PUBLIC MEETING

CITY OF ALBANY
PLANNING COMMISSION
City Council Chambers, 333 Broadalbin Street SW
Monday, June 1, 2009
5:15 p.m.

AGENDA

1. CALL TO ORDER (Chair Faller)
2. PLEDGE OF ALLEGIANCE TO THE FLAG
3. ROLL CALL
4. GOAL 5 REPORT
5. ACTIVITY UPDATE
6. NEXT PLANNING COMMISSION MEETING DATE: **JUNE 15, 2009**.
7. ADJOURN

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The location of the meeting/hearing is accessible to the disabled. If you need special accommodations to attend or participate, please notify the Human Resources Department in advance by calling 917-7500.

City of Albany Web site: www.cityofalbany.net

TO: Albany Planning Commission

VIA: Greg Byrne, Community Development Director
Don Donovan, Planning Manager

FROM: Heather Hansen, Planner

DATE: May 22, 2009, for the June 1, 2009, Planning Commission

SUBJECT: Completion of Periodic Review-Goal 5 Technical Phase: Consultant's Presentation of Technical Report; Discussion of Next Steps in Implementation Phase

Action Requested: None – Review and Discussion

Background: Oregon's land use planning program addresses 19 statewide planning goals. State law requires each city to adopt a comprehensive plan and implementing codes that are consistent with the statewide planning goals.

Periodic Review & Goal 5: Periodic review is a process for local governments to examine, and as necessary, update their comprehensive land use plans and implementing codes. The City is currently under periodic review, which began in 1997. The City has an approved work program that includes mandatory tasks required to complete periodic review. The work program requires us to address Goal 5 by inventorying wetlands, riparian corridors, and wildlife habitat inside the City's urban growth boundary (UGB), identifying which resources are significant, and adopting measures to protect the significant resources.

Multiple Government Responsibilities: The vast majority of significant Goal 5 resources overlap in or along the creeks, rivers, and lakes inside the City's UGB. Protection of these Goal 5 resources directly relates to other municipal government responsibilities, such as floodplain management, stormwater quality/management, buildable land supply, drinking water supply, parks and recreation, economic vitality, health and safety, and livability.

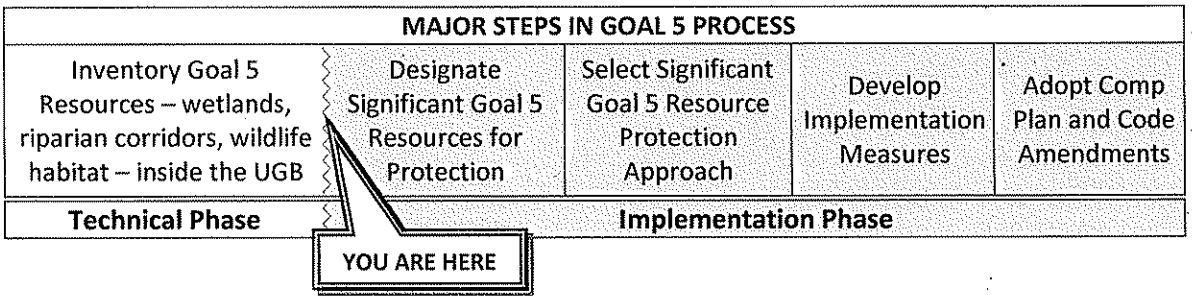
Balancing Preferences & Priorities: Some community members feel strongly that the City should protect our natural resources beyond the minimum requirements of Goal 5, while others feel just as strongly that the City should do the minimum possible to comply with Goal 5. Ultimately, the City Council must decide how to balance competing points of view with multiple government responsibilities and public benefit.

Complying with the requirements of Statewide Planning Goal 5 by protecting significant resources demands thoughtful consideration of the associated benefits and costs, and opportunities and challenges, both to individuals and the community as a whole.

Benefits/Opportunities: Beyond their own intrinsic value, high value/high functioning natural resources provide a variety of societal benefits. Examples of these include: regulation of river flow and groundwater levels; purification of air and water; provision of drinking water; climate control; waste absorption and breakdown; thermal regulation; nutrient cycling; recreation, education, research and spiritual opportunities; and aesthetic amenities.

Costs/Challenges: Many of the significant Goal 5 resources inside the UGB are currently zoned as Open Space, which limits potential development already. The Federal Government and State of Oregon already regulate development activities in wetlands and waterways. Additional development restrictions and requirements may increase development costs, decrease the amount of buildable land inside the UGB, restrain redevelopment potential of developed properties, and reduce the development area of individual properties.

Consultant's Report-Completion of Technical Phase: The consultant's report (see attached) represents the completion of the technical phase of Goal 5. It includes an update of the previously completed wetland and riparian corridor inventories, a more comprehensive look at wildlife habitat, and recommendations for designating "significant" Goal 5 resources.



Next Steps-Implementation Phase: During the implementation phase, the City will need to designate the significant resources and develop measures to protect them. The following schedule and activities are proposed to complete our Goal 5 requirements:

Meeting/Milestone	Description
June 10th – City Council	Consultant's overview of resource inventory update; Resolution instructing staff to begin the implementation phase (per DLCD grant)
July 20th – Joint Planning Commission/ City Council Work Session	Implementation phase kickoff – Review consultant's recommendations and options for protection of Goal 5 resources, including pros and cons; Discuss information and process for planned Open House
Mid August – Open House	Consultant presentation; Information stations
Mid August – Goal 5 Implementation Team	Meeting of interdepartmental team to discuss potential policy and code amendments to implement Goal 5
Early September – Public Forum/Roundtable	Staff presents draft recommendations based on consultant's report and recommendations, NRAC report, public input, and Goal 5 Implementation Team input; Roundtable discussions
Late September – Joint Public Meeting	Staff presents final recommendations, including input from Public Forum; City Council motion on how staff should proceed
Late September – Goal 5 Implementation Team	Meeting of interdepartmental team to develop policy and code amendments to implement Goal 5
October – Planning Commission Public Hearing	Review Comprehensive Plan and code amendments; Make recommendation to City Council
October – City Council Public Hearing	Review Comprehensive Plan and code amendments; Ordinance to adopt amendments

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Attachment: *City of Albany Goal 5 Significant Natural Resources: Technical Report, Pacific Habitat Services, May 20, 2009*

City of Albany
Goal 5 Significant Natural Resources

Technical Report

Prepared for

City of Albany
Albany, Oregon

Prepared by

Pacific Habitat Services, Inc.
Wilsonville, Oregon
(503) 570-0800

May 21, 2009

City of Albany
Goal 5 Significant Natural Resources

Technical Report

Prepared for

City of Albany Community Development Department
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May 21, 2009

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Figure 2. Fish-Bearing Lakes, Rivers, and Streams

Figure 3. Riparian Inventory – Safe Harbor Method

Figure 4. Riparian Inventory – Urban Riparian Inventory & Assessment Guide Method (URIAG)

Figure 5. Riparian Inventory – Effective Shade Method

Figure 6. Wildlife Habitat

1.0 INTRODUCTION

As part of the Department of Land Conservation and Development's (DLCD) periodic review requirements, the City of Albany is addressing significant natural resources as defined by Statewide Planning Goal 5, Oregon Administrative Rule (OAR) Section 660, Division 23. Goal 5's objective is to "protect natural resources and conserve scenic, historic and open space resources for present and future generations." The process requires the City to inventory Goal 5 resources (i.e. riparian corridors, including water and riparian areas and fish habitat; significant wetlands; and significant wildlife habitat) and then adopt programs protecting those resources.

The inventory of wetlands and riparian corridors started in the early 1990s. The first inventory was conducted to determine the location of wetlands within the City's largely industrially-zoned area in the southern portion of the City. Since that time, Pacific Habitat Services, Inc. (PHS) has conducted inventories throughout most of the City's Urban Growth Boundary (UGB). All of the inventories were approved by the Oregon Department of State Lands (DSL).

Once the inventory portion of the Goal 5 process for wetlands and riparian areas was complete, the City embarked on updating its policies protecting natural resources. To assist in this process, in September 2001, the City Council appointed a Natural Resources Advisory Committee (NRAC). The NRAC's task was to develop recommendations on how City policies can be updated to protect Goal 5 resources. The report summarizing their recommendations was completed in November 2003. Their recommendations are listed below.

- Enact Goal 5 protection for Locally Significant Wetlands, other wetlands located within floodplains and all fish-bearing rivers, lakes, and creeks
- Apply safe harbor protection for significant wetlands.
- Designate all fish-bearing streams and rivers as significant riparian resources.
- Use a fixed width riparian zone based on the Site Potential Tree Height method.
- Measure the width of riparian areas from the mapped edge of water, not the top of bank.
- Manage riparian areas for the long-term sustainable functioning of natural processes that define the riparian corridor.
- Guard the physical processes that shape floodplains and channel migration zones.
- Use riparian areas to buffer the water resource from the effects of urbanization.
- Strive for a mature multi-layered forest of native species in riparian areas.
- Encourage restoration of riparian functions along drainageways that are not significant riparian corridors.
- Implement stormwater Best Management Practices to address non-point pollution.

Following the completion of the NRAC report, the City Council put the project on hold due to concerns about a pending property rights ballot measure and a takings case before the Oregon Supreme Court. Around the same time, Oregon Senate Bill 920 (2003) passed and Goal 5 was considered an optional periodic review task. In 2008, DLCD clarified that the City's Goal 5 periodic review tasks are still mandatory, and encouraged the City to apply for a technical assistance grant to complete the process.

The City was awarded the grant and in January, 2009, the City hired PHS to complete the determination of Goal 5 resources, including significant wildlife habitat. A summary of the work to be conducted by PHS under the contract is as follows:

- Review existing data and determine where gaps exist
- Review changes to significant wetlands since the inventories were completed and update the significance determinations
- Conduct a wildlife habitat assessment and determine significant wildlife habitat areas
- Review changes to riparian vegetation along all fish-bearing streams and update the inventory where necessary
- Conduct shade modeling along all fish-bearing streams and determine the effective shade widths
- Prepare maps showing the location of all potentially significant resources
- Outline options for protection of significant Goal 5 resources, including the recommendations in the NRAC report

This report presents the results of the study. Section 2 describes the process used to inventory wetlands and update the wetlands information given the span of time since the completion of the inventories. Section 3 describes options for designating riparian corridors within the City's UGB. Section 4 describes the results of a wildlife assessment conducted throughout the UGB and the designation of significant wildlife habitat. Section 5 summarizes the findings of the study and includes recommendations for designating significant Goal 5 resources. Section 6 summarizes next steps in the process for completing Goal 5.

2.0 SIGNIFICANT WETLANDS

2.1 Inventorying Wetland Location

Since 1989, Oregon has had a process to inventory wetlands and comply with Statewide Planning Goal 5. The Oregon Department of State Lands (DSL) established Local Wetlands Inventory (LWI) standards and guidelines under ORS 196.674. An approved LWI replaces the National Wetlands Inventory and is incorporated into the statewide wetlands inventory. An LWI is an inventory of all wetlands (greater than 0.5 acre in size) within a local jurisdiction using the standards and procedures of OAR 141-86-0180 through 141-86-0240.

In Oregon, wetlands and water resources are regulated by DSL under the Removal-Fill Law (ORS 196.800-196.990) and by the US Army Corps of Engineers through Section 404 of the Clean Water Act. Wetland*s* are defined as "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" (DSL, 2001). Wetland boundaries are identified using the *Wetland Delineation Manual Technical Report Y-87-1* (Environmental Laboratory, 1987) and the *Western Mountains, Valleys and Coast Region* regional supplement to the 1987 Manual. These manuals define wetlands as requiring indicators of hydric soils, a dominance of hydrophytic vegetation (i.e. vegetation that is adapted to growing in saturated soils), and wetland hydrology.

Wetlands are generally transitional between uplands and areas that have permanent open water. The wetland may occupy a position where the groundwater table remains at or near the surface for an extended period during the growing season; however, surface inundation may or may not be present. Many of the wetlands throughout the UGB are seasonally saturated or inundated. Vegetation varies depending on the extent of disturbance.

2.2 Albany's Local Wetland Inventory Results

Between 1992 and 2001, the City conducted four LWIs. These LWIs cover most of the UGB. The developed city center was not inventoried for wetlands as few were perceived to be present. The four LWIs conducted by PHS are referred to as the South Industrial; East I-5; North Albany; and the Oak Creek, Calapooia River, and Willamette River inventories. All of these inventories were approved by DSL.

PHS found the character of the wetlands varied depending on land uses and the dominant plant community of each wetland. Agricultural or farmed wetlands, which occur in the lesser developed areas of the UGB, obviously have been influenced by farming or grazing activities, and are generally dominated by grasses and forbs. Forested wetlands in the City are generally dominated by Oregon ash (*Fraxinus latifolia*), although red alder (*Alnus rubra*), black cottonwood (*Populus trichocarpa*), and western red cedar (*Thuja plicata*) are often present. Scrub/shrub dominated wetlands generally include saplings of the above species, along with Douglas' hawthorn (*Crataegus douglasii*), clustered rose (*Rosa pisocarpa*), red-osier dogwood (*Cornus stolonifera*), Douglas' spiraea (*Spiraea douglasii*), and willows (*Salix* spp.). Emergent wetlands are dominated by herbaceous species such as sedges (*Carex* spp.), rushes (*Juncus* spp.), common camas (*Camassia quamash*), buttercups (*Ranunculus* spp.), and wetland grasses, such as meadow foxtail (*Alopecurus pratensis*), reed canarygrass (*Phalaris arundinacea*) and colonial bentgrass (*Agrostis tenuis*).

The following table summarizes the acreage and types of wetlands found within each of the inventory areas.

Table 1 Summary of Acreage by Wetland Type in Each Inventory

Inventory Area	Cowardin Classification (acres)			
	PEMf	**PEM**	**PSS**	**PFO**
North Albany	56.22	50.02	3.93	1.8
East I-5	316.43	71.43	0.05	42.85
Oak/Calapooia/Willamette	455.41	346.02	2.35	172.34
South Industrial	171.08	14.37	0.00	16.30
Total	**999.14**	**481.84**	**6.33**	**233.29**

PEMf Palustrine emergent, farmed
PEM Palustrine emergent
PSS Palustrine scrub-shrub
PFO Palustrine forested

Based on the results of the inventories, the majority of wetlands are farmed agricultural areas located east of I-5 and south of Oak Creek. There are relatively large areas of forested wetlands, primarily in the Oak Creek and Calapooia floodplains.

2.3 Defining Locally Significant Wetlands

As defined by Goal 5, the first step in determining whether a wetland is significant is assessing its quality using DSL's adopted *Oregon Freshwater Wetland Assessment Methodology* (OFWAM) (Roth et al. 1996 ORS 197.279(3) (b)). OFWAM does not assign a numeric ranking to the wetlands, but does determine the relative quality of a wetland by determining six wetland functions and three wetland conditions. All the wetlands inventoried in the UGB were assessed using OFWAM. The results of the assessments are included in the appendices of each LWI report.

The functions and conditions assessed by OFWAM are as follows:

Wetland Functions	Wetland Conditions
• Wildlife habitat	• Sensitivity to Future Impacts
• Fish habitat	• Enhancement Potential
• Water Quality	• Aesthetic quality
• Hydrologic control	
• Education	
• Recreation	

Once the quality of the wetlands were assessed using OFWAM, specific criteria were applied to determine whether the wetlands are significant. The criteria were adopted by DSL on September 1, 1996 pursuant to ORS 197.279(3)(b).

The significance criteria are divided into three sections, as described in the following table.

Table 2 Criteria for Determining Goal 5 Locally Significant Wetlands

***Exclusions*: A wetland cannot be designated as significant if the answer to any of the criteria below is "Yes".**
1. Is this wetland artificially created entirely from upland and: **a.** created for the purpose of controlling, storing, or maintaining storm water **b.** is used for active surface mining or as a log pond **c.** is a ditch without a free and open connection to natural waters of the state **d.** is less than 1 acre and created unintentionally from irrigation or construction **e.** created for the purpose of wastewater treatment, cranberry production, farm watering, sediment settling, cooling industrial water, or a golf hazard **2.** Is the wetland or portion of the wetland contaminated by hazardous substances, materials or wastes as per the conditions of ORS 141-86-350 1(b)

Table 2, continued

***Mandatory Locally Significant Wetland Criteria*: A wetland is locally significant if "Yes" is the answer to any of the criteria below.**
1. Does the wetland provide *diverse wildlife habitat*? **2.** Is the wetland's *fish habitat function intact*? **3.** Is the wetland's *water quality function intact*? **4.** Is the wetland's *hydrologic control function intact*? **5.** Is the wetland less than 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) and is the wetland's *water quality function intact, or impacted or degraded*? **6.** Does the wetland contain a rare plant community? **7.** Is the wetland inhabited by any species listed federally as threatened or Endangered, or state listed as sensitive, threatened or endangered? **8.** Does the wetland have a direct surface water connection to a stream segment Mapped by ODFW as habitat for indigenous anadromous salmonids and is the wetland's *fish habitat function intact, or impacted or degraded*?
***Optional Locally Significant Wetland Criteria*: local governments may Identify a wetland as significant if "Yes" is the answer to the criteria below**
1. Does the wetland represent a locally unique native plant community and Provides *diverse wildlife habitat or habitat for some species* or Has a *intact, or impacted or degraded fish habitat function* or Has a *intact, or impacted or degraded water quality function* or Has an *intact, or impacted or degraded hydrologic control function*. **2.** Is the wetland publicly owned and used by a school or organization and Does the wetland provide *educational uses*?

One important criterion for determining significant wetlands is whether a wetland is less than 1/4 mile from a water body listed by Oregon Department of Environmental Quality (DEQ) as water quality limited (i.e. on the 303(d) list) and its water quality function is *intact, or impacted or degraded* according to OFWAM. Since the completion of the inventories, DEQ updated their designation of 303(d) listed streams within the City. The following table summarizes the 303(d) list for these streams.

Table 3 Water Quality Limited Streams in Albany's Urban Growth Boundary

Name	Listed Parameter
Willamette River (Santiam River to Calapooia River)	• Biological criteria • Temperature • Bacteria • Toxins
Calapooia River (Mouth to Brush Creek)	• Bacteria • Temperature
Oak Creek	• Bacteria • Temperature

As part of this study, PHS reviewed all of the wetland locations and their proximity to 303(d) listed streams. Due to the new listing, 47 additional wetlands are now considered to be significant. A list of these wetlands is included in the table below.

Table 4 List of Added Locally Significant Wetlands that are within 1/4 mile from a water body listed by DEQ as a water quality limited water body (303(d) list) and is the wetland's water quality function intact, or impacted or degraded.

Wetland Code	Size (acres)	Cowardin Classification (acres)
CAL-1A	0.47	PEM
CAL-1B	0.31	PEM
CAL-1C	0.08	PEM
CAL-1D	0.32	PEM
CAL 1E	0.17	PEM
CAL-5	0.06	PEM,PSS
CAL-11B	0.49	PEM,PSS
CAL-12	1.9	PEM
CAL-14A	0.81	PEM,PEMF
CAL-16	0.24	PEM
CAL-17A	0.92	PFO
CAL-17Bf	1.3	PEMF
CAL-17Cf	1.22	PEMF
CAL-17D	0.37	PEM
CAL-18	0.2	PEM
CAL-21	0.21	PEM,PSS
CAL-23f	0.69	PEMF
OAK-2	0.65	PEM
OAK-4	0.05	PSS
OAK-6A	0.3	PEM
OAK-6B	0.14	PEM
OAK-7B	0.96	PEM
OAK-11H	0.29	PEM
OAK-11Lf	1.04	PEMF
OAK-11M	0.15	PFO
OAK-12	0.31	PUB
OAK-16f	3.46	PEMF
OAK-19Bf	0.7	PEMF
OAK-19Ff	3.65	PEMF
OAK-20f	0.7	PEMF
OAK-21f	2.96	PEMF
OAK-26Df	2.62	PEMF
OAK-32Bf	11.14	PEMF
OAK-32Cf	52.57	PEMF
OAK-32D	1.87	PEM,PUB
OAK-32Ef	27.3	PEMF
OAK-34A	0.62	PEM
OAK-34B	0.04	PEM

Wetland Code	Size (acres)	Cowardin Classification (acres)
OAK-41Df	5.9	PEMF
OAK-41E	2.77	PEM
OAK-41Ff	1.12	PEMF
OAK-41Gf	2.65	PEMF
OAK-42f	1.76	PEMF
OAK-46f	0.46	PEMF
OAK-47Af	26.25	PEMF
OAK-48Af	0.74	PEMF
OAK-49f	9.25	PEMF

In addition to the designation of locally significant wetlands using the State's criteria, the NRAC recommended Goal 5 protection for wetlands that do not meet the criteria, but that are located in the 100-year floodplain outside the riparian corridor and could be restored to provide long-term water quality and flood storage values to the riparian area.

PHS reviewed wetlands located within the floodplain that were not designated as locally significant to determine whether their designation was warranted. Based on our review, the only wetland that we felt warranted a new designation of locally significant is OAK-26Cf. The portion of this wetland within the 100-year floodplain is now designated as locally significant (new code OAK-26Cfa) and the portion outside remained non significant and received a new code of OAK-26Cfb. The portion within the floodplain is surrounded by significant wetlands and can be restored to provide flood storage and water quality functions.

Table 5 lists the wetlands that are located within the 100-year floodplain, but that do not meet locally significant wetland criteria.

Table 5 Wetlands not meeting the State's Locally Significant Wetland Criteria, but located within the 100 year floodplain.

100 Year Floodplain	Wetland LWI ID	Size (Acres)	Cowardin Classification (acres)
Burkhart Creek	BUR-1Cf	5.7	PEM
Burkhart Creek	BUR-3Af	2.45	PEMF
Burkhart Creek	BUR-6Cf	16.38	PEMF
Calapooia River	CAL-14Bf	0.21	PEMF, PFO
Cox Creek	COX-5	29.44	PEM,PEMF,PFO
Cox Creek	COX-7f	6.39	PSS
Cox Creek	COX-13f	11.33	PEM
Cox Creek	COX-15B	0.03	PEM
Cox Creek	COX-16A	0.03	PEM
Cox Creek	COX-16B	0.03	PEMF
Cox Creek	COX-16C	0.05	PEMF
Oak Creek	OAK-3A	0.08	PEMF,PEM
Oak Creek	OAK-3B	0.03	PEMF
Oak Creek	OAK-5Cf	6.55	PEM

100 Year Floodplain	Wetland LWI ID	Size (Acres)	Cowardin Classification (acres)
Oak Creek	OAK-7D	0.05	PEM
Oak Creek	OAK-11Bf	3.27	PEMF
Oak Creek	OAK-11E	2.17	PEM
Oak Creek	OAK-11Gf	0.36	PFO
Oak Creek	OAK-11L	1.04	PFO
Oak Creek	OAK-13	0.05	PFO
Oak Creek	OAK-14f	0.07	PEM
Oak Creek	OAK-15f	0.53	PEM
Oak Creek	OAK-17Af	0.02	PEM
Oak Creek	OAK-17Bf	0.32	PEM
Oak Creek	OAK-23Bf	6.77	PEM
Oak Creek	OAK-26Cf	68.76	PEM
Oak Creek	OAK-26Kf	2.83	PEM
Oak Creek	OAK-26Lf	11.68	PEM,PSS
Periwinkle Creek	PER-3Cf	0.06	PEM
Periwinkle Creek	PER-3Df	0.05	PEM,PEMF
Periwinkle Creek	PER-6Af	1.56	PEMF
Periwinkle Creek	PER-8Bf	0.81	PEM
Springhill	SPH-2A	0.11	PFO
Springhill	SPH-2B	0.09	PEMF
Springhill	SPH-2C	0.06	PEMF
Springhill	SPH-4	3.48	PEM
Thornton Lakes	DSL 99-270	0.02	PEM
Thornton Lakes	THO-1A	0.06	PEM
Thornton Lakes	THO-1B	0.14	PEM
Thornton Lakes	THO-2	0.05	PEM
Thornton Lakes	THO-3C	0.07	PSS
Thornton Lakes	THO-4D	0.07	PEMF
Thornton Lakes	THO-6	0.23	PEM
Truax Creek	TRU-6	0.19	PEM
Truax Creek	TRU-7	0.2	PEM
Truax Creek	TRU-10Af	1.35	PEMF
Truax Creek	TRU-12	0.16	PEM

PHS also reviewed permits that had been issued by DSL since the early 1990s to determine whether any completed or proposed fill activity had impacted wetlands to the point they no longer satisfied the locally significant wetlands criteria. Table 6 lists the locally significant wetlands that have or will be impacted by fill activities; however, none of these was sufficient to alter their designations as significant. These wetland impacts were mostly as a result of residential development, although the Greater Albany Public School impacted a small portion of a forested wetland dominated by Oregon ash. Although not due to a permit, a significant wetland located within the Cox Creek Watershed (COX-5) was removed from the LWI due to the fact this area is not jurisdictional by DSL (Dana Field, DSL, letter dated December 30, 1997).

Table 6 Wetlands that were designated as locally significant and which have received permits to impact from DSL

Wetland LWI	Cowardin Classification (acres)
HRS-10C	PEM
HRS-13	PEM,PSS
OAK -5Cf	PEMf
OAK-11A	PEM,PSS
OAK-11C	PFO,PUB,PEM
OAK-5A	PFO
OAK-5B	PFO
THO-4B	PEM
THO-4C	PEM
TRU-10G	PFO
TRU-14	POW,PEM

PEMf	Palustrine emergent, farmed	PSS	Palustrine scrub-shrub
PEM	Palustrine emergent	PFO	Palustrine forested
PUB	Palustrine unconsolidated bottom	POW	Palustrine open water

All wetlands, whether locally significant or not, are still regulated by DSL and most (those that are not hydrologically isolated) are regulated by the US Army Corps of Engineers. Table 7 is the complete list of Locally Significant Wetlands. Figure 1 shows the location of these wetlands.

Table 7 Complete list of Locally Significant Wetlands

Creek's watershed	Wetland Code	Size (acres)	Cowardin Classification
Burkhart Creek	BUR-1B	23.65	PFO
Burkhart Creek	BUR-1E	2.83	PFO
Burkhart Creek	BUR-2	4.27	PEM,POW
Burkhart Creek	BUR-5A	1.6	PFO
Burkhart Creek	BUR-5B	0.43	PFO
Burkhart Creek	BUR-6A	4.2	PFO, PSS, PEM
Burkhart Creek	BUR-8	2.34	WOS
Burkhart Creek	BUR-9A	0.72	PFO
Burkhart Creek	BUR-10B	1.37	PFO
Burkhart Creek	BUR-11	0.89	PEM
Cox Creek	COX 1E	0.17	PEM
Cox Creek	COX-6A	9.4	PSS,PFO,PEM
Cox Creek	COX-6B	2.71	PSS,PFO,PEM
Cox Creek	COX-6C	6.87	PEM,PSS,POW
Cox Creek	COX-6D	1.89	PSS,PFO,PEM
Cox Creek	COX-9	5.39	POW,PEM
Cox Creek	COX-14A	5.08	PEM
Cox Creek	COX-14B	3.78	PEM,PFO,PSS
Cox Creek	COX-15A	3.42	PEM,PSS,PFO
Cox Creek	COX-15C	0.33	PFO
Truax Creek	TRU-1	1.72	POW,PEM

Creek's watershed	Wetland Code	Size (acres)	Cowardin Classification
Truax Creek	TRU-2	0.73	PFO,PEM
Truax Creek	TRU-3A	1.6	PFO,PEM
Truax Creek	TRU-3B	0.99	PFO
Truax Creek	TRU-5	1.94	POW,PEM
Truax Creek	TRU-10B	1.68	PFO
Truax Creek	TRU-10G	5.29	PFO
Truax Creek	TRU-14	0.71	POW,PEM
Horseshoe Creek	HRS-7B	8.32	PFO,PEM
Horseshoe Creek	HRS-10C	0.36	PEM,PSS
Horseshoe Creek	HRS-11A	1.32	PEM,PSS
Horseshoe Creek	HRS-11C	7.53	PEM
Horseshoe Creek	HRS-13	0.48	PSS,PEM
Horseshoe Creek	HRS-14	1.06	PEM
North Albany-Groundwater	SPH-3	1.05	PFO
Thornton Lakes	THO-3A	1.95	PSS,PFO
Thornton Lakes	THO-3B	6.44	PEM,PSS
Thornton Lakes	THO-4A	1.21	PSS
Thornton Lakes	THO-4B	3.03	PEM
Thornton Lakes	THO-4C	2.07	PEM
Thornton Lakes	THO-4E	2.09	PEM,PAB
Calapooia River	CAL-1A	0.47	PEM
Calapooia River	CAL-1B	0.31	PEM
Calapooia River	CAL-1C	0.08	PEM
Calapooia River	CAL-1D	0.32	PEM
Calapooia River	CAL-2A	42.65	PEM,PSS
Calapooia River	CAL-2B	0.87	PEM
Calapooia River	CAL-3A	2.21	PFO,PEM
Calapooia River	CAL-3B	4.01	PFO
Calapooia River	CAL-3C	0.17	PFO
Calapooia River	CAL-4A	2.3	PFO,PSS,PUB
Calapooia River	CAL-4B	4.48	PFO/UMOSAIC
Calapooia River	CAL-5	0.06	PEM,PSS
Calapooia River	CAL-6	2.17	PEM,PFO,PSS
Calapooia River	CAL-7A	2.35	PEM,PUB
Calapooia River	CAL-7B	1.17	PFO
Calapooia River	CAL-8	1.81	PFO,PUB,PEM
Calapooia River	CAL-9A	2.49	PEM
Calapooia River	CAL-9B	0.7	PFO,PEM
Calapooia River	CAL-10A	7.65	PFO/UMOSAIC
Calapooia River	CAL-10B	13.41	PFO/UMOSAIC
Calapooia River	CAL-11A	2.67	PFO,PUB,PEM
Calapooia River	CAL-11B	0.49	PEM,PSS
Calapooia River	CAL-11C	1.11	PFO
Calapooia River	CAL-12	1.9	PEM
Calapooia River	CAL-13	3.76	PFO,PEM
Calapooia River	CAL-14A	0.81	PEM,PEMF

Creek's watershed	Wetland Code	Size (acres)	Cowardin Classification
Calapooia River	CAL-14C	1.52	PFO
Calapooia River	CAL-14D	6.53	PFO/UMOSAIC
Calapooia River	CAL-15	1.96	PFO
Calapooia River	CAL-16	0.24	PEM
Calapooia River	CAL-17A	0.92	PFO
Calapooia River	CAL-17Bf	1.3	PEMF
Calapooia River	CAL-17Cf	1.22	PEMF
Calapooia River	CAL-17D	0.37	PEM
Calapooia River	CAL-18	0.2	PEM
Calapooia River	CAL-19	2.05	PEM,PSS
Calapooia River	CAL-20	1.61	PEM,PSS
Calapooia River	CAL-21	0.21	PEM,PSS
Calapooia River	CAL-22	0.53	PEM
Calapooia River	CAL-23f	0.69	PEMF
Oak Creek	EN-A	13.15	PFO
Oak Creek	OS-C	3.15	PFO
Oak Creek	OAK-1A	23.91	PFO,PEM,PSS
Oak Creek	OAK-1B	3.01	PEM/UMOSAIC,PSS
Oak Creek	OAK-1C	2.1	PFO/U
Oak Creek	OAK-1D	0.71	PSS,PEM
Oak Creek	OAK-1E	2.33	PFO,PEM
Oak Creek	OAK-1F	7.73	PEM,PFO,PSS
Oak Creek	OAK-1G	2.61	PFO/U
Oak Creek	OAK-2	0.65	PEM
Oak Creek	OAK-4	0.05	PSS
Oak Creek	OAK-5A	1.89	PFO
Oak Creek	OAK-5B	11.78	PFO
Oak Creek	OAK-5Cf	6.55	PEMf
Oak Creek	OAK-6A	0.3	PEM
Oak Creek	OAK-6B	0.14	PEM
Oak Creek	OAK-7A	7.41	PEM
Oak Creek	OAK-7B	0.96	PEM
Oak Creek	OAK-7C	1.57	PEM,PFO
Oak Creek	OAK-8	0.28	PFO
Oak Creek	OAK-9	0.26	PFO
Oak Creek	OAK-10	0.41	PFO
Oak Creek	OAK-11A	3.07	PEM,PSS
Oak Creek	OAK-11C	26.15	PFO,PUB,PEM
Oak Creek	OAK-11D	8.15	PFO/U
Oak Creek	OAK-11Ff	1.89	PFO/U
Oak Creek	OAK-11H	0.29	PEM
Oak Creek	OAK-11I	6.48	PFO,PEM
Oak Creek	OAK-11J	1.75	PFO,PEM
Oak Creek	OAK-11K	8.79	PFO,PEM
Oak Creek	OAK-11Lf	1.04	PEMF
Oak Creek	OAK-11M	0.15	PFO

Creek's watershed	Wetland Code	Size (acres)	Cowardin Classification
Oak Creek	OAK-12	0.31	PUB
Oak Creek	OAK-16f	3.46	PEMF
Oak Creek	OAK-18	2.18	PFO,PEM
Oak Creek	OAK-19Bf	0.7	PEMF
Oak Creek	OAK-19E	3.64	PFO,PEM
Oak Creek	OAK-19Ff	3.65	PEMF
Oak Creek	OAK-20f	0.7	PEMF
Oak Creek	OAK-21f	2.96	PEMF
Oak Creek	OAK-22	5.07	PFO/UMOSAIC,PEM
Oak Creek	OAK-23A	7.53	PFO/UMOSAIC
Oak Creek	OAK-26A	11.92	PFO,PSS,PEM
Oak Creek	OAK-26B	40.97	PFO/UMOSAIC
Oak Creek	OAK-26Cfa	23.10	PEMF
Oak Creek	OAK-26Df	2.62	PEMF
Oak Creek	OAK-26F	6.31	PFO
Oak Creek	OAK-26G	1.22	PFO/UMOSAIC
Oak Creek	OAK-26H	3.17	PFO/UMOSAIC
Oak Creek	OAK-26I	3.93	PFO,PEM
Oak Creek	OAK-26M	1.22	PFO
Oak Creek	OAK-32A	80.27	PFO,PEM,PSS
Oak Creek	OAK-32Bf	11.14	PEMF
Oak Creek	OAK-32Cf	52.57	PEMF
Oak Creek	OAK-32D	1.87	PEM,PUB
Oak Creek	OAK-32Ef	27.3	PEMF
Oak Creek	OAK-34A	0.62	PEM
Oak Creek	OAK-34B	0.04	PEM
Oak Creek	OAK-36A	5.12	PFO
Oak Creek	OAK-40	6.7	PFO,PUB,PEMF
Oak Creek	OAK-41A	20.82	PFO,PSS,PEM
Oak Creek	OAK-41B	28.46	PFO/UMOSAIC
Oak Creek	OAK-41C	4.47	PFO/UMOSAIC
Oak Creek	OAK-41Df	5.9	PEMF
Oak Creek	OAK-41E	2.77	PEM
Oak Creek	OAK-41Ff	1.12	PEMF
Oak Creek	OAK-41Gf	2.65	PEMF
Oak Creek	OAK-42f	1.76	PEMF
Oak Creek	OAK-46f	0.46	PEMF
Oak Creek	OAK-47Af	26.25	PEMF
Oak Creek	OAK-48Af	0.74	PEMF
Oak Creek	OAK-49f	9.25	PEMF
Periwinkle Creek	PER-4	2.47	POW,PEM
Periwinkle Creek	PER-8A	0.84	PFO
Willamette River	WIL-1	10.29	PEM,PFO
Willamette River	WIL-2A	15.28	PEM,PFO
Willamette River	WIL-2B	2.41	PEM
Willamette River	WIL-2C	1.19	PEM,PFO

Creek's watershed	Wetland Code	Size (acres)	Cowardin Classification
Willamette River	WIL-3	4.48	PEM,PFO
Willamette River	WIL-4	8.15	PEM,PFO

2.4 Conclusions and Recommendations

Based on the updated results of this assessment, 159 out of the 372 inventoried wetlands meet the Goal 5 criteria of significance. These wetlands cover approximately 824 acres out of the 1,715 acres of wetlands within the UGB. Forty seven wetlands were added as part of this current study due to their close proximity to a 303(d) listed stream. One wetland was added due to its location within the 100-year floodplain. PHS recommends adopting these wetlands as Goal 5 resources. These wetlands have functions and values that benefit the City's natural environment and improve its livability.

3.0 RIPARIAN CORRIDORS

A "riparian area" is defined as the area adjacent to a river, lake, or stream, consisting of the area of transition from and aquatic ecosystem to a terrestrial ecosystem. A "riparian corridor" is a Goal 5 resource that includes the water areas, fish habitat, adjacent riparian areas, and wetlands within the riparian boundary.

Albany has several perennial and intermittent streams, as well as two rivers and several lakes. It includes portions of the Willamette River, the Calapooia River, East and West Thornton Lake, Horseshoe Lake, Oak Creek, Periwinkle Creek, Truax Creek, Cox Creek, Burkhart Creek, Crocker Creek, and Cathey Creek.

DLCD requires that cities determine riparian corridors using either the safe harbor method or the standard method. The safe harbor method applies setbacks of either 50 feet or 75 feet depending on the volume of stream flow. As a standard method, PHS conducted riparian inventories for all waterbodies within the City using a methodology called the *Urban Riparian Inventory and Assessment Guide* (URIAG) (DSL 1998). This riparian assessment methodology was developed by PHS for DSL. A description of the methodology and the results of applying this methodology are included in the sections below.

For this current study, PHS also assessed riparian areas along all fish-bearing waterbodies using a computer model that PHS first developed for the City of Gresham and which has since been used for several jurisdictions. This model, which has been approved by DEQ and which is described in the sections below, determines the width of riparian vegetation needed to effectively shade a waterbody. This effective shade model can also be used as a method for determining riparian corridors for purposes of Goal 5 due to the fact that riparian areas provide multiple functions (e.g. flood attenuation, wildlife habitat, water quality treatment). The minimum riparian width under the effective shade method is 50 feet. The model may sometimes indicate that a narrower width is effective in shading a waterbody; however, due to the fact this study is focusing on Goal 5 resources and not specifically restricted to temperature, the minimum was set to 50 feet.

3.1 Fish-Bearing Streams, Rivers and Lakes

The NRAC recommended designating all fish-bearing streams and rivers as significant riparian resources. Goal 5 also requires that fish habitat be included in the inventory. The definition of fish bearing includes waterbodies with both native and introduced species. As such, the determination of riparian corridors under Goal 5 was based on all fish-bearing waterbodies within the City. Information on fish presence came from a 2001 fish survey and from http://www.streamnet.org/ which is a database of the latest sampling conducted by the Oregon Department of Fish and Wildlife and other data sources. The following summarizes the fish species sampled or known to occur in streams, lakes and rivers within the UGB.

Table 8 Fish Species in Albany's Rivers, Lakes and Streams

Native Fish		Introduced Fish	
Chinook salmon	Peamouth	Black Bullhead	Pumpkinseed
Chiselmouth	Redside shiner	Black Crappie	Smallmouth bass
Cutthroat trout	Speckled dace	Bluegill	Yellow bullhead
Dace species	Sandroller	Brown Bullhead	Yellow perch
Lamprey species	Sculpin species	Carp	Mosquitofish
Largescale sucker	Steelhead	Largemouth bass	
Mountain whitefish	Sucker species		
Northern pike minnow	Threespine stickleback		

The list of streams and lakes assessed for riparian protection under Goal 5 is below. Their location is shown on Figure 2:

- Willamette River
- Calapooia River
- Burkhart Creek
- Cathey Creek
- Cox Creek
- Crocker Creek
- Horseshoe Creek/Lake
- Oak Creek
- Periwinkle Creek
- Freeway Lakes
- Thornton Lakes
- Truax Creek

3.2 Safe Harbor Method

Goal 5 contains a "safe harbor" option for local jurisdictions allowing them to replace portions of the standard Goal 5 process with processes set forth in the rules for each of the listed Goal 5 resources. The safe harbor process for riparian corridors allows jurisdictions to impose a 50-foot setback from all fish-bearing lakes and streams and a 75-foot setback from all streams with average annual stream flow greater than 1,000 cubic feet per second (cfs) [OAR 660-023-0090(5)].

For Albany, only the Willamette River was determined to have an average annual flow of greater than 1,000 cfs. As such, this riparian area is 75 feet and all of the remaining fish-bearing streams and lakes are 50 feet. Figure 3 shows the safe harbor setbacks.

3.3 Standard Method - Urban Riparian Inventory and Assessment Guide

3.3.1 Methodology

The *Urban Riparian Inventory and Assessment Guide* (URIAG) was one method used to determine the riparian width on all fish-bearing streams and waterways. With URIAG, riparian corridors are broken into “reaches” with similar characteristics, such as vegetation patterns or land use. Each riparian reach has a right and left side, looking downstream. It relies on a combination of available knowledge, field observations, and best professional judgment. The methodology is comprised of a riparian inventory and a riparian assessment. The riparian inventory involves gathering and assimilating information pertinent to the project site, developing a base map, and completing the riparian characterization form.

The riparian characterization form includes a determination of the riparian width. The riparian width is measured from the edge of the water resource, typically either the top of a streambank or the outer edge of a wetland, lake, or pond. Riparian areas on both sides of a stream channel are assigned separate widths. The potential width of the riparian area is based on the dominant riparian tree species within 100 feet of the water resource. The height of the dominant tree species at maturity is used as a distance to define the outer riparian boundary. The height of the tree species at maturity is called the site potential tree height (SPTH).

SPTH is used as the potential riparian width because it represents a distance in which a tree can still affect the water resource (e.g. provide shade, provide organic material). Where riparian area trees have been eliminated by land-use activities, such as development, farming, or by natural causes, such as land slides, it may be necessary to extrapolate tree heights from a reference site. Although the riparian widths never exceed the PTH, they can be less than the PTH if impervious surfaces or permanent structures (e.g. buildings or roads) are inventoried within the SPTH.

As with the LWI, a part of the riparian inventory process is determining the quality of the riparian area. In URIAG this is accomplished by reviewing functions including water quality, flood management, thermal regulation, and wildlife habitat. The riparian assessment was completed by answering a series of questions for each function. Because certain elements or characteristics of a riparian area are more critical to its function, the answers are "weighted". The points are then totaled for each reach and for each function. The results indicate whether the functional integrity of each riparian area is high, medium, or low.

3.3.2 Results

Goal 5 does not establish specific criteria for determining significant riparian areas. Instead, local jurisdictions establish their own criteria based on the quantity and quality of the resource. In Albany, the NRAC determined that all riparian areas adjacent to fish bearing streams or lakes are significant.

Using URIAG, four tree species were determined to be the dominant native trees within riparian areas of the UGB. The majority of riparian vegetation was dominated by Oregon ash, with black cottonwood predominantly along the Willamette River and Oregon white oak common in sections along Oak Creek. The trees have the following potential tree heights. These riparian areas are shown on Figure 4.

Table 9 Potential tree heights of the four tree species determining riparian widths in the City's UGB.

Common Name	Botanical Name	Potential Tree Height/ Riparian Corridor Widths (feet)
Oregon ash	*Fraxinus latifolia*	75
Black cottonwood	*Populus trichocarpa*	120
Douglas fir	*Pseudotsuga menziesii*	120
Oregon white oak	*Quercus garryana*	60
Big leaf maple	*Acer macrophyllum*	90

The quality of the riparian corridors using URIAG indicate that most (91%) of inventoried riparian areas rate "high" for water quality functioning, because they filter the runoff from nearby land. Only 25% contain enough woody vegetation in flood prone areas to slow the velocity of floodwater, thereby diminishing the erosive forces of a flood. Over one-third (37%) of the riparian areas are rated "high" for thermal regulation due to good vegetation cover. Factors contributing to increased water temperatures include an absence of tall shade trees and the north-south orientation of many stream reaches. High quality wildlife is characterized by a multi-layered vegetation near streams, but less than one-half (44%) of Albany's riparian areas are vegetated to this extent.

3.4 Standard Method – Effective Shade Method

3.4.1 Methodology

As described above, Goal 5 does not provide a defined methodology that delineates the width of riparian areas if the standard inventory option is used. To provide additional options for the City, it was decided that another methodology be applied to determine whether alternative riparian widths could be legitimately used as a Goal 5 resource.

The methodology briefly described in this section is one that has recently been used by several jurisdictions in the Willamette Basin to comply with DEQ's Total Maximum Daily Loads (TMDL) requirements related to the temperature of water bodies in the Willamette Basin. Specifically, DEQ set allowable stream temperatures to reflect conditions needed to support the most sensitive beneficial uses of each watershed. DEQ determined that resident fish, aquatic life and salmonid spawning, rearing and migration are the most sensitive temperature-related beneficial uses. DEQ set the stream temperature standard to be 18°C (64.4^{o}F). This means that jurisdictions need to prove to DEQ they are lowering the temperature of their streams in order to comply with the TMDL and to benefit salmonids. The proof is in the form of planting riparian corridors to the minimum width necessary to effectively shade a waterbody.

To determine the effective shade widths, PHS created a computer model that compares summer conditions where a stream has direct radiation loading (sun) without riparian vegetation to summer conditions with completely vegetated riparian areas. The model uses direct normal radiation data recorded for the Albany region through the National Solar Radiation Database (1961-1990) and compares how much solar radiation reaches the stream based on stream orientation, slope angles and buffer widths. The effect of opposite bank vegetation on the stream loading ratios was also considered.

This model was applied to all of the fish-bearing waterbodies to determine an effective shade width. The most important function of riparian vegetation in the City is likely moderating water temperatures; however, vegetated riparian areas provide multiple functions. As such, although the focus of the computer modeling is on shade, the modeling is a valid way of determining Goal 5 significance.

3.4.2 Results

The modeling took into account solar radiation, stream aspect, the height of mature trees and the angle of adjacent slopes. The results indicate the widest buffers necessary to effectively shade a waterbody in the City are 75 feet (along the southern banks of all east-west oriented waterbodies). This width is due to the fact that in Oregon, the sun shines from the south and blocking solar radiation is most effective when trees grow along a southern bank. Conversely, the narrowest buffers are found along the northern bank of east-west oriented waterbodies. In some instances, the widths necessary to effectively shade a creek are less than 50 feet; however, we extended the minimum widths to 50 feet to match Goal 5's safe harbor and to take into account additional riparian functions. Figure 5 shows the riparian areas using the effective shade modeling.

3.5 Conclusion and Recommendations

PHS used three methods to determine riparian widths. Table 10 includes the range of widths available to the City for Goal 5 protection.

Table 10 The ranges of widths available from the three methods applied to all fish bearing waterbodies in the City.

Method	Range of riparian corridor widths
Safe Harbor	50 feet (all other waterbodies) - 75 feet (Willamette River)
Urban Riparian Inventory and Assessment Guide (URIAG)	60 feet (white oak) - 120 feet (cottonwoods and Douglas fir)
Effective Shade	50 - 75 feet (depending on the orientation of the stream)

The NRAC recommended the City use a fixed width riparian zone based on the Site Potential Tree Height method of URIAG and to measure the width of riparian areas from the mapped edge of water, not the top of bank.

Based on our review of potential riparian widths within the City's more urbanized center, the majority of the riparian areas are already developed: houses and impervious surfaces encompass much of the riparian corridors. It is likely that designating up to 120-foot wide riparian corridors (i.e. using the URIAG widths) within already developed areas will not result in additional riparian protection. Based on our observations and the results of this study, we recommend the widths in Table 11.

Table 11 Recommended widths for fish-bearing waterbodies in the City

Waterbody Name	Methodology	Riparian Corridor Width(s) (feet)
Burkhart Creek	Effective Shade	50 – 75
Cathey Creek	Safe Harbor	50
Calapooia River	URIAG	75 - 120
Cox Creek	Effective Shade	50 – 75
Horseshoe Creek	Effective Shade	50 – 75
Horseshoe Lake	Effective Shade	50 – 75
Oak Creek	URIAG	60 - 120
Periwinkle Creek	Effective Shade	50 – 75
Thornton Lakes	Safe Harbor	50
Truax Creek	Effective Shade	50 – 75
Willamette River	Safe Harbor	75

In addition, a more accurate method of measuring the point where riparian areas begin is by delineating the ordinary high water mark of each water body. Delineating ordinary high water is a method required by DSL and the Corps of Engineers whenever a delineation report is submitted by a property owner or developer seeking a jurisdictional determination from each agency.

4.0 SIGNIFICANT WILDLIFE HABITAT

4.1 Significant Wildlife Habitat - Safe Harbor Method

As with wetlands, Goal 5 has a safe harbor provision allowing jurisdictions to assess whether wildlife habitat is significant and, therefore a Goal 5 resource. The significance criteria are as follows:

> *(4) Local governments may determine wildlife habitat significance under OAR 660-23-040, or apply the safe harbor criteria in this section. Under the safe harbor, local governments may determine that "wildlife" does not include fish, and that significant wildlife habitat is only those sites where one or more of the following conditions exist:*
>
> > *(a) The habitat has been documented to perform a life support function for a wildlife species listed by the federal government as a threatened or endangered species, or by the state of Oregon as threatened, endangered, or sensitive species;*
> >
> > *(b) The habitat has documented occurrences of more than incidental use by a species described in subsection (a) of this section;*

(c) The habitat has been documented as a sensitive bird nesting, roosting, or watering resource site for osprey or great blue herons pursuant to OAR 527.710 (Oregon Forest Practices Act) and OAR 629-24-700 (Forest Practices Rules);

(d) The habitat has been documented to be essential to achieving policies or population objectives specified in a wildlife species management plan adopted by the Oregon Fish and Wildlife Commission pursuant to ORS Chapter 496;

(e) The area is identified and mapped by ODFW as habitat for a wildlife species of concern and/or as habitat of concern (e.g. big game winter range and migration corridors, golden eagle and prairie falcon nest sites, or pigeon springs).

To determine whether species matching the criteria are found in Albany, PHS obtained records from the Oregon Heritage Information Center (ORNHIC). The records requested were for all known sightings of sensitive, threatened, or endangered species within and two miles from the City's UGB. PHS obtained a similar list from the US Fish and Wildlife Service on species known to occur anywhere in Linn and Benton Counties. Additionally, PHS spoke with Oregon Department of Fish and Wildlife (ODFW) biologists to determine if the ORNHIC data missed any species. A complete list of species is included in the table below.

Table 12 ESA Species and Critical Habitat found within and two miles from the City of Albany's UGB.

Common Name	Scientific Name	Federal Status*	State Status*
Animals			
Bald eagle	*Haliaeetus leucocephalus*	None	LT
Marbled murrelet	*Brachyramphus marmoratus*	CH/LT	LT
Northern spotted owl	*Strix occidenatlis caurina*	LT/CH	LT
Streak horned lark	*Eremophila alpestris strigata*	C	SC
Fish			
Steelhead	*Oncorhynchus mykiss* Upper Willamette River, winter run Upper Willamette River, summer run	LT	SV
Chinook salmon	*Oncorhynchus tshawytscha* Upper Willamette River, spring run Upper Willamette River, fall run	LT	SC
Oregon chub	*Oregonichthys crameri*	PCH/LE	SC
Other Vertebrates			
Northern Pacific pond turtle	*Actinemys marmorata marmorata*	SOC	SC
Painted turtle	*Chrysemys picta*	None	SC
Oregon spotted frog	*Rana pretiosa*	C	SC
Other Invertebrates			
Fender's blue butterfly	*Plebejus icariodes fenderi*	CH/LE	None
Whulge checkerspot	*Euphydryas editha taylori*	C	None
Plants			
Bradshaw's desert parsley	*Lomatium bradshawii*	LE	LE
Golden paintbrush	*Castilleja levisecta*	LT	LE
Kincaid's lupine	*Lupinus sulphureus ssp. kincaidii*	CH/LT	LT
Nelson's checkermallow	*Sidalcea nelsoniana*	LT	LT
Water howellia	*Howellia aquatilis*	LT	LT

Common Name	Scientific Name	Federal Status*	State Status*
Willamette Valley larkspur	*Delphinium oreganum*	SOC	C
Peacock larkspur	*Delphinium pavonaceum*	SOC	LE
Willamette Valley daisy	*Erigeron decumbens var. decumbens*	CH/LE	LE

Source: ORNHIC 2009, USFWS 2009, and StreamNet 2009.
*Key to Federal and State Status Designations:
** Species identified in Thornton Lakes during survey conducted by Parks and Recreation Department

LE	Listed Endangered	C	Candidate for Listing
LT	Listed Threatened	SOC	Species of Concern
CH	Critical Habitat has been designated for this species	SC	Sensitive-Critical
SV	Sensitive vulnerable	PCH	Potential Critical Habitat

According to our research, in addition to listed salmonids, only two sensitive species are documented (i.e. have a specific location cited) recently as occurring within the UGB; the northern pacific pond turtle (i.e. western pond turtle) (*Actinemys marmorata marmorata*) and the painted turtle (*Chrysemys picta*). Both of these species are known to occur in Thornton Lakes. A brief description of the two turtles is provided below.

Northern Pacific Pond Turtle: The Northern Pacific pond turtle is currently neither a listed nor a candidate species; however, it is a federal species of concern, and listed as a sensitive-critical species by the State of Oregon. The pond turtle has been directly observed in Thornton Lakes (ORNHIC 2009 and Calapooia Watershed Council). The pond turtle's habitat consists mainly of streams, ponds, lakes, and some wetlands. Though much of their lives are spent in water, they need terrestrial habitats for nesting. They also may disperse via overland routes, and often overwinter on land. Pond turtles are commonly observed basking on fallen logs, rocks, floating vegetation, or even mud or sand banks, provided escape cover is nearby. Nesting takes place from May to mid-July, at which time the female excavates a cavity in upland soils with sparse vegetation cover.

Historically, the upland areas most suitable for nesting contain little canopy cover, such as white oak and conifers savannah, prairie, or pastureland. By contrast, overwintering turtles may use upland sites up to 0.3 mile from water, typically burrowing into deep leaf or needle litter in woodlands with up to 90% canopy cover (WDFW, 1999). A survey conducted by the Calapooia Watershed council reported pond turtle occurrences in East Thornton Lake.

Painted Turtle: The painted turtle is currently not listed, nor is it a candidate for federal listing; however the species is listed as a sensitive-critical species by the State of Oregon. The painted turtle is mainly aquatic, spending much of its life time in slow moving waters with a soft, muddy bottom and submerged logs.

Similar to the pond turtle, the painted turtle is commonly observed on logs basking in the sun. During mid to late summer mating occurs. Nesting occurs usually on drier land with soils composed of sand, silt, and clay. Typically, the nesting sites are open, sunny, and sparsely vegetated areas similar to the pond turtle nesting sites (WDFW, 1999). During the winter, painted turtles are rarely observed as they are usually hibernating at the bottoms of streams, lakes, ponds, or some wetlands. The Calapooia Watershed Council reported painted turtles in Thornton Lakes.

Other Species of Interest: PHS contacted Dr. Franc Isaacs, a biologist with Oregon State University studying bald eagles (*Haliaeetus leucocephalus)*, to determine whether any nests are known to occur in the Albany area. He provided documented nest sites, but none are within the UGB.

Red-legged frogs, a sensitive species, are likely found within the UGB, but their specific habitat locations have not been documented. They are also a species that is relatively common and does not require specific protection measures beyond reducing wetland impacts.

Osprey are known to nest within the UGB. Several nests are located close to the Willamette River within the riparian area. Osprey is not a species that is protected under the endangered species act nor is it considered to be sensitive. They are relatively common and can usually be found nesting along rivers and reservoirs. As this species is not sensitive, we felt they did not meet the criteria for safe harbor protection.

Under the safe harbor approach, jurisdictions do not need to consider fish as wildlife. As such, although listed salmonids are known to occur within the Willamette River, Calapooia River, Truax Creek, Periwinkle Creek, and Cox Creek, these waterbodies are not considered significant wildlife habitat. However, fish habitat was addressed as part of the riparian corridor designation process.

Based on our review of the safe harbor criteria, only Thornton Lakes (due to the presence of painted and pond turtles) satisfied the criteria and can be designated as significant wildlife habitat through the safe harbor approach.

4.2 Significant Wildlife Habitat – Standard Inventory Method

In addition to the safe harbor criteria, the City requested a more thorough review of wildlife habitat throughout the UGB. The UGB's vegetation Geographic Information System (GIS) layer was used to determine the location of all stands of trees greater or equal to five acres in size. This size limit was the same size used by the City of Corvallis when they addressed significant wildlife habitat. Five acres was also selected as a minimum size, because much of the territorial needs of even small forms of wildlife cannot be met with smaller areas.

4.2.1 Proposed Significant Wildlife Habitat Criteria

To conduct the standard inventory method, we developed a new set of criteria based on our experience in conducting wildlife assessments for other jurisdictions in the Willamette Valley and modifying the criteria used by the City of West Linn when they addressed significant wildlife habitat.

The criteria proposed for the City is listed below. The determination of whether a particular wildlife habitat is significant was based on whether at least one of the criteria was satisfied.

A habitat is significant if it:

- Is a forested stand that is greater or equal to 5 acres in size and receives a Wildlife Habitat Assessment score of 80 points or more;

- Provides habitat for a wildlife species listed by the Federal government as a threatened or endangered species or by the State of Oregon as a threatened, endangered, or sensitive-critical species;
- Provides a documented (by state or local resource agency) rookery for great blue herons or a bald eagle nest;
- Is documented to be essential to achieving policies or population objectives specified in a wildlife species management plan adopted by the Oregon Fish and Wildlife Commission; or
- Is identified and mapped by the Oregon Fish and Wildlife Department as habitat for a wildlife species of concern and/or as a habitat of concern.

4.2.2 Wildlife Habitat Assessment Methodology

In order to apply these criteria, it was necessary to conduct a Wildlife Habitat Assessment (WHA). Wildlife habitat values were determined using the WHA form (completed forms are in Appendix A). Variations of this form have been used throughout Oregon to address Goal 5 inventories.

The purpose of the form is to score habitat polygons based on components such as water, food and cover. For the purpose of this analysis, a habitat polygon only received a score for the water component if there was some form of water available on the site itself. Habitat polygons without a water component scored significantly lower than those that had available water. The food component was scored depending on the availability and variety of potential food sources for various guilds of birds and mammals rather than by counting specific types of foods.

The WHA forms generate a numerical score that can be used as an indication of habitat quality. Various aspects of the three primary habitat components, food, water and cover are scored in terms of quality, diversity and availability. These scores are then totaled for an existing habitat score. The highest possible score that could be achieved on the WHA form is 118. Habitat that scored between 0 and 39 were considered low quality, polygons that scored between 40 and 79 were considered of medium quality and sites that had scores from 80 to 118 were considered high quality.

Because access to the polygons was often limited to the established road systems, specific onsite observations of tree species, microhabitats or wildlife was generally not performed. Although the size of the habitat polygons was limited to five acres, several are in close proximity to each other and likely function as a single habitat patch. As such, several of the five-acre habitat polygons were combined.

This assessment included an aerial photographic review, on-site inspections (where allowed), and surveys from adjacent parcels. Observations on the habitat's vegetation composition, surrounding land uses, the presence of water, the presence of invasive plants, physical disturbance and connectivity to other habitats were noted. Any changes to the habitat polygons were drawn onto an aerial photographic and later digitized into a GIS layer.

4.2.3 Wildlife Habitat Assessment Results

Twenty seven (27) habitat polygons were assessed using the WHA form. Some of these polygons were a combined patchwork of individual tree groves at least five acres in size. Scores for the habitat polygons ranged from 20 to 71. None of the sites received higher scores due to the fact that many of them were disturbed. The disturbance was mostly a result of encroaching residential development. Almost all of the polygons had high levels of human activity associated with them including adjacent agriculture, maintained vegetation (e.g. parks), roads and houses. Many of the habitat polygons were isolated tree stands, which reduced the interspersion opportunities for wildlife. Each of the wetlands was designated according to their score with wildlife criteria description of low (0-40) medium low (40-45) and medium high (45-71). None of the sites were considered to be of high quality.

A brief description of each habitat polygon is presented below, and shown on Figure 6.

- #1 is located in the northeastern portion of the UGB west of Valley View. The stand consists of a mix of Douglas-fir and white oak. Numerous houses are interspersed in the polygon. There is very little understory vegetation. Due to the isolation of this polygon and lack of a water resource it received a relatively low score.
- #2 is located on the northeastern boundary of the UGB. A residential development makes up the southern boundary and an agricultural field makes up the northern boundary. There are several residences within the polygon. The tree stand consists of mature Douglas-fir with some young white oaks in the understory. English ivy is the dominant vegetation in the understory. Due to encroaching residential development and interspersion of residences, this polygon received a relatively low score.
- #3 is located near North Albany Park, which is a day-use facility with maintained lawns, picnic areas and play structures. The tree canopy is composed of mixed hardwoods, including oaks. As a significant portion of the polygon has maintained lawns the native understory is lacking. This polygon is not located in close proximity to water. Disturbance is medium high due to the park use. Due to the fact that this polygon is isolated by residential development from other polygons, is not associated with water, and is significantly disturbed this polygon scored relatively low.
- #4 is located to the north of Valley View and northwest of Horseshoe Lake. A mixed canopy of second growth Douglas-fir and hardwoods dominates this tree stand. There is limited access to water, food sources are relatively low, and disturbance is generally high from residential development. As such, this habitat received a low score.
- #5 is located to the west of Horseshoe Lake on a west facing slope east of Crocker Road. The polygon consists of a long narrow tree stand between agricultural land and residential development. The residential development is located to the west of the polygon. The stand includes mixed conifers (western hemlock and Douglas-fir) and mature hardwoods (big-leaf maple). The hardwoods are located primarily along the boundary of the polygon. This polygon received a relatively low score due to its isolation and distance from water resources.
- #6 is located to the southeast of Valley View and north of a large residential development west of Horseshoe Lake. Douglas-fir dominates this tree stand. The boundary to the east of the polygon includes a power line corridor. There is no access to water and residential

development is located along the perimeter of this habitat. This is a low scoring polygon due to the high disturbance, isolation from other polygons, and lack of a water resource.

- #7 encompasses a large area with an undefined boundary due to the high amount of residential developments. Most of the development consists of single family houses dispersed throughout the polygon. The northern slope of this area is dominated by second growth Douglas-fir trees while the southern slope is made up of mixed hardwoods (white oak and Madrone). Himalayan blackberry is the dominant vegetation in the understory. This polygon is a relatively low scoring due to the lack of a water resource end encroaching residential development.
- #8 includes Thornton Lakes and a narrow band of mature Douglas-fir trees along the perimeter of East Thornton Lake. The lake is a long narrow body of water (approximately one mile) that is bisected by North Albany Road. The majority of the shoreline consists of residential developments and boat docks. Areas of undeveloped land are found along portions of the western and south central shorelines. The narrow band of mature Douglas-fir trees is found on the southern shore of the eastern half of the lake. The lake has few other native trees. The lake provides food and habitat along the shores, which contributes to the habitat score of medium high for this polygon.
- #9 includes the Takena Landing Park area, west of Highway 20 and the Willamette River Bridge. This park is located on the northern bank of the Willamette River and includes a parking area and river access roads. An agricultural field is located on the south side of the polygon. The tree stand consists of a mixture of mature hardwoods. A patch of mature pines is found on the west end of the park. English ivy and Himalayan blackberry dominates the understory vegetation in portions of the park. This polygon is scored at medium high as a result of its proximity to the Willamette River.
- #10 is located on the southern bank of the Willamette River. This polygon is associated with a wetland within the floodplain of the Willamette River. The tree canopy is a hardwood mix composed of big-leaf maple and cottonwood. It is located adjacent to Bryant Park, but is generally undisturbed. It has good access to water and relatively good sources of food. Due to the proximity to water and availability of food this polygon received a score of medium high.
- #11 is also adjacent to Bryant Park and is bordered to the west by a large agricultural field. The trees are a mixed stand of hardwoods (cottonwood and big leaf maple) that appear to be associated with a small wetland. This polygon is scored at medium high due to its proximity to water and connectivity with Habitat Polygon #10.
- #12 is close proximity to the Calapooia River. This stand is entirely bordered by agriculture. The tree stand consists of mixed hardwoods. Due to the proximity of the Calapooia River and presence of a good source of food this polygon received a medium high score.
- #13 is located in the western portion of the UGB to the south of the Willamette River and to the east of the Calapooia River. Several wetlands were identified in this polygon. Residential development and agricultural land is intermixed throughout the polygon. Mixed hardwoods and conifers make up the tree stand. English ivy is prevalent in portions of the polygon. The Calapooia River is on its western edge and a residential development is on the east. Due to the complexity of this polygon and its close proximity to a water resource, this polygon received a medium high score.

- #14 is located in the southeastern portion of the UGB, west of Highway 99. A large residential development is located to the south of this polygon. This polygon is associated with a small wetland complex. The forest canopy is mixed hardwoods, with oaks, cottonwoods and willows. Due to the presence of residential development interspersed throughout the polygon it scored relatively low.
- #15 is a small stand of oak trees within the southwest section of the UGB. The understory appears is maintained. It is in close proximity to the Calapooia River and includes a wetland; however, due to its isolation and disturbance from residential development and tree removal, this polygon scored relatively low.
- #16 is located to the south of Habitat Polygon #15. A Target distribution center is located to the south of the polygon and the Calapooia River is located to the west. This polygon is associated with a significant wetland. The stand consists of mature oaks with a hawthorn understory. This polygon received a Medium high score due to the proximity to water resources.
- #17 is adjacent to Oak Creek, within the southern portion of the UGB. The habitat is intermingled with residential development, wetlands, and agricultural lands. Agricultural fields are located on the southern boundary with light industrial to the north. Due to its close association with Oak Creek this polygon received a medium high score.
- #18 is located south of Habitat Polygon #17 and to the west of Highway 99. This polygon is bordered entirely by agricultural lands and is isolated from other polygons. The tree stand consists of mixed hardwoods. Due to the lack of water resources this polygon received a relatively low score.
- #19 is located in the southern portion of the UGB along an intermittent tributary to Oak Creek and is associated with wetlands. This polygon consists of a long narrow stand of hardwoods. English ivy is prevalent in the understory in portions of this polygon. This polygon is bordered by agricultural fields. A raptor's nest was observed in the polygon during the survey.
- #20 is located in the southeastern portion of the UGB on the west side of I-5. A large residential development borders the polygon to the south while agricultural fields border the polygon to the north. The western portion of the stand has been removed. The stand consists of mature oaks, with little understory. Residential dwellings are present in proximity to the site contributing to the relatively low score of this polygon along with the lack of a water resource.
- #21 is located on the north side of the Freeway Lakes Park. The tree stand is a mix of hardwoods, including oaks and cottonwood. The understory has a well developed shrub layer. This polygon scored medium high, due to its close proximity to water and good availability of food sources.
- #22 encompasses a community park on the south bank of the Willamette River. This polygon is associated with a wetland. The park consists of paved roads, parking areas, picnic areas, walking trails, maintained lawns and a boat ramp. The tree canopy includes a stand of mature mixed hardwoods with an open understory (maintained lawn). The areas that are not maintained consist primarily of English ivy, reed canary grass and Himalayan blackberry. The park is located between the river and a neighborhood to the south. Due to the location of this site near a water feature this habitat received a medium high score.

- #23 is located on the southern bank of the Willamette River west of First and Second lakes. This polygon includes an elevated bench above the river and is associated with wetlands. A large residential development is present along the southern boundary. The stand consists of mixed hardwoods and conifers including white oak, willow, and big-leaf maple. This polygon received a medium high score because of its close proximity to the Willamette River.
- #24 is adjacent to Truax Creek, east of I-5. Mixed hardwoods dominated the overstory of this small polygon. English ivy is the dominant vegetation in the understory. Residential development is located within and encroaching on all boundaries of this narrow polygon, which contributes to the low score along with its isolation.
- #25 is a long narrow strip of trees along a tributary of Truax Creek in the northeast section of the UGB. An agricultural field is present on its south side. A residential house is located to the north. The canopy is made up of mixed hardwoods. Due to its isolation, this polygon scored relatively low.
- #26 is located to the south of Burkhart Creek and is associated with a significant wetland. The polygon consists of a long narrow stand of mixed hardwoods surrounded by agriculture fields. This polygon received a relatively low score due to its isolation, sparsely vegetated cover, and the encroaching agricultural fields.
- #27 is located on the top of the east side of Knox Butte. The stand is interspersed with many residences and is fairly open in some areas. The stand consists of a mixed canopy of second growth Douglas-fir and white oak. The understory includes maintained lawns. Due to the presence of many residences interspersed throughout the polygon, it received a relatively low score.

Several polygons on the City's GIS that appear as tree stands greater than five acres in size were not included, because they had been recently harvested. These areas are located to the west of Knox Butte and to the west of Horseshoe Lake.

Table 13 Numeric Scores of Habitat Components

Habitat Polygon	Water	Food	Cover	Distur-bance	Interspe-rsion	Unique-ness	Total	Habitat Quality
1	0	12	12	2	1	0	27	Low
2	0	14	20	2	2	0	38	Low
3	0	18	18	2	2	3	43	Medium-Low
4	0	18	19	6	1	0	44	Medium-Low
5	0	16	21	2	1	1	41	Medium-Low
6	0	15	16	5	0	0	36	Low
7	0	12	20	1	3	1	37	Low
8	12	8	10	5	1	1	37	Medium-High
9	22	14	20	2	3	10	70	Medium-High
10	24	12	17	4	3	4	64	Medium-High
11	7	18	19	4	3	1	52	Medium-High
12	18	18	18	4	4	3	65	Medium-High
13	18	18	21	2	4	3	66	Medium-High
14	2	12	14	3	1	1	33	Low
15	10	10	12	2	1	2	37	Low

Habitat Polygon	Water	Food	Cover	Distur-bance	Interspe-rsion	Unique-ness	Total	Habitat Quality
16	10	17	19	2	1	2	49	Medium-High
17	6	12	20	4	4	2	48	Medium-High
18	6	12	20	5	1	0	44	Medium-Low
19	6	12	10	6	2	1	37	Low
20	0	9	9	2	0	0	20	Low
21	22	14	19	2	3	4	64	Medium-High
22	26	9	18	2	3	10	71	Medium-High
23	22	14	19	4	3	8	70	Medium-High
24	6	9	12	2	1	1	31	Low
25	12	8	7	2	1	1	31	Low
26	12	6	9	2	0	1	30	Low
27	0	18	18	2	2	1	41	Medium-Low

4.2.4 Wildlife Habitat Assessment Discussion and Determination of Significance

All of the habitat polygons in the UGB have been affected by human encroachment. However, those associated with water, with good food sources and in close proximity to other habitats scored the highest. Many of the lower scoring habitat polygons have understories dominated by non-native species, such as Himalayan blackberry and English ivy.

Connectivity (wildlife corridors) between adjacent habitat polygons in many cases is interrupted by housing developments and roadways. For terrestrial forms of wildlife to travel between habitat polygons they would either have to move through residential neighborhoods or, where available, cross open agricultural fields. This is especially true for wildlife moving between habitat polygons in northwest Albany. Connectivity in the southwestern portion of the City has greater potential for wildlife corridors due to the relatively intact riparian corridors along the Calapooia River and Oak Creek. Wildlife could move along the Calapooia River and, with only a few major road crossings, into the Oak Creek habitat. Connectivity for habitat polygons in the northeastern part of the City is not encumbered as much by urbanization as it is by the distance between other habitat polygons and the surrounding open farm land. The distance between the habitat polygon at Knox Butte and the next closest habitat polygon is over one mile.

As urbanization continues, connectivity between habitat polygons will decline. In balancing the various priorities and interests of the community, the City of Albany could choose to establish corridors on undeveloped lands and implement habitat improvement projects to create cover for terrestrial species traveling between polygons. Some polygons, surrounded by residential development and agricultural areas will likely have little or no connectivity to other polygons.

When the proposed significance criteria were applied to the 27 polygons identified in the study, none of them scored high enough (>80) to be considered significant. The only criterion that was met was the presence of pond and painted turtles, which are designated as a sensitive-critical species by the Oregon Department of Fish and Wildlife, in Thornton Lakes. As such, the standard inventory method resulted in the same outcome as safe harbor.

5.0 SUMMARY OF SIGNIFICANT RESOURCES

5.1 Goal 5 Resources

As required through the Goal 5 process, the City must adopt a list of significant resources and then implement protection of those resources. The significant resources identified through this study are wetlands, riparian corridors and wildlife habitat.

Wetlands

Goal 5 provides criteria that must be followed in order to identify significant wetlands. In addition, the City has the option of expanding the designation of significant wetlands. The NRAC chose to expand the designation to also include all wetlands mapped within the 100-year floodplain that potentially could be restored to improve water quality and flood storage functions.
The results of the study conducted by PHS include the following:

- Since the original inventories were conducted, no change in the number of significant wetlands from permits issued to applicants allowing wetlands to be filled. Although portions of wetlands had been filled, they still satisfied the significant wetlands criteria.
- 47 additional wetlands determined to be significant based on their close proximity to a waterbody on DEQ's updated 303(d) list.
- One wetland added based on its potential for providing significant water quality and flood storage functions.
- 159 out of the 372 inventoried wetlands meet the Goal 5 criteria of significance. These wetlands cover approximately 824.46 acres out of the 1,715 acres of inventoried wetlands within the UGB.

Riparian Corridors

Goal 5 requires that the City protect fish bearing lakes and streams. It provides two options for identifying riparian corridors: safe harbor and the standard inventory method.

Through this study, PHS applied both strategies. For the standard inventory method, we reviewed the URIAG method that was used in the earlier inventories and also applied effective shade modeling, which has been used by several jurisdictions in the Willamette Basin to lower water temperatures. The NRAC used the URIAG method only.

The results of the methods are summarized below:

- <u>Safe Harbor</u> — 75 feet setback from the Willamette River and 50 feet from all other waterbodies
- <u>URIAG</u> — 120 feet maximum setback when cottonwoods and Douglas fir are the site potential trees, 75 feet when it is Oregon ash, and 60 feet when it is white oak

- Effective Shade 75 feet maximum setback along the southern bank of all east-west oriented waterbodies and a minimum of 50 feet along the northern banks, and all other waterbodies

The City has the option of adopting one of the methodologies listed above or a combination of all three. PHS recommends a combination, as listed in the table below. This allows for dividing the riparian corridor into a series of stream sections, and regarding these as individual resource sites [OAR 660-032-0090(3)].

Table 15 Recommended riparian corridors widths for the City's fish-bearing waterbodies

Waterbody Name	Methodology	Riparian Corridor Width(s) (feet)
Burkhart Creek	Effective Shade	50 – 75
Cathey Creek	Safe Harbor	50
Calapooia River	URIAG	75 - 120
Cox Creek	Effective Shade	50 – 75
Horseshoe Creek	Effective Shade	50 – 75
Horseshoe Lake	Effective Shade	50 – 75
Oak Creek	URIAG	60 - 120
Periwinkle Creek	Effective Shade	50 – 75
Thornton Lakes	Safe Harbor	50
Truax Creek	Effective Shade	50 – 75
Willamette River	Safe Harbor	75

Wildlife Habitat

As with riparian corridors, Goal 5 allows jurisdictions to use either a safe harbor method or a standard inventory method to determine the significant wildlife habitat. PHS' review found the following:

Safe Harbor:

- Only Thornton Lakes is significant due to the documented presence of painted and pond turtles, both designated as sensitive-critical species by the Oregon Department of Fish and Wildlife.

Standard Inventory Method:

- No habitat polygons were ranked as high quality habitat using the wildlife habitat assessment methodology. Only Thornton Lakes satisfied the criteria and were determined to be significant. As such, the results for the standard inventory method were the same for the safe harbor.

5.2 Recommendations for Identifying Goal 5 Resources

The NRAC report presented a number of recommendations for consideration by the City. PHS reviewed these recommendations, as they relate to the identification of significant resources, and in some cases our recommendations vary from the NRAC's. The NRAC and PHS recommendations and methodologies used are summarized below:

NRAC	PHS
Wetlands	
Added Goal 5 protection for wetlands that do not meet the criteria, but that are located in the 100-year floodplain outside the riparian corridor and could potentially be restored to provide long-term water quality and flood storage values to the riparian area.	Added one wetland within the 100-year floodplain, based on its ability to be restored to provide flood storage and water quality treatment
Riparian Corridors	
Designate all fish-bearing streams and lakes as significant riparian resources.	This follows Goal 5 requirements and was used as the basis for the designation of riparian corridors
Use a fixed width riparian zone based on the Site Potential Tree Height method.	PHS recommends a combination of riparian corridor widths to reflect changes in riparian conditions throughout the City and between basins
Measure the width of riparian areas from the mapped edge of water, not the top of bank.	PHS recommends using the ordinary high water as the point of measurement, which is required by the DSL and Corps to determine the limits of their jurisdiction.
Wildlife Habitat	
No specific recommendations for identifying significant wildlife habitat. At that time, a wildlife habitat assessment had not been conducted.	PHS reviewed both the safe harbor and the standard inventory approach. Following the standard approach, PHS conducted a wildlife habitat assessment and proposed criteria designating which habitats are significant. The results were the same.

6.0 NEXT STEPS

This report includes recommendations for determining which natural resources in the Goal 5 inventories should be considered significant. The City must decide whether to adopt these recommendations, or develop and adopt other criteria to determine significance. Once the significant resources are identified, the City is required to protect those resources. The following is a summary of the options available to implement Goal 5. These will be discussed in more detail at a joint work session, scheduled for July.

Regulations and Standards: The final step in the process is to develop a program to achieve Goal 5. It consists of comprehensive plan policies and land use regulations that set forth the degree of protection "for each significant resource site" [OAR 660-023-0050(1)]. The regulations must be "clear and objective." Clear and objective criteria are performance standards that describe an outcome. Different performance standards may be applied to individual resource sites.

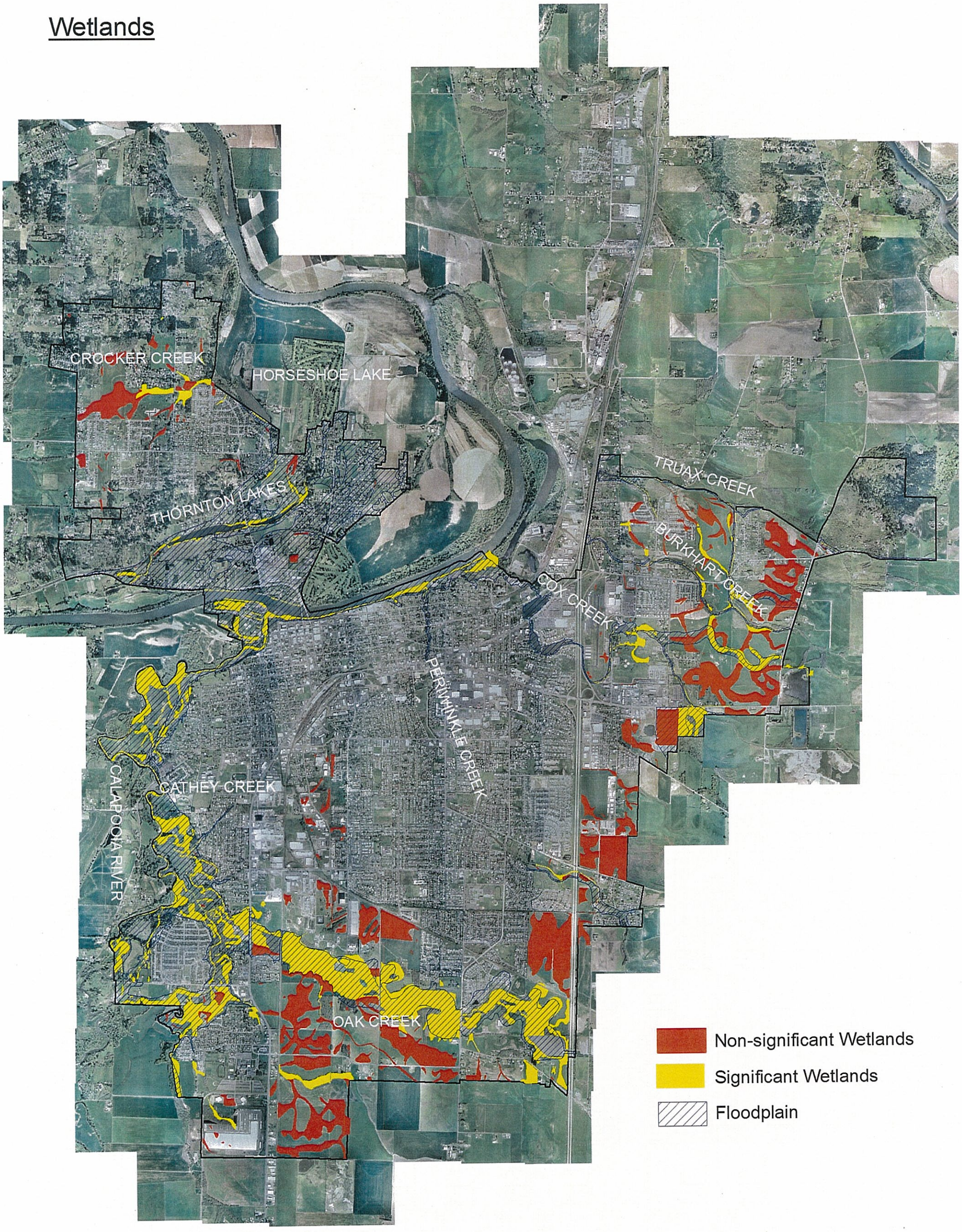
The rule also provides the option to have alternative discretionary standards as long as applicants have a choice of using the clear and objective criteria [OAR 660-023-0050(3)]. For example, in 1995, the City of Portland implemented a "two-tiered" program. The first tier consists of clear and objective development standards for areas in and around identified Goal 5 resources. The second tier consists of a discretionary "environmental review" procedure, which can be used at the request of the development applicant when they want to vary from the first tier standards.

If desired, Albany can also use a set of discretionary performance standards, which account for site-specific conditions related to significant resources. This approach is consistent with the Goal 5 rule and provides flexibility in implementing a regional program for achieving Goal 5.

Conservation Options: There are two options for conservation of significant resources in Albany: the safe harbor option and the standard process. Goal 5 also uses these terms to identify the location of significant resources (i.e. the safe harbor setbacks of 50 feet and 75 feet for riparian corridors).

- The safe harbor approach is a standard set of protection measures that ensures limited future impacts to significant resources. It can only be applied to significant riparian corridors and significant wetlands.
- The standard process identifies potential land uses on or near each significant resource area and any conflicts that might result, analyzing the economic, social, environmental, and energy consequences of such conflicts, decides whether the resource should be fully or partially protected, and justifies the decision and then adopts measures such as zoning to put that policy into effect.

Wetlands



N

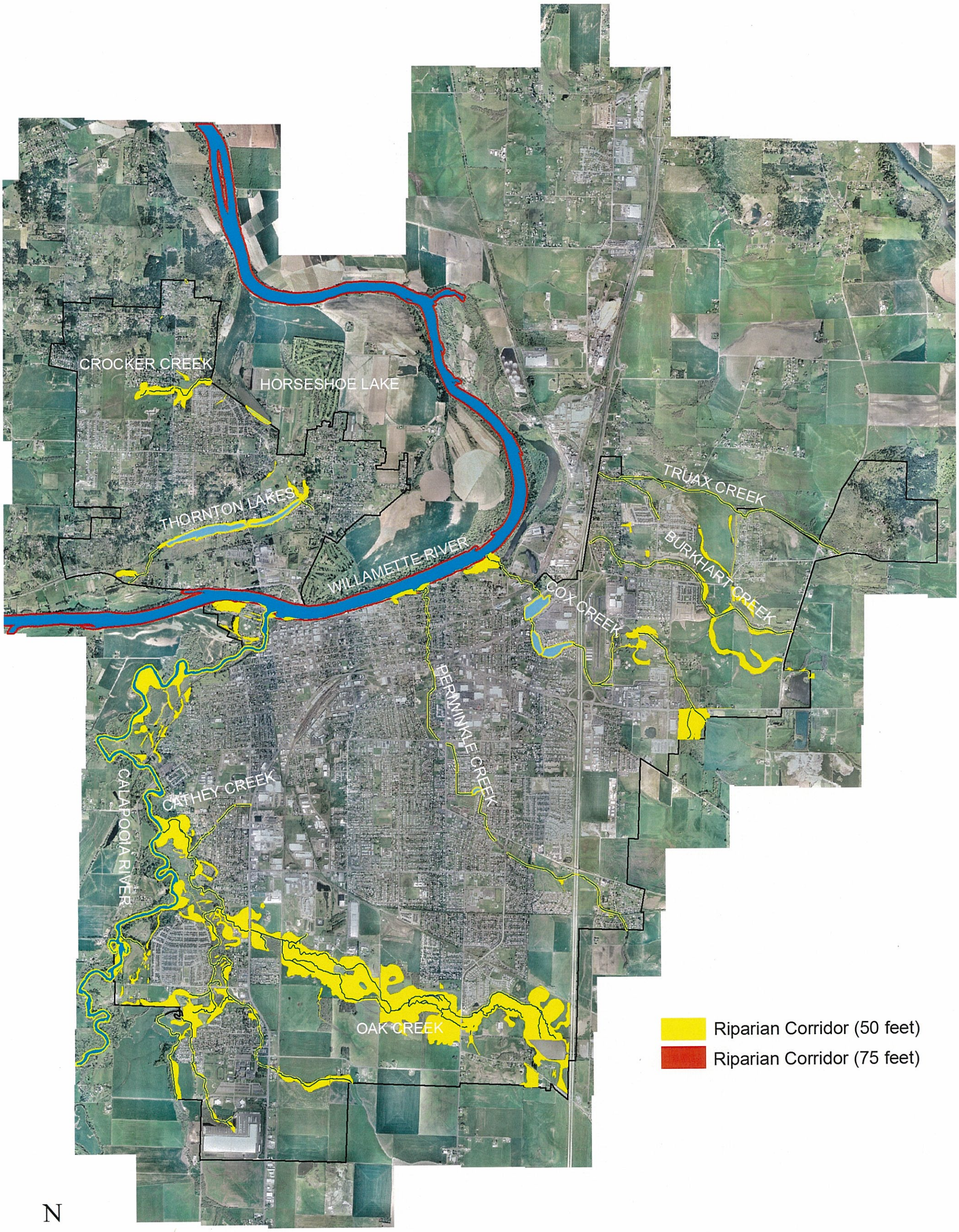
0 0.5 1 1.5 2 Miles

Figure 1

Fish-Bearing, Lakes, Rivers, and Streams

Figure 2

Riparian Inventory
(Safe Harbor)



N

0 0.5 1 1.5 2 Miles

Figure 3

Riparian Inventory
(Urban Riparian Inventory & Assessment Guide)

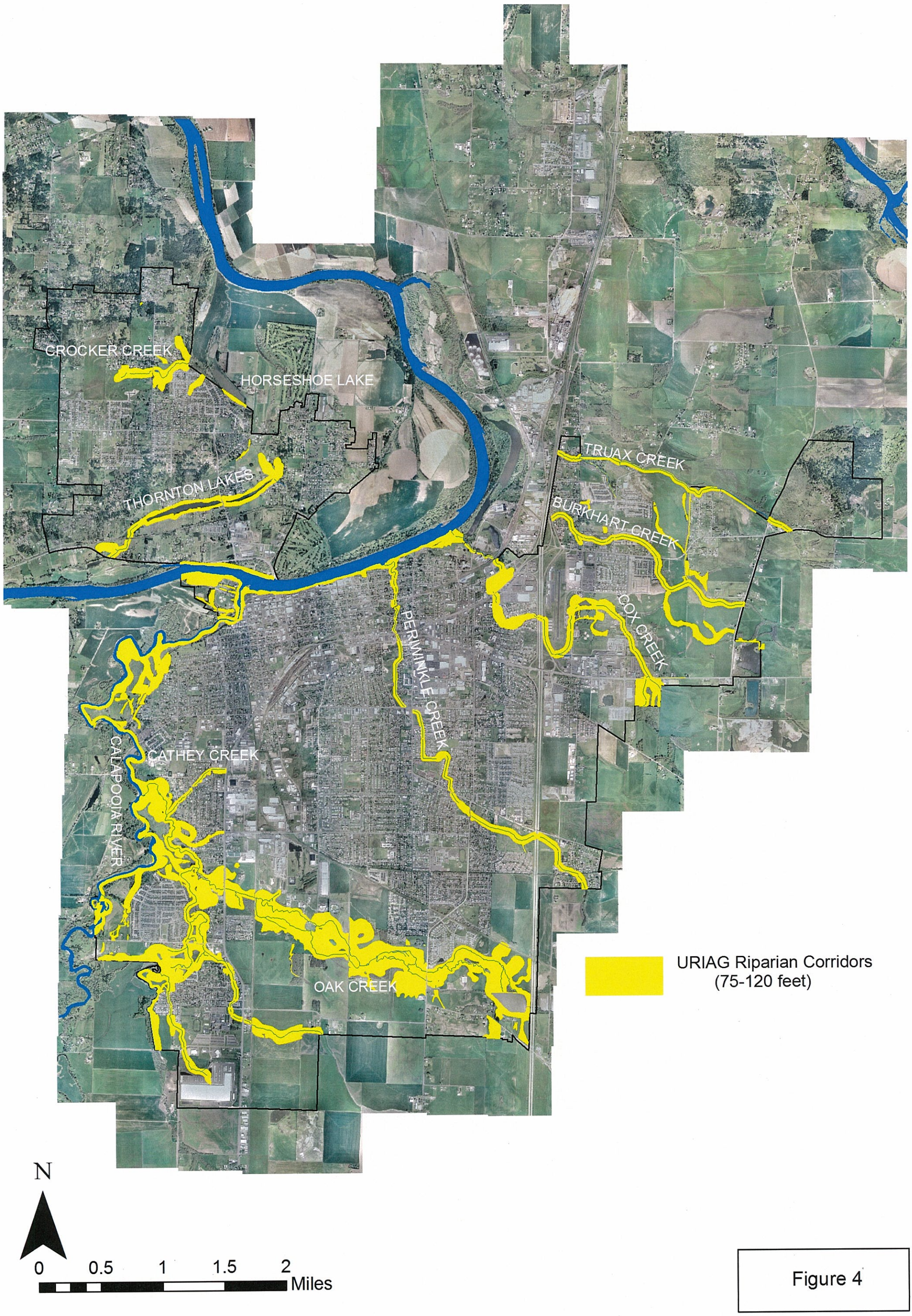
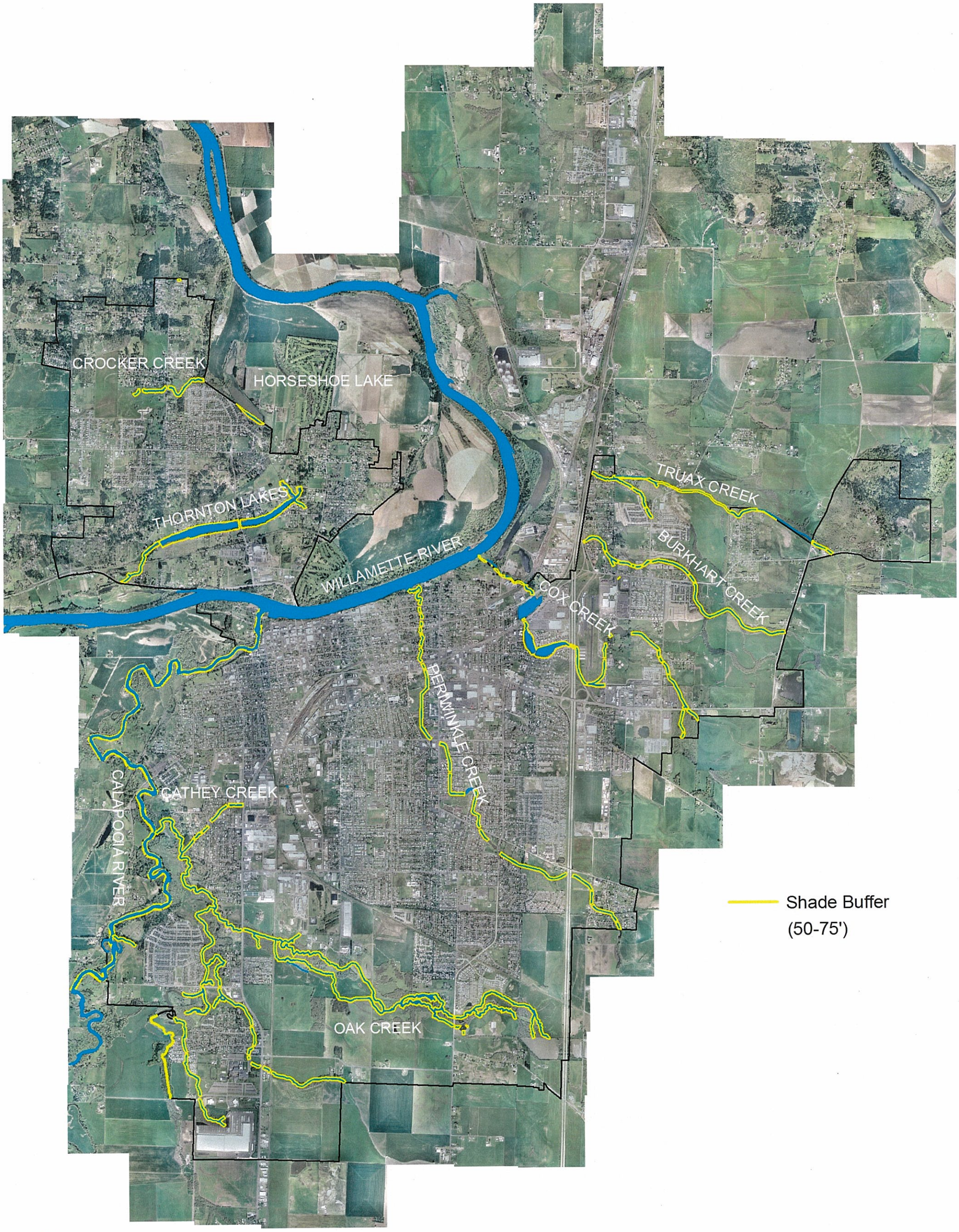


Figure 4

TMDL Shade Buffer



N

0 0.5 1 1.5 2 Miles

Figure 5

Wildlife Habitat

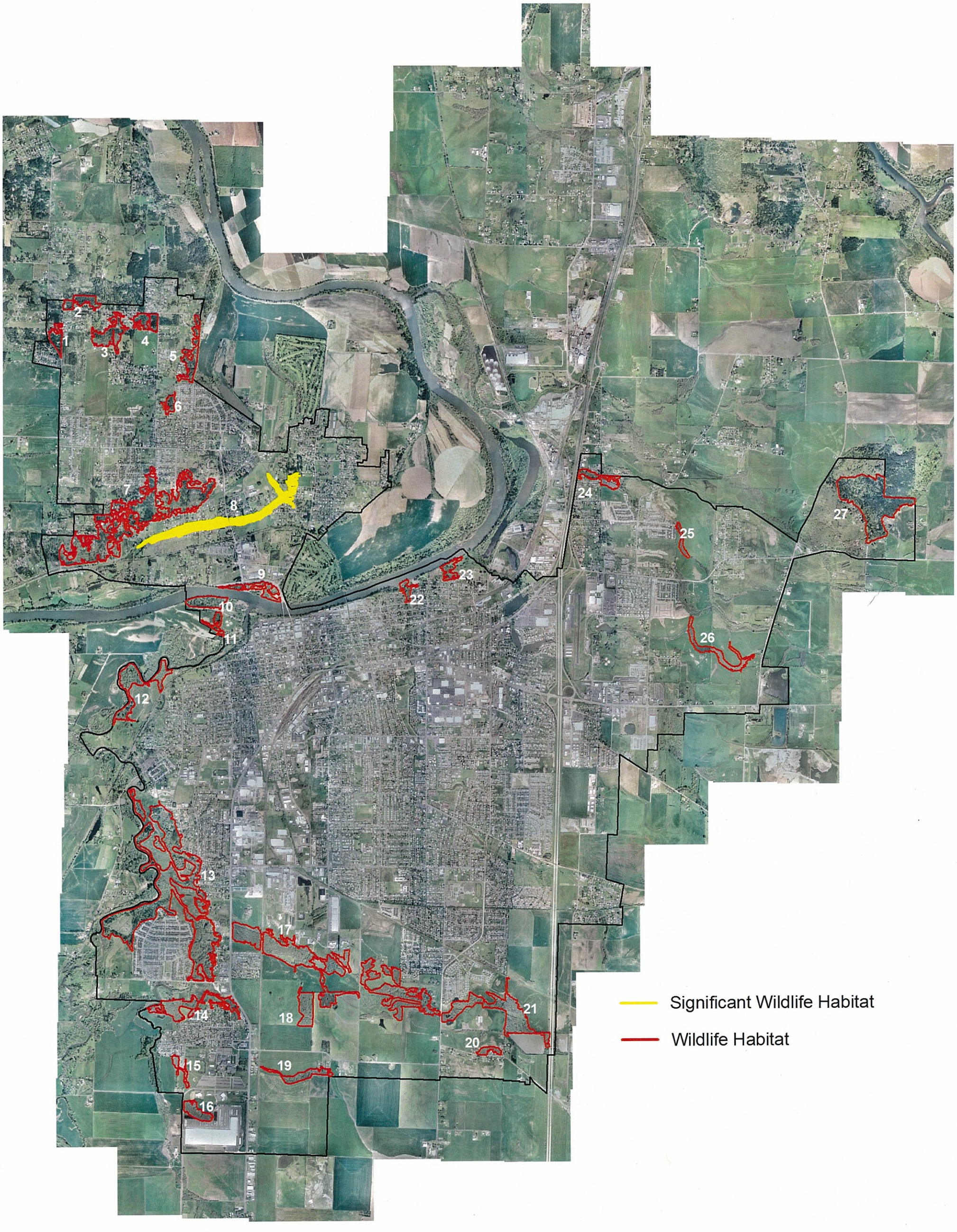


Figure 6

APPENDIX A
WILL BE AVAILBLE
LATER THIS WEEK