used in the assessment.

  If there is a wetland on opposite sides of a large river, the wetland on both sides and the river water between are considered to be part of the same assessment unit.

  If there is a wetland on only one side of a river or stream, the water body adjacent to the wetland is included in the assessment, as instructed in the characterization questions.

  Wetlands located along river channels greater than 50 feet wide terminate wherever upland directly borders the channel on both sides.

- **Major roads**—If the base map does not include roads, trace major roads onto the map.
- **Railroads, power lines, pipe lines, utility rights of way, etc.**—This information should be obtained from U.S. Geological Survey topographic quadrangles or local comprehensive plans unless a newer source is available.

Notes

Notes

- **Watercourses** (including lakes and ponds)—This information should be obtained from U.S. Geological Survey topographic maps, Oregon Department of Water Resources basin maps, the Atlas of Oregon Lakes, or local comprehensive plans unless a newer source is available.
- **Location of educational site(s)**—Information can be obtained from local knowledge and comprehensive plans.
- **Location of viewing area(s)**—Obtain this information from aerial photographs or in-field observations. The viewing area does not have to be a platform or other designated area, just an area that provides a good view of the wetland or portion of the wetland.

Overlay 1—Wetland soils, water quality, wetland classes, and land-use designations

Overlay 1 should contain the following information:

- **Wetland boundaries**—Already available from the base map.
- **Wetland classes**—These may be designated on the wetlands base map in the field, from aerial photographs or National Wetlands Inventory maps. Use the Cowardin wetland classification system. It was used for the National Wetlands Inventory maps and can lend consistency to assessments. Refer to Appendix D for a brief explanation of the Cowardin wetland classification system.
- **Wetland soils**—Trace hydric soil units from the county soil survey map and label each soil type. You may want to map soil units with hydric inclusions and code them separately.
- **Water quality designations for watercourses in the assessment area**—Obtain from the *1988 Oregon Statewide Assessment of Nonpoint Sources of Water Pollution.* Listings that indicate a watercourse has severe water quality conditions status from nonpoint sources may be based on data or observations. For example, the watercourse may be designated to have severe water quality conditions due to agricultural practices.
- **Land-use designations**—For the entire assessment area, map the comprehensive plan land-use designations.

Overlay 2—Existing land use within 500 feet of the wetland

Overlay 2 should contain the following information:

- **Wetland boundaries**—Already available from the base map.
- **Areas of fill, drainage or altered vegetation**—Indicate all areas that reasonably can be judged to have been filled. Areas of recent fill may be obvious, but older fill areas may be difficult to detect. Look for unnatural or abrupt changes in elevation, especially between developed

areas such as lawns or parking lots and surrounding undeveloped areas. Also indicate areas where the wetland plant community has been altered by mowing, grazing or plowing.

- **Land use within 500 feet of wetland boundaries**—Indicate the existing land use 500 feet from the wetland edge. Land-use designations should include agriculture, open space, exclusive forest use, residential, commercial, industrial, and other designations used in the local comprehensive plan or zoning map. This may be completed in the field. You may want to note the intensity of use.

Alternatives to overlays

The watershed map and wetland base map are always necessary. Overlays are an important part of the evaluation technique, too, but they take time to make. Because the information contained on overlays is essential, it must be obtained in some form for reference. Two alternatives to overlays are listed below:

- **Using existing information**—One difference between creating overlays and using existing information is that information is not transferred to the same scale as the base map and not made into an overlay format. When using this method, be careful to scale or measure the information accurately for correct interpretation.
- **Employing a geographic information system package (GIS)**—Some users will be able to use a GIS package to prepare the base map and overlays. Using the GIS entails storing data about wetlands and wetland functions and conditions in a database and then generating maps based on that data. For this application, "data layers" about roads, hydrology, soils and drainage basins are required. The determination and mapping of wetlands must be done in such a manner that the information can be transferred into a GIS (digitized). It can then be printed as a map that also depicts information about roads, hydrology and drainage features. This map can be overlaid easily with information about soils and other natural resources. Using a GIS ensures that all maps generated share a common base and that each portrays the data that suits the user's needs.

Notes

Wetlands of Special Interest for Protection & Wetland Characterization

This chapter contains the Wetlands of Special Interest for Protection section and the Wetland Characterization.

Listed after each question in the Wetlands of Special Interest for Protection section is a source of information to help you answer that question. In the Wetland Characterization, instructions for answering the questions and sources of information are listed where needed.

Appendix B contains copies of all the questions—but not the instructions—for the Wetland Characterization. This appendix is intended to be photocopied and used in the field. Once you are familiar with the methodology and questions, detach Appendix B from the manual.

Also, the Watershed Summary Sheet and Function & Condition Summary Sheet at the end of Chapter VI are repeated in Appendix C. They can be removed from the appendix and used in the field to note unique features, landscape location and other important information about the wetland site and assessment area. You may want to attach a simple sketch to the summary sheet for each wetland site.

	Wetland 1	Wetland 2	Wetland 3

Wetlands of Special Interest for Protection

The first filter in the Oregon Method is to see whether the wetland is in a management plan, is protected by regulatory rules or statutes, or is uncommon in Oregon. A "yes" answer to any of the following questions will place the wetland into this category and management decisions should be made to protect the site. You still may want to evaluate the functions and conditions of each wetland to give you an overall evaluation of the wetlands in your assessment area. You should note on the Function and Condition Summary Sheet (Chapter VI and Appendix C) the information from this section. You do not need to contact every agency listed, but all those listed have all or some of the information you need.

Question 1

Does the wetland contain threatened, endangered or sensitive species of wildlife, plants, invertebrates or fish? (Either federal- or state-listed. Include species.) If yes, list.

a. Yes
b. No
c. Unknown
List:

Information source

Oregon Natural Heritage Program, The Nature Conservancy, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Oregon Department of Fish and Wildlife, Oregon Department of Agriculture.

Question 2

Is the wetland designated as critical habitat or essential habitat for federal- or state-listed threatened or endangered species of wildlife, plants, invertebrates or fish? If yes, list species.

a. Yes
b. No
c. Unknown
List:

Information source

U.S. Fish and Wildlife Service, National Marine Fisheries Service, The Nature Conservancy.

	Wetland 1	*Wetland 2*	*Wetland 3*

Question 3

Is the wetland a dedicated or proposed Registered State Natural Area or Area of Critical Environmental Concern, State Natural Heritage Conservation Area, Federal Research Natural Area, or a Nature Conservancy Preserve?

a. Yes
b. No
c. Unknown
List which it is:

Information source

The Nature Conservancy, the Oregon Natural Heritage Program, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service, National Park Service and Corps of Engineers.

Question 4

Is the wetland of regional or national significance for migratory birds?

a. Yes
b. No
c. Unknown
List which species:

Information source

U.S. Fish and Wildlife Service, Oregon Department of Fish and Wildlife.

Question 5

Is the wetland protected in a local wetland conservation plan or a local comprehensive plan as a Goal 5 or Goal 17 resource?

a. Yes
b. No
c. Unknown

Information source

Local planning office.

Question 6

Is the wetland a designated State Outstanding Resource Water?

a. Yes
b. No
c. Unknown

Information source

Oregon Department of Environmental Quality. (As of 1996, DEQ has not made any such designations.)

	Wetland 1	Wetland 2	Wetland 3

Question 7

Is the wetland a protected area in a recognized federal, state or local management plan, e.g., for a park, refuge or scenic river?

a. Yes
b. No
c. Unknown
List name:

Information source

Oregon Department of Fish and Wildlife, State Parks, U.S. Fish and Wildlife Service, Bonneville Power Administration, Bureau of Land Management, National Park Service, METRO, local parks department.

Question 8

Is the wetland a *protected* mitigation site for a removal-fill permit, federal 404 fill permit, or enforcement action? Protected means there is a legal instrument, such as a conservation easement, that will preclude a wetland impact permit from being issued for this site.

a. Yes
b. No
c. Unknown

Information source

Oregon Division of State Lands, Corps of Engineers, Environmental Protection Agency.

Question 9

Is the wetland a restoration or protected area included in the wetland reserve program administered by the Natural Resources Conservation Service? The length of protection may vary depending on landowner agreements.

a. Yes
b. No
c. Unknown

Information source

Natural Resources Conservation Service, Consolidated Farm Services Agency.

Question 10

Is the wetland considered rare or unique in Oregon? Examples include bogs, vernal pools and old growth forested wetlands (See Appendix G).

a. Yes
b. No
c. Unknown

Information source

The Nature Conservancy, Oregon Division of State Lands, the Oregon Natural Heritage Program.

Wetland 1	*Wetland 2*	*Wetland 3*

Wetland Characterization

The Wetland Characterization is designed for information collection in a systematic manner. The Characterization is divided into a landscape section, for which all the information can be gathered in the office with appropriate maps and references (and maybe a few phone calls), and a site-specific section, which requires field observation and measurement. (*Questions that must be answered in the field are marked with a check.*) You may want to record the observation, not just the letter answer, when given the choice, because you might find the descriptive information useful later. Also, take some blank sheets of paper into the field for making sketches of the wetland area that you can refer to later. Another alternative is to put an overlay on an aerial photo and sketch and note information on the overlay. If done thoroughly, this should prevent you from having to return to the field or having to seek additional information when completing the assessment.

Watershed Notes

The information gathered is used to answer function and condition assessment questions (copies of these questions appear directly following the Characterization). The Characterization should not lead you to any conclusions; this will be done as the assessment sheets are completed.

What you need to take with you into the field:

- Clipboard
- Pencils (various colors for sketching)
- Blank paper to sketch on
- Long tape measure (200 feet if you have one), or measure your pace before going into the field
- Aerial photos (you may want to attach a mylar overlay to draw on)
- Ruler
- Base maps (optional or make copies)
- Binoculars (optional)

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.) The answers to these questions are used to give decision makers a broader understanding of ecological functions and land uses in the watershed. The answers are summarized on the Watershed Summary Sheet at the end of the Assessment Questions section.

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.

Watershed Notes

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.

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.

Watershed Notes

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.
b. Warm water.
c. Anadromous.
d. Wild population.
e. Introduced or hatchery populations.
f. None.
g. Other (list).

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.
b. No.
c. Unknown.

Watershed Notes

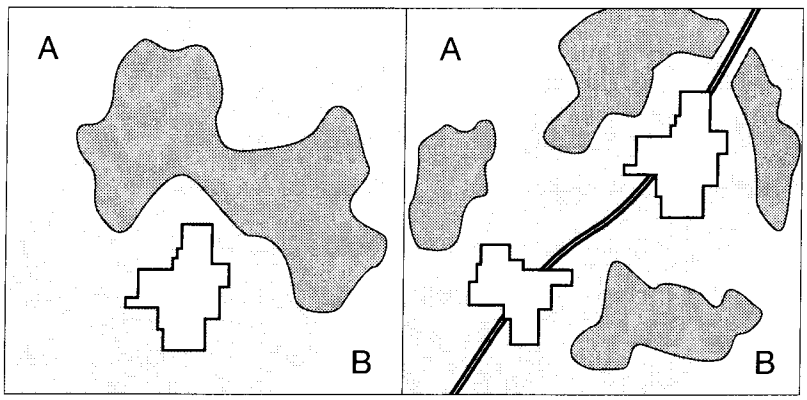


Figure 1. Watersheds as corridors for wildlife movement.
Areas A and B are the end points of a movement corridor through the watershed. Natural areas are shaded darkly, the irregular polygons represent highly developed areas, and the thick black line represents an impassable barrier such as an interstate 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.

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.

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.

Watershed Notes

	Wetland 1	Wetland 2	Wetland 3

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

✓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).
2. Agriculture (pasture, cropped lands, orchards, range land).
3. Exclusive Forest Use lands.
4. Developed uses (residential, commercial or industrial—rural and urban).
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.

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.
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.*

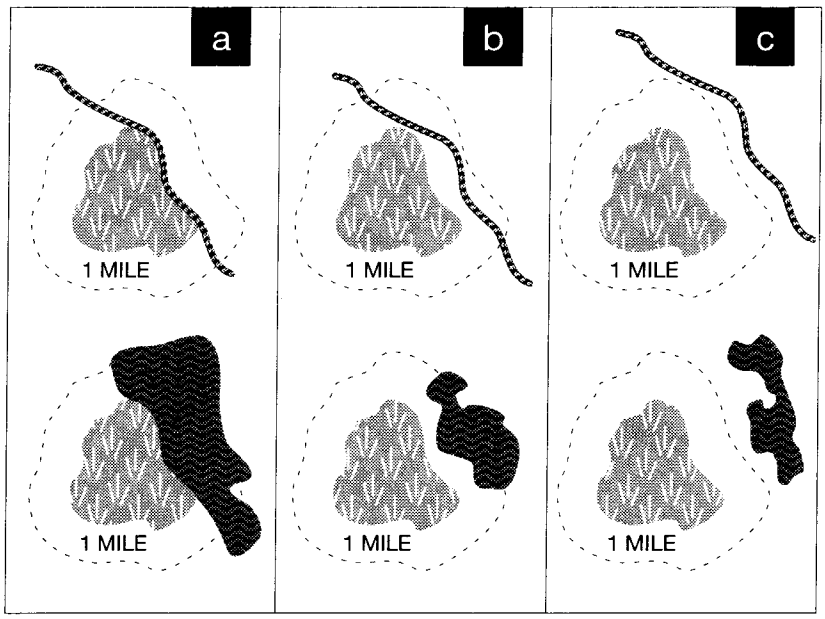


Figure 2. Connectivity to streams, lakes and ponds.
The lightly shaded area represents a wetland, the darkly shaded area represents a lake or pond and the dark line represents a stream. Part "a" shows the wetland connected to a stream, lake or pond, part "b" shows a stream, lake or pond within 1 mile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

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.
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.

	Wetland 1	*Wetland 2*	*Wetland 3*

	Wetland 1	Wetland 2	Wetland 3
20. What percentage of the area within 500 feet of the wetland's edge is **zoned** for each of the land uses listed below?			

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).
3. Scrub-shrub (woody vegetation under 20 feet tall).
4. Forested (woody vegetation 20 feet or taller).

✓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).

✓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.

	Wetland 1	Wetland 2	Wetland 3
✓24.			

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.

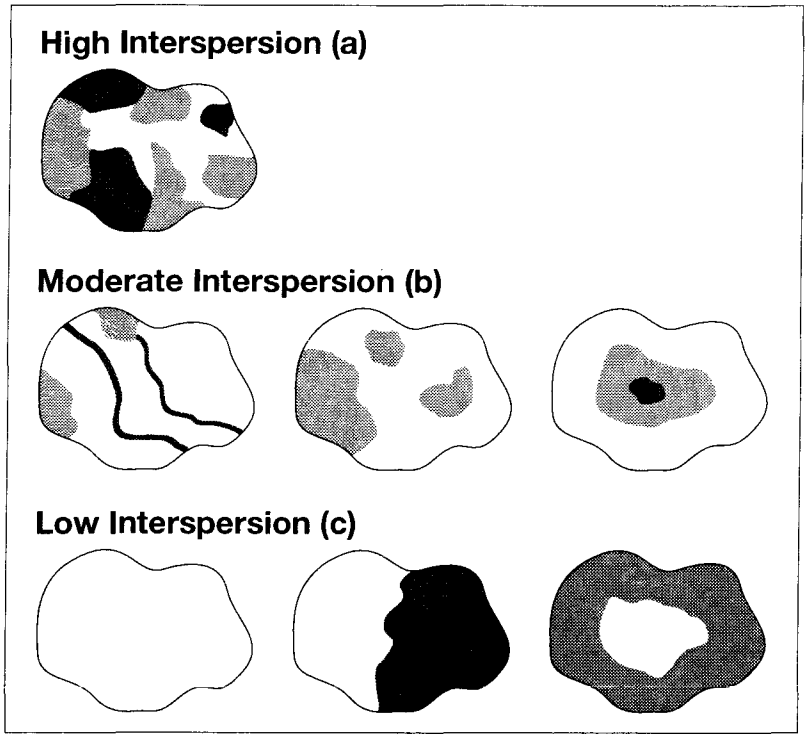


Figure 3. Interspersion of Cowardin classes and upland inclusions.

	Wetland 1	*Wetland 2*	*Wetland 3*
✓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%.			
✓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%.			
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.			
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.			

	Wetland 1	Wetland 2	Wetland 3

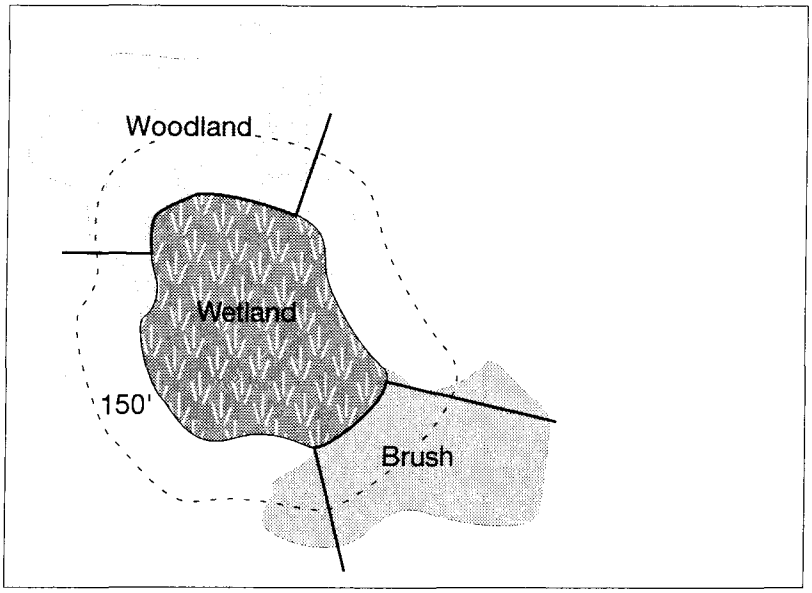


Figure 4. Percent of wetland edge bordered by upland habitat (for Question 25).
The dashed line delineates the area within 150 feet of the wetland; the "woodland" and "brush" areas are upland habitat; and the lines perpendicular to the wetland edge indicate where the upland habitat adjacent to the wetland 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.

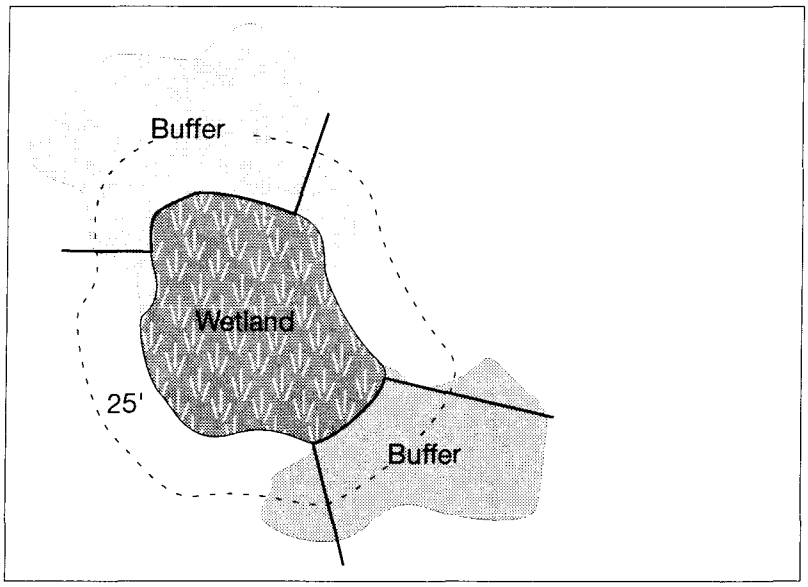


Figure 5. Percent of wetland edge bordered by vegetative buffer (for Question 26).
The dashed line delineates the area within 25 feet of the wetland; the vegetative buffer areas are labeled "buffer"; and the lines perpendicular to the wetland edge indicate where the vegetative buffer adjacent to the 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.

	Wetland 1	Wetland 2	Wetland 3

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*
✓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%.			
✓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%			

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.			
✓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.			
✓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.			

	Wetland 1	Wetland 2	Wetland 3
✓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.			
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.			

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.			
✓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).			
✓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.			

	Wetland 1	Wetland 2	Wetland 3
✓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.			
✓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.)			
✓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.			

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.			

	Wetland 1	Wetland 2	Wetland 3
✓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.			
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.			
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.			

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.			
✓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.			
✓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.			
✓54. If the wetland contains visual detractors, as indicated in question 53, can they be removed easily?			
a. Yes.			
b. No.			

Locate the primary viewing area(s) for the following four questions (be sure to indicate the location on the overlay).

✓55. What odors are present at the primary viewing location(s)?

a. Natural, pleasant odors only.

b. Unpleasant odors such as automobile exhaust or stench from a sewage treatment plant are present at certain times.

c. Unpleasant odors are distinct and continuously present.

	Wetland 1	*Wetland 2*	*Wetland 3*

Figure 6. Visual contrast.
The top part of the figure shows a wetland with significant visual contrast with the surrounding landscape. The bottom part shows a wetland with little or no visual contrast with the surrounding landscape.

	Wetland 1	Wetland 2	Wetland 3
✓56. What noises are audible at the primary viewing location(s)?			
a. Bird and wildlife noises and other naturally occurring sounds.			
b. Some traffic and other similar background sounds are audible in addition to naturally occurring sounds.			
c. Continuous traffic or other intrusive noise is audible in addition to naturally occurring sounds.			
d. Continuous traffic or other intrusive noise is audible, but no naturally occurring sounds are.			
✓57. How much of the wetland is visible from the viewing area(s)? Describe the view.			
a. Greater than 50%.			
b. Between 25% and 50%.			
c. Less than 25%.			
✓58. How many Cowardin classes are visible from the primary viewing area(s)? (See question 21 for list of Cowardin classes to use.)			
a. More than two.			
b. Two			
c. One			

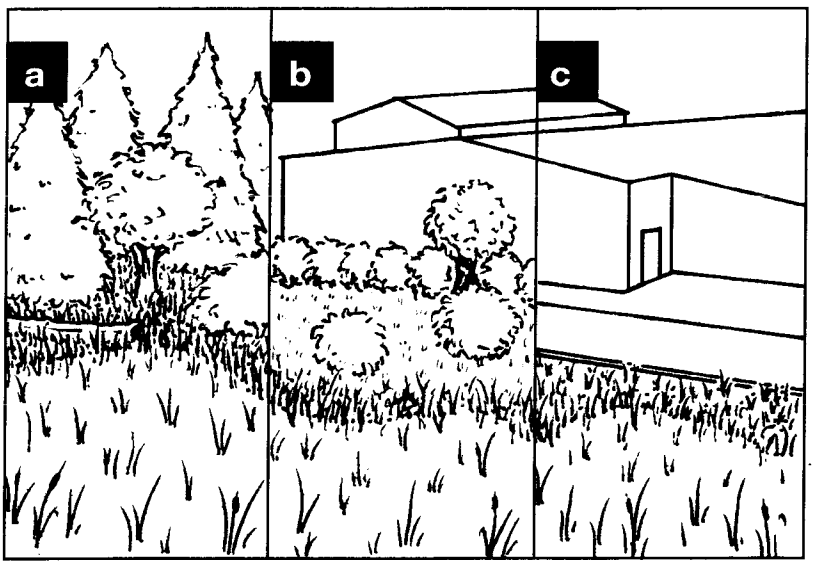


Figure 7. Visual character of urban wetlands.
Beginning with the left part, this figure shows an urban wetland with naturally landscaped areas, areas landscaped by people and with unlandscaped developed areas.

Function & condition assessment questions

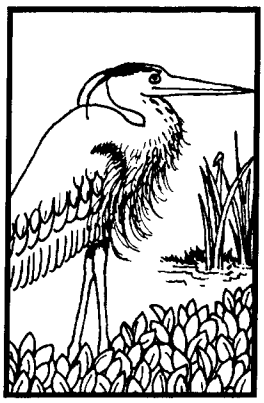
This chapter includes a set of **assessment questions** for each of the nine functions and conditions evaluated using the Oregon Method.

Listed after each assessment question you will find **directions** explaining which questions from the Wetland Characterization you should refer to when determining your answer. Some of the questions are followed by examples.

Then, following the directions for each question, is a **rationale** paragraph that explains the importance of the information you are asked to gather.

Duplicates of all question sets—without the rationales—appear in Appendix C. *Once you are familiar with the directions and rationale for each question, detach the appendix and photocopy it for use in the field.* This will reduce the possibility of losing portions of the main document.

At the end of the chapter (and in Appendix C) is an **answer sheet**, where you can enter your responses to all assessment questions, as well as a **function and condition summary sheet,** where you can enter the results of the assessment criteria for each function and condition and where you can write an overall description of a wetland's functions and conditions. The **watershed summary sheet** is also included at the end of this chapter.



Wildlife habitat

Wetlands provide habitat for many wildlife species. A single wetland often cannot satisfy all requirements for wildlife use, so its proximity to other bodies of water or upland areas is important. Buffers and corridors are also essential for this reason, and they reduce human disturbance as well. Many species also have special habitat requirements: Good water quality is necessary for amphibians and mammals; structural diversity is important for birds; and a combination of open water and grazing areas is important for waterfowl.

For this assessment, **urban wetlands are those within urban growth boundaries or urban or rural service areas.** Because of the impacts of human activities, urban wetlands may not satisfy as many habitat requirements as wetlands in undeveloped areas. This should not be interpreted to mean that urban wetlands have limited value for all wildlife. The importance of an urban wetland may be increased because of its location and surroundings.

Notes

Assessment questions

Question 1

How many Cowardin wetland classes are present?

Directions

See question 21 in the Wetland Characterization. Count only those Cowardin classes for which you answered "a," "b" or "c." For urban areas, also consider the mix of species (Question 22 in the Wetland Characterization.)

Rural areas:

a. Three or four.

b. Two.

c. One.

Urban areas:

a. Two or more.

b. One class with more than five plant species.

c. One class with five or fewer plant species.

Rationale

In Northwest wetlands, vegetation is the most important component of wildlife habitat. It is widely recognized that plant community diversity increases animal community diversity. The existence of two Cowardin classes adjacent to each other may also improve wildlife habitat value because some wetland wildlife species use the edge between plant communities. ("Edge" describes the border between vegetation types or between a vegetation type and open water.)

Structural diversity is also important. If several layers of vegetation are present, more diverse habitat types are provided. (Different birds nest in different layers.) In addition, the number of layers affects the amount of natural debris, which is necessary for amphibians and other wildlife.

Question 2

What is the dominant wetland vegetation cover type?

a. Woody vegetation.
b. Emergent vegetation and ponding, or open water only.
c. Emergent vegetation or wet meadow.

Directions

See question 23 in the Wetland Characterization.

Rationale

Wooded and shrub wetlands provide habitat for the largest overall species assemblages. Emergent wetlands associated with open water are also an essential habitat for a large number of wetland species, particularly waterfowl, amphibians and wading birds. Emergent wetlands without open water provide habitat for wetland species to a lesser degree.

Question 3

What is the degree of Cowardin class interspersion for the wetland being observed?

a. High.
b. Moderate.
c. Low.

Directions

See question 24 in the Wetland Characterization.

Rationale

Interspersion occurs when two or more wetland types or upland inclusions create a mosaic or pattern. In a wetland composed of approximately concentric bands of vegetation, such as cattails ringed by shrubs, interspersion is low. At the opposite extreme, small patches of shrubs scattered throughout an emergent marsh represent a high degree of interspersion.

When two or more vegetation types are highly interspersed, a great deal of edge is created. Edge is important because many wildlife species are edge dwellers. Generally, the greater the edge, the greater the diversity of wildlife.

Notes

Question 4

If the wetland contains unvegetated open water, how many acres of unvegetated open water are present?

Directions

See question 28 in the Wetland Characterization.

Rural areas:

a. More than 3 acres .
b. Between 0.5 and 3 acres.
c. Less than 0.5 acres.

Urban areas:

a. More than 1 acre.
b. Between 0.5 and 1 acre.
c. Less than 0.5 acres.

Rationale

Open water is essential to a number of wetland wildlife species, including waterfowl, wading birds, amphibians and some reptiles.

Question 5

How is the wetland connected to another body of water, such as a stream, lake or pond?

Directions

See question 18 in the Wetland Characterization.

a. The wetland is connected by surface water to another body of water.
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.

Rationale

Wetland wildlife species will often use surface water to travel between a wetland and deep water. Also, water must be available during critical phases for the wildlife that use it. Water available during the nesting season is more valuable to wildlife than water available only during the winter.

Notes

Question 6 *(for Western OR only)*

How is the wetland connected to other wetlands?

Directions

See question 27 in the Wetland Characterization.

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.

Rationale

Proximity to other wetlands increases a wetland's utility as habitat. Nearby wetlands sometimes contain features absent from the assessment wetland. For example, birds such as the great blue heron may roost near one wetland but travel to another to fish if the wetland where they roost doesn't have an ample supply of fish.

This criterion applies only in western Oregon. Because of the dry climate in eastern Oregon, isolated wetlands provide important habitat to both local and migratory species.

Question 7

What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?

Directions

See questions 7 and 8 in the Wetland Characterization. If both "a" and "b" apply, choose "a."

a. No upstream or adjacent reaches are listed as *water quality limited,* and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants.
b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants.
c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants.

Rationale

Poor water quality can harm many terrestrial and aquatic species. The character of a wetland ecosystem can change when exposed to nutrients and other chemicals beyond tolerable limits. Excess nutrients, for example, can cause oxygen deficiencies, which in turn can cause a change in the species composition of both plant and animal communities. Studies in Washington and elsewhere have indicated that amphibians are especially sensitive to water quality.

Notes

Question 8

What is the dominant existing land use within 500 feet of the wetland's edge?

a. Exclusive Forest Use or Open Space.
b. Agriculture.
c. Developed uses.

Directions

See question 15 in the Wetland Characterization. If the responses you gave to question 15 in the Characterization indicate that two or more land-use categories are equally dominant, pick the one that will yield the lowest letter response for this question. (Example: In question 15 of the Wetland Characterization, you responded "b. Between 20% and 50%" to both *Exclusive Forest Use lands* and *developed uses,* and the remainder of your responses to question 15 were "a. Less than 20%." For this Wildlife Habitat question, you would respond "a..Exclusive Forest Use or Open Space.")

Rationale

Wildlife habitat generally deteriorates as land use changes from forested land to agricultural land to urban land. Certain game species, such as deer and some waterfowl, may benefit from land clearing. However, the majority of wildlife species are affected adversely when the land is developed because of fencing, lighting and loss of habitat.

Notes

Question 9a

For **rural areas:** What percentage of the wetland's edge is bordered by upland wildlife habitat that is at least 150 feet wide?

a. Greater than 40%.
b. Between 10% and 40%.
c. Less than 10%.

Question 9b

For **urban areas:** What percent of the wetland's edge is bordered by a vegetative buffer at least 25 feet wide?

a. Greater than 40%.
b. Between 10 and 40%.
c. Less than 10%.

Directions

For rural areas, see question 25 in the Wetland Characterization. For urban areas, see question 26 in the Wetland Characterization.

Rationale

A buffer zone, an uncut or undisturbed area of vegetation providing wildlife cover, increases a wetland's wildlife habitat potential. It provides habitat for both upland animals and wetland dependent species that require upland habitat for parts of their life cycle. A buffer zone also decreases the impacts of disturbance on the wetland. This is particularly important for nesting birds, which may be disturbed by people and household pets.

Well-vegetated buffer areas and corridors are particularly significant in urban areas because of their beneficial effect on water quality as well as their value for wildlife.

Wildlife habitat: assessment criteria

The wetland provides diverse wildlife habitat if:	At least four questions are answered "a," and no more than one is answered "c."
The wetland provides habitat for some wildlife species if:	Answers do not satisfy the above- or below-listed criteria.
The wetland's wildlife habitat function is lost or not present if:	All questions are answered "c."

Notes

Fish habitat

Notes

This index assesses the contribution of wetlands connected to streams, rivers, lakes or ponds to fish habitat. **or this index, "connected to" implies a surface-water connection.** The assessment should be done on the reach of the stream or on a section of lake that actually borders the wetland or is contained within the wetland.

A stream is defined as a waterbody with a distinct channel and flow. Examples include sloughs, perennial streams and intermittent streams. If dikes or berms have been built on the stream banks between the stream and wetland that do not allow continual exchange of surface water, do not complete this index. If both a stream and lake are present, choose the one with the longest wetland surface connection.

Wetlands that contribute to habitat for fish include areas with dense, overhanging vegetation. This vegetation provides shade, cover and food sources to related waterways and lakes. Wetlands also provide spawning, rearing and resting opportunities for fish. However, a wetland need not actually contain fish to contribute to fish habitat because wetlands may perform important functions for fish-bearing waters downstream.

The assessment of fish habitat is divided into two parts. Part A evaluates the wetland habitat connected to rivers and streams. If there is no stream or river associated with the wetland, then leave Part A out of the assessment. Part B evaluates the wetland habitat connected to ponds (water greater than 6 feet deep) and lakes. If there is no lake or pond connected to the wetland, then leave Part B out of the assessment. If no stream, river, pond or lake is connected to the wetland, then leave this index out of the assessment altogether.

Assessment questions: Part A—streams

Question 1

What percentage of the stream is shaded by stream-side (riparian) vegetation?

Directions

See question 31 in the Wetland Characterization.

Western Oregon:

a. More than 75%.

b. Between 50% and 75%.

c. Less than 50%.

Eastern Oregon:

a. 50% or more.

b. 25% or more, but less than 50%.

c. Less than 25%.

Rationale

Many Oregon streams are unsuitable for anadromous and resident fish because riparian vegetation has been cleared. High water temperatures that result from removal of stream-side vegetation can make a stream unsuitable for some fish species. Salmonids and some resident fish are particularly susceptible to elevated water temperatures. The amount and type of stream-bank cover also affects the amount of large woody debris in the stream or river system. In addition, stream-bank vegetation provides habitat for insects, an important food source for salmonids.

Question 2

What is the physical character of the stream channel?

Directions

See question 30 in the Wetland Characterization.

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 channel are modified.

c. The stream is extensively modified or confined in a non-vegetated channel or pipe.

Rationale

Although the species or age composition of low- and high-gradient streams is different, both can provide habitat for fish. Artificially channelized or extensively modified streams, however, usually do not provide fish habitat as well as natural stream channels.

Notes

Question 3

What percentage of the entire stream contains instream structures such as large woody debris, floating submerged vegetation, large rocks or boulders?

a. More than 25%.
b. Between 10% and 25%.
c. Less than 10%.

Directions

See question 32 in the Wetland Characterization.

Rationale

Cover is essential for good fish habitat. It provides refuge from predators and serves as substrate for insect larva, which are a good food source for some fish species. The presence of large pieces of woody material in pools is essential for providing adequate winter habitat for salmonid species. In addition, large pieces of woody material contribute to bank stability, dissipate energy, generate pool formation and encourage meandering. The breakdown of this material is also important in the nutrient cycle of the stream or river.

Question 4

What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?

a. No upstream or adjacent reaches are listed as *water quality limited,* and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants.
b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants.
c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants.

Directions

See questions 7 and 8 in the Wetland Characterization. If both "a" and "b" apply, choose "a."

Rationale

Poor water quality can harm many aquatic species. The whole character of a wetland ecosystem can change when it is exposed to nutrients and other chemicals beyond tolerable limits. Excess nutrients, for example, can cause oxygen deficiencies, which in turn can cause a species composition change in both plant and animal communities.

Notes

Question 5

What is the dominant existing land use within 500 feet of the wetland's edge?

a. Exclusive Forest Use or Open Space.
b. Agriculture.
c. Developed uses.

Directions

Refer to the directions for question 8 of the wildlife habitat assessment questions.

Rationale

Fish habitat generally deteriorates as land use becomes more intensive, e.g., changes from forested land to agricultural land (including rangeland) to urban land. The change in intensity often changes the structure of the habitat and increases runoff, pollutant loading and sedimentation.

Question 6

Are fish present in a stream, lake or pond associated with 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.

Directions

See question 29 in the Wetland Characterization.

Rationale

The potential for a wetland to benefit fish is directly related to the presence of fish in the stream or river reach within or adjacent to the wetland.

Part B—lakes and ponds

Question 1

Does the lake or pond contain areas of both deep and shallow water?

a. Yes.
b. Cannot be determined.
c. No.

Directions

See question 33 in the Wetland Characterization.

Rationale

The depth of the pond or lake is important for spawning and may be important for rearing. A mixture of shallow, medium and deeper water is optimum to provide different habitat types.

Notes

Question 2

What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

a. More than 25%.
b. Between 10% and 25%.
c. Less than 10%.

Directions

See question 35 in the Wetland Characterization.

Rationale

Cover is essential for good fish habitat. It provides refuge from predators and serves as substrate for insect larva, which are a food source for some fish species. The presence of large pieces of woody material in wetlands is essential for providing adequate winter habitat for salmonid species. In addition, large pieces of woody material contribute to bank stability and dissipate energy. The breakdown of this material is also important in the nutrient cycle of the pond or lake.

Question 3

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%.

Directions

See question 34 in the Wetland Characterization.

Rationale

Shoreline cover provides shading, which moderates water temperature in lakes and ponds. High water temperatures that result from removal of lake-side vegetation can make a lake unsuitable for some fish species. Shoreline vegetation also provides food, large pieces of woody debris and cover from predators. Woodland and scrubland vegetation provides more shading than herbaceous vegetation.

Notes

Question 4

What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?

Directions

See questions 7 and 8 in the Wetland Characterization. If both "a" and "b" apply, choose "a."

a. No upstream or adjacent reaches are listed as *water quality limited,* and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants.
b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants.
c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants.

Rationale

See Part A question 4.

Question 5

What is the dominant existing land use within 500 feet of the wetland's edge?

Directions

Refer to the directions for question 8 of the wildlife habitat assessment questions.

a. Exclusive Forest Use or Open Space.
b. Agriculture.
c. Developed uses.

Rationale

See Part A question 5.

Question 6

Are fish in a stream, lake or pond associated with the wetland?

Directions

See question 29 in the Wetland Characterization.

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.

Rationale

The potential for a wetland to benefit fish is directly related to the presence of fish in the pond or lake.

Notes

Fish habitat: assessment criteria

The wetland's fish habitat function is intact if:	Any three questions are answered "a," and no more than one is answered "c."
The wetland's fish habitat function is impacted or degraded if:	Answers do not satisfy the above- or below-listed criteria.
The wetland's fish habitat function is lost or not present if:	All questions are answered "c."

Notes

Water quality (pollutant removal)

Notes

Sediment trapping

During periods of heavy rainfall, water runoff may cause erosion and increase solids suspended in receiving surface waters. The excess sediment entering water systems can damage aquatic ecosystems. For example, sediment accumulation in stream bottoms can smother spawning areas and kill aquatic insect larvae. It can also reduce the storage capacity of downstream water supply reservoirs.

Wetlands perform an important function by trapping sediment from waters that pass through them. As water flows through wetlands, it is slowed by vegetation, and sediment settles to the bottom before the water moves farther downstream. As much as 90% of the solids suspended in the water may be removed as the water moves through wetlands, resulting in cleaner water entering streams, rivers, lakes and estuaries.

Nutrient attenuation

Nitrogen and phosphorus are the two nutrients most often associated with water pollution. They are also main ingredients of fertilizers used on agricultural fields and lawns, and both are found in high concentrations in discharges from sewage treatment plants and livestock operations. Excessive amounts of nitrogen and phosphorus in lakes and slow-moving streams can cause algal blooms and subsequent oxygen deficiencies, which may kill fish and reduce water quality. The processes that occur as a result of excess nutrients are lumped together under the term "eutrophication." Within limits, wetlands can reduce nutrient levels so that the effects of eutrophication on downstream areas are prevented or reduced. This index considers only point and non-point pollutant sources that are due to land uses in the watershed.

Assessment questions

Question 1

What is the wetland's primary source of water?

Directions

See question 36 in the Wetland Characterization.

a. Surface flow, including streams and ditches.
b. Precipitation or sheet flow.
c. Groundwater, including seeps and springs.

Rationale

Wetlands bordering a perennial or intermittent stream or lake are areas into which floodwaters spread during periods of high runoff, enabling the wetlands to remove pollutants.

Question 2

Is there evidence of flooding or ponding during a portion of the growing season?

a. Yes.
b. Unable to determine or not applicable.
c. No.

Directions

See question 37 in the Wetland Characterization.

Rationale

Water level fluctuation in the wetland indicates the ability to retain water. Impounded or standing water acts as a sediment trap because it greatly slows the flow of the incoming water, allowing suspended solids to settle out. Additionally, the slower velocity increases the contact time of the water with vegetation, resulting in uptake of nutrients by the vegetation. These actions function to reduce pollutant loads.

Question 3

What is the degree of wetland vegetation cover?

a. High (greater than 60%).
b. Moderate (approximately 60%).
c. Low (less than 60%).

Directions

See question 21 in the Wetland Characterization. Add the lower end of the ranges for forest, scrub-shrub and emergent vegetation to get the result. If the result is 60% or more, answer "high." If the result is 60%, answer "moderate." Answer "low" for other results.

Rationale

The more dense the vegetation, the greater the wetland's ability to take up nutrients. A dense stand of persistent emergent plants (such as cattail and rush) along with floating and submerged aquatics would tend to provide maximum nutrient uptake during the growing season. Wooded and scrub-shrub wetlands remove nutrients mainly through settling of suspended solids in runoff and flood waters.

Notes

Question 4

What is the wetland's area in acres?

Directions

See questions 17 and 27 in the Wetland Characterization.

a. More than 5 acres.
b. Between 0.5 acres and 5 acres; or wetland area is less than 0.5 acres, and the wetland is connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake.
c. Less than 0.5 acres, and the wetland is not connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake.

Rationale

The larger the wetland, the greater its capacity and ability to filter pollutants. Small wetlands connected by surface water act as a series of filters and thus function similarly to a larger wetland.

Question 5

What is the dominant, existing land use within 500 feet of the wetland's edge?

Directions

Refer to the directions for question 8 of the wildlife habitat assessment questions.

a. Developed uses.
b. Agriculture.
c. Exclusive Forest Use or Open Space.

Rationale

Urbanized areas have more impervious surface areas and concentrate pollution sources. Wetlands in urban areas are important for filtering the runoff water before it enters a stream.

Notes

Question 6

What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?

Directions

See questions 7 and 8 in the Wetland Characterization. If both "a" and "b" apply, choose "a."

a. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants.

b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants.

c. No upstream or adjacent reaches are listed as *water quality limited,* and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants.

Rationale

A watershed with upstream pollutant loading sources needs wetlands to reduce pollutant levels in water before it is delivered downstream.

Water quality: assessment criteria

A wetland's water-quality function is intact if:	Question 1 is answered "a" or "b," questions 2 and 3 are answered "a," and any other question is answered "a" or "b."
A wetland's water-quality function is impacted or degraded if:	Answers do not satisfy the above- or below-listed criteria.
A wetland's water-quality function is lost or not present if:	Four out of six questions are answered "c."

Notes

Hydrologic control
(flood control & water supply)

Notes

Wetlands function as natural water-storage areas during periods of high runoff and stream flooding. At times they act as flood regulators by holding floodwater then slowly releasing it downstream. This temporary storage reduces the amount of water downstream during floods, thereby reducing peak flows. Through this flood storage mechanism, wetlands associated with tributaries of streams or rivers can prevent water from all tributaries reaching the stream or river at the same time (this is called desynchronization). Wetlands can also act as floodwater "brakes." For example, water flowing through riverine wetlands during floods is slowed by trees, shrubs, reeds, rushes and other wetland vegetation. Wetlands acting as brakes can reduce flood peaks and thereby reduce flood damage, bank and bed erosion, and other adverse effects caused by fast moving water.

Wetlands also have long-term water holding abilities. Wetlands may store water for longer periods, sometimes for months. The slow draining of these wetlands to surface water or ground water as the water level in the wetland recedes may contribute to maintenance of baseflows in streams hydrologically connected to the wetland. The ability of this long-term water storage to maintain stream flows is called "flow conservation."

Assessment questions

Question 1

Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

a. Yes.
b. No.

Directions

See question 19 in the Wetland Characterization.

Rationale

Wetlands located within a floodplain or enclosed basin have a greater opportunity to receive and store water from surface flows and to release it slowly downstream or into the groundwater.

Question 2

Is there evidence of flooding or ponding during a portion of the growing season?

a. Yes.
b. Unable to determine or not applicable.
c. No.

Directions

See question 37 in the Wetland Characterization.

Rationale

Water marks are valid indicators of seasonal and episodic stage fluctuations in wetlands and, as such, are strong indicators of storage function.

Question 3

What is the wetland's area in acres?

a. More than 5 acres.
b. Between .5 acres and 5 acres.
c. Less than .5 acres.

Directions

See question 17 in the Wetland Characterization.

Rationale

Generally, the larger the wetland, the greater its ability to store and attenuate flood flows.

Question 4

Is waterflow 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 (i.e., undersized culvert.)
c. No, the outlet has unrestricted flow.

Directions

See question 38 in the Wetland Characterization.

Rationale

Wetlands with no outlets or with restricted or controlled outlets generally will store greater amounts of water than wetlands with unrestricted flow outlets. Also, the wetland can store water for slower release into the water system.

Notes

Question 5

What is the dominant wetland vegetation cover type?

a. Woody vegetation.
b. Emergent vegetation and ponding, or open water only.
c. Emergent vegetation or wet meadow.

Directions

See question 23 in the Wetland Characterization.

Rationale

Densely vegetated wetlands with vegetation greater than 6 feet tall are better able to control flood flows than wetlands dominated by open water or low growing vegetation, which generally offers little resistance.

Question 6

What is the dominant existing land use, within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

a. Developed uses.
b. Agriculture.
c. Exclusive Forest Use and Open Space.

Directions

See question 16 in the Wetland Characterization.

Rationale

If the wetland is upstream from developed areas, its ability to control floods becomes more important.

Question 7

What is the dominant land use in the watershed upstream from the assessment area?

a. Urban or urbanizing.
b. Agriculture.
c. Forested or natural area.

Directions

See question 6 in the Wetland Characterization.

Rationale

Runoff volume is directly related to the level of development in the watershed: The more development, the more runoff. The opportunity for the wetland to provide flood control and flow conservation to a community is greater where runoff is greater.

Notes

Hydrologic control: assessment criteria

A wetland's hydrologic control function is intact if:	Four or more questions are answered "a."
A wetland's hydrologic control function is is impacted or degraded if:	Answers do not satisify the above- or below-listed criteria.
A wetland's hydrologic control function is lost or not present if:	Four or more questions are answered "c."

Notes

Sensitivity to future impacts

The wetland's ability to provide ecological function depends on its condition. If past environmental impacts have affected its ability to sustain itself, then its ability to recover from future impacts is diminished. Factors such as vegetation type contribute to a wetland's sensitivity. Forested wetland types, for example, are considered particularly sensitive because their vegetation structure is complex and slow to recover once disturbed. Also, a wetland is considered sensitive to impact if the quantity and quality of its water supply has been altered or degraded and if the intensity of adjacent land use suggests that the impairment is permanent. Under such circumstances, the wetland will have lost some of its natural capacity to recover from impacts. Small, incremental impacts to sensitive wetlands can cause broader, secondary effects throughout the wetland system. A wetland's resilience depends on whether adverse effects caused by future impacts will be localized or will spread throughout the wetland and beyond into other ecosystems. The sensitivity to impact index is an indication of risk to the wetland because of future changes in the watershed and land surrounding it. The index gives an indication to decision makers of the future conditions of the wetland if planned activities develop.

Notes

Assessment questions

Question 1

Has the stream flow or stream bank been modified by human activities less than 1 mile above the wetland, or is the wetland isolated?

a. Yes.
b. No.

Directions

See questions 27 and 40 in the Wetland Characterization. A wetland is considered isolated if the answer to question 27 in the Wetland Characterization is "b" or "c."

Rationale

Wetlands located in areas where natural hydrologic conditions exist are more resilient than wetlands located in altered settings. Control structures such as dams can divert water toward or away from wetland ecosystems. Because plant growth and decomposition and other processes operating within wetlands are controlled in part by the water supply, changes in water distribution can disrupt ecosystem processes and reduce the wetland's capacity to recover from impact.

Question 2

Is water being taken out of the stream(s) through active diking, drainage or irrigation districts upstream of the assessment area, or is the wetland isolated?

a. Yes
b. No

Directions

See questions 5 and 27 in the Wetland Characterization. A wetland is considered isolated if the answer to question 27 in the Wetland Characterization is "b" or "c."

Rationale

Wetlands located in areas with natural hydrologic conditions are more resilient than wetlands located in areas where water is being removed from the active stream channel for other purposes. In areas where active draining, diking or irrigation districts exist, the amount of water available to replenish the wetland is limited, and this reduces the wetland's capacity to recover from impact.

Question 3

What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland?

a. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants.
b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants.
c. No upstream or adjacent reaches are listed as *water quality limited,* and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants.

Directions

See questions 7 and 8 in the Wetland Characterization. If both "a" and "b" apply, choose "a."

Rationale

Ecosystem processes like nutrient cycling are controlled in part by the chemistry of water entering the system. Changes in water quality beyond a wetland's ability to adjust can disrupt ecosystem processes and threaten the wetland's existence.

Notes

Question 4

What is the dominant, existing land use within 500 feet of the wetland's edge?

a. Developed uses.
b. Agriculture.
c. Exclusive Forest Use or Open Space.

Directions

Refer to question 8 of the wildlife habitat assessment questions.

Rationale

The intensity of human-caused impacts to a wetland affects the wetland's capacity to absorb and withstand those impacts. Land use is an approximation of a wetland's exposure to disturbance.

Question 5

What is the dominant zoned land use within 500 feet of the wetland's edge?

a. Developed uses.
b. Agriculture.
c. Exclusive Forest Use or Open Space.

Directions

See question 20 in the Wetland Characterization. If the responses you gave to question 20 in the Characterization indicate that two or more zoned land-use categories are equally dominant, pick the one that will yield the lowest letter response for this question. (Example: In question 20 of the Wetland Characterization, you responded "b. Between 20% and 50%" to both *Exclusive Forest Use lands* and *developed uses*, and the remainder of your responses to question 15 were "a. Less than 20%." For this Sensitivity to Impact question, you would respond "a. Developed uses.")

Rationale

The duration of human-caused disturbance to a wetland also affects its capacity to absorb and withstand new or additional impacts. Zoned land-use is an approximation of the wetland's future exposure to disturbance.

Notes

Question 6

What is the dominant wetland vegetation cover type?

Directions

See question 23 in the Wetland Characterization.

a. Woody vegetation.
b. Emergent vegetation only or wet meadow.
c. Emergent vegetation and ponding, or open water only.

Rationale

The capacity of an individual type of wetland to recover from disturbance is controlled by its community structure. Woody communities exhibit higher structure and are less resilient because of their slow rate of biological turnover.

Sensitivity to impact: assessment criteria

A wetland is sensitive to future impacts if:	Questions 1, 2 and 3 are answered "a," and one other question is answered "a."
A wetland is potentially sensitive to future impacts if:	Answers do not satisfy the above- or below-listed criteria.
A wetland is not sensitive to future impacts if:	Questions 1 and 2 are answered "b", and no other questions are answered "a."

Notes

Enhancement potential

This index evaluates whether impacted or lost wetland functions can be restored at a degraded wetland site. It does **not** evaluate the enhancement potential of changing the vegetation through exotic weed removal, which is considered a management issue. Wetland enhancement provides opportunities to connect wetlands and adjacent natural areas, thus creating larger natural systems that provide corridors for animal movement. Enhancement potential represents how well a wetland might respond to the mitigation of past environmental impacts. The recovery of a wetland, and in particular its functions, depends upon the site's hydrology, its soils and substrate and the presence of environmental buffers surrounding the wetland.

For example, a wetland can be enhanced if its soils are minimally disturbed and if it can receive water from a known perennial or intermittent source. However, the enhancement potential of a site for a specific function may still be adversely impacted because of the surrounding land use. The wetland may be in an area where the source water quality is degraded and where weedy plants can invade the system.

If the wetland provides diverse wildlife habitat, do not complete the enhancement potential assessment questions. (Refer to the results of the assessment criteria for wildlife habitat.)

Notes

Assessment questions

Question 1

What are the assessment results for wildlife habitat, fish habitat, water quality and hydrologic control?

Directions

Refer to the results of the assessment criteria for each of the functions.

a. One or more of the functions is impacted or degraded.
b. The wetland has lost one or more of the functions or one or more of the functions is not present.

Rationale

The success of an enhancement project depends upon the wetland's existing capacity for providing a desired function. Wetlands that are either functionally intact or that are not functional offer little enhancement potential. Wetlands have a greater enhancement potential if their observed functions suggest that structural problems caused by previous environmental impacts can be easily remedied. For purposes of this index, a wetland that provides diverse wildlife habitat is functionally intact and efforts to enhance other functions may adversely affect the diversity of the wildlife habitat.

Question 2

What is the wetland's primary source of water?

a. Surface flow, including streams and ditches.
b. Groundwater, including springs or seeps.
c. Precipitation or sheet flow.

Directions

See question 36 in the Wetland Characterization.

Rationale

The success of a wetland enhancement project depends upon the ease with which local hydrologic regimes can be determined and, if needed, engineered to mitigate impaired conditions.

Question 3

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.
c. Flow is restricted and cannot be restored.

Directions

See question 39 in the Wetland Characterization.

Rationale

See rationale for question 2.

Question 4

What is the wetland's area in acres?

a. Greater than 5 acres.
b. Between .5 acres and 5 acres.
c. Less than .5 acres.

Directions

See question 17 in the Wetland Characterization.

Rationale

The variability of environmental conditions across large wetlands is greater than in small wetlands. The opportunity for finding and working with conditions that are amenable to enhancement efforts are therefore greater in large wetlands.

Notes

Question 5a

For **rural areas:** What percentage of the wetland's edge is bordered by upland wildlife habitat that is at least 150 feet wide?

a. Greater than 40%.
b. Between 10% and 40%.
c. Less than 10%.

Question 5b

For **urban areas:** What percent of the wetland's edge is bordered by a vegetative buffer at least 25 feet wide?

a. Greater than 40%.
b. Between 10 and 40%.
c. Less than 10%.

Directions

For rural areas, see question 25 in the Wetland Characterization. For urban areas, see question 26 in the Wetland Characterization.

Rationale

Wetlands with a larger intact buffer provide better environmental buffers to work sites within the wetland (e.g., they preclude unwanted access to new water control structures).

Question 6

What is the result of the sensitivity to impact index?

a. The wetland is not sensitive to future impacts.
b. The wetland is potentially sensitive to future impacts.
c. The wetland is sensitive to future impacts.

Directions

See the results of the evaluation criteria for the sensitivity to impact index.

Rationale

The enhancement potential of a wetland for a desired functional performance is greater when the quality of its source water is not impaired. The potential for functional performance also increases when the assessed wetland is not surrounded by land uses that expose the system to future impacts.

Notes

Enhancement potential: assessment criteria

A wetland has high enhancement potential if:	Question 1 is answered "a," and not more than one other question is answered "c."
A wetland has moderate potential for enhancement if:	Answers do not satisfy the above- or below-listed criteria.
A wetland has little enhancement potential if:	Question 1 is answered "b," and two or more other questions are answered "c."

Notes

Education

Field trips to wetlands are an important part of the educational experience. At wetland "classrooms" students can learn about ecological principles. The Oregon Method bases the educational assessment on accessibility and diversity of the wetlands. Wetlands that provide fish and wildlife habitat and permit access to other natural features allow for a broader course of study. This index evaluates whether it is possible to use the wetlands for educational purposes, not research.

Notes

Assessment questions

Question 1

Is the wetland site open to the public for direct access or observation?

Directions

See question 41 in the Wetland Characterization.

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.

Rationale

Public access allows educators to use the site on an unrestricted basis. If public access to a wetland is denied, the wetland cannot be used as an educational site. If public access exists, controlling the access limits disruption of the site. If the site is in a management area, the educational opportunities could be greater because of the availability of pamphlets and brochures. Management practices themselves could be of interest to users. Indicate in the "Notes" column, whether the site is in a management area.

Question 2

Are there visible hazards to the public at the wetland site?

Directions

See question 41 in the Wetland Characterization.

a. No.
b. One or two visible safety hazards exist.
c. More than two visible safety hazards exist.

Rationale

A safety hazard is an obvious drawback to an educational site or a reason not to use it.

Question 3

What are the results for the wildlife habitat and fish habitat assessment criteria?

Directions

Refer to the results of the assessment criteria for wildlife habitat and fish habitat.

a. The wetland provides diverse wildlife habitat, or the fish habitat function is intact.
b. Results for the wildlife habitat and fish habitat assessment criteria do not meet the criteria for responses "a" or "c."
c. Both wildlife habitat function and fish habitat function are lost or not present.

Rationale

The Oregon Method assumes that a user's exposure to ecological principles is greater in a naturally functioning ecosystem that is likely to contain fish or wildlife species.

Question 4

Is there existing physical public access to other features? If not, can such access be created easily, or can other habitats be observed from the site?

Directions

See question 44 in the Wetland Characterization.

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.

Rationale

Access to other habitat types allows users to examine the interactive nature of upland and aquatic systems. The presence of non-wetland plant or aquatic communities increases the educational value of the wetland by allowing the learner to compare wetlands, uplands and other aquatic systems.

Notes

Question 5

Is there a public access point within 250 feet of the wetland's edge?

a. Yes, a maintained access point exists.
b. Yes, an unmaintained access point exists.
c. No access point exists, or the access point is hazardous.

Directions

See question 46 in the Wetland Characterization.

Rationale

Access points within a reasonable distance are important if a wetland is to be a good educational site. But even nearby access points are of little value if they represent a hazard to users.

Question 6

Does it appear that access to a viewing spot or wetland edge is available for individuals with limited mobility?

a. Yes.
b. No.

Directions

See question 45 in the Wetland Characterization.

Rationale

The educational potential of a wetland is increased if people with limited mobility can also use the site. Note: This question is not included in the assessment criteria, but it should still be included on the answer sheet for assessment questions.

Education: assessment criteria

A wetland has educational uses if:	Questions 1 and 2 are answered "a," and questions 3, 4 and 5 are either "a" or "b."
A wetland has potential for educational use if:	Answers do not satisfy the above- or below-listed criteria.
A wetland site is not appropriate for educational use if:	The answer to 1 or 2 is "c."

Notes

Recreation

Many recreational activities take place in and around wetlands. Wetlands associated with open bodies of water also support boating and fishing. Many people simply enjoy the beauty and sounds of nature and spend time walking in or near wetlands observing plant and animal life.

This index considers the most common recreational activities associated with wetlands. It does not take into account motor-associated activities.

Notes

Assessment questions

Question 1

Is there a public access point within 250 feet of the wetland's edge?

Directions

See question 46 in the Wetland Characterization.

a. Yes, a maintained access point exists.
b. Yes, an unmaintained access point exists.
c. No access point exists, or the access point is hazardous.

Rationale

Access near the wetland is necessary to enable unloading of boats and equipment and to allow walking to trails or observation areas.

Question 2

Is the wetland accessible by boat?

Directions

See question 47 in the Wetland Characterization.

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

Rationale

Many wetlands are found along streams or lakes suitable for canoeing, kayaking or other non-motorized boating. This provides important recreational opportunities. In addition, a canoe route can provide an important viewpoint for enjoying the aesthetic beauty of a wetland.

Question 3

Are there trails, viewing areas or other structures that guide user movement to a particular area or areas in or around the wetland?

Directions

See question 48 in the Wetland Characterization.

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.

Rationale

Hunting, fishing, wildlife observation, photography and plant identification are recreational activities that take place in or around wetlands. Controlled movement of users limits adverse impacts to the wetland.

Question 4

What is the result of the wildlife habitat index?

Directions

Refer to the result of the assessment criteria for wildlife habitat.

a. The wetland provides diverse wildlife habitat.
b. The wetland provides habitat for some wildlife species.
c. The wetland's wildlife habitat function is lost or not present.

Rationale

Wetlands are likely to be ideal areas for wildlife observation and for photography if they contain diverse wildlife habitat.

Question 5

Is fishing allowed at the wetland or adjacent water body?

Directions

See question 49 in the Wetland Characterization.

a. Yes.
b. No or not applicable.

Rationale

Fishing is a popular activity associated with wetland areas and adjacent waterways.

Notes

Question 6

Is hunting allowed at the wetland?

a. Yes.
b. No.

Directions

See question 50 in the Wetland Characterization.

Rationale

Wetlands are ideal hunting areas. Although there will be game species in most wetlands, some wetlands may be closed to hunting.

Recreation: assessment criteria

The wetland provides recreational opportunities if:	Question 1 or 2 is answered "a," and at least one other question is is answered "a."
The wetland has the potential to provide recreational opportunities if:	Answers do not satisfy the above- or below- listed criteria.
The wetland is not appropriate for or does not provide recreational opportunities if:	Questions 1 and 2 are answered "c"; or questions 3 and 4 are answered "c," and 5 and 6 are answered "b."

Notes

Aesthetic quality

"Beauty is in the eye of the beholder." Although this index is subjective, it is included to assess the open space and overall pleasing qualities of wetlands to local residents and users. The assessment assumes the user will be visiting the wetland, not just driving by in a car, bus or on a bicycle.

Wetlands can be areas of scenic beauty. Most often they are viewed from along a stream, from a canoe, along a nature trail or from an overlook. Because some wetlands are large and can be viewed from several locations, it is important to note on the wetland base map which viewing location(s) are being evaluated. The assessment area may include the entire wetland or only a portion, such as an area clearly visible from a road or stream. Thus this assessment can be based on an average of several viewpoints or on one outstanding viewpoint.

Notes

Assessment questions

Question 1

How many Cowardin classes are visible from the primary viewing area(s)?

a. More than two.
b. Two.
c. One.

Directions

See question 58 in the Wetland Characterization.

Rationale

Views of wetlands with a mix of wetland types are often considered most pleasing.

Question 2

How much of the wetland is visible from the viewing area(s)?

a. Greater than 50%.
b. Between 25% and 50%.
c. Less than 25%.

Directions

See question 57 in the Wetland Characterization.

Rationale

The more area that is visible, the more pleasing the wetland is considered.

Question 3

What is the general appearance of the wetland as visible from primary viewing location?

Directions

See questions 53 and 54 in the Wetland Characterization.

a. No visual detractors.
b. Visual detractors exist but can be removed easily.
c. Visual detractors exist and cannot be removed easily.

Rationale

Trash and other signs of disturbance mar the aesthetics of a site, but they often can be removed or hidden. Power lines and other large, permanent structures may distract the viewer and cannot be removed.

Question 4

What is the extent of visual contrast with the surrounding landscape (rural) or visual character of the surrounding area (urban)?

Directions

See questions 51 and 52 in the Wetland Characterization.

Rural

a. Significant contrast with surrounding landscape.
b. Limited contrast with surrounding landscape.
c. Little or no contrast with surrounding landscape.

Urban

a. Open space or naturally landscaped areas.
b. Areas landscaped or manipulated by people.
c. Developed with no landscaping.

Rationale

Wetlands, which are generally low-lying features, often contrast dramatically with the surrounding areas, or their aesthetics are enhanced by the surrounding landscape.

Question 5

What odors are present at the primary viewing location(s)?

Directions

See question 55 in the Wetland Characterization.

a. Natural, pleasant odors only.
b. Unpleasant odors such as automobile exhaust or stench from a sewage treatment plant are present at certain times.
c. Unpleasant odors are distinct and continuously present.

Rationale

Unnatural odors reduce the aesthetic quality of wetlands.

Notes

Question 6

What noises are audible at the primary viewing location?

Directions

See question 56 in the Wetland Characterization.

Rural

a. Bird and wildlife noises and other naturally occurring sounds.

b. Some traffic and other similar background sounds are audible in addition to naturally occurring sounds.

c. Continuous traffic or other intrusive noise is audible in addition to naturally occurring sounds.

Urban

a. Some traffic and other similar background sounds are audible in addition to naturally occurring sounds.

b. Continuous traffic or other intrusive noise is audible in addition to naturally occurring sounds.

c. Continuous traffic or other intrusive noise is audible, but no naturally occurring sounds are.

Rationale

Subjective impressions of noise levels vary from person to person, but most agree that continual noise such as that from a busy highway detracts significantly from aesthetic appreciation of wetlands. Noise can be particularly distracting to observers who are listening for bird songs and other wildlife sounds.

Notes

Aesthetics: assessment criteria

A wetland is considered to be pleasing if:	Question 1 or 2 is answered "a," and all other questions are answered "a" or "b."
A wetland is considered to be moderately pleasing if:	Answers do not satisfy the above- or below-listed criteria.
A wetland is not pleasing if:	Two or more questions are answered "c."

Answer sheets & summary sheets

Wetland Assessment Questions: Answer Sheet				
Wetland identifier				
Wildlife habitat				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Question 7				
Question 8				
Question 9				
Assessment descriptor				
Fish habitat				
Streams and rivers				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Lakes and ponds				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				
Water quality				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				

Wetland Assessment Questions: Answer Sheet				
Wetland identifier				
Hydrologic control				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Question 7				
Assessment descriptor				
Sensitivity to future impacts				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				
Enhancement potential				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				
Education				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				

Wetland Assessment Questions: Answer Sheet				
Wetland identifier				
Recreation				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				
Aesthetic quality				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				

Function & condition summary sheet for the Oregon Method

Wetland identification:

Function	Assessment Descriptor	Rationale
Wildlife habitat		
Fish habitat		
Water quality		
Hydrologic control		
Sensitivity to future impacts		
Enhancement potential		
Education		
Recreation		
Aesthetic quality		

Narrative description of overall wetland functions and conditions

Watershed summary sheet for the Oregon Method

Watershed or community identification:

Characteristic	Description
Physical characteristics of the watershed	
Land uses within the watershed	
Water quality	
Biological characteristics of the watershed	

Narrative summary of watershed description

Glossary

This glossary provides nontechnical definitions of some of the technical terms used in this manual. This is by no means an exhaustive list of wetland terminology. For more detailed information, refer to the sources listed in Chapter VIII of this manual.

Anadromous fish
Saltwater fish that enter fresh water to spawn.

Aquatic bed
A wetland class dominated by plants that are completely submerged or float on the water's surface (refer to Appendix E).

Bog
Wetlands characterized by a waterlogged, spongy mat of sphagnum moss, ultimately producing a thickness of acid peat. Bogs are highly acid and tend to be nutrient poor. They are typically dominated by sedges, evergreen trees and shrubs.

Channel
The bed or deeper part of a stream or river.

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

Condition
The integrity of a wetland's physical and biological structure. This determines the wetland's ability to perform specific functions, as well as its resilience and enhancement opportunities.

Deep-water habitat
Aquatic habitats, such as lakes, rivers and oceans, where surface water is permanent and deeper than 6.6 feet most of the year (refer to Appendix E).

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

Ecology
The study of interactions between living things and their environment.

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.

Edge
The border between two vegetation types or between a vegetation type and open water. Edge contributes to diversity of wildlife in an ecosystem because some species ("edge dwellers") depend on such areas.

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

Emergent wetland
A wetland class dominated by emergent plants. Emergent wetlands include marshes and wet meadows (refer to Appendix E).

Enhancement
The alteration or active management of a wetland for improvements of particular functions.

Eutrophication
A high concentration of organic matter and mineral nutrients, such as phosphates and nitrates, can cause the over-fertilization of aquatic ecosystems. This results in excessively high levels of production and decomposition. This situation, called eutrophication, can hasten the aging process of a pond or lake because of the rapid buildup of organic remains.

Forested wetland
A wetland class in which the soil is saturated and often inundated, and woody plants taller than 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 (refer to Appendix E).

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.

Ground water
Water found at and beneath the water table in the zones of saturated soil and bedrock.

Ground water discharge
Ground water that emerges at the land surface in the form of springs or seepage areas. Ground water can also discharge into rivers (via bank seepage) and sustain flow during the drier months.

Ground water recharge
The process whereby infiltrating rain, snowmelt or surface water enters and replenishes the ground water stores.

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

Herptile
A cold-blooded vertebrate; includes reptiles and amphibians.

Hydric soil
A soil that is saturated long enough during the growing season to develop anaerobic (oxygen lacking) conditions in the upper part of the soil. Hydric soils are generally classified as poorly drained or very poorly drained.
- Poorly drained: Water is removed from the soil so slowly that the soil is saturated periodically during the growing season or remains wet for long periods.
- Very poorly drained: Water is removed from the soil so slowly that water remains at or on the surface during most of the growing season.

Impact
An action that creates an effect.

Intermittent stream
Streams that flow primarily during the wet seasons when the water table is high, and remain dry for a portion of the year. Most intermittent streams flow for a good portion of the year.

Main stem
The largest continuous channel of a river system that tributaries flow into.

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 plants such as pondweeds; and submergents.

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

Palustrine
Palustrine wetlands include 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: area less than 20 acres, maximum water depth less than 6.6 feet and salinity less than 0.5% (refer to Appendix E).

Perennial stream
A stream that normally flows year round in all years because it is sustained by ground water discharge as well as by surface runoff.

Riparian
Those areas associated with streams, lakes and wetlands where vegetation communities are predominantly influenced by their association with water.

Scrub-shrub wetland
A wetland class dominated by shrubs and woody plants less than 20 feet tall, e.g. dogwoods, alders, red maple saplings, etc. Water levels in shrub swamps can range from permanent to intermittent flooding (refer to Appendix E).

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

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

Swamp
A wetland in which the soil is saturated and often inundated and that is dominated by woody cover (such as alder or cedar).

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

Water table
The upper level of the portion of the ground (rock) in which all spaces are wholly saturated with water. The water table may be located at or near the land surface, or at a depth below the land surface. It usually fluctuates from season to season. Where the water table intersects the land surface, springs, seepages, marshes or lakes may occur.

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

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Appendix A
Sources of information

Notes

Where to go for information

Table A.1 on the following page lists sources of information needed to complete the Wetland Characterization. Some of the sources are given as abbreviations. Full agency names appear in Table A.2. Not all information listed in Table A.1 is available immediately for purchase. However, purchasing information can also be obtained from these offices. Addresses and phone numbers for many of the agencies listed appear in the following material.

Resources and assistance available to Oregon communities

The freshwater wetland function and condition assessment is interdisciplinary, and depending on your community's expertise, you may need to contact a list of people and agencies, including consultants, regional planning agencies, state permitting agencies, economic development specialists, and environmental organizations.

It is no coincidence that Oregon's first statewide planning goal is "citizen involvement." When formulating local wetland plans and assessing wetlands, your community must look for ways to include public input at every stage. Your "number one resource" is the people who live and work in your community—including older residents, who know a region's history, and young people, who are a community's future.

Although this list is not complete, the following are places to turn for help, whatever the stage of the planning and assessment process:

- Regional councils of government
- Other agencies and commissions
- State government agencies
- Miscellaneous state bureaus and services
- State colleges and universities
- State extension services (university specialists and county agents)
- State and regional offices of federal agencies
- Nonprofit organizations and conservation groups

Table A.1: Sources of information

Information	Available from
Aerial photographs, low altitude	County's Consolidated Farm Services Agency, Private Businesses, COG
Anadromous fish run information	ODFW Habitat Conservation Division, NMFS
Archaeological & historical information*	PRD Historic Preservation, SHPO
Drainage basin maps	WRD
Endangered and threatened wildlife listing	ODFW Threatened and Endangered Coordination, NHAC, USFWS
Endangered and threatened plants listing	NHAC, USFWS, ODA Plant Conservation Biology Program
Endangered and threatened species by town	NHAC
Fish stocking information	ODFW Fish Division
Flood hazard maps	Local planning offices, COGs
Surficial geology maps*	DOGAMI, USGS
Geographic information system*	GISSC
1988 Oregon Statewide Assessment of Nonpoint Sources of Water Pollution	DEQ Surface Water Division
Atlas of Oregon Lakes	DEQ, libraries
Lake water quality information	DEQ, Cooperative extension service, Lakes Lay Monitoring Program
State-owned waters*	DSL
Municipal Assessor's/tax maps	Local government offices
Local comprehensive plan and zoning maps	Local government offices
National Wetlands Inventory Maps	DSL
National Heritage Inventory	NHAC
Water Quality Report to Congress 305(b)	DEQ, State library
Rare natural communities listing	NHAC (Appendix A)
Soil survey maps (by county)	County NRCS offices
USGS topographical maps	Local bookstores and sporting goods stores or order by calling 1-800-USAMAPS

**Optional*

Table A.2: Agency abbreviations

Abbreviation	Agency
State agencies	
DEQ	Department of Environmental Quality
DLCD	Department of Land Conservation and Development
DSL	Division of State Lands
DOGAMI	Department of Geology and Minerals Industries
Ext.	Oregon State University Extension Service
GISSC	Geographic Information System Service Center
NHAC	Natural Heritage Advisory Council
ODA	Oregon Department of Agriculture
OACD	Oregon Association of Conservation Districts
ODF	Oregon Department of Forestry
ODFW	Oregon Department of Fish and Wildlife
PRD	Parks and Recreation Department
SHPO	State Historic Preservation Office
WRD	Water Resources Department
Federal agency abbreviations and others	
CFBS	Consolidated Farm Bureau Services
COE	Army Corps of Engineers (Corps)
EPA	Environmental Protection Agency
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
SWCD	Soil and Water Conservation District
COG	Council of governments

Contact Addresses

Regional councils of government

In Oregon, regional councils of government (COG's) have been formed to promote greater cooperation between all levels of government. COG's are usually voluntary associations of local governments cooperating on issues and problems that cross city, county, and sometimes state boundaries. They are multi-jurisdictional and multipurpose organizations, with an emphasis on economic development and developing regional planning strategies.

Columbia River Estuary Study Taskforce (CREST)
750 Commercial Street, Room 214
Astoria, OR 97103-4513
(503) 325-0435

Metropolitan Service District (Metro)
600 N.E. Grande Ave.
Portland, OR 97232-2799
(503) 797-1700

Clatsop-Tillamook Intergovernmental Council
1063 S. Hemlock Street
P.O. Box 488
Cannon Beach, OR 97110
(503) 436-1156

Lane Council of Governments
125 E. 8th Avenue
Eugene, OR 97401
(503) 687-4283

Mid-Willamette Valley Council of Governments
105 High Street SE
Salem, OR 97301
(503) 588-6177

Rogue Valley Council of Governments
155 S. Second Street
P.O. Box 3275
Central Point, OR 97502
(503) 664-6674

Umpqua Regional Council of Governments
Room 305
Douglas Co. Courthouse
Roseburg, OR 97470
(503) 440-4231

State agencies

Department of Land Conservation and Development (DLCD)
1175 Court Street NE
Salem, OR 97310-0590
(503) 373-0050

DLCD reviews and coordinates application of statewide planning goals to city and county comprehensive plans and to state agency land-use programs. There are field offices in Portland, Newport and Bend.

Department of Environmental Quality (DEQ)
Executive Building
811 SW 6th Ave.
Portland, OR 97204
(503) 229-5696/5630

DEQ develops comprehensive plans and programs for environmental quality, conducts field investigations, and establishes standards of quality for Oregon's waters. There are field offices throughout the state.

Department of Fish and Wildlife (ODFW)
2501 SW First Street
P.O. Box 59
Portland, OR 97207
(503) 229-5403

ODFW assists and advises other regulatory agencies and private parties in protecting water quality, water flows, and fish and wildlife habitat. There are regional offices in Corvallis, Roseburg, Bend, La Grande, Hines, Newport and Clackamas.

Division of State Lands (DSL)
775 Summer Street NE
Salem, OR 97310
(503) 378-3805

DSL performs many public services assigned by the legislature, including administering state laws protecting Oregon wetlands and waterways from dredging and filling alterations and approving local wetland inventories and wetland conservation plans. There is a regional office in Bend.

Natural Heritage Advisory Council (NHAC)
c/o Division of State Lands
775 Summer Street NE
Salem, OR 97310
(503) 378-3805

This council works with DSL to carry out the Natural Heritage Plan approved by the legislature in 1981. Development of an inventory (The Natural Heritage Data Bank) of native Oregon ecosystems was primary objective of the Council. Material from the data bank is available through:

The Natural Heritage Program
821 SE 14th Ave.
Portland, OR 97214
(503) 731-3070

Water Resources Department (WRD)
158 12th St. NE
Salem, OR 97310
(503) 378-3739

Although mainly concerned with regulation of state laws pertaining to water rights and diversion of surface and ground waters, this department is a good contact for local water resource information. There are regional offices in Salem, Grants Pass, Bend, Baker, and Pendleton.

Other state agencies

Department of Geology and Minerals Industries (DOGAMI)
State Office Bldg. Suite 965
800 NE Oregon Street #28
Portland, OR 97232
(503) 731-4100

Department of Forestry (ODF)
2600 State Street
Salem, OR 97310
(503) 945-7200

Department of Parks and Recreation (PRO)
Vick Building
525 Trade Street SE
Salem, OR 97310
(503) 378-6305

State Historic Preservation Office (SHPO)
(503) 378-6508

State and regional offices of federal agencies

The state agencies below can be contacted for information on federal land use, permits and technical assistance.

U.S. Department of Agriculture Natural Resources Conservation Service State Office
101 SW Main St., Suite 1300
Portland, OR 97204-3221
(503) 414-3200

U.S. Army Corps of Engineers (COE) Portland District
Box 2946
Portland, OR 97208-2946
(503) 326-6995

U.S. Environmental Protection Agency (EPA)
811 SW 6th Avenue
Portland, OR 97204
(503) 326-2716

U.S. Fish and Wildlife Service (USFWS) Ecological Services
2600 SE 98th Suite 100
Portland, OR 97266
(503) 231-6179

National Marine Fisheries Service (NMFS)
911 NE 11th Ave., Room 620
Portland, OR 97232
(503) 230-5400

U.S. Geological Survey National Cartographic Information Center Western Mapping Center
345 Middlefield Road
Menlo Park, CA 94025
(415) 329-4309 (California number)
1-800-USA-MAPS (Virginia number)

Nonprofit organizations and conservation groups

The following groups are state chapters of some known public-interest and conservation organizations, as well as some Oregon-only groups. They often can provide information on other local citizen-activist organizations involved in environmental and governmental issues.

Audubon Society of Portland
5151 N.W. Cornell Road
Portland, OR 97210
(503) 292-6855

The Nature Conservancy
821 SE 14th Ave.
Portland, OR 97214
(503) 230-1221

The Wetland Conservancy
P.O. Box 1195
Tualatin, OR 97062
(503) 691-1394

Sierra Club, Oregon Chapter
1413 S.E. Hawthorne Blvd.
Portland, OR 96214
(503) 238-0442

Oregon Coastal Zone Management Association, Inc. (OCZMA)
P.O. Box 1033
Newport, OR 97365
(503) 265-8918

Appendix B
Wetland Characterization

Notes

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.

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 identification _____

Wetland Characterization (Page 2 of 19)

Watershed Notes

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.
   b. Warm water.
   c. Anadromous.
   d. Wild population.
   e. Introduced or hatchery populations.
   f. None.
   g. Other (list).

Watershed identification _____

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.
    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

Watershed identification _____

Wetland Characterization (Page 4 of 19)

Watershed Notes

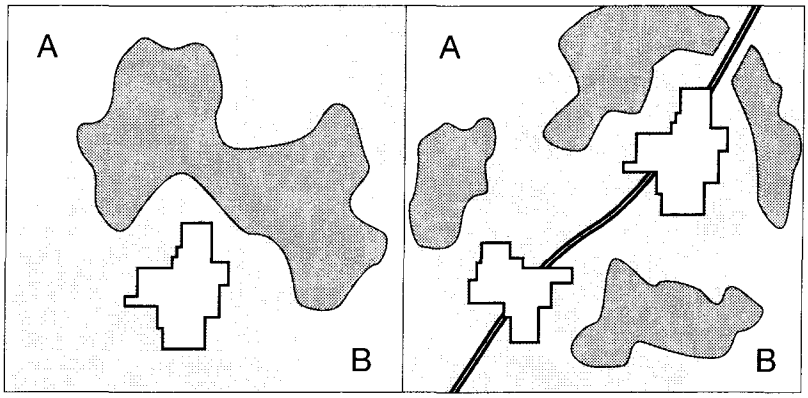


Figure 1. Watersheds as corridors for wildlife movement.
Areas A and B are the end points of a movement corridor through the watershed. Natural areas are shaded darkly, the irregular polygons represent highly developed areas, and the thick black line represents an impassable barrier such as an interstate 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.

Watershed identification _____

Wetland 1	Wetland 2	Wetland 3

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

✔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).
2. Agriculture (pasture, cropped lands, orchards, range land).
3. Exclusive Forest Use lands.
4. Developed uses (residential, commercial or industrial—rural and urban).
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.

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.
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 _____

	Wetland 1	Wetland 2	Wetland 3

Wetland Characterization (Page 6 of 19)

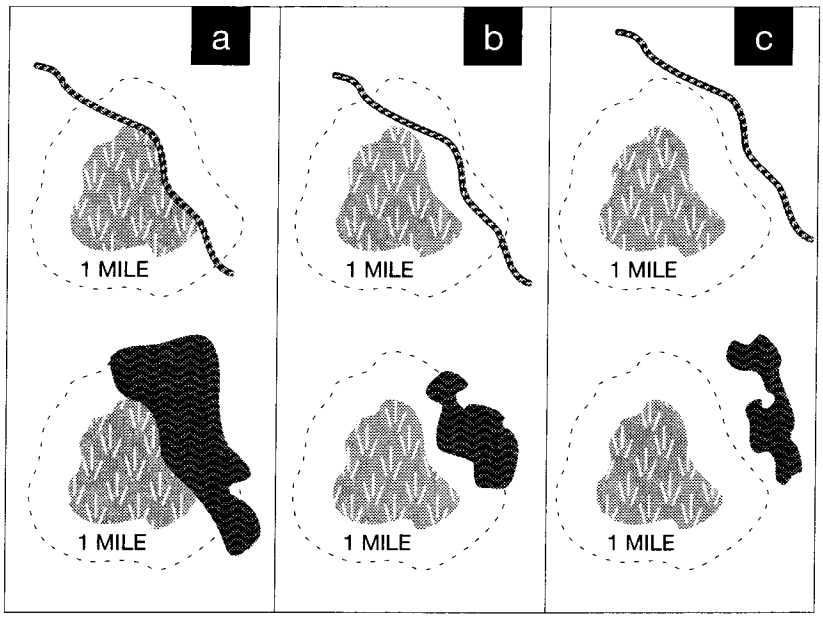


Figure 2. Connectivity to streams, lakes and ponds.
The lightly shaded area represents a wetland, the darkly shaded area represents a lake or pond and the dark line represents a stream. Part "a" shows the wetland connected to a stream, lake or pond, part "b" shows a stream, lake or pond within 1 mile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

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.
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.

Watershed identification _____

Wetland 1	Wetland 2	Wetland 3

Wetland Characterization (Page 7 of 19)

20. What percentage of the area within 500 feet of the wetland's edge is **zoned** for each of the land uses listed below?

    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).
    3. Scrub-shrub (woody vegetation under 20 feet tall).
    4. Forested (woody vegetation 20 feet or taller).

✓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).

Watershed identification _____

Wetland 1	Wetland 2	Wetland 3

Wetland Characterization (Page 8 of 19)

✓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.

✓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.

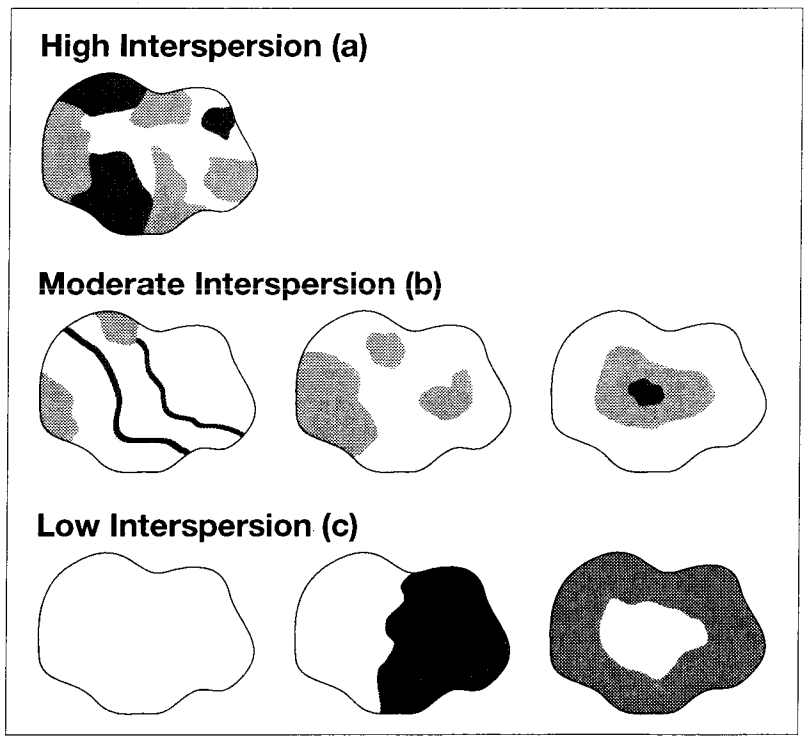


Figure 3. Interspersion of Cowardin classes and upland inclusions.

Watershed identification _____

	Wetland 1	Wetland 2	Wetland 3

Wetland Characterization (Page 9 of 19)

✓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%.

✓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%.

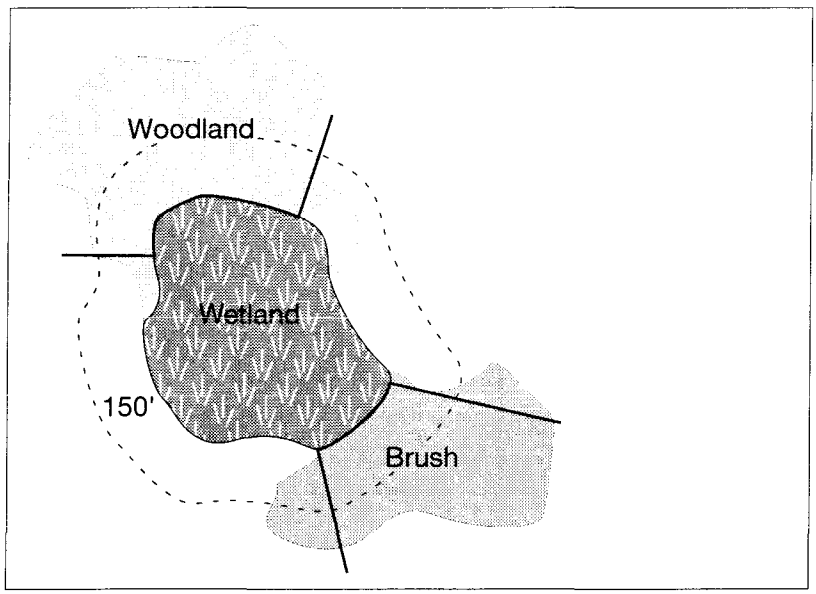


Figure 4. Percent of wetland edge bordered by upland habitat (for Question 25).
The dashed line delineates the area within 150 feet of the wetland; the "woodland" and "brush" areas are upland habitat; and the lines perpendicular to the wetland edge indicate where the upland habitat adjacent to the wetland 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 _____

Wetland Characterization (Page 10 of 19)

	Wetland 1	Wetland 2	Wetland 3
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.			
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.			

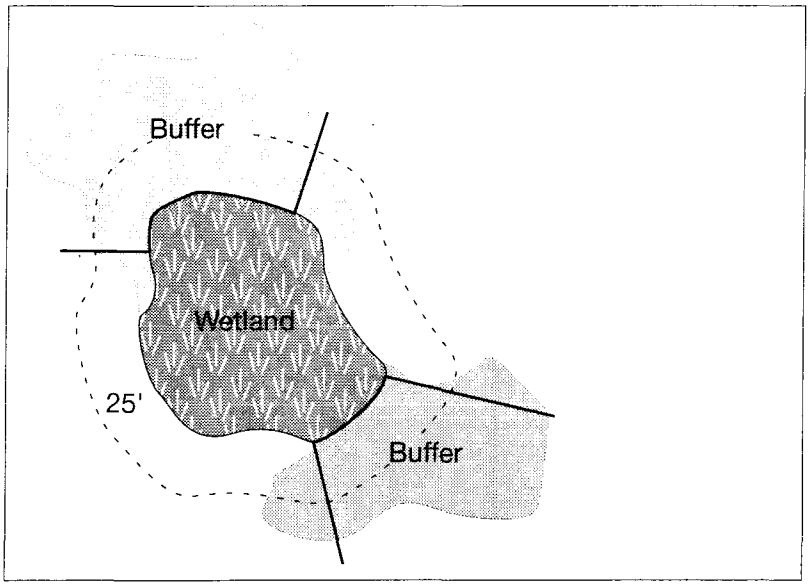


Figure 5. Percent of wetland edge bordered by vegetative buffer (for Question 26).
The dashed line delineates the area within 25 feet of the wetland; the vegetative buffer areas are labeled "buffer"; and the lines perpendicular to the wetland edge indicate where the vegetative buffer adjacent to the 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 _____

	Wetland 1	Wetland 2	Wetland 3

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.

Watershed identification _____

	Wetland 1	Wetland 2	Wetland 3

Wetland Characterization (Page 12 of 19)

✓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%.

✓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%

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.

✓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.

✓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.

Watershed identification _____

	Wetland 1	Wetland 2	Wetland 3

Wetland Characterization (Page 13 of 19)

✓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.

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.

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.

✓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).

✓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.

Watershed identification _____

Wetland 1	Wetland 2	Wetland 3

Wetland Characterization (Page 14 of 19)

✓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.

✓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.)

✓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.

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.

Watershed identification _____

	Wetland 1	Wetland 2	Wetland 3

Wetland Characterization (Page 17 of 19)

✓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.

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.

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.

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.

✓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.

✓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.

Watershed identification _____

	Wetland 1	Wetland 2	Wetland 3

Wetland Characterization (Page 18 of 19)

✓54. If the wetland contains visual detractors, as indicated in question 53, can they be removed easily?

a. Yes.

b. No.

Locate the primary viewing area(s) for the following four questions (be sure to indicate the location on the overlay).

✓55. What odors are present at the primary viewing location(s)?

a. Natural, pleasant odors only.

b. Unpleasant odors such as automobile exhaust or stench from a sewage treatment plant are present at certain times.

c. Unpleasant odors are distinct and continuously present.

Figure 6. Visual contrast.
The top part of the figure shows a wetland with significant visual contrast with the surrounding landscape. The bottom part shows a wetland with little or no visual contrast with the surrounding landscape.

Watershed identification _____

	Wetland 1	Wetland 2	Wetland 3

Wetland Characterization (Page 19 of 19)

✓56. What noises are audible at the primary viewing location(s)?

a. Bird and wildlife noises and other naturally occurring sounds.

b. Some traffic and other similar background sounds are audible in addition to naturally occurring sounds.

c. Continuous traffic or other intrusive noise is audible in addition to naturally occurring sounds.

d. Continuous traffic or other intrusive noise is audible, but no naturally occurring sounds are.

✓57. How much of the wetland is visible from the viewing area(s)? Describe the view.

a. Greater than 50%.

b. Between 25% and 50%.

c. Less than 25%.

✓58. How many Cowardin classes are visible from the primary viewing area(s)? (See question 21 for list of Cowardin classes to use.)

a. More than two.

b. Two

c. One

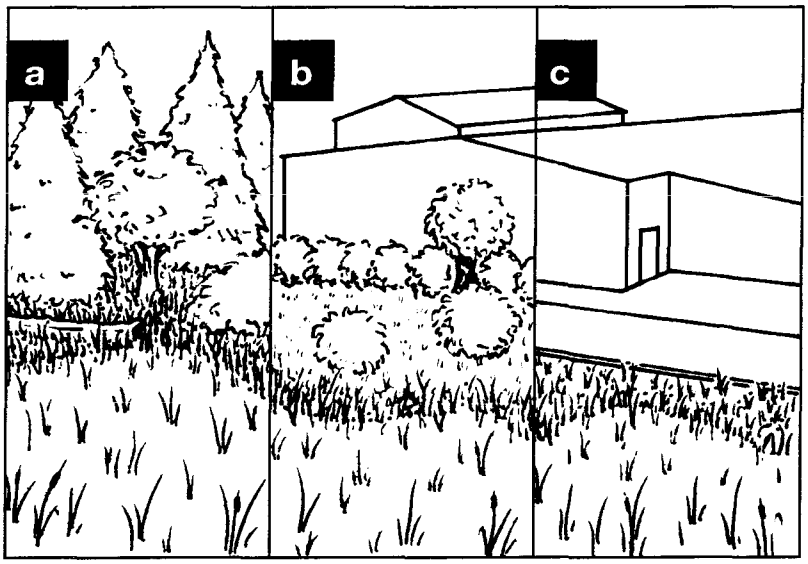


Figure 7. Visual character of urban wetlands.
Beginning with the left part, this figure shows an urban wetland with naturally landscaped areas, areas landscaped by people and with unlandscaped developed areas.

Appendix C
Assessment questions, answer sheets & summary sheets

Notes

Wetland identification _____

Assessment questions: wildlife habitat (Page 1 of 3)

Question	Answer
1. How many Cowardin wetland classes are present? (Characterization: 21)	*Rural areas:* a. Three or four. b. Two. c. One. *Urban areas:* a. Two or more. b. One class with more than five plant species. c. One class with five or fewer plant species.
2. What is the dominant wetland vegetation cover type? (Characterization: 23)	a. Woody vegetation. b. Emergent vegetation and ponding, or open water only. c. Emergent vegetation or wet meadow.
3. What is the degree of Cowardin class interspersion for the wetland being observed? (Characterization: 24)	a. High. b. Moderate. c. Low.
4. If the wetland contains unvegetated open water, how many acres of unvegetated open water are present? (Characterization: 28)	*Rural areas:* a. More than 3 acres . b. Between 0.5 and 3 acres. c. Less than 0.5 acres. *Urban areas:* a. More than 1 acre. b. Between 0.5 and 1 acre. c. Less than 0.5 acres.

Notes

Wetland identification _____

Assessment questions: wildlife habitat (Page 2 of 3)

Question	Answer
5. How is the wetland connected to another body of water, such as a stream, lake or pond? (Characterization: 18)	a. The wetland is connected by surface water to another body of water. 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.
6. How is the wetland connected to other wetlands? (Characterization: 27)	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.
7. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland? (Characterization: 8)	a. No upstream or adjacent reaches are listed as *water quality limited,* and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants. b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants. c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants.

Notes

Wetland identification _____

Assessment questions: wildlife habitat (Page 3 of 3)

Question	Answer
8. What is the dominant existing land use within 500 feet of the wetland's edge? (Characterization: 15)	a. Exclusive Forest Use or Open Space. b. Agriculture. c. Developed uses.
9a. For **rural areas:** What percentage of the wetland's edge is bordered by upland wildlife habitat that is at least 150 feet wide? (Characterization: 25)	a. Greater than 40%. b. Between 10% and 40%. c. Less than 10%.
9b. For **urban areas:** What percent of the wetland's edge is bordered by a vegetative buffer at least 25 feet wide? (Characterization: 26)	a. Greater than 40%. b. Between 10 and 40%. c. Less than 10%.

Wildlife habitat: assessment criteria

The wetland provides diverse wildlife habitat if:	At least four questions are answered "a," and no more than one is answered "c."
The wetland provides habitat for some wildlife species if:	Answers do not satisfy the above- or below-listed criteria.
The wetland's wildlife habitat function is lost or not present if:	All questions are answered "c."

Notes

Wetland identification _____

Notes

Assessment questions: fish habitat (Page 1 of 3)

Part A—streams

Question	Answer
1. What percentage of the stream is shaded by streamside (riparian) vegetation? (Characterization: 31)	*Western Oregon:* a. More than 75%. b. Between 50% and 75%. c. Less than 50%. *Eastern Oregon:* a. 50% or more. b. 25% or more, but less than 50%. c. Less than 25%.
2. What is the physical character of the stream channel? (Characterization: 30)	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 channel are modified. c. The stream is extensively modified or confined in a non-vegetated channel or pipe.
3. What percentage of the entire stream contains instream structures such as large woody debris, floating submerged vegetation, large rocks or boulders? (Characterization: 32)	a. More than 25%. b. Between 10% and 25%. c. Less than 10%.
4. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland? (Characterization: 8)	a. No upstream or adjacent reaches are listed as *water quality limited,* and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants. b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants. c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants.

Wetland identification _____

Assessment questions: fish habitat (Page 2 of 3)

Question	Answer
5. What is the dominant existing land use within 500 feet of the wetland's edge? (Characterization: 15)	a. Exclusive Forest Use or Open Space. b. Agriculture. c. Developed uses.
6. Are fish present in a stream, lake or pond associated with the wetland? (Characterization: 29)	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.

Part B—lakes and ponds

1. Does the lake or pond contain areas of both deep and shallow water? (Characterization: 33)	a. Yes. b. Cannot be determined. c. No.
2. What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders? (Characterization: 35)	a. More than 25%. b. Between 10% and 25%. c. Less than 10%.
3. What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation? (Characterization: 34)	a. 60% or more. b. 20% or more, but less than 60%. c. Less than 20%.

Notes

Wetland identification _____

Notes

Assessment questions: fish habitat (Page 3 of 3)

Question	Answer
4. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland? (Characterization: 8)	a. No upstream or adjacent reaches are listed as *water quality limited,* and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants. b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants. c. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants.
5. What is the dominant existing land use within 500 feet of the wetland's edge? (Characterization: 15)	a. Exclusive Forest Use or Open Space. b. Agriculture. c. Developed uses.
6. Are fish in a stream, lake or pond associated with the wetland? (Characterization: 29)	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.

Fish habitat: assessment criteria

The wetland's fish habitat function is intact if:	Any three questions are answered "a," and no more than one is answered "c."
The wetland's fish habitat function is impacted or degraded if:	Answers do not satisfy the above- or below-listed criteria.
The wetland's fish habitat function is lost or not present if:	All questions are answered "c."

Wetland identification _____

Assessment questions: water quality (Page 1 of 2)

Question	Answer
1. What is the wetland's primary source of water? (Characterization: 36)	a. Surface flow, including streams and ditches. b. Precipitation or sheet flow. c. Groundwater, including seeps and springs.
2. Is there evidence of flooding or ponding during a portion of the growing season? (Characterization: 37)	a. Yes. b. Unable to determine or not applicable. c. No.
3. What is the degree of wetland vegetation cover? (Characterization: 21)	a. High (greater than 60%). b. Moderate (approximately 60%). c. Low (less than 60%).
4. What is the wetland's area in acres? (Characterization: 17, 27)	a. More than 5 acres. b. Between 0.5 acres and 5 acres; or wetland area is less than 0.5 acres, and the wetland is connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake. c. Less than 0.5 acres, and the wetland is not connected to other wetlands within a 3-mile radius by a perennial or intermittent stream, irrigation or drainage ditch, canal or lake.
5. What is the dominant, existing land use within 500 feet of the wetland's edge? (Characterization: 15)	a. Developed uses. b. Agriculture. c. Exclusive Forest Use or Open Space.

Notes

Wetland identification _____

Assessment questions: water quality (Page 2 of 2)

Question	Answer
6. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland? (Characterization: 8)	a. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants. b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants. c. No upstream or adjacent reaches are listed as *water quality limited,* and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants.

Water quality: assessment criteria

A wetland's water-quality function is intact if:	Question 1 is answered "a" or "b," questions 2 and 3 are answered "a," and any other question is answered "a" or "b."
A wetland's water-quality function is impacted or degraded if:	Answers do not satisfy the above- or below-listed criteria.
A wetland's water-quality function is lost or not present if:	Four out of six questions are answered "c."

Notes

Wetland identification _____

Assessment questions: hydrologic control (Page 1 of 2)

Question	Answer
1. Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin? (Characterization: 19)	a. Yes. b. No.
2. Is there evidence of flooding or ponding during a portion of the growing season? (Characterization: 37)	a. Yes. b. Unable to determine or not applicable. c. No.
3. What is the wetland's area in acres? (Characterization: 17)	a. More than 5 acres. b. Between .5 acres and 5 acres. c. Less than .5 acres.
4. Is waterflow out of the wetland restricted (e.g., beaver dam, concrete structure, undersized culvert)? (Characterization: 38)	a. Yes, the outlet is restricted or the wetland has no outlet. b. Minor restrictions slow down the water (i.e., undersized culvert.) c. No, the outlet has unrestricted flow.
5. What is the dominant wetland vegetation cover type? (Characterization: 23)	a. Woody vegetation. b. Emergent vegetation and ponding, or open water only. c. Emergent vegetation or wet meadow.
6. What is the dominant existing land use, within 500 feet of the wetland on the downstream or down-slope edge of the wetland? (Characterization: 16)	a. Developed uses. b. Agriculture. c. Exclusive Forest Use and Open Space.
7. What is the dominant land use in the watershed upstream from the assessment area? (Characterization: 6)	a. Urban or urbanizing. b. Agriculture. c. Forested or natural area.

Notes

Wetland identification _____

Assessment questions: hydrologic control (Page 2 of 2)

Hydrologic control: assessment criteria	
A wetland's hydrologic control function is intact if:	Four or more questions are answered "a."
A wetland's hydrologic control function is is impacted or degraded if:	Answers do not satisify the above- or below-listed criteria.
A wetland's hydrologic control function is lost or not present if:	Four or more questions are answered "c."

Notes

Wetland identification _____

Assessment questions: sensitivity (Page 1 of 2)

Question	Answer
1. Has the stream flow or stream bank been modified by human activities less than 1 mile above the wetland, or is the wetland isolated? (Characterization: 27, 40)	a. Yes. b. No.
2. Is water being taken out of the stream(s) through active diking, drainage or irrigation districts upstream of the assessment area, or is the wetland isolated? (Characterization: 5, 27)	a. Yes b. No
3. What is the water quality condition of stream reaches in the watershed upstream of the wetland or adjacent to the wetland? (Characterization: 8)	a. One or more upstream or adjacent reaches are listed as *water quality limited* or in *severe* water quality condition for nonpoint source pollutants. b. One or more upstream or adjacent reaches are listed in *moderate* water quality condition for nonpoint source pollutants. c. No upstream or adjacent reaches are listed as *water quality limited,* and all upstream or adjacent reaches are listed as *no problem* (or no data available) for nonpoint source pollutants.
4. What is the dominant, existing land use within 500 feet of the wetland's edge? (Characterization: 15)	a. Developed uses. b. Agriculture. c. Exclusive Forest Use or Open Space.
5. What is the dominant zoned land use within 500 feet of the wetland's edge? (Characterization: 20)	a. Developed uses. b. Agriculture. c. Exclusive Forest Use or Open Space.

Notes

Wetland identification _____

Assessment questions: sensitivity (Page 2 of 2)

Question	Answer
6. What is the dominant wetland vegetation cover type? (Characterization: 23)	a. Woody vegetation. b. Emergent vegetation only or wet meadow. c. Emergent vegetation and ponding, or open water only.

Sensitivity to impact: assessment criteria

A wetland is sensitive to future impacts if:	Questions 1, 2 and 3 are answered "a," and one other question is answered "a."
A wetland is potentially sensitive to future impacts if:	Answers do not satisfy the above- or below-listed criteria.
A wetland is not sensitive to future impacts if:	Questions 1 and 2 are answered "b", and no other questions are answered "a."

Notes

Wetland identification _____

Assessment questions: enhancement (Page 1 of 2)

Question	Answer
1. What are the assessment results for wildlife habitat, fish habitat, water quality and hydrologic control?	a. One or more of the functions is impacted or degraded. b. The wetland has lost one or more of the functions or one or more of the functions is not present.
2. What is the wetland's primary source of water? (Characterization: 36)	a. Surface flow, including streams and ditches. b. Groundwater, including springs or seeps. c. Precipitation or sheet flow.
3. If the primary source of water is surface flow, is the water flow into the wetland restricted? (Characterization: 39)	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. c. Flow is restricted and cannot be restored.
4. What is the wetland's area in acres? (Characterization: 17)	a. Greater than 5 acres. b. Between .5 acres and 5 acres. c. Less than .5 acres.
5a. For **rural areas:** What percentage of the wetland's edge is bordered by upland wildlife habitat that is at least 150 feet wide? (Characterization: 25)	a. Greater than 40%. b. Between 10% and 40%. c. Less than 10%.
5b. For **urban areas:** What percent of the wetland's edge is bordered by a vegetative buffer at least 25 feet wide? (Characterization: 26)	a. Greater than 40%. b. Between 10 and 40%. c. Less than 10%.

Notes

Wetland identification _____

Assessment questions: enhancement (Page 2 of 2)

Question	Answer
6. What is the result of the sensitivity to impact index?	a. The wetland is not sensitive to future impacts. b. The wetland is potentially sensitive to future impacts. c. The wetland is sensitive to future impacts.

Enhancement potential: assessment criteria

A wetland has high enhancement potential if:	Question 1 is answered "a," and not more than one other question is answered "c."
A wetland has moderate potential for enhancement if:	Answers do not satisfy the above- or below-listed criteria.
A wetland has little enhancement potential if:	Question 1 is answered "b," and two or more other questions are answered "c."

Notes

Wetland identification _____

Assessment questions: education (Page 1 of 2)

Question	Answer
1. Is the wetland site open to the public for direct access or observation? (Characterization: 41)	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.
2. Are there visible hazards to the public at the wetland site? (Characterization: 41)	a. No. b. One or two visible safety hazards exist. c. More than two visible safety hazards exist.
3. What are the results for the wildlife habitat and fish habitat assessment criteria?	a. The wetland provides diverse wildlife habitat, or the fish habitat function is intact. b. Results for the wildlife habitat and fish habitat assessment criteria do not meet the criteria for responses "a" or "c." c. Both wildlife habitat function and fish habitat function are lost or not present.
4. Is there existing physical public access to other features? If not, can such access be created easily, or can other habitats be observed from the site? (Characterization: 44)	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.

Notes

Wetland identification _____

Assessment questions: education (Page 2 of 2)

Question	Answer
5. Is there a public access point within 250 feet of the wetland's edge? (Characterization: 46)	a. Yes, a maintained access point exists. b. Yes, an unmaintained access point exists. c. No access point exists, or the access point is hazardous.
6. Does it appear that access to a viewing spot or wetland edge is available for individuals with limited mobility? (Characterization: 45)	a. Yes. b. No.

Education: assessment criteria

A wetland has educational uses if:	Questions 1 and 2 are answered "a," and questions 3, 4 and 5 are either "a" or "b."
A wetland has potential for educational use if:	Answers do not satisfy the above- or below-listed criteria.
A wetland site is not appropriate for educational use if:	The answer to 1 or 2 is "c."

Notes

Wetland identification _____

Assessment questions: recreation (Page 1 of 2)

Question	Answer
1. Is there a public access point within 250 feet of the wetland's edge? (Characterization: 46)	a. Yes, a maintained access point exists. b. Yes, an unmaintained access point exists. c. No access point exists, or the access point is hazardous.
2. Is the wetland accessible by boat? (Characterization: 47)	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
3. Are there trails, viewing areas or other structures that guide user movement to a particular area or areas in or around the wetland? (Characterization: 48)	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.
4. What is the result of the wildlife habitat index?	a. The wetland provides diverse wildlife habitat. b. The wetland provides habitat for some wildlife species. c. The wetland's wildlife habitat function is lost or not present.
5. Is fishing allowed at the wetland or adjacent water body? (Characterization: 49)	a. Yes. b. No or not applicable.

Notes

Wetland identification _____

Assessment questions: recreation (Page 2 of 2)

Question	Answer
6. Is hunting allowed at the wetland? (Characterization: 50)	a. Yes. b. No.

Recreation: assessment criteria

The wetland provides recreational opportunities if:	Question 1 or 2 is answered "a," and at least one other question is is answered "a."
The wetland has the potential to provide recreational opportunities if:	Answers do not satisfy the above- or below- listed criteria.
The wetland is not appropriate for or does not provide recreational opportunities if:	Questions 1 and 2 are answered "c"; or questions 3 and 4 are answered "c," and 5 and 6 are answered "b."

Notes

Wetland identification _____

Notes

Assessment questions: aesthetics (Page 1 of 2)

Question	Answer
1. How many Cowardin classes are visible from the primary viewing area(s)? (Characterization: 58)	a. More than two. b. Two. c. One.
2. How much of the wetland is visible from the viewing area(s)? (Characterization: 57)	a. Greater than 50%. b. Between 25% and 50%. c. Less than 25%.
3. What is the general appearance of the wetland as visible from primary viewing location? (Characterization: 53, 54)	a. No visual detractors. b. Visual detractors exist but can be removed easily. c. Visual detractors exist and cannot be removed easily.
4. What is the extent of visual contrast with the surrounding landscape (rural) or visual character of the surrounding area (urban)? (Characterization: 52)	*Rural* a. Significant contrast with surrounding landscape. b. Limited contrast with surrounding landscape. c. Little or no contrast with surrounding landscape. *Urban* a. Open space or naturally landscaped areas. b. Areas landscaped or manipulated by people. c. Developed with no landscaping.
5. What odors are present at the primary viewing location(s)? (Characterization: 55)	a. Natural, pleasant odors only. b. Unpleasant odors such as automobile exhaust or stench from a sewage treatment plant are present at certain times. c. Unpleasant odors are distinct and continuously present.

Wetland identification _____

Assessment questions: aesthetics (Page 2 of 2)

Question	Answer
6. What noises are audible at the primary viewing location? (Characterization: 56)	*Rural* a. Bird and wildlife noises and other naturally occurring sounds. b. Some traffic and other similar background sounds are audible in addition to naturally occurring sounds. c. Continuous traffic or other intrusive noise is audible in addition to naturally occurring sounds. *Urban* a. Some traffic and other similar background sounds are audible in addition to naturally occurring sounds. b. Continuous traffic or other intrusive noise is audible in addition to naturally occurring sounds. c. Continuous traffic or other intrusive noise is audible, but no naturally occurring sounds are.

Aesthetics: assessment criteria

A wetland is considered to be pleasing if:	Question 1 or 2 is answered "a," and all other questions are answered "a" or "b."
A wetland is considered to be moderately pleasing if:	Answers do not satisfy the above- or below-listed criteria.
A wetland is not pleasing if:	Two or more questions are answered "c."

Notes

Wetland Assessment Questions: Answer Sheet				
Wetland identifier				
Wildlife habitat				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Question 7				
Question 8				
Question 9				
Assessment descriptor				
Fish habitat				
Streams and rivers				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Lakes and ponds				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				
Water quality				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				

Wetland Assessment Questions: Answer Sheet				
Wetland identifier				
Hydrologic control				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Question 7				
Assessment descriptor				
Sensitivity to future impacts				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				
Enhancement potential				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				
Education				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				

Wetland Assessment Questions: Answer Sheet				
Wetland identifier				
Recreation				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				
Aesthetic quality				
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor				

Function & condition summary sheet for the Oregon Method

Wetland identification:

Function	Assessment Descriptor	Rationale
Wildlife habitat		
Fish habitat		
Water quality		
Hydrologic control		
Sensitivity to future impacts		
Enhancement potential		
Education		
Recreation		
Aesthetic quality		

Narrative description of overall wetland functions and conditions

Watershed summary sheet for the Oregon Method

Watershed or community identification:

Characteristic	Description
Physical characteristics of the watershed	
Land uses within the watershed	
Water quality	
Biological characteristics of the watershed	

Narrative summary of watershed description

Appendix D
The Cowardin system of wetland classification

Notes

In 1979, the U.S. Fish & Wildlife Service published a classification of wetlands and deep water habitats (Cowardin et al., 1979). In this classification system, wetlands are defined by plants (hydrophytes), soils (hydric soils), and frequency of flooding.

The structure of the classification scheme is hierarchical, with systems forming the highest level of the classification hierarchy. Of the five major wetland systems, three are of interest in inland watersheds:

- **Riverine System**—All freshwater rivers and their tributaries are included in this system.
- **Lacustrine System**—Includes areas of open water greater than 20 acres or more than 6.6 feet in depth.
- **Palustrine System**—All nontidal wetlands dominated by trees, shrubs and persistent emergent herbaceous plants.

Within these three systems, wetlands are further divided into a number of classes. The classes which are important to the Oregon Method are as follows:

- **Open Water**—Areas of water where there are no beds of emergent, submergent or floating vegetation. (This is not in the Cowardin classification system, but is used on National Wetland Inventory maps.)
- **Emergent Wetland**—Characterized by rooted herbaceous and grass-like plants which stand erect above the water or ground surface, e.g. cattails, pickerel weed.
- **Scrub-shrub Wetland**—Wetlands dominated by shrubs and tree saplings less than 20 feet in height, e.g. wild rose, alders, willow saplings.
- **Forested Wetland**—Wetlands dominated by trees taller than 20 feet in height, e.g. willow, ashes, spruce.

For a more complete explanation of this classification system, the reader should refer to the original publication (Cowardin et al. 1979—see Chapter VIII for the full reference). Users of the Oregon Method may be able to obtain copies of this report from the U.S. Fish & Wildlife Service depending on availability. Reprints of the publication may be purchased from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4780, or you can contact the Oregon Division of State lands.

Appendix E
Interpretation of topographic maps & watershed delineation

Notes

For watershed delineation, you will need the following:

- Topographic map
- Ability to interpret topographic maps
- Planimeter or dot grid

For the purpose of the Oregon Method, a watershed or drainage basin is defined as the geographic area that contributes surface water runoff to a watercourse or wetland. The Oregon Method requires that an evaluator delineate and measure the watershed area of the wetland being evaluated, unless this information is already available.

This appendix describes a method for delineating a watershed on a topographic map such as a U.S. Geological Survey quadrangle sheet. Once the watershed boundary is established, the area of the watershed can be measured using one of the methods described under *Measuring Watershed Area.*

How to interpret a topographic map

In order to successfully delineate a watershed boundary, the evaluator must visualize the landscape as represented by a topographic map. This is not difficult once the following basic concepts of the topographic maps are understood.

Each contour line on a topographic map represents a ground elevation or vertical distance above a reference point such as sea level. A contour line is level with respect to the earth's surface just like the top of a building foundation. All points along any one contour line are at the same elevation.

The difference in elevation between two adjacent contours is called the contour interval. This is typically given in the map legend. It represents the vertical distance you would need to climb or descend from one contour elevation to the next.

The horizontal distance between contours, on the other hand, is determined by the steepness of the landscape and can vary greatly on a given map. On relatively flat ground, two 20-foot contours can be far apart horizontally. On a steep cliff face two 20-foot contours might be directly above and below each other. In each case the vertical distance between the contour lines would still be 10 feet.

Notes

One of the easiest landscapes to visualize on a topographic map is an isolated hill. If this hill is more or less circular the map will show it as a series of more or less concentric circles (Figure E-1). Imagine that a surveyor actually marks these contour lines onto the ground. If two people start walking in opposite directions on the same contour line, beginning at point A, they will eventually meet face to face.

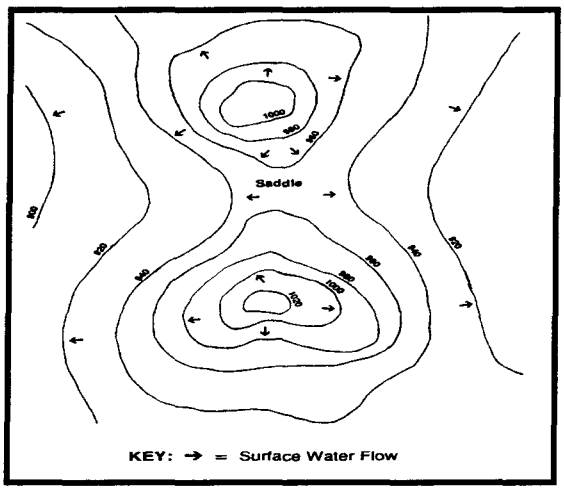


Figure E-1

If these same two people start out in opposite directions on different contours, beginning at points A and B respectively, they will pass each other somewhere on the hill and their vertical distance apart would remain 20 feet. Their horizontal distance apart could be great or small depending on the steepness of the hillside where they pass.

A rather more complicated situation is where two hills are connected by a saddle (Figure E-2). Here each hill is circled by contours but at some point toward the base of the hills, contours begin to circle both hills.

How do contours relate to water flow? A general rule is that water flow is perpendicular to contour lines. In the case of the isolated hill, water flows down on all sides of the hill. Water flows from the top of the saddle or ridge, down each side in the same way water flows down each side of a garden wall (See arrow on Figure E-2).

As the water continues downhill it flows into progressively larger watercourses and ultimately into the ocean. Any point on a watercourse can be used to define a watershed. That is, the entire drainage area of a major river like the Willamette can be considered a watershed, but the drainage areas of each of its tributaries are also watersheds.

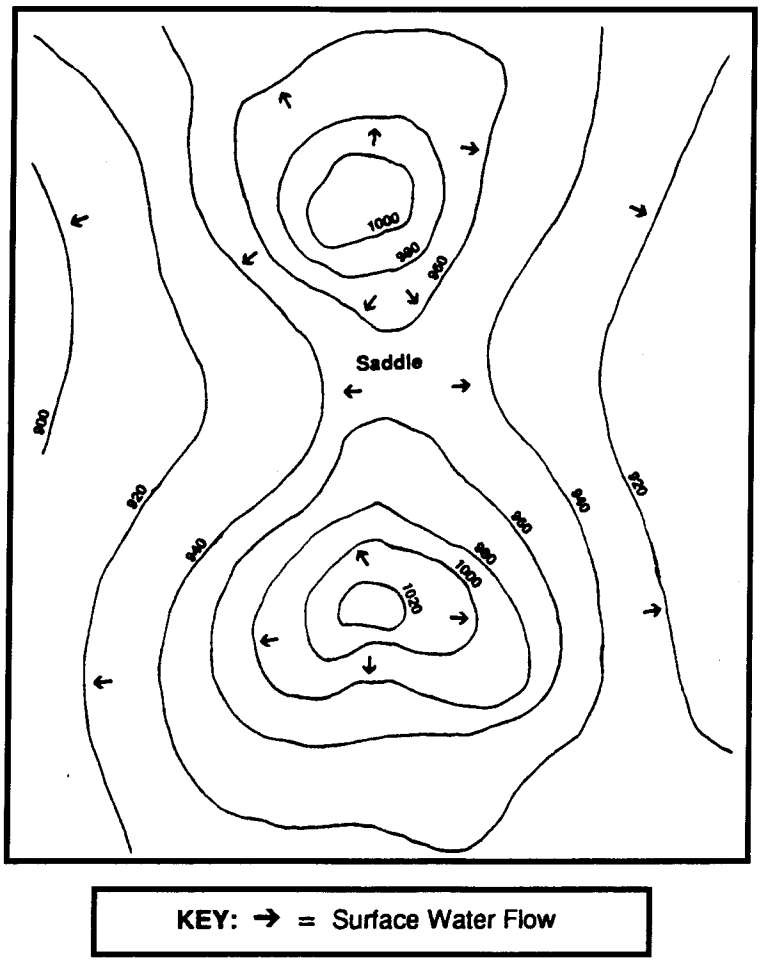


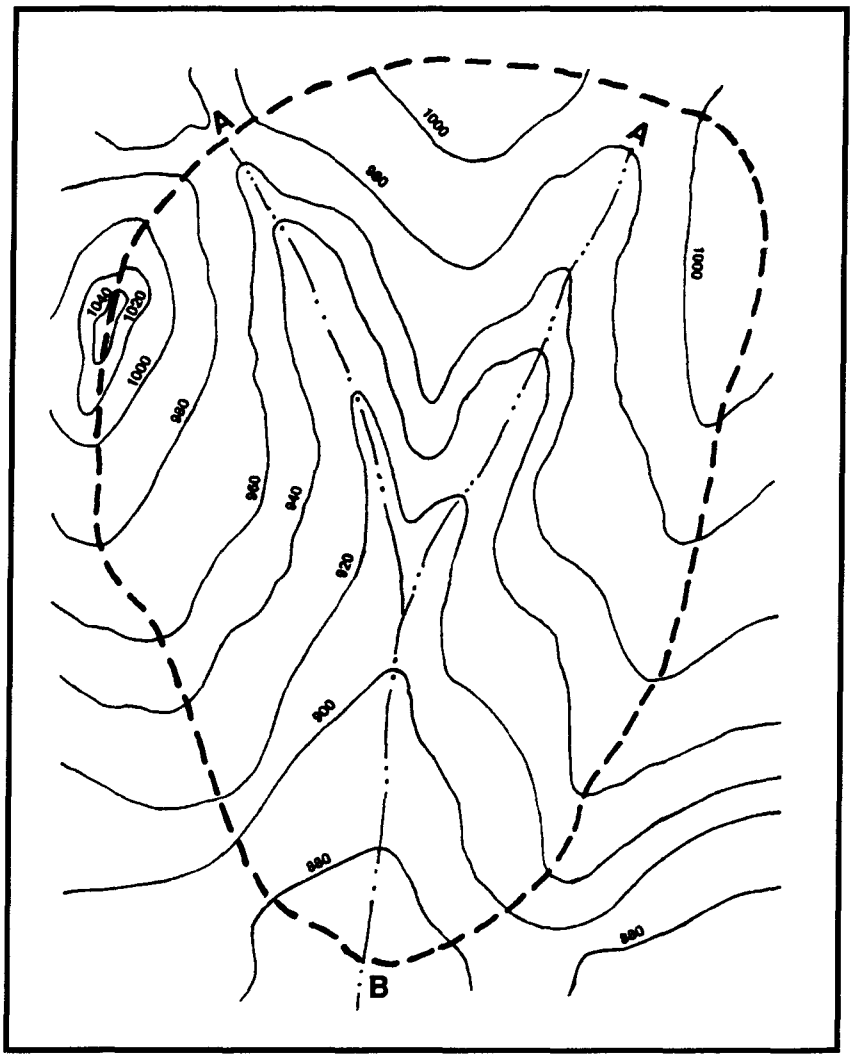
Figure E-2

Each tributary in turn has tributaries, and each one of these tributaries has a watershed. This process of subdivision can continue until very small, local watersheds are defined which might only drain a few acres, and might not contain a defined watercourse.

Figure E-3 shows an idealized watershed of a small stream. Water always flows downhill perpendicular to the contour lines. As one proceeds upstream, successively higher and higher contour lines first parallel then cross the stream. This is because the floor of a river valley rises as you go upstream. Like-wise the valley slopes upward on each side of the stream. A general rule is that topographic lines always point upstream. With that in mind, it is not difficult to make out drainage patterns and the direction of flow on the landscape even when there is no stream depicted on the map. In Figure E-3, for example, the direction of streamflow is from point A to point B.

Notes

Notes



KEY:

Stream — • • —

Watershed Boundary — — —

Figure E-3

Ultimately, you must reach the highest point upstream. This is the head of the watershed, beyond which the land slopes away into another watershed. At each point on the stream the land slopes up on each side to some high point then down into another watershed. If you were to join all of these high points around the stream you would have the watershed boundary. (High points are generally hill tops, ridge lines or saddles).

Notes

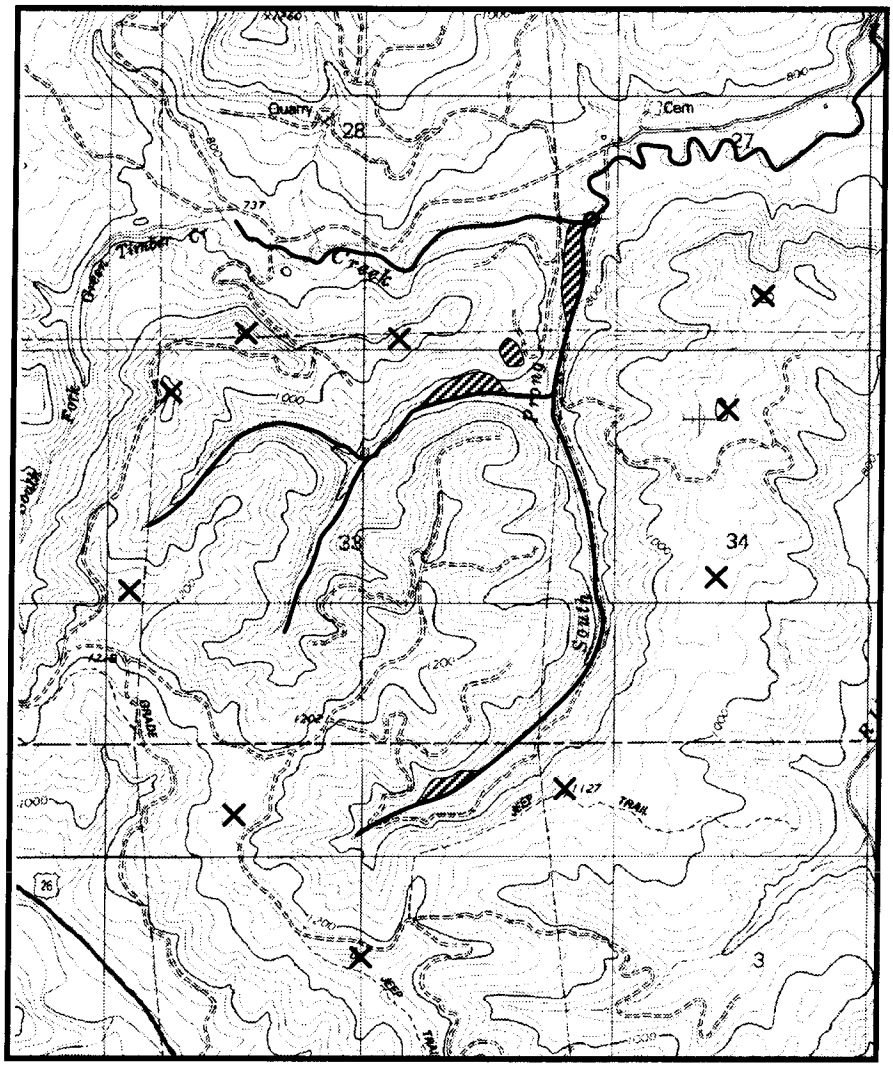


Figure E-4

Notes

How to delineate a watershed

The following procedure and example will help you locate and connect all of the high points around a watershed on a topographic map shown in Figure E-4. Visualizing the landscape represented by the topographic map will make the process much easier than simply trying to follow a method by rote.

1. Draw a circle at the outlet or downstream point of the wetland in question (the wetland is the hatched area shown in Figure E-4).
2. Put small X's at the high points along both sides of the watercourse, working your way upstream towards the headwaters of the watershed.
3. Starting at the circle that was made in step one, draw a line connecting the X's along one side of the water course (Figure E-5). This line should always cross the contours at right angles (i.e. it should be perpendicular to each contour line it crosses).

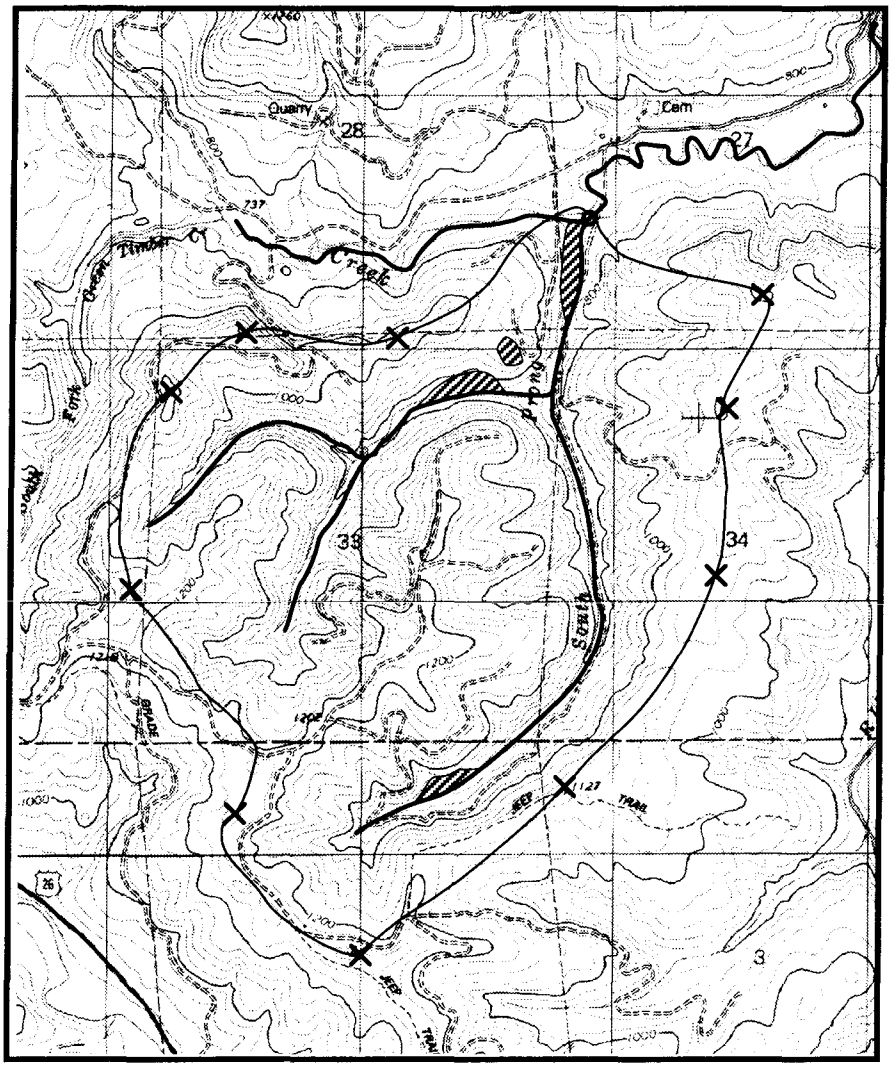


Figure E-5

4. Continue the line until it passes around the head of the watershed and down the opposite side of the water course. Eventually it will connect with the circle from which you started. At this point you have delineated the watershed of the wetland being evaluated.

The delineation appears as a solid line around the watercourse. Generally, surface water runoff from rain falling anywhere in this area flows into and out of the wetland being evaluated. This means that the wetland has the potential to modify and attenuate sediment and nutrient loads from this watershed as well as to store runoff that might otherwise result in downstream flooding.

Notes

How to measure watershed areas

There are two widely available methods for measuring the area of a watershed: the dot grid method, and the planimeter method. Both can be used to measure the area of the wetland itself as well as required by the Oregon Method.

The dot grid method

The dot grid method is a simple technique that does not require expensive equipment. In this method the user places over the map area to be measured a sheet of acetate or mylar that has a series of dots about the size of the period at the end of this sentence printed on it. The user counts the dots that fall within the area to be measured and multiplies by a factor to determine the area. A hand-held, mechanical counting device is available to speed up this procedure.

The planimeter method

The second of these methods involves using a planimeter, which is a small device having a hinged mechanical arm. One end of the arm is fixed to a weighted base while the other end has an attached magnifying lens with a cross hair or other pointer. The user spreads the map with the delineated area on a flat surface. After placing the base of the planimeter in a convenient location the user traces around the area to be measured with the pointer. A dial or other readout registers the area being measured.

Planimeters cost from several hundred dollars up to a thousand dollars or more depending of the degree of sophistication. For the purposes of the Oregon Method, a basic model is sufficient. Dot counting grids are more affordable, and are in the 10- to 20-dollar range. Both planimeters and dot grid sheets are available from engineering and forestry supply companies. Users of either of these methods should refer to the instructions packaged with the equipment they purchase.

Appendix F
Calculation of the average slope & stream gradient of the watershed

Notes

To calculate average slope and stream gradient, you will need:

- A U.S. Geological Survey topographic map or aerial photograph
- Ruler or scale, and
- Pocket calculator

How to calculate the average slope of a watershed

When the average watershed slope is difficult to estimate because of complex topography or lack of sufficient local data, the following method using a grid system on a topographic map may be used.

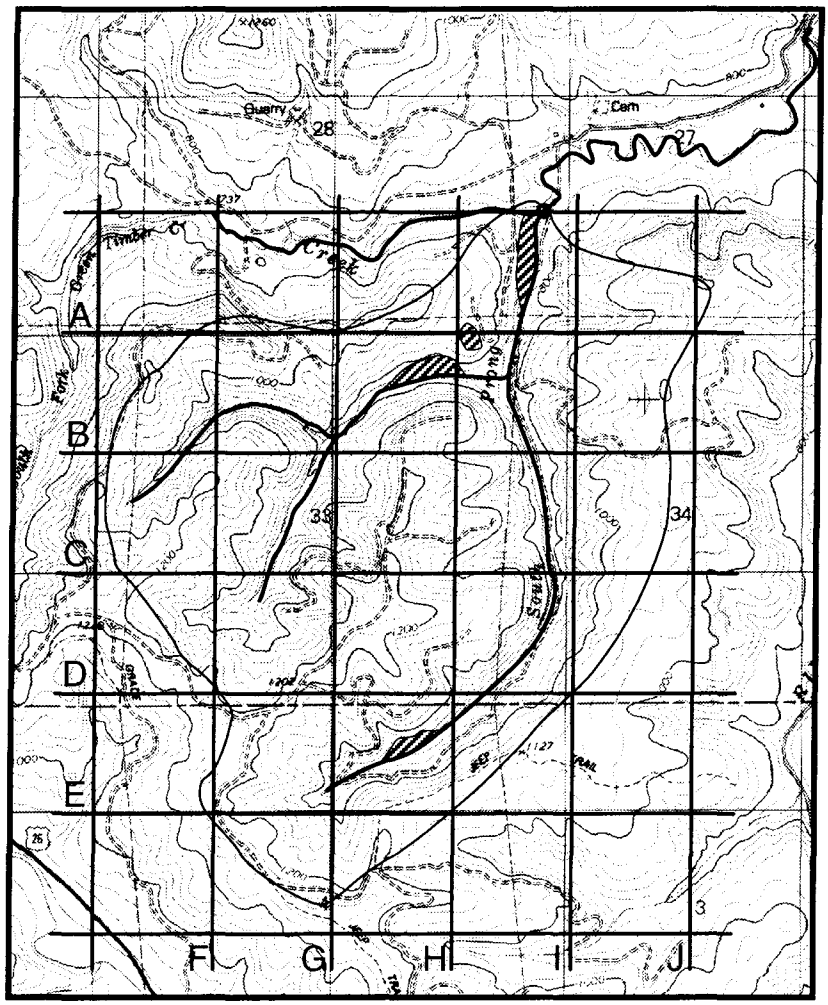
The procedure is as follows:

1. Establish a grid on the contour map on which the watershed has been delineated. The grid is usually laid off on a north-south and east-west line, but this is not essential. At least four grid lines should cross the watershed in each direction (Figure F-1).
2. Measure the length of each grid line in each direction within the watershed boundary. Using the map scale, convert your measurement to feet. The total of these lengths is the denominator (L) in the equation below.
3. Count the number of contour line crossings or points of contact along each grid line. The total number of crossings is N in the numerator in the equation.
4. The value ΔZ in the numerator is the contour interval of the topographic map being used. If you are using a 7.5 minute U.S. Geological Survey topographic map, the contour interval is 20 feet. For 15 minute U.S. Geological Survey topographic maps, the contour interval is 40 feet.
5. The constant 1.57 in the equation is a modifying factor that is related to the angle between the contours and the grid lines.
6. S simply refers to Slope.

The mathematical formula for determining the average watershed slope using the grid system is expressed as:

$$S = \frac{N \times \Delta Z \times 1.57}{L}$$

Notes



Line lengths				Contour crossings			
A =	8,500'	F =	7,000'	A =	34	F =	34
B =	7,500'	G =	7,750'	B =	45	G =	42
C =	8,000'	H =	7,500'	C =	39	H =	42
D =	6,000'	I =	6,500'	D =	25	I =	29
E =	3,250'	J =	1,000'	E =	12	J =	1
	33,250'		29,750'		155		148

Totals: Length	33,250'	Crossings	155
	+29,750'		+148
	63,000'		303

Figure F-1

The following example illustrates the procedure.

Notes

Problem

Determine the average watershed slope for the watershed already delineated.

Solution

Outline the watershed on a topographic map and lay out a grid system with at least four grid lines in each direction (Figure F-1).

Referring to the map, first calculate the lengths of the grid lines within the watershed boundary, and then count the number of contour crossings or points of contact on the grid in both directions (also within the watershed boundary) as shown in the example (Figure F-1).

Using the equation:

$$S = \frac{N \times \Delta Z \times 1.57}{L}$$

The average slope is:

$$S = \frac{303 \times 40 \text{ feet} \times 1.57}{63{,}000 \text{ feet}} = \frac{19{,}028}{63{,}000} = 0.302$$

Expressed as a percent, S = 30.2%. Round off to 30%.

Calculation of stream gradient

The topography or relief of a basin has an influence on the hydrological response of the drainage basin. The slope (or gradient) of a stream channel, which is determined by topography, affects the velocity (speed) of flow in the channel.

Commonly, only the main stream is considered when describing the stream gradient of a watershed. The longest stream is taken to be the main stream. To obtain the value for the gradient of the stream, it is necessary to measure the total fall in height of the stream from its most distant point in the watershed to the outlet (points A and B respectively in Figure F-2). The blue line marked on the U.S.Geological Survey topographic map is used to measure stream length. The fall in height of the stream is found by considering the contour pattern of the topographic map, and is divided by the length of the stream channel (measured from A to B in Figure F-2) to give a value for gradient. Gradient can either be expressed in feet per mile, or as a percentage (see the following example).

The stream length can be measured either by using a map wheel, or by carefully measuring along each stream length with a length of string (a narrow link gold or silver chain works very well).

1. Establish the highest (point A) and the lowest (point B) contours along the main stream channel within the watershed boundary. Calculate the height difference in feet (A-B).

Notes

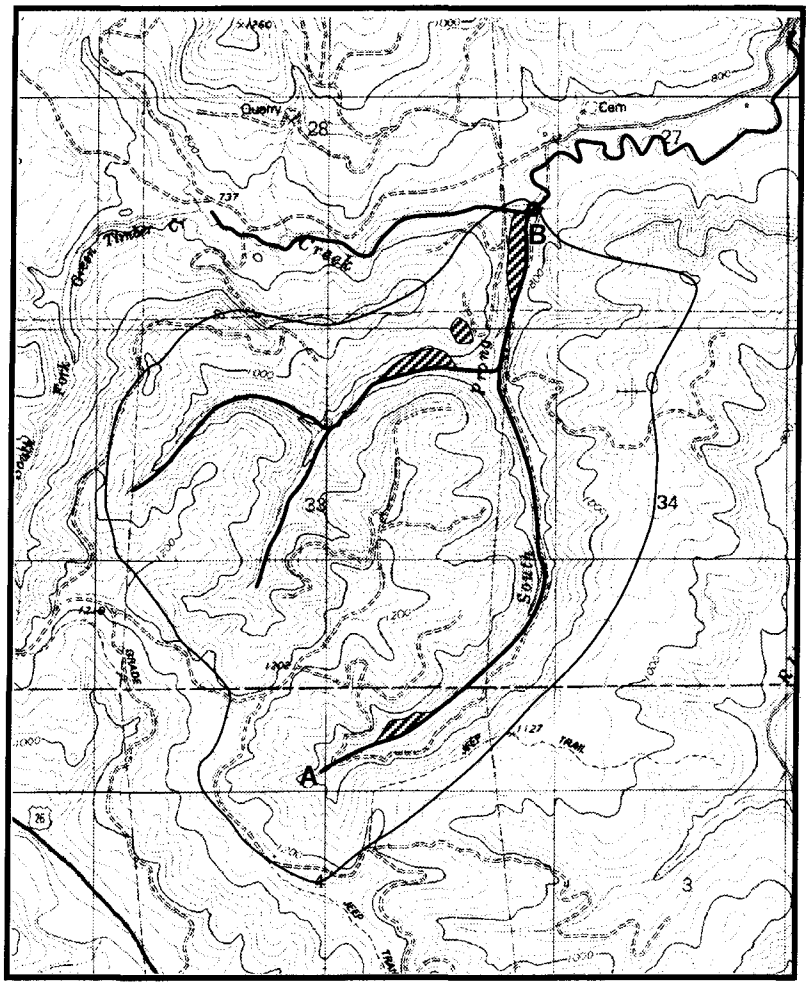


Figure F-2

2. Measure the length of the main stream channel (L) in feet.
3. Divide the answer from Step 1 by the answer from Step 2:

$$\frac{\text{A-B}}{\text{L}} = \text{Stream gradient}$$

In Figure F-2
A = 980'
B = 760'
L = 10,500'

$$\frac{\text{980 feet - 760 feet}}{\text{10,500 feet}} = \frac{220}{10{,}500} = 0.02$$

The stream has a 2% gradient. It can also be said that the stream drops 111 feet per mile or 220 feet per 10,500 feet.

Appendix G
Uncommon wetland plant communities in Oregon

Notes

The following section was prepared by John A. Christy of the Oregon Natural Heritage Program

The list of uncommon wetland plant communities present in this appendix was extracted from the 1993 edition of the Oregon Natural Heritage Program's *Classification and catalog of native wetland plant communities in Oregon*, which is available from the Oregon Natural Heritage Program.

The rank assigned to each community follows the standard Heritage Program methodology. Each is given a four-character ranking (e.g., G2S1), which can be decoded using the following legend:

G Global rank indicator; denotes rank based on worldwide status.

S State rank indicator; denotes rank based on status within Oregon.

1 Critically imperiled because of extreme rarity; 5 or fewer occurrences or very few remaining acres.

2 Imperiled because of rarity; 6-20 occurrences or few remaining acres.

3 Either very rare and local throughout its range or found locally in a restricted range; uncommon; 21-100 occurrences.

4 Apparently secure, though it may be quite rare in parts of its range, especially at the periphery; many occurrences.

5 Demonstrably secure, though it may be quite rare in parts of its range, especially at the periphery; ineradicable under present conditions.

U Unknown

Palustrine aquatic bed: freshwater

Myriophyllum hippuroides

G5S2 Western water-milfoil bed

Scirpus subterminalis

G3S1 Water clubrush bed

Palustrine emergent wetland: serpentine fens

Darlingtonia californica

G2S2 Darlingtonia serpentine fen

Notes

Palustrine emergent wetland: alkaline marshes and playas

Carex douglasii-Deschampsia cespitosa

G1S1 Tufted hairgrass-Douglas sedge alkaline meadow

Elymus triticoides-Poa juncifolia

GUS2 Creeping wildrye-alkali bluegrass playa

Poa nevadensis-Puccinellia lemmonii

G2S1 Nevada bluegrass-Lemmon alkaligrass playa

Palustrine emergent wetland: vernal pools and snowbed depressions

Alopecurus saccatus-Plagiobothrys

GUS2 Foxtail-popcorn flower vernal pool

Danthonia unispicata-Deschampsia danthonioides

GUS2 Oatgrass-hairgrass vernal pool

Downingia-Eleocharis

G2S2 Downingia-spikerush vernal pool

Myosurus minimus-Plagiobothrys

GUS2 Mousetail-popcorn flower vernal pool

Navarretia intertexta-Polygonum kelloggii

GUS2 Navarretia-popcorn flower vernal pool

Plagiobothrys-Veronica peregrina

GUS2 Popcorn flower-veronica vernal pool

Palustrine emergent wetland: coastal fresh-water fens, marshes, and deflation plains

Calamagrostis nutkaensis

G3S1 Pacific reedgrass fen

Palustrine emergent wetland: low- to mid-elevation western Oregon fens, marshes

Carex aperta

G1S1 Columbia sedge marsh

Carex unilateralis-Hordeum brachyantherum

G2S2 One-sided sedge-meadow barley marsh

Deschampsia cespitosa (interior valley association)

G2S2 (interior valley association) Tufted hairgrass prairie

Ludwigia palustris-Polygonum hydropiperoides

G2S2 Water purslane-waterpepper marsh

Sagittaria latifolia

G4S2 Wapato marsh

Palustrine emergent wetland; montane fens, etc.: spikerush dominated

Eleocharis pauciflora/Hamatocaulis vernicosus

G3S2 Few-flowered spikerush/brown moss fen

Palustrine scrub-shrub wetland: serpentine fens

Rhododendron occidentale/Camassia quamash

G2S2 Western azalea/camas shrub swamp

Palustrine scrub-shrub wetland: coastal shrub swamp, bog and brush prairie

Ledum glandulosum/Sphagnum

G2S2 Labrador-tea/sphagnum bog

Ledum glandulosum/Darlingonia californica/Sphagnum

G2S2 Labrador-tea/darlingtonia/ sphagnum bog

Ledum glandulosum-Myrica gale

G1S1 Labrador tea-sweet gale heath

Vaccinium uliginosum/Deschampsia cespitosa

G2S2 Coastal bog blueberry/tufted hairgrass brush prairie

Palustrine scrub-shrub wetland: low- to mid-elevation western Oregon shrub swamp, brush prarie and riparian

Rosa nutkana/Oenanthe sarmentosa

G2S2 Nootka rose/water parsley shrub swamp

Rosa nutkana/Deschampsia cespitosa

G2S2 Nootka rose/hairgrass brush prairie

Salix geyeriana-Salix piperi

G1S1 Geyer willow-Piper willow shrub swamp

Salix lasiandra/Urtica dioica

G3S2 Pacific willow shrub swamp

Salix piperi-Salix sitchensis

G2S2 Piper willow-Sitka willow shrub swamp

Notes

Notes

Vaccinium caespitosum

G3S1 Dwarf blueberry brush prairie

Palustrine scrub-shrub wetland: montane (Cascade and eastern Oregon) shrub swamp and riparian

Salix boothii-Salix drummondiana

G3S1 Booth willow-Drummond willow shrub swamp

Salix boothii-Salix eastwoodiae

G3S2 Booth willow-mountain willow riparian

Salix boothii-Salix lemmonii

G3S2 Booth willow-Lemmon willow riparian

Salix drummondiana

G3S1 Drummond willow shrub swamp

Salix geyeriana-Salix lemmonii

G3S2 Geyer willow-Lemmonwillow riparian

Salix geyeriana-Salix rigida

G3S2 Geyer willow-rigid willow riparian

Vaccinium occidentale/Sphagnum fuscum

G1S1 Bog blueberry/sphagnum shrub swamp

Palustrine scrub-shrub wetland: low- to mid-elevation eastern Oregon riparian

Salix amygdaloides-Salix exigua

G3S2 Peachleaf willow-coyote willow

Salix exigua

G3S2 Coyote willow riparian

Salix exigua-Salix lasiandra

G3S2 Coyote willow-Pacific willow riparian

Salix exigua-Salix rigida

G3S2 Coyote willow-rigidwillow riparian

Salix lasiandra-Rosa woodsii

G3S2 Pacific willow-Woods rose riparian

Salix rigida-Ribes aureum

G3S2 Rigid willow-golden currant riparian

Palustrine forested wetland: serpentine fens and riparian

Chamaecyparis lawsoniana/Rhododendron occidentale/Darlingtonia californica

G2S2 Port Orford cedar-western azalea/darlingtonia riparian

Palustrine forested wetland: coastal swamps and muskeg

Picea sitchensis/Cornus stolonifera

G3S1 Old-growth Sitka spruce/creek dogwood tideland swamp

Picea sitchensis/Rubus spectabilis/Lysichitum americanum

G3S1 Old-growth Sitka spruce/salmonberry/skunkcabbage swamp

Pinus contorta/Carex obnupta

G2S1 Shore pine/slough sedge vernal pool

Pinus contorta-Thuja plicata/Ledum glandulosum

G3S1 Shore pine-red cedar/Labrador tea muskeg

Palustrine forested wetland: low- to mid-elevation western oregon swamps and riparian

Fraxinus latifolia/Urtica dioica

G3S2 Oregon ash/nettle woodland

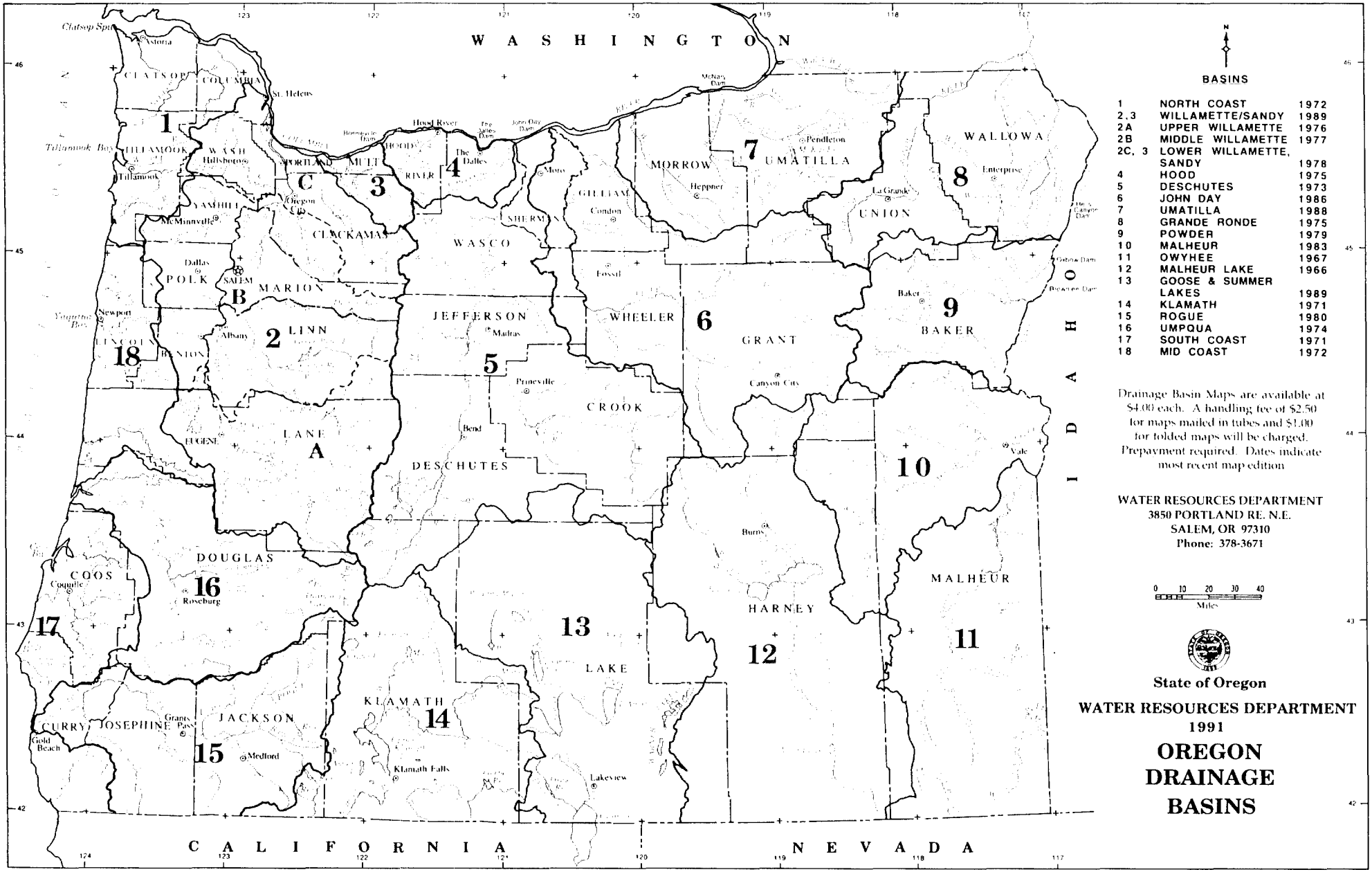
Thuja plicata/Lysichitum americanum

G3S1 Old-growth red cedar/skunk cabbage swamp

Notes

Appendix H
Basin Map

Notes



BASINS

1	NORTH COAST	1972
2,3	WILLAMETTE/SANDY	1989
2A	UPPER WILLAMETTE	1976
2B	MIDDLE WILLAMETTE	1977
2C, 3	LOWER WILLAMETTE, SANDY	1978
4	HOOD	1975
5	DESCHUTES	1973
6	JOHN DAY	1986
7	UMATILLA	1988
8	GRANDE RONDE	1975
9	POWDER	1979
10	MALHEUR	1983
11	OWYHEE	1967
12	MALHEUR LAKE	1966
13	GOOSE & SUMMER LAKES	1989
14	KLAMATH	1971
15	ROGUE	1980
16	UMPQUA	1974
17	SOUTH COAST	1971
18	MID COAST	1972

Drainage Basin Maps are available at $4.00 each. A handling fee of $2.50 for maps mailed in tubes and $1.00 for folded maps will be charged. Prepayment required. Dates indicate most recent map edition

WATER RESOURCES DEPARTMENT
3850 PORTLAND RE. N.E.
SALEM, OR 97310
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State of Oregon

WATER RESOURCES DEPARTMENT

1991

OREGON DRAINAGE BASINS

Appendix I
Wetland fact sheets

Notes

The following inserts are wetland fact sheets published by the Oregon Division of State Lands Wetlands Program. They are intended as background material.

JUST THE FACTS . . .

ABOUT THE NATIONAL WETLANDS INVENTORY

What is the National Wetlands Inventory?

In 1974, the U.S. Fish and Wildlife Service (FWS) was directed to conduct an inventory of the nation's wetlands. The goal of the National Wetlands Inventory (NWI) is to classify and map the nation's wetlands and evaluate wetland status and trends. NWI maps contain information on the location and classification (Cowardin et al. 1979) of wetlands and deepwater habitats (streams, lakes and estuaries). This information is overlaid on 7.5 minute (1:24,000) U.S. Geological Survey topographic maps.

In 1989, Oregon entered into a cost-share agreement with the FWS to speed completion of the 1,869 maps required to cover the state. The entire state has been completed, although many maps will be in draft form for some time. Not all of Oregon's maps are the same type or of equal quality. Contact the Division of State Lands (DSL) for information on specific maps.

Important Points to Keep in Mind as You Use the Maps

☐ NWI maps are based upon interpretation of high-altitude aerial photographs. Because of this:

- Most wetlands on the map are not field-verified; although the maps are very good, expect some errors.
- The minimum required mapping resolution is 2 acres; many smaller wetlands will not appear on the map.
- The mapped wetland is the approximate wetland location with respect to geographic features such as roads. Inventory methods and map scale prevent greater mapping accuracy than 30-50 feet.

☐ Maps are a snapshot in time, reflecting conditions at the time the source airphotos were taken. This is especially important to remember for dynamic systems like wetlands, which may vary seasonally and annually.

- Most airphotos were taken in July or August; this means that seasonal wetlands or small wetlands obscured by tree canopy may be especially difficult to identify and map.
- The month and year of the airphoto is noted on each map.
- Changes (natural or otherwise) after that date will not be reflected on the map.

☐ **The National Wetlands Inventory was not designed to be a map of regulated wetlands and waterways**, and there is a note to that effect at the bottom of each map. Reasons include:

- Wetland regulations vary across the nation and are subject to change.
- Wetlands that are cultivated and cropped are not included on NWI maps but may be regulated. For information on agricultural wetlands, contact the U.S. Soil Conservation Service, Army Corps of Engineers, or DSL.
- Due to scale and methodology, small, seasonal, and/or tree-obscured wetlands are easily missed.
- Airphoto interpretation methods rely on visible hydrology and/or wetland vegetation, whereas jurisdictional (e.g., regulated) wetlands are determined by on-the-ground examination of hydrology, vegetation and soils.
- Because of this, on-the-ground investigation is generally required to verify mapped wetlands and make a jurisdictional wetland determination.

Over ☛

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(503) 378-3805

Wetlands Program
Just the Facts #1
June 1991

THE NATIONAL WETLANDS INVENTORY

☐ All wetlands and other waters of the state, mapped or not, may be subject to local, state, and/or federal regulation.

✔ Questions about regulations should be directed to your city or county planning department, DSL, and/or the Army Corps of Engineers.

☐ The NWI forms the basis of the statewide wetlands inventory, which includes two types of large-scale inventories.

✔ See *Just the Facts #2* or contact DSL for more information about Local Wetlands Inventories (LWIs) and Wetland Conservation Plan Inventories (WCPIs).

☐ DSL uses the same map name as the USGS topographic map (which forms the base map for most wetlands maps). Frequently, the name on your map (upper left or lower right corner) will not match the map name you ordered. This is because many of the wetlands maps have "old" map names.

State Distribution Center Services and Products

The Division of State Lands is the lead state agency for wetlands and is the State Distribution Center for National Wetlands Inventory (NWI) maps.

Services and Products Include:

- ○ NWI, LWI or WCPI map sales
- ○ Assistance with using the NWI
- ○ Developing and distributing wetlands inventory information
- ○ State or county index maps showing location, type and name of NWI maps for area*
- ○ Wetlands Inventory User's Guide
- ○ Map fact sheets
- ○ MAPTRACK – a database of information about individual maps (quads). MAPTRACK is available on diskette to agencies and organizations that need wetland information on a statewide basis.*
- ○ Digital wetlands maps for some areas
- ○ Coordinating digital wetlands inventory data
- ○ NWI digitizing standards
- ○ Compiling Local Wetlands Inventories (LWI & WCPI)
- ○ Technical assistance for LWI/WCPI planning and completion
- ○ Guidelines, rules and standards for state-approved LWIs/WCPIs
- ○ Developing and maintaining the Statewide Wetlands Inventory

If you would like more information, photocopy this page, check items of interest, complete request form and mail to DSL.

Name _____

Organization _____

Mailing Address _____

_____

Daytime Phone # ( ) _____

Funded by Environmental Protection Agency SEDM grant.

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(503) 378-3805

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June 1991

JUST THE FACTS. . .

ABOUT LOCAL WETLANDS INVENTORIES

Why Develop a Local Wetlands Inventory?

√ The City of Lebanon wants to know which industrial-zoned lands are ready for immediate development.

√ A Medford developer is considering several sites adjacent to Larson Creek for a planned unit development and golf course.

√ Citizens and planners in Lake Oswego want to adopt ordinances protecting streams and certain wetlands.

In each of the above scenarios, a detailed wetlands inventory would provide much-needed information. To help meet such needs, the 1989 Oregon state legislature authorized the Division of State Lands (DSL) to develop a statewide wetlands inventory suitable for planning and regulatory purposes. Community-based Local Wetlands Inventories, conducted according to DSL standards, are an important element of the statewide wetlands inventory. Local Wetlands Inventories provide a planning tool for balancing the protection of wetland functions that are of value to a community with economic needs. Advance information on the location and type of wetlands also helps to avoid last minute delays when planning development or conducting real estate transactions.

What is a Wetlands Inventory?

A wetlands inventory is a systematic survey of a fairly large geographic area to locate and map wetlands and classify them by type. Many different inventory methods may be used, ranging from remote sensing (using aerial photography or satellite imagery) to on-the-ground surveys. The appropriate type of inventory depends upon the intended uses, size of area to be covered, and available funds.

Overview of Inventory Types

There are two types of wetlands inventories that comprise the statewide wetlands inventory---the National Wetlands Inventory (NWI) and the Local Wetlands Inventory.

National Wetlands Inventory

The NWI was developed by the U.S. Fish and Wildlife Service and covers the entire country (see *Just the Facts #1).* While the NWI is extremely useful for many resource management and planning purposes, its small scale, accuracy limitations, and absence of property boundaries make it unsuitable for parcel-based decision making.

Local Wetlands Inventories

To augment the NWI in areas where more detailed inventory information is needed, DSL developed guidelines and rules for the **Local Wetlands Inventory (LWI).** A LWI aims to map all wetlands 0.5 acres or larger at an accuracy of approximately 25 feet on a parcel-based map. Accuracy may be less in areas that could not be field verified. If ground-altering site work is proposed, a more precise wetland boundary may need to be located to know where Removal-Fill Law regulations apply. The LWI maps and report provide information about the inventory area and the individual wetlands, including:

- acreage of wetlands in the inventory area
- acreage of each wetland type in the inventory area
- location, approximate size, and classification, and description of each wetland
- all tax lots containing wetlands

LOCAL WETLANDS INVENTORIES

Who Conducts the Inventory, and What is the Process?

An inventory may be initiated by a local government or by the state. Most local governments contract with a wetland consultant or other expert to conduct the technical aspects of the inventory. *Typical steps in the inventory process are:*

- √ Contact DSL for inventory requirements and guidelines
- √ Select the inventory area and prepare a work plan
- √ Obtain funding (most range from $15,000-$30,000 or more)
- √ Conduct a public meeting; notify landowners of the impending inventory
- √ Conduct fieldwork and prepare draft inventory (consultant)
- √ DSL conducts a field review of draft maps
- √ Hold public meeting to review draft maps
- √ Prepare final inventory maps and report (consultant)
- √ DSL reviews and approves final inventory
- √ Local government notifies landowners of properties with wetlands mapped
- √ Local government adopts inventory

What are the Regulatory and Planning Implications?

Once an inventory is completed and approved by DSL, there are certain requirements and implications:

- ❑ An approved LWI is incorporated into the statewide wetlands inventory and is made available by DSL to other agencies and the public.

- ❑ Wetlands and waterways, regardless of whether they are mapped, may be regulated by the State Removal-Fill Law. Compliance with wetland and waterway regulations remains the responsibility of the landowner.

- ❑ Under Statewide Planning Goals 5 and 17, cities must conduct an LWI and wetland function and value assessment then identify locally significant wetlands. A protection program is then adopted by the local government to further guide the management of locally significant wetlands. (Contact the Department of Land Conservation and Development for details.)

- ❑ An approved LWI (in place of the NWI) must be used by the local government for the Wetland Land Use Notification process (a local-state coordination process).

CONTACT DSL FOR

- Purchasing NWI and LWI maps
- Guidelines and rules for Local Wetlands Inventories and wetland planning
- Location and status of existing Local Wetlands Inventories
- Availability of grants for conducting Local Wetlands Inventories
- Technical assistance with conducting LWI's and function/value assessment
- Availability of digital wetlands data
- Further information on wetland and waterway regulations

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775 Summer St. NE, Salem, OR 97310
(503) 378-3805

Wetlands Program
Just the Facts #2
Rev. February 1998

JUST THE FACTS . . .

HOW ARE WETLANDS AND WATERWAYS REGULATED?

Activities in wetlands and waterways are regulated by:

- The Division of State Lands (DSL) under the state Removal-Fill Law
- The Army Corps of Engineers (Corps) under the federal Clean Water Act and Rivers & Harbors Act
- The State Department of Forestry under the Forest Practices Act
- The U.S. Natural Resources Conservation Service under the federal Farm Bill
- Some city and county land use ordinances

Because many local governments regulate activities in and adjacent to wetlands and waterways, your city or county land use planning department is a good first contact. Be aware, however, that whether or not a local permit is required, a state and/or federal permit may be required. Sound complicated? It is, but this fact sheet will give you the basic information you need to determine if the activity you propose may require a state (DSL) or federal (Corps) permit.

What Areas Are Regulated?

- Rivers, streams, and most creeks
- Estuaries and tidal marshes
- Lakes and some ponds
- Permanent and seasonal wetlands
- Regulations apply to all lands, public or private
- A wetland does not have to be mapped by the state or otherwise "designated" to fall under the regulations
- If you are uncertain if there are regulated wetlands on your property, contact DSL for assistance

What Activities Are Regulated?

- Placement of fill material
- Alteration of stream banks or stream course
- Ditching and draining
- Bank stabilization
- Excavation or dredging of material
- In-water construction (may also require a lease from DSL)
- Stump removal (some large land clearing projects)
- Commercial timber harvest (State Dept. of Forestry)

What Activities Are Exempt?

- Some routine maintenance activities
- Established, ongoing agricultural activities like plowing, harvesting & grazing
- Some minor projects involving small amounts of fill or removal

Contact DSL and the Corps for details and clearance to proceed with your project.

Confused?

For non-forest or non-farm activities

- First contact: City or county planning department
- Next contact: DSL (503) 378-3805 and Corps of Engineers (503) 808-4373

For agricultural activities

- First contact: Natural Resources Conservation Service for your area
  (in phone book under U.S. Government, Dept. of Agriculture)
- Next contact: DSL and Corps
  (Some activities are regulated by all three agencies)

For commercial forest operations

- First contact: Oregon Dept. of Forestry, forest practices section (503) 945-7470
- If change in land use planned, also contact: local planning department, DSL and Corps

Over ☛

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Wetlands Program
Just the Facts #3
March 1999

HOW ARE WETLANDS AND WATERWAYS REGULATED?

How Can You Avoid the Permit Process?

If you know with certainty the boundaries of any wetlands or waterways and can avoid those areas with your project, no state or federal permit is required. However, it is important to contact your local planning department, as some local governments have setback requirements.

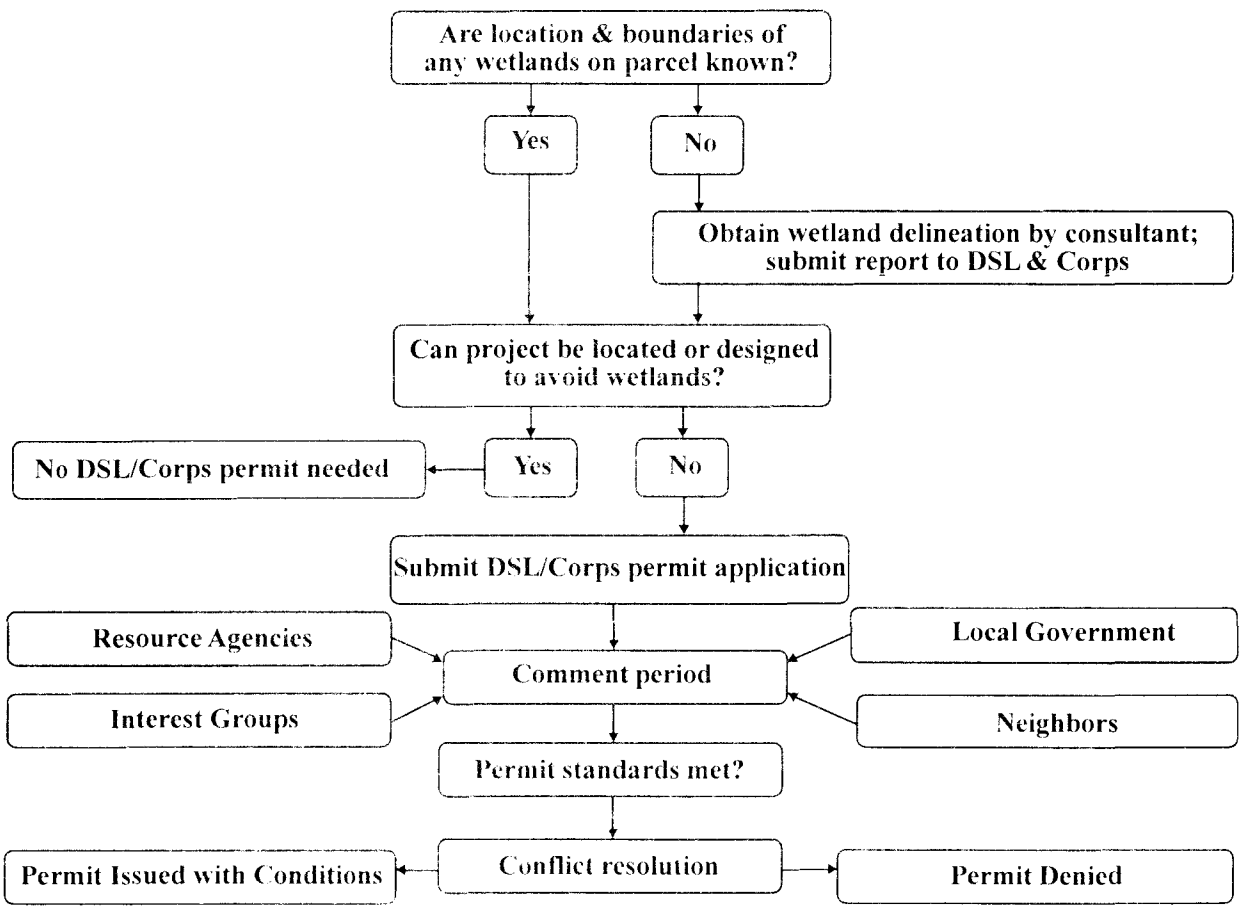
How Does One Obtain a Permit?

A joint application form may be obtained from either DSL or the Corps. During the comment period, your application will be circulated to a variety of agencies and other parties. Of particular importance are comments from the Department of Fish and Wildlife and the local government. No permit is issued that is inconsistent with the local land use plan or does not comply with Oregon's water quality standards. Proposed projects must also be consistent with the state's responsibility to protect the public interest and best use of waters of the state. Applicants must establish that alternative, non-wetland sites are not readily available and must design projects to minimize impacts. In most cases, unavoidable impacts must be compensated for through wetland restoration or creation.

How Are the Laws Enforced?

The best enforcement is to prevent illegal wetland alterations through information and education. However, when violations do occur, a variety of enforcement tools may be used, including restoration orders, fines of up to $10,000 per day (DSL), civil charges and/or criminal charges.

STATE & FEDERAL PERMIT PROCESS



JUST THE FACTS . . .

WETLAND FUNCTIONS AND ASSESSMENT

"Damp, insect-ridden, often foul-smelling and mysterious area of muddy soils and relatively still water where strange and different animals and plants reside."

-wetland definition, 1800's

For much of our nation's history, wetland descriptions like the one above formed our perception of wetlands as disease-ridden, sinister wastelands. With the help of government programs, we drained, ditched and filled wetlands to convert them to "more productive" uses, and we were highly successful! In California, for example, nearly 90 percent of original wetlands are gone. In Oregon, about 38 percent of our wetlands have been converted.

Changing Perceptions

Finally, we realized that as wetlands disappeared, ducks and geese disappeared—as did many of the "strange and different" animals and plants that reside only in wetlands. Researchers also discovered that wetlands provide many valuable ecological functions and social benefits, such as flood control and water quality improvement.

Today, learning from our mistakes, state and federal programs are turning their efforts toward wetland protection, wetland restoration, and comprehensive watershed management. Similarly, citizen groups are springing up to spearhead local efforts to restore neighborhood streams and wetlands, and educate citizens about the "free" services that wetlands provide the community.

The many functions that wetlands provide make protection, restoration, and wise management of wetlands important to landowners and the general public. Many functions and values—notably wildlife habitat, water quality improvement, and flood storage—are public trust values that extend beyond property boundaries.

Assessing Wetland Functions and Values

Because wetlands vary greatly by type and location, not all provide the same functions and not all are equally valued by society. Wetland assessment methodologies, like the *Oregon Freshwater Wetland Assessment Methodology*, allow us to evaluate the extent to which a specific wetland may perform any given function. Additionally, these methodologies help us to compare wetlands and evaluate their relative importance.

It is far too difficult and expensive to conduct a detailed study of every wetland. Therefore, wetland assessment methodologies rely on the presence or absence of various characteristics that are known to correspond with certain functions. For example, certain wetland characteristics are "indicators" of good migratory bird habitat. Another set of characteristics may "indicate" that a wetland is good at removing pollutants from water.

How is Assessment Information Used?

In Oregon, wetlands are assessed to obtain resource quality information as part of the statewide land use planning process (Goal 5 or 17). This information helps to identify the highest value wetlands in communities. Wetlands are also assessed as part of watershed assessment plans. Assessing wetland functions and characteristics also helps us to:

- Make better decisions when evaluating wetland fill permit applications
- Incorporate landscape-scale wetland functions into land use plans
- Identify exceptional wetlands for acquisition from willing landowners
- Develop better resource management plans

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Wetlands Program
Just the Facts #5
March 1999

WETLAND FUNCTIONS AND ASSESSMENT

Flood Storage and Water Supply

Many floodplain and stream-associated wetlands absorb and store storm water flows, which reduces flood velocities and stream bank erosion. Preserving these wetlands reduces flood damage and the need for expensive flood control devices such as levees. When the storms are over, many wetlands augment summer stream flows when the water is needed, by slowly releasing the stored water back to the stream system.

Food Chain Support

Because of their high productivity, wetlands provide essential food chain support. That green scum that coats cattail stems and ankles provides food for an abundance of tiny organisms that, in turn, feed fish, wildlife, and humans.

Wildlife and Fish Habitat

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

Rare and Endangered Species

As the old wetland definition suggests, wetlands are full of "strange and different" animals and plants. Take the carnivorous pitcher plant, for instance, a bog plant with a cobra-like hood that traps insects. Nationally, nearly 35% of all rare and endangered animal species depend on wetlands, even though wetlands comprise only about 5% of the land area.

Water Quality Improvement

Wetlands are highly effective at removing nitrogen, phosphorous, some chemicals, heavy metals, and other pollutants from water. For this reason, artificial wetlands are often constructed for cleaning stormwater runoff and for tertiary treatment (polishing) of wastewater. Wetlands bordering streams and rivers and those that intercept runoff from fields and roads provide this valuable service free of charge.

Aesthetics, Recreation and Education

Depending on their type and location, wetlands provide opportunities for fishing, hunting, plant identification, and wildlife observation. They are also visually pleasing, interesting elements in the landscape, often providing some of the last open space in urbanized areas. Wetlands are wonderful outdoor classrooms and laboratories.

For Better or For Worse® **by Lynn Johnston**

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About Compensatory Mitigation for Wetland Impacts

When people apply for a permit to place fill in a wetland, they discover immediately that they must follow a process to "mitigate" the negative impacts to the wetland. Often, applicants start with the assumption that mitigation only means that they will be issued a permit if they are willing to replace the wetland area that they propose to impact. However, there's much more to it than that! This fact sheet explains the mitigation process and the different compensatory mitigation options that may be available to the permit applicant. More detailed information in the form of rules is available from the Division of State Lands (DSL).

What Does Mitigation Mean?

The dictionary definition of mitigation is "to reduce the effect of an action." In wetland regulations, the term has the same meaning—to reduce the negative effects of a proposed project. The main point to remember is that mitigation is a *process*. It starts with evaluating how wetland impacts can be avoided. If the impact cannot be completely avoided, the next step is to look at ways to minimize "unavoidable" impacts. Only after a legitimate effort has been made to avoid and minimize impacts does "compensatory mitigation" come into play. This sequential process is established in both state and federal law.

What Is Compensatory Mitigation?

Compensatory mitigation is creating, restoring or enhancing wetlands to replace or "compensate" for the wetland area and functions lost through the permitted alteration. Constructing a wetland in an area that never supported wetlands historically is called *creation*. Wetland creation is often difficult because the upland soils are not good at retaining water. *Restoration* means re-establishing wetland vegetation and hydrology to a site that was historically wetland but has been dried out by diking, draining, or filling. *Enhancement* is improving an existing but badly degraded wetland by correcting the conditions that cause it to be degraded. This might include providing more water to the site or restoring native plant communities. The enhancement goal is to greatly improve the condition and functions of the wetland.

When Is Compensatory Mitigation Required?

Compensatory mitigation is required as a condition of any state permit to place fill or excavate in a wetland. When a permit application is received by DSL, the permit coordinator determines if the applicant has adequately explored project alternatives that would avoid wetland impacts completely and also those that would minimize impacts. If there are practicable alternatives with no or minimal wetland impact, those alternatives must be pursued. Compensatory mitigation is required for the unavoidable impacts.

Basic Mitigation Process Steps

Steps taken before compensatory mitigation is considered

- Delineate wetland boundaries on development site and obtain DSL/Corps of Engineers concurrence
- Analyze development needs for the site
- Determine if project can be completed without any impact to the wetlands
- If not, identify project alternatives that will minimize wetland impacts
- Finalize development/project plans that avoid and minimize wetland impacts; consult with DSL/Corps and prepare permit application

Steps taken after alternatives are fully explored and impacts minimized

- Evaluate project impacts on wetland acreage and functions
- Develop compensatory mitigation plan that meets minimum ratios and replaces lost functions
- Obtain DSL/Corps approval of mitigation plan
- Construct mitigation project before or at the same time (same growing season) that development project is constructed
- Monitor mitigation project for required period of time (usually 3-5 years) and take corrective action to ensure project success, as necessary

Over ☛

Oregon Division of State Lands
775 Summer Street NE
Salem, OR 97310

Wetlands Program
Just The Facts #6
April 1999

Compensatory Mitigation for Wetland Impacts

Must Wetlands Be Replaced On An Acre-For-Acre Basis?

Not necessarily. DSL's rules set minimum ratios that vary by the type of compensatory mitigation proposed, as follows:

- Restoration ratio is 1:1 (1 acre restored for every 1 acre lost)
- Creation ratio is 1.5:1 (1½ acres created for every 1 acre lost)
- Enhancement ratio is 3:1 (3 acres enhanced for every 1 acre lost)
- Enhancement of cropped wetlands is 2:1 (2 acres enhanced for every 1 acre lost)

The ratios reflect both the probability of mitigation project success and the state's mandate to maintain wetland acreage and functions.

Compensatory Mitigation Options

Onsite mitigation is the customary option. It refers to conducting the compensatory mitigation project on the same parcel where the wetland impact will occur. This is frequently the easiest option and may be the best one for minimizing the cumulative impacts of developments in a given area. Sometimes, however, it is not practicable and often it is not the best option for replacing ecological functions. If DSL staff determines that the onsite option is not feasible or is not ecologically preferable, other options may be pursued.

Offsite mitigation is when the mitigation site is not adjacent to the development site. Generally, the mitigation project will be constructed within the same drainage basin—again, this is to control cumulative impacts in an area and ensure that problems such as flooding are not shifted from one basin to another.

Payment to provide mitigation—in limited cases such as for small impacts, an applicant may be allowed to make a payment to DSL rather than construct the mitigation project his or herself. DSL determines the amount of the payment based upon estimated costs to acquire a site and construct, plant and monitor the mitigation project, and seeks out projects that will provide the necessary compensatory mitigation.

Purchase credits from a mitigation bank—a mitigation bank is a large wetland mitigation project constructed by a public or private party to compensate for future wetland impacts. DSL has specific rules for how a mitigation bank will be developed, operated and monitored. "Credits" are the units of exchange. They are usually based on acre units (one acre impact = one credit) and their value is determined by the actual cost of creating the credit in the bank. Private bank sponsors will also figure in a margin of profit. DSL staff may approve purchase of credit from a bank if onsite mitigation options are not practicable or not ecologically preferable. Mitigation banks can provide many practical and ecological benefits over small, onsite mitigation projects.

Does Compensatory Mitigation Really Work?

There have been many studies throughout the U.S. on how well created or restored wetlands perform. The "success" of a mitigation project depends upon multiple factors including appropriate siting, adequate water source, and the site's ability to be self-maintaining. In general, restoration of former wetlands has a higher likelihood of success than creation or enhancement. DSL has conducted studies of mitigation compliance with permit conditions and has found that:

- Most compensatory mitigation projects required by a permit were completed
- There were often significant differences in what was proposed and what was completed, resulting in a small net loss of wetland acreage
- Most wetland impacts and mitigation projects are less than one acre in size
- There is limited data with which to evaluate the functional success of mitigation projects

Project evaluation helps DSL improve mitigation project design, monitoring requirements and overall mitigation project success.

Just the Facts—Choosing and Using a Wetlands Consultant

When Do You Need a Wetlands Consultant?

If you are a realtor with undeveloped land on the market, a developer, a public works director developing a stormwater management plan, or someone who for any reason might need a wetland permit, chances are you will need the specialized expertise of a wetlands consultant. Wetlands staff at the Division of State Lands (DSL) can help landowners, developers and local governments determine whether or not there may be wetlands on a parcel and what permit requirements might apply. In addition, a qualified wetlands consultant can provide a number of helpful or essential services.

Typical Services a Consultant Can Provide

- Conduct a preliminary site reconnaissance to determine if wetlands are present, their approximate extent, and whether a full wetland delineation is needed
- Conduct a wetland boundary delineation to identify and accurately map areas subject to wetland permit requirements
- Prepare or contribute to site development designs that integrate development goals with wetland and stream protection
- Advise you on state and federal wetland permit requirements and options
- Handle all technical aspects of a permit application, including the alternatives analysis and compensatory mitigation plan
- Implement the mitigation plan, including instructing and monitoring heavy equipment operators, planting, annual monitoring, and preparing monitoring reports for DSL and the Corps of Engineers

General Qualifications

A wetlands consultant should have:

- An educational background in science, ecology and wetland-specific training, including a wetland delineation course
- A thorough knowledge of local, state and federal permit requirements and processes

Continued on back

Wetland Delineation Approval Process

A wetland delineation report and map is often the first step in planning a development project on a site that contains wetlands. Although the report may be submitted to DSL at the same time as a removal-fill permit application, we strongly recommend that the wetland delineation be conducted and submitted to DSL well in advance of detailed project planning. Until the wetlands are located and their boundaries mapped, appropriate measures to avoid and minimize impacts as required by state and federal law cannot be taken. If considerable expense has already been incurred for site planning and local government approvals have been obtained, agency requirements to further reduce wetland impacts can cause substantial additional cost and delay. Note: the Corps of Engineers will generally review a delineation report only when it is submitted along with a permit application; they may rely upon DSL's delineation concurrence but are not bound to do so.

When a wetland delineation report is submitted to DSL for approval, it is reviewed by staff for technical accuracy. If the report meets applicable standards and provides sufficient information for DSL to make a determination of which areas (if any) meet wetland criteria and are subject to permit requirements, the staff member approves the report. DSL staff may request additional or clarifying information and/or conduct an onsite inspection. Because delineating wetland boundaries requires data interpretation and professional judgment, many reports—even from experienced consultants—are revised prior to acceptance by DSL. **Do <u>not</u> count on the accuracy of a wetland delineation until you get a concurrence letter from DSL!**

Oregon Division of State Lands
Wetlands Program
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503-378-3805; http://statelands.dsl.state.or.us

Just the Facts #7
May 2000

- An understanding of development standards and options
- The ability to help develop workable solutions for challenging sites
- Good communication skills and professional ethics
- Good working relationships with permit agency staff

Selecting a Consultant

A good, experienced consultant can facilitate the wetland permit process with minimal delays. In contrast, an inexperienced or less-than-competent consultant who submits unclear or inaccurate information, or provides their client with misinformation about regulatory requirements, can cause frustration and waste time and money for their client and agency staff. There are many ways to locate a wetlands consultant, including:

- ***Word of mouth***—find out who does a consistently good job for others and has a good professional and ethical reputation.
- ***DSL's Consultants List***—the list is maintained by DSL as a public service. Because there are no criteria for inclusion on the list, it is **not** a list of recommended firms.

  In all cases, follow the recommendations below!
- Contact at least three firms for a cost estimate
- Ask for a resume or the firm's Statement of Qualifications
- Ask about any professional certification the firm's individuals have (see box)
- If it's a larger firm, ask about the specific person who will be doing the work for you
- Ask about firm's experience with the specific services you want (i.e., wetland delineation; permit application; mitigation design and construction) or any specialized experience needed, such as agricultural wetland delineation
- Talk to their references about the firm's performance with respect to work quality, staying within budget, innovation, meeting deadlines, communication throughout the project, and follow-through on agency or client requests and requirements

Professional Certification

The Society of Wetland Scientists administers a professional certification program whereby individuals who meet specific educational and experience requirements may be certified as a Professional Wetland Scientist (PWS). The certification program does not guarantee that an individual is qualified to provide a specific service; for example, it is not a "wetland delineator" certification. Likewise, certification does not guarantee the quality of work, but it does identify those individuals who have the necessary academic background and wetland-specific experience to provide good service. Wetlands specialists come from a variety of academic disciplines including botany, soil science, environmental studies, and wildlife management. Therefore, some may have additional professional certification, such as Professional Soil Scientist.

Working With Your Consultant and Permitting Agencies

Selecting the right consultant is the first step toward a successful project, but the subsequent working relationship is of equal importance. Ideally, this is a partnership, with all parties working in an efficient manner toward a good development project with minimal environmental impacts. Some tips and reminders:

- Good communication is essential. Depending on the scope of the project, an initial meeting may be needed to set the project off on the right track.
- Plan ahead! A wetland delineation typically takes several months from initiation to DSL approval, and permit applications typically take 90 days. Rush jobs can lead to errors, slowing rather than speeding the process.
- At the outset, give the consultant all pertinent information about the site and the project, including legal description, any previous studies, previous land uses, development objectives.
- The landowner or applicant is the legally responsible party for meeting permit requirements and conditions. Because the consultant is often the "intermediary" and the person who is communicating directly with agency staff, the consultant is responsible for keeping their client informed and getting the OK for major changes or commitments.
- If you experience unusual delays or problems that your consultant does not adequately explain, phone the agency staff person working on your project. It could be an agency problem, but sometimes agency staff have problems getting adequate information or products from the consultant.

Oregon Freshwater Wetland Assessment Method (OFWAM) Questions
MEDFORD URBAN RESERVE LWI Wetland Assessment Unit: MWC-1

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

b	

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

b	Rogue River is outside of Study Area

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.

a	Is upstream of Rogue River

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other		c	

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?

a. Exclusive Forest Use or Open Space	c
b. Agriculture	
c. Developed uses	

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?

c. Exclusive Forest Use or Open Space	a
b. Agriculture	
a. Developed uses	

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other		see next question	

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

a. Developed uses	a
b. Agriculture	
c. Exclusive Forest Use or Open Space	

17 What is the (entire) wetland acreage?

	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres
a			

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile
b			

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

a	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	b
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? b

23 What is the dominant wetland vegetation cover?

c	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

a	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet w

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

a	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	urban

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

c	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

b	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

a	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

a	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
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b	

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a	

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15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — b
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — b
   b. Agriculture
   a. Developed uses

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	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other		see next question	

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   a. Developed uses — b
   b. Agriculture
   c. Exclusive Forest Use or Open Space

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	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres
a			

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Wetland Habitat

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Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	a
RURAL	a. 3 or 4	b. 2	c. 1	

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b	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

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32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

b	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

n/a	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

n/a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

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38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

b	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

Oregon Freshwater Wetland Assessment Function Questions
Answer Sheet

OFWAM UNIT #		MWC-1
Wildlife Habitat		
1	b	
2	c	
3	a	
4	c	
5	b	
6	a	
7	a	
8	c	
9b	c	
Provides habitat for some species		
Fish Habitat		
Streams and Rivers		
1		
2		
3		
4		
5		
6		
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Not applicable		
Water Quality (pollutant removal)		
1	b	
2	a	
3	b	
4	a	Ditches likely provide connectivity
5	a	
6	b	
Impacted or degraded		
Hydrologic Control (flood control & water supply)		
1	a	
2	a	
3	a	
4	a	
5	c	
6	a	
7	b	
Intact		

OFWAM UNIT #		MWC-2
Wildlife Habitat		
1	a	
2	a	
3	b	
4	c	
5	a	
6	a	
7	a	
8	b	
9b	b	
Provides diverse wildlife habitat		
Fish Habitat		
Streams and Rivers		
1	a	
2	b	
3	b	
4	a	
5	b	
6	b	
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Intact		
Water Quality (pollutant removal)		
1	a	
2	a	
3	a	
4	a	
5	b	
6	c	
Intact		
Hydrologic Control (flood control & water supply)		
1	a	
2	a	
3	a	
4	b	
5	a	
6	b	
7	b	
Intact		

Oregon Freshwater Wetland Assessment
Function and Condition Summary Sheet

Wetland identification: MWC-1

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Relatively isolated, habitat not interspersed, low structural diversity, no open water, lacks woody vegetation. Adjacent land use is rural/residential and industrial. Located south of Swanson Creek
Fish Habitat	Not applicable	No stream / pond / lake present.
Water Quality	Impacted or degraded	Surface inflow. Fed by ditch in-flow; ponding; within floodplain of Swanson Creek, a tributary to Whetsone and the Rogue. Average vegetative cover <60% due to vernal pool component.
Hydrologic Control	Intact	Located within Swanson Creek 100-year floodplain.
Description		
Wetland ID's: W36, W04 (A, B and Mosaic components).		

Wetland identification: MWC-2

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides diverse wildlife habitat	Forested, woody cover along Swanson Creek. Diverse herbaceous vegetation. Two wetland vegetation classes present, interspersed, large size. Provides meadow / pasture habitat for insects and small birds. Good structural diversity. Adjacent to developed areas.
Fish Habitat	Intact	Wetland complex connected to natural stream channel (Swanson Creek). No recorded water quality issues upstream. Shaded riparian corridor. Small portions of stream ditched/culverted.
Water Quality	Intact	Surface inflow from Swanson Creek and surrounding upland. Interspersed ponding, well vegetated. Within floodplain of Swanson Creek, a tributary to Whetsone and the Rogue.
Hydrologic Control	Intact	Within 100-year floodplain of Swanson Creek. Adjacent industrial / residential land use. Restricted outflow; ponding during growing season; Complex >5 acres in size.
Description		
Wetland ID's: W06, W34, W35, W23, W24, W83 through W88. Swanson Creek riparian feature.		

Oregon Freshwater Wetland Assessment Method Characterization Questions
MEDFORD URBAN RESERVE LWI OFWAM Wetland Assessment Unit: MWC-3

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

b	comments: Light industrial also present. Pasture land dominant use.

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

b	comments: Rogue River is outside of Study Area

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.

a	comments: Extensive ditching to east for flood irrigation.

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next two questions*		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?

a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses	b

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?

c. Exclusive Forest Use or Open Space b. Agriculture a. Developed uses	b

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next question*		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

a. Developed uses b. Agriculture c. Exclusive Forest Use or Open Space	b

17 What is the (entire) wetland acreage?

a	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	b
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? a

23 What is the dominant wetland vegetation cover?

b	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

c	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet w

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

a	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

b	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

c	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

c	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

c	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

c	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

b	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

c	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

c	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

b	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

a	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

b	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

Oregon Freshwater Wetland Assessment Method Characterization Questions
MEDFORD URBAN RESERVE LWI OFWAM Wetland Assessment Unit: MWC-4

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

b	

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

b	

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.

a	

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next two questions		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — b
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — b
   b. Agriculture
   a. Developed uses

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next question		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses — a
   b. Agriculture
   c. Exclusive Forest Use or Open Space

17 What is the (entire) wetland acreage?

a	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

a	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	b
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? a

23 What is the dominant wetland vegetation cover?

a	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

b	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet wi

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

a	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

b	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

b	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

b	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

a	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

b	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

n/a	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

n/a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

a	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

c	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

Oregon Freshwater Wetland Assessment Function Questions
Answer Sheet

OFWAM UNIT# MWC-3		
Wildlife Habitat		
1	b	
2	b	
3	c	
4	b	
5	a	
6	a	
7	a	
8	b	
9b	c	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1		
2		
3		
4		
5		
6		
Lakes and Ponds		
1	b	
2	c	
3	c	
4	a	
5	b	
6	c	
Impacted or Degraded		
Water Quality (pollutant removal)		
1	b	
2	a	
3	a	
4	a	
5	b	
6	c	
Intact		
Hydrologic Control (flood control & water supply)		
1	b	
2	a	
3	a	
4	b	
5	b	
6	b	
7	b	
Impacted or Degraded		

OFWAM UNIT # MWC-4		
Wildlife Habitat		
1	b	
2	a	
3	b	
4	b	
5	a	
6	a	
7	a	
8	b	
9b	b	
Provides diverse wildlife habitat		
Fish Habitat (if applicable)		
Streams and Rivers		
1	a	
2	b	
3	b	
4	a	
5	b	
6	b	
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Impacted or Degraded		
Water Quality (pollutant removal)		
1	a	
2	a	
3	a	
4	a	
5	b	
6	c	
Intact		
Hydrologic Control (flood control & water supply)		
1	a	
2	a	
3	a	
4	c	
5	a	
6	a	
7	b	
Intact		

Oregon Freshwater Wetland Assessment
Function and Condition Summary Sheet

Wetland identification: MWC-3

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Habitat not interspersed, adjoining waters are approximately 0.6 acres in total. Some structural diversity. Lacks woody vegetation. Adjacent land use is residential. Borderline diverse / some.
Fish Habitat	Impacted or Degraded	Ditches are channelized, one man-made irrigation pond present.
Water Quality	Intact	Overland sheet inflow and surface flow via ditches. Extensive ponding during growing season is likely, based on historical aerial imagery. Tributary to Swanson Creek.
Hydrologic Control	Impacted or Degraded	Agriculture is dominant surrounding land use.
Description		
Wedland ID's: W07, W38. Adjoining waters: AW35, WA29.		

Wetland identification: MWC-4

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides diverse wildlife habitat	Forested, woody cover along Swanson Creek. Diverse herbaceous vegetation. Two wetland vegetation classes present, interspersed, large size. Provides meadow / pasture habitat for insects and small birds. Good structural diversity. Adjacent to developed areas.
Fish Habitat	Impacted or Degraded	Wetland complex connected to natural stream channel (Swanson Creek). No recorded water quality issues upstream. Shaded riparian corridor. Small portions of stream ditched/culverted.
Water Quality	Intact	Surface inflow from Swanson Creek and surrounding upland. Interspersed ponding, well vegetated. Within floodplain of Swanson Creek, a tributary to Whetsone and the Rogue.
Hydrologic Control	Intact	Within 100-year floodplain of Swanson Creek. Adjacent industrial / residential land use. Restricted outflow; ponding during growing season; Complex >5 acres in size.
Description		
Wetland ID's: W08, W09, W39-(A-B), W40 through W43.		

Oregon Freshwater Wetland Assessment Method Characterization Questions
MEDFORD URBAN RESERVE LWI OFWAM Wetland Assessment Unit: MWC-5

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

a	comments: housing development upstream

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

b	comments:

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.

a	comments:

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next two questions*		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — b
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — b
   b. Agriculture
   a. Developed uses

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next question*		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses — a
   b. Agriculture
   c. Exclusive Forest Use or Open Space

17 What is the (entire) wetland acreage?

a	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	a
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? a

23 What is the dominant wetland vegetation cover?

b	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

c	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet w

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

b	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

b	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	urban

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

c	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

c	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

c	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

c	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

c	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

c	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

b	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

c	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

a	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

a	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

b	

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

b	

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.

a	

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next two questions		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — b
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — b
   b. Agriculture
   a. Developed uses

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next question		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses — a
   b. Agriculture
   c. Exclusive Forest Use or Open Space

17 What is the (entire) wetland acreage?

	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres
a			

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile
a			

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	a
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? a

23 What is the dominant wetland vegetation cover?

c	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

b	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet wi

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

b	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

a	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

c	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

b	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

c	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

c	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

b	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

c	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

c	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

c	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

a	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

a	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

Oregon Freshwater Wetland Assessment Function Questions
Answer Sheet

OFWAM UNIT#	MWC-5	
Wildlife Habitat		
1	a	
2	b	
3	c	
4	b	
5	a	
6	b	
7	a	
8	b	
9b	c	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1	c	
2	c	
3	c	
4	a	
5	b	
6	c	
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Impacted or Degraded		
Water Quality (pollutant removal)		
1	c	
2	a	
3	a	
4	a	
5	b	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	b	
2	a	
3	a	
4	a	
5	b	
6	a	
7	a	
Intact		

OFWAM UNIT #	MWC-6	
Wildlife Habitat		
1	a	
2	c	
3	b	
4	a	
5	a	
6	b	
7	a	
8	b	
9b	c	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1	c	
2	b	
3	c	
4	a	
5	b	
6	c	
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Impacted or Degraded		
Water Quality (pollutant removal)		
1	c	
2	a	
3	a	
4	a	
5	b	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	b	
2	a	
3	a	
4	a	
5	c	
6	a	
7	b	
Intact		

OFWAM Answer Summary Tables

Oregon Freshwater Wetland Assessment
Function and Condition Summary Sheet

Wetland identification: MWC-5

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Mostly emergernt with adjoinging open water, interspersed, large size. Provides meadow / pasture habitat for insects and small birds. Somewhat mosaic distribution of wetland/upland areas. Surface water connection via channelized stream. Relatively undisturbed pasture.
Fish Habitat	Impacted or Degraded	Ditches are channelized, two ponds present.
Water Quality	Impacted or Degraded	Primarily groundwater input. Lacks woody vegetation. Seasonal ponding; adjacent to light industrial land use and agriculture. No clear connection to Swanson Creek.
Hydrologic Control	Intact	Complex >5 acres in size. Extensive flooding during growing season. Restricted outlet due to adjoing Vilas road and industrial development.
Description		
Wetland ID's: W10-(A, D-G), W22. Water ID's: AW16, AW32.		

Wetland identification: MWC-6

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Five wetland vegetation classes present, well interspersed, large size, diverse. Good structural at eastern end (W21, W53 on slope), open water interspersed, and streams / ditches present.
Fish Habitat	Impacted or Degraded	Ditches are channelized, several man made and natural ponds present.
Water Quality	Impacted or Degraded	Groundwater input. Streams extensively channelized. Surrounding land use is flood irrigated pasture. Downstream channel runs through / adjacent to Medford airport.
Hydrologic Control	Intact	Limited outlet. Not in floodplain, however ponding is likely. Ajacent to developed land uses. Drainage feeds to pond with restricted outflow.
Description		
Wetland ID's: W11, W21, W46 through W51, W53 through W57. Water ID's: WA14, WA15, AW33, AW17, WA16, WA28.		

Oregon Freshwater Wetland Assessment Method Characterization Questions
MEDFORD URBAN RESERVE LWI OFWAM Wetland Assessment Unit: MWC-7

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

a	comments: pasture, residential, industrial

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

b	comments:

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.

a	comments: Rogue river is outside study area, downstream

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next two questions*		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — b
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — b
   b. Agriculture
   a. Developed uses

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next question*		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses — b
   b. Agriculture
   c. Exclusive Forest Use or Open Space

17 What is the (entire) wetland acreage?

a	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

a	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	b
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? b

23 What is the dominant wetland vegetation cover?

b	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

a	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet w

b	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

b	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

c	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

c	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

c	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

c	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

n/a	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

n/a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

a	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

c	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

a	

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

b	

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.

a	

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next two questions		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — a
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — a
   b. Agriculture
   a. Developed uses

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next question		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses — a
   b. Agriculture
   c. Exclusive Forest Use or Open Space

17 What is the (entire) wetland acreage?

	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres
a			

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile
b			

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	b
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? c

23 What is the dominant wetland vegetation cover?

c	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

a	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet wi

b	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

b	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

c	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

n/a	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

n/a	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

n/a	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

n/a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

a	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

a	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

Oregon Freshwater Wetland Assessment Function Questions
Answer Sheet

OFWAM UNIT#	MWC-7	
Wildlife Habitat		
1	b	rural
2	b	
3	a	
4	c	
5	a	
6	b	
7	a	
8	b	
9b	b	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1	c	
2	c	
3	c	
4	a	
5	b	
6	c	
Lakes and Ponds		
1	n/a	
2	n/a	
3	n/a	
4	n/a	
5	n/a	
6	n/a	
Impacted or Degraded		
Water Quality (pollutant removal)		
1	a	
2	a	
3	b	
4	a	
5	b	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	a	
2	a	
3	a	
4	c	
5	b	
6	b	
7	a	
Intact		

OFWAM UNIT #	MWC-8	
Wildlife Habitat		
1	b	
2	c	
3	a	
4	c	
5	b	
6	b	
7	a	
8	a	
9b	b	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1		
2		
3		
4		
5		
6		
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Not applicable		
Water Quality (pollutant removal)		
1	a	
2	a	
3	c	
4	a	
5	a	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	b	
2	a	
3	a	
4	a	
5	c	
6	a	
7	a	
Intact		

OFWAM Answer Summary Tables

Oregon Freshwater Wetland Assessment
Function and Condition Summary Sheet

Wetland identification: MWC-7

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Limited structural diversity, very small waters and vernal pools interspersed, one Cowardin class. Adjacent to Swanson Creek, with a portion crossing in to the 100-year floodplain. Lacks woody vegetation.
Fish Habitat	Impacted or Degraded	Small ditch runs through center of complex.
Water Quality	Impacted or Degraded	Surface in-flow, however wetland vegetation percentage is low because of mosaic structure. Vernal pool ponding during the growing season evident in aerial imagery.
Hydrologic Control	Intact	Partly intersects with Swanson Creek 100-year floodplain. More than 5 acres in size.
Description		
Wetland ID's: W82. Landform was visually observed from southern boundary of parcel, however the characteristics of the vernal pools were not confirmed due to denied access. This polygon is from the Agate Desert Vernal Pool Planning TAC (2000), which has been extended slightly to the NW using desktop interpretation. Water ID's: AW10, WA11		

Wetland identification: MWC-8

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Isolated with low structural diversity. Surrounded by developed land uses.
Fish Habitat	Not applicable	Not connected to a stream, ditch or open water.
Water Quality	Impacted or Degraded	Outside the floodplain of Swanson Creek. Low percentage of wetland vegetation cover due to mosaic structure.
Hydrologic Control	Intact	Polygon more than 5 acres in size, however actual wetland acreage may be smaller. No apparent outlet. Wetland surrounded by industrial and residential land use, and pasture.
Description		
Wetland ID's: W25. Not accessed for verification. This wetland polygon is from the Agate Desert Vernal Pool Planning TAC (2000), and the Medford Hydrography CAD (2013). Native oaks are present within the wetland polygon and were included as upland habitat in the OFWAM assessment.		

Oregon Freshwater Wetland Assessment Method Characterization Questions
MEDFORD URBAN RESERVE LWI OFWAM Wetland Assessment Unit: MWC-9

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

a	comments:

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

b	comments:

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.

a	comments:

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next two questions*		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?

a. Exclusive Forest Use or Open Space	b
b. Agriculture	
c. Developed uses	

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?

c. Exclusive Forest Use or Open Space	b
b. Agriculture	
a. Developed uses	

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next question*		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

a. Developed uses	b
b. Agriculture	
c. Exclusive Forest Use or Open Space	

17 What is the (entire) wetland acreage?

b	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	**a. Two or more**	**b. One w/ > 5 species**	**c. One w/ < 5 speci**	**a**
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? b

23 What is the dominant wetland vegetation cover?

c	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

c	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet w

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

b	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

c	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

c	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

n/a	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

n/a	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

n/a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

b	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

c	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

a	

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

b	

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.

a	

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next two questions		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — b
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — b
   b. Agriculture
   a. Developed uses

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next question		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses — a
   b. Agriculture
   c. Exclusive Forest Use or Open Space

17 What is the (entire) wetland acreage?

	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres
b			

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile
b			

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)	a			
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	b
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? b

23 What is the dominant wetland vegetation cover?

c	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

b	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet wi

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

b	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

n/a	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

n/a	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

n/a	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

n/a	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

n/a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

b	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

b	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

Oregon Freshwater Wetland Assessment Function Questions
Answer Sheet

OFWAM UNIT#	MWC-9	
Wildlife Habitat		
1	a	
2	c	
3	c	
4	c	
5	a	
6	b	
7	a	
8	b	
9b	c	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1		
2		
3		
4		
5		
6		
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Not applicable		
Water Quality (pollutant removal)		
1	a	
2	b	
3	b	
4	b	
5	b	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	b	
2	b	
3	b	
4	c	
5	c	
6	b	
7	a	
Impacted or Degraded		

OFWAM UNIT #	BCS-1	
Wildlife Habitat		
1	b	
2	c	
3	b	
4	c	
5	b	
6	b	
7	a	
8	b	
9b	c	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1		
2		
3		
4		
5		
6		
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Not applicable		
Water Quality (pollutant removal)		
1	a	
2	b	
3	b	
4	b	
5	b	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	b	
2	b	
3	b	
4	b	
5	c	
6	a	
7	a	
Impacted or Degraded		

OFWAM Answer Summary Tables

Oregon Freshwater Wetland Assessment
Function and Condition Summary Sheet

Wetland identification: MWC-9

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	0.52 acres. Isolated, along boundary of field pasture. Disturbed. Potential PSS component <0.08 acres.
Fish Habitat	Not applicable	Minor ditch.
Water Quality	Impacted or Degraded	Isolated.
Hydrologic Control	Impacted or Degraded	Water likely moves through the wetland rapidly. Agriculture is dominant surrounding land use.
Description		
Wetland ID's: W31 along small ditch line (desktop delineation), likely artificial. LSW determination = No.		

Wetland identification: BCS-1

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Flood irrigated pasture with limited diversity, one Cowardin class. Adjacent land use is flood irrigated pasture and other agriculture, with a golf course to the west.
Fish Habitat	Not applicable	Highly altered irrigation canal.
Water Quality	Impacted or Degraded	No true surface water connection to Phoenix Canal. Flood irrigation is practiced on site by controlled use of ditches.
Hydrologic Control	Impacted or Degraded	Any ponding that occurs is a result of controlled flood irrigation. Canal is bordered by a dike on the west side. A small underground pipe connects the ditch along the east side of the wetland to the canal.
Description		
Wetland ID's: W01, W02-(A-B). Phoenix Canal runs along eastern edge of W02-B, separated by a dike. Phoenix Canal is a tributary to Larson Creek, and Larson Creek to Bear Creek (>1/4 mile away). Artificial waters to the west are part of golf course landscaping features - no connection to these was observed.		

Oregon Freshwater Wetland Assessment Method Characterization Questions
MEDFORD URBAN RESERVE LWI OFWAM Wetland Assessment Unit: BCS-2

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

c	comments: a portion is agriculture, and further upstream is open upland forest.

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

a	comments: Adjacent Larson creek is listed as water quality limited for temperature and dissolved oxygen

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.

a	comments:

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next two questions*		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — b
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — b
   b. Agriculture
   a. Developed uses

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next question*		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses — b
   b. Agriculture
   c. Exclusive Forest Use or Open Space

17 What is the (entire) wetland acreage?

b	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	b
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? a

23 What is the dominant wetland vegetation cover?

b	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

b	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet w

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

b	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

b	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

b	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

n/a	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

n/a	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

b	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

b	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

c	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

b	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

a	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

b	

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

a	comment: Downstream Bear creek is listed as water quality limited - Temperature, sediment, and bacteria.

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.

a	

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next two questions		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space
   b. Agriculture
   c. Developed uses

b

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space
   b. Agriculture
   a. Developed uses

b

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next question		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses
   b. Agriculture
   c. Exclusive Forest Use or Open Space

b

17 What is the (entire) wetland acreage?

b	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	b
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? b

23 What is the dominant wetland vegetation cover?

c	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

b	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet wi

b	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

a	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

a	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

b	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

c	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

c	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

n/a	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

n/a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

c	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

c	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

Oregon Freshwater Wetland Assessment Function Questions
Answer Sheet

OFWAM UNIT#	BCS-2	
Wildlife Habitat		
1	b	
2	b	
3	b	
4	b	
5	a	
6	b	
7	a	
8	b	
9b	c	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1		
2		
3		
4		
5		
6		
Lakes and Ponds		
1	b	
2	c	
3	b	
4	a	
5	b	
6	b	
Impacted or Degraded		
Water Quality (pollutant removal)		
1	a	
2	b	
3	a	
4	b	
5	b	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	b	
2	b	
3	b	
4	a	
5	b	
6	b	
7	c	
Impacted or Degraded		

OFWAM UNIT #	BCS-3	
Wildlife Habitat		
1	b	
2	c	
3	b	
4	c	
5	a	
6	a	
7	a	
8	b	
9b	b	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1	c	
2	b	
3	c	
4	a	
5	b	
6	a	
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Impacted or Degraded		
Water Quality (pollutant removal)		
1	a	
2	c	
3	b	
4	a	
5	b	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	b	
2	c	
3	b	
4	c	
5	c	
6	b	
7	b	
Impacted or Degraded		

OFWAM Answer Summary Tables

Oregon Freshwater Wetland Assessment
Function and Condition Summary Sheet

Wetland identification: BCS-2

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Riparian vegetation along Larson Creek includes oak, ash, willow, and blackberry. One wetland type.
Fish Habitat	Impacted or Degraded	Larson Creek reservoir is small. It adjoins the wetlands, but does not have a clear connection to Larson Creek.
Water Quality	Impacted or Degraded	Could be intact if ponding is occuring (unable to determine). Evidence that main source of hydrology is from up-slope canal and associated ditches used for flood irrigation.
Hydrologic Control	Impacted or Degraded	Larson Creek reservoir connects to wetlands, but does not have a clear connection to Larson Creek. No culvert observed under road to west.
Description		
Wetland ID's: W13 and W66 Water ID's: AW21 - Larson Creek Reservoir. East Lateral Canal is upslope. Passes LSW criteria because it is within 1/4 mile of water quality limited Larson creek.		

Wetland identification: BCS-3

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Adjoining upland vegetation somewhat sparse. Single Cowardin class.
Fish Habitat	Impacted or Degraded	Wetland connected to tributary via intermittent or potentially ephemeral drainage / ditch that lacks woody vegetation.
Water Quality	Impacted or Degraded	Connected to tributary by likely intermittent stream. Inflow potentially from East Lateral Canal and AW22 pond.
Hydrologic Control	Impacted or Degraded	Residence is in close proximity, however majority of surrounding land use is flood irrigated pasture.
Description		
Wetland ID's: W68. Unnamed tributary to Bear Creek is located approximately 300 feet to the south, outside the study area and is connected by an ephemeral drainage.		

Oregon Freshwater Wetland Assessment Method Characterization Questions
MEDFORD URBAN RESERVE LWI OFWAM Wetland Assessment Unit: BCS-4

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

b	comments: Pasture, and golf course

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

a	comments: Bear Creek, downstream

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.

a	comments:

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next two questions*		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — b
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — b
   b. Agriculture
   a. Developed uses

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next question*		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses — a
   b. Agriculture
   c. Exclusive Forest Use or Open Space

17 What is the (entire) wetland acreage?

a	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	a
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? a

23 What is the dominant wetland vegetation cover?

b	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

b	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet w

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

a	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

b	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

a	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

n/a	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

n/a	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

b	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

c	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

c	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

a	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

a	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

a	

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

a	comments: Bear Creek is 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.

c	comments: Bear creek is listed as severe with data

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next two questions		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?

a. Exclusive Forest Use or Open Space	a
b. Agriculture	
c. Developed uses	

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?

c. Exclusive Forest Use or Open Space	a
b. Agriculture	
a. Developed uses	

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next question		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

a. Developed uses	c
b. Agriculture	
c. Exclusive Forest Use or Open Space	

17 What is the (entire) wetland acreage?

b	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

a	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	a
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? a

23 What is the dominant wetland vegetation cover?

a	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

a	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by a vegetative buffer at least 25 feet wide?

a	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

a	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

a	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

b	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

a	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

b	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

b	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

b	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

b	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

b	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

Oregon Freshwater Wetland Assessment Function Questions
Answer Sheet

OFWAM UNIT#	BCS-4	
Wildlife Habitat		
1	a	
2	b	
3	b	
4	b	
5	a	
6	a	
7	a	
8	b	
9b	c	
Provides diverse wildlife habitat		
Fish Habitat (if applicable)		
Streams and Rivers		
1		
2		
3		
4		
5		
6		
Lakes and Ponds		
1	b	
2	c	
3	c	
4	a	
5	b	
6	a	
Impacted or Degraded		
Water Quality (pollutant removal)		
1	a	
2	a	
3	a	
4	a	
5	b	
6	c	
Intact		
Hydrologic Control (flood control & water supply)		
1	b	
2	a	
3	a	
4	a	
5	b	
6	a	
7	b	
Intact		

OFWAM UNIT #	BCS-5	
Wildlife Habitat		
1	a	
2	a	
3	a	
4	c	
5	a	
6	a	
7	c	
8	a	
9b	a	
Provides diverse wildlife habitat		
Fish Habitat (if applicable)		
Streams and Rivers		
1	a	
2	b	
3	b	
4	c	
5	a	
6	a	
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Intact		
Water Quality (pollutant removal)		
1	a	
2	b	
3	a	
4	a	
5	a	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	a	
2	b	
3	b	
4	b	
5	a	
6	c	
7	a	
Impacted or Degraded		

OFWAM Answer Summary Tables

Oregon Freshwater Wetland Assessment
Function and Condition Summary Sheet

Wetland identification: BCS-4

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides diverse wildlife habitat	Two Cowardin classes present, dominated by emergent vegetation with limited diversity and moderate interspersion. Adjoins open water, and I-5 corridor.
Fish Habitat	Impacted or Degraded	Coho present in Bear Creek, downstream. Connected to Bear Creek via culvert under I-5 corridor.
Water Quality	Intact	Large area, well vegetated, tributary to Bear Creek.
Hydrologic Control	Intact	Aerial imagery suggests flooding / ponding present. Receives flow from ditches and tributaries leading to Bear Creek.
Description		
Wetland ID's: W70-W72, W74. Water ID's: WA08, WA22, WA24, WA25, WA28		

Wetland identification: BCS-5

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides diverse wildlife habitat	Forested, woody, scrub-shrub cover. Diverse vegetation. Two Cowardin classes classes present, interspersed, large size, good structural diversity. Bear Creek runs through middle. Adjacent to developed areas.
Fish Habitat	Intact	Provides shade to Bear Creek, a natural channel with good structural diversity. Coho recorded in Bear Creek (federally threatened).
Water Quality	Impacted or Degraded	Bear Creek is water quality limited due to temperature, bacteria and sediment.
Hydrologic Control	Impacted or Degraded	Dominant downstream cover within 500 feet is natural area within the Bear Creek Greenway.
Description		
Wetland ID's: W18, W79 Water ID's: Bear Creek		

Oregon Freshwater Wetland Assessment Method Characterization Questions
MEDFORD URBAN RESERVE LWI OFWAM Wetland Assessment Unit: BCS-6

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

b	comments:

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

a	comments: Bear creek, downstream

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.

a	comments:

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next two questions*		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?

a. Exclusive Forest Use or Open Space	a
b. Agriculture	
c. Developed uses	

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?

c. Exclusive Forest Use or Open Space	a
b. Agriculture	
a. Developed uses	

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next question*		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

a. Developed uses	c
b. Agriculture	
c. Exclusive Forest Use or Open Space	

17 What is the (entire) wetland acreage?

b	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	b
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? a

23 What is the dominant wetland vegetation cover?

c	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

c	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by a vegetative buffer at least 25 feet wide?

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

b	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

b	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

b	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

c	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

c	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

b	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

b	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

a	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

a	

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

a	comment: Bear creek

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.

a	

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next two questions		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — b
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — b
   b. Agriculture
   a. Developed uses

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next question		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses — b
   b. Agriculture
   c. Exclusive Forest Use or Open Space

17 What is the (entire) wetland acreage?

	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres
a			

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile
a			

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	a
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? a

23 What is the dominant wetland vegetation cover?

c	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

c	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by a vegetative buffer at least 25 feet wide?

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

b	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

c	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

n/a	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

n/a	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

n/a	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

n/a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

c	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

a	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

a	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

Oregon Freshwater Wetland Assessment Function Questions
Answer Sheet

OFWAM UNIT# BCS-6		
Wildlife Habitat		
1	b	
2	c	
3	c	
4	c	
5	a	
6	b	
7	a	
8	a	
9b	c	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1		
2		
3		
4		
5		
6		
Lakes and Ponds		
1	b	
2	c	
3	c	
4	a	
5	a	
6	b	
Impacted or Degraded		
Water Quality (pollutant removal)		
1	b	
2	b	
3	a	
4	b	
5	a	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	b	
2	b	
3	b	
4	a	
5	c	
6	c	
7	b	
Impacted or Degraded		

OFWAM UNIT # BCS-7		
Wildlife Habitat		
1	a	
2	c	
3	c	
4	c	
5	a	
6	b	
7	a	
8	b	
9b	c	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1		
2		
3		
4		
5		
6		
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Not applicable		
Water Quality (pollutant removal)		
1	c	
2	a	
3	a	
4	a	
5	b	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	b	
2	a	
3	a	
4	a	
5	c	
6	b	
7	a	
Intact		

OFWAM Answer Summary Tables

Oregon Freshwater Wetland Assessment
Function and Condition Summary Sheet

Wetland identification: BCS-6

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Isolated wetland within golf course.
Fish Habitat	Impacted or Degraded	Culvert from wetland flows to underground piping, and into artificial pond
Water Quality	Impacted or Degraded	Wetland on slope, surrounded by golf course, drained by underground culvert.
Hydrologic Control	Impacted or Degraded	Wetland on slope, surrounded by golf course, drained by underground culvert. Not in floodplain, not upstream of developed areas. Extensive ponding not likely.
Description		
Wetland ID's: W17. Other small probable wetlands on golf course too small for functional assessment. Water ID's: Artificial ponds on golf course include AW27, AW36, AW37, AW38, AW39		

Wetland identification: BCS-7

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Isolated, habitat not interspersed, no open water. Two Cowardin classes. Adjacent to Bear Creek which is water quality limited.
Fish Habitat	Not applicable	Ditch is minor.
Water Quality	Impacted or Degraded	Ground water input. Lacks extensive woody vegetation.
Hydrologic Control	Intact	Ground water fed wetland, ponding evident in ditch that runs through site. Large area. Woody vegetation present.
Description		
Wetland ID's: W19-(A-B). Field visit found no surface connection to W20 wetland which has, therefore, been excluded from this assessment unit (see BCS-8).		

Oregon Freshwater Wetland Assessment Method Characterization Questions
MEDFORD URBAN RESERVE LWI OFWAM Wetland Assessment Unit: BCS-8

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

a	comments:

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

a	comments: Bear creek is water quality limited for temperature, bacteria, sediment.

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.

a	comments:

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next two questions*		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — b
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — b
   b. Agriculture
   a. Developed uses

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next question*		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses — b
   b. Agriculture
   c. Exclusive Forest Use or Open Space

17 What is the (entire) wetland acreage?

b	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	b
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? a

23 What is the dominant wetland vegetation cover?

c	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

c	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet w

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

b	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

n/a	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

n/a	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

n/a	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

n/a	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

n/a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

c	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

c	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

a	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

a	

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

a	Bear Creek is 303(d) for multiple criteria

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.

a	

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next two questions		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — b
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — b
   b. Agriculture
   a. Developed uses

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next question		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses — b
   b. Agriculture
   c. Exclusive Forest Use or Open Space

17 What is the (entire) wetland acreage?

	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres
b			

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile
a			

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)	a			
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	c
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? b

23 What is the dominant wetland vegetation cover?

c	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

b	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet wi

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

b	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

c	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

c	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

c	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

c	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

n/a	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

n/a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

b	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

c	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

Oregon Freshwater Wetland Assessment Function Questions
Answer Sheet

OFWAM UNIT#	BCS-8	
Wildlife Habitat		
1	b	
2	c	
3	c	
4	c	
5	a	
6	b	
7	a	
8	b	
9b	c	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1		
2		
3		
4		
5		
6		
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Not applicable		
Water Quality (pollutant removal)		
1	c	
2	c	
3	a	
4	b	
5	b	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	b	
2	c	
3	b	
4	a	
5	c	
6	b	
7	a	
Impacted or Degraded		

OFWAM UNIT #	BCS-9	
Wildlife Habitat		
1	c	
2	c	
3	b	
4	c	
5	a	
6	b	
7	a	
8	b	
9b	c	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1	c	
2	c	
3	c	
4	a	
5	b	
6	c	
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Impacted or Degraded		
Water Quality (pollutant removal)		
1	a	
2	b	
3	b	
4	b	
5	b	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	b	
2	b	
3	b	
4	c	
5	c	
6	b	
7	a	
Impacted or Degraded		

OFWAM Answer Summary Tables

Oregon Freshwater Wetland Assessment
Function and Condition Summary Sheet

Wetland identification: BCS-8

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Limited structural diversity. Isolated. Agriculture and developed land uses surround the wetland.
Fish Habitat	Not applicable	Very small pond present.
Water Quality	Impacted or Degraded	Ground water fed. No connection to ditch along southern boundary of parcel.
Hydrologic Control	Impacted or Degraded	Ground water fed. No connection to flood plain. Slight slope - little to no ponding.
Description		
Wetland ID's: W20 Water ID's: WA26		

Wetland identification: BCS-9

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Flood irrigated pasture with limited diversity, one Cowardin class. Adjacent land use is flood irrigated pasture and other agriculture.
Fish Habitat	Impacted or Degraded	Highly altered irrigation canal that is not diked on eastern side and therefore connected to W03.
Water Quality	Impacted or Degraded	Connected to Phoenix Canal, used for flood irrigation. FAC vegetation is dominated by meadow foxtail as a result of flood irrigation activities on clay soils.
Hydrologic Control	Impacted or Degraded	No ponding, as wetland is located on a slope. Receives hydrology from ditches used for flooding along the east side of the parcel.
Description		
Wetland ID's: W03. Highly altered setting limits functional value. Phoenix Canal runs along western edge, and is a tributary to Larson Creek, and Larson Creek to Bear Creek.		

Oregon Freshwater Wetland Assessment Method Characterization Questions
MEDFORD URBAN RESERVE LWI OFWAM Wetland Assessment Unit: LSC-1

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

b	

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

a	comment: Larson and Bear creeks are water quality limited for multiple criteria.

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.

a	

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next two questions		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — b
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — b
   b. Agriculture
   a. Developed uses

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next question		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses — b
   b. Agriculture
   c. Exclusive Forest Use or Open Space

17 What is the (entire) wetland acreage?

b	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

b	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	a
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? a

23 What is the dominant wetland vegetation cover?

a	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

b	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet w

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

b	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

c	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

n/a	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

n/a	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

n/a	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

n/a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

a	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

a	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

b	comments:

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

a	comments: Larson creek is listed as water quality limited for temperature, bacteria.

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.

a	comments:

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next two questions*		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space
   b. Agriculture
   c. Developed uses

b

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space
   b. Agriculture
   a. Developed uses

b

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next question*		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses
   b. Agriculture
   c. Exclusive Forest Use or Open Space

b

17 What is the (entire) wetland acreage?

c	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile	***Connection estimated - not confirmed***

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	a
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? a

23 What is the dominant wetland vegetation cover?

a	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

b	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet w

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

a	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

c	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

b	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe	***Connection estimated - not confirmed***

31 What percentage of the stream is shaded by riparian vegetation?

a	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

c	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

n/a	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

n/a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

East Lateral Canal

37 Is there evidence of flooding or ponding during a portion of the growing season?

a	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

c	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

Oregon Freshwater Wetland Assessment Function Questions
Answer Sheet

OFWAM UNIT# LSC-1		
Wildlife Habitat		
1	a	
2	a	
3	b	
4	c	
5	b	
6	b	
7	a	
8	b	
9b	c	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1		
2		
3		
4		
5		
6		
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Not applicable		
Water Quality (pollutant removal)		
1	a	
2	a	
3	a	
4	b	
5	b	
6	c	
Intact		
Hydrologic Control (flood control & water supply)		
1	b	
2	a	
3	b	
4	a	
5	a	
6	b	
7	b	
Impacted or Degraded		

OFWAM UNIT # LSC-2		
Wildlife Habitat		
1	a	
2	a	
3	b	
4	c	
5	a	
6	a	
7	a	
8	b	
9b	c	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1	a	
2	b	
3	c	
4	a	
5	b	
6	c	
Lakes and Ponds		
1	n/a	
2	n/a	
3	n/a	
4	n/a	
5	n/a	
6	n/a	
Impacted or Degraded		
Water Quality (pollutant removal)		
1	a	
2	a	
3	a	
4	b	
5	b	
6	c	
Intact		
Hydrologic Control (flood control & water supply)		
1	b	
2	a	
3	c	
4	c	
5	a	
6	b	
7	b	
Impacted or Degraded		

OFWAM Answer Summary Tables

Oregon Freshwater Wetland Assessment
Function and Condition Summary Sheet

Wetland identification: LSC-1

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Heavily impacted by cattle. Isolated, habitat not interspersed, low structural diversity, no open water. Two Cowardin classes; scrub-shrub dominated.
Fish Habitat	Not applicable	Drainage is ephemeral.
Water Quality	Intact	Ponding observed during site visit. PSS component is well vegetated with willow.
Hydrologic Control	Impacted or Degraded	Sheet flow and ephemeral drainage provide hydrology. Surrounding land use is agriculture.
Description		
Wetland ID's: W15. Water ID's: Feeds to Mud Creek		

Wetland identification: LSC-2

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Habitat with limited interspersion, some structural diversity, no open water. Two Cowardin classes; PSS dominated with emergent understory. Connected to Mud Creek and associated riparian vegetation. Adjacent land use is agricultural.
Fish Habitat	Impacted or Degraded	Unnamed tributary is intermittent or emphemeral and flows into intermittent Mud Creek. Unable to determine whether there is an "unimpeded surface water connection to the stream". If there is no connection, this function is not applicable.
Water Quality	Intact	Ponding occurs in wetland, and two Cowardin classes are present; PSS dominated with emergent understory.
Hydrologic Control	Impacted or Degraded	Not located on a floodplain. Surrounded by pasture. Wetland is associated with drainage which feeds to Mud Creek.
Description		
Wetland ID's: W62 Water ID's: Ditch feeds to Mud Creek		

Oregon Freshwater Wetland Assessment Method Characterization Questions
MEDFORD URBAN RESERVE LWI OFWAM Wetland Assessment Unit: LSC-3

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

b	comments: not visually confirmed

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

a	comments: Larson creek is listed as water quality limited for temperature, bacteria.

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.

a	comments:

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next two questions*		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?

a. Exclusive Forest Use or Open Space b. Agriculture c. Developed uses	b

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?

c. Exclusive Forest Use or Open Space b. Agriculture a. Developed uses	b

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next question*		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

a. Developed uses b. Agriculture c. Exclusive Forest Use or Open Space	b

17 What is the (entire) wetland acreage?

a	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile	***Connection estimated - not confirmed***

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	b
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? b

23 What is the dominant wetland vegetation cover?

b	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

b	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet w

b	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

b	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

c	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

a	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe	***Connection estimated - not confirmed***

31 What percentage of the stream is shaded by riparian vegetation?

b	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

b	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

n/a	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

n/a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

East Lateral Canal

37 Is there evidence of flooding or ponding during a portion of the growing season?

b	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

c	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

b	comments:

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

a	comments: Larson creek is listed as water quality limited for temperature, bacteria.

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.

a	comments:

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next two questions*		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — b
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — b
   b. Agriculture
   a. Developed uses

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	*see next question*		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses — b
   b. Agriculture
   c. Exclusive Forest Use or Open Space

17 What is the (entire) wetland acreage?

b	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	a. Two or more	b. One w/ > 5 species	c. One w/ < 5 specie	b
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? a

23 What is the dominant wetland vegetation cover?

a	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

b	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet w

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

b	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	a. >1 acres	b. bet. 0.5 and 1 acre	c. <0.5 acre	URBAN
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

c	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

b	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

c	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

c	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

n/a	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

n/a	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

b	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

c	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

Oregon Freshwater Wetland Assessment Function Questions
Answer Sheet

OFWAM UNIT# LSC-3		
Wildlife Habitat		
1	b	
2	b	
3	b	
4	c	
5	a	
6	b	
7	a	
8	b	
9b	b	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1	b	
2	a	
3	b	
4	a	
5	b	
6	c	
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Impacted or Degraded		
Water Quality (pollutant removal)		
1	a	
2	b	
3	b	
4	b	
5	b	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	b	
2	b	
3	a	
4	c	
5	b	
6	b	
7	b	
Impacted or Degraded		

OFWAM UNIT # LSC-4		
Wildlife Habitat		
1	b	
2	a	
3	b	
4	c	
5	a	
6	b	
7	a	
8	b	
9b	c	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1	c	
2	b	
3	c	
4	a	
5	b	
6	c	
Lakes and Ponds		
1		
2		
3		
4		
5		
6		
Impacted or Degraded		
Water Quality (pollutant removal)		
1	a	
2	b	
3	a	
4	b	
5	b	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	b	
2	b	
3	b	
4	c	
5	a	
6	b	
7	b	
Impacted or Degraded		

OFWAM Answer Summary Tables

Oregon Freshwater Wetland Assessment
Function and Condition Summary Sheet

Wetland identification: LSC-3

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Habitat with limited interspersion, some structural diversity, no open water. One Cowardin class; herbaceous dominated. Adjacent to a small portion of intermittent Mud Creek, and to the east lateral canal. Adjacent land use is agricultural.
Fish Habitat	Impacted or Degraded	Mud Creek is intermittent. Unable to determine whether there is an "unimpeded surface water connection to the stream". If there is no connection, this function is not applicable.
Water Quality	Impacted or Degraded	Potentially fed by flood irrigation from the East Lateral Canal. No evidence of ponding. Connection to Mud Creek not confirmed.
Hydrologic Control	Impacted or Degraded	Not located on a floodplain. Surrounded by pasture. Fed potentially by flood irrigation waters from East Lateral Canal and drains down towards Mud Creek.
Description		
Wetland ID's: W63 and W64. Water ID's: East Lateral Canal and potentially Mud Creek.		

Wetland identification: LSC-4

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Surrounded by agriculture. Well vegetated, however relatively small and isolated.
Fish Habitat	Impacted or Degraded	Drainages / ditches likely to be altered by agricultural activities.
Water Quality	Impacted or Degraded	Small wetland - associated with a minor drainage within an agricultural setting.
Hydrologic Control	Impacted or Degraded	Not located in a floodplain. Agriculture immediately downstream.
Description		
Wetland ID's: W62 Water ID's: Ditch feeds to Mud Creek		

Oregon Freshwater Wetland Assessment Method Characterization Questions
MEDFORD URBAN RESERVE LWI OFWAM Wetland Assessment Unit: LPC-1

WETLAND CHARACTERIZATION QUESTIONS

Land uses within the watershed

6. What is the dominant land use in the watershed upstream from the assessment area? (Modified for HC7)
   a. Urban or urbanizing (mix of urban, agriculture and forest uses).
   b. Agriculture (farming, ranching or grazing).
   c. Forested or natural area.

b	

Water quality - see DEQ website

7. Consult the most recent State of Oregon DEQ 305(b) Report to determine whether any streams in the study area are listed as water quality limited (included in CWA 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.

a	comment: Lazy creek (ajacent) water quality limited for bacteria.

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.

a	

Wetland Structure and Landscape

15 What percentage of area within 500 feet of the wetland edge is dedicated to these land uses?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next two questions		

15 Modified for WH8: What is the dominant existing land use within 500 feet of the wetland's edge?
   a. Exclusive Forest Use or Open Space — b
   b. Agriculture
   c. Developed uses

15 Modified for WQ5: What is the dominant existing land use within 500 feet of the wetland's edge?
   c. Exclusive Forest Use or Open Space — b
   b. Agriculture
   a. Developed uses

16 What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?

	a. <20%	b. bet. 20% & 50%	c. >50%
1. Open Space 2. Agriculture 3. Exclusive Forest Use 4. Developed uses 5. Other	see next question		

16 Modified for HC6: What is the dominant existing land use within 500 feet of the wetland on the downstream or down-slope edge of the wetland?
   a. Developed uses — b
   b. Agriculture
   c. Exclusive Forest Use or Open Space

17 What is the (entire) wetland acreage?

b	a. >5 acres	b. bet. 0.5 & 5 acres	c. < 0.5 acres

18 How is wetland connected to a stream, lake, or pond ? (see Figure, p. 35)

a	a. connected by surface water (culv., ditch, int./per. stream)	b. not connected to water body within 1 mile	c. not connected, no water bodies within 1 mile

19 Is all or part of the wetland located within the 100-year floodplain or within an enclosed basin?

b	a. yes	b. no

Wetland Habitat

21 What is percentage wetland area by Cowardin class (10% or more)?

	a. bet. 70% & 100%	b. bet. 50% & <70%	c. bet. 20% & <50%	d. bet. 10% & <20%
Open water (OW >6.6ft)				
Emergent (EM)				
Scrub-shrub (SS)				
Forested (FO)				

21 Modified for WH1: How many Cowardin wetland classes are present?

URBAN	**a. Two or more**	**b. One w/ > 5 species**	**c. One w/ < 5 speci**	a
RURAL	a. 3 or 4	b. 2	c. 1	

21 Modified for WQ3: What is the degree of wetland vegetation cover (a.H>60%/ b.M/ c.L<60%)? c

23 What is the dominant wetland vegetation cover?

c	a. woody (FO & SS)	b. emergent and ponding, or open water only (EM w/ water or OW)	c. emergent vegetation only or wet meadow (EM)

24 How interspersed are the Cowardin classes (and upland inclusions)? (see Figure p. 37)

b	a. high	b. moderate	c. low

26 For urban areas, what percentage of the wetland edge is bordered by upland wildlife habitat buffer at least 25ft feet wi

c	a. >40%	b. bet. 10% & 40%	c. <10%

27 How is the wetland connected to other wetlands?

c	a. connected within 3 miles by surface water	b. not connected; wetlands present within 3 miles	c. not connected, no other wetlands within 3 miles

28 Estimate area of unvegetated, open water within the wetland.

c	**a. >1 acres**	**b. bet. 0.5 and 1 acre**	**c. <0.5 acre**	**URBAN**
RURAL	a. >3 acres	b. bet. 0.5 and 3 acre	c. <0.5 acre	

Fisheries Habitat

29 Are fish present in a stream, lake or pond connected to the wetland?

c	a. salmon, trout or sensitive species are present at some time during the year	b. other fish species are present at some time during the year	c. no species are present at any time during the year

Streams connected to the wetland

30 What is the physical character of the stream channel?

n/a	a. natural channel, or modified portions are returning to a natural channel	b.only portions of stream modified	c. extensively modified or confined in a non-vegetated channel or pipe

31 What percentage of the stream is shaded by riparian vegetation?

n/a	a. >75%	b. bet. 50% & 75%	c. <50%

32 What percentage of the stream contains instream structures such as large woody debris, floating/submerged vegetation, large rocks or boulders?

n/a	a. >25%	b. bet. 10% & 25%	c. <10%

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

33 Does the lake or pond contain areas of deep and shallow water?

b	a. yes	b. cannot be determined	c. no

34 What percentage of the shoreline is shaded at the water's edge by forested or scrub-shrub vegetation?

c	a. 60% or more	b. bet. 20% & <60%	c. <20%

35 What percentage of the wetland complex contains cover objects such as submerged logs, floating or submerged vegetation, large rocks or boulders?

c	a. >25%	b. bet. 10% & 25%	c. <10%

Wetland Hydrology

36 What is the wetland's primary source of water? (emphasis on primary)

a	a. surface flow, including streams and ditches	b. precipitation or sheet flow	c. groundwater, including springs or seeps

37 Is there evidence of flooding or ponding during a portion of the growing season?

b	a. yes (describe)	b. unable to determine or not applicable	c. no

38 Is the water flow out of the wetland restricted (beaver dam, concrete structure, undersized culvert)?

c	a. yes, restricted or no outlet	b. minor restrictions slow down the water (i.e., undersized culvert)	c. no, outlet has unrestricted flow

(bold questions =field; office review important for 15, 16, 26)

Oregon Freshwater Wetland Assessment Function Questions Answer Sheet

OFWAM UNIT # LPC-1		
Wildlife Habitat		
1	a	
2	c	
3	b	
4	c	
5	a	
6	c	
7	a	
8	b	
9b	c	
Provides habitat for some species		
Fish Habitat (if applicable)		
Streams and Rivers		
1		
2		
3		
4		
5		
6		
Lakes and Ponds		
1	b	
2	c	
3	c	
4	a	
5	b	
6	c	
Impacted or Degraded		
Water Quality (pollutant removal)		
1	a	
2	b	
3	c	
4	b	
5	b	
6	c	
Impacted or Degraded		
Hydrologic Control (flood control & water supply)		
1	b	
2	b	
3	b	
4	c	
5	c	
6	b	
7	b	
Impacted or Degraded		

Oregon Freshwater Wetland Assessment
Function and Condition Summary Sheet

Wetland identification: LPC-1

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some species	Surrounded by active orchards. Two Cowardin classes present. Well vegetated.
Fish Habitat	Impacted or Degraded	Artificial canal and pond - highly altered.
Water Quality	Impacted or Degraded	Adjacent to Lazy Creek. Abuts Phoenix Canal. Lacks woody vegetation with low degree of cover; small size. Adjacent agricultural land use.
Hydrologic Control	Impacted or Degraded	Connects to Phoenix Canal and irrigation pond.
Description		
Wetland ID's: W61 Water ID's: AW18, and Phoenix Canal. More than 1/4 mile distance from Lazy Creek.		

Appendix F

Maps and Figures

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Appendix F Contents

Table F1. Figure Number Index for Figure Series F

WET_ID	OFWAM Group	Figure Number
W01	BCS-1	F-69
W02-A	BCS-1	F-68, F-69
W02-B	BCS-1	F-68
W03	BCS-9	F-68
W04-A	MWC-1	F-8
W04-B	MWC-1	F-8
W04-Mosaic	MWC-1	F-8
W06	MWC-2	F-7, F-8
W07	MWC-3	F-4, F-5
W08	MWC-4	F-9, F-10
W09	MWC-4	F-10
W10-A	MWC-5	F-11, F-112
W10-B	MWC-5	F-11
W10-C	MWC-5	F-11
W10-D	MWC-5	F-11
W10-E	MWC-5	F-11
W10-F	MWC-5	F-13, F-14
W10-G	MWC-5	F-11, F-12, F-13, F-14
W11	MWC-6	F-16, F-17
W13	BCS-2	F-65, F-66
W14	LSC-1	F-58
W15	LSC-2	F-57, F-58
W17	BCS-6	F-71, F-72
W18	BCS-5	F-74
W19-A	BCS-7	F-76
W19-B	BCS-7	F-76
W20	BCS-8	F-76
W21	MWC-6	F-22, F-23
W22	MWC-5	F-11
W23	MWC-2	F-2
W24	MWC-2	F-2
W25	MWC-8	F-1, F-2, F-6
W29	N/A	F-6
W30	N/A	F-6
W31	MWC-9	F-7
W32	N/A	F-7
W33	N/A	F-3

Table F1. Figure Number Index for Figure Series F

WET_ID	OFWAM Group	Figure Number
W34	MWC-2	F-3
W35	MWC-2	F-3
W36	MWC-1	F-8
W37	N/A	F-4
W38	MWC-3	F-4
W39-A	MWC-4	F-10
W39-B	MWC-4	F-10, F-12
W40	MWC-4	F-10
W41	MWC-4	F-9, F-10
W42	MWC-4	F-9, F-10
W43	MWC-4	F-9
W44	N/A	F-11
W45	N/A	F-11
W46	MWC-6	F-19
W47	MWC-6	F-16, F-17, F-20, F-21
W48	MWC-6	F-19
W49	MWC-6	F-16, F-19, F-20
W50	MWC-6	F-16, F-19
W51	MWC-6	F-16, F-19
W53	MWC-6	F-22
W54	MWC-6	F-21, F-22
W55	MWC-6	F-21
W56	MWC-6	F-21
W57	MWC-6	F-21
W61	LPC-1	F-50
W62	LSC-4	F-56
W63	LSC-3	F-57
W64	LSC-3	F-57, F-62
W66	BCS-2	F-66
W68	BCS-3	F-66
W69	N/A	F-68
W70	BCS-4	F-74
W71	BCS-4	F-74
W72	BCS-4	F-74
W73	BCS-4	F-74
W74	BCS-4	F-72, F-74
W79	BCS-5	F-74
W81	N/A	F-87

Table F1. Figure Number Index for Figure Series F

WET_ID	OFWAM Group	Figure Number
W82	MWC-7	F-1, F-2
W83	MWC-2	F-3
W84	MWC-2	F-3
W85	MWC-2	F-2, F-3
W86	MWC-2	F-2
W87	MWC-2	F-8
W88	MWC-2	F-8

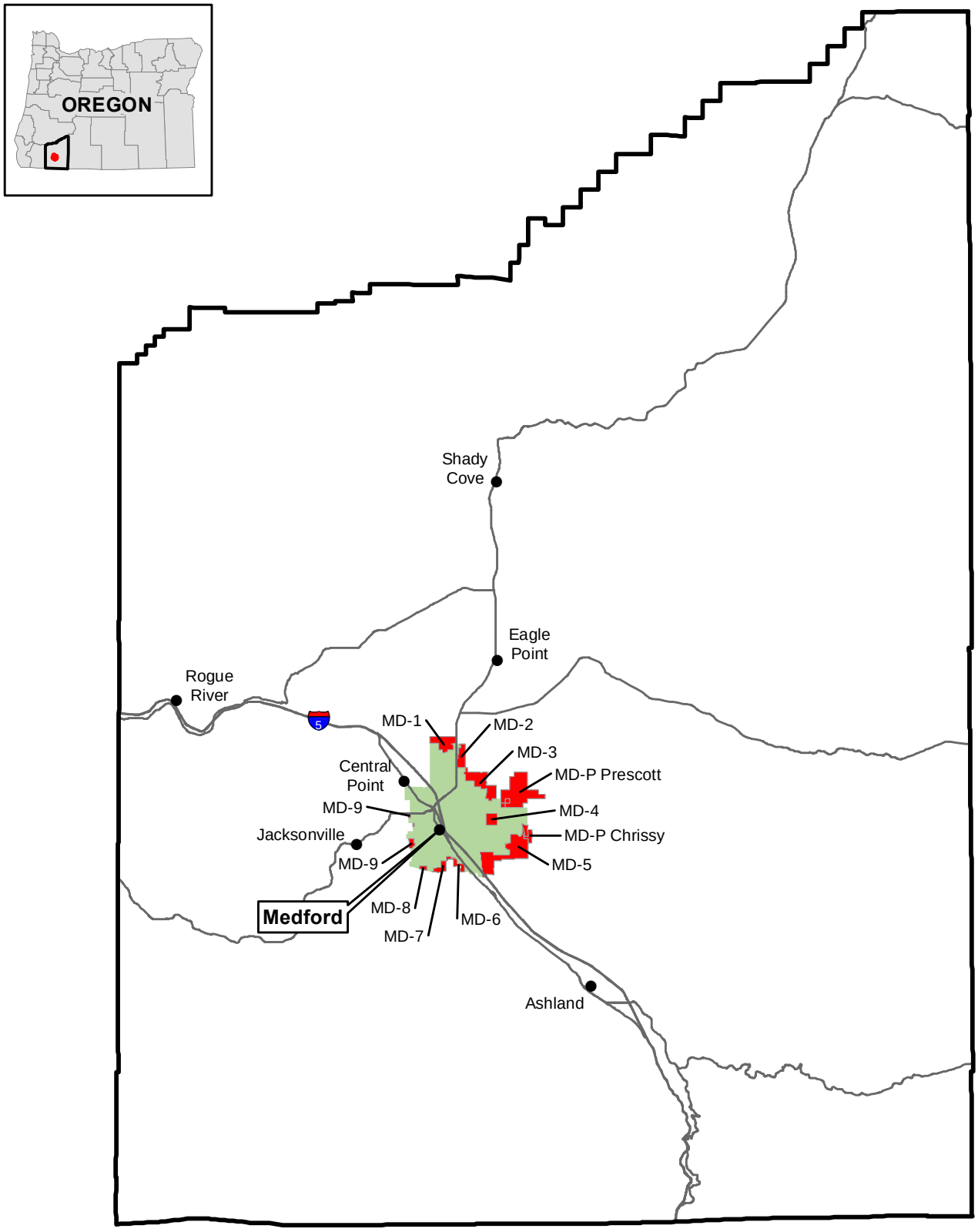

Figure A – Project Location

- Study Area
- Town/City
- Major Road
- Urban Growth Boundary
- Jackson County Line

0 4 8 Miles
0 6 12 Kilometers

1 inch = 8 miles

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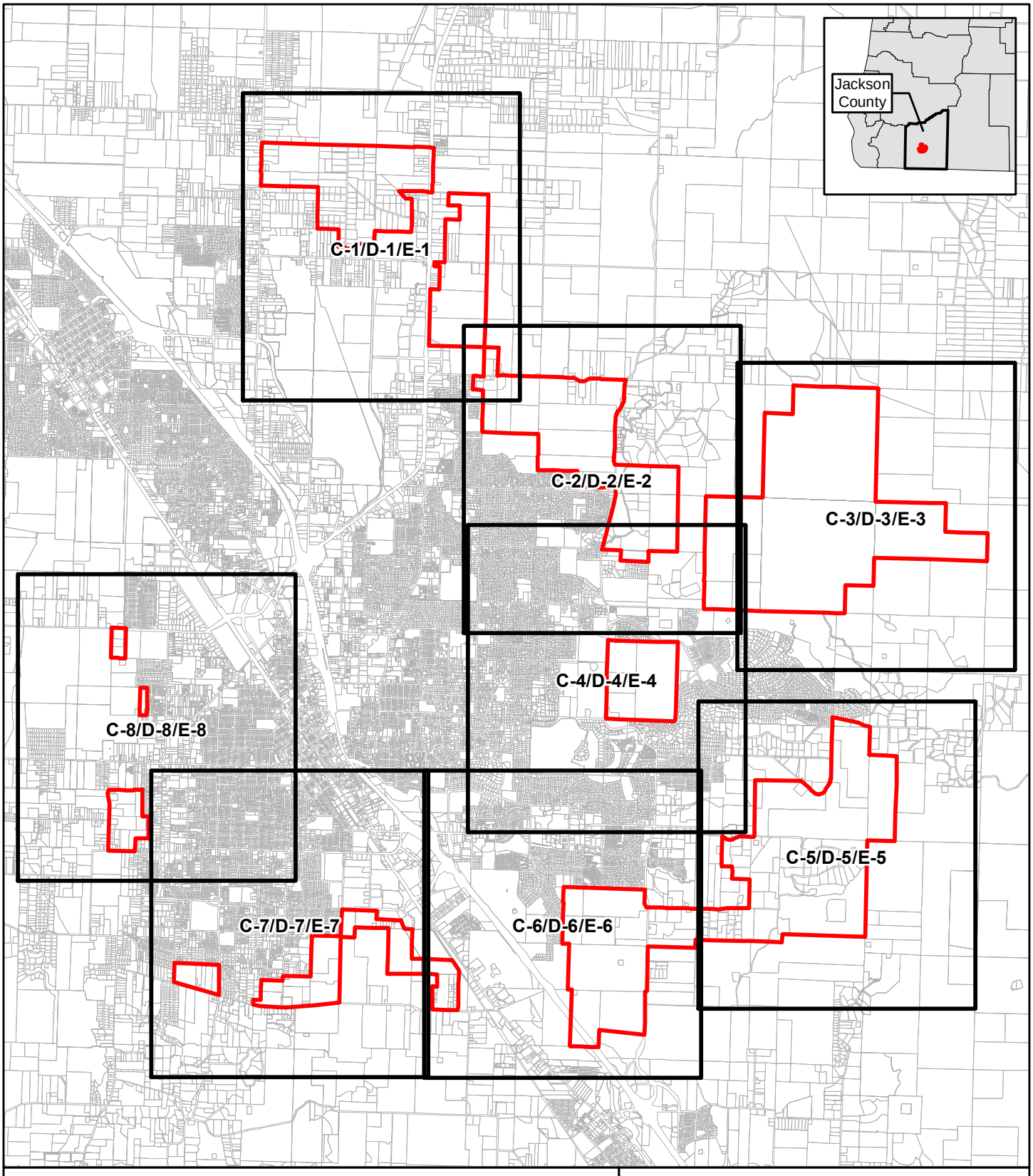

Figure B – Index Map for Figure Series C, D and E

Index Map (Figure Series C, D, and E)
Study Area
Tax Lot

0 0.5 1 Miles
0 1 2 Kilometers

1 inch = 1 miles

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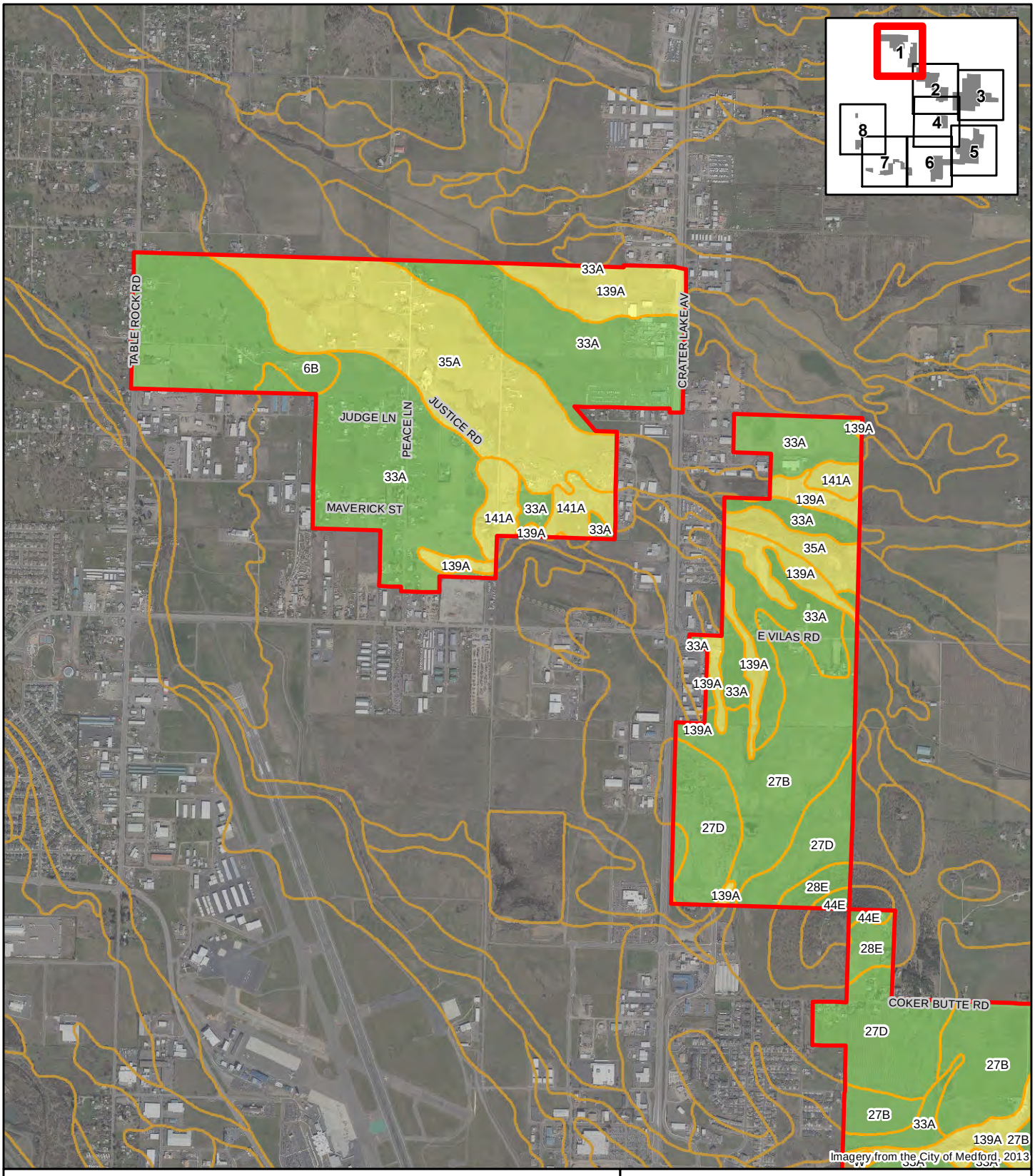

Figure C-1 – NRCS Soil Map

Study Area
Soil Unit*
Hydric
Hydric Inclusions
Non-Hydric

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

*See report table 4 for map unit legend
Source: Soil Survey Geographic (SSURGO) Database for Jackson County, OR. http://soildatamart.nrcs.usda.gov, accessed 02/03/2015.

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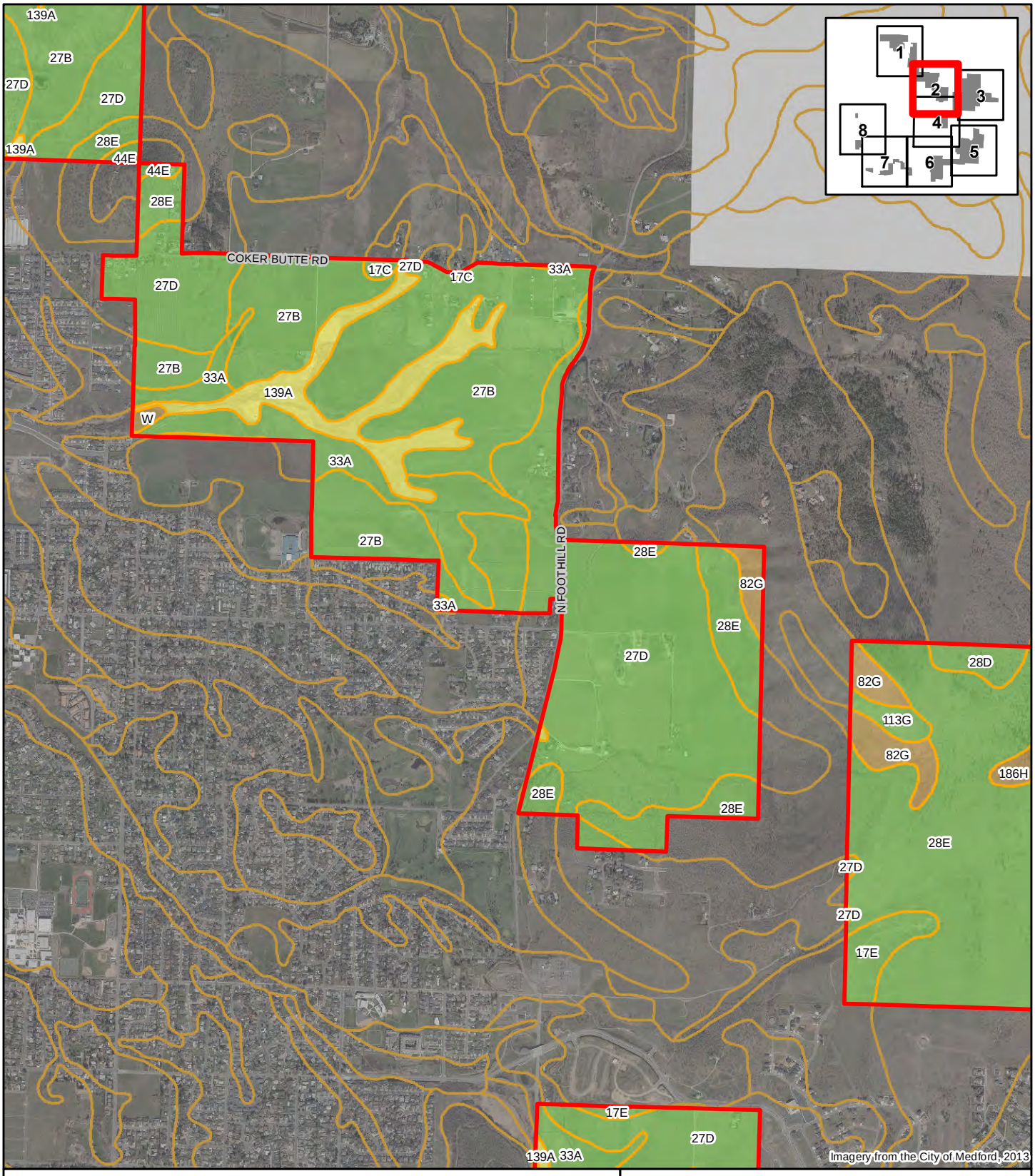

Figure C-2 – NRCS Soil Map

Study Area
Soil Unit*

Hydric
Hydric Inclusions
Non-Hydric

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

*See report table 4 for map unit legend
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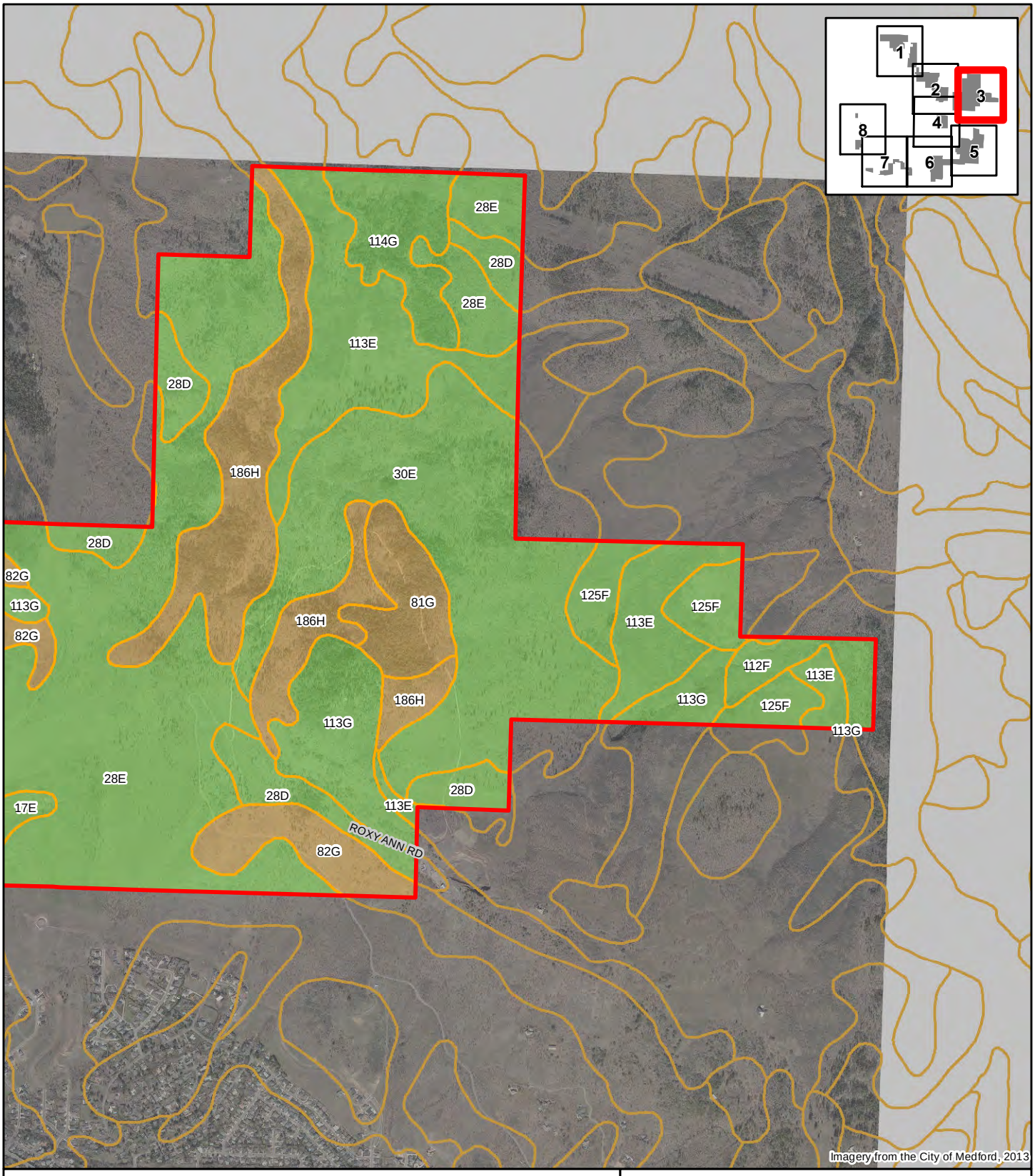

Figure C-3 – NRCS Soil Map

Study Area
Soil Unit*
Hydric Inclusions
Non-Hydric

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

*See report table 4 for map unit legend
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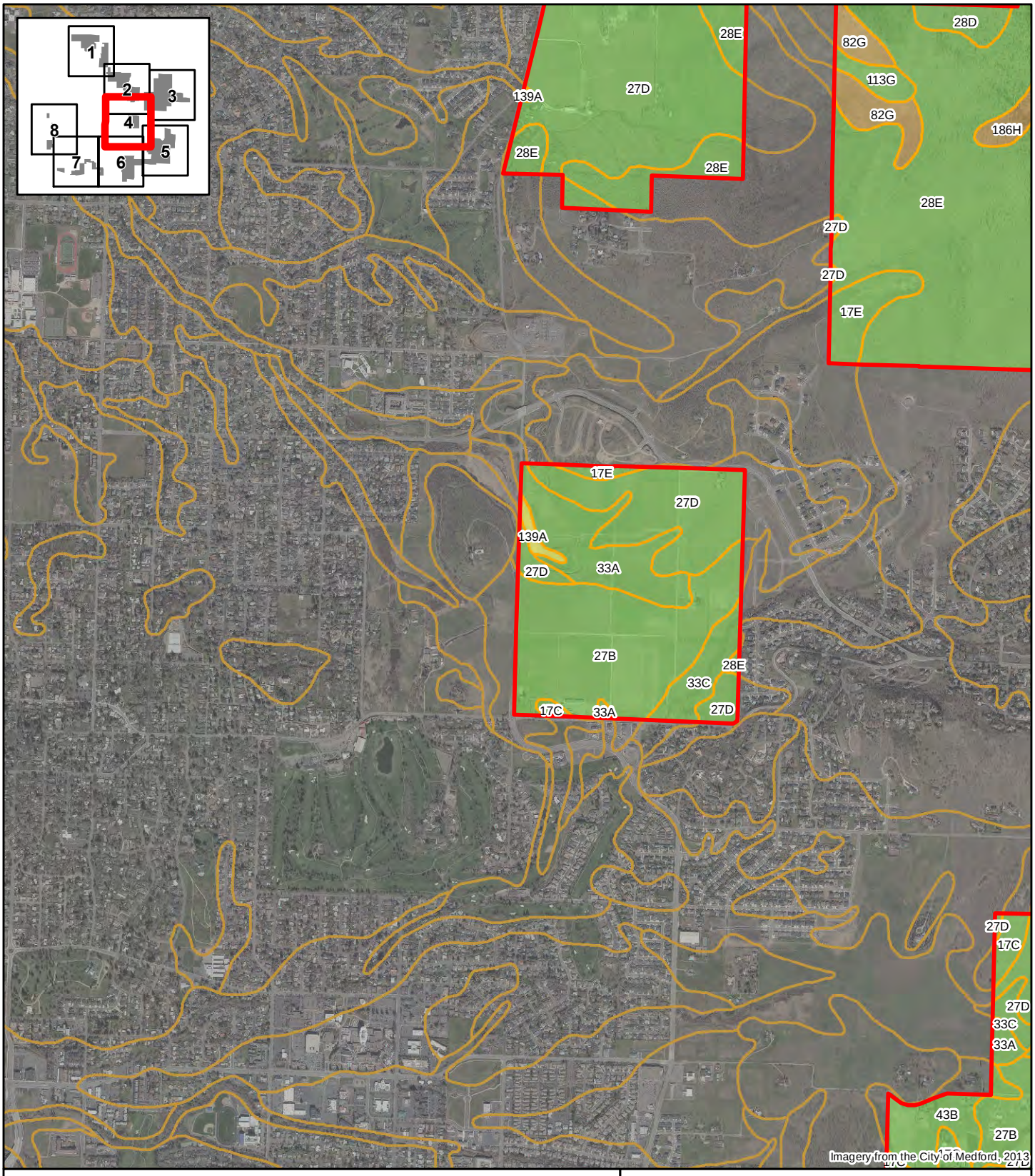

Figure C-4 – NRCS Soil Map

Study Area
Soil Unit*

Hydric
Hydric Inclusions
Non-Hydric

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

*See report table 4 for map unit legend
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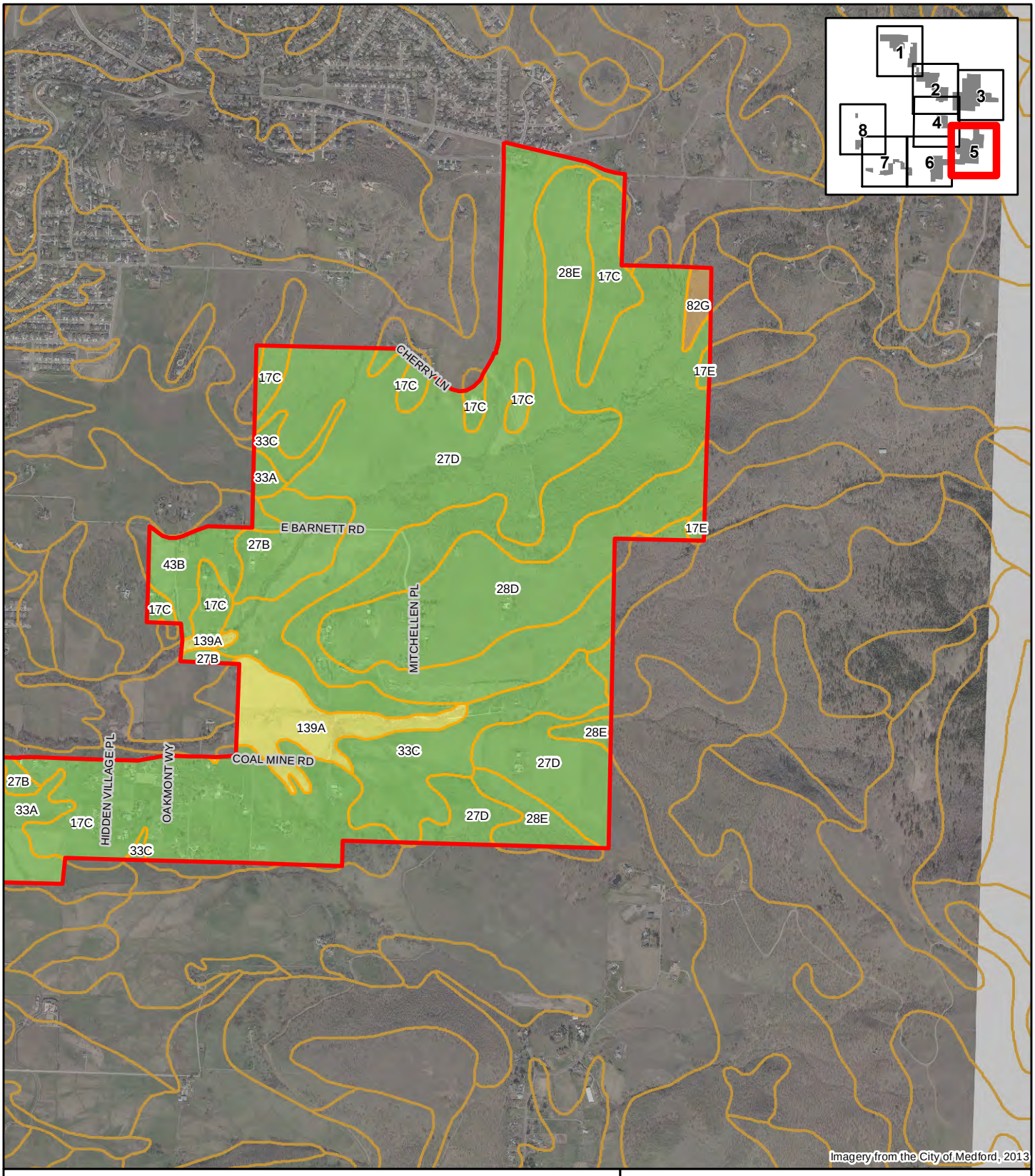

Figure C-5 – NRCS Soil Map

Study Area
Soil Unit*
Hydric
Hydric Inclusions
Non-Hydric

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

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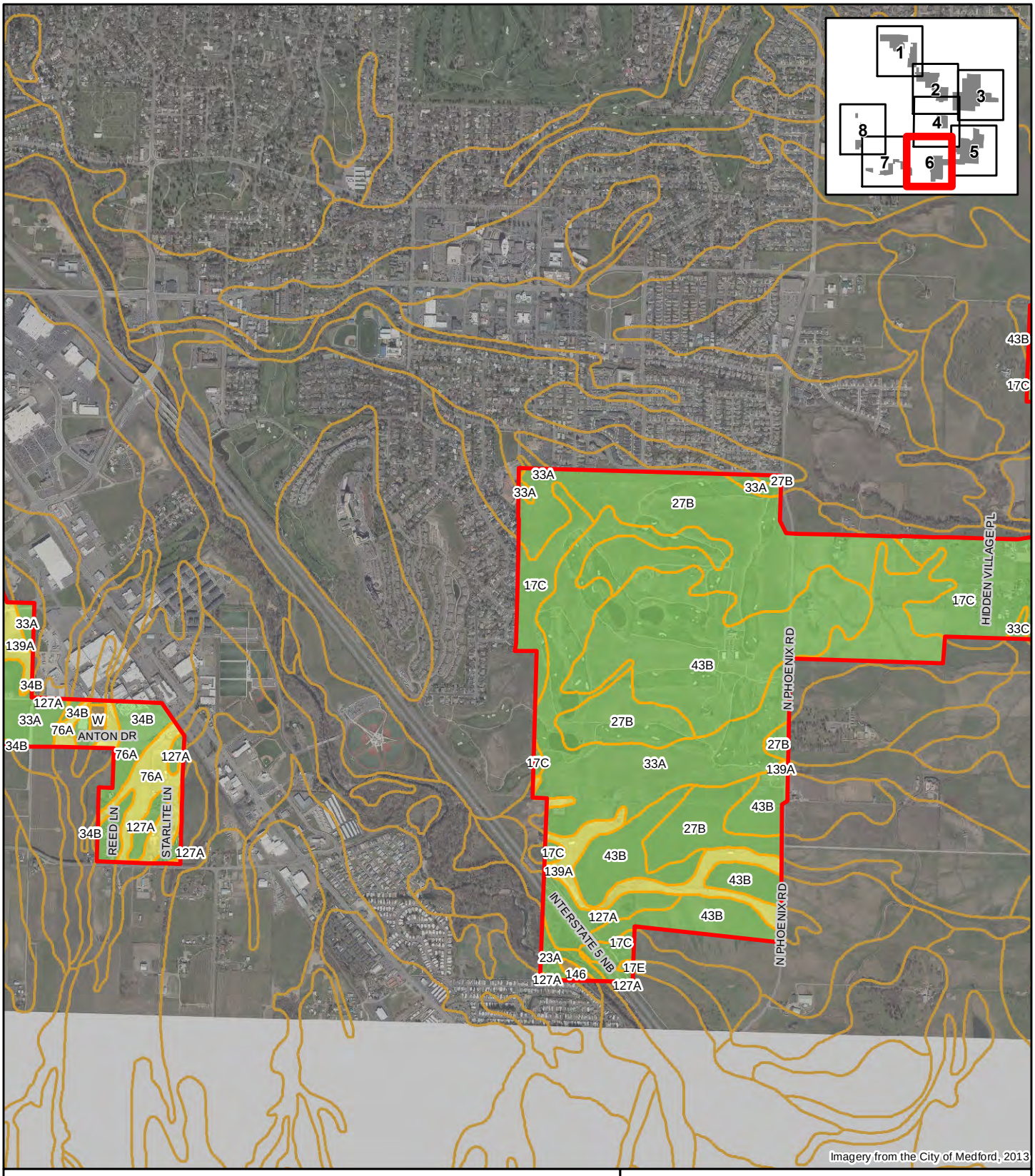

Figure C-6 – NRCS Soil Map

Study Area
Soil Unit*
Hydric
Hydric Inclusions
Non-Hydric

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

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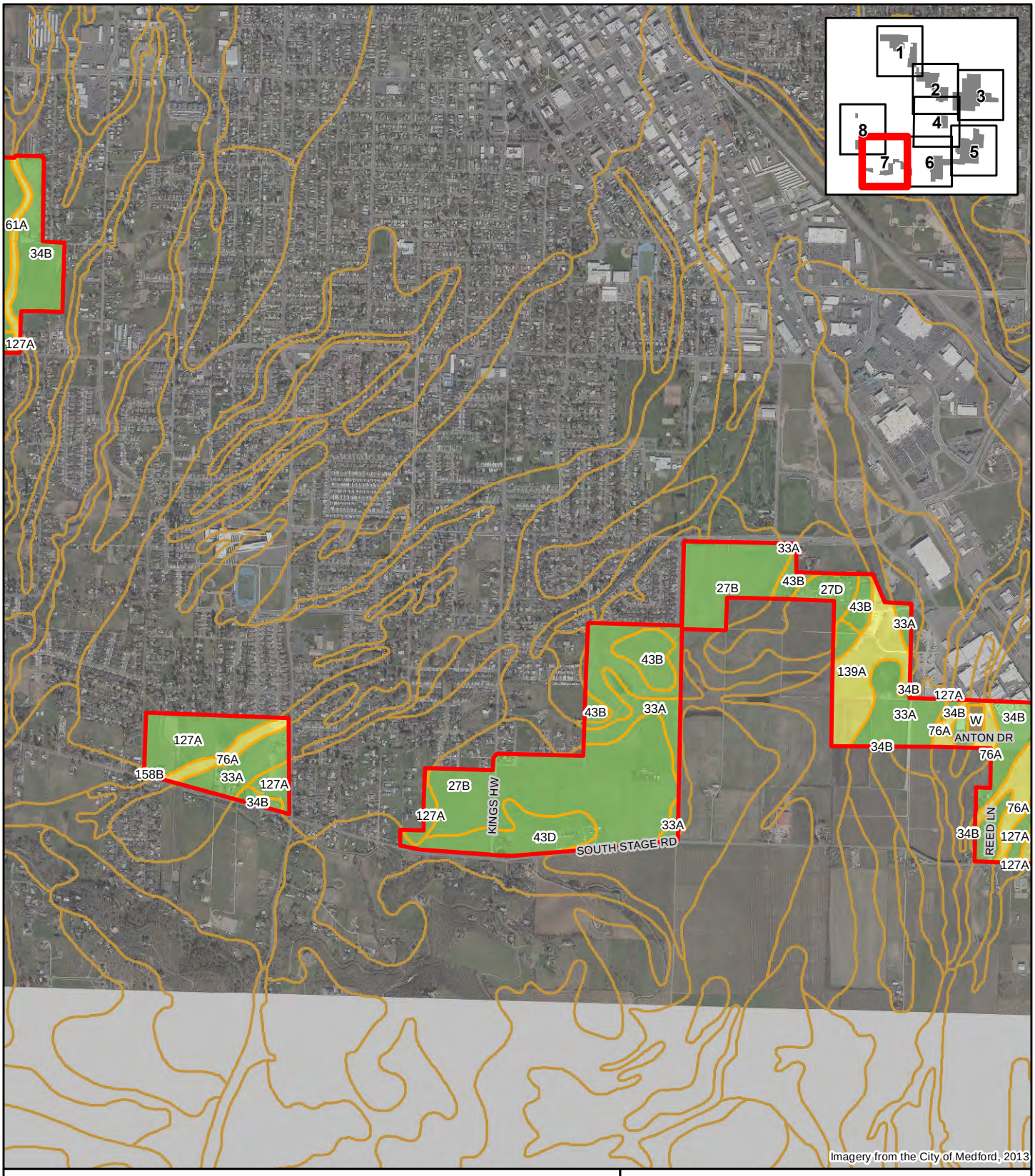

Figure C-7 – NRCS Soil Map

Study Area
Soil Unit*
Hydric
Hydric Inclusions
Non-Hydric

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

*See report table 4 for map unit legend
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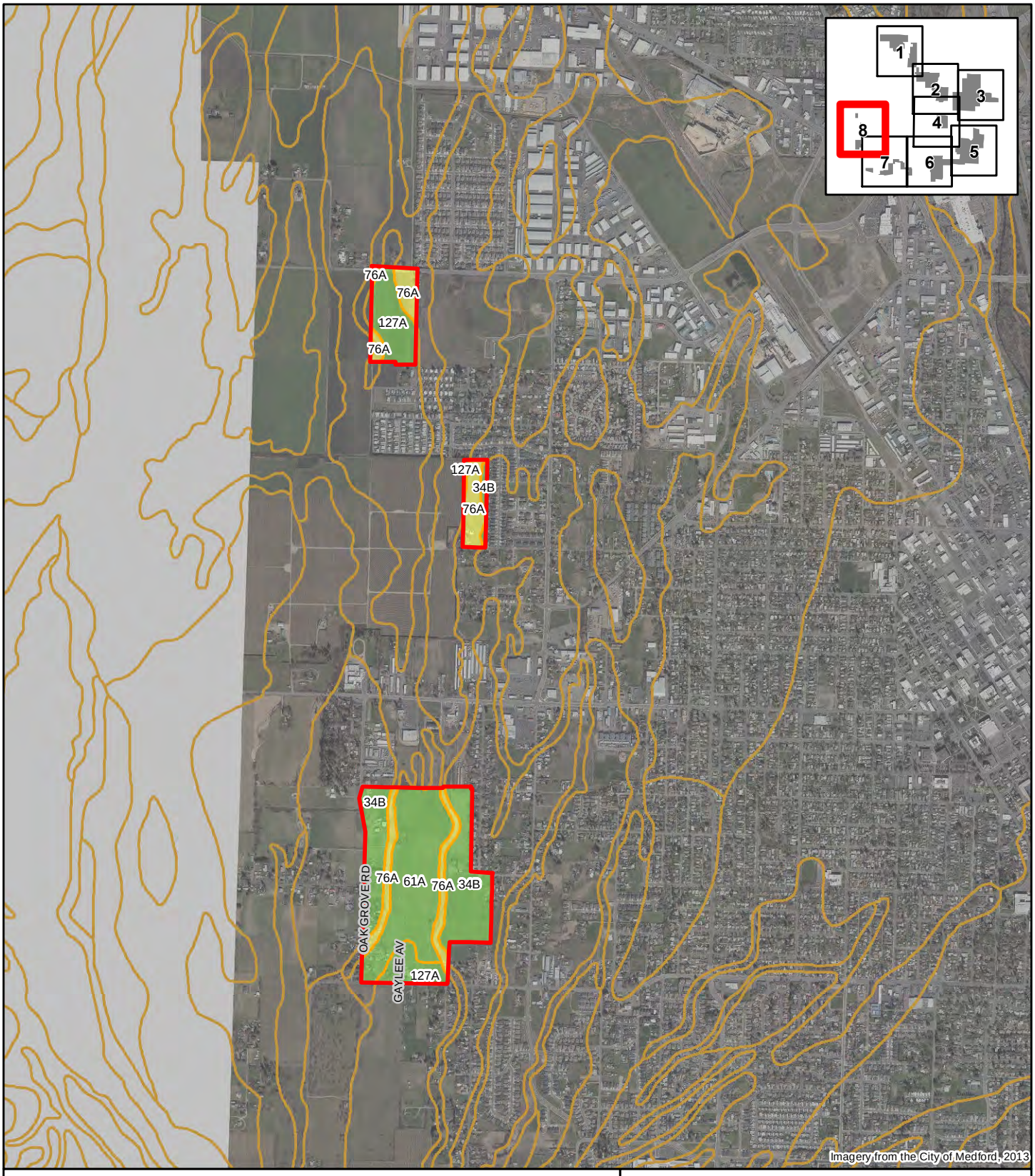

Figure C-8 – NRCS Soil Map

Study Area
Soil Unit*
Hydric
Hydric Inclusions

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

*See report table 4 for map unit legend
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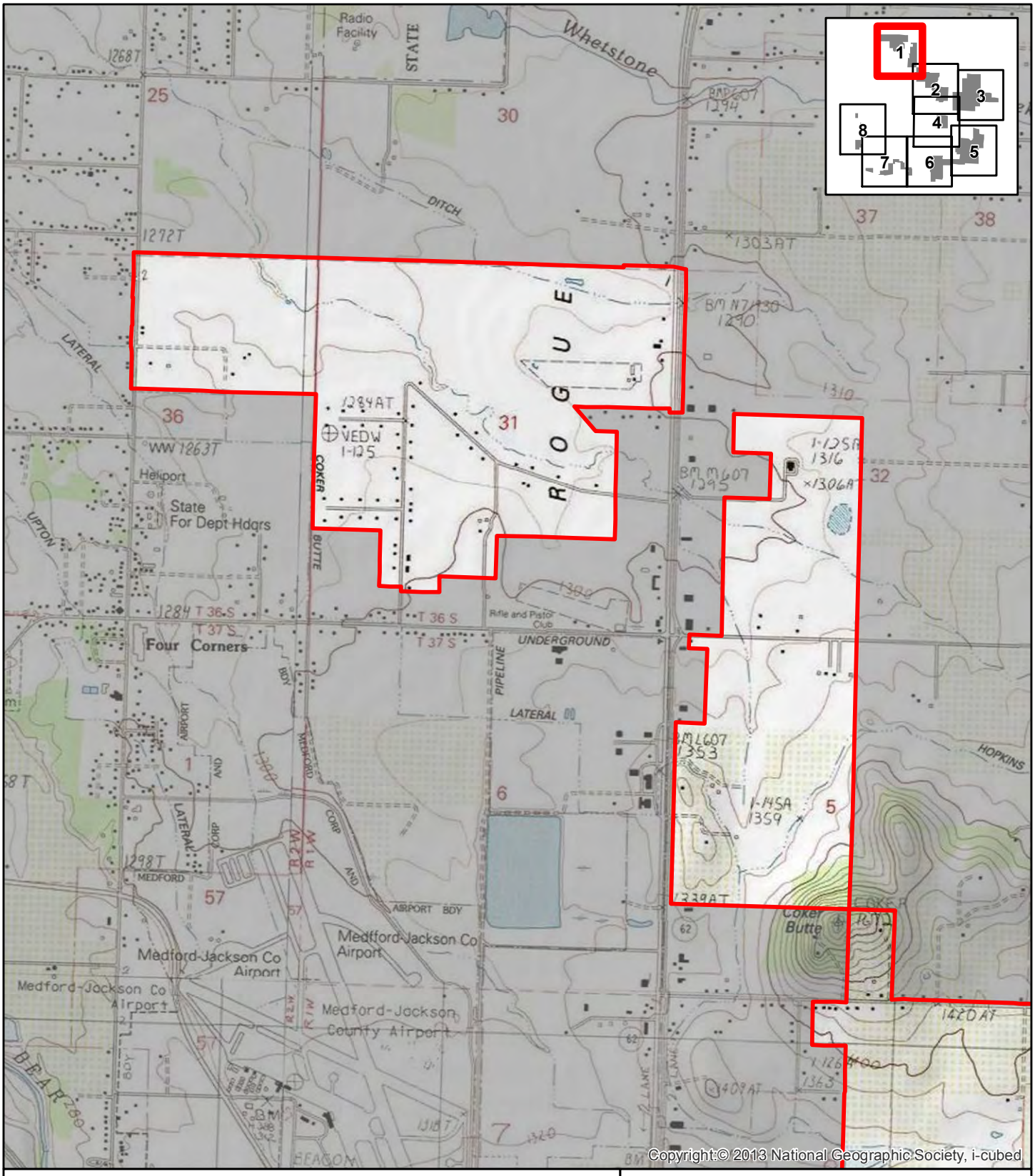

Figure D-1 – USGS Topographic Map

Study Area

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

Source: USGS 7.5' topographic quadrangles Medford East (1979), Medford West (1981), Sams Valley (1978), and Eagle Point (1979), OR.

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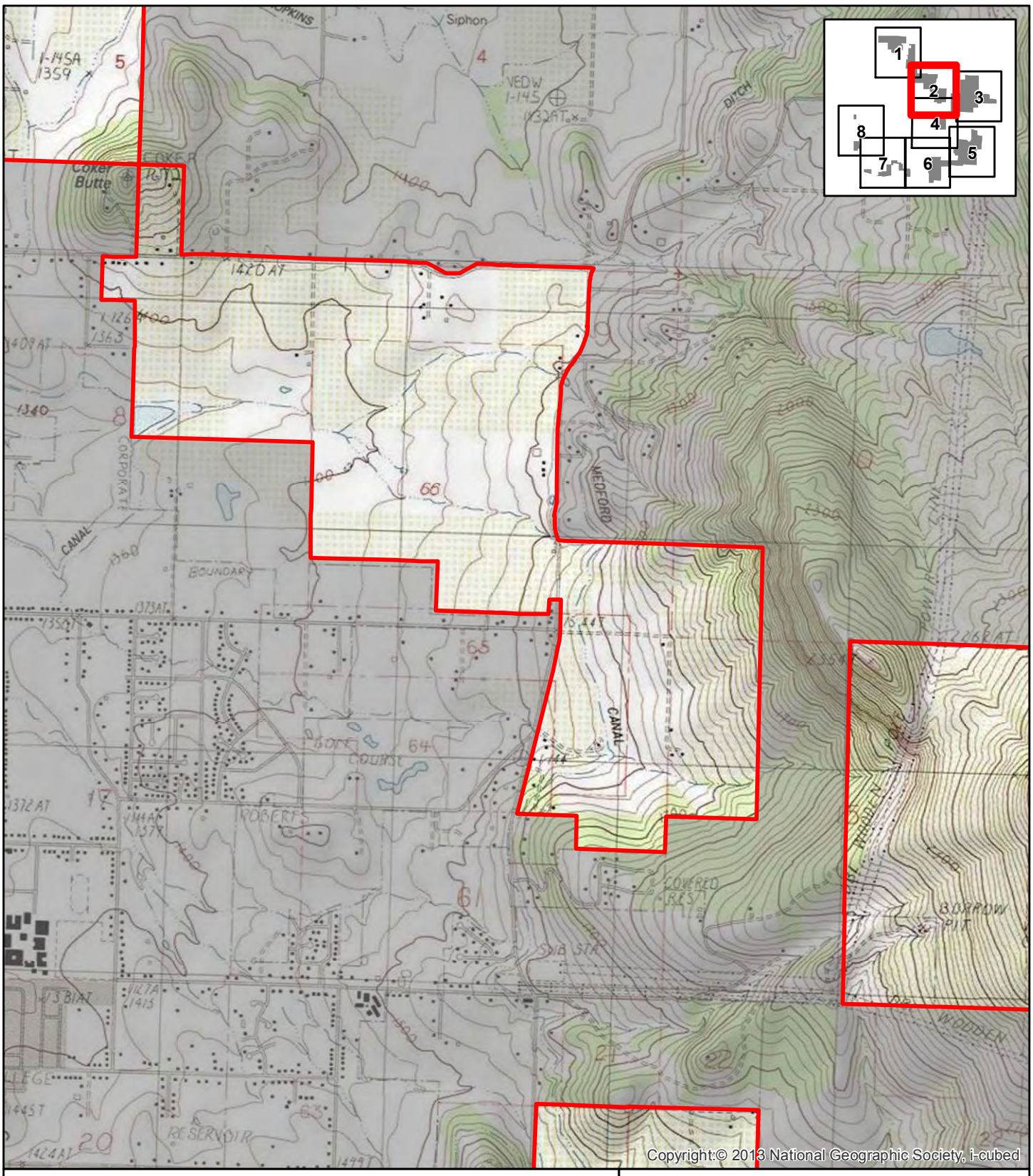

Figure D-2 – USGS Topographic Map

Study Area

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

Source: USGS 7.5' topographic quadrangles Medford East (1979) and Eagle Point (1979), OR.

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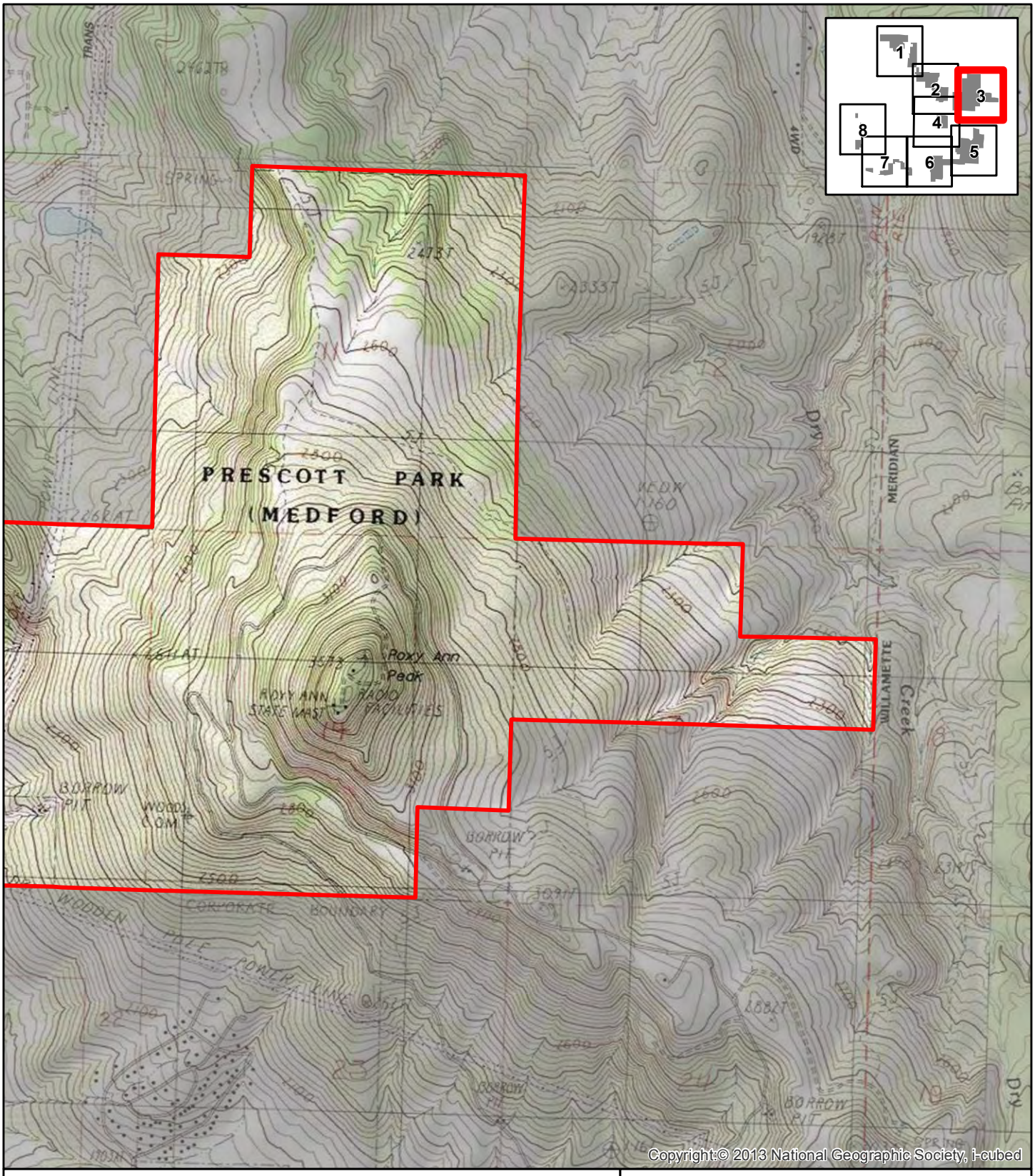

Figure D-3 – USGS Topographic Map

Study Area

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

Source: USGS 7.5' topographic quadrangles Medford East (1979) and Eagle Point (1979), OR.

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September 16, 2015

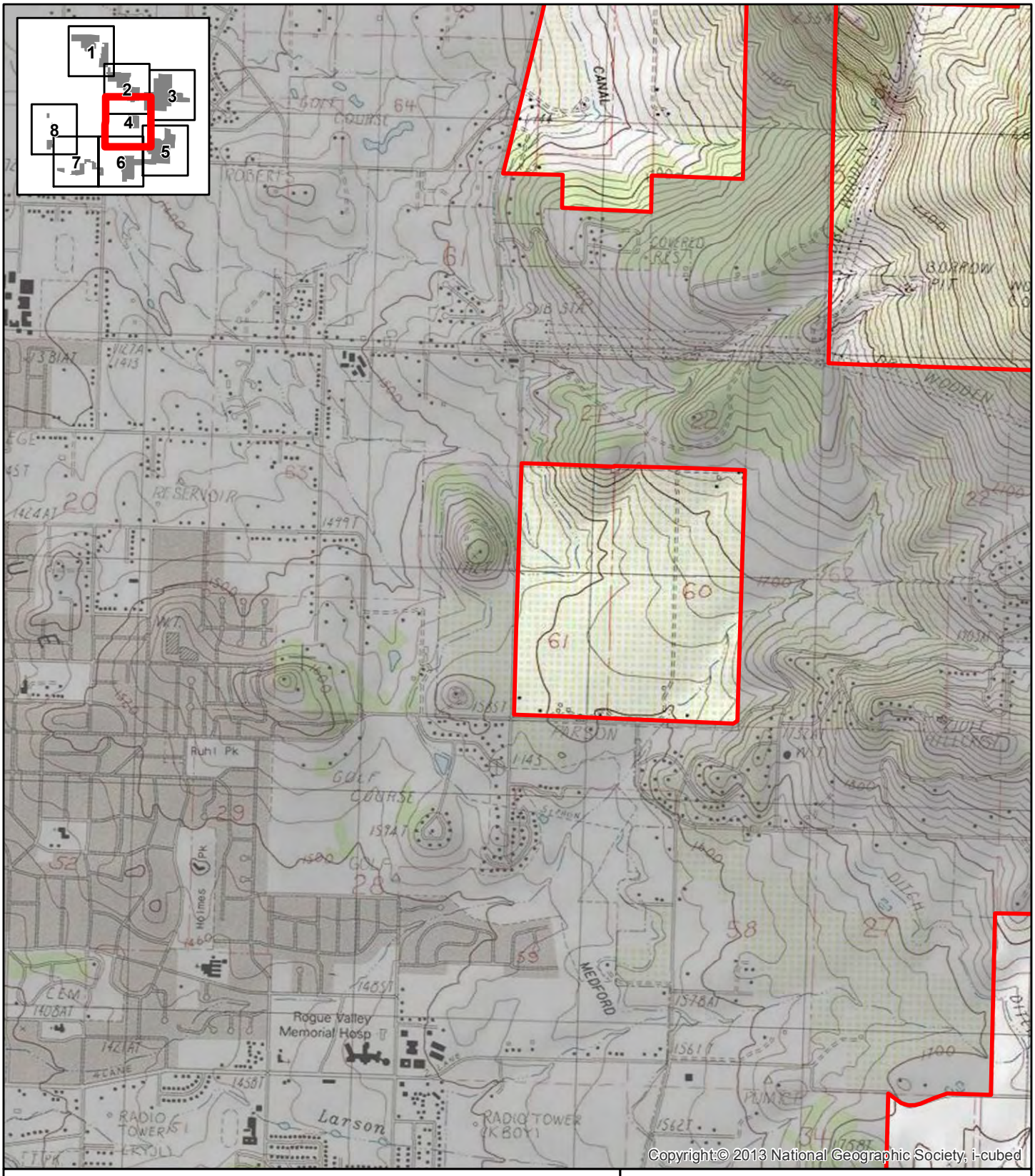

Figure D-4 – USGS Topographic Map

Study Area

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

Source: USGS 7.5' topographic quadrangles Medford East (1979), OR.

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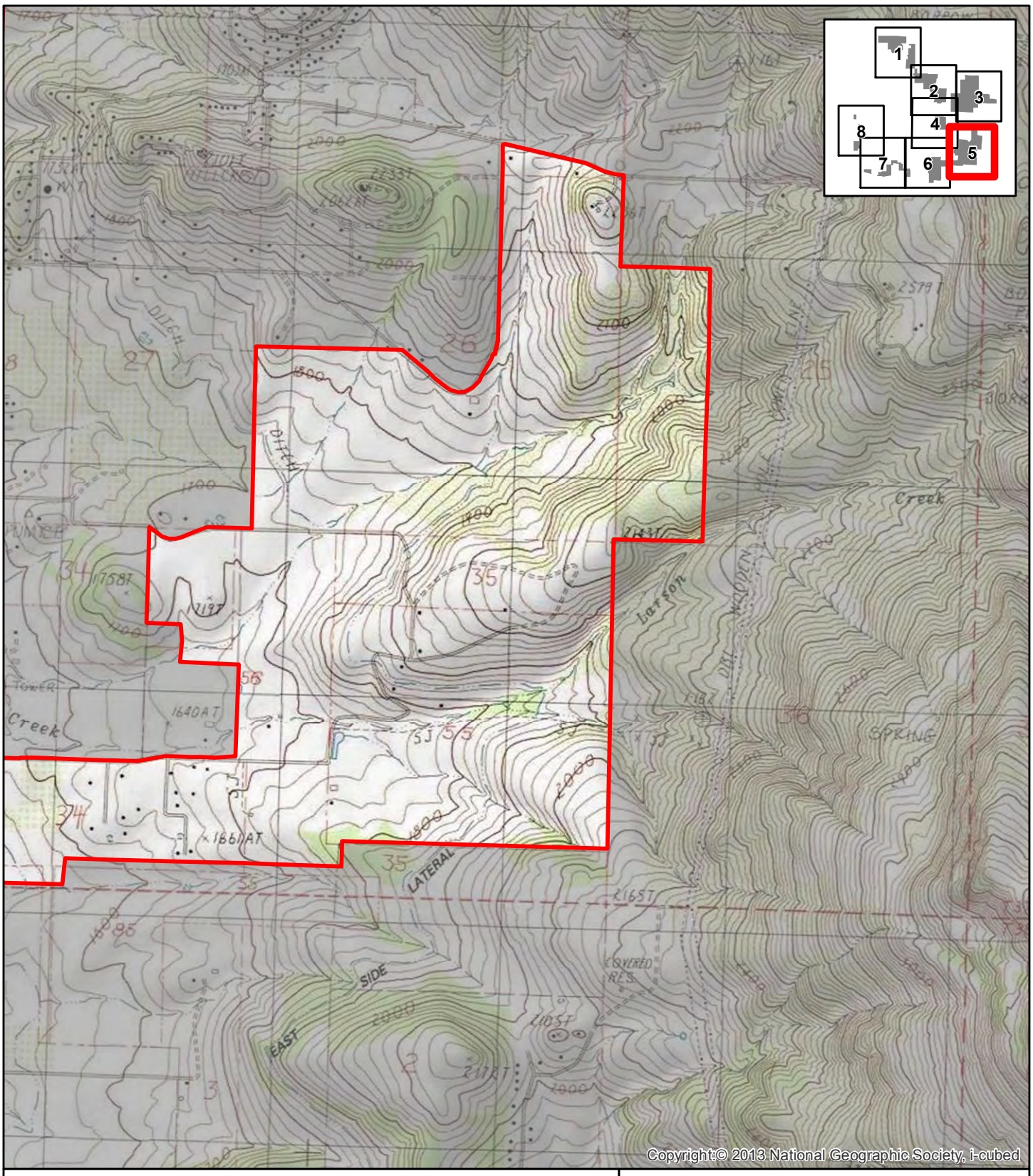

Figure D-5 – USGS Topographic Map

Study Area

Source: USGS 7.5' topographic quadrangles Medford East (1979), OR.

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

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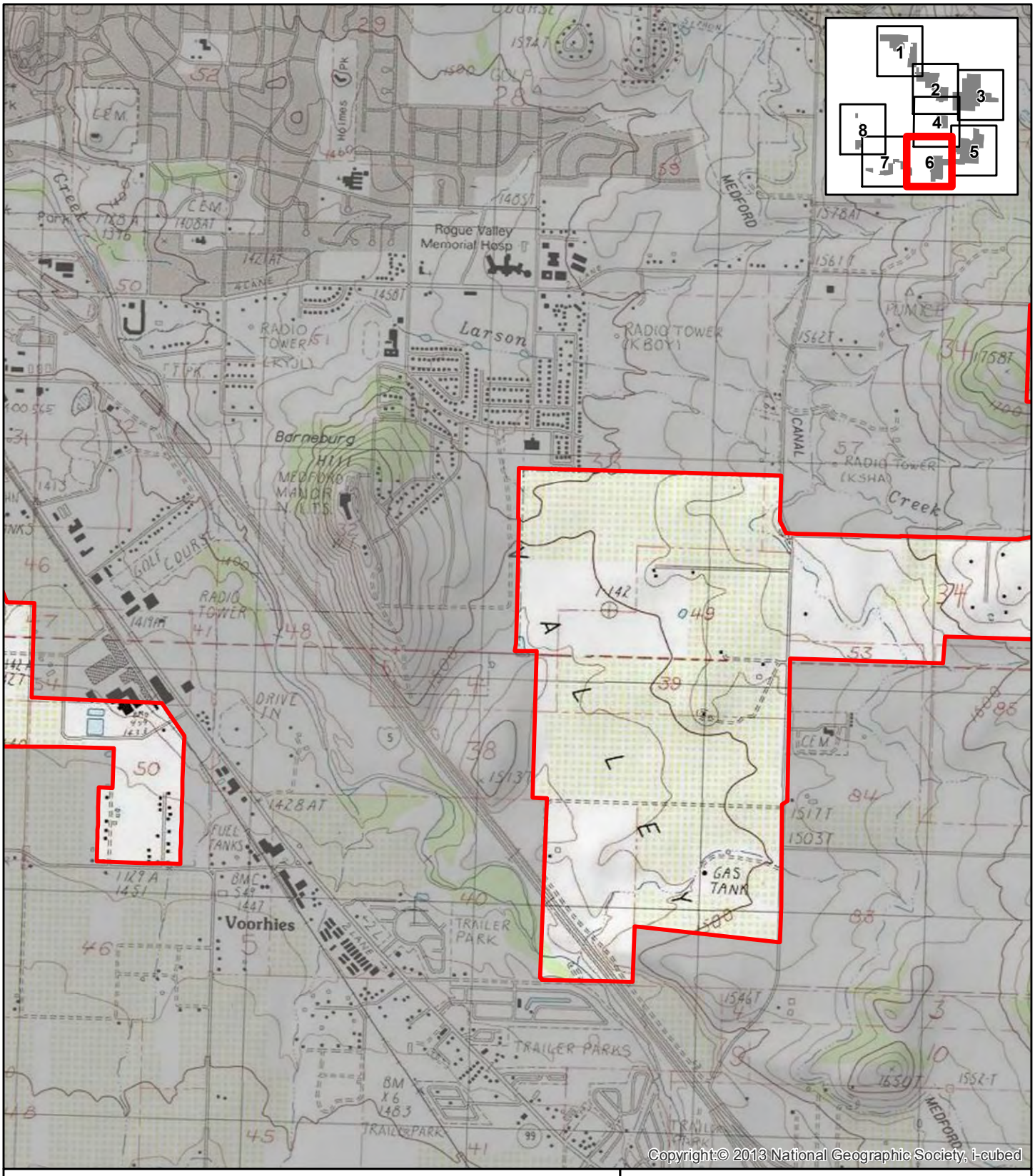

Figure D-6 – USGS Topographic Map

Study Area

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

Source: USGS 7.5' topographic quadrangles Medford East (1979), OR.

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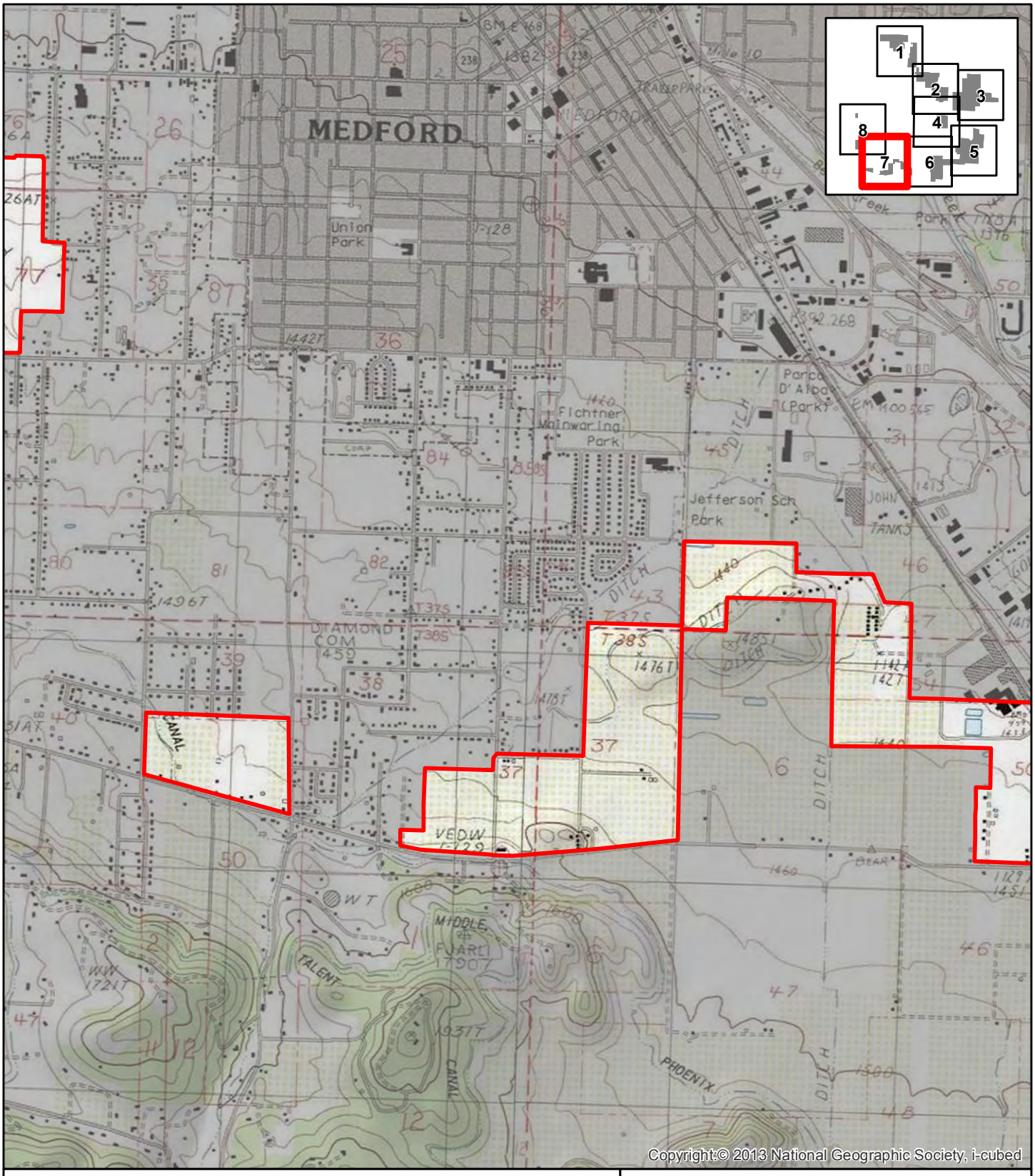

Figure D-7 – USGS Topographic Map

Study Area

Source: USGS 7.5' topographic quadrangles Medford East (1979) and Medford West (1981), OR.

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

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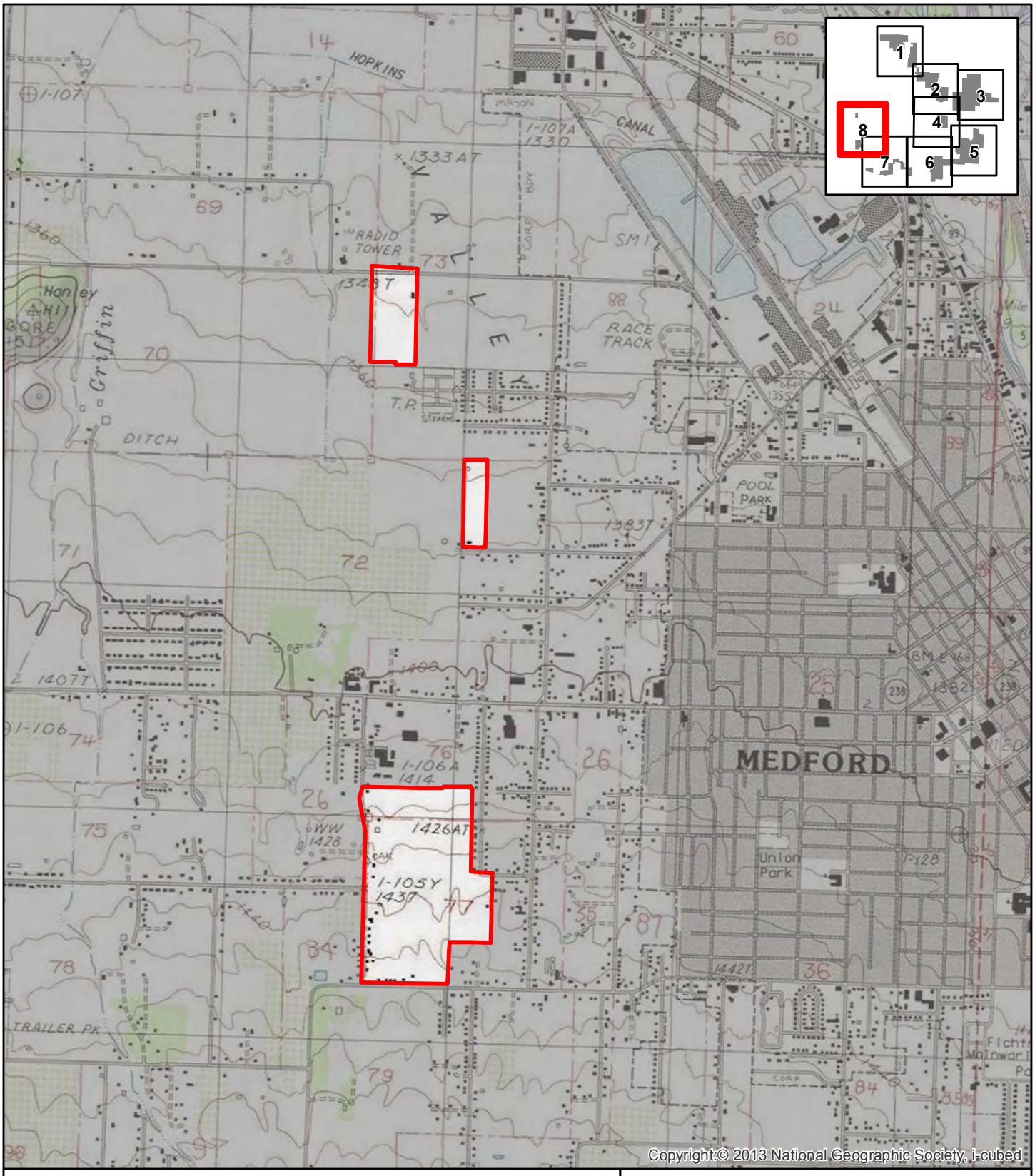

Figure D-8 – USGS Topographic Map

Study Area

Source: USGS 7.5' topographic quadrangles Medford West (1981), OR.

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

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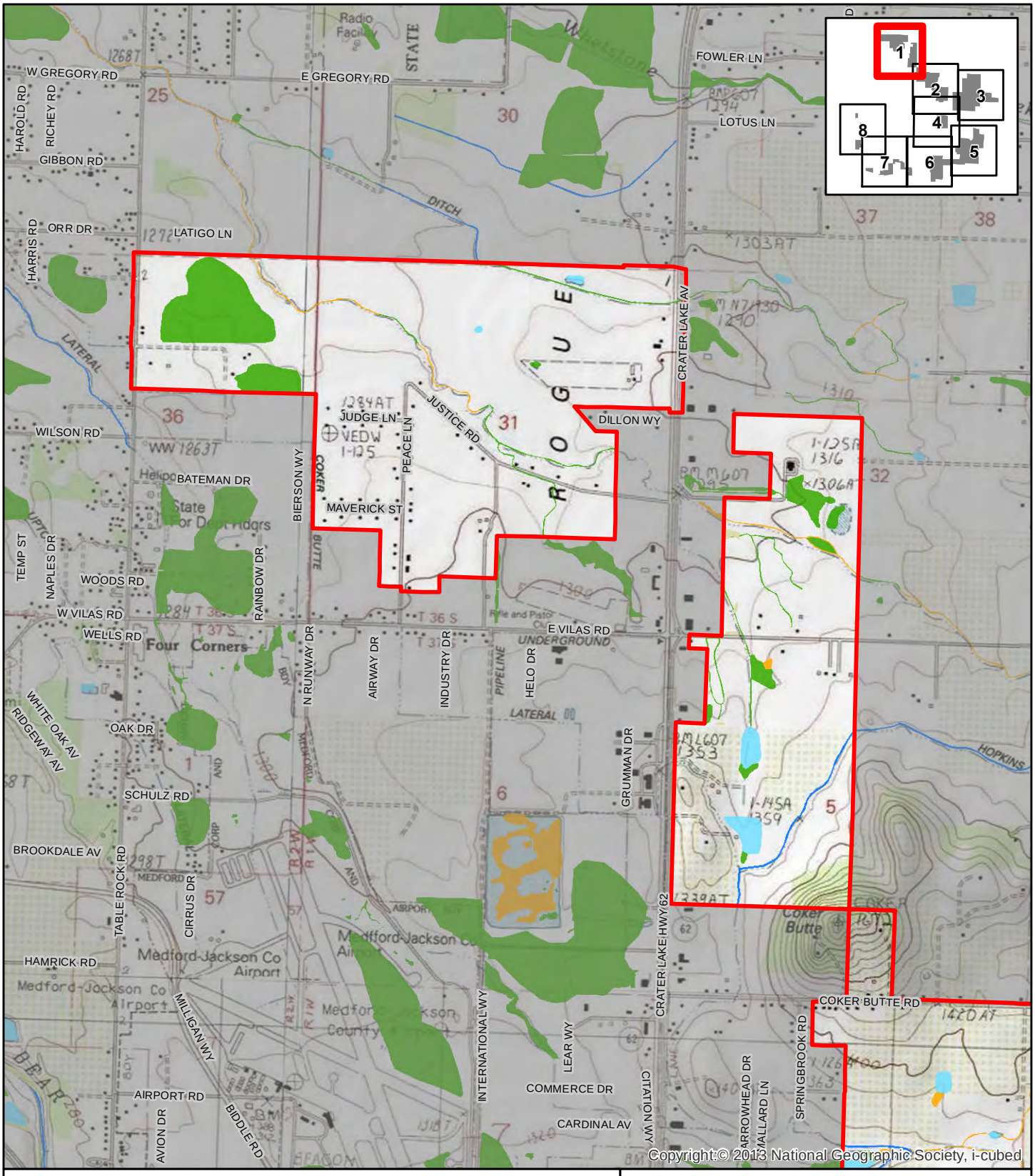

Figure E-1 – NWI and County Hydrography Map

Study Area

Cowardin Types

- Palustrine Emergent Wetland
- Palustrine Forested/Shrub Wetland
- Palustrine Pond
- Riverine
- Unknown

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

Source: Oregon Natural Heritage Information Center & The Wetlands Conservancy, 2009. Note that additional wetlands mapping data was referenced, not shown here.

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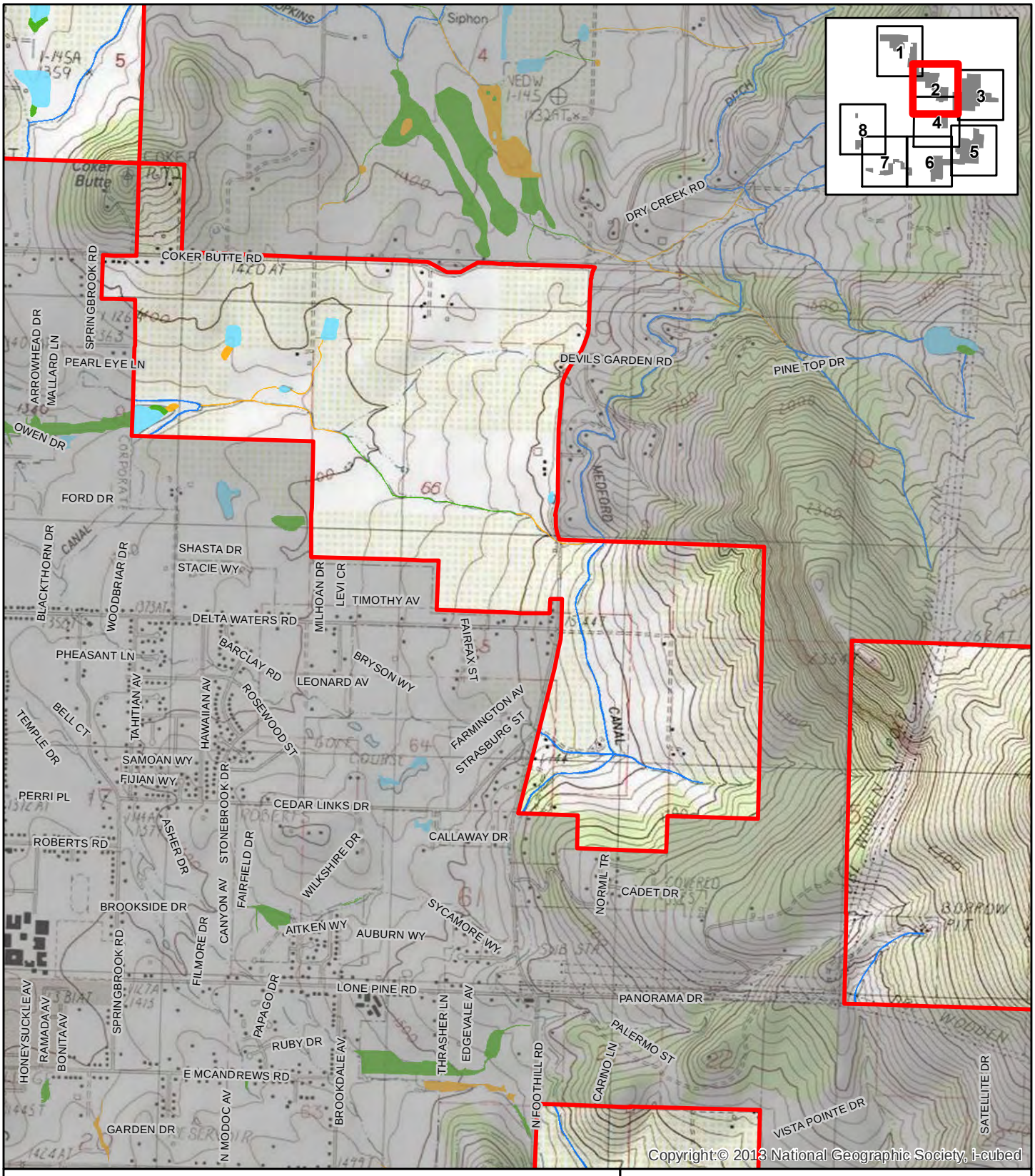

Figure E-2 – NWI and County Hydrography Map

Study Area

Cowardin Types

Palustrine Emergent Wetland

Palustrine Forested/Shrub Wetland

Palustrine Pond

Riverine

Source: Oregon Natural Heritage Information Center & The Wetlands Conservancy, 2009. Note that additional wetlands mapping data was referenced, not shown here.

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

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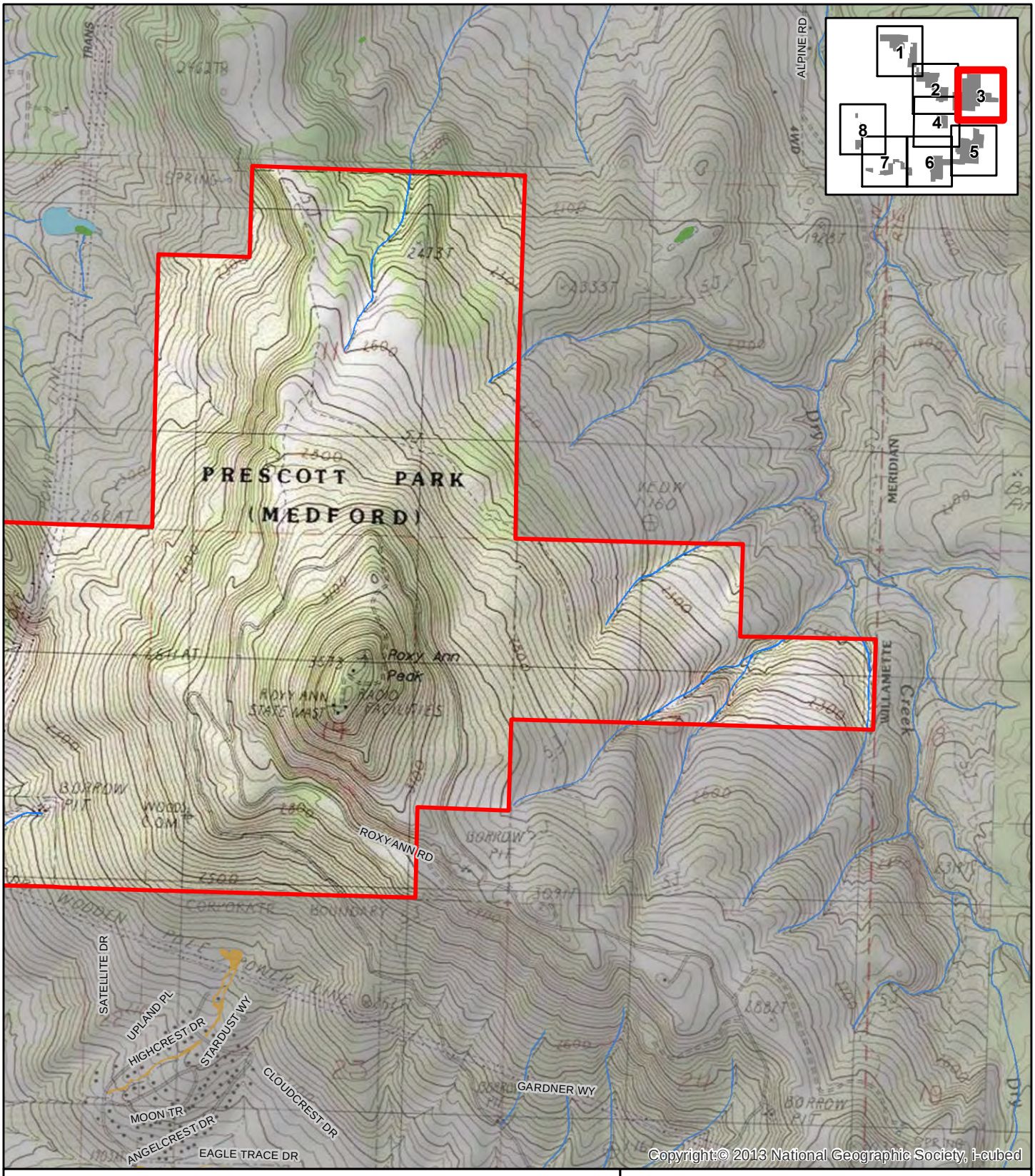

Figure E-3 – NWI and County Hydrography Map

Study Area

Cowardin Types

Palustrine Emergent Wetland

Palustrine Forested/Shrub Wetland

Palustrine Pond

Riverine

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

Source: Oregon Natural Heritage Information Center & The Wetlands Conservancy, 2009. Note that additional wetlands mapping data was referenced, not shown here.

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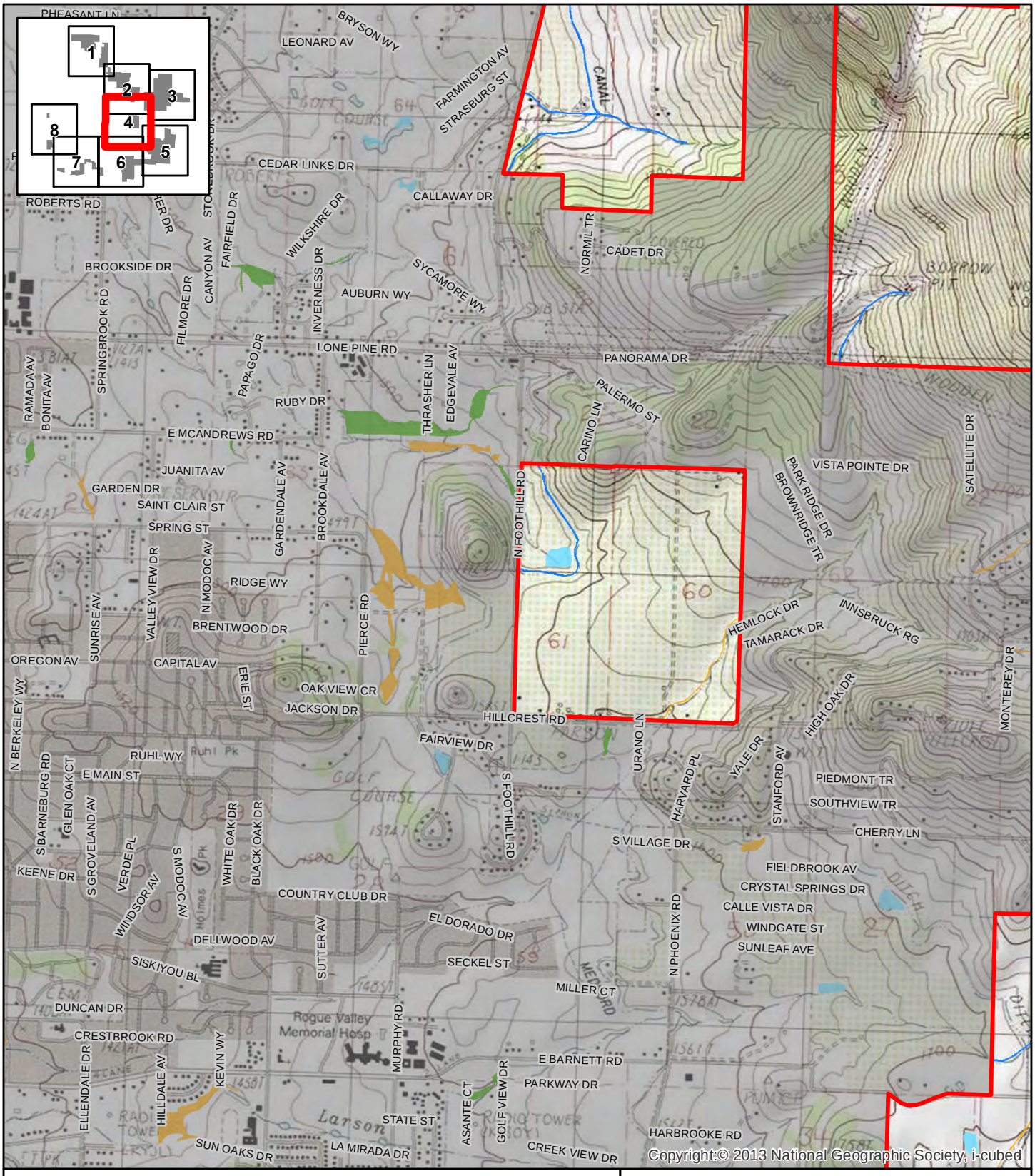

Figure E-4 – NWI and County Hydrography Map

Study Area

Cowardin Types

Palustrine Emergent Wetland

Palustrine Forested/Shrub Wetland

Palustrine Pond

Riverine

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

Source: Oregon Natural Heritage Information Center & The Wetlands Conservancy, 2009. Note that additional wetlands mapping data was referenced, not shown here.

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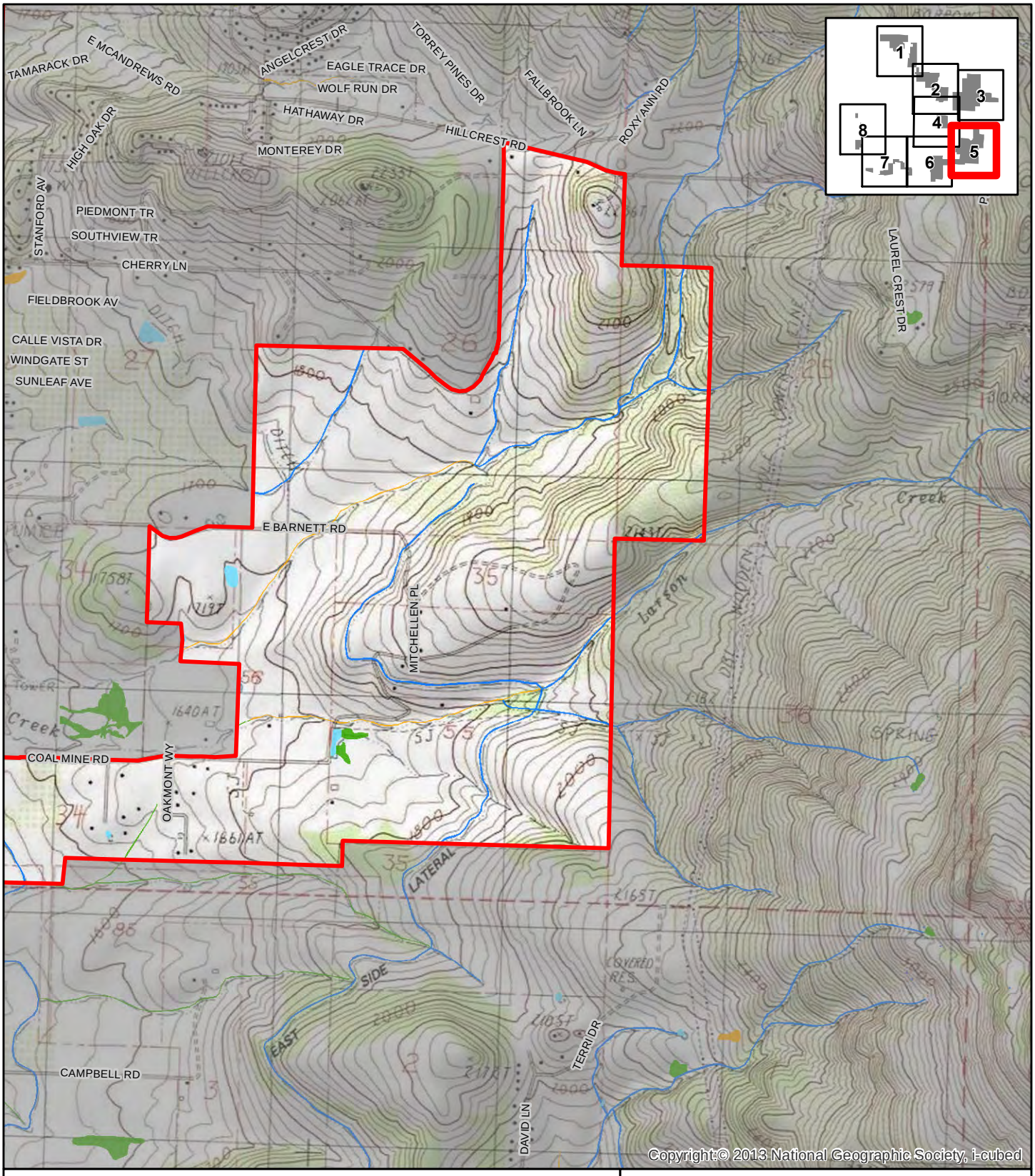

Figure E-5 – NWI and County Hydrography Map

Study Area

Cowardin Types

Palustrine Emergent Wetland

Palustrine Forested/Shrub Wetland

Palustrine Pond

Riverine

Source: Oregon Natural Heritage Information Center & The Wetlands Conservancy, 2009. Note that additional wetlands mapping data was referenced, not shown here.

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

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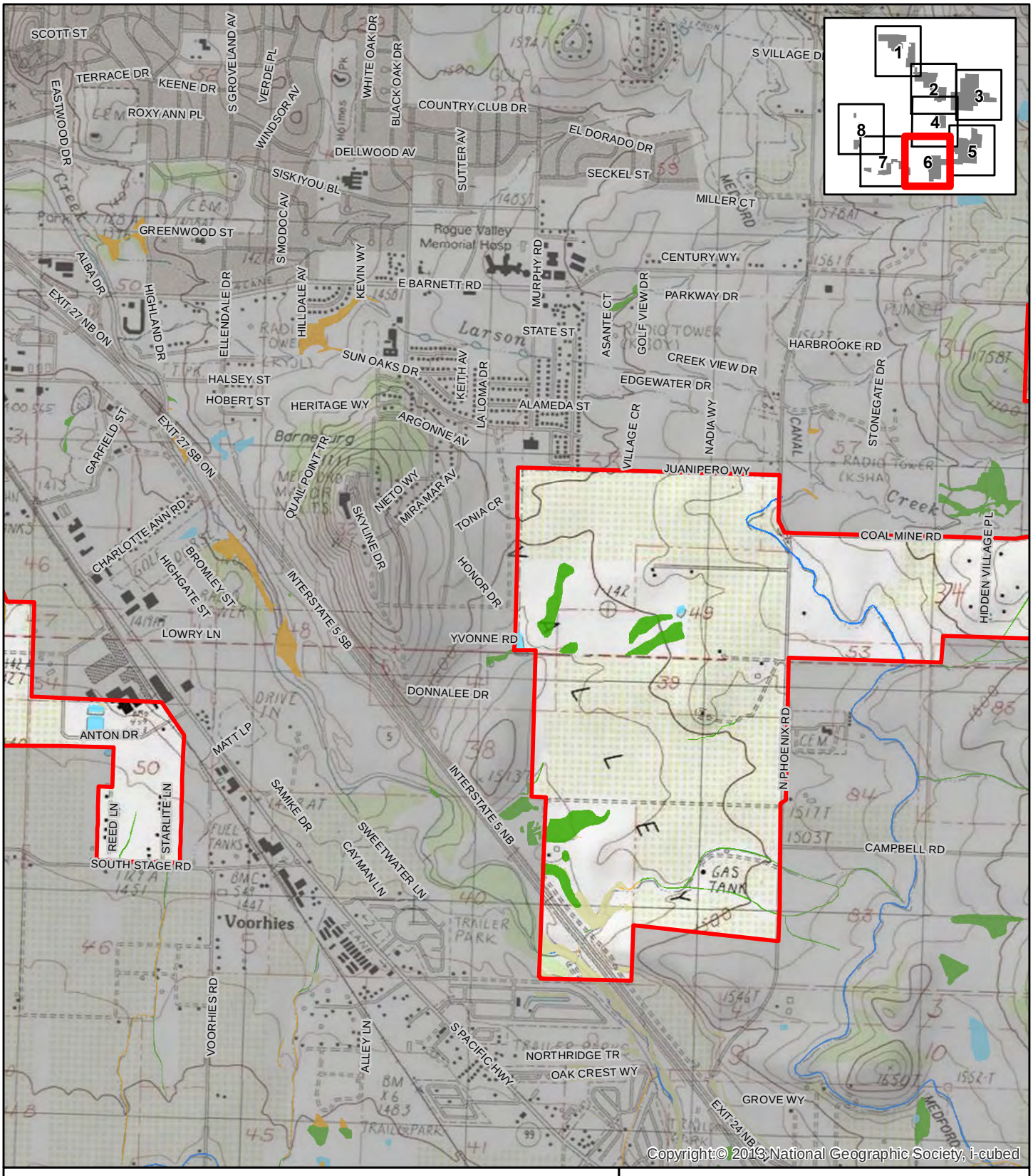

Figure E-6 – NWI and County Hydrography Map

Study Area

Cowardin Types

- Palustrine Emergent Wetland
- Palustrine Forested/Shrub Wetland
- Palustrine Pond
- Riverine
- Unknown

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

Source: Oregon Natural Heritage Information Center & The Wetlands Conservancy, 2009. Note that additional wetlands mapping data was referenced, not shown here.

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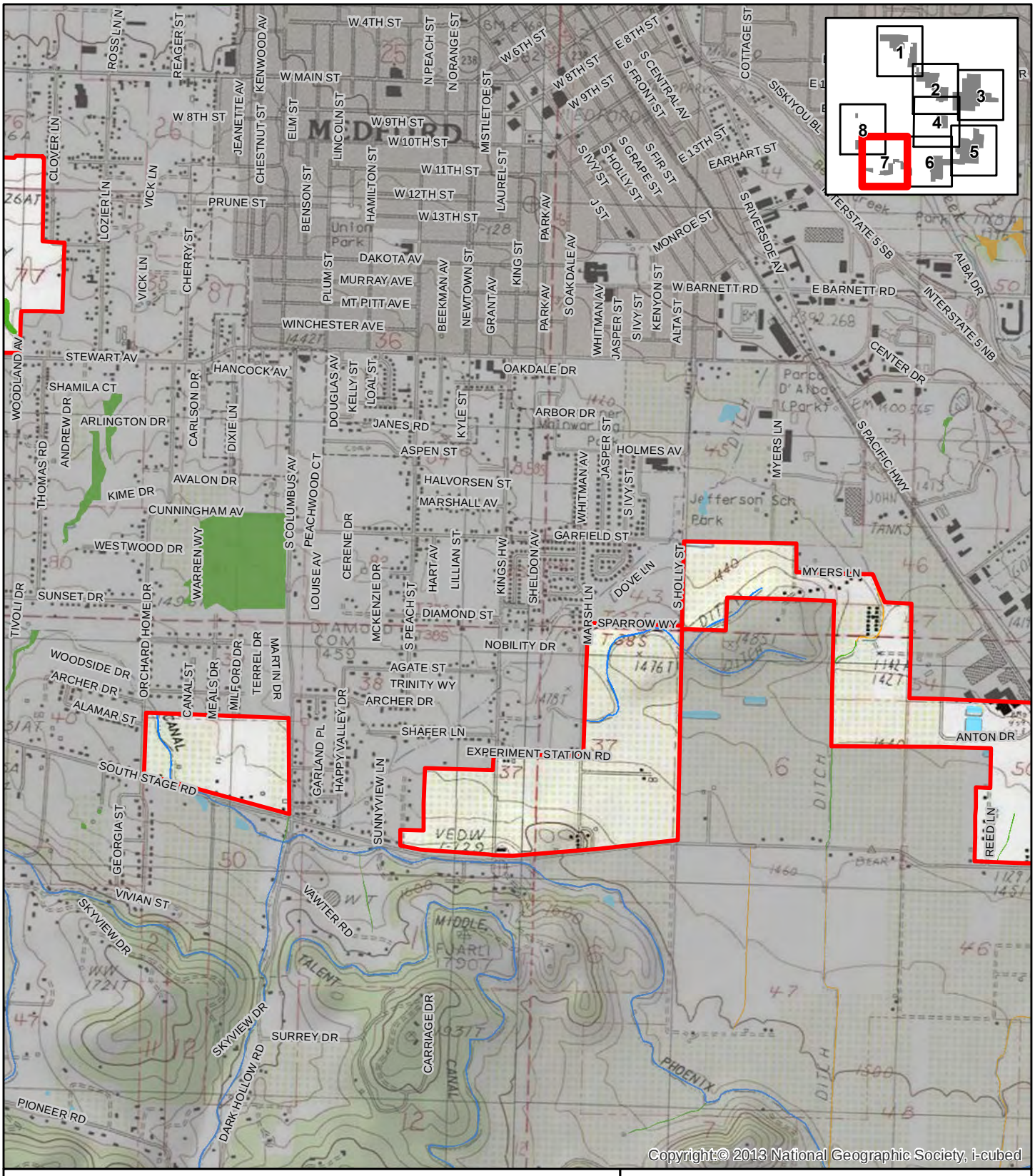

Figure E-7 – NWI and County Hydrography Map

Study Area

Cowardin Types

- Palustrine Emergent Wetland
- Palustrine Forested/Shrub Wetland
- Palustrine Pond
- Riverine
- Unknown

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

Source: Oregon Natural Heritage Information Center & The Wetlands Conservancy, 2009. Note that additional wetlands mapping data was referenced, not shown here.

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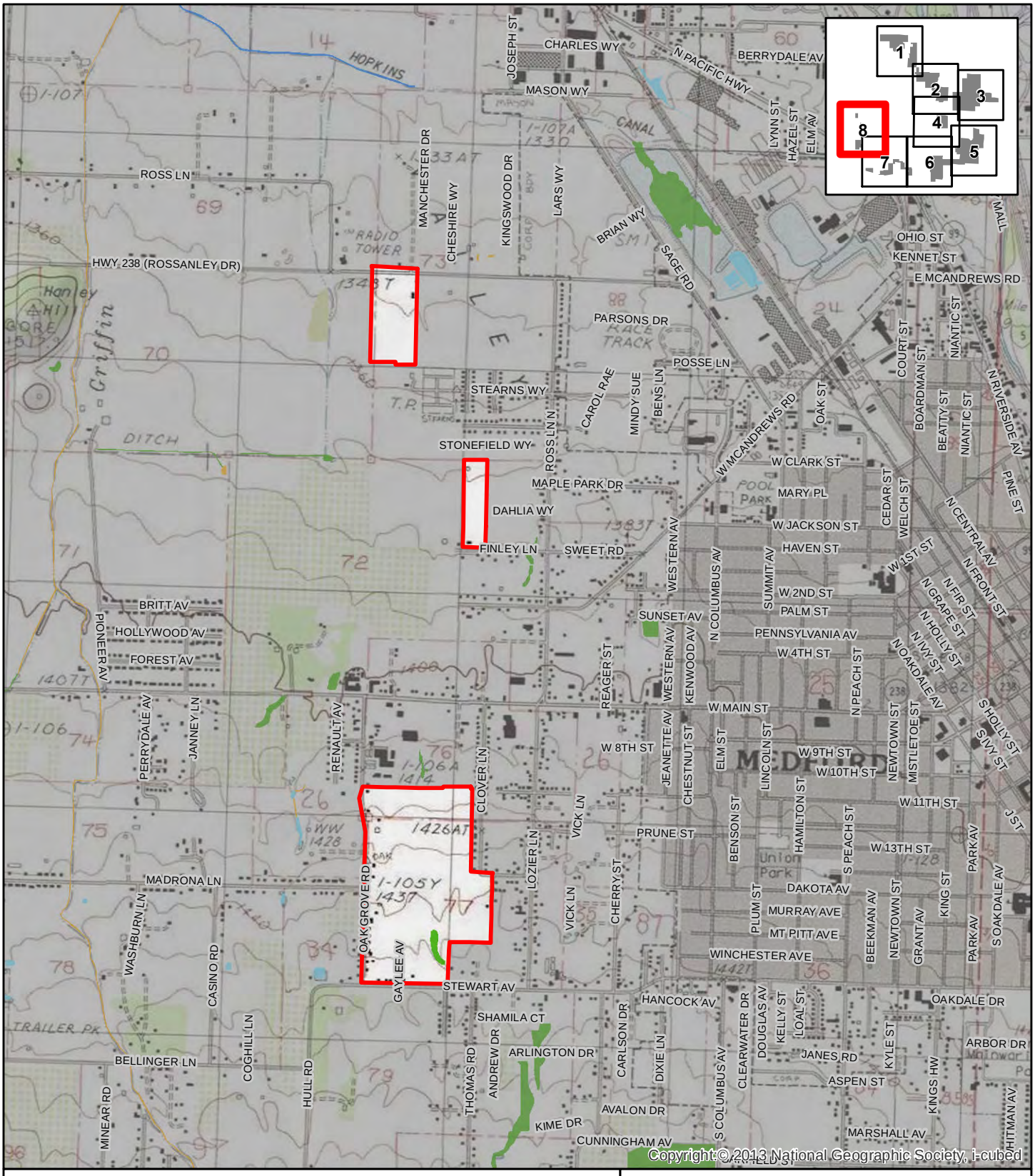

Figure E-8 – NWI and County Hydrography Map

Study Area

Cowardin Types

- Palustrine Emergent Wetland
- Palustrine Forested/Shrub Wetland
- Palustrine Pond
- Riverine
- Unknown

1 inch = 2,000 feet

0 1,000 2,000 Feet

0 200 400 Meters

Source: Oregon Natural Heritage Information Center & The Wetlands Conservancy, 2009. Note that additional wetlands mapping data was referenced, not shown here.

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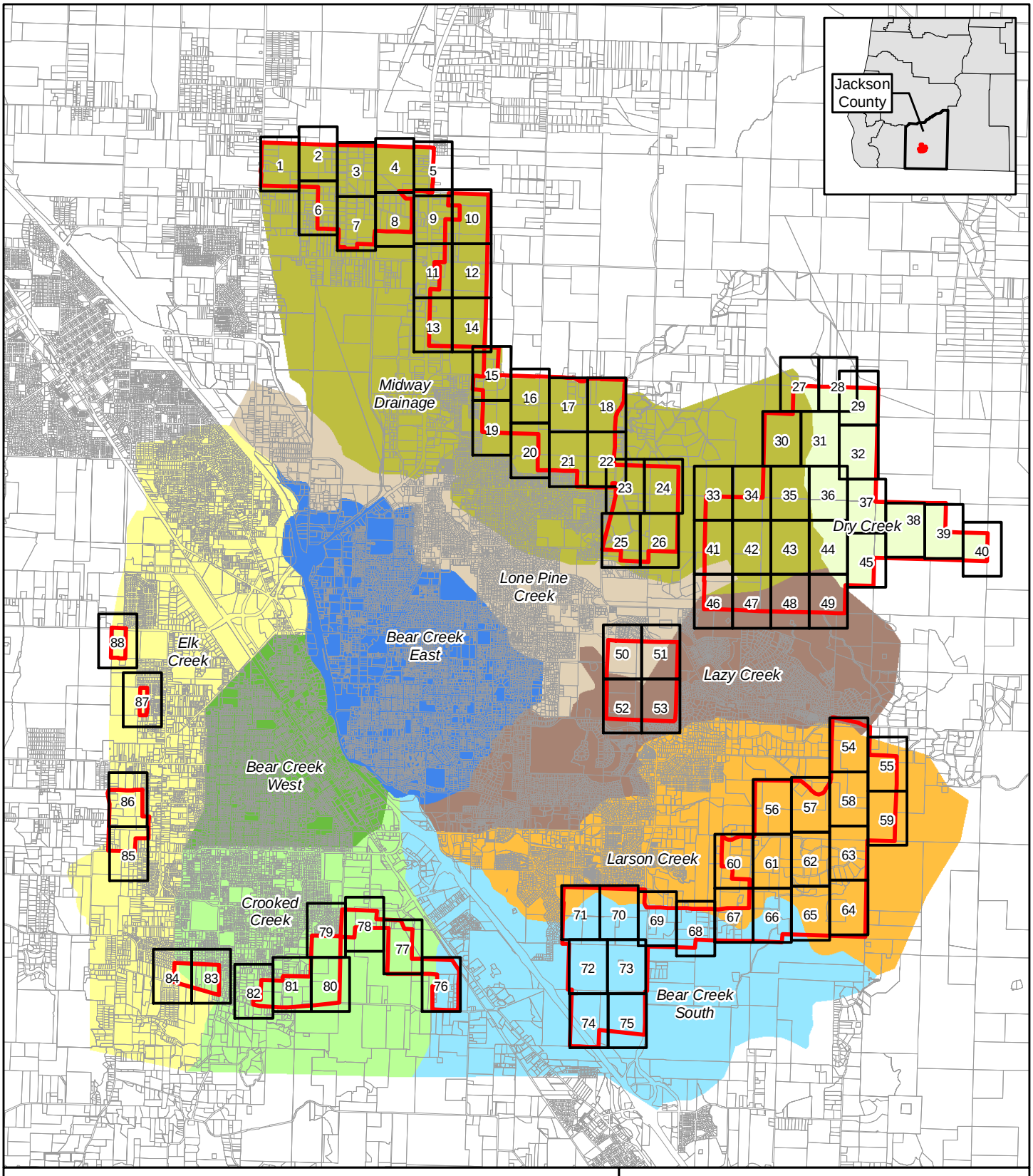

Figure F – LWI Map Index and Drainage Basin Guide

Index Map (Figure Series F)

Study Area

0 0.5 1 Miles

0 1 2 Kilometers

1 inch = 1 miles

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September 17, 2015

ORR DR
LATIGO LN
T36SR02W
Section 25
PW54
ID: W82
OFWAM: MWC-7
PEMA
AW10 (C)
T36SR02W
Section 36
PW53
TABLE ROCK RD
ID: W25
OFWAM: MWC-8
PEMA
Imagery from the City of Medford, 2013

Figure F-1 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
C- Stock watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-2 – LWI Map

SWCA LWI Data

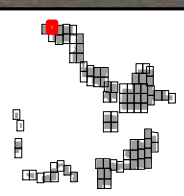
- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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T36SR01W
Section 30

PW59

AW11 (B)

AW15 (B)

ID: W85
OFWAM: MWC-2
PSS1C/PEMC

PEACE LN

Swanson Creek

ID: W33
OFWAM: N/A
PUBFx

T36SR01W
Section 31

ID: W84
OFWAM: MWC-2
PSS1C/PEMC

ID: W83
OFWAM: MWC-2
PEMC

P04

JUSTICE RD

ID: W35
OFWAM: MWC-2
PSS1F

PW56

ID: W34
OFWAM: MWC-2
PSS1F

JUDGE LN

PW01

Imagery from the City of Medford, 2013

Figure F-3 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Railroad
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

Artificial Waters Purpose Key:
B- Residential and/or farm/stock watering

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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T36SR01W
Section 30

ID: W38
OFWAM: MWC-3
PEMCd

AW35 (A)

ID: W07
OFWAM: MWC-3
PEMBh

PW52

WA29

T36SR01W
Section 31

ID: W37
OFWAM: N/A
PSS1C

WA13

PW56

DILLON Imagery from the City of Medford, 2013

Figure F-4 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Railroad
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

Artificial Waters Purpose Key:
A- Farm/stock watering

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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T36SR01W
Section 30

T36SR01W
Section 29

ID: W07
OFWAM: MWC-3
PEMBh

CRATER LAKE AV

T36SR01W
Section 31

T36SR01W
Section 32

CRATER LAKE HWY 62

DILLON WY

Imagery from the City of Medford, 2013

Figure F-5 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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ID: W25
OFWAM: MWC-8
PEMA

PW58

JUDGE LN

T36SR02W
Section 36

BIERSON WY

T36SR01W
Section 31

BATEMAN DR

BOUNTY LN

PW61

AW12 (B)

MAVERICK ST

MUTINY WY

ID: W29
OFWAM: N/A
PSS1/PEM

ID: W30
OFWAM: N/A
PEMB

Imagery from the City of Medford, 2013

Figure F-6 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
B- Residential and/or farm/stock watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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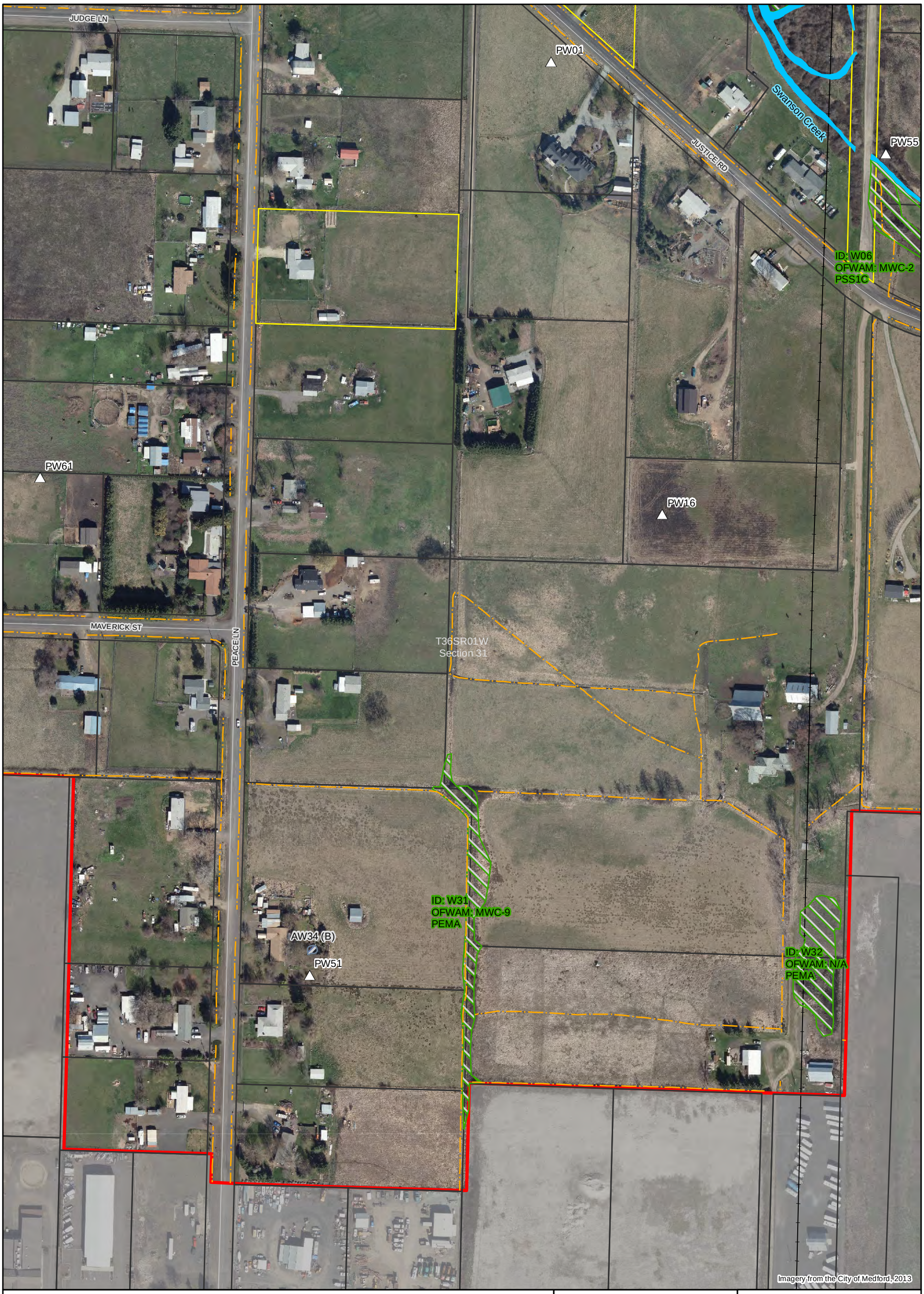

Figure F-7 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Railroad
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

Artificial Waters Purpose Key:
B- Residential and/or farm/stock watering

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
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PW56
PW55
DILLON WY
ID: W06
OFWAM: MWC-2
PSS1C
Swanson Creek
ID: W87
OFWAM: MWC-2
PEMC/PSS1C
ID: W88
OFWAM: MWC-2
PSS1C/PEMC
PW17
JUSTICE RD
WA31
P26
ID: W04-B
OFWAM: MWC-1
PEMCh
ID: W04-A
OFWAM: MWC-1
PEMCd
P05
T36SR01W
Section 31
ID: W04-Mosaic
OFWAM: MWC-1
PEMC
ID: W36
OFWAM: MWC-1
PEMCx
N/A
Imagery from the City of Medford, 2013

Figure F-8 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Railroad
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-9 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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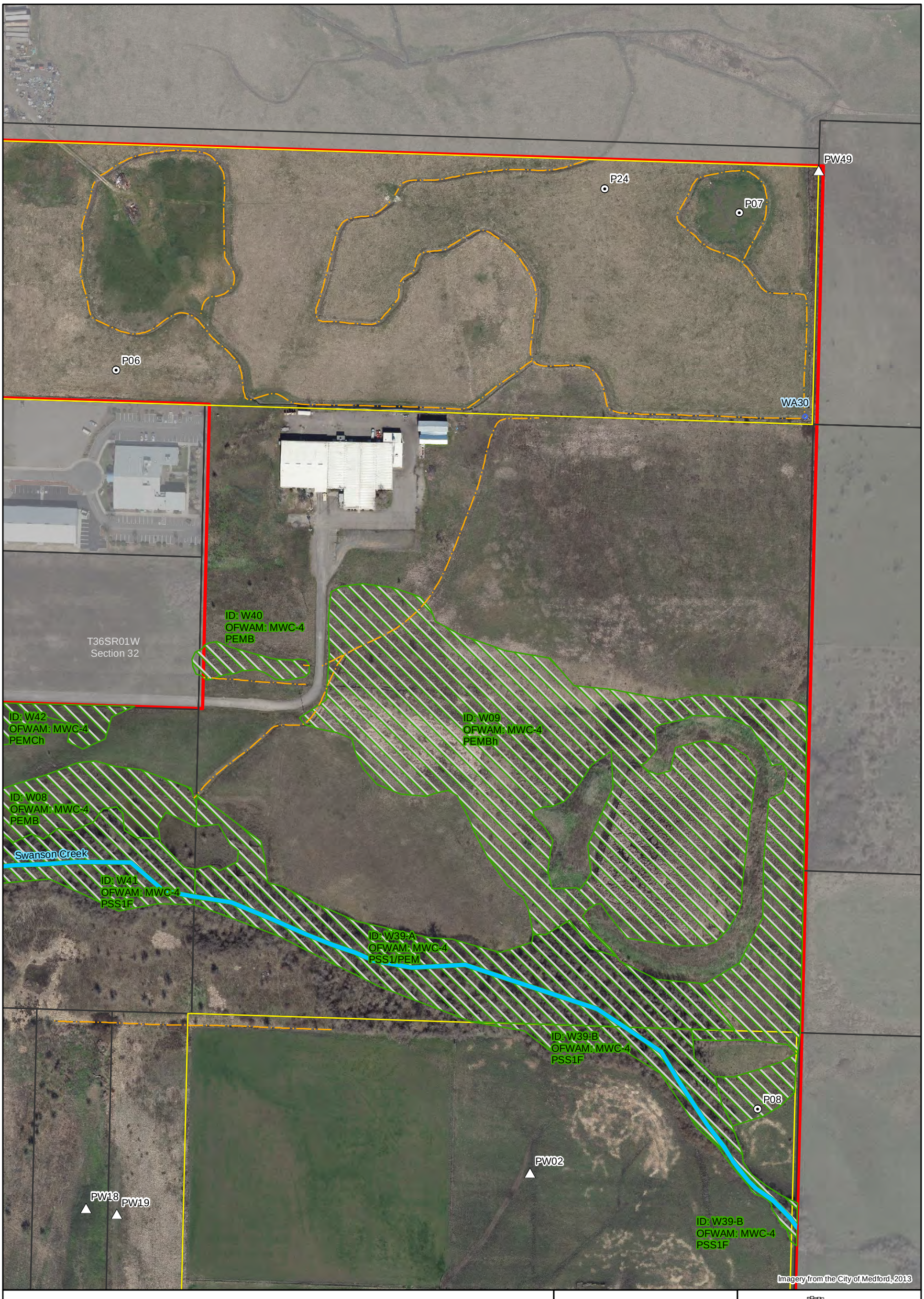

Figure F-10 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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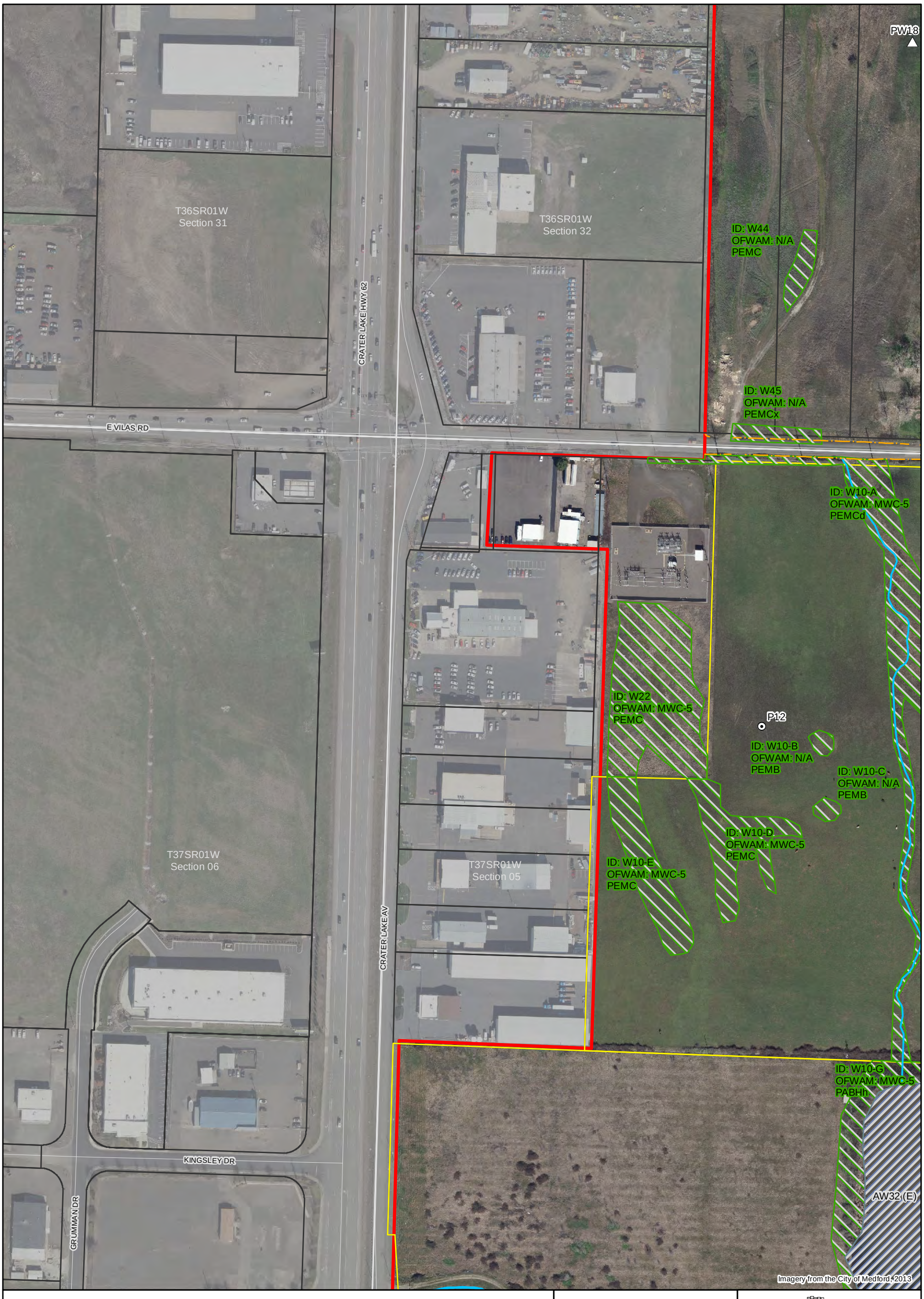

Figure F-11 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
E- Historical orchard and/or pasture watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Project: 31802

PW18
PW19
PW02
ID: W39-B
OFWAM: MWC-4
PSS1F
T36SR01W
Section 32
PW03
E VILAS RD
AW16 (A)
ID: W10-A
OFWAM: MWC-5
PEMCd
P09
ID: W10-C
OFWAM: N/A
PEMB
T37SR01W
Section 05
ID: W10-G
OFWAM: MWC-5
PABHh
PW20
AW32 (E)
Imagery from the City of Medford, 2013

Figure F-12 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
A- Farm/stock watering
E- Historical orchard and/or pasture watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-13 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
E- Historical orchard and/or pasture watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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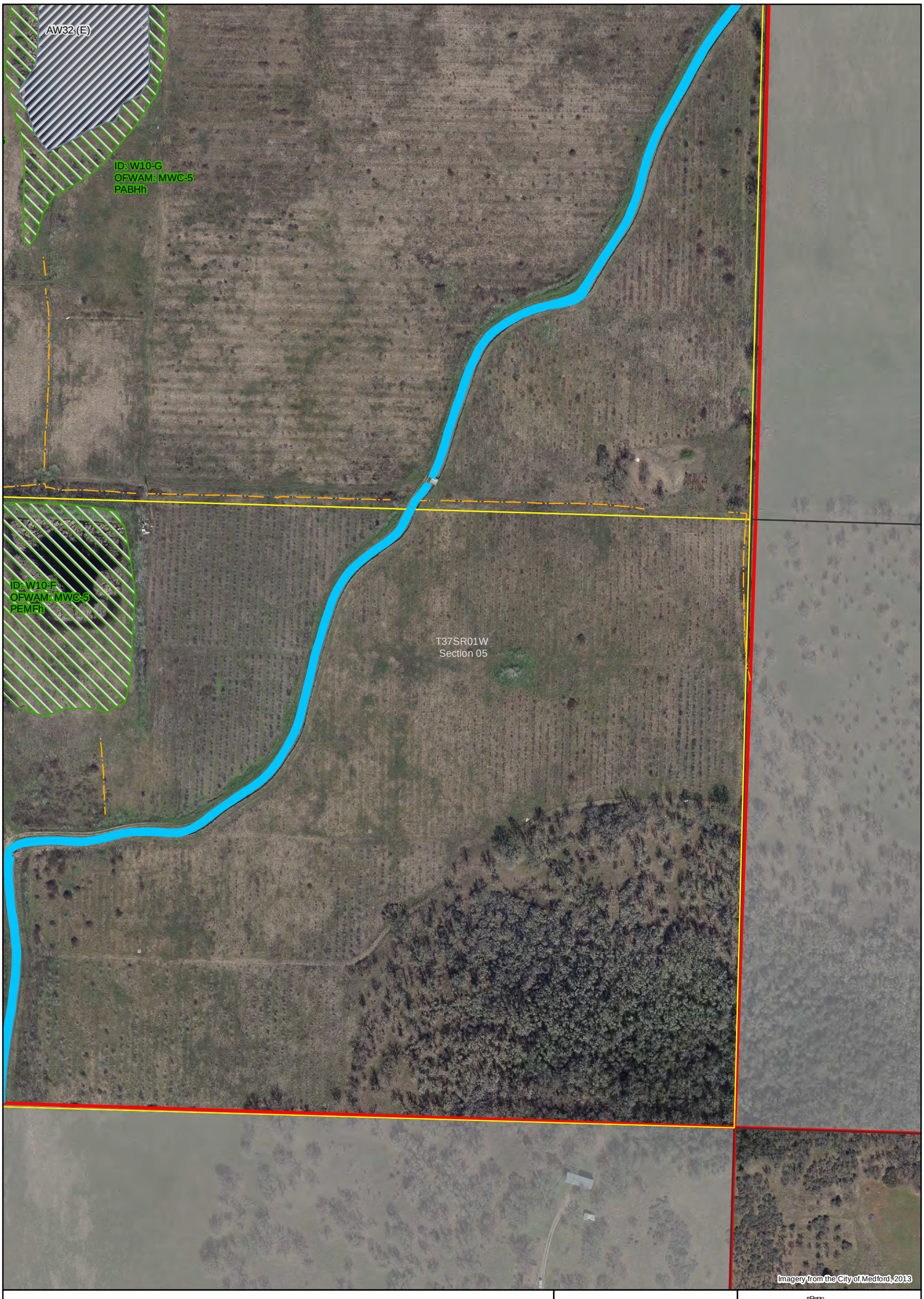

Figure F-14 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

Artificial Waters Purpose Key:
E- Historical orchard and/or pasture watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-15 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
E- Historical orchard and/or pasture watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Project: 31802

T37SR01W
Section 05

T37SR01W
Section 04

COKER BUTTE RD

T37SR01W
Section 08

ID: W50
OFWAM: MWC-6
PUBHx/PSS1Bh

AW33 (E)

ID: W51
OFWAM: MWC-6
PSS1Bh/PEMB

ID: W11
OFWAM: MWC-6
PEMCx

P10

AW17 (E)

T37SR01W
Section 09

WA15

ID: W49
OFWAM: MWC-6
PSS1Cd/PEMC

ID: W49
OFWAM: MWC-6
PSS1Cd/PEMC

ID: W47
OFWAM: MWC-6
PEMBd

ID: W47
OFWAM: MWC-6
PEMBd

Imagery from the City of Medford, 2013

Figure F-16 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
E- Historical orchard and/or pasture watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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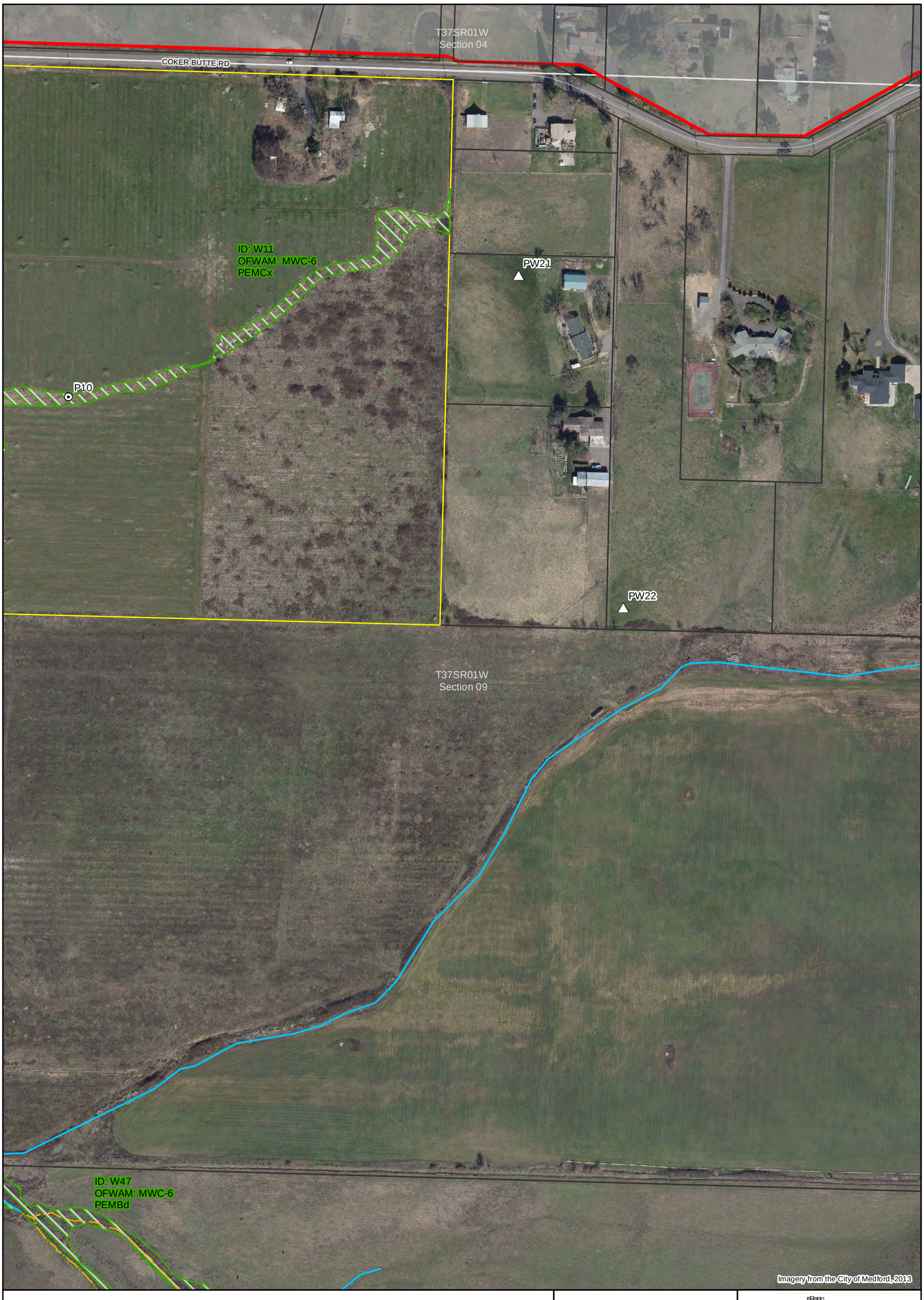

Figure F-17 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")
- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet

0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-18 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-19 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
E- Historical orchard and/or pasture watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

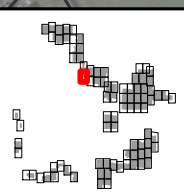

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Figure F-20 – LWI Map

SWCA LWI Data

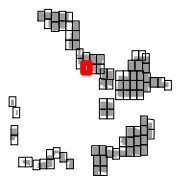
- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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ID: W47
OFWAM: MWC-6
PEMBd

WA16

PW25

ID: W56
OFWAM: MWC-6
PEMBd

ID: W54
OFWAM: MWC-6
PEMB

ID: W55
OFWAM: MWC-6
PEMBd

ID: W57
OFWAM: MWC-6
PEMBd

PW26

T37SR01W
Section 09

PAUL CR

BRON CR

CODY ST

NETTIE WY

TIMOTHY AV

Imagery from the City of Medford, 2013

Figure F-21 – LWI Map

SWCA LWI Data

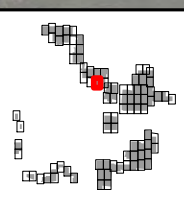
- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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ID: W54
OFWAM: MWC-6
PEMB

ID: W53
OFWAM: MWC-6
PEMBd

WA28

ID: W21
OFWAM: MWC-6
PFOd/PABFx

T37SR01W
Section 09

ID: W21
OFWAM: MWC-6
PFOd/PABFx

N FOOTHILL RD

Medford Irrigation District Canal

PW57

Imagery from the City of Medford, 2013

Figure F-22 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-23 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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T37SR01W
Section 09

T37SR01W
Section 10

T37SR01W
Section 16

T37SR01W
Section 15

Imagery from the City of Medford, 2013

Figure F-24 – LWI Map

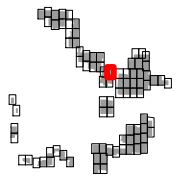
SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")
- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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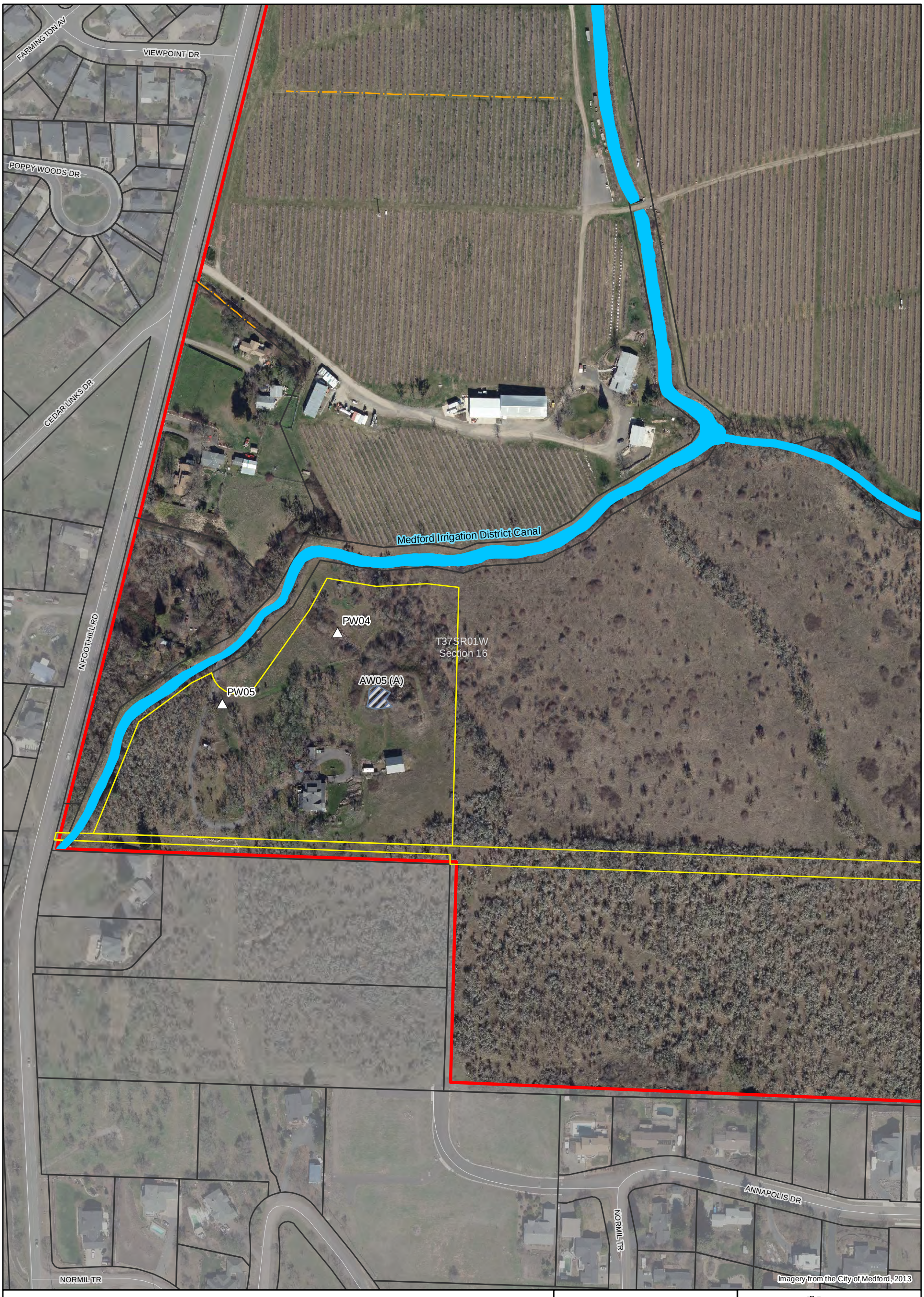

Figure F-25 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
A- Farm/stock watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-26 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")
- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet

0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Section 02

T37SR01W
Section 11

Imagery from the City of Medford, 2013

Figure F-27 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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T37SR01W
Section 02

T37SR01W
Section 11

Imagery from the City of Medford, 2013

Figure F-28 – LWI Map

SWCA LWI Data

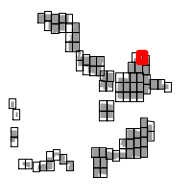
- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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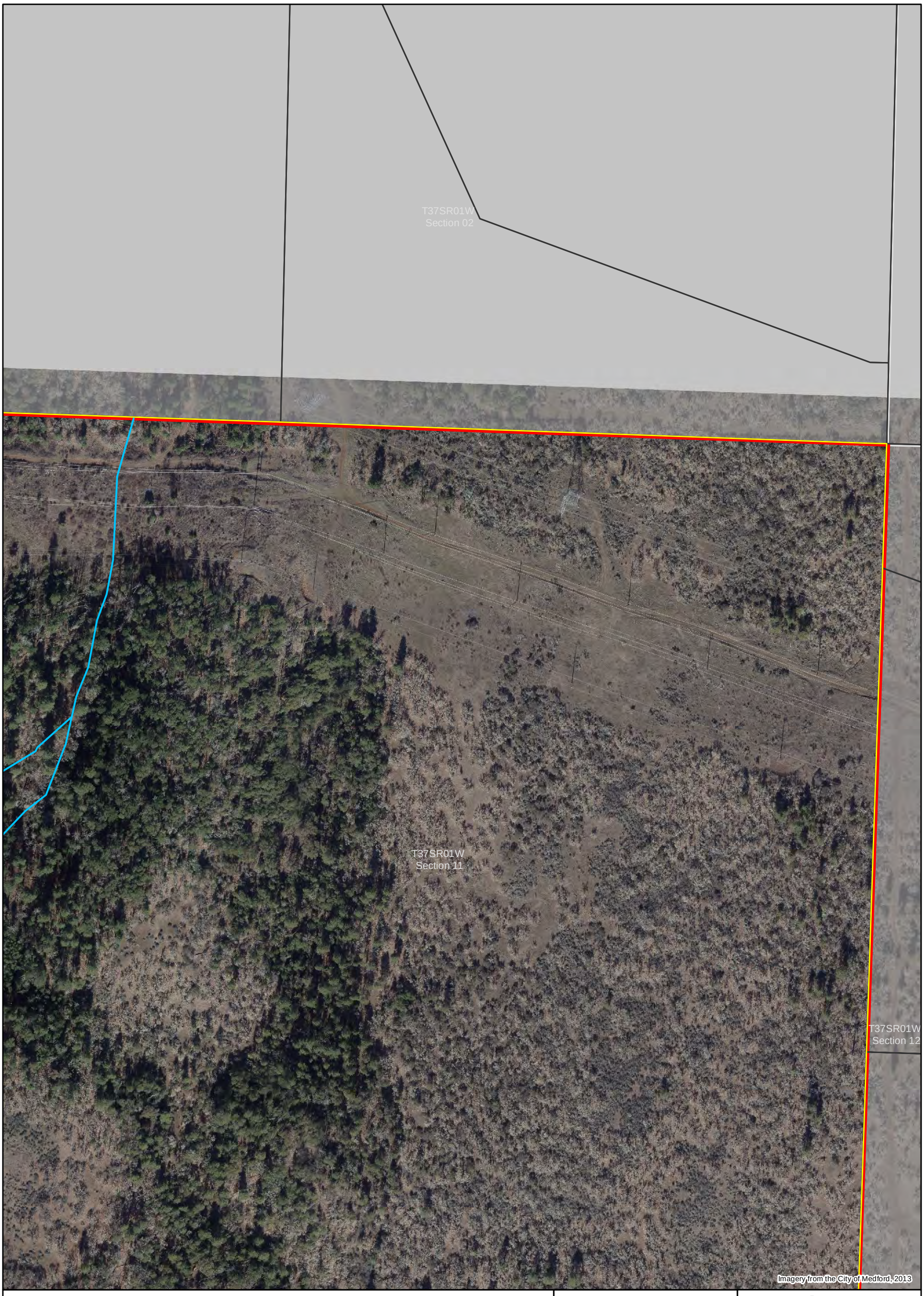


Figure F-29 – LWI Map

SWCA LWI Data

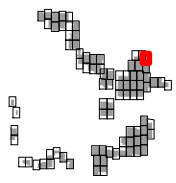
- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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Imagery from the City of Medford, 2013

Figure F-30 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

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Jackson County, OR
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Imagery from the City of Medford, 2013

Figure F-31 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")
- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet

0 40 80 Meters

1 inch = 200 feet

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Jackson County, OR
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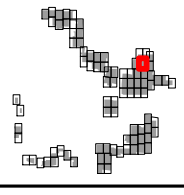

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Figure F-32 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

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Local Wetlands Inventory
Jackson County, OR
September 2015

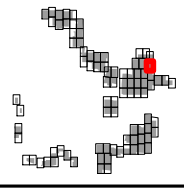

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Figure F-33 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

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Local Wetlands Inventory
Jackson County, OR
September 2015

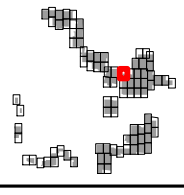

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Figure F-34 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

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Local Wetlands Inventory
Jackson County, OR
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Figure F-35 – LWI Map

SWCA LWI Data

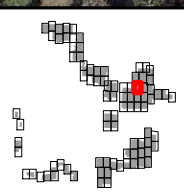
- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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Imagery from the City of Medford, 2013

Figure F-36 – LWI Map

SWCA LWI Data

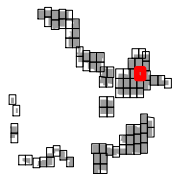
- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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Imagery from the City of Medford, 2013

Figure F-37 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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PW65

Imagery from the City of Medford, 2013

Figure F-38 – LWI Map

SWCA LWI Data

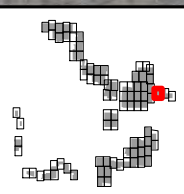
- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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PW66

Imagery from the City of Medford, 2013

Figure F-39 – LWI Map

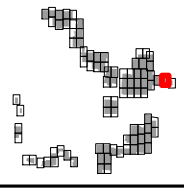
SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")
- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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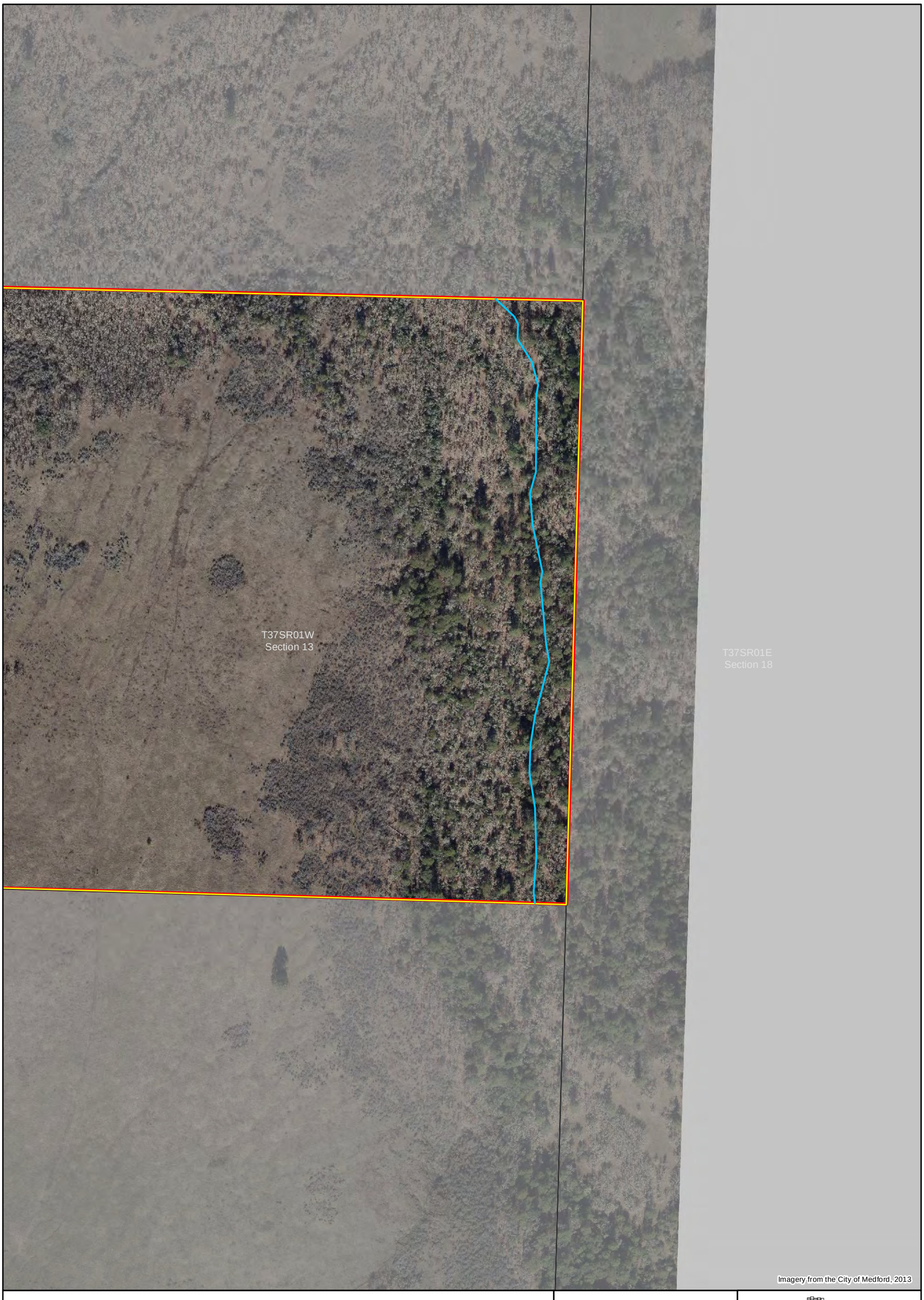

Figure F-40 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")
- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
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T37SR01W
Section 15

Imagery from the City of Medford, 2013

Figure F-41 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Imagery from the City of Medford, 2013

Figure F-42 – LWI Map

SWCA LWI Data

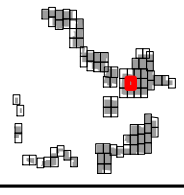
- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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T37SR01W
Section 14

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Imagery from the City of Medford, 2013

Figure F-43 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

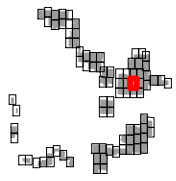

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Figure F-44 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

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Local Wetlands Inventory
Jackson County, OR
September 2015

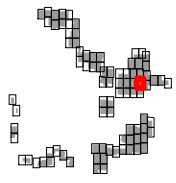

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Figure F-45 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

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Local Wetlands Inventory
Jackson County, OR
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Figure F-46 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
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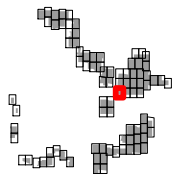
September 2015



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Section 15

T37SR01W
Section 14

T37SR01W
Section 22

T37SR01W
Section 23

Imagery from the City of Medford, 2013

Figure F-47 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

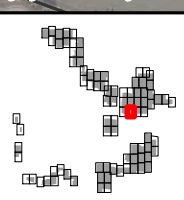

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Figure F-48 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

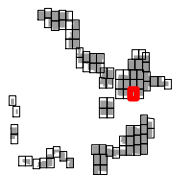

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Figure F-49 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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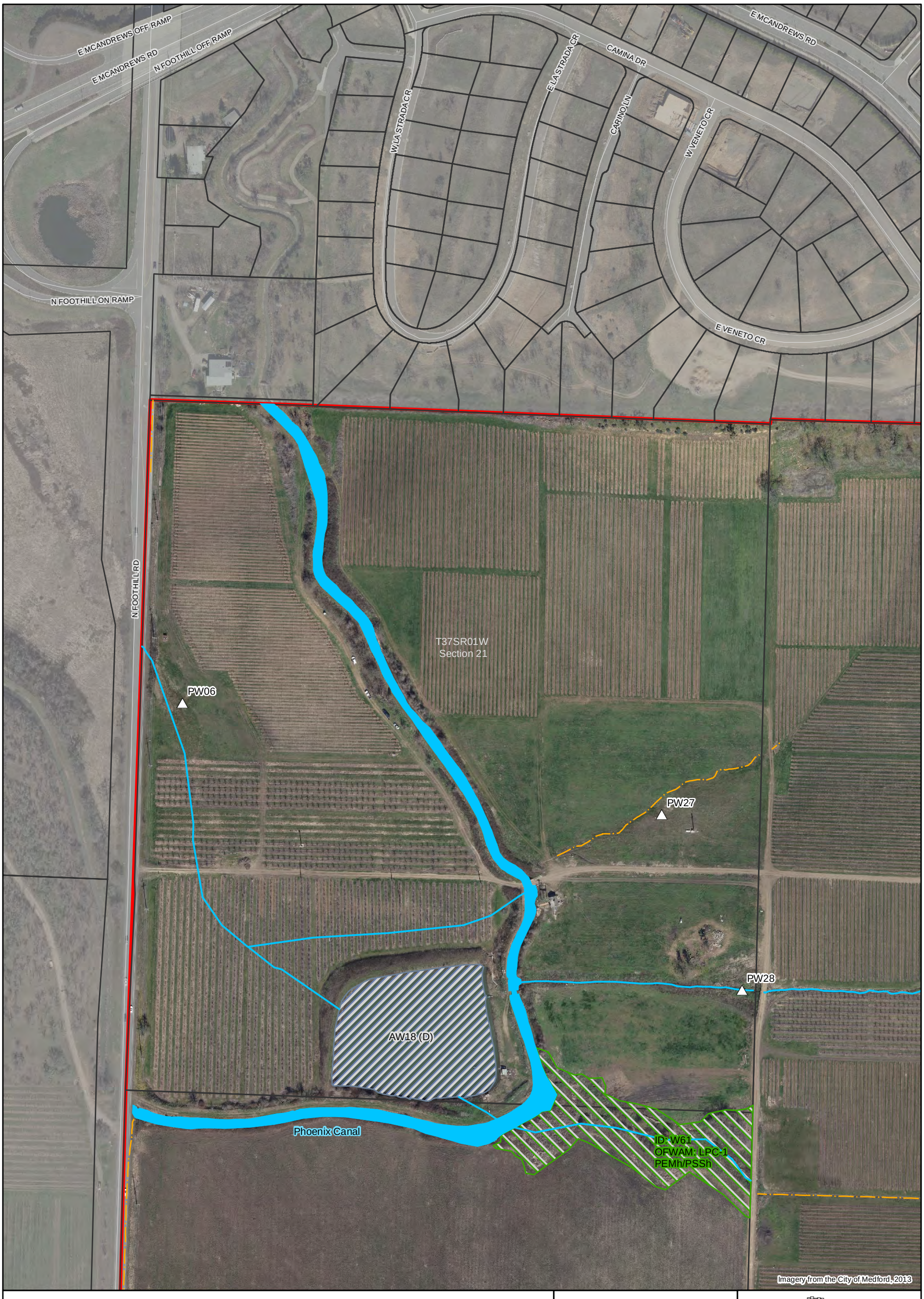

Figure F-50 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
D- Orchard irrigation

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-51 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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ID: W61
OFWAM: LPC-1
PEMh/PSSh

N FOOTHILL RD

T37SR01W
Section 21

HILLCREST RD

HILLCREST PARK DR

T37SR01W
Section 28

N PHOENIX RD

SIGNATURE CT

FAIRVIEW DR

Imagery from the City of Medford, 2013

Figure F-52 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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T37SR01W
Section 21

T37SR01W
Section 22

T37SR01W
Section 28

T37SR01W
Section 27

HEMLOCK DR

ANNETTES WY

HIDDEN VALLEY CT

Lazy Creek

HILLCREST RD

PURDUE LN

OXFORD PL

BEL AIR CT

YALE DR

URANO LN

PRINCETON WY

HARVARD PL

N PHOENIX RD

Imagery from the City of Medford, 2013

Figure F-53 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-54 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
B- Residential and/or farm/stock watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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T37SR01W
Section 26

T37SR01W
Section 25

Imagery from the City of Medford, 2013

Figure F-55 – LWI Map

SWCA LWI Data

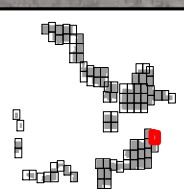
- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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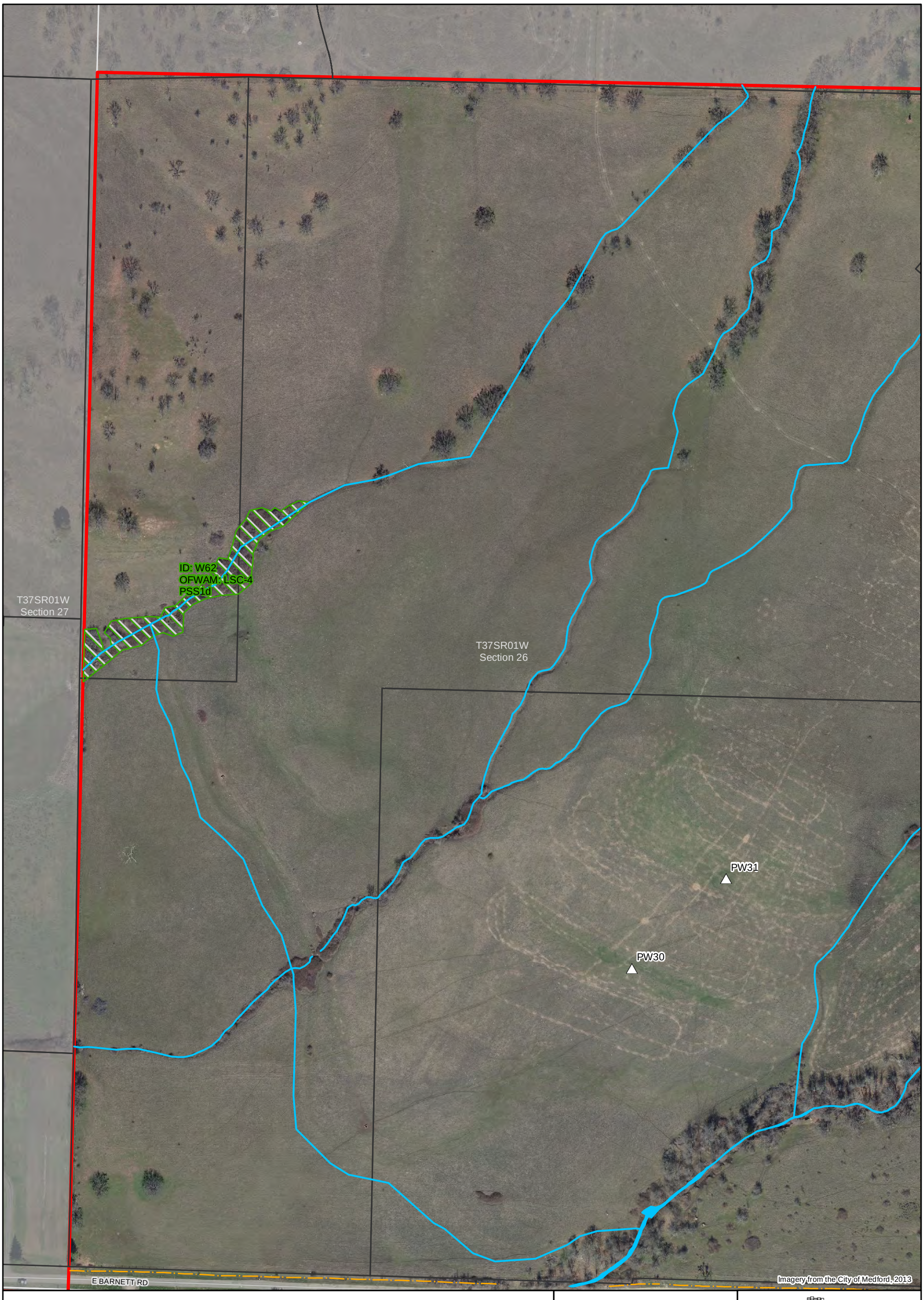

Figure F-56 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")
- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet

0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-57 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-58 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

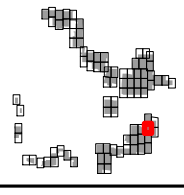
- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet

0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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T37SR01W
Section 25

T37SR01W
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Imagery from the City of Medford, 2013

Figure F-59 – LWI Map

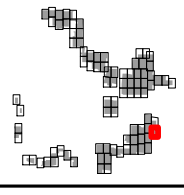
SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")
- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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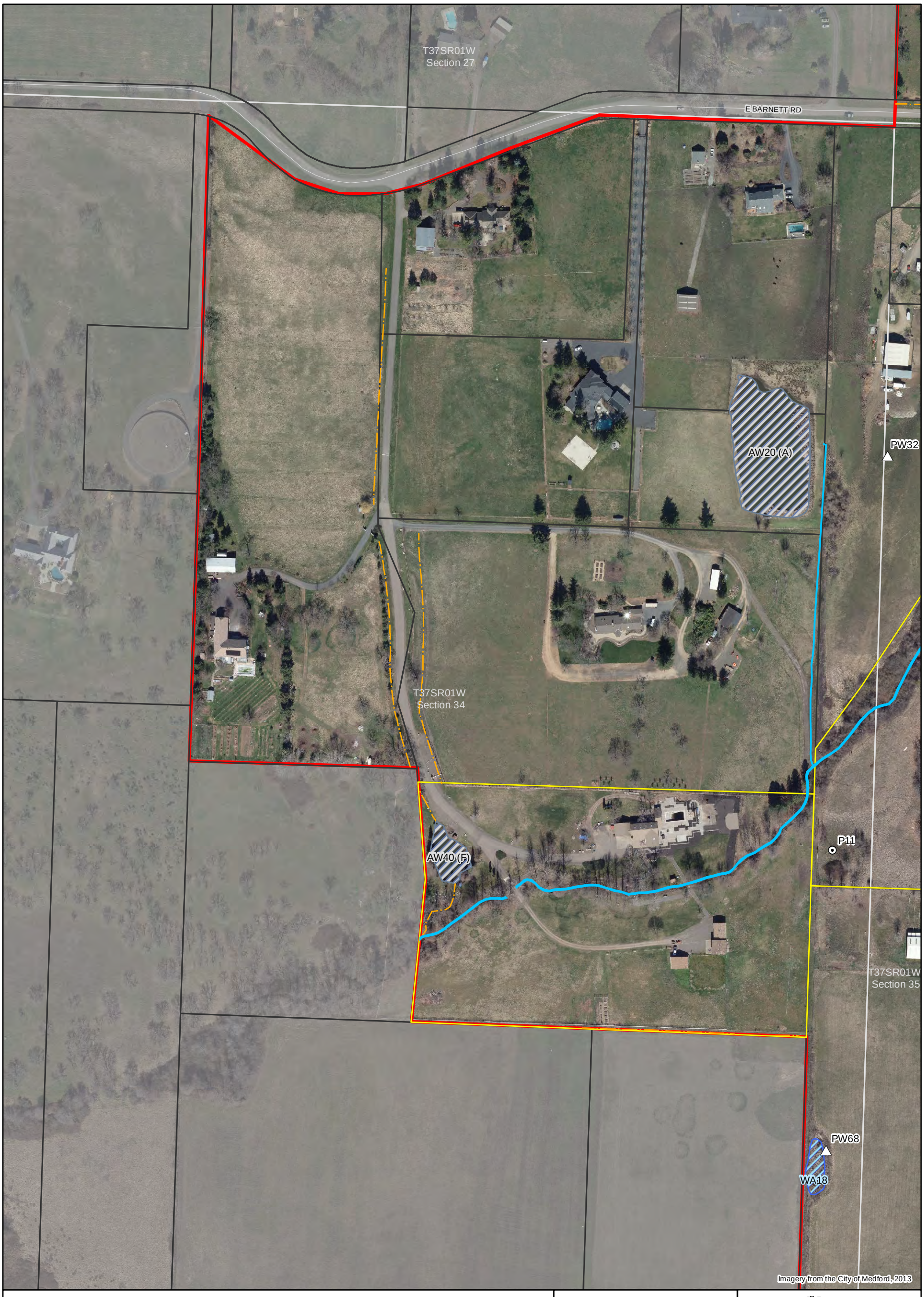

Figure F-60 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
A- Farm/stock watering
F- Landscaping feature

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-61 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-62 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

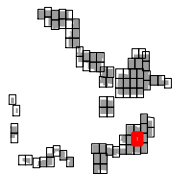

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Figure F-63 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")
- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-64 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")
- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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East Lateral Canal

Larson Creek

SANTA BARBARA DR

PW33

ID: W13
OFWAM: BCS-2
PEMCx

T37SR01W
Section 35

East Lateral Canal

PW34

Imagery from the City of Medford, 2013

Figure F-65 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-66 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
A- Farm/stock watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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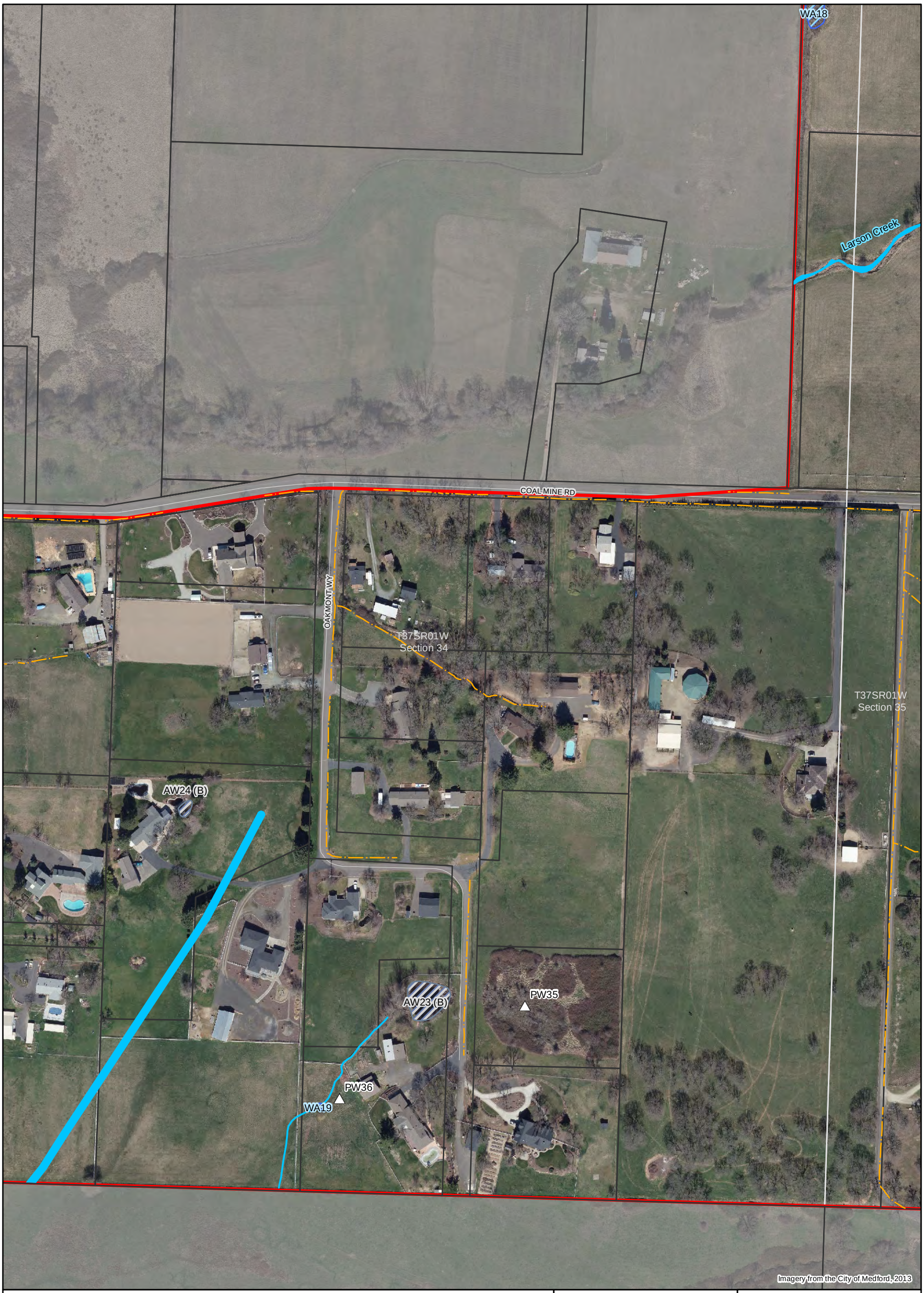

Figure F-67 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
B- Residential and/or farm/stock watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-68 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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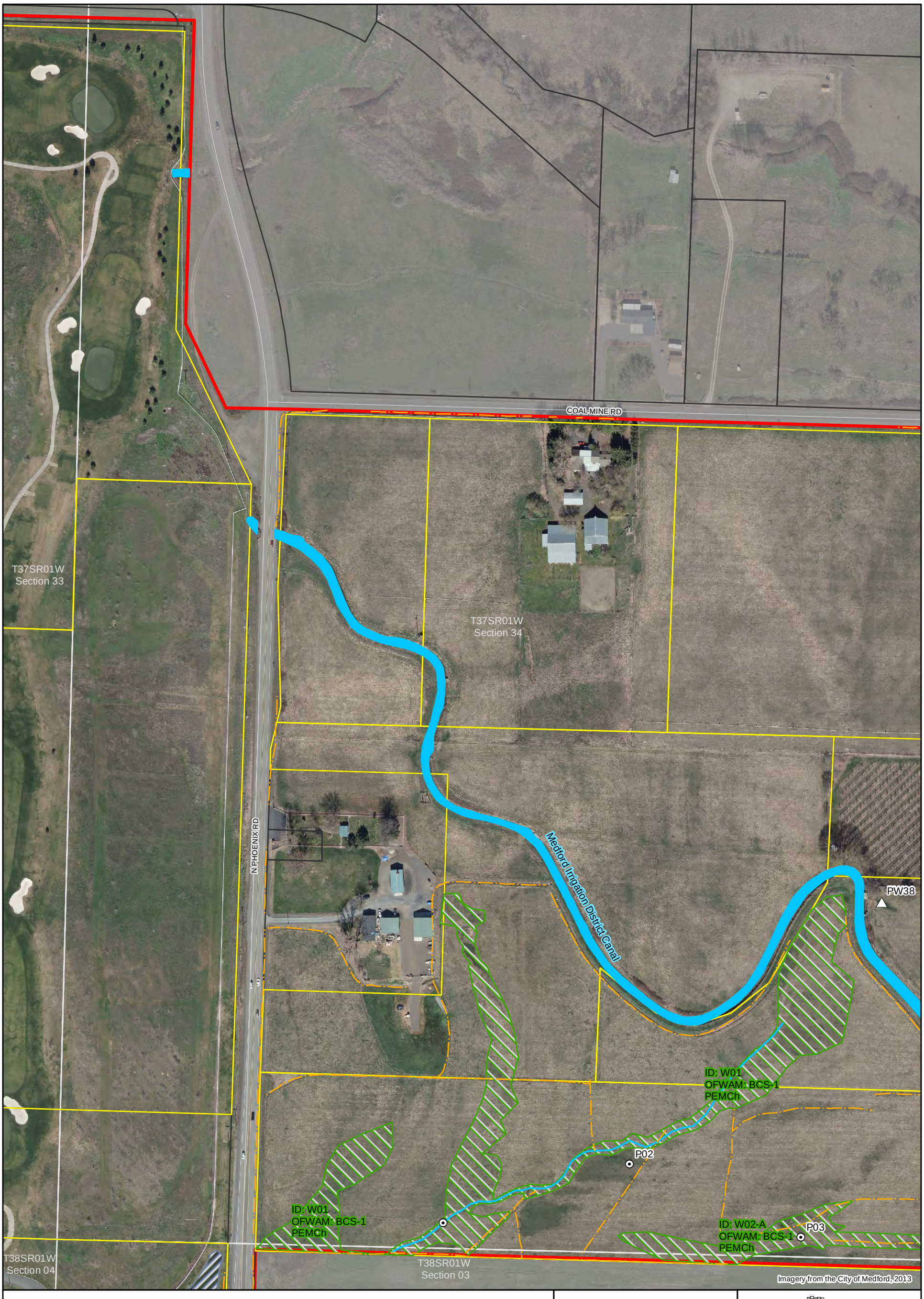

Figure F-69 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
F- Landscaping feature

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
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Figure F-70 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
G- Golf course watering/water management

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-71 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
G- Golf course watering/water management

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-72 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Section

Artificial Waters Purpose Key:
G- Golf course watering/water management

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
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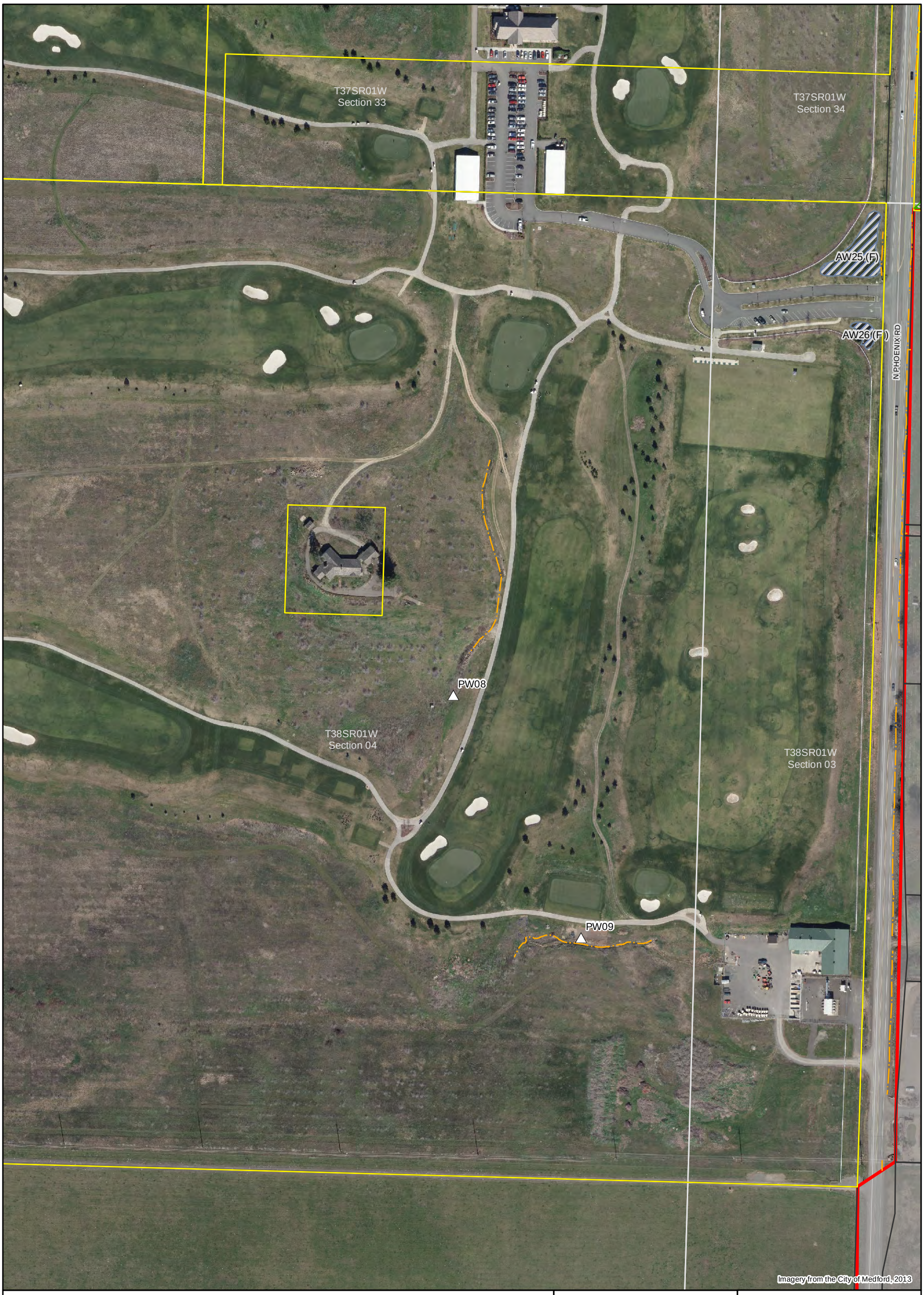

Figure F-73 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
F- Landscaping feature

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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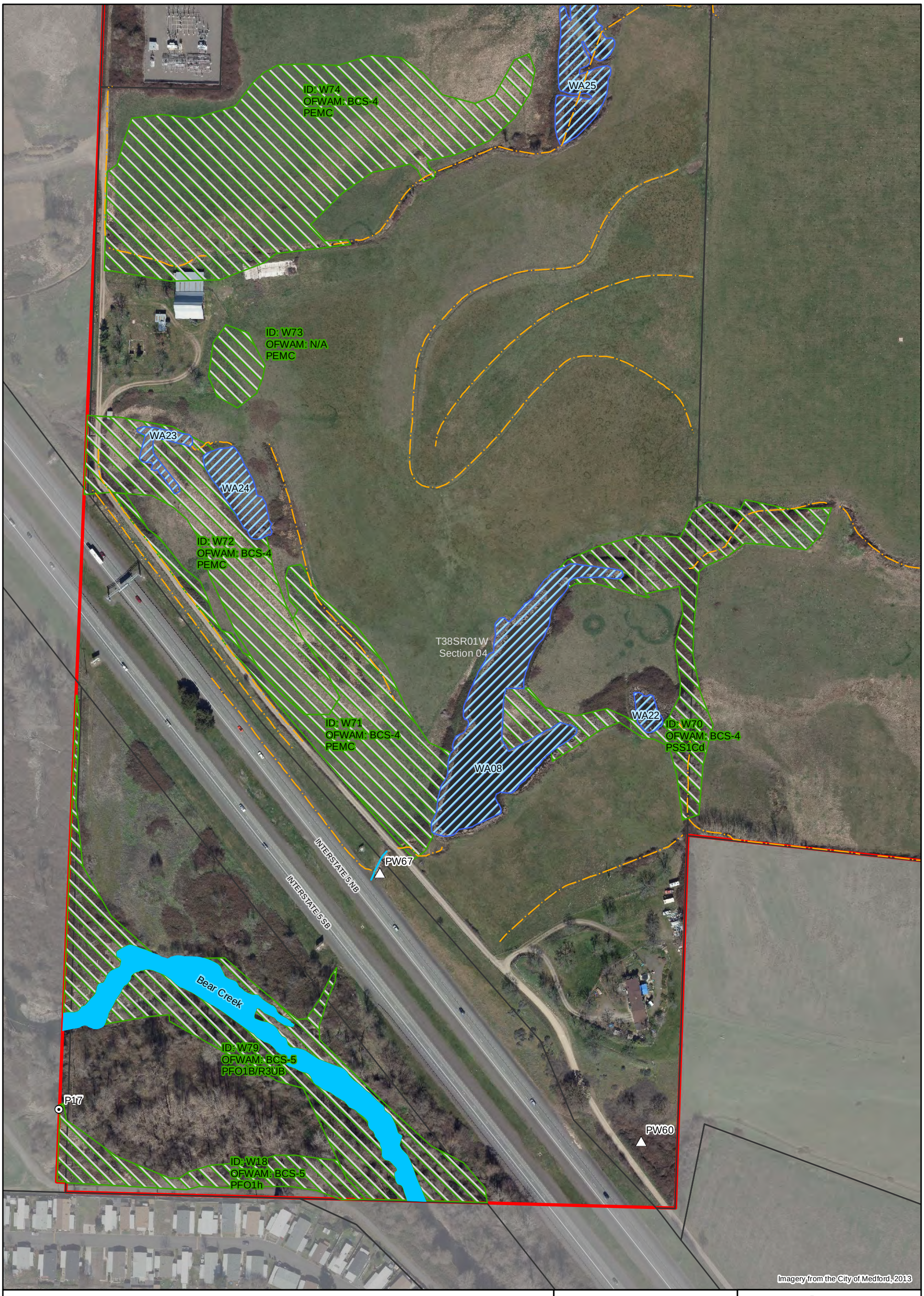

Figure F-74 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
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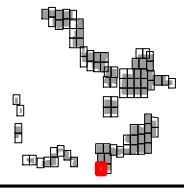

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Figure F-75 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-76 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Railroad
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

Artificial Waters Purpose Key:
B- Residential and/or farm/stock watering
H- Stormwater management/treatment ponds

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-77 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-78 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
H- Stormwater management/treatment ponds

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

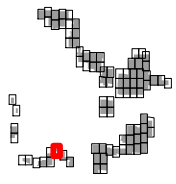

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Figure F-79 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
E- Historical orchard and/or pasture watering
H- Stormwater management/treatment ponds

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

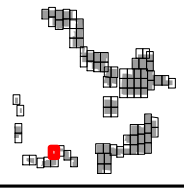

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Figure F-80 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
E- Historical orchard and/or pasture watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-81 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

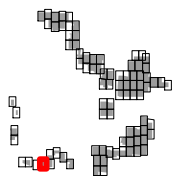

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Figure F-82 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")
- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-83 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

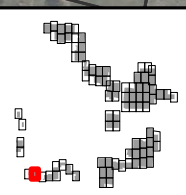

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Figure F-84 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")
- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet

0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

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Figure F-85 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015

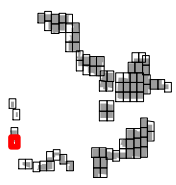

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Figure F-86 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

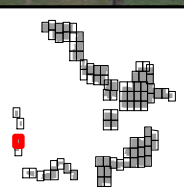
- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

Artificial Waters Purpose Key:
C- Stock watering

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



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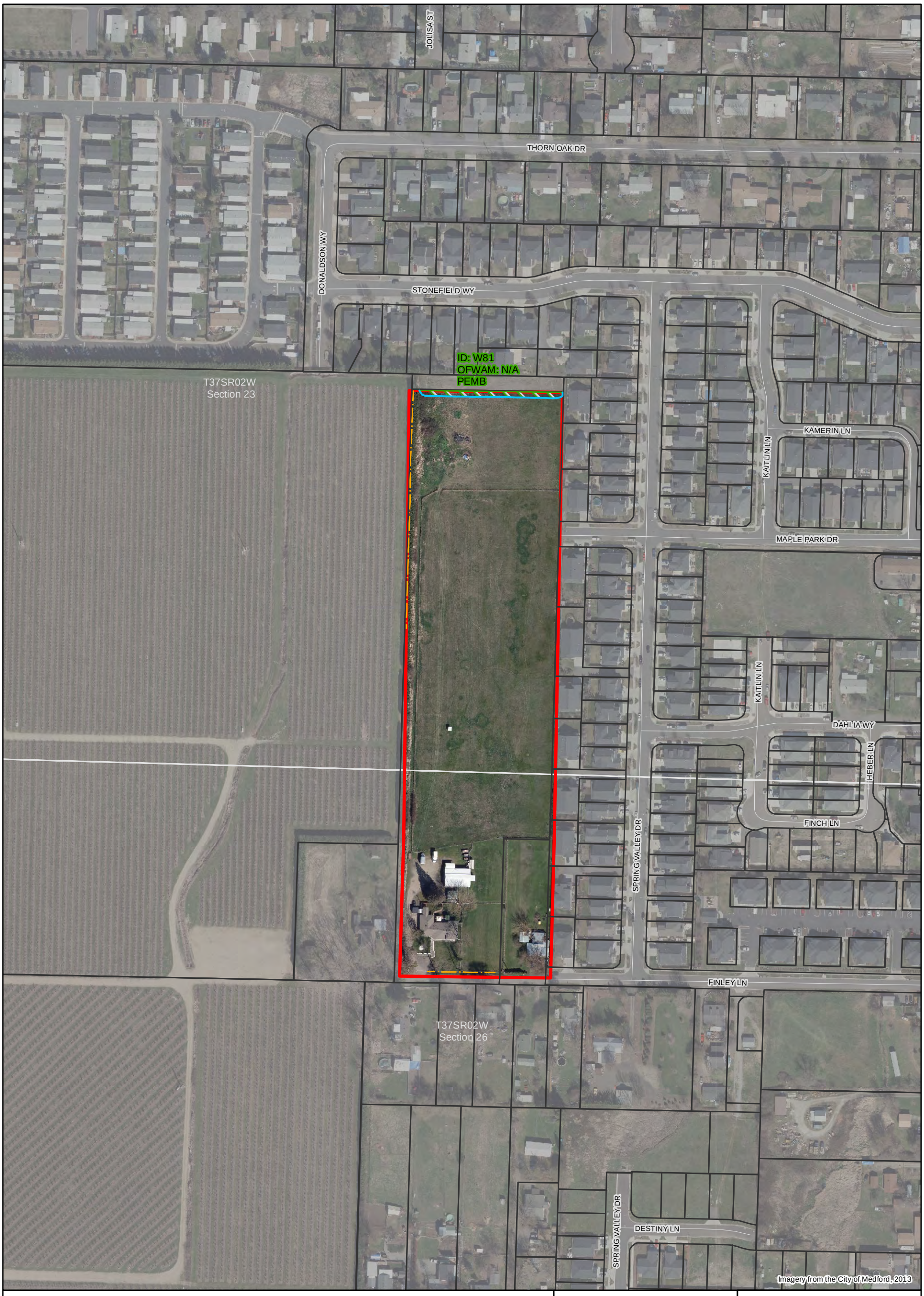


Figure F-87 – LWI Map

SWCA LWI Data

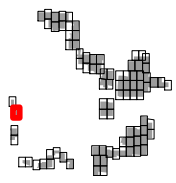
- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
- Waterbody ("WA")
- Stream
- Ditch
- Pond/Water ("AW")

- Study Area
- Tax Lot, Accessed
- Tax Lot, Not Accessed
- Street
- Section

0 100 200 Feet
0 40 80 Meters

1 inch = 200 feet

City of Medford Urban Reserve
Local Wetlands Inventory
Jackson County, OR
September 2015



Information shown on this map is for planning purposes, represents the conditions that exist at the map date, and is subject to change. The location and extent of wetlands and other waters is approximate. There may be unmapped wetlands and other waters present that are subject to regulation. A current Oregon Department of State Lands-approved wetland delineation is required for state removal-fill permits. You are advised to contact the Department of State Lands and the U.S. Army Corps of Engineers with any regulatory questions.

SWCA
ENVIRONMENTAL CONSULTANTS
1220 SW Morrison, Suite 700
Portland, OR 97205-2235
www.swca.com
503.224.0333

Project: 31802

Figure F-88 – LWI Map

SWCA LWI Data

- SWCA Sample Plot
- Probable Wetland ("PW", <0.5 acre)
- Wetland ("W")
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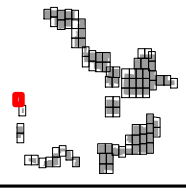

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Appendix G

Staff Qualifications

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C. Mirth Walker, Senior Wetland Scientist, B.A., PWS

Responsibilities: Ms. Walker provided project management and quality assurance/quality control review. She assisted with the fieldwork, data analysis, digitizing, and report preparation.

Ms. Walker has over 25 years of experience conducting wetland delineations and functional assessments, and coordinating agency approvals of state and federal wetland permits. Ms. Walker has received training in the USACE Arid West and Western Mountains, Valleys and Coast Regional Supplements, and the Oregon Rapid Wetland Assessment Method. She has been managing and conducting LWIs for over 20 years, and has both a depth and breadth of wetland inventory experience. Inventory areas she has worked on include the cities of Ashland, Hillsboro, Lakeside, La Grande, Tigard, Tualatin, Stayton, and Wilsonville, as well as five cities for the Lane Council of Governments (LCOG): Adair Village, Harrisburg, Mill City, Monroe, and Scio. Ms. Walker understands wetland permitting and regulations, and she works collaboratively with clients, team members, and agency personnel to resolve issues and provide solutions that are easily attainable.

Clare Kenny, Wetlands Scientist, B.S., PWS

Responsibilities: With support from the project team, Ms. Kenny led the fieldwork effort and designed the LWI geospatial database based on OAR. She completed digitization, the OFWAM assessment, and report preparation. Ms. Kenny also led the public open house meetings for the project.

Ms. Kenny has over 11 years of environmental consulting experience in the United States and overseas, including 6 years of specialization and local trainings in wetland and waterbody assessment and botanical surveys. Continuing education workshops have included a number of regional supplement trainings for the USACE wetland manual, the Oregon Rapid Wetland Assessment Protocol, the Washington Wetland Rating System, the Oregon Stream Duration Assessment Method, National Environmental Policy Act (NEPA), and geographic information system (GIS). Ms. Kenny additionally has expertise with habitat mapping, invasive species surveys, threatened and endangered species surveys, restoration monitoring, and associated reporting. She understands wetland reporting and permit application processes and is proficient using ArcGIS for large-scale data collection and analysis.

Taya MacLean, Botanist/Wetlands Scientist, M.S., B.S.

Responsibilities: Taya assisted with fieldwork, wetland data entry, and wetland data quality assurance/quality control review.

Ms. MacLean has over 15 years of experience conducting botanical studies, habitat mapping, and wetland delineations, and plays an integral role on SWCA's wetland and wetland inventory team. In continuing her education to focus upon Pacific Northwest vegetation and wetland communities, Ms. MacLean regularly attends local botanical workshops and trainings on topics ranging from plant identification and management, to vegetation and habitat mapping, to rapid wetland functional assessment tool trainings. Her on-the-ground experience is diverse and includes the Lower Columbia River Estuary Partnership land cover mapping project and the LCOG Five City LWI. She has conducted vegetation monitoring at vernal pool and wetland mitigation sites for Roseburg Forest Products, the Oregon Parks and Recreation Department, and a variety of other clients throughout southern Oregon.

Catherine Smith, GIS and Mapping Specialist, B.A.

Responsibilities: Catherine built and maintained the LWI geodatabase, sourced reference data, and prepared base and final report maps for the project.

Ms. Smith is a GIS specialist with 21 years of experience in GIS support for NEPA documents, wetland delineations, and vegetation inventory projects. She uses Esri ArcGIS applications to support and help solve natural resource management and planning issues. Ms. Smith has coordinated the GIS involvement for extensive environmental impact statement and environmental assessment projects, including some for the National Park Service, Bureau of Land Management, and U.S. Forest Service. She also has experience with aerial photography/satellite imagery interpretation and classification using ERDAS Imagine software.

Chris Moller, GIS and Remote Sensing Specialist, B.S.

Responsibilities: Provided GIS and remote sensing support to the project team.

Mr. Moller has 15 years of technical experience in GIS and remote sensing as well as natural resources areas. His primary areas of expertise are land cover and land use mapping, wetland interpretation, GPS data collection, and associated GIS analysis. His background in the natural sciences allows him to work with landscape ecologists, botanists, fisheries scientists, restoration scientists, wetland scientists, and cultural resources specialists to gather, analyze, and display data. He also contributes to the development of new methods to answer environmental consulting questions and solve problems. Mr. Moller is familiar with current remote sensing techniques, satellite and aerial imagery manipulation, and accuracy assessment methods. He has used several types of satellite and aerial imagery as well as LiDAR data, and is proficient with different imagery analysis software for interpretation of imagery and classification. He is also practiced in current techniques related to land cover and land use classification as well as change detection.

Appendix H

Example Landowner Letter

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CITY OF MEDFORD
PLANNING DEPARTMENT

Date of Notice: March 11, 2015 Contact: Carla Paladino

Informational Meeting
Medford Local Wetland Inventory Project for Urban Reserve

You are receiving this invitation because you own property within the City of Medford's Urban Reserve and preliminary data indicates the possible presence of wetlands on your property.

Wednesday, March 18, 2015
5:00 p.m. – 7:00 p.m.
(Short Presentation starts at 5:15 p.m.)

Carnegie Building
413 W. Main Street, Top Floor

Scope of Project: The City of Medford is about to conduct a Local Wetland Inventory (LWI) in the Urban Reserve. The City is required by Oregon law (Statewide Planning Goal 5) to identify and assess wetlands in order to update its Comprehensive Plan and meet requirements associated with expanding the City's Urban Growth Boundary. The City is requesting your participation in order to gather the most accurate information possible about the location and quality of wetlands within these areas. From preliminary data, part of your property may have wetland characteristics, contain part of a stream or drainage way, or may be located next to such a feature.

The City has hired SWCA Environmental Consultants, an environmental consulting firm to conduct the Local Wetland Inventory (LWI) and provide the technical expertise for the project. The LWI will provide useful planning information both for property owners and the City.

Why attend? The informational meeting will help explain the LWI project. Staff from the Oregon Department of State Lands (the state agency that sets wetland inventory standards), SWCA Environmental Consultants, and the City will be in attendance. After a brief presentation, staff will be available to answer questions and maps will be on display for the benefit of the audience.

We Need Your Help! The City is requesting your participation in order to gather the most accurate information possible about the location and quality of wetlands within the Medford Urban Reserve. While aerial photography, soil maps, and other information will also be used in this study to locate and map wetlands, for the best accuracy we would like your permission for SWCA to walk on the property and briefly study the vegetation and soils. **The consultant will not come onto your property without your consent. Therefore, we request that you please sign the "Permission to Access" form and mail it back by March 25th**. Otherwise, please bring the signed sheet with you to the informational meeting.

If you consent, the site visit will occur between the end of March through the end of April of this year. It would take place on a weekday and in most cases would not last longer than 30 minutes. When the consultant visits your property, he/she may dig a few small test holes (1 ft. wide by 1.5 ft. deep) to help identify wetland soils. The consultant will fill these holes back in when finished. No gardens or lawns will be disturbed. Although your presence is not necessary, SWCA will be flexible in working with you on any special arrangements that you may require in order to accommodate schedules, pets/animals etcetera.

Who do I contact? Questions can be directed to the contact listed above at 541-774-2380, or by visiting the Planning Department in person. The Planning Department is on the second floor of the Lausmann Annex, 200 S. Ivy Street and is open from 8 a.m. to 5 p.m. weekdays.

Sincerely,

signed

James E. Huber, AICP, Planning Director
City of Medford

Enclosure: Permission to Access form

Permission to Access

Property Owner Consent Form

I understand that SWCA Environmental Consultants, an environmental consulting firm, has been contracted by the City of Medford to conduct a Local Wetland Inventory (LWI). In order to accurately determine the presence or location of a wetland, staff from SWCA needs to enter onto my property. By signing this form, I grant the consultant permission to access my property for the purposes of this inventory.

Map and Tax Lot(s): _____

Street Address: _____

Print Name: _____

Signed: _____ Date: _____

Should the consultant call first to make any special arrangements for access?

- ☐ No
- ☐ Yes Phone: _____ Best time to call_____

Please return this form by March 25th or bring it with you to the informational meeting.

Thank you.