A FOCUSED LOOK at Fish and Wildlife Habitat

LIMITED GOAL 5 PROGRAM UPDATE

MEETING AGENDA

Date: Aug 21, 2023

Time: 1-3 p.m., via Zoom

Meeting Link: https://us02web.zoom.us/j/83568137024

Meeting Purpose: Review and give feedback on the Draft Inventory Report and ESEE Analysis/Title 13 Compliance Approach

I. Welcome (5 min)

- Introductions
- TAC Meeting #1 Meeting Summary (attached)
- Review agenda

II. Draft Goal 5 Inventory Report (60 min)

- Overview of Draft inventory report (attached)
- Examples and questions
- Next Steps

III. ESEE Analysis/Title 13 Compliance Approach (40 min)

- Review memo and discussion questions (attached)

IV. Public Comment (10 min)

V. Closing and wrap up (5 min), including discussion of next TAC meeting date in Nov. 2023

Materials attached (via email to TAC members):

- Technical Advisory Committee Summary – Meeting #1
- Draft Goal 5 Inventory Report,
  - Link to Appendix C, Draft Inventory maps
- Draft ESEE Analysis and Title 13 Compliance Methodology

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Technical Advisory Committee
Summary – Meeting #1

June 6, 2023
1-3 p.m., via Zoom

Members and alternates present:

Joy Vaughan, Oregon Department of Fish and Wildlife (ODFW)	Bruce Barbarasch, Tualatin Hills Park and Recreation District (THPRD)
Ariana Scipioni, ODFW	Rachel Marble, City of Hillsboro
Amanda Punton, Department of Land Conservation and Development (DLCD)	Rob Zoeller, City of Beaverton
Laura Kelley, DLCD	Stephen Shane, Washington County
Damon Reische, Clean Water Services (CWS)	Deborah Lockwood, Planning Commission Chair
Lindsay Obermiller, CWS	Morgan Will, Planning Commission
Fran Warren, Community Advocate	Matt Wellner, Home Building Association (HBA)
Ted Labbe, Urban Greenspace Institute	

Members absent:

Tim Moss, Oregon Department of Forestry (ODF)	Lacey Townsend, Tualatin Soil and Water Conservation District (TSWCD)
Glen Hamburg, Metro	

Public present:

Al Jock	Jim Long
Greg Malinowski	Susan Mates
Masaki Narita	Eugenia Parker
Dave Robinson	Rob Skinner
Jill Warren	

Staff/Consultants present:

Cathy Corliss, MIG|Angelo Planning Group (APG)	Ethan Rosenthal, David Evans and Associates (DEA)
Brandon Crawford, MIG|APG	Sarah Gilbert, DEA
Michelle Miller, Washington County (Project Manager)	Theresa Cherniak, Washington County
Suzanne Savin, Washington County	Brenda Schaeffer, Washington County
Emily Brown, Washington County	Erin Wardell, Washington County

Meeting Purpose: Lay a foundation for the work of the Technical Advisory Committee (TAC), including:

- Understanding of the project
- TAC's role
- Discussion of preliminary Goal 5 inventory

Summary

The first meeting of the Limited Goal 5 Program Update Technical Advisory Committee (TAC) was attended by representatives from a variety of agencies and jurisdictions, members of the public, County staff and the consultant team for the project. After introductions, staff reviewed the meeting agenda and provided an overview of the TAC's role in this project, meeting protocols, TAC participation rules, and guidelines for communication between meetings.

This TAC meeting addressed the County's proposed methodology and preliminary approach to the Goal 5 inventory update. The project consultants provided an overview of the Statewide Planning Goal 5 process, the project mapping and inventory methodology, preliminary inventory map examples, and some project inventory discussion questions for the TAC.

Discussion

TAC members and the project team discussed issues to consider while developing a methodology for this inventory update. Highlights of the discussion are summarized below.

Public Input Process

- A Planning Commission representative asked when community members would be able to review and comment on the inventory and whether public input could affect the inventory.
- Consultant team responded that the purpose of today's meeting was to gather feedback from TAC members on our inventory process. Based on input received today, the team will create a *draft* inventory map to share at our next TAC meeting and with the public. The inventory map is draft until adoption (anticipated Aug. 1, 2024), and the public will have the opportunity to review both the methodology and draft map. Public outreach has already been occurring and will continue throughout the project. Public outreach will be discussed in more detail at upcoming meetings.

Inventory Methodology: Approach

- The draft inventory will be created using a GIS-based (rather than field-based) methodology.
- A THPRD representative asked what happens in instances where we see good habitat that's not included in the draft inventory or developed areas that are included on the current inventory - how does that get resolved?
    - Consultant team noted that this update is not looking to expand on previously mapped sites, but that is something people can comment on. When we get to the step of determining significance of resources, we're limited to including Significant Natural Resource (SNR) areas that were originally inventoried as significant. A portion of the mapped SNR may have considered through the development review process and preserved as parkland. Those areas would remain on the County's inventory.
- A developer representative asked for confirmation that North Bethany and Bonny Slope aren't included in the inventory update.

  - The consultant confirmed that the inventory for these areas will not be updated Those areas underwent a more recent planning process that included an update of their Goal 5 inventories, so the current County information for the resources will be used.
- A developer representative noted that for the inventoried riparian areas, it would be helpful to see a comparison map with CWS buffers – an estimated vegetated corridor in GIS form. He wondered how similar the two maps would be.
  - CWS representative noted that they don't have a district-wide map of estimated vegetated corridors in GIS form. They've never completed an inventory ahead of time with the exception of some planning areas (Bonny Slope, for example). They might be able to look at ways to help with this process. Their pre-screening map is limited in its accuracy and is not an inventory.
- A developer representative noted that he thought the CWS vegetated corridor and the Goal 5 riparian corridor are one and the same. He stated the hope that this process won't create another layer of regulation.
  - Staff and the consultant team responded that the County's update to the Riparian Habitat mapping is not as precise as the onsite delineation that occurs at the time of development. The County still expects to require a habitat delineation (onsite assessment) at the time of development. CWS requirements for the vegetated corridor will likely be able to satisfy this requirement. As part of the Tualatin Basin Program adopted in 2005, Metro Title 13 approved the County and other cities in the Tualatin Basin to use the CWS vegetated corridor as a proxy for the location of the riparian corridor.
- The DLCD representative asked about the onsite assessment versus mapping of a resource, and whether that would differ for wildlife habitat and riparian areas. She expressed the opinion that the correspondence between Statewide Planning Goal 5 and Metro Titles 3 and 13 was somewhat confusing and wondered if there needed to be different approaches for different types of resources.
  - The consultant team responded that with regard to riparian areas, what will come out of this work - essentially what Metro has already mapped - will be used by the County for pre-screening. Ground-truthing (onsite assessment) will then be required for these areas in accordance with CWS criteria.
- The consultant team discussed removal of developed areas from the habitat inventory, and options for staff to do this efficiently. Although Metro has a developed lands data layer, in some locations that data doesn't accurately represent developed areas.
- The consultant team posed questions to the TAC (Slide 36, PowerPoint presentation). One proposal is to remove habitat patches less than 2 acres in size from the Upland Wildlife Habitat inventory. Another proposal is to retain mapped areas within tracts owned by Homeowner Associations (HOAs) as part of the Upland Wildlife Habitat Inventory. The consultant team asked whether, in the case of parks, the whole park should be mapped as an SNR or only the areas that have habitat. These proposals and questions were discussed.
  - ODFW, THPRD and UGI representatives expressed support for retaining some patches less than 2 acres in the inventory. THPRD and UGI representative stated that even isolated oaks are important as wildlife habitat. THPRD representative stated that for parks, the preference would be dividing them as developed area and habitat area – to lump them together would not serve the public well.

- A community advocate asked whether the County had a target goal for the total SNR size as part of the updated inventory. A follow-up question was whether mitigation areas would be part of the inventory.
  - Staff responded that the County doesn't have a target size for the total SNR area, but we are reviewing more area than just our current inventory.
  - Regarding whether mitigation areas would be part of the inventory, the consultant responded that tracts held by HOAs for mitigation of impacts to resources and lands dedicated to a public agency would likely be included in the updates to the inventory. Wetland and stream mitigation, which would need to come from the Department of State Lands, is not digitized and likely will not be included.

Potential Use of Additional Data Sets

- Throughout the discussion, TAC members shared recommendations for data sets that may be helpful to the project team as they work through the inventory process.
  - Oregon Department of Forestry Tree Plotter
  - OakQuest: Collaborative mapping and stewardship of Oregon white oak prepared by the Intertwine Alliance Oak Mapping Workgroup Partners
  - ODFW Priority Wildlife Connectivity Areas identified by Oregon Connectivity Assessment and Mapping Project. (OCAMP)
- Question for TAC members: is there better existing data (e.g., Goal 5 planning conducted by cities for communities in currently unincorporated areas) that we should use for some areas instead of starting with County and Metro data?
  - City of Beaverton representative: how far along does the planning process need to be? Complete today, or by Oct. 2024? Beaverton is hoping to adopt its natural resources maps, as part of its community planning, sometime in between.
  - Staff responded that if cities are far enough along that we can utilize their data now, let us know. Otherwise, we revert to what was on the Metro maps and follow the standard methodology. Additional considerations: if a city draft Goal 5 analysis exists, is that acceptable for us to use? Would it need to have gone through public review as a draft? If cities have data that we should look at using, please let us know.

Public comment:

- A Washington County resident asked how this process will relate to development in the urban growth boundary expansion area north of the Tualatin River and west of King City. He asked five specific questions regarding this process. Staff responded that they would need to look into these questions and respond to resident after reviewing them.
- A Washington County resident noted that he spent eight years on the board of Clean Water Services and learned that their priorities were sewage treatment and stormwater management. He noted that wildlife protection is not part of their mission, even though their work does incidentally help with that. He opined that small areas can provide habitat for small animals and that if it's not perfect and pristine, it's not significant. He also questioned how many times in the last 40 years upland habitat has been protected by the county, noting that he has not seen a lot of examples.

Closing and Wrap Up

Staff noted that a draft summary of this meeting will be available on the website prior to the next TAC meeting.

Draft - Habitat Inventory Report

WASHINGTON COUNTY
OREGON

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Contents

List of Tables

1.0 INTRODUCTION

This document provides an overview of the methods and findings of the Washington County (the County) Goal 5 Inventory update for areas within the Urban Growth Boundary. Goal 5 Resources that were evaluated include:

- County Wildlife Habitat
- County Water Areas and Wetlands
- County Water Areas and Wetlands and Fish and Wildlife Habitat
- Metro Riparian Wildlife Habitat Classes I and II
- Metro Upland Wildlife Habitat Classes A and B

The primary purpose of the inventory work is to update mapping and the determination of significance (Oregon Administrative Rule 660-023-0030(4)) for the County's Significant Natural Resource (SNR) Wildlife Habitat, using existing Metro and Washington County inventories. Another task in the inventory work is to adjust the mapped boundaries of the County's water-related resource areas for accuracy and qualitative classification of the Riparian Wildlife Habitat to align with Metro's SNR Riparian Wildlife Habitat Classes I and II.

The overall process consists of incorporating Metro's habitat mapping (specifically Upland Wildlife Habitat Classes A and B, and Riparian Wildlife Habitat Classes I and II) into the County's wildlife and water-related resource mapping. Review of the wildlife/upland habitats were the first priority, and the water-related riparian resources were second. The goal is to understand what resource sites are still significant and reclassify the remaining significant resources in an updated county Goal 5 Inventory. Combining these distinct but overlapping inventories results in a consolidated Washington County Goal 5 Inventory update. The process did not add any new sites to the mapped areas, but some resource boundaries were refined.

2.0 NATURAL RESOURCE CATEGORIES

This section describes the Goal 5 natural resource categories identified in the adopted County Goal 5 Inventory and the adopted Metro Regionally Significant Fish and Wildlife Habitat Inventory to better understand areas of overlap and differences between the two inventories. This information about natural resource categories also supports an understanding of the mapping update methods described in Section 3.

The County's Goal 5 Inventory of natural resources is included in its Comprehensive Plan.[1] The SNRs determined to be significant were sorted into categories based on the following classifications, as stated in Community Development Code Section 422:

- **Water Areas and Wetlands.** 100-year floodplain, drainage hazard areas, and ponds, except those already developed.
- **Water Areas and Wetlands and Fish and Wildlife Habitat.** Water areas and wetlands that are also fish and wildlife habitat.

[1] For the urban area these natural resources are mapped in the community plans, and for the rural area these natural resources are mapped in the Rural/Natural Resource Plan.

- **Wildlife Habitat.** Sensitive habitats identified by the Oregon Department of Fish and Wildlife (ODFW) and the Audubon Society Urban Wildlife Habitat Map, and forested areas coincidental with water areas and wetlands.

The Regionally Significant Fish and Wildlife Habitat Inventory Map identifies Metro's natural resources, and Metro's Urban Growth Management Functional Plan, Title 13 categorizes them by both habitat type and value as follows:

- **Riparian Wildlife Habitat** Class I (high value), Class II (medium value)
- **Upland Wildlife Habitat** Class A (high value), Class B (medium value)

Metro habitats being reviewed are defined by Metro as described in the bullet points below and were based on a complex GIS based scoring model. Full documentation of Metro's GIS model is not readily available, but a summary document provides an overview of the Metro Title 13 mapping (see Appendix A, Hennings 2009). For Upland Wildlife Habitat, the summary document refers to large and medium-sized forest patches but does not explicitly define these. However, 2 acres is generally used as the lower size range for a mapped habitat patch, although there are exceptions for smaller-sized patches that are habitats of concern (HOCs).

- **Riparian Wildlife Habitat Class I**: Includes rivers, streams, wetlands, undeveloped floodplains, forest canopy within 100 feet of streams (200 feet if steep sloped). Provides three to five of the following primary functions:
- Microclimate and shade.
- Streamflow moderation and water storage.
- Bank stabilization, sediment, and pollution control.
- Large wood and channel dynamics.
- Organic material sources.
- **Riparian Wildlife Habitat Class II:** Includes rivers, streams, a 50-foot area along developed streams, forest canopy or low structure [vegetation] within 200 feet of streams, and portions of undeveloped floodplain beyond 300 feet of streams. Includes wildlife habitat where it coincides with the medium value riparian habitat. Provides one to two primary functions, or one primary plus one or more secondary functions. Secondary functions are not defined. Class II can be elevated to Class I if it contains an HOC.
- **Upland Wildlife Habitat Class A:** Includes upland portions of large forest patches that the GIS model scored as high value. Also, may contain areas providing secondary functions for riparian habitat and HOCs outside of riparian habitat.
- **Upland Wildlife Habitat Class B:** Primarily includes upland portions of medium-sized forest patches that the GIS model scored as moderate value.
- **Habitats of Concern:** HOCs are not a distinct habitat class within Metro's Title 13 mapping but are instead types of habitats that when identified are rolled into either the Riparian Wildlife Habitat or Upland Wildlife Habitat classes. HOCs are unique or unusually important wildlife habitats and are identified based on site-specific information. They can be smaller than 2 acres and were incorporated into Metro's inventory if they fell into one or more of the following categories:

- Any patch specifically identified as a Priority Conservation Habitat by ODFW, the U.S. Fish and Wildlife Service (USFWS), or other agencies or local wildlife experts. Such habitat types include Oregon white oak savannas and woodlands, native prairie grasslands, wetlands, and bottomland hardwood forest.
- Any patch of natural land cover identified by ODFW, USFWS, or other agencies or local wildlife experts as riverine island or delta important to wildlife.
- Specifically delineated habitat areas that provide life-history requirements of sensitive, threatened, or endangered wildlife species or great blue heron rookeries; habitats that support at-risk plants; or habitats that provide unusually important wildlife functions, such as major wildlife crossings/pathways or a key migratory pathway, such as an elk migratory corridor.

Although the County's Goal 5 Inventory and Metro's inventory have many similar resource sites, for a variety of reasons, they also have some differences. Table 1 provides an overview of those similarities and differences.

Table 1. Generalized relationships between Washington County and Metro Goal 5 inventoried natural resources included in this update process

County Natural Resources	Metro Title 13 Regional Habitat Resources	Comparison Notes
Water Areas and Wetlands	Riparian Wildlife Habitat (Classes I and II)	County mapping and Metro's high and medium riparian habitat are similar in nature and generally refer to the same types of resources; however, because the County's Goal 5 Inventory is based on floodplain mapping, it does not extend into areas with steep slopes.
Water Areas and Wetlands and Fish and Wildlife Habitat	Riparian Wildlife Habitat (Classes I and II)	County mapping and Metro habitat types are similar in nature and generally refer to the same types of resources. Areas that show the County's Water Areas and Wetlands and Fish and Wildlife Habitat extending beyond Metro's Class I or Class II Riparian Wildlife Habitat areas may be the result of mapping errors due to scale or to the mapping technology available at the time of the inventory.
Wildlife Habitat	Upland Wildlife Habitat (Classes A and B)	County Wildlife Habitat mapping typically focuses on upland habitats, but it can also contain riparian-type habitats due to limits in available data at the time of the inventory. The County mapping contrasts with Metro's Upland Wildlife Habitat mapping, which focuses solely on habitat upland from the riparian areas. Therefore, areas of county-mapped Wildlife Habitat that overlap with Metro riparian habitat areas have been classified as updated Washington County Riparian Habitat as part of this update.

3.0 METHODS

The update of the County's Goal 5 Inventory used GIS mapping technology. The analysis relied on existing geospatial data, including but not limited to the Washington County and Metro Inventory map layers, aerial photography, topographical data, and Metro Regional Land Information System (RLIS) data that identifies developed lands, tax lots, and parks.

This section presents the analysis methods that were used in a stepwise approach. Each step is represented by a numbered subsection heading below, and each subsection describes the basic methodology or guiding principles used to carry out the analysis. The result is a consolidated and updated Washington County Goal 5 Inventory for the Washington County Urban Unincorporated Area (UUA). The Goal 5 Inventory update process also developed several intermediate map layers to support inventory review by the County and interested stakeholders.

The following analysis steps are described in the subsections below:

1. Define the Study Area and Map Refinement Area
2. Consolidate Existing County and Metro Habitat Mapping within the Map Refinement Area
3. Review and Adjust Consolidated Mapping for Significance within the Map Refinement Area
4. Conduct Manual Review and Data Cleanup within the Map Refinement Area
5. Incorporate more recent habitat mapping completed through pre-annexation City or County community planning within the County UUA

3.1 Define the Map Refinement Area

The limited Goal 5 update covers the Washington County Urban Unincorporated Area (UUA) circa 2023, which is referred to as the study area for the project. The “Map Refinement Area” is a subset of the study area, where the detailed map update methodology described in this report was applied. It does not include certain areas where more recent Goal 5 inventory work was conducted, including new community plan areas planned by the County and new UGB areas where Goal 5 inventories have been completed as required by Metro Functional Plan Title 11 (Planning for New Urban Areas).

Those areas with more recent Goal 5 inventories are listed below. Natural resources for these areas are incorporated into the update as they are, unmodified by the methods described in the following sections:

- North Bethany (Washington County)
- Bonny Slope West (Washington County)
- Cooper Mountain (Beaverton)
- South Hillsboro (Hillsboro)
- Jackson East (Hillsboro)

To support the analysis within the Map Refinement Area, the analysis also reviewed areas adjacent to the map refinement area. This was done to assess connectivity and size of habitats within the map refinement area as they relate to those in adjacent areas. The analysis used both automated GIS methods and manual review of GIS data. Using both automated and manual methods helped avoid potential removal of what may appear to be small, isolated habitat patches along the inner edge of the overall study area that are connected to larger habitats outside the Map Refinement Area. Section 3.3 below includes a definition of “small, isolated habitat patches.”

3.2 Consolidate Existing Washington County and Metro Habitat Mapping

Washington County Goal 5 habitat mapping layers (County 2023) were combined with Metro's Title 13 habitat mapping layers (Metro 2023a). Each entity uses different naming conventions and classifications, as noted in Section 2, above. The goal of this effort is to create a clean set of mapped habitat areas with a single naming convention. Table 2 provides the general relationship between Washington County habitat types and Metro habitat types, along with the proposed naming conventions for the reclassification of county natural resources in the Washington County Goal 5 Inventory update.

Table 2. Metro and Washington County habitat resources overlap conditions and proposed natural resource classifications for the County's Goal 5 Inventory

Metro Habitat and County Habitat Overlap Conditions	Proposed Classification of Updated County Goal 5 Inventory	Rationale
Metro Riparian Wildlife Habitat Classes I and II, no overlap with any county SNR category	Riparian Habitat Class I or Class II	Metro riparian habitat areas are more accurate than the County's water-related SNRs and the County's wildlife habitat; therefore, Metro's boundaries are used even if no Washington County habitat has been mapped.
Metro Riparian Wildlife Habitat Classes I and II *overlap* with any county SNR category	Riparian Habitat Class I or Class II	Metro's riparian habitat areas are more accurate than the County's water-related SNRs and the County's wildlife habitat; therefore, Washington County SNRs are reclassified as Riparian Habitat Class I or Class II and Metro's boundaries are used.
Metro Upland Wildlife Habitat Classes A and B *overlap* with any county category	Upland Wildlife Habitat Class A or Class B	Metro Upland Habitat Classes A and B include a qualitative assessment of the upland habitat, whereas the County's wildlife habitat does not. Also, the Metro inventory is more recent and accurate.
Washington County Wildlife Habitat *does not overlap* with any Metro category	Upland Wildlife Habitat – County Only	The County's wildlife habitat mapping typically focuses on upland habitat and may also contain riparian or isolated forested habitats, in contrast to Metro's upland wildlife habitat mapping, which focuses solely on upland habitat, either as upland adjacent to riparian areas (out to 300 feet from the water source) or upland habitat patches typically greater than 2 acres regardless of proximity to a water source. County-mapped wildlife habitat that does not overlap with any Metro category was evaluated through the adjustment analysis described in Section 3.3.
Washington County Water Areas and Wetlands, and Water Areas and Wetlands and Fish and Wildlife Habitat *do not overlap* with any Metro habitat category	Removed from Inventory update	Metro's more recent riparian habitat inventory is considered more accurate than the County's inventoried water-related habitat. An exception occurred in the southwest corner of the King City area, which was beyond the limits of Metro's inventory. This area utilized the County's mapping as a starting point and was adjusted based on aerial photo review.

3.3 Review and Adjust Consolidated Mapping for Significance

A great deal of development has occurred since the original Washington County Goal 5 and Metro Title 13 habitat mapping efforts took place. As previously noted, the Metro mapping is more up-to-date than the County's mapping, but more than 20 years have passed since even the Metro mapping was done. Therefore, the consolidated habitat mapping from the previously described steps will need to be updated to remove areas of mapped habitat that have since been developed and small patches of habitat that are no longer considered significant.

Updating of the consolidated habitat mapping adhered to the following principles:

A. Riparian

a. Residential parcels less than 10,000 square feet with at least one mapped structure (per Metro RLIS data (Metro 2023b) were removed from consideration as significant. An exception was if there was a known mapped protection (see second bullet point under item B. Wildlife Habitat) or if the removal resulted in no remaining riparian corridor along a stream mapped by ODFW as providing habitat for native fish (e.g., resident cutthroat trout, steelhead trout). Screening for ODFW native fish-bearing streams (ODFW 2023a) was conducted during the manual cleanup phase described in Step 3.4.

b. Narrow slivers of Riparian Habitat mapped on residential lots greater than 10,000 square feet were removed if there was mapped adjacent protected area. This removal occurred as part of the manual cleanup phase described in Step 3.4.

c. Areas of multifamily or nonresidential parcels with paving or structures were removed from consideration as significant. Narrow slivers of riparian habitat on such parcels were also removed if there was mapped adjacent protected area. These removals occurred as part of the manual cleanup phase described in Step 3.4.

d. Riparian areas along piped creek sections were removed. These removals were specific to areas where creeks were piped underdeveloped areas but did not include roadway culverts if an open channel and/or wetland was likely present on both sides of the culvert. This analysis used Clean Water Services' GIS streams layer (CWS 2023), which identifies piped and open creek sections, and an aerial photo review.

e. Riparian habitat in agricultural fields, including plowed fields, was not adjusted unless there was clearly no sign of a stream (including ditched streams) or potential wetlands. Although these areas may not provide high quality habitat in their current condition, if wetlands and streams are present, they may be regulated at the federal, state, and/or local level and protected and/or improved as part of the development permitting process, based on a site-specific analysis.

f. Riparian areas along developed right of way (ROW).

    i. Riparian areas intersecting ROW were typically not removed, because such areas typically occur at creek crossings. Although no riparian vegetation is present at such locations, the crossing provides important passage for aquatic and often terrestrial wildlife and is therefore considered significant.

ii. However, riparian areas along ROW were removed, primarily during the manual review noted in Step 3.4 below, where ROW ran roughly parallel to a riparian area and therefore the mapped habitat along the developed roadway clearly provided no habitat function.

B. Wildlife Habitat

a. Residential parcels less than 0.5 acre with at least one mapped structure (per Metro RLIS developed lands data) and vacant parcels recently platted where it is presumed they went through development review were removed from the County's updated inventory. An exception was if there was a known mapped protection (see item C. Considerations for Riparian and Wildlife Habitats).
b. Sites with mapped Wildlife Habitat on multifamily and nonresidential parcels with paving or structures were removed from consideration as significant.
c. Small, isolated upland habitat patches were removed from the habitat mapping. For this effort, small, isolated upland habitat patches are defined as follows:
    i. Patch is less than 2 acres and is not connected to other habitats within or adjacent to the map refinement area.
    ii. Patches less than 2 acres were reviewed, based on readily available mapping data, to determine whether they should be part of the County's updated inventory based on the following criteria:
        1. Contain HOCs, as described in Section 2. If HOCs are present, then the patch will remain in the updated Goal 5 Inventory mapping. Items a. – d., listed below, were used to identify HOCs:
            a) Patch occurs in a public park or open space.
            b) Patch overlaps with ODFW Priority Habitat Connectivity Areas (ODFW 2023b). Note that this dataset was conducted for a statewide analysis, and the resulting priority areas were mapped as very large hexagons when viewed at the county-level scale. This dataset captured large areas of clearly developed land as well as areas of remaining habitat within the map refinement area. This screening criterion was further reviewed during the manual review step, and the analysis used professional judgement to determine whether the small patch should be kept solely based on this criterion (e.g., if the ODFW hexagon appeared to be associated with a well-defined riparian corridor and not a single or sprinkling of small habitat patches, then the small patch would be removed).
            c) Patch overlaps with Intertwine Alliance (Intertwine) Oak Patch layer (Intertwine 2018), specifically where the patch score is greater than or equal to the average patch score within the map refinement area. (The range of scores in the map refinement area is 120 to 765. The average patch score in the map refinement area is 221.) This approach is intended to support preservation of oak patches rated as average or better relative to patches in the map refinement

area. The Intertwine and its partners have not yet provided guidance on use of their data. This is important to note, because the data scoring methodology is complex, and there are likely varied opinions on how it should be interpreted to inform decision making. The approach described above is intended to be a balanced approach to aid preservation of average or better patches of Oregon oak habitat within the map refinement area, while not capturing every single tree or small cluster of trees that may be present in the map refinement area. During the manual review step (Step 3.4, below), this layer was closely reviewed along with aerial photography. If the aerial photo suggested that the oak patch was no longer present, then the small habitat polygon was typically removed.

d) Patch overlaps with Intertwine Habitat Connectivity model results (Intertwine 2022), specifically the "All Habitats Summed Connectivity Model" layer in which scores rated as "moderate cumulative current and/or moderate constricted" or better for connectivity. This approach for identifying HOCs is intended to support preservation of habitat connectivity for all species reviewed by the Intertwine, with average condition or better being preserved. The Intertwine and its partners have not yet provided guidance on use of their data. This is important to note, because the data scoring methodology is complex, and there are likely varied opinions on how it should be interpreted to inform decision making. The approach described above is intended to be a balanced approach to aid preservation of average or better connectivity habitat within the map refinement area. This screening criterion was further reviewed during the manual review step (Step 3.4, below), and the analysis used professional judgement to determine whether the small patch should be kept solely based on this criterion (e.g., if the Intertwine mapping of moderate or better was a single or just a few pixels that did not appear to be part of a more extensive connectivity corridor, then the habitat patch was typically removed, except if the small patch still met the oak patch screening criteria).

C. Considerations for Riparian and Wildlife Habitats

a. Known protected areas within approved developments (i.e., non-buildable tracts subject to conditions of approval or easements dedicated to conservation) were reviewed for inclusion in or removal from the updated Goal 5 Inventory mapping. The homeowner's association coding in the Metro RLIS Outdoor Recreation and

Conservation Area (ORCA) GIS layer was used to define these areas. The following rule set applied to this process:

i. Where such areas overlap or intersect with Goal 5 resources, they will be maintained regardless of size of the area or their potential isolated nature.
ii. Where such areas occur but do not overlap or intersect with Goal 5 resources, the areas will not be considered significant unless they are greater than 2 acres and aerial photo review reveals that they likely contain natural habitat features (e.g., forest canopy as opposed to being large stormwater ponds).

b. Mapped parks and open spaces were identified and incorporated into the Goal 5 resources as follows:
    i. Developed parks with only Washington County Wildlife Habitat were maintained in the updated Goal 5 Inventory upland habitat mapping in areas where such parcels overlap with mapped Goal 5 resources, regardless of habitat patch size or connectivity to other habitat types.
c. Rock Quarry Areas: Habitat mapping was not adjusted in rock quarry parcels. These areas have and will continue to experience massive changes in habitat presence or absence. It is understood that the current mapping does not reflect current conditions; however, current mapping does reflect a reasonable snapshot of how habitat once looked in these areas. Importantly, it is understood that each operation will be required to restore habitats in compliance with their operations permits and a site reclamation plan as part of any closure process for the rock quarry areas.

3.4 Conduct Manual Review and Data Cleanup

The project ecologist for the Washington County Goal 5 Inventory update conducted a detailed manual review of the map results from the previous step. was conducted by the project ecologist. PDF map figures were generated (481 figures, 11 x 17 inches page size, 1 inch equals 200 feet scale) for consistency with the mapping protocols described above. Appendix B provides examples of these edits. The review of these static maps also included looking at aerial photography and GIS data layers that could be actively turned on and off, zoomed in and out, to support the manual review. Proposed edits were added to the PDF maps for tracking purposes and to direct the project's GIS analyst in making edits to the maps.

The following types of manual edits were made:

- Sliver polygons were removed from the Map Refinement Area layer (see Appendix B, Example 1). These slivers appeared in the UUA boundary GIS layer and were likely a result of slight misalignment of the underlying data sources during previous GIS processing.
- Habitat mapping discrepancies due to misalignment of GIS data layers were fixed (see Appendix B, Example 2). These discrepancies due to misalignment occurred most often with respect to the parks and open spaces layer, which had a distinct misalignment relative to the Metro RLIS tax lot layer, resulting in slivers of habitat being maintained on adjacent lots instead of being removed.

- Habitats mapped in clearly developed areas were removed (e.g., based on aerial photo review and applying the various criteria described in Section 3.3) (see Appendix B, Examples 2 through 5).
- The lot size screening criteria removed some riparian corridors entirely or in a piecemeal manner where there was clearly still a stream that was providing habitat for native fish according to ODFW fish distribution mapping (ODFW 2023a). In such areas, riparian habitat was added back in (see Appendix B, Example 5).
- The southwestern corner of the King City area was beyond the limits of Metro's Title 13 habitat mapping. Riparian habitat was added based on a review of aerial photography and the project ecologist's experience with the area (see Appendix B, Example 6).
- Small upland patches were occasionally removed even if they met the small patch screening criteria (see the rationale and criteria in Section 3.3, item B.c.ii., 3 through 5). An example of this is provided in Appendix B, Example 7.

3.5 Incorporate Pre-annexation City and County Concept Plan Habitat Mapping

As noted and listed in Section 3.1, several municipalities in Washington County have completed or are in the process of completing Community Plans for areas in the study area that they intend to annex into their respective city limits. In addition, the County also completed updated Community Plans for two sub-planning areas. Community Plan development includes conducting a detailed review of Goal 5 habitats to provide more up-to-date mapping of habitat types than current County Goal 5 mapping and Metro Title 13 mapping. Therefore, habitat mapping from these Community Plans were incorporated into the County's limited Goal 5 mapping for the UUA. This mapping was incorporated as-is, with no edits. Appendix D provides the mapping results for each Concept Plan.

4.0 RESULTS

Appendix C provides the mapping results for the map refinement area. The following tables show the acreage of habitats in the map refinement area based on current Washington County and Metro mapping, the habitat acreage when mapping was consolidated (see Step 3.2 above), and the final results after significance review.

[Note to TAC Reviewers: Additional breakdown of results will be provided in the final report and will include a breakdown by all County Community Plan areas within the UUA. Results provided below currently just focus on totals for the map refinement area.]

Table 3. Breakdown of limited Goal 5 update Study Area

Habitat Type	Acres
Limited Goal 5 Update Map Refinement Area	26,367
Completed Community Plans (to be incorporated into update, area overlapping with UUA only)	
Cooper Mountain	1,240
South Hillsboro	576
Witch Hazel Village South	151
Jackson East	479
Bonny Slope West	160
North Bethany	848
Total Community Plans	**3,454**
Total	**29,821**

Table 4. Current Washington County habitat acreage in Map Refinement Area

Habitat Type	Acres
Water Areas and Wetlands	851
Water Areas and Wetlands, and Fish and Wildlife Habitat	951
Wildlife Habitat	1,373
Total	**3,175**

Table 5. Current Metro habitat acreage in Map Refinement Area

Habitat Type	Acres
Riparian Class I	2,139
Riparian Class II	1,029
Total Riparian	**3,168**
Upland Class A	613
Upland Class B	1,039
Total Upland	**1,652**
Total All	**4,821**

Table 6. Initial combined habitats, before significance review, in Map Refinement Area

Habitat Type	Acres
Riparian Class I	2,139
Riparian Class II	1,029
Total Riparian	**3,168**

Habitat Type	Acres
County/Metro Overlap Upland Class A	85
County/Metro Overlap Upland Class B	176
Metro Only Upland Class A	891
Metro Only Upland Class B	1,066
County Only Upland	716
Total Upland	**2,934**
Total All	**6,103**

Table 7. Combined habitats, after significance review, in Map Refinement Area

Habitat Type	Acres
Riparian Class I	2,051
Riparian Class II	832
Total Riparian	**2,883**
County/Metro Overlap Upland Class A	143
County/Metro Overlap Upland Class B	181
Metro Only Upland Class A	277
Metro Only Upland Class B	434
County Only Upland	110
Total Upland	**1,145**
Total All	**4,028**

5.0 LITERATURE CITATIONS

Clean Water Services (CWS). 2023. CWS Streams Designation GIS data. Provided via Washington County, July 26, 2023.

Hennings, Lori. 2009. Summary of Metro's Title 13: Nature in Neighborhoods program and habitat mapping criteria.

Intertwine Alliance. 2022. All Habitats Summed Connectivity Model GIS data.

Intertwine Alliance. 2018. Oak Patch GIS data layer. Intertwine Alliance Oak Prairie Working Group.

Metro. 2023a. Metro Title 13 Resource Inventory GIS data. From 2023 RLIS database, based on maps adopted in 2005.

Metro. 2023b. Metro Regional Land Information Service (RLIS), GIS data. February 2023.

Oregon Department of Fish and Wildlife (ODFW). 2023a. Oregon Fish Habitat Distribution Data On-line Mapping Tool. Publish date: April 27, 2023.

Oregon Department of Fish and Wildlife (ODFW). 2023b. Oregon Connectivity Assessment and Mapping Project: Priority Wildlife Connectivity Areas.

Washington County. 2023. Goal 5 Significant Natural Areas GIS data. Provided by County 2023. Original data circa 1980's.

APPENDICES

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APPENDIX A: SUMMARY OF METRO'S TITLE 13 NATURE IN NEIGHBORHOODS PROGRAM AND HABITAT MAPPING CRITERIA

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Riparian corridors ecological functions and criteria

Ecological function	Criteria for receiving a primary score	Criteria for receiving a secondary score
Microclimate and shade	Forest or woody vegetation within **100 feet** of a stream; a wetland[1]; or a flood area[2].	Forest or woody vegetation that is contiguous to the primary area (which is 100 feet) and extends outward to **780** feet.
Streamflow moderation and water storage	A wetland or other water body[3] with a hydrologic connection to a stream; or a flood area.	Forest, woody vegetation, or low structure vegetation/undeveloped soils within **300 feet**[4] of a stream; or forest that is contiguous to the riparian corridor (starts within **300 feet**[5] but extends beyond); or developed floodplains.
Bank stabilization, sediment and pollution control	A 50-foot band is included within the riparian corridor as a default to maintain basic functions. All sites within **50 feet** of a surface stream receive a primary score. Forest, woody vegetation, or low structure vegetation/undeveloped soils within **100 feet**[6] of a stream or a wetland; or forest, woody vegetation, or low structure vegetation/ undeveloped soils[8] within a flood area. Forest, woody vegetation, or low structure vegetation/undeveloped soils within **100-200 feet** of a stream if the slope is greater than 25%.	Forest, woody vegetation, or low structure vegetation/undeveloped soils located on a slope greater than 25%, that starts within **175** feet[7] of a stream and runs to the first effective break in slope.
Large wood and channel dynamics	Forest within **150 feet** of a stream or wetland; or within a flood area. The channel migration zone is basically defined by the floodplain, but where there is no mapped floodplain a default of **50 feet** was selected to allow for the channel migration zone[9].	Forest within **150 to 262 feet** of a stream; or developed floodplains.
Organic material sources	Forest or woody vegetation within **100 feet** of a stream or wetland; or within a flood area.	Forest or woody vegetation within **100 to 170 feet** of a stream.

Source: Metro 2001.

[1]Here we refer to "hydrologically-connected wetlands," which are located partially or wholly within ¼ mile of a surface stream or flood area.

[2]eveloped floodplains are not included as a regional resource since they do not receive a primary ecological function score.

[3]Other water body" could include lakes, ponds, reservoirs, or manmade water feature that is not a water quality facility or farm pond.

[4]All upland forests, vegetation, and undeveloped soils help to moderate streamflow and store water. Staff used 300 feet here because some data layers for landcover types do not extend past 300 feet from a stream.

[5]Forest landcover is the only type that extends beyond 300 feet in the Metro database and thus excludes other types.

[6]Metro's science paper indicates 100 feet as a suitable average distance for vegetation contributing to filtering.

[7]175 feet was chosen due to the method used for mapping riverine slopes.

[8]The woody vegetation and low structure vegetation/undeveloped soils are mapped to 300 feet, the forest is mapped to the edge of the floodplain.

[9]Application of the default to maintain basic functions will be limited to low and moderate gradient channel types.

Created by Lori Hennings, November 2009

Class I riparian/wildlife habitat

- Largest classification – 32% of total habitat inside UGB, 31% outside
- Includes rivers, streams, wetlands, undeveloped floodplains, forest canopy within 100 feet of streams (200 if steep sloped)
- High value riparian corridors providing 3-5 primary functions (18-30 in the model)
    - Microclimate and shade
    - Streamflow moderation and water storage
    - Bank stabilization, sediment and pollution control
    - Large wood and channel dynamics
    - Organic material sources

Class II riparian/wildlife habitat

- 14% inside UGB, 10% outside
- 1 to 2 primary functions (6-17 points) or one primary plus one or more secondary
- Includes wildlife habitat where it coincides with the medium value riparian habitat
- Includes rivers, streams, 50-ft area along developed streams, forest canopy or low structure within 200 ft of streams, and portions of undeveloped floodplain beyond 300 ft of streams
- Elevated to Class I when contain HOCs

Class III riparian/wildlife habitat

- 8% of habitat inside UGB, 1% outside
- Riparian value only (outside wildlife areas)
- Developed floodplains, smaller forest canopies disassociated from streams (less than 20 acres)

Class A upland wildlife habitat

- 24% of habitat inside UGB, 25% outside
- High value habitat areas scoring 7-9 points in model
- Includes upland portions of large forest patches
- May also contain areas providing secondary fxns for riparian, and HOCs outside riparian

Class B upland wildlife habitat

- 13% inside, 22% outside UGB
- 4-6 points in model
- Primarily upland portions of medium sized forest patches

Class C upland wildlife habitat

- 9% inside, 11% outside UGB
- 2-3 points in model
- Include forest patches and smaller connector patches along streams and rivers

Created by Lori Hennings, November 2009

Table 3.07-13a: Method for Identifying Habitat Conservation Areas ("HCA")

Fish & wildlife habitat classification	*High Urban development value*[1]	*Medium Urban development value*[2]	*Low Urban development value*[3]	*Other areas: Parks and Open Spaces, no design types outside UGB*
Class I Riparian	Moderate HCA	High HCA	High HCA	High HCA / High HCA+[4]
Class II Riparian	Low HCA	Low HCA	Moderate HCA	Moderate HCA / High HCA+[4]
Class A Upland Wildlife	No HCA	No HCA	No HCA	No HCA / High HCA[5] / High HCA+[4]
Class A Upland Wildlife	No HCA	No HCA	No HCA	No HCA / High HCA[5] / High HCA+[4]

NOTE: The default urban development value of property is as depicted on the Metro Habitat Urban Development Value Map. The Metro 2040 Design Type designations provided in the following footnotes are only for use when a city or county is determining whether to make an adjustment pursuant to Section 4(E)(5) of this title.

[1] Primary 2040 design types: Regional Centers, Central City, Town Centers, and Regionally Significant Industrial Areas
[2] Secondary 2040 design types: Main Streets, Station Communities, Other Industrial Areas, and Employment Centers
[3] Tertiary 2040 design types: Inner and Outer Neighborhoods, Corridors
[4] Cities and counties shall give Class I and II riparian habitat and Class A and B upland wildlife habitat in parks designated as natural areas even greater protection than that afforded to High Habitat Conservation Areas, as provided in Section 4(A)(5) of this title.
[5] All Class A and B upland wildlife habitat in publicly-owned parks and open spaces, except for parks and open spaces where the acquiring agency clearly identified that it was acquiring the property to develop it for active recreational uses, shall be considered High HCAs.

Table 3.07-13b: Method for Identifying Habitat Conservation Areas ("HCA") in Future Metro Urban Growth Boundary Expansion Areas

Fish & wildlife habitat classification	*High Urban development value*[1]	*Medium Urban development value*[2]	*Low Urban development value*[3]	*Other areas: Parks and Open Spaces, no design types outside UGB*
Class I Riparian	Moderate HCA	High HCA	High HCA	High HCA / High HCA+[4]
Class II Riparian	Low HCA	Low HCA	Moderate HCA	Moderate HCA / High HCA+[4]
Class A Upland Wildlife	Low HCA	Moderate HCA	Moderate HCA	High HCA / High HCA[5] / High HCA+[4]
Class B Upland Wildlife	Low HCA	Low HCA	Moderate HCA	Moderate HCA / High HCA[5] / High HCA+[4]

(same footnotes apply as in first table)

APPENDIX B: EXAMPLE MANUAL EDITS

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Example 1

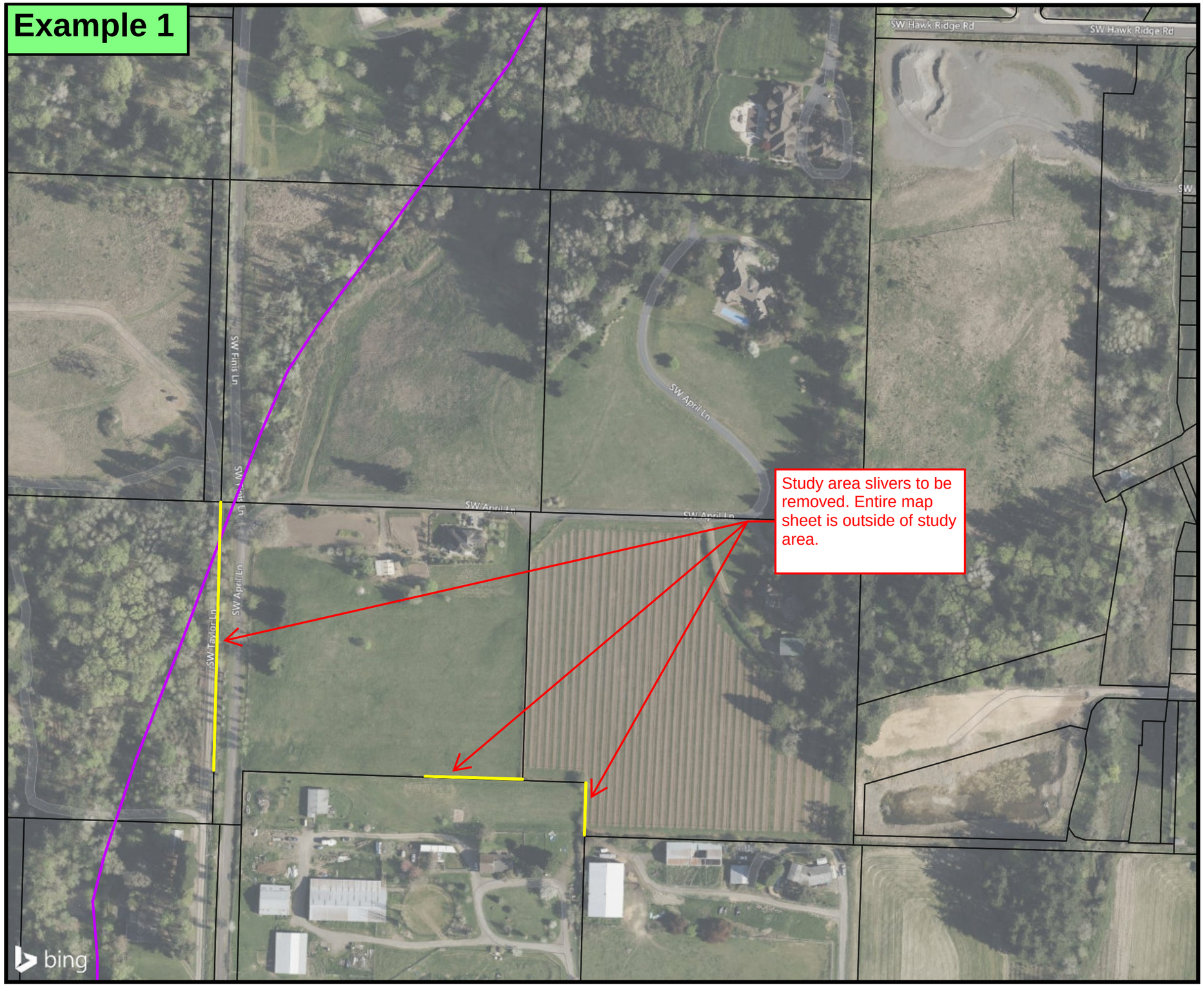


Figure 2, Sheet 81
Results

7/20/2023

Washington County Limited Goal 5 Program Update

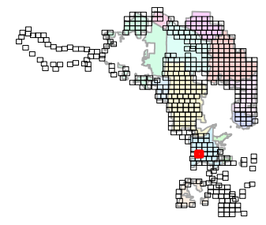
Habitat Inventory

Legend

- Study Area
- Isolated Upland Patch Removed
- Riparian Wildlife Habitat Class I
- Riparian Wildlife Habitat Class II
- Overlapping County and Metro UWH Class A
- Overlapping County and Metro UWH Class B
- Metro Only Upland Wildlife Habitat Class A
- Metro Only Upland Wildlife Habitat Class B
- County UWH
- CWS Stream (Open)
- Parks & Greenspaces
- Metro RLIS Tax Lot

Justification for Retaining Isolated Upland Habitat Patches < 2 acres	
1	Adjacent to Riparian Habitat Layer
2	Intersects Oak Woodland Patches with OWP Score ≥ 221
3	Intersects Intertwine All Habitats Summed Layer (Mod/High Conn only)
4	Intersects ODFW Priority Habitat Connectivity Area
5	Adjacent to Goal 5 County Habitats (UWH, WAW, and WRFWH) outside SA
6	Adjacent to Metro Riparian (I/II) or Upland (A/B) Habitats outside SA
7	Intersects with ORCA Homeowner's Association area (HOA)
8	Intersects Park/Open Space
9	Boundary touches different type of Upland Habitat

Notes: Within the Metro RLIS Parks and Open Space areas, Metro riparian I/II habitat and Metro/County/Overlapping upland habitat was retained. Patches smaller than 0.01 acres were removed.



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WASHINGTON COUNTY OREGON

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Example 2

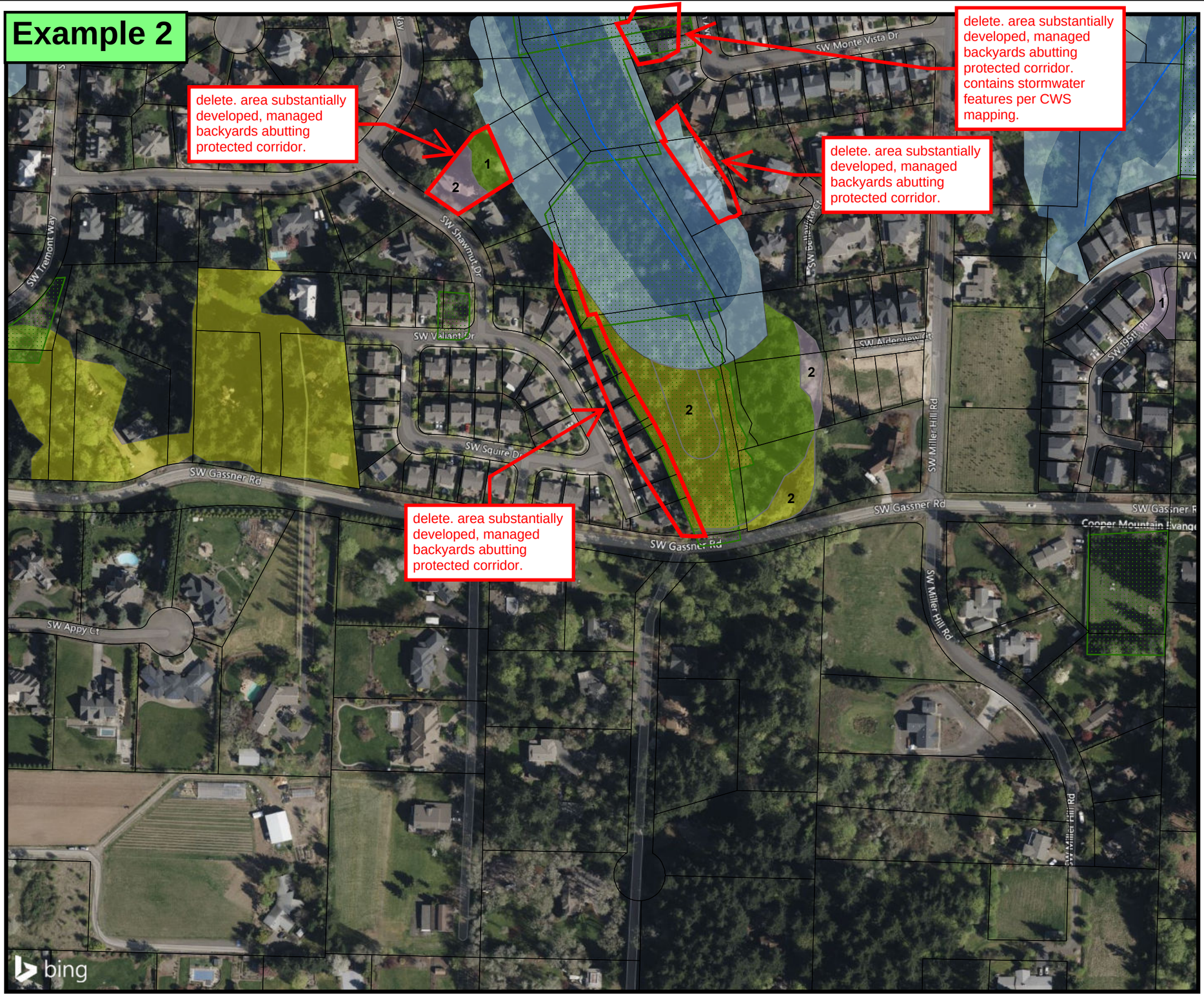


Figure 2, Sheet 141
Results

7/29/2023

Washington County Limited Goal 5 Program Update

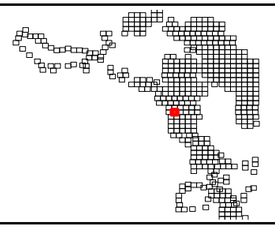
Habitat Inventory

Legend

- Overlapping Metro Upland Wildlife Habitat Class A
- Overlapping Metro Upland Wildlife Habitat Class B
- Metro Upland Wildlife Habitat Class A
- Metro Upland Wildlife Habitat Class B
- County Upland Wildlife Habitat (UWH)
- Riparian Wildlife Habitat Class I
- Riparian Wildlife Habitat Class II
- Isolated Patch to Remove
- CWS Stream (Open)
- CWS Stream (Piped)
- Park & Greenspace
- Metro RLIS Tax Lot

Justification for Retaining Isolated Upland Habitat Patches < 2 acres	
1	Adjacent to Riparian Habitat Layer
2	Adjacent to different type of Upland Habitat
3	Intersects Oak Woodland Patches with OWP Score ≥ 221
4	Intersects Intertwine All Habitats Summed Layer (Mod/High Conn only)
5	Intersects ODFW Priority Habitat Connectivity Area
6	Adjacent to Goal 5 County Habitats (UWH, WAW, and WRFWH) outside SA
7	Adjacent to Metro Riparian (I/II) or Upland (A/B) Habitats outside SA
8	Intersects with ORCA Homeowner's Association area (HOA)
9	Intersects Park/Open Space

Notes: Within the Metro RLIS Parks and Open Space areas, Metro riparian I/II habitat and Metro/County/Overlapping upland habitat was retained. Patches smaller than 0.01 acres were removed.



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Example 3

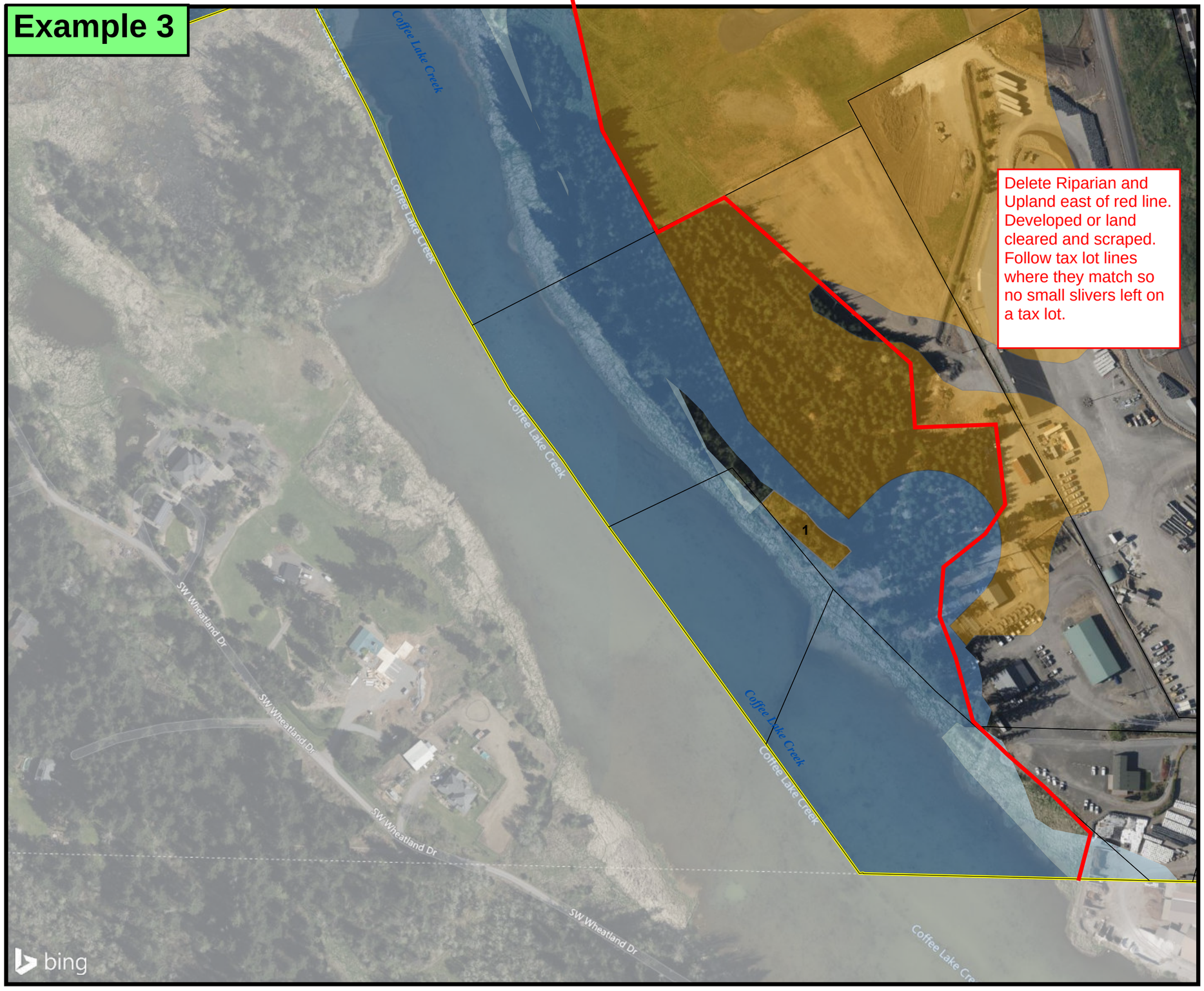


Figure 2, Sheet 1
Results

7/29/2023

Washington County Limited Goal 5 Program Update

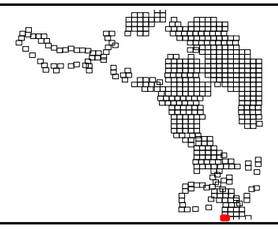
Habitat Inventory

Legend

- Overlapping Metro Upland Wildlife Habitat Class A
- Overlapping Metro Upland Wildlife Habitat Class B
- Metro Upland Wildlife Habitat Class A
- Metro Upland Wildlife Habitat Class B
- County Upland Wildlife Habitat (UWH)
- Riparian Wildlife Habitat Class I
- Riparian Wildlife Habitat Class II
- Isolated Patch to Remove
- CWS Stream (Open)
- CWS Stream (Piped)
- Park & Greenspace
- Metro RLIS Tax Lot

Justification for Retaining Isolated Upland Habitat Patches < 2 acres	
1	Adjacent to Riparian Habitat Layer
2	Adjacent to different type of Upland Habitat
3	Intersects Oak Woodland Patches with OWP Score ≥ 221
4	Intersects Intertwine All Habitats Summed Layer (Mod/High Conn only)
5	Intersects ODFW Priority Habitat Connectivity Area
6	Adjacent to Goal 5 County Habitats (UWH, WAW, and WRFWH) outside SA
7	Adjacent to Metro Riparian (I/II) or Upland (A/B) Habitats outside SA
8	Intersects with ORCA Homeowner's Association area (HOA)
9	Intersects Park/Open Space

Notes: Within the Metro RLIS Parks and Open Space areas, Metro riparian I/II habitat and Metro/County/Overlapping upland habitat was retained. Patches smaller than 0.01 acres were removed.



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WASHINGTON COUNTY OREGON

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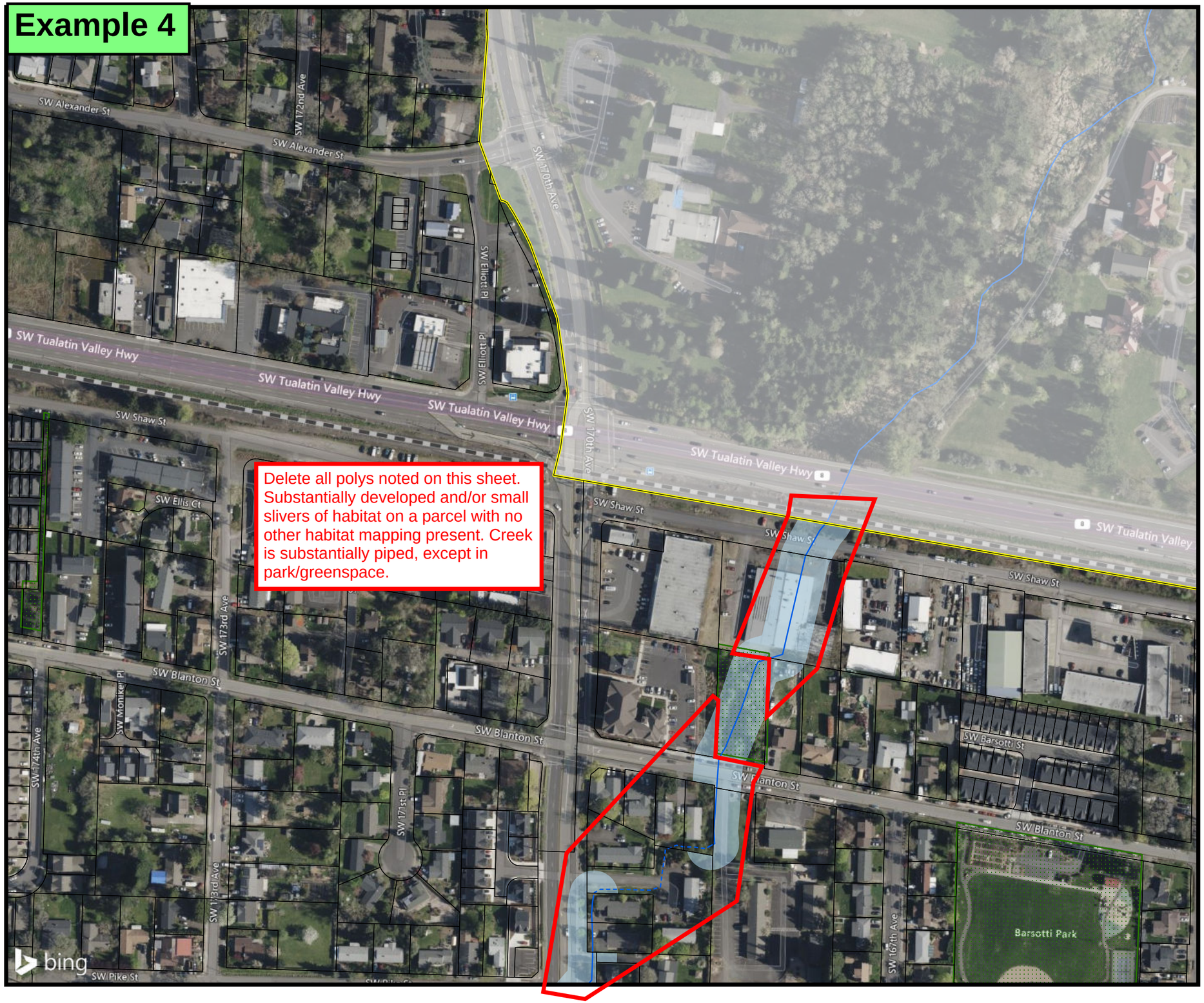
Example 4



Delete all polys noted on this sheet. Substantially developed and/or small slivers of habitat on a parcel with no other habitat mapping present. Creek is substantially piped, except in park/greenspace.

Figure 2, Sheet 223
Results

7/29/2023

Washington County Limited Goal 5 Program Update

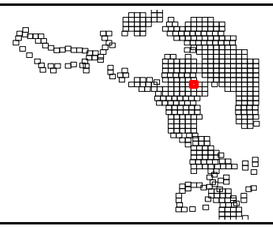
Habitat Inventory

Legend

- Overlapping Metro Upland Wildlife Habitat Class A
- Overlapping Metro Upland Wildlife Habitat Class B
- Metro Upland Wildlife Habitat Class A
- Metro Upland Wildlife Habitat Class B
- County Upland Wildlife Habitat (UWH)
- Riparian Wildlife Habitat Class I
- Riparian Wildlife Habitat Class II
- Isolated Patch to Remove
- CWS Stream (Open)
- CWS Stream (Piped)
- Park & Greenspace
- Metro RLIS Tax Lot

Justification for Retaining Isolated Upland Habitat Patches < 2 acres	
1	Adjacent to Riparian Habitat Layer
2	Adjacent to different type of Upland Habitat
3	Intersects Oak Woodland Patches with OWP Score ≥ 221
4	Intersects Intertwine All Habitats Summed Layer (Mod/High Conn only)
5	Intersects ODFW Priority Habitat Connectivity Area
6	Adjacent to Goal 5 County Habitats (UWH, WAW, and WRFWH) outside SA
7	Adjacent to Metro Riparian (I/II) or Upland (A/B) Habitats outside SA
8	Intersects with ORCA Homeowner's Association area (HOA)
9	Intersects Park/Open Space

Notes: Within the Metro RLIS Parks and Open Space areas, Metro riparian I/II habitat and Metro/County/Overlapping upland habitat was retained. Patches smaller than 0.01 acres were removed.



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Example 5

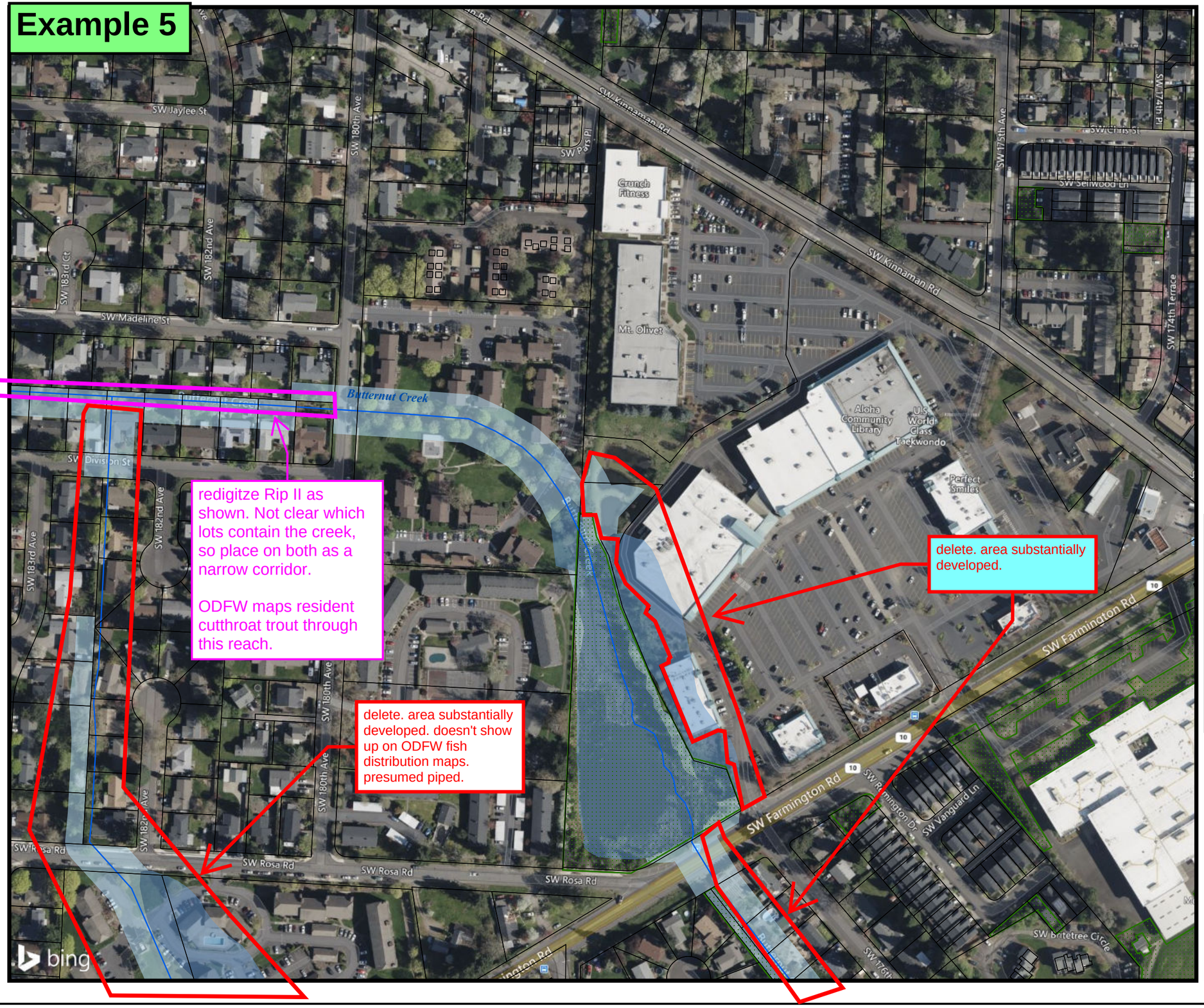


Figure 2, Sheet 188
Results

7/29/2023

Washington County Limited Goal 5 Program Update

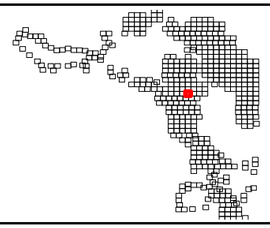
Habitat Inventory

Legend

- Overlapping Metro Upland Wildlife Habitat Class A
- Overlapping Metro Upland Wildlife Habitat Class B
- Metro Upland Wildlife Habitat Class A
- Metro Upland Wildlife Habitat Class B
- County Upland Wildlife Habitat (UWH)
- Riparian Wildlife Habitat Class I
- Riparian Wildlife Habitat Class II
- Isolated Patch to Remove
- CWS Stream (Open)
- CWS Stream (Piped)
- Park & Greenspace
- Metro RLIS Tax Lot

Justification for Retaining Isolated Upland Habitat Patches < 2 acres	
1	Adjacent to Riparian Habitat Layer
2	Adjacent to different type of Upland Habitat
3	Intersects Oak Woodland Patches with OWP Score ≥ 221
4	Intersects Intertwine All Habitats Summed Layer (Mod/High Conn only)
5	Intersects ODFW Priority Habitat Connectivity Area
6	Adjacent to Goal 5 County Habitats (UWH, WAW, and WRFWH) outside SA
7	Adjacent to Metro Riparian (I/II) or Upland (A/B) Habitats outside SA
8	Intersects with ORCA Homeowner's Association area (HOA)
9	Intersects Park/Open Space

Notes: Within the Metro RLIS Parks and Open Space areas, Metro riparian I/II habitat and Metro/County/Overlapping upland habitat was retained. Patches smaller than 0.01 acres were removed.



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WASHINGTON COUNTY OREGON

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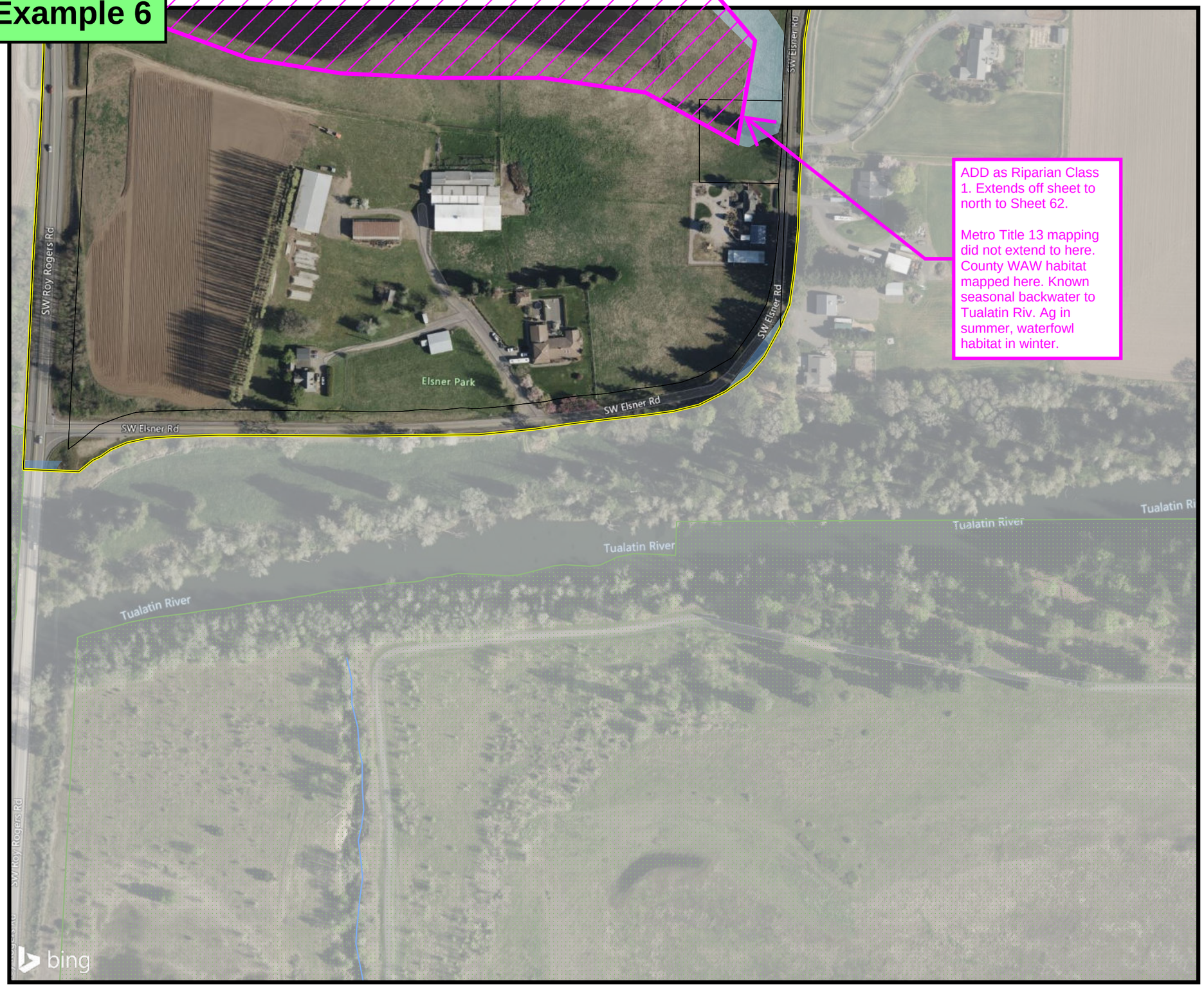
Example 6



ADD as Riparian Class 1. Extends off sheet to north to Sheet 62.

Metro Title 13 mapping did not extend to here. County WAW habitat mapped here. Known seasonal backwater to Tualatin Riv. Ag in summer, waterfowl habitat in winter.

Figure 2, Sheet 58 Results

7/29/2023

Washington County Limited Goal 5 Program Update

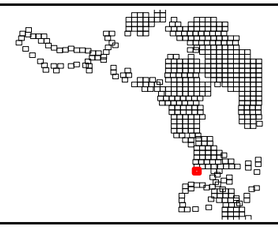
Habitat Inventory

Legend

- Overlapping Metro Upland Wildlife Habitat Class A
- Overlapping Metro Upland Wildlife Habitat Class B
- Metro Upland Wildlife Habitat Class A
- Metro Upland Wildlife Habitat Class B
- County Upland Wildlife Habitat (UWH)
- Riparian Wildlife Habitat Class I
- Riparian Wildlife Habitat Class II
- Isolated Patch to Remove
- CWS Stream (Open)
- CWS Stream (Piped)
- Park & Greenspace
- Metro RLIS Tax Lot

Justification for Retaining Isolated Upland Habitat Patches < 2 acres	
1	Adjacent to Riparian Habitat Layer
2	Adjacent to different type of Upland Habitat
3	Intersects Oak Woodland Patches with OWP Score ≥ 221
4	Intersects Intertwine All Habitats Summed Layer (Mod/High Conn only)
5	Intersects ODFW Priority Habitat Connectivity Area
6	Adjacent to Goal 5 County Habitats (UWH, WAW, and WRFWH) outside SA
7	Adjacent to Metro Riparian (I/II) or Upland (A/B) Habitats outside SA
8	Intersects with ORCA Homeowner's Association area (HOA)
9	Intersects Park/Open Space

Notes: Within the Metro RLIS Parks and Open Space areas, Metro riparian I/II habitat and Metro/County/Overlapping upland habitat was retained. Patches smaller than 0.01 acres were removed.



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WASHINGTON COUNTY OREGON

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Example 7

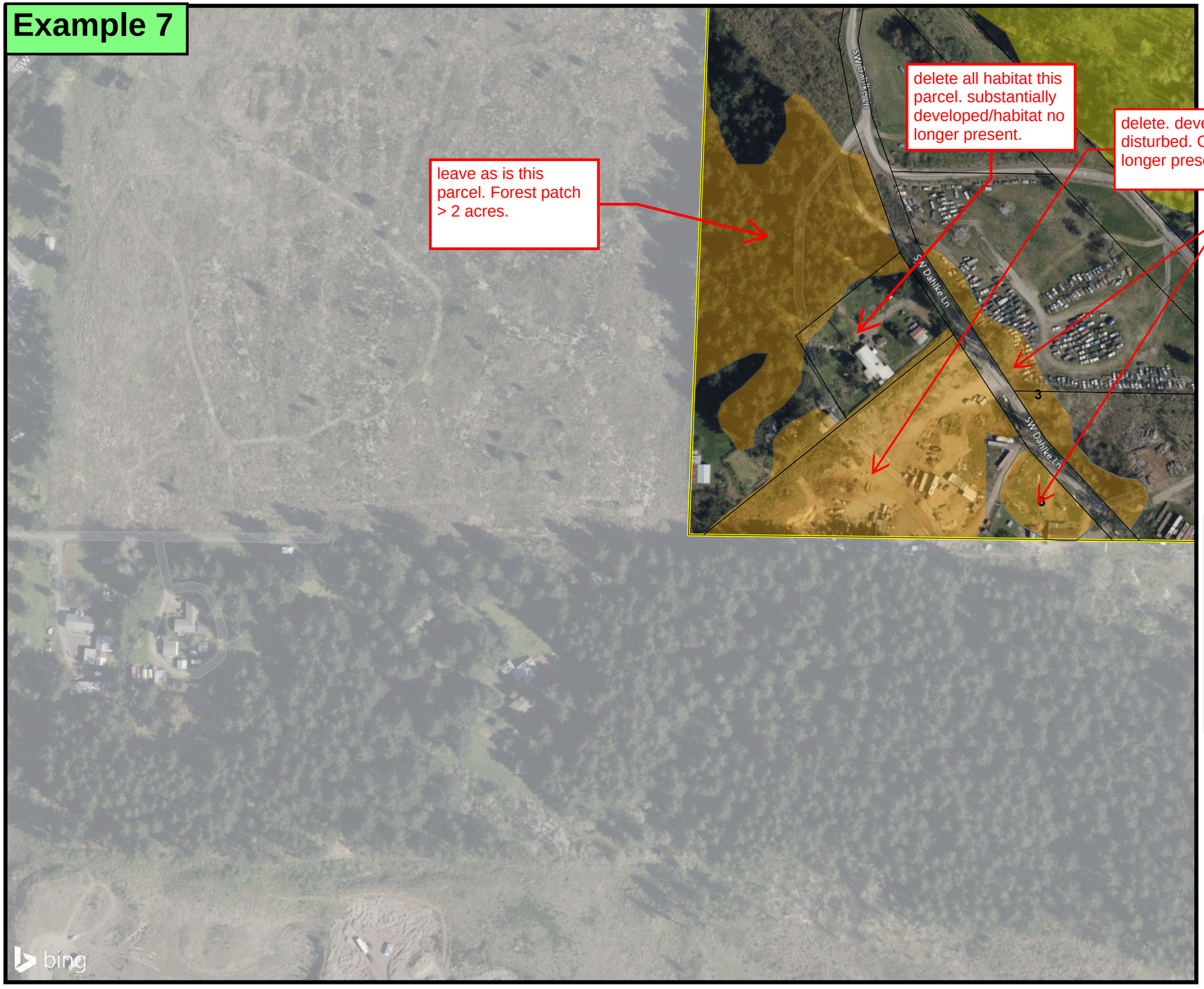


Figure 2, Sheet 30
Results

7/29/2023

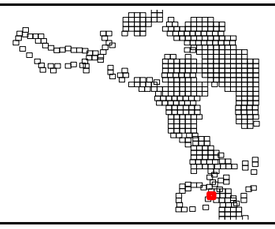
Washington County Limited Goal 5 Program Update

Habitat Inventory

- Overlapping Metro Upland Wildlife Habitat Class A
- Overlapping Metro Upland Wildlife Habitat Class B
- Metro Upland Wildlife Habitat Class A
- Metro Upland Wildlife Habitat Class B
- County Upland Wildlife Habitat (UWH)
- Riparian Wildlife Habitat Class I
- Riparian Wildlife Habitat Class II
- Isolated Patch to Remove
- CWS Stream (Open)
- CWS Stream (Piped)
- Park & Greenspace
- Metro RLIS Tax Lot

Justification for Retaining Isolated Upland Habitat Patches < 2 acres	
1	Adjacent to Riparian Habitat Layer
2	Adjacent to different type of Upland Habitat
3	Intersects Oak Woodland Patches with OWP Score ≥ 221
4	Intersects Intertwine All Habitats Summed Layer (Mod/High Conn only)
5	Intersects ODFW Priority Habitat Connectivity Area
6	Adjacent to Goal 5 County Habitats (UWH, WAW, and WRFWH) outside SA
7	Adjacent to Metro Riparian (I/II) or Upland (A/B) Habitats outside SA
8	Intersects with ORCA Homeowner's Association area (HOA)
9	Intersects Park/Open Space

Notes: Within the Metro RLIS Parks and Open Space areas, Metro riparian I/II habitat and Metro/County/Overlapping upland habitat was retained. Patches smaller than 0.01 acres were removed.



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WASHINGTON COUNTY OREGON

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APPENDIX C: FIGURES FOR MAP REFINEMENT AREA

Maps provided as separate PDF file for this review draft

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for double sided printing

APPENDIX D: COMPLETED COMMUNITY PLAN MAPPING

- North Bethany (County)
- Bonny Slope West (County)
- Cooper Mountain (Beaverton)
- South Hillsboro (Hillsboro)
- Jackson East (Hillsboro)

Maps not provided for this review draft. They will be included in final report.

Overview of Draft ESEE Analysis and Title 13 Compliance Methodology

Prepared for the Technical Advisory Committee (TAC) by MIG | APG
August 9, 2023

I. Introduction

As discussed at TAC meeting #1, this project will result in an updated Significant Natural Resources (SNR) Inventory, changes to comprehensive plan policies, and clear and objective regulatory standards for the protection of Significant Natural Resources within Washington County. The new standards will address state and regional requirements as well as legal issues. An economic, social, environmental, and energy (ESEE) analysis will also be prepared to help evaluate potential changes. An ESEE analysis considers the pros and cons of allowing, limiting, or prohibiting uses that might conflict with the resources.

Oregon Administrative Rules (OAR) 660, Division 23 (the "Goal 5 rule") establishes procedures and requirements for complying with Goal 5, including preparation of an ESEE analysis to help evaluate potential changes. Within the Metro region, local governments are also subject to the natural resource requirements in Metro's Urban Growth Management Functional Plan (UGMFP), Title 13 (Nature in Neighborhoods).

> *OAR 660-023-0040(1) Local governments shall develop a program to achieve Goal 5 for all significant resource sites based on an analysis of the economic, social, environmental, and energy (ESEE) consequences that could result from a decision to allow, limit, or prohibit a conflicting use…*
>
> *The ESEE analysis need not be lengthy or complex, but should enable reviewers to gain a clear understanding of the conflicts and the consequences to be expected.*

This memo outlines the proposed approach to demonstrating compliance with UGMFP Title 13 and preparing the required Goal 5 Economic, Social, Environmental, and Energy (ESEE) analysis.

II. UGMFP Title 13 (Nature in Neighborhoods)

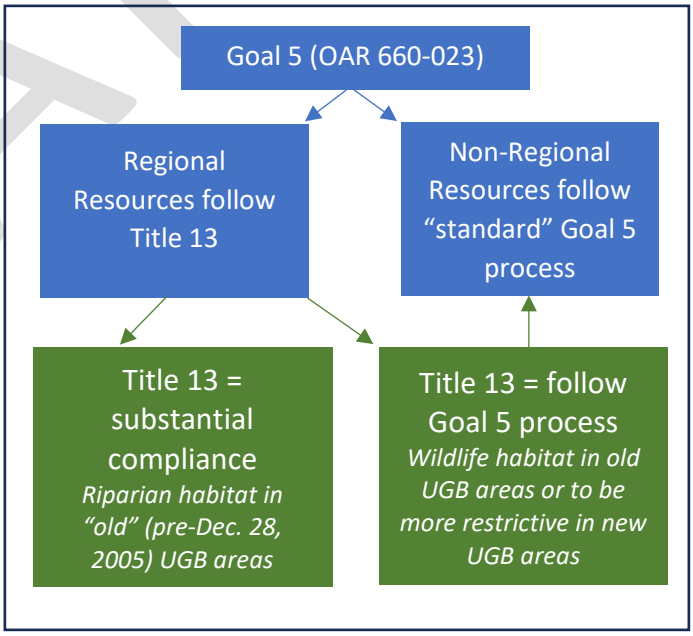
In 2005, the Metro Council voted to approve a regional Nature in Neighborhoods program (including Title 13 of the UGMFP) to meet the requirements of Goal 5, an Oregon statewide planning goal for Riparian Corridors and Wildlife Habitat. This means that for regionally significant Riparian Corridors (OAR 660-023-0090) and Wildlife Habitat (OAR 660-023-0110) within Metro's boundary, Washington County (County) must comply with the Metro functional plan rather than the standard provisions of the Goal 5 rule.

> *OAR 660-023-0800(3) "…Upon acknowledgment of Metro's regional resource functional plan, local governments within Metro's jurisdiction shall apply the requirements of the functional plan for regional resources rather than the requirements of this division.*

Metro conducted a habitat inventory and adopted a Regionally Significant Fish and Wildlife Habitat Inventory Map and the underlying GIS data that the map represents. The map identifies the areas that have been determined to contain regionally significant fish and wildlife habitat. The map divides habitat into two general categories, riparian and upland wildlife. As a part of the adoption process Metro Council considered the results of the ESEE consequences of protecting or not protecting the habitat, public input and technical review, and the Metro Council's subsequent decision to balance conflicting uses in habitat areas.[1]

In 2005, the County coordinated with cities in the County, Clean Water Services, the Tualatin Hills Park & Recreation District (THPRD) and Metro, to adopt a comprehensive program for the protection of fish and wildlife habitat in the Tualatin Basin to comply with Metro's new Goal 5 mandate. This group, the Tualatin Basin Partners, conducted a Goal 5 ESEE analysis of the portion of Metro's Inventory for Washington County located near and within the Urban Growth Boundary (UGB), including all waterways that feed the Tualatin River. The results of that analysis led to the "Tualatin Basin Program." Washington County complied with the requirements of Title 13 through participation in the Tualatin Basin Program pursuant to Title 13 (3.07.1330(b)(5)). The County adopted policies and minor changes to Section 422 that implemented and demonstrated substantial compliance with Title 13.

Updates to the natural resource inventory and regulations impacting regional resources will require findings that the County remains substantially compliant with Title 13 for regional resources including Upland Wildlife Habitat in areas added to the UGB after Dec. 28, 2005 ("new" UGB areas) and riparian habitat. However, Title 13 directs jurisdictions to follow the standard Goal 5 process (including preparation of an ESEE analysis) in certain circumstances, such as when a jurisdiction is proposing to add resource areas to the inventory or to be more restrictive than the Title 13 requirements for Riparian Habitat.[2]



[1] Title 13 ESEE Analyses, Metro Ordinance 05-1077C, Attachments 3 (Phase I ESEE) & 4 (Phase II ESEE) to Exhibit F.

[2] UGMFP 3.07.1330(a)

(1) A city or county shall apply the requirements of division 23 of OAR chapter 660 in order to adopt comprehensive plan amendments or land use regulations that (i) would otherwise require compliance with division 23 of OAR chapter 660 but for the adoption of this title (i.e., amendments or regulations adopted to protect Goal 5 resources), and (ii) will limit development in areas not identified as riparian habitat on the Inventory Map, unless such provisions (a) are part of a program intended to comply with Metro Code Section 3.07.1330(b)(3) and apply only to areas identified as upland wildlife habitat on the Inventory Map (i.e., they do not apply to areas not identified as habitat); or (b) apply to areas identified as Class A or B upland wildlife habitat on the Inventory Map that are brought within the UGB after December 28, 2005. Such a city or county shall seek

Because this project is re-evaluating significant County Wildlife Habitat as well as Class A and B Upland Wildlife Habitat in areas that were in the UGB before Dec. 28, 2005, a full ESEE analysis for these resources is needed. In addition, while Title 13 compliance is required for regional Wildlife and Riparian resources in areas brought within the UGB after Dec. 28, 2005, a supplemental ESEE analysis will allow the County to consider additional regulatory options.

Proposed Approach:
The table below summarizes the proposed approach for each resource type and location (i.e., whether it is located on land that was in the UGB before (or after) Dec. 28, 2005.

<table>
<tr><th>Resource Type</th><th>"Old" UGB (Pre-Dec. 28, 2005)</th><th>"New" UGB (Post-Dec. 28, 2005)</th></tr>
<tr><td>Regionally Significant Riparian Areas (including Class I & II)</td><td>Demonstrate continued compliance with Title 13 (Tualatin Basin Approach)</td><td rowspan="2">Demonstrate compliance with Title 13. Plus, prepare <u>supplemental</u> ESEE to evaluate whether level of protection should exceed Title 13.</td></tr>
<tr><td>Regionally Significant Upland Wildlife Habitat (including Class A & B)</td><td rowspan="2">Follow "standard" Goal 5 process including preparation of an ESEE analysis</td></tr>
<tr><td>Locally significant resources (e.g., County Wildlife Habitat)</td><td>Follow "standard" Goal 5 process including preparation of an ESEE analysis</td></tr>
</table>

Question for TAC:

- **Do you foresee any problems with the proposed approach for Goal 5 and Title 13 compliance?**

III. Goal 5 (OAR 660-023) ESEE Process

As described above, the ESEE analysis will evaluate the economic, social, environmental, and energy consequences of allowing, limiting, or prohibiting conflicting uses. The focus of the full ESEE analysis will therefore be on the updated Upland Wildlife Habitat and its impact area that are not regulated by Title 13. This includes Significant Upland Wildlife Habitat on lands that were in the UGB before Dec. 28, 2005, and any "locally significant" resources added to the County inventory after adoption of Title 13. NOTE: for simplicity, hereafter in this memo, we will refer to these Significant Natural Resources as "Wildlife Habitat." A supplemental ESEE analysis will also be prepared to consider the impact of conflicting uses from urban "holding" land use designations on identified significant resources in areas that were brought into the UGB after Dec. 28, 2005.

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acknowledgement of such provisions from LCDC or treat such provisions as post-acknowledgement plan amendments under ORS chapter 197;…

(3) After a city or county has demonstrated that it is in substantial compliance with the requirements of this title, if the city or county wishes to adopt comprehensive plan amendments or land use regulations applicable to areas identified as riparian habitat on the Inventory Map that have the effect of imposing greater limits on development than those imposed by provisions that are in substantial compliance with the requirements of this title, such a city or county shall comply with the provisions of division 23 of OAR chapter 660, and shall seek acknowledgement of such provisions from LCDC or treat such provisions as post-acknowledgement plan amendments under ORS chapter 197.

The steps in the standard ESEE process are as follows:

A. Identify conflicting uses;
B. Determine the impact area;
C. Analyze the ESEE consequences; and
D. Develop a program to achieve Goal 5.

A. Conflicting Uses

The first step in the ESEE analysis is to identify conflicting uses that "exist or could occur" within significant resource areas or within their identified impact areas.[3] Identifying conflicting uses is important to focus the ESEE consequences analysis on various land uses and related disturbance activities that may negatively impact significant Wildlife Habitat.

A wide range of disturbance activities can occur throughout urban Washington County. However, the degree to which these disturbances occur, and their impacts to Goal 5 resources, depends in large part on the intensity of land use (e.g., low density residential vs. mixed use center), and the form and layout of development (cluster development vs. evenly distributed development). The Goal 5 rule (OAR 660-23-040(5)) allows a jurisdiction to "address each of the identified conflicting uses, or it may address a group of similar conflicting uses."

Governments are directed to examine land uses allowed outright or conditionally within the land use districts applied to the resource site and in its impact area. If a local government finds that no uses conflict with a significant resource site, acknowledged policies and land use regulations may be considered sufficient to protect the resource site. The determination that there are "no conflicting uses" must be based on the applicable land use district rather than ownership of the site (OAR 660-023-0040(2)).

In the 2005 ESEE analysis prepared by the TBNRCC, conflicting uses were grouped into four Conflicting Use Categories. Each of the four categories represented a group of land uses that could conflict with resources with similar impacts to the significant resource and its impact area. These categories were specific to the Tualatin Basin, but also coordinated with Metro's ESEE analysis at the regional level. The use categories from the 2005 ESEE analysis are summarized in the table on the following page, as well as modifications proposed for the upcoming 2023 ESEE analysis.

[3] OAR 660-023-0040(2) Local governments shall identify conflicting uses that exist, or could occur, with regard to significant Goal 5 resource sites. To identify these uses, local governments shall examine land uses allowed outright or conditionally within the zones applied to the resource site and in its impact area. Local governments are not required to consider allowed uses that would be unlikely to occur in the impact area because existing permanent uses occupy the site.

Conflicting Use Categories

Description of Conflicting Use Categories from 2005 ESEE prepared by the TBNRCC			Proposed Modifications to Conflicting Use Categories for 2023 ESEE Analysis
Category	**Corresponding Land Use Designations**	**Characterization**	
High Intensity Urban (HIU)	– Commercial – Industrial – Mixed Use – Regional Centers, Town Centers, Station Areas, Main Streets, Employment Areas, Corridors – Other (Institutional Facilities, Public Facilities, Parks) – Non-annexed lands within the UGB zoned Future Development, 10-acres (FD-10) proposed for HIU	High potential for impacts to regionally significant riparian corridor and upland wildlife habitat resources due to the intensity of activity and the existing or expected amount of impervious surface area due to increased lot coverage and minimum Floor Area Ratios (FAR). Also, there is a high expectation for development or redevelopment in these areas.	Retain HIU category and characterization with one exception -- exclude lands currently designated FD-10 or FD-20. See proposed Non/Future Urban category below.
Other Urban (OU)	– Residential (single-family and multi-family) – Other (Institutional Facilities, Public Facilities, Parks) – Non-annexed lands within the UGB zoned Future Development, 10-acres (FD-10) proposed for OU*	Medium potential for impacts to regionally significant riparian corridor and upland wildlife habitat resources and medium to low expectation for development or redevelopment.	Retain OU category and characterization with one exception -- exclude lands currently designated FD-10 or FD-20. See proposed Non/Future Urban category below.
Future Urban (FU)	– Urban Growth Boundary (UGB) Expansion Areas	Varying potential for impacts to regionally significant riparian corridor and upland wildlife habitat resources depending on the 2040 design types assigned through the UGB expansion process. There is a high expectation for development in these areas and a corresponding potential for future protection.	Non/Future Urban (NFU). Consolidate Future Urban and Non-Urban into a single category. This change recognizes that the conflicting uses associated with FD-10 and FD-20 are comparable to non-urban designations. There is also relatively little Farm/Forest or Rural designated land within the project study area. This combined category can be characterized as follows: Low potential for impacts to regionally significant riparian corridor and upland wildlife habitat resources from increases in impervious surface area, but more potential for impact from loss of habitat due to agricultural practices under current designations. There is a high expectation for development in these areas and a corresponding potential for future protection upon annexation.
Non-Urban (NU)	– Farm/Forest (FF) – Rural (RUR, RR)	Low potential for impacts to regionally significant riparian corridor and upland wildlife habitat resources from increases in impervious surface area, but more potential for impact from loss of habitat due to agricultural practices. Low expectation for change in these areas.	

Proposed Approach:

The proposed approach would establish conflicting use categories similar to those used in the 2005 Tualatin Basin ESEE analysis, but with some modifications to reflect the focus of the 2023 ESEE on urban unincorporated Washington County and Wildlife Habitat and post-2005 UGB expansion areas.

We are proposing to establish six conflicting use categories -- three based on the 2005 Tualatin Basin ESEE analysis (with minor modifications) and three new categories (open space, utilities, transportation). The three new categories are intended to allow us to better evaluate the unique impacts of those activities. Part "C" of this memo shows how these categories will be used in the ESEE analysis.

Proposed Conflicting Use Categories:	
– High Intensity Urban (HIU) – Other Urban (OU) – Non/Future Urban (NFU)	– Open Space – Utilities – Transportation Facilities

Question for TAC:

- **Do you have any suggestions for the proposed approach to conflicting uses?**

A range of potential disturbance activities are associated with these conflicting use categories. The ESEE analysis will identify and describe activities that might be expected to negatively impact Wildlife Habitat, for example, as listed on the following page.

Potential Wildlife Habitat Disturbance Activities

1. Vegetative clearing and removing native soil/grading
2. Placement of impervious surfaces by constructing buildings, sidewalks, driveways, parking areas
3. Erosion, grading, filling, soil compaction, excavation and hauling
4. Creation of barriers by construction of fences, buildings, etc.
5. Introduction of toxins, heavy metals and other pollutants
6. Groundwater draw-down
7. Landscaping with exotic or non-native vegetation (e.g., establishment of lawns, addition of nonnative landscape features)
8. Exterior lighting and glare
9. Keeping of animals (domestic pets and farm)
10. Noise
11. Pesticides, herbicides, and fertilizer use
12. Direct physical impacts to wildlife (e.g., roadkill at street crossings, hunting/trapping)
13. Littering
14. Temporary construction activities

The evaluation of conflicting uses in the ESEE analysis will also take into consideration that the extent and frequency of these disturbance activities varies by land use category.

Proposed Approach:

The proposed approach to conflicting uses includes identifying typical disturbance activities that could conflict with the Wildlife Habitat. The list of activities or conflicts does not have to be exhaustive but should include those that could occur in reasonable scenarios.

Questions for TAC:

- **Are there other activities that have the potential to disturb Wildlife Habitat that should be added to the list above?**

B. Impact Area for Wildlife Habitat Resources

The impact area is to be drawn to include only the area in which allowed uses could adversely affect the identified resource. This defines the geographic limits within which to conduct an ESEE analysis for the identified significant resource site. In addition, any regulatory program that may result from the Goal 5 process is limited to those areas mapped as significant resource sites or impact areas.

In the 2005 Tualatin Basin ESEE analysis, two types of Impact Areas were identified:

- *Inner Impact Areas. The inner impact areas are comparable to the impact areas established by Metro for the purposes of the Regional ESEE analysis. It includes:*
  - *The area within 150 feet of a stream, wetland or lake that is not within a significant resource site; and*
  - *The area within 25 feet of Wildlife Habitat and HOC [Habitat of Concern] significant resource sites and within 25 feet of the edge of remaining Riparian Corridor significant resource sites (not already covered in first part)*
- *Outer Impact Areas. The outer impact areas include all land within the Tualatin Basin ESEE Study Area which is not within a resource or an inner impact area. Establishing outer impact areas supports a watershed approach and may be utilized in the management of overall Effective Impervious Area within the Basin. Literature cited throughout Metro's work establishes a nexus between the levels of general development throughout watersheds to the viability of significant resources. For example, Booth and Jackson, 1997, establish that altered hydrology and increased impervious surfaces increase flooding and damage streams. Recognizing that riparian corridor and wildlife habitat health is the responsibility of the entire watershed will enable the impacts of any eventual program to be more equitably shared among beneficiaries and property owners.*

Proposed Approach:
The 2005 Tualatin Basin ESEE analysis identified both an inner and outer impact area. For consistency, the proposed approach would use the same impact areas.

Questions for TAC:

- **Do you concur with the proposed approach to the impact area? If not, what is your recommendation for impact areas for:**
  - **Wildlife Habitat areas?**
  - **Riparian Habitat areas?**

Now that we have identified an approach to conflicting uses and impact areas, we can consider how those are used in the ESEE analysis itself.

C. Analysis of the ESEE Consequences

Based on the ESEE analysis, local governments must determine whether to allow, limit or prohibit identified conflicting uses for significant resource sites. A decision to prohibit or limit conflicting uses is intended to provide increased protection for the resource. A decision to allow some or all conflicting uses for a particular site may also be consistent with Goal 5 provided it is supported by the ESEE analysis. One of the following determinations must be reached:

- Allow conflicting uses - The conflicting use should be allowed fully, notwithstanding the possible impacts on the resource site. The ESEE analysis must demonstrate that the conflicting use is of sufficient importance relative to the resource site and must indicate why measures to protect the resource to some extent should not be provided per OAR 660-23-040(5)(b).
- Limit conflicting uses - Both the resource site and the conflicting uses are important compared to each other; and, based on the ESEE analysis, the conflicting uses should be allowed in a limited way that protects the resource site to a desired extent (e.g., strictly, moderately, or lightly limit).
- Prohibit conflicting uses - The significant resource is of such importance compared to the conflicting uses and the ESEE consequences of allowing the conflicting uses are so detrimental to the resource, that the conflicting uses should be prohibited.

The purpose of the ESEE analysis is to inform the program and help determine the policies and standards used to carry out the program decision. To do this, the ESEE consequences that could result from decisions to allow, limit, or prohibit a conflicting use must be analyzed for each ESEE category of conflicting uses. While an ESEE analysis does incorporate available research, there is also a reliance on qualitative judgement, for example based on community values and policies. A systematic approach can be helpful to organize and synthesize the data so that the public and decision-makers can review/comment and suggest additional considerations and recognize apparent trade-offs.

ESEE analyses are intended to help communities consider and balance the trade-offs of allowing, limiting or prohibiting conflicting uses. An approach MIG | APG has used in ESEE analyses completed for other jurisdictions is to use a series of tables and identify the expected net effect of either allowing, limiting or prohibiting the conflicting use as either positive (+1), neutral (0) or negative (-1). The fifth table under each scenario reflects the cumulative end result (either positive, neutral or negative) of the preceding tables. This approach is summarized below.

Scenario A - Allowing conflicting uses within the resource and impact areas. In evaluating the consequences of **allowing** conflicting uses, the assumption is that all significant Wildlife Habitat would be subject to the conflicting uses allowed by base zone regulations.

- Table A-1 Economic Consequences of Allowing Conflicting Uses (see example in Attachment A)
- Table A-2 Social Consequences of Allowing Conflicting Uses
- Table A-3 Environmental Consequences of Allowing Conflicting Uses
- Table A-4 Energy Consequences of Allowing Conflicting Uses
- Table A-5 Summary of Consequences of Allowing Conflicting Uses (see example in Attachment A)

Scenario B - Limiting conflicting uses within the resource and impact areas. In evaluating the consequences of **limiting** conflicting uses, the assumption is that regulations would be established to limit the impacts of allowable development in areas containing significant wildlife habitat. Areas containing significant wildlife habitat could still be developed to some degree, but additional development restrictions (e.g., mitigation requirements) would be put in place in addition to land use district regulations. A "limit" decision could be further refined, for example as "strictly limit," "moderately limit," and "lightly limit" and those terms can be defined by the program. NOTE: This was done in the Tualatin Basin ESEE analysis. In that analysis, the conclusion for mapped Metro Upland Wildlife Habitat was "lightly limit." In that context, the non-regulatory implementation measures included education, stewardship recognition, restoration funds, tax incentives, technical assistance, promotion of voluntary activities and acquisition.

- Table B-1 Economic Consequences of Limiting Conflicting Uses
- Table B-2 Social Consequences of Limiting Conflicting Uses
- Table B-3 Environmental Consequences of Limiting Conflicting Uses
- Table B-4 Energy Consequences of Limiting Conflicting Uses
- Table B-5 Summary of Consequences of Limiting Conflicting Uses

Scenario C - Prohibiting conflicting uses within the resource and impact areas. In evaluating the consequences of **prohibiting** conflicting uses, the assumption is that regulations and/or other mechanisms would be established that preclude all allowable development in significant natural resource areas.

- Table C-1 Economic Consequences of Prohibiting Conflicting Uses
- Table C-2 Social Consequences of Prohibiting Conflicting Uses
- Table C-3 Environmental Consequences of Prohibiting Conflicting Uses
- Table C-4 Energy Consequences of Prohibiting Conflicting Uses
- Table C-5 Summary of Consequences of Prohibiting Conflicting Uses

The ESEE analysis concludes with program recommendations as to whether to allow, limit, or prohibit identified conflicting uses within significant natural resources areas based on a summation of the preceding analysis. A final table identifies the "net effect" from Summary Tables A-5, B-5, and C-5 and provides a general recommendation for each use category (See example in Attachment A). The overall program recommendation is based on encouraging the strongest positive outcome. The general approach can be supplemented and refined by specific program recommendations. For example, the recommendations could suggest concepts (if supported by the ESEE analysis) such as "the program should support the clustering of residential development away from resources so that the economic and social benefits of providing housing are accomplished in conjunction with environmental benefits of protecting resources".

Proposed Approach:
Use a systematic approach comparable to the one described above and shown in Attachment A that uses a series of tables and scoring to systematically consider the ESEE consequences that could result from decisions to allow, limit, or prohibit a conflicting use.

Questions for TAC:

- **It can be challenging to quantify the positive economic and energy consequences associated with habitat (Wildlife Habitat). In the past we have used references such as the Millennium Ecosystem Assessment[4] to describe ecosystem services (see example in Attachment A). Do you have any recommendations for additional reference materials?**
- **Do you foresee any problems with the proposed approach? Do you have any recommendations on how to assess Wildlife Habitat, especially in the urban area?**
- **Do you have any suggestions for how to engage the community-at-large in the ESEE analysis process?**

[4] The Millennium Ecosystem Assessment – a four-year United Nations assessment of the condition and trends of the world's ecosystems - describes ecosystem services as:

Ecosystem services are the benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fiber; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling.

Attachment A: Example of ESEE Methodology

Scenario A: Allowing conflicting uses within the Wildlife Habitat Resource Area

Under this scenario there would be no land use regulations restricting conflicting uses within the Resource Area. Tables A-1 through A-4 identify the likely positive and negative consequences to both the resource and the conflicting use of *allowing* the conflicting use (i.e., both the economic goods and services provided by the conflicting uses and the ecosystem services provided by the significant Resource Area). The results are summarized in Table A-5. (NOTE: Only Tables A-1 and A-5 are provided as examples below.)

- Table A-1 Economic Consequences of Allowing Conflicting Uses
- Table A-2 Social Consequences of Allowing Conflicting Uses
- Table A-3 Environmental Consequences of Allowing Conflicting Uses
- Table A-4 Energy Consequences of Allowing Conflicting Uses
- Table A-5 Summary of Consequences of Allowing Conflicting Uses

The expected net effect of allowing the conflicting use is identified in column 4. The result can be either positive (+1), neutral (0), or negative (-1).

- If the positive consequences generally outweigh the negative consequences, the result is a "+1."
- If the positive consequences are generally balanced by the negative consequences, the result is a "0."
- If the negative consequences generally outweigh the positive consequences, the result is a "-1."

Table A-1 Economic Consequences of Allowing Conflicting Uses (Example)

Use Category	Positive Economic Consequences	Negative Economic Consequences	Net Effect
High Intensity Urban (HIU)	• Development potential of parcels fully realized, enhancing potential for local economic development and jobs. • Improvements increase property tax base. • Development of employment land could provide job opportunities. • No mitigation is required, which reduces the cost to develop. • Economic development is facilitated by providing additional mixed use	• Loss of ecosystem services[5] provided by wildlife habitat and native vegetation. • Amenity/development premium for parcels adjacent to wildlife habitat is eliminated. • Intense industrial uses may result in pollution, causing health problems for humans and habitat in long term, or climate change costs etc.	+1

[5] Ecosystem Services are commonly defined as benefits people obtain from ecosystems. The Millennium Ecosystem Assessment – a four-year United Nations assessment of the condition and trends of the world's ecosystems - categorizes ecosystem services as:

- Provisioning Services or the provision of food, fresh water, fuel, fiber, and other goods;
- Regulating Services such as climate, water, and disease regulation as well as pollination;
- Supporting Services such as soil formation and nutrient cycling; and
- Cultural Services such as educational, aesthetic, and cultural heritage values as well as recreation and tourism.

Use Category	Positive Economic Consequences	Negative Economic Consequences	Net Effect
	land that can provide housing for relocating/new employees. • Depending on development type, potential increase in property values for adjacent landowners.	• Cost of clean up to environmental harm of intense development	
Other Urban (OU)	• Similar to HIU, but to a lesser degree - lower intensity development provides fewer dwelling units, and employment opportunities. Property tax base is increased but to a lesser degree. • Property owners realize short term benefit of full development potential of parcels; clustering of residential development is not required.	• Similar to HIU, but with slightly less potential for increased costs resulting from lost ecosystem services due to less dense development.	0
Non-Urban (NU)	• Significant development is not expected, so relatively limited opportunities to create jobs and housing.	• Could be loss of some ecosystem services depending on the type of non-urban activity.	0
Open Space	• May create a development premium and amenity for adjacent undeveloped parcels or developed parcels, respectively. • Recreation facilities that are a community attraction may enhance potential for local economic development. • Some ecosystem services could still be provided.	• Loss of some ecosystem services depending on the nature of the facility. • May decrease property values for adjacent landowners if higher pedestrian traffic (including unpermitted camping and dumping) or active recreation (e.g., ball fields) create a nuisance. • Higher municipal service costs relating to maintenance, law enforcement, etc.	0
Utilities	• Placement and maintenance of utilities systems can be maximized for cost effectiveness and efficiency. • No mitigation is required, which reduces the cost to develop utilities.	• Loss of ecosystem services, although impacts may be temporary for underground facilities. • Depending on use (e.g., substation), property value for adjacent landowners could be negatively impacted.	+1
Transportation	• Potential for improved connectivity (reduced out-of-direction travel) and movement of people and goods especially for collector and arterial streets. • No mitigation is required, which reduces the cost to develop streets and roads.	• Loss of ecosystem services; extent of loss depends on factors such as width and location of street and removal of Wildlife Habitat. • Environmental impact costs could be passed on to County, thus increasing rates and fees.	+1

Table A-5 summarizes the net effect of allowing the conflicting uses. The cumulative net effect column shows the "strength" of the positive or negative consequences of allowing the conflicting

use. The maximum positive score is +4 and the maximum negative score is -4. A strong positive score suggests that, on the whole, allowing the conflicting use would provide a net benefit to the County, whereas a negative score would suggest that the use should not be allowed outright. Results of this table are carried forward to the Program Recommendation section of this analysis.

NOTE: The numbers from Table A-1, above, are shown in the "Economic" column. The numbers in the "Social," "Environmental," and "Energy" columns are placeholders included here solely to show how the summary tables work.

Table A-5 Summary of Consequences of Allowing Conflicting Uses (Example)

Use Category	**Economic** (A-1)	**Social** (A-2)	**Environmental** (A-3)	**Energy** (A-4)	**Cumulative Effect**
High Intensity Urban (HIU)	+1	+1	-1	+1	+2
Other Urban (OU)	+1	0	-1	0	0
Non-Urban (NU)	0	0	-1	0	-1
Open Space	0	+1	0	0	+1
Utilities	+1	+1	0	+1	+3
Transportation	+1	0	-1	+1	+1

The summary table, below, identifies the "net effect" from Tables A-5, B-5, and C-5 and provides a general recommendation for each use category. The overall recommendation is based on encouraging the strongest positive outcome. In this example, the "Limit" scenario has a total score of +17 suggesting that it would have the strongest possible outcome; thus, a general recommendation of "limit" is appropriate. Through the program recommendations, individual refinements can be made. For example, the Utilities use category also received a positive result under the Allow scenario; indicating that a greater degree of flexibility (e.g., "lightly limit") to accommodate these uses under a future protection program may be appropriate.

NOTE: The numbers from Table A-5, above, are shown in the "Allow" column. The numbers in the "Limit," and "Prohibit" columns are place-holders included here solely to show how the summary table work.

Summary of Net Effect of Allowing, Limiting or Prohibiting Conflicting Uses within Wildlife Habitat (Example)

Use Category	**Allow** (Cumulative Effect from Table A-5)	**Limit** (Cumulative Effect from Table B-5)	**Prohibit** (Cumulative Effect from Table C-5)
High Intensity Urban (HIU)	+2	+3	+1
Other Urban (OU)	0	+3	0
Non-Urban (NU)	-1	+2	0
Open Space	+1	+3	-1
Utilities	+3	+3	-2
Transportation	+1	+3	-3
Totals	***+4***	***+17***	***-5***