

Report

Supplemental Goal 5 Economic, Social, Environmental and Energy (ESEE) Analysis

Multnomah County, West Hills, and Sauvie Island/Multnomah Channel

March 24, 2017

Prepared by

Angelo Planning Group



1. INTRODUCTION

Statewide Planning Goal 5 directs local governments to protect natural resources and conserve scenic and historic areas and open spaces. OAR 660-023 establishes procedures and criteria for inventorying and evaluating Goal 5 resources and for developing land use programs to conserve and protect significant Goal 5 resources. For some types of natural resources, local jurisdictions may opt to use a “safe harbor” approach to identifying and/or regulating resources. Alternatively, the jurisdiction may analyze the economic, social, environmental, and energy (ESEE) consequences of different protection scenarios and use the results to establish a regulatory program. For some resources, a safe harbor approach is not available and an ESEE analysis is needed to establish the regulatory program.

Multnomah County has previously adopted inventories, ESEE analyses, and protection programs for most of the previously identified significant natural resources within the County. However, as part of an update of the County’s Comprehensive Plan in 2014-2016, additional resources were inventoried and determined to be significant. The County elected to prepare an ESEE analysis for these newly identified resources in order to develop a regulatory protection program for them.

The purpose of this ESEE analysis and report is to address the Goal 5 requirements for two types of natural resources (Riparian Corridors and Wildlife Habitat) within the western unincorporated portions of Multnomah County, including portions of the West Hills and Sauvie Island/Multnomah Channel subareas. A separate report addresses similar resources in the eastern unincorporated portions of the County.

The process to comply with Goal 5 follows three main steps.

1. Inventory natural resources and determine which resources are significant. Because Multnomah County has previously adopted inventories, ESEE analyses, and protection programs for most significant resources within the County, only a limited number of resources are evaluated in this report. Within the study area inventories include:
 - a. Riparian Corridors inventoried by:
 - i. Metro Title 13 Resource for areas mapped within one mile of the Metro urban growth boundary
 - ii. The State of Oregon and found in the Oregon Explorer database
 - b. Wildlife Habitat areas on Sauvie Island and between the Multnomah Channel and US Highway 30 not currently subject to SEC overlays but which have been mapped by the Oregon Department of Fish and Wildlife (ODFW) and the United States Fish and Wildlife Service (USFWS) as areas of critical habitat and winter range.
2. Complete an economic, social, environmental, and energy (ESEE) analysis. An ESEE Analysis involves evaluating the potential tradeoffs associated with managing significant natural resources relative to the expected use scenario.

3. Develop a program to protect significant natural resources. For example, Multnomah County's existing Goal 5 program consists of a series of Significant Environmental Concern (SEC) overlays for different types of resources.

1.1. STUDY AREA AND BACKGROUND

The study area for this ESEE analysis is the western unincorporated portions of Multnomah County. This includes two subareas – the West Hills and the Sauvie Island/Multnomah Channel (SIMC) areas. The County previously prepared Rural Area Plans for these areas as part of its land use planning program. The County recently updated the SIMC Rural Area Plan in 2015. The West Hills Rural Area Plan was adopted in 1996. The West Hills Reconciliation Report (1996) summarized an ESEE analysis for Goal 5 resources in that area. In 2014-2016, the County completed a major overhaul of its Comprehensive Plan, including combining and updating information from previously adopted Rural Area Plans for the West Hills, Sauvie Island/Multnomah Channel (SIMC), East of Sandy River and West of Sandy River areas. The updated Comprehensive Plan includes a variety of policies applicable to this report as listed below.

Applicable Policies and Strategies from the Multnomah County Comprehensive Plan

General Policies and Strategies

Policy 5.2 *Protect natural areas from incompatible development and specifically limit those uses which would significantly damage the natural area values of the site.*

Strategy 5.2-1: *Utilize the Oregon Natural Heritage Resources Register to maintain a current inventory of ecologically and scientifically significant natural areas.*

Policy 5.4 *Review Goal 5 inventories and programs periodically in order to consider any new data and, if necessary, initiate amendments to the inventories and protection programs.*

Wetland and Riparian Area Policies and Strategies

Policy 5.18 *Designate as areas of Significant Environmental Concern, those water areas and adjacent riparian areas, streams, wetlands and watersheds that warrant designation as a protected Goal 5 resource or have special public value in terms of the following:*

1. *Economic value, including ecosystem services value (the benefits people derive from ecosystems, including but not limited to: nutrient recycling, air purification, climate regulation, carbon sequestration, water purification, food, temperature regulation and aesthetic experience);*
2. *Natural area value (areas valued as habitats for plant, animal or aquatic life, or having a state or federally listed plant or animal species);*
3. *Recreation value, where compatible with underlying natural area value;*
4. *Educational research value (ecologically and scientifically significant lands), or;*
5. *Public safety (municipal water supply watersheds, water quality, flood water storage areas, vegetation necessary to stabilize river banks and slopes).*

Strategy 5.18-1: *Maintain inventories and continue to protect all significant riparian corridors and wetlands in accordance with applicable ESEE Analysis Reports.*

Strategy 5.18-2: Update the inventory of riparian corridors, including water areas and adjacent riparian areas, to include significant riparian corridors identified in Metro's Urban Growth Management Functional Plan Title 13, Nature in Neighborhoods inventory within unincorporated Multnomah County.

Strategy 5.18-3: As appropriate, rely upon the findings contained within Metro's analysis of "Economic, Social, Environmental and Energy" (ESEE) consequences to apply the Significant Environmental Concern overlay for streams (SEC-s) to riparian corridors that have been added to the updated inventory.

Strategy 5.18-6: Periodically review and consider new data to update the inventory of significant wetlands and riparian corridors.

Wildlife Habitat Policies and Strategies

Policy 5.26 Designate as areas of Significant Environmental Concern, those habitat areas that warrant designation as a protected Goal 5 resource or have special public value in terms of the following:

1. Economic value, including ecosystem services value (the benefits people derive from ecosystems, including but not limited to: nutrient recycling, air purification, climate regulation, carbon sequestration, water purification, food, temperature regulation and aesthetic experience);
2. Natural area value (areas valued as habitats for plant, animal or aquatic life, or having a state or federally listed plant or animal species);
3. Recreation value, where compatible with underlying natural area value;
4. Educational research value (ecologically and scientifically significant lands), or;
5. Public safety (municipal water supply watersheds, water quality, flood water storage areas, vegetation necessary to stabilize river banks and slopes).

Strategy 5.26-1: Maintain inventories and continue to protect all significant wildlife habitat in accordance with applicable ESEE Analysis Reports.

Strategy 5.26-2: Periodically review and consider new data to update the inventory of significant wildlife habitat.

Strategy 5.26-3: Update the inventory of wildlife habitat and associated wildlife corridors in accordance with Statewide Planning Goal 5.

Strategy 5.26-4: Designate wildlife habitat and corridors mapped by Oregon Department of Fish and Wildlife as significant.

Strategy 5.26-5: Conduct an analysis of "Economic, Social, Environmental, and Energy" (ESEE) consequences on wildlife habitat that has been added to the inventory.

Strategy 5.26-6: If warranted by an ESEE analysis, apply the Significant Environmental Concern overlay for wildlife habitat (SEC-h) to any newly identified significant wildlife habitat.

Policy 5.27 Protect significant native fish and wildlife habitat and wildlife corridors and specifically limit conflicting uses within natural ecosystems and sensitive big game winter habitat areas.

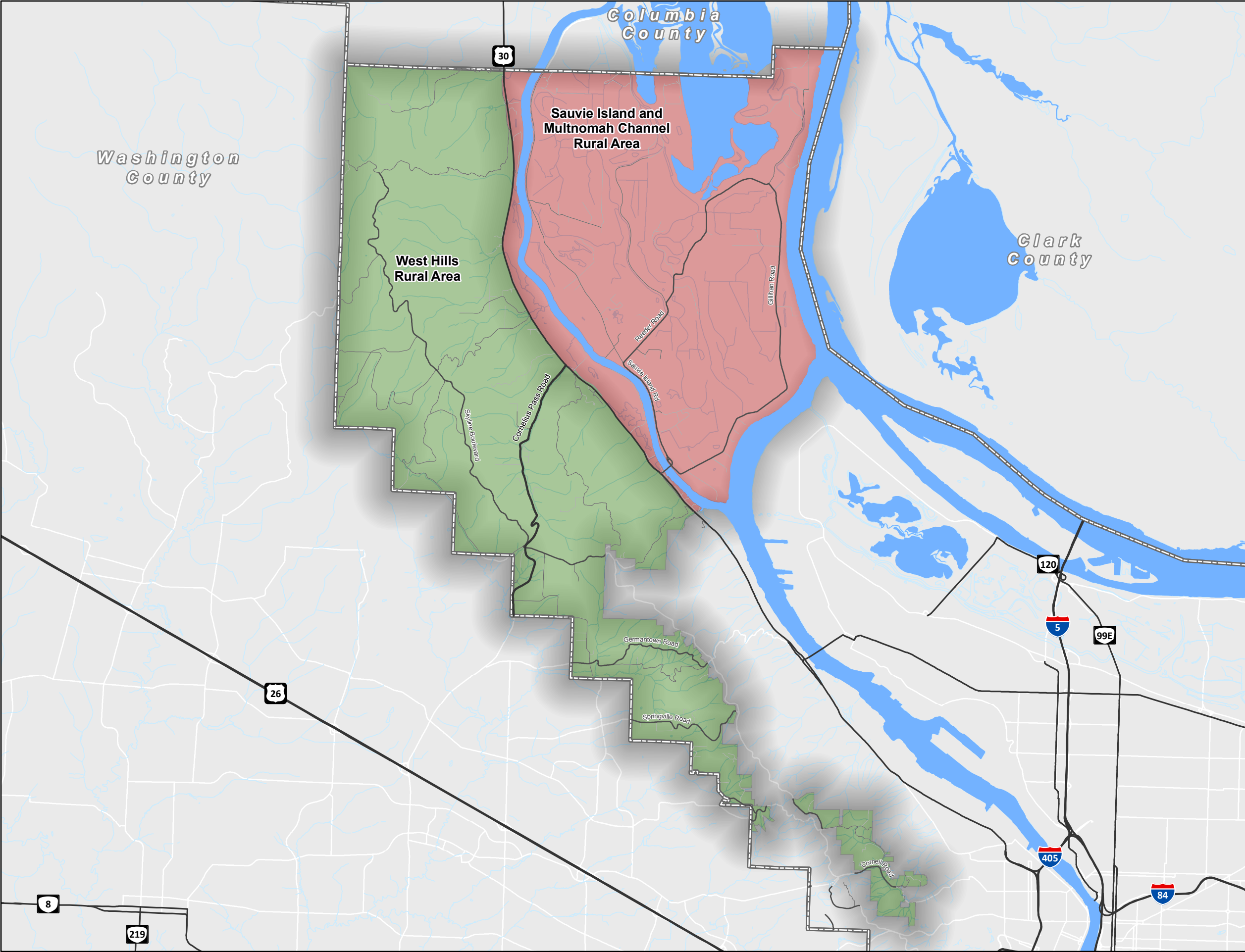



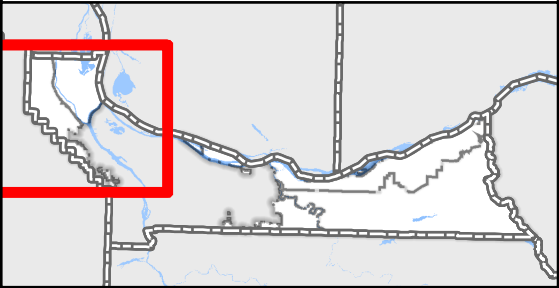


Figure 1 - West Multnomah County Unincorporated Areas

Subareas

-  Sauvie Island and Multnomah Channel Rural Area
-  West Hills Rural Area
-  County Boundaries



0 0.5 1 2 Miles



Prepared By:
Angelo Planning Group

Date:
7/8/2016

Coordinate System:
NAD 1983 HARN State Plane Oregon North FIPS 3601

Disclaimer:
Unofficial depiction, for illustrative purposes only.

1.2. RESOURCES SUBJECT TO ESEE ANALYSIS

The resources which are the subject of this ESEE analysis include those riparian corridors and wildlife habitat areas identified in the inventories established by Metro and the Oregon Department of Fish and Wildlife (ODF&W) within the West Hills and SIMC areas which are not already subject to Multnomah County's SEC-WR, SEC-H or SEC-S overlay zones. These include the following areas as illustrated in Figures 2 and 3:

- Riparian corridors within and adjacent to portions of Ennis/Newberry Creek, South Angell Creek, Middle Angell Creek and a tributary of McCarthy Creek, located approximately southwest of US 30 in the lower slopes of the West Hills. These areas are wooded and moderately to steeply sloped. The Angell Brothers quarry site is located northeast of the portion of Middle Angell Creek within the study area.
- Riparian corridors within and adjacent to two tributaries of Rock Creek, located in the upper slopes of the West Hills, near Skyline Blvd and Cornelius Pass Road. This area features a mix of wooded and open areas on slopes of varying degree. It is crisscrossed by Cornelius Pass and other roads and includes a mix of residential and agricultural uses.
- Wildlife habitat located due east of US 30, adjacent to the Multnomah Channel and both on and west of Sauvie Island, both north of the southern tip of the island and south of the Multnomah/Columbia County border. This area includes big game (black bear, elk, and/or black tailed deer) habitat mapped by the ODF&W. These areas are generally flat with a mix of uses, including marinas and moorages, open space and natural areas, farm uses and associated residences.

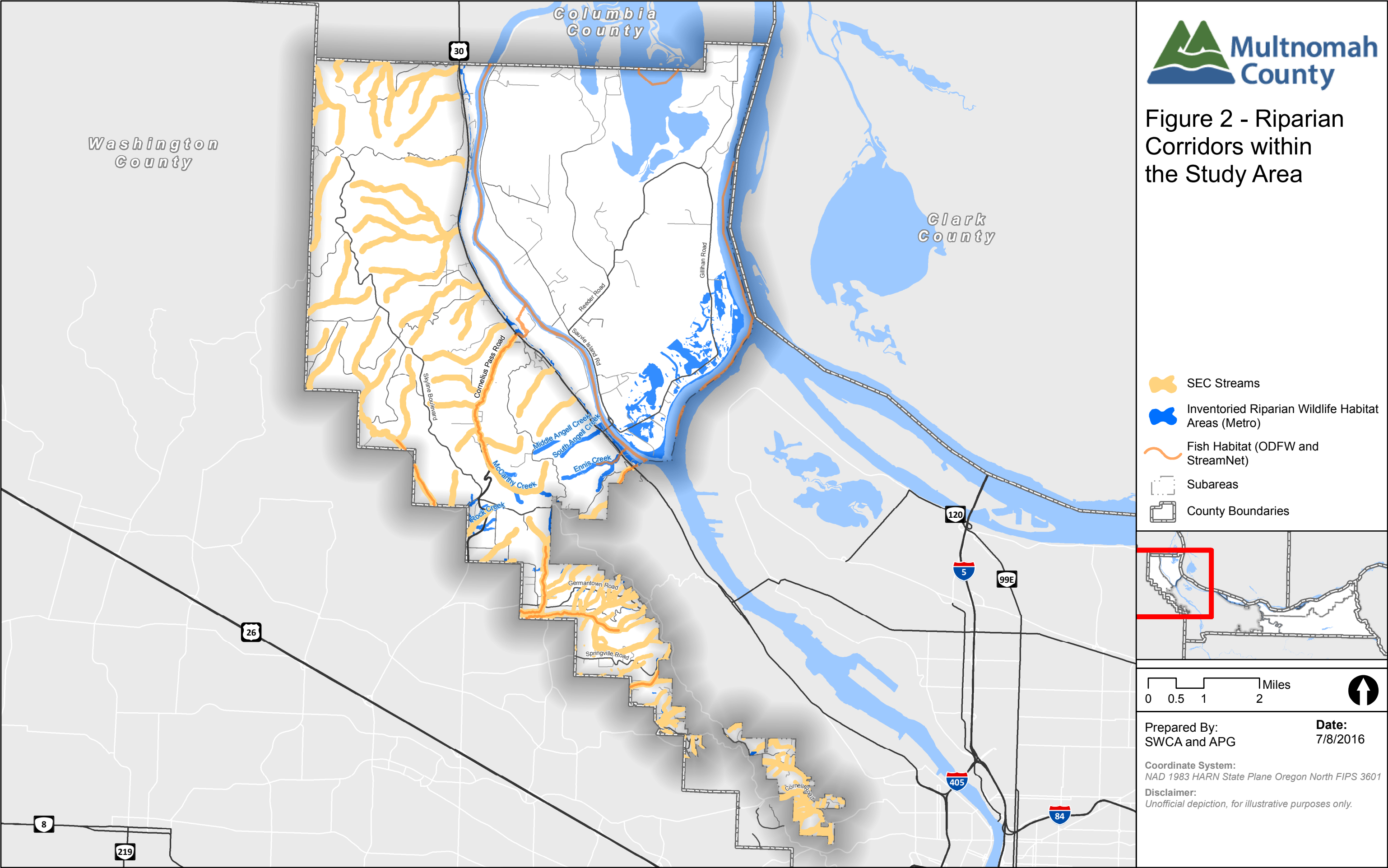
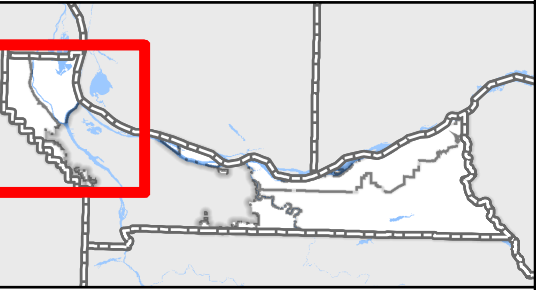


Figure 2 - Riparian Corridors within the Study Area

- SEC Streams
- Inventoried Riparian Wildlife Habitat Areas (Metro)
- Fish Habitat (ODFW and StreamNet)
- Subareas
- County Boundaries



0 0.5 1 2 Miles



Prepared By:
SWCA and APG

Date:
7/8/2016

Coordinate System:
NAD 1983 HARN State Plane Oregon North FIPS 3601

Disclaimer:
Unofficial depiction, for illustrative purposes only.

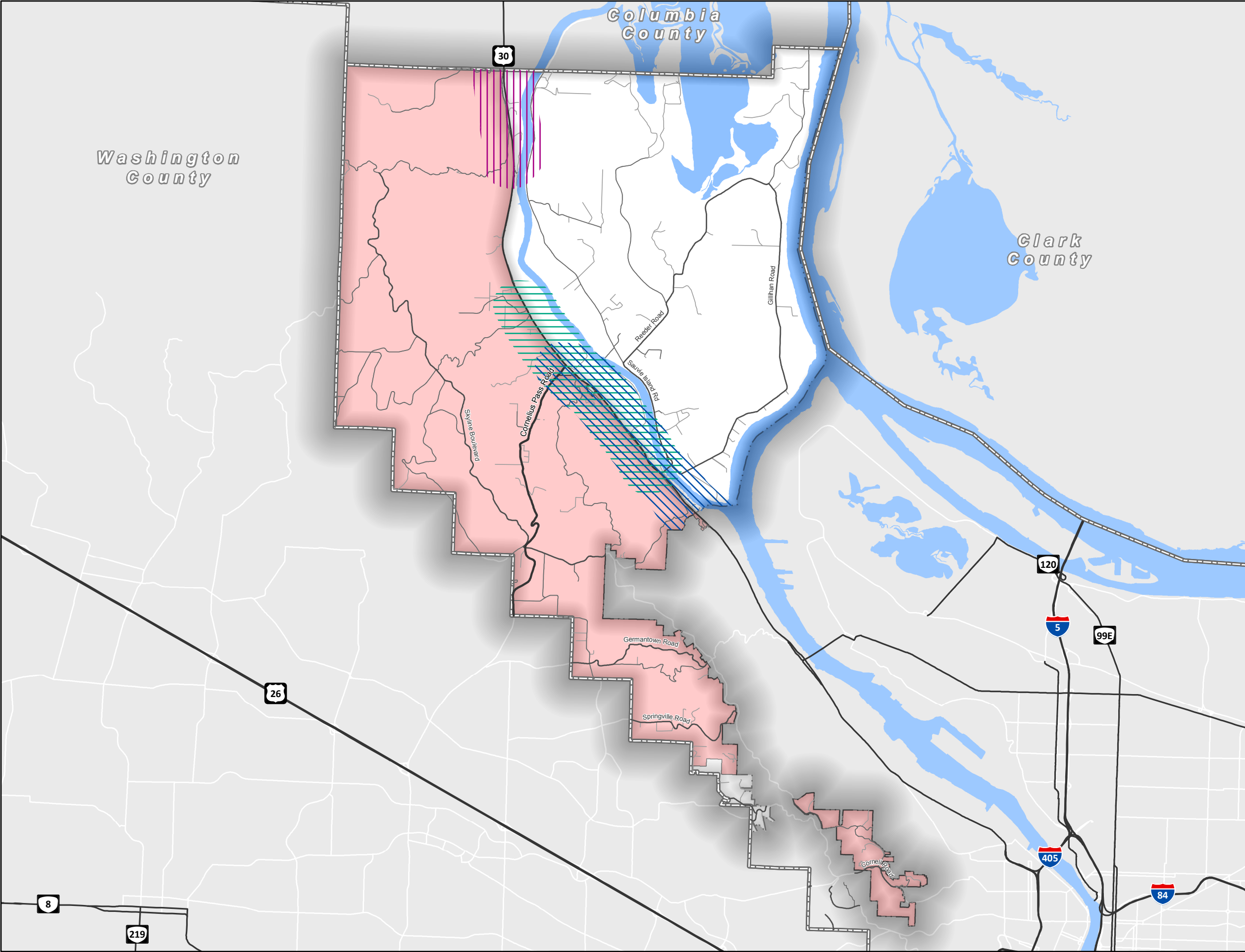
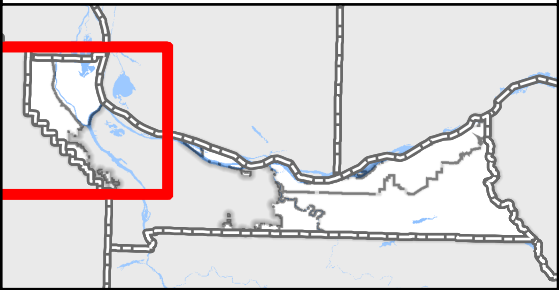


Figure 3 - Wildlife
Habitat Areas
within the Study Area

- SEC Habitat
- Black-tailed Deer (ODFW)
- Elk (ODFW)
- Black Bear (ODFW)
- Subareas
- County Boundaries



0 0.5 1 2 Miles



Prepared By:
SWCA and APG

Date:
7/8/2016

Coordinate System:
NAD 1983 HARN State Plane Oregon North FIPS 3601

Disclaimer:
Unofficial depiction, for illustrative purposes only.

1.3. STUDY AREA ZONING

As shown in Figure 4, zoning within the study area for the riparian corridors is a combination of Rural Residential (RR) and Multiple Use Agricultural (MUA-20) in the vicinity of the tributaries of Rock Creek. Zoning is Commercial Forest Use (CFU-1 and CFU-2) in the vicinity of Ennis/Newberry Creek, South Angell Creek, Middle Angell Creek, and McCarthy Creek. Zoning in the study area for the wildlife habitat that is not already subject to the County's SEC-h designation is primarily, a combination MUA-20 southwest of the Multnomah Channel, Exclusive Farm Use (EFU) within a smaller area on the southern tip of Sauvie Island, and smaller amounts of CFU and RC zoning in the West Hills area. Table 1 identifies the type of land uses that are allowed within these designations, including uses that are permitted outright, those that require staff review prior to approval ("Review Uses"), and those allowed conditionally.

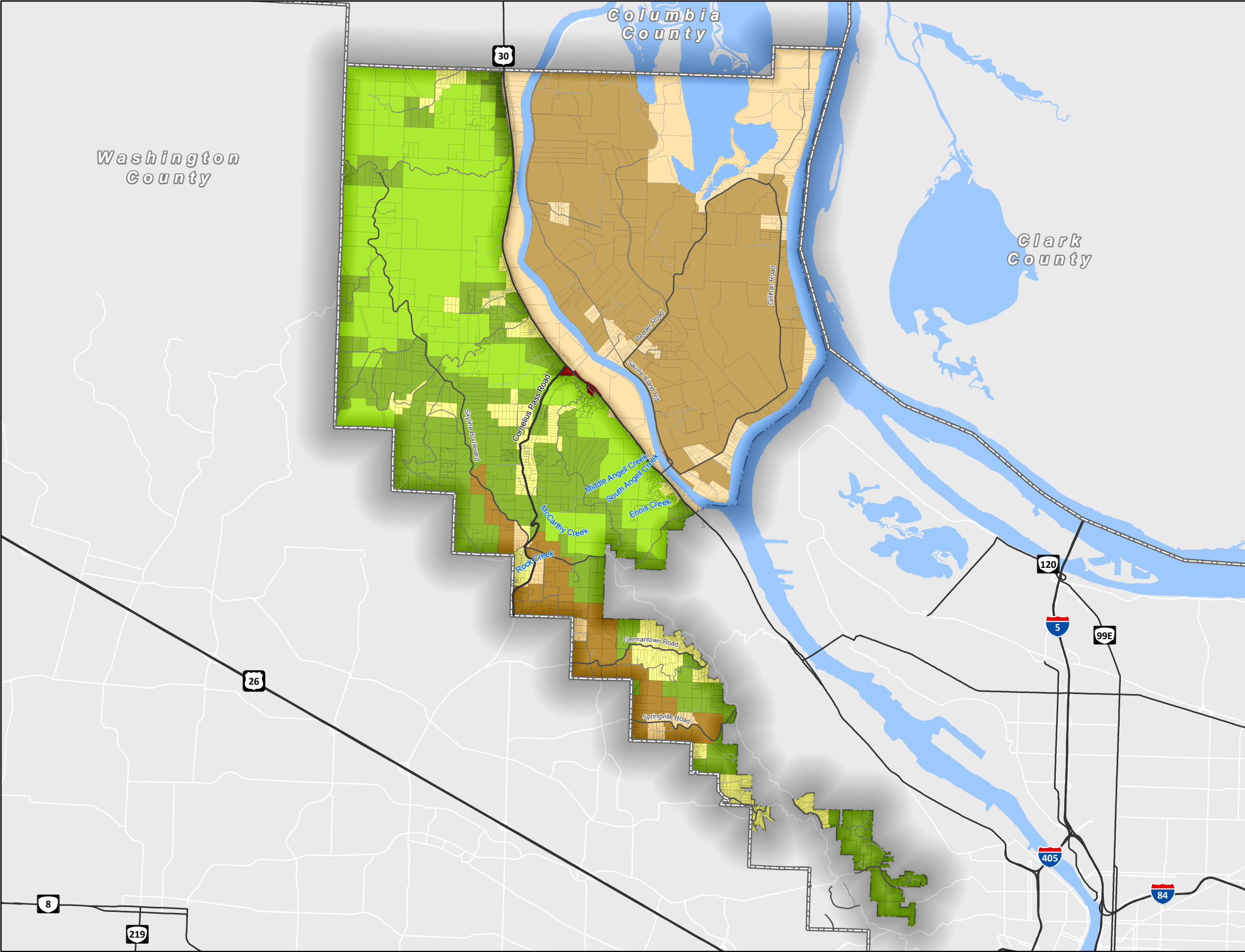


Figure 4 - Multnomah County Zoning

West Hills

- CFU1
- CFU2
- CFU5
- EFU
- MUA20
- RC
- RR

Sauvie Island

- EFU
- MUA20
- RC

- County Boundaries
- Subareas

0 0.5 1 2 Miles



Prepared By:
Angelo Planning Group

Date:
7/8/2016

Coordinate System:
NAD 1983 HARN State Plane Oregon North FIPS 3601

Disclaimer:
Unofficial depiction, for illustrative purposes only.

Table 1: Zoning, Allowed Uses & Housing Types by Designation

Comprehensive Plan Designation	Zoning District	Uses & Housing Types Allowed		
		Uses Permitted Outright*	Review Uses**	Uses Allowed Conditionally***
Rural Residential	RR	Single family detached housing, accessory structures, farm uses, forest propagation & harvesting, livestock, honeybee & other animal raising, home occupation(Type A), family day care, conservation areas, solar & wind energy, transportation facilities	Manufactured dwellings, wholesale or retail sales of farm or forest products grown on premises, wireless communication facilities, home occupation (Type B)	Feed lots, fowl raising & processing, raising swine & fur bearing animals, commercial processing of agricultural products grown in the region, cottage industries, limited rural service commercial, mineral & aggregate exploration & processing, community service uses, geothermal mining & processing
Multiple Use Agriculture	MUA-20	Single family detached housing, floating homes in existing moorage facilities****, farm uses, livestock and honeybee raising, home occupation (Type A), conservation areas, family day care, transportation facilities, solar & wind energy	Manufactured dwellings, wholesale or retail sales of farm or forest products, wireless communication facilities, home occupation (Type B)	Planned developments, farm and forest products processing, other animal raising, , home occupation(Type C, mineral & aggregate exploration & processing, community service uses, geothermal mining, processing and production
Exclusive Farm Use	EFU	Farm uses, livestock, honeybee and other animal raising, , home occupation(Type A), Forestry, filming, conservation areas, wetland enhancements, replacement dwellings, mineral aggregate exploration, fire stations, churches & cemeteries, solar energy, geothermal, oil & gas operations	Utility facilities (including radio, television and telecommunications towers and facilities), farm help and accessory farm dwellings, heritage tract dwellings, farm stands, wineries, farm product processing, home occupations (Type B)	Dwellings associated with farm operations, Forest products processing, agricultural processing, , home occupation(Type C), dog kennels, aquatic species, mineral & aggregate processing, transportation facilities, geothermal, oil & gas mining, processing and production, commercial solar systems

Comprehensive Plan Designation	Zoning District	Uses & Housing Types Allowed		
		Uses Permitted Outright*	Review Uses**	Uses Allowed Conditionally***
Commercial Forest Use	CFU-1, 2	Forest uses, farm uses, temp. Forest processing, water intake, temp. labor camp, , home occupation(Type A), mineral aggregate exploration, conservation areas, caretaker structures for parks or fish hatcheries, solid waste disposal, solar energy, geothermal exploration, lookout tower, wind turbines	Single family detached housing (Replacement, Template, Hardship, Heritage, or Large Acreage), wireless communication facilities, home occupations (Type B)	Forest products processing (permanent), reservoir, forest management research, logging equipment repair & storage, log scaling & weigh stations, , home occupation(Type C), fire stations, community service uses, sanitary landfills, private park, campground, hunting & fishing, mineral & aggregate processing, geothermal mining & processing
<p>* In all zones noted here, signs, accessory structures, and actions taken in response to an emergency are permitted outright</p> <p>** In all zones noted here, temporary structures, structures required for continued public safety, off-street parking and loading, and certain land use actions are allowed as review uses</p> <p>*** In all zones noted here, schools, parks and, churches certain other commercial & civic uses are allowed conditionally.</p> <p>**** Allowed in SIMC only.</p>				

2. RIPARIAN CORRIDORS

2.1. INVENTORY AND DETERMINATION OF SIGNIFICANCE

2.1.1. METRO TITLE 13 INVENTORY

At the regional level, Metro completed the required process to comply with State Land Use Planning Goal 5 in developing the Nature in Neighborhoods program. First, Metro developed an inventory of regionally significant riparian corridors and wildlife habitat based on a scientific assessment of functional values (initial Metro Council endorsement in August 2002). In developing the inventory Metro produced technical reports, GIS data and models, and maps showing natural resource features and relative quality ranks. Metro then completed an ESEE analysis to assess the tradeoffs of protecting or not protecting the resources identified in the inventory. Metro completed this inventory for the area within the Portland Metropolitan area UGB, as well as for areas within one mile outside the UGB (“one-mile streams”).

The Metro Council established Title 13 through adoption of Ordinance NO. 05-1077C (September 2005) and as amended through Ordinance NO. 05-1097A (December 2005). Through this action the Metro Council adopted the inventory of regionally significant fish and wildlife habitat and its ESEE analysis as the basis for the Nature in Neighborhoods program for the areas within the UGB. Because it was outside its jurisdiction, Metro did not formally adopt the inventory or analysis for the areas outside the UGB.

While Metro did not adopt the inventory and analysis for the “one-mile streams”, the methodology used to identify the resources was identical to that used to identify Title 13 resources within the UGB. As a result, our analysis assumes that Metro’s inventory (Riparian Corridors / Habitat Class I and II) can be relied upon and no additional riparian inventory work will be conducted in these areas.

These areas were determined to be significant as part of the Comprehensive Plan update process based on recommendations from County staff and Community Advisory Committee members because they have the same characteristics as other resources also determined to be regionally significant by Metro and local jurisdictions within the urban growth boundary. This determination of significance and direction to conduct an ESEE analysis of these resources is found in the Comprehensive Plan policies cited on page 3 of this report.

As noted previously, streams for this inventory proposed to be included in the County’s Goal 5 inventory include the following (see Figure 2):

- Ennis/Newberry Creek
- South Angell Creek
- Portion of Middle Angell Creek
- A tributary of McCarthy Creek
- Two tributaries of Rock Creek

2.1.2. ODF&W FISH-BEARING STREAMS INVENTORY

Several streams in Multnomah County which are not currently covered by the County's SEC overlays have been identified and inventoried as fish-bearing streams by the ODF&W and are included in the agency's Oregon Fish Habitat Distribution data layer (2013). These streams are determined to be significant because they have been classified as fish-bearing streams by the ODF&W. This determination of significance and direction to conduct an ESEE analysis of these resources is found in the Comprehensive Plan policies cited on page 3 of this report.

Two streams in the ODF&W inventory are not already subject to the County's SEC overlay regulations. This is the lower portion of Ennis Creek and McCarthy Creek. The portion of Ennis Creek also is found entirely within Metro's inventory of one-mile streams (see Figure 2).

2.2. IMPACT AREA

The "Impact area" is a geographic area within which conflicting uses could adversely affect a significant Goal 5 resource.

For "one-mile streams" proposed to be added to the County's Goal 5 inventory Metro's methodology identified an impact area that took into account a variety of factors and a significant amount of technical analysis.

Metro identified the impact area as the land extending 150 feet from a water body, and the land extending 25 feet from edge of inventoried wildlife habitat (includes Habitats of Concern). Metro's intent was to:

- Provide all fish and wildlife habitat with an impact area and provide the most sensitive habitat with wider impact areas (note: developed floodplains do not have an impact area).
- Provide an impact area to address tree root zones.
- Address areas that are already degraded, but where development or disturbance could influence onsite and downstream water quality and key wildlife habitat (such as wetlands)
- Meet the requirements of the Goal 5 rule.

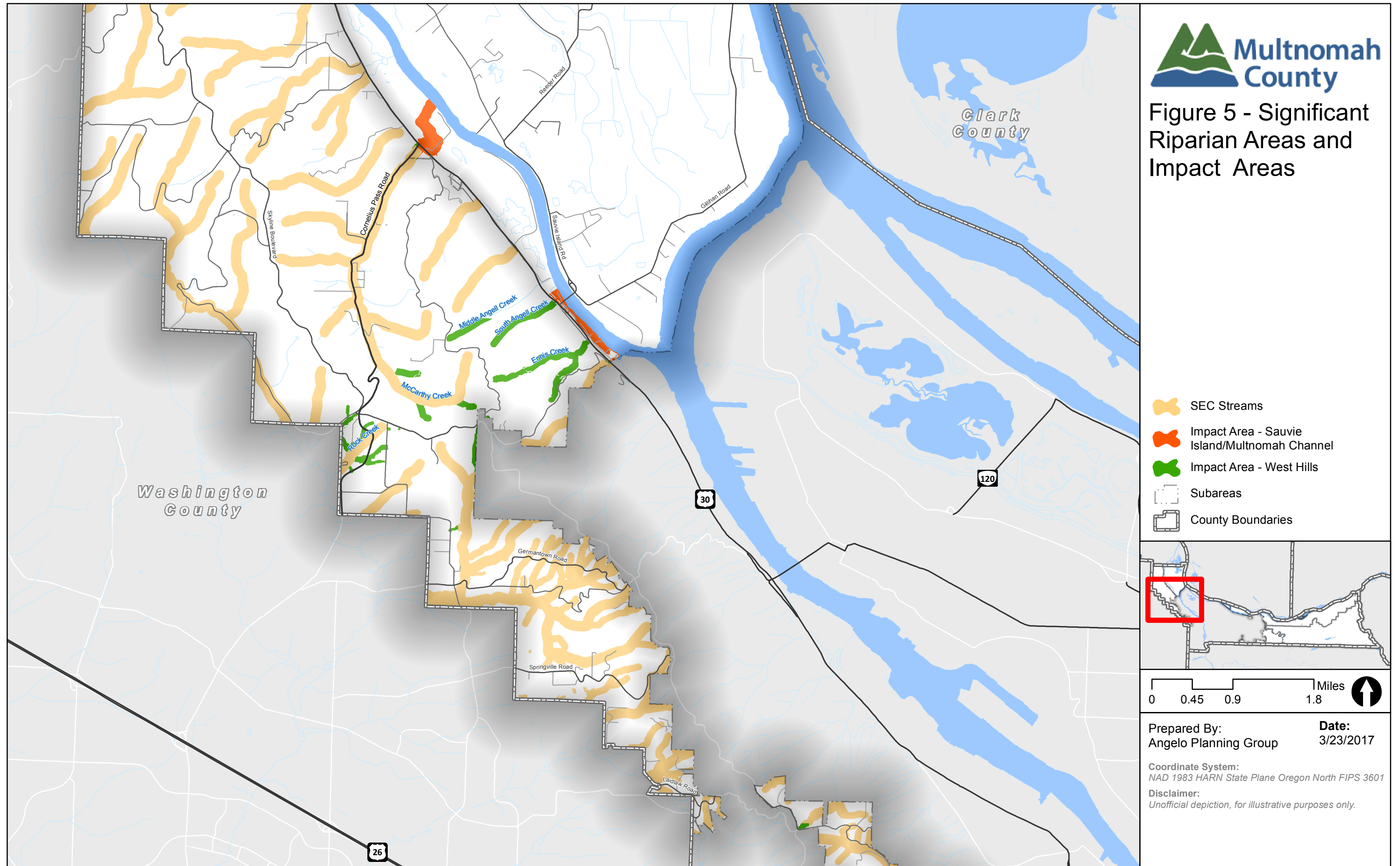
This same methodology has been used for other ESEE analyses in Multnomah County. For example, in an ESEE Analysis conducted for West Hayden Island, the City of Portland elected to use the same general methodology to define the impact area for riparian areas there. The City noted that the intention is to provide an impact area around all existing ranked natural resources and to provide a minimum impact area for water bodies.

The impact area identified by Metro for Ennis Creek will also apply to the portion of that stream that is also included in the ODF&W fish-bearing stream corridor since it is entirely within the Metro inventory and ODF&W did not specifically define an impact area for the stream.

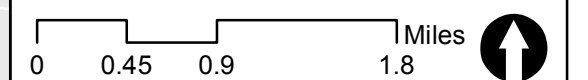
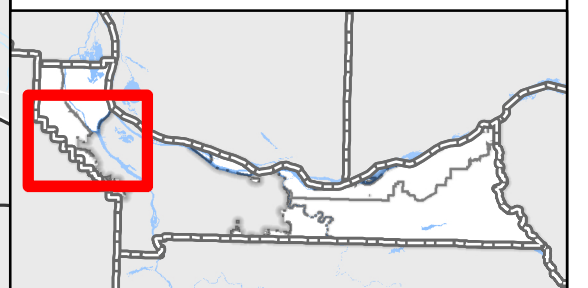
The impact area is illustrated in Figure 5 and Table 2.



Figure 5 - Significant
Riparian Areas and
Impact Areas



- SEC Streams
- Impact Area - Sauvie Island/Multnomah Channel
- Impact Area - West Hills
- Subareas
- County Boundaries



Prepared By: Angelo Planning Group
Date: 3/23/2017

Coordinate System:
NAD 1983 HARN State Plane Oregon North FIPS 3601

Disclaimer:
Unofficial depiction, for illustrative purposes only.

Table 2: Summary of Impact Areas by Zone

	CFU1	CFU2	EFU	MUA20	RC	RR	Total
Sauvie Island/Multnomah Channel	-	-	0.07	103.58	4.78	-	108.43
West Hills	140.59	47.80	8.10	18.02	-	30.39	244.90
Total	140.59	47.80	8.17	121.60	4.78	30.39	353.33

2.3. CONFLICTING USES

The primary purpose of the ESEE analysis is to determine whether potential “conflicting uses” should be allowed, limited, or prohibited, based on the overall net benefits associated with each of these scenarios. The areas where riparian corridor resources are located are zoned rural residential, exclusive farm use, multiple use agriculture, and/or commercial forest use on the County’s zoning map. These zones allow for a wide variety of land uses, including farm and forestry operations and associated uses, residential uses, commercial businesses, civic uses, transportation and utility facilities, and mining and processing of minerals and other energy sources.

Goal 5 provides direction about the types of land uses that should be considered conflicting uses. In general a “conflicting use” is “a land use, or other activity reasonably and customarily subject to land use regulations, that could adversely affect a significant Goal 5 resource (except as provided in OAR 660-023-010(1)(b)).” The administrative rule goes on to say that “Local governments are not required to regard agricultural practices as conflicting uses.” In addition, OAR 660-023-0090 (7)(b)(C) states the County does not have to consider the removal of vegetation on lands designated for agriculture or forest use. As a result, farm uses are not considered as conflicting uses in this analysis. Similarly, timber harvesting also is not considered a conflicting use, consistent with the OAR provisions and because timber harvesting for commercial purposes is regulated by the Oregon Forest Practices Act. Processing of forest products is considered a conflicting use in combination with other commercial activities, given that impacts would be similar.

Other potential conflicting uses which are permitted outright or conditionally by Multnomah County within the zones having significant riparian corridors within the study area fall into the following six general categories, with types of impacts associated with these uses described very briefly. A more detailed discussion of impacts associated with the four ESEE factors occurs in the next section.

- Residential development.** Single family detached dwellings and accessory structures are allowed in all zones within the study area. As shown on Figure 4, the tax lots that include riparian corridors vary in size from 0.02 to 843.37 acres. The potential negative impacts of residential development include: clearing of vegetation; grading, excavation, filling, hauling, and soil compaction; adding impervious surfaces by constructing buildings, walkways, driveways and parking areas ; installing utility connections such as water lines and stormwater pipes where a public system exists; building stormwater control structures; landscaping with non-native vegetation (e.g., establishment of lawns, addition of non-native landscape features – trees, shrubs, groundcover, etc.); using toxins (cleaners, fertilizers, pesticides, and herbicides) in

households and yards and generating contaminated runoff from household activities; and other general impacts from pets, noise, litter, garbage, etc. For larger lots, many of these impacts could be avoided by locating residential structures and other improvements on portions of the lot outside the impact area.

- **Limited civic and commercial development** (e.g., Type A, B or C home occupations, sales of agricultural products, health care, schools, churches, fire stations, and cemeteries). A number of civic and commercial uses are permitted outright or permitted as review or conditional uses within the zones within the study area. Forest products processing, forestry experimentation and research, and log scaling and weighing also are included in this category because their impacts are similar to those of commercial uses. The potential impacts of these uses are similar to those described for residential uses; however, civic and commercial developments may have larger building footprints and more impervious area due to parking requirements than residential development.
- **Parks, open space, and trails.** Parks require conditional use approval. Where parks include buildings or parking areas, the impacts of these activities are similar to those described for civic and commercial uses except that normally a smaller percentage of land area is covered by impervious surfaces. Parks and open areas construction and maintenance practices can cause erosion and damage vegetation. Intensive recreational activity such as cycling also causes erosion, particularly when it occurs off maintained trails. The use of pesticide and fertilizer in maintained areas may impact water quality within wetlands.
- **Transportation facilities.** Similar to other types of development, constructing streets and sidewalks results in the removal of vegetation, grading, excavation, filling, hauling, and new impervious surfaces. The construction of streets can result in concentration of surface water, higher runoff rates, and alteration to groundwater recharge (alteration of area hydrology). Streets also can include impacts associated with crossings and the installation of culverts as well as the building of stormwater control structures. Where stormwater isn't managed, there can be the potential for impacts from runoff.
- **Public and private utilities.** This category includes water, sewer and storm drainage pipes, telecommunication facilities, electric power lines and substations, and gas pipelines. Other than transmission lines, which are permitted outright, these uses require conditional use approval. Although operation of existing facilities may have few adverse environmental effects, construction and maintenance practices for new basic utilities have some adverse effects associated with clearing or grading. Where facilities include a building or parking area, impacts are similar to commercial development.
- **Energy exploration, production, and processing.** This category includes activities associated with solar and wind power generation, mineral/aggregate excavation and processing, geothermal exploration and production, and oil and gas exploration and operations. Impacts of these uses are similar to those from civic and commercial development but may have greater impacts on land form and topography due to excavation and other activities, including potential stream diversions and significant changes in runoff into streams.

2.4. TYPES OF IMPACTS

The uses described in the previous section can have a variety of positive or negative consequences on economic, social, environmental, and energy resources and conditions. Following is a summary of the different types of impacts considered and which are referenced in the text and tables in the following section of the Report.

2.4.1. ECONOMY

Economic values and potential impacts associated with riparian corridors in the study area include the following.

Economic value derived from development. The ability to develop a property to the maximum level or density of development allowed under County zoning will increase the economic or market value of a property or allowed improvements. This type of impact is most important for residential, commercial, and energy uses. It is relatively less applicable to transportation, utility, or community facilities, or to parks, open spaces, or trails. Allowing conflicting uses provides the highest economic benefit in this regard, while prohibiting those uses provides the lowest benefits.

Tax revenues. A large percentage of tax revenues in Oregon come from a combination of property, income, and payroll taxes. Maximizing the development of a property will generally increase the property tax revenues associated with it. Income and payroll taxes also will increase for employment-related uses (primarily commercial, civic, and energy uses, with a smaller impact from transportation, utilities and parks, recreation, and open space). In general, the highest positive economic consequences in this regard will be for allowing employment-related uses, followed by residential uses, with parks, open space, and trails uses receiving the lowest net benefit in this regard. For larger properties, the relative positive consequences for allowing residential uses will be lessened if it is possible to located residential structures and other improvements on portions of the lot outside the impact area. Prohibiting uses will generally have a negative economic impact in relation to tax revenues.

Employment. For commercial or other uses that provide job opportunities, employment generates personal and business income, which has a positive economic consequence if development is allowed and a negative impact if it is prohibited.

Self-sufficiency and economic equity. The majority of County households earn enough money to cover their basic household needs – i.e., are economically self-sufficient and do not depend on government assistance programs. However, a certain percentage of households do not. In particular, workers in the food and drink service and retail sectors are less likely to earn wages that result in self-sufficiency while workers in construction, manufacturing, and distribution jobs are more likely to do so. Land uses that promote economic self-sufficiency have a higher economic net benefit associated. Development of transportation facilities allows transportation of goods produced or distributed in higher-wage sectors and provides higher-wage jobs associated with construction and maintenance of transportation and utility facilities.

Open space value. People value open space for its potential recreational amenities, as well as its scenic value and it is possible to quantify this intrinsic value. Developing open space for non-park or open space purposes has a negative economic consequence in this regard, with larger scale development having a greater impact. Prohibiting such development can have a positive economic consequence.

Ecosystem services. Riparian corridors provide ecosystem goods and services, which in turn provide economic and social value. Ecosystem services include water conveyance, purification, and flood control, air cooling and purification, carbon sequestration, soil fertilization and pollination. Ecosystem goods include commodities like food, fuel, fisheries, timber, minerals, etc. Ecosystem goods also include supporting recreation and tourism. In general, wetlands provide the highest level of ecosystem services, followed by shallow water riparian areas and then by upland habitat (e.g., forest/woodlands, shrubland and grassland). Allowing conflicting uses will result in negative economic consequences in this regard while prohibiting them will have positive consequences. The degree of impact will depend on the amount of area affected, the type of resources and the proximity to it.

The economic benefits of ecosystem services come in large part from the savings associated with building infrastructure (stormwater conveyance systems, water filtration plants, etc.) to otherwise serve development or mitigate the impacts of it, as well as from amenity values associated with natural areas which increase property values. While the economic value of ecosystem services associated with certain types of resources can be relatively high, they are typically lower than economic values associated with employment and tax revenues.

2.4.2. SOCIAL

Social values and potential impacts associated with riparian corridors in the study area include the following.

Human health and welfare. Physical and mental health and welfare are related to a variety of factors that can be impacted positively or negatively by conflicting uses. They include:

- *Employment opportunities.* Household income is one of the most important factors in determining human health and welfare and is directly dependent on employment. Income can provide access to better quality food and housing, as well as health care services. Similar to economic self-sufficiency, jobs with higher wages will have a more positive impact on social welfare. Allowing conflicting uses that will provide employment opportunities will have a positive impact on social resources in this regard while prohibiting them will have a negative impact.
- *Access to nature and recreation.* Access to natural areas and the recreational opportunities they provide have positive impacts on physical and mental health. Recreation has multiple health benefits, including improving overall physical health, strengthening immune systems, and preventing a variety of diseases and medical conditions. In addition, studies show that viewing vegetation and wildlife can reduce stress and aggression, improve cognitive development, and enhance medical recovery. Allowing conflicting uses will generally have a negative impact on social resources in this regard while limiting or prohibiting them will have a positive impact.

- *Air and water quality.* Air and water pollution adversely impact human health. Conflicting uses can impact air quality in two ways, either by introducing pollutants into the air or by eliminating vegetation that can help filter pollutants and improve air quality. Relatively few of the specific conflicting uses allowed in these zones produce point sources of air or water pollution. However, increased use of automobiles or equipment that produce carbon or other emissions associated with virtually all of the uses allowed can have some impact on air quality, as well as water quality via stormwater runoff from roads or other impervious surfaces or via erosion. In all cases, consequences would be negative for allowing or limiting uses and positive for prohibiting uses, except possibly for parks and open space uses where natural areas would be retained. Energy exploration uses likely would have the highest negative impacts due the size of areas impacted, while park and open space and residential uses typically would result in the lowest level of impacts.
- *Light, noise, and traffic.* Both noise and light can have negative consequences, including reducing enjoyment of leisure activities; contributing to health effects such as hypertension, heart disease, and sleep interruption; reduction of property values; and/or elimination of the ability to see the night sky (for light). Noise and light can come from human activity, equipment, and/or traffic associated with the majority of the conflicting uses described previously. Similar to air and water quality, consequences would be negative for allowing or limiting uses and positive for prohibiting uses, except possibly for parks and open space uses where natural areas would be retained. Energy exploration uses likely would have the highest negative impacts due the size of areas impacted, the type of equipment used, and truck traffic generated, while park and open space and residential uses typically would result in the lowest level of impacts.
- *Opportunities for social interaction.* Opportunities for social interaction have positive benefits on psychological health, formation of social networks, and the ability for community members to collectively discuss and achieve community goals. Allowing uses that promote or provide opportunities for social interaction will have positive effects in this regard. Prohibiting or limiting such uses will have negative impacts, with the highest negative impacts from prohibiting them.

Cultural values associated with Native American values and habitation. The first Europeans to explore the Columbia and Willamette Rivers arrived in the late 18th century. Prior to that, the area was populated by various aboriginal tribes who settled along sections of these rivers for 6,000 to 9,000 years. The creation stories of these tribes held that the people were created in these places. The rivers provided a travel route for trade of goods among tribes, and also provided a rich diversity of food that was fairly obtainable for most of the year. Besides fish that could be caught over a period of several months a year, and game and fowl that could be hunted, Native peoples also gathered plants that were available much of the year in the temperate climate. There is evidence of Native habitation in the Sauvie Island area. Most types of land use and development have the potential to disturb Native American artifacts during the course of grading or other soil-disturbing activities. To the extent that land use or development degrades environmental resources, it also has potential negative impacts on the cultural value associated with those resources. Limiting development can significantly lessen these impacts by either shifting the

location of development to minimize impacts or requiring investigation, documentation, and preservation of archeological resources if they are discovered during the course of development.

Other historic and heritage values. Multnomah County residents value historic structures and resources as evidenced by policies in the County's Comprehensive Plan (updated in 2016) which direct the County to inventory and establish protection programs for such resources. Allowing land uses or development of properties with historic resources could negatively impact them. Limiting development to avoid such impacts would lessen these impacts.

Other cultural values. Multnomah County and Oregon residents place a high value on the environment and quality of life. Numerous policies in the County's Comprehensive Plan aimed at protecting and conserving these resources confirm these values. Allowing development which can adversely impact riparian corridors and impact areas can have an effect on these values. At the same time, many rural residents live in the rural areas of the County out of a desire for privacy and the ability to manage their own land and resources. They also have a strong history of valuing individual property rights and opposing what they consider to be undue levels of regulation. As a result, allowing development has both potentially negative and positive impacts on these somewhat conflicting cultural values.

2.4.3. ENVIRONMENT

Environmental functions and potential impacts associated with riparian corridors in the study area include the following.

Microclimate and shade. Streams and riparian wetlands, and surrounding trees and woody vegetation are associated with localized air cooling, increased humidity, and soil moisture. Shading from riparian vegetation also creates localized areas of cool water which is important to fish and other aquatic species.

Bank stabilization and control of sediments, nutrients, and pollutants. Trees, vegetation, roots, and leaf litter intercept precipitation, hold soils, banks and steep slopes in place, slow surface water runoff, take up nutrients, and filter sediments and pollutants found in surface water.

Stream flow moderation and flood storage. Waterways, floodplains, and wetlands provide conveyance and/or storage of stream flows, floodwaters, and groundwater discharge. Trees and vegetation intercept precipitation and promote infiltration which tempers the stream flow fluctuations or "flashiness" that often occurs in urban watersheds.

Large wood and channel dynamics. Streams, riparian wetlands, floodplains and standing or downed large trees and woody vegetation contribute to the natural changes in location, configuration, and structure of stream channels over time.

Organic inputs, food web, and nutrient cycling. Water bodies, wetlands, and nearby vegetation provide food and nutrients for aquatic and terrestrial species (e.g., plants, leaves, twigs, seeds, berries, and insects) and are part of an ongoing chemical, physical, and biological nutrient cycling system.

Wildlife habitat/corridors. Vegetation, water bodies, and associated landscape features (e.g. downed logs) provide wildlife habitat functions such as food, cover, breeding and nesting opportunities, and migration corridors. Vegetated corridors along waterways and between waterways and uplands allow wildlife to migrate and disperse among different habitat areas, and provide access to water. Vegetation creates a buffer between human activities and wildlife. Noise, light, pollution, and domestic animals all impact wildlife and vegetation retention can reduce those impacts.

Development within riparian resource areas can impact these functions. In general, allowing development would have the greatest potential impacts while limiting it to avoid or reduce impacts to the resource areas would have a lower impact. Prohibiting development would have the least impact.

2.4.4. ENERGY

The following types of energy related impacts are considered in this analysis.

Transportation. Different types of development will have varying impacts on energy associated with transportation. In general, allowing more residential development in rural communities increases the expenditure of energy associated with transportation between new homes and available retail and commercial services and employment centers in nearby urban areas. Conversely, allowing commercial and other services that support local residents can decrease energy associated with transportation. Allowing for schools, parks, and trails can have similar impacts. Allowing extractive uses can increase energy costs associated with transportation of extracted materials in general, but it can reduce those energy costs if the sources of materials are relatively closer to nearby urban areas than similar resources in other parts of the region or state. Allowing streets to cross riparian corridors can reduce out of direction travel. Similarly, utilities may need to cross corridors to ensure an efficient network.

Energy production. Allowing energy extraction and transmission uses will generally have positive energy impacts by allowing energy to be distributed to homes and businesses that need it and by reducing energy related transportation impacts to the extent that energy production in the study area is relatively closer to nearby market areas in comparison to other energy production sources.

2.5. ESEE CONSEQUENCES

In this section, the ESEE consequences that could result from decisions to allow, limit, or prohibit a conflicting use are analyzed for each category of conflicting uses. Within the study area, riparian corridors represent a total of approximately 6,432 acres and the area within the riparian corridor impact area (including riparian resources) is 1,046 acres. It is within these 1,046 acres that the consideration of allowing, limiting, or prohibiting conflicting uses takes place.

As described in section 2.4, potential conflicting uses can generally be grouped into one of six categories. In the tables that follow, each of the six conflicting use categories is considered under each scenario (i.e., Allow, Limit, Prohibit) and the expected net effect of either allowing, limiting, or prohibiting the conflicting use is identified as either positive (+1), neutral (0) or negative (-1). In some situations a mix of

both positive and negative outcomes is possible. The net effect is intended to reflect the cumulative end result (either positive, neutral, or negative) of all potential consequences.

Scenario A - Allowing conflicting uses within the riparian corridors and impact areas. In evaluating the consequences of **allowing** conflicting uses, the assumption is that all significant riparian corridor resources would be subject to development allowed by existing base zone regulations.

Scenario B - Limiting conflicting uses within the resource and impact areas. In evaluating the consequences of **limiting** conflicting uses, the assumption is that rules would be established to limit the impacts of allowed development in areas containing significant riparian corridor resources. Areas containing significant resources could still be subject to development, but development restrictions in addition to base zone regulations would be imposed.

Scenario C - Prohibiting conflicting uses within the resource and impact areas. In evaluating the consequences of **prohibiting** conflicting uses the assumption is that rules and/or other mechanisms would be established that preclude all allowed development in significant riparian corridors and associated impact areas.

2.5.1. SCENARIO A - ALLOWING CONFLICTING USES WITHIN THE RESOURCE AND IMPACT AREAS

Under this scenario there would be no land use regulations restricting conflicting uses within the Goal 5 (riparian) resources or impact areas. Tables A-1 through A-4 identify the likely positive and negative consequences to both the riparian resource and the conflicting use of *allowing* the conflicting use including both the economic goods and services provided by the conflicting uses and the ecosystem services provided by the significant riparian corridor. The expected net effect of allowing the conflicting use, either positive (+1), neutral (0), or negative (-1), is identified in column 4.

Table A-1 Economic Consequences of Allowing Conflicting Uses

Use Category	Positive Economic Consequences	Negative Economic Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Property owners realize full development potential of parcels; structures not required to avoid riparian areas. Residential improvements increase property tax base. No mitigation is required, which reduces the cost to develop. 	<ul style="list-style-type: none"> Loss of ecosystem services results in higher costs, either to replace services or repair impacts (e.g., repair flood or erosion damage). Amenity/development premium for parcels adjacent to resource areas is eliminated. Environmental impact costs passed on to County could lead to increased taxes. Potential loss of value for downstream property owners with water rights due to reduced water quality from increased turbidity or pollution. Higher cost to develop and maintain private utilities. 	-1
Limited civic and commercial development	<ul style="list-style-type: none"> Development potential of parcels fully realized enhancing potential for local economic development. Commercial improvements increase property tax base. Depending on development type, potential increase in property values for adjacent landowners. Helps to satisfy governmental long-term capital facility needs. Potential benefits associated with economic self-sufficiency 	<ul style="list-style-type: none"> Same as residential, but with lesser loss of amenity value and greater potential for increased costs resulting from lost ecosystem services due to larger development area size associated with civic and commercial development. 	+1
Parks, open space, and trails	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> May decrease property values for adjacent landowners if higher pedestrian traffic or active recreation create a nuisance. Higher municipal service costs relating to maintenance, law enforcement, etc. Some loss of ecosystem services possible with certain types of parks facilities (e.g., active recreation facilities). 	0

Table A-1 Economic Consequences of Allowing Conflicting Uses

Use Category	Positive Economic Consequences	Negative Economic Consequences	Net Effect
Transportation facilities	<ul style="list-style-type: none"> • Potential for improved connectivity and movement of people and goods. • No mitigation is required, which reduces the cost to develop streets and roads. • Potential positive benefits associated with economic self-sufficiency. 	<ul style="list-style-type: none"> • Loss of ecosystem services (e.g., higher potential costs due to flood damage or erosion risk). • Environmental impact costs could be passed on to County, thus increasing taxes. 	+1
Public and private utilities	<ul style="list-style-type: none"> • Provides essential services for other land uses. • No mitigation is required, which reduces costs to develop facilities. • Potential positive benefits associated with economic self-sufficiency. 	<ul style="list-style-type: none"> • Loss of ecosystem services (e.g., higher potential costs due to flood damage or erosion risk). • Environmental impact costs could be passed on to County, thus increasing taxes. 	+1
Energy exploration, production or processing	<ul style="list-style-type: none"> • Energy use achieves full potential for economic use of property. • Improvements to jobs and tax base associated with increased economic activity. 	<ul style="list-style-type: none"> • Loss of ecosystem services (e.g., higher potential costs due to flood damage or erosion risk). • Amenity/development premium for parcels adjacent to resource areas is eliminated. • Potential adverse impacts are relatively more significant than for other uses. 	0

Table A-2 Social Consequences of Allowing Conflicting Uses

Use Category	Positive Social Consequences	Negative Social Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Provides residents with access to nature and recreation. Positive impacts of allowing for rural residential lifestyle. 	<ul style="list-style-type: none"> Potential impact to historic, aesthetic, and cultural values or resources. Potential loss of passive recreational opportunities. Potential impacts to air and water quality result in potential negative health impacts. Residences located relatively far from most needed services. 	-1
Limited civic and commercial development	<ul style="list-style-type: none"> Civic and commercial development provide community gathering places with positive social benefits. Employment opportunities represent positive social benefits. 	<ul style="list-style-type: none"> Same as residential, but with greater potential for impacts to riparian corridors due to development size and lesser health-related impacts. Potential light, noise, and traffic impacts on residents associated with additional commercial traffic. 	-1
Parks, open space, and trails	<ul style="list-style-type: none"> Parks and open space provide community gathering places. Opportunities for active recreation provide community health benefits. 	<ul style="list-style-type: none"> Consequences similar to, but less than, residential, depending on amount of active recreation area and non-native landscaping provided. 	0
Transportation facilities	<ul style="list-style-type: none"> Good connectivity encourages the use of active transportation modes, which can improve public health. Provides enhanced ability to access social activities, benefits. 	<ul style="list-style-type: none"> Same as residential, but with a potentially lower degree of impact, depending on nature of improvements. Potential light, noise, and traffic impacts on residents associated with additional commercial traffic. 	0
Public and private utilities	<ul style="list-style-type: none"> Utilities and telecommunication facilities provide ability for residents to communicate, gather, and socialize. 	<ul style="list-style-type: none"> Same as residential, but with potentially lower degree of impact, depending on nature of improvements. 	0
Energy exploration, production or processing	<ul style="list-style-type: none"> Positive impacts associated with employment, income, and living standards. 	<ul style="list-style-type: none"> Consequences similar to residential, but with greater potential for impacts due to potential size and intensity of uses. Noise and related impacts have negative impact on rural character and quality of life. 	-1

Table A-3 Environmental Consequences of Allowing Conflicting Uses

Use Category	Positive Environmental Consequences	Negative Environmental Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Opportunities for voluntary good stewardship practices by property owners. 	<ul style="list-style-type: none"> Potential adverse impacts on microclimates and shade. Potential adverse impacts on water quality. Potential changes in stream flow, channel dynamics, and flood storage. Potential adverse impacts on riparian species habitat. 	-1
Limited civic and commercial development	<ul style="list-style-type: none"> Same as residential development. 	<ul style="list-style-type: none"> Similar to residential, but with potentially greater impacts from the size of the development and amount of impervious are. 	-1
Parks, open space, and trails	<ul style="list-style-type: none"> Public ownership may help ensure that resource units are maintained in the future. 	<ul style="list-style-type: none"> Developed parks and open space may displace native riparian and wildlife habitat. Maintenance practices may introduce pesticides and fertilizers. 	-1
Transportation facilities	<ul style="list-style-type: none"> Good connectivity encourages the use of active transportation modes and lessen travel times and vehicle miles traveled which can reduce greenhouse gas emissions. 	<ul style="list-style-type: none"> Similar to residential, with potentially greater impact due to light and noise from automobile traffic, introduction of polluted runoff from the transportation facility, and vulnerability that accidents that may introduce high levels of pollutants. 	-1
Public and private utilities	<ul style="list-style-type: none"> Telecommunication facilities allow residents to telecommute or purchase goods and services online, reducing vehicle miles traveled, and greenhouse gas emissions. 	<ul style="list-style-type: none"> Similar to residential, with varying impacts due to size and scope of facility. 	-1
Energy exploration, production or processing	<ul style="list-style-type: none"> Production of wind or solar energy can have positive impacts in relation to other forms of energy. 	<ul style="list-style-type: none"> Similar to transportation but with potential greater impacts due to increased areas of activity and potential greater impacts to land form, topography, and drainage. 	-1

Table A-4 Energy Consequences of Allowing Conflicting Uses

Use Category	Positive Energy Consequences	Negative Energy Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> • Opportunities to reduce out-of-direction travel are increased. 	<ul style="list-style-type: none"> • Possible increased energy consumption due to loss of vegetation and microclimate effects. • May encourage residential uses away from more cost-effective, urban locations to serve with public facilities. • Increased energy to travel from new homes in rural areas to urban area employment and services. 	-1
Limited civic and commercial development	<ul style="list-style-type: none"> • Providing needed services reduces energy needed for transportation by nearby residents. 	<ul style="list-style-type: none"> • Similar to residential development. 	0
Parks, open space and trails	<ul style="list-style-type: none"> • Similar to civic and commercial. In addition, allowing trails encourages non-motorized modes of transportation. 	<ul style="list-style-type: none"> • Similar to residential, although impacts could be less depending on the amount of impervious area. 	0
Transportation facilities	<ul style="list-style-type: none"> • Good connectivity encourages use of active transportation modes and lessen travel times and vehicle miles traveled. 	<ul style="list-style-type: none"> • Possible increased energy consumption due to loss of vegetation and microclimate effects. 	+1
Public and private utilities	<ul style="list-style-type: none"> • Telecommunication facilities allow residents to telecommute or purchase goods and services online, reducing energy usage. • Improves efficiency of energy grid and potentially reduces transmission-related energy losses. 	<ul style="list-style-type: none"> • Same as residential development but to a lesser degree. 	+1
Energy exploration, production or processing	<ul style="list-style-type: none"> • Creates local opportunities for energy production and utilizes potential available energy sources. 	<ul style="list-style-type: none"> • Similar to residential development but with potential greater impacts due to increased areas of activity. 	0

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 without limitations or should be prohibited entirely. Results of this table are carried forward to the program recommendation section of this analysis.

As shown in Table A-5, the net effect of allowing conflicting uses is positive for transportation facilities and utilities and negative for all other uses. The economic and energy consequences are positive or neutral for most uses. Environmental consequences are negative for all uses and social consequences are neutral or negative for all uses.

Table A-5 Summary of Consequences of Allowing Conflicting Uses

Use Category	Economic	Social	Environmental	Energy	Cumulative Effect
Residential Development	-1	-1	-1	-1	-4
Limited Civic and Commercial Development	+1	-1	-1	0	-1
Parks, Open Space and Trails	0	0	-1	0	-1
Transportation Facilities	+1	0	-1	+1	+1
Public and Private Utilities	+1	0	-1	+1	+1
Energy Exploration, Production and Processing	0	-1	-1	0	-2

2.5.2. SCENARIO B - LIMITING CONFLICTING USES WITHIN THE RESOURCE AND IMPACT AREAS

Under this scenario conflicting uses would be limited (by regulations) within the Goal 5 resource or its impact area. Uses would be permitted in resource or impact areas if it could be demonstrated that they would have a positive effect on Goal 5 resources or if their negative effects can be mitigated or minimized and uses and activities would be located on portions of a land parcel which are outside the resource and impact areas, where feasible. Tables B-1 through B-4 identify the likely positive and negative consequences of limiting the conflicting use. The expected net effect of limiting the conflicting use, either positive (+1), neutral (0), or negative (-1), is identified in column 4.

Table B-1 Economic Consequences of Limiting Conflicting Uses

Use Category	Positive Economic Consequences	Negative Economic Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Property owners realize most of the development potential of parcels through clustering of residential development. Economic development still facilitated by allowing development of residential land for relocating/new employees. Most ecosystem services are retained reducing costs to replace services or repair impacts (e.g., repair erosion or flood related damage). Most of the amenity/development premium for adjacent parcels is preserved and may be enhanced by mitigation. 	<ul style="list-style-type: none"> Loss of some ecosystem services still possible. Steps to enhance Goal 5 resources are required, which increases the cost to develop. 	+1
Limited civic and commercial development	<ul style="list-style-type: none"> Some of the development potential of parcels fully realized. Enhances potential for local economic development by providing some opportunities for commercial development and employment. Depending on development type, potential increase in property values for adjacent landowners. Helps to satisfy governmental district long-term capital facility needs. 	<ul style="list-style-type: none"> Similar to residential, but with greater potential for increased costs resulting from lost ecosystem services and greater need for mitigation as a result of larger scale facilities. 	+1
Parks, open space and trails	<ul style="list-style-type: none"> Limited amount of parks, open space, and trail development allowed within the resource or impact area may create a development premium and amenity for adjacent parcels and a community attraction, enhancing potential for local economic development. Most ecosystem services are provided. 	<ul style="list-style-type: none"> Similar to residential, but to the extent these facilities are allowed, they may decrease property values for adjacent landowners if higher level of use creates a nuisance. Higher municipal service costs relating to maintenance, law enforcement, etc. 	0
Transportation facilities	<ul style="list-style-type: none"> To the extent that some facilities are allowed within resources and impact areas, connectivity can be achieved. Potential for local economic development is enhanced by providing access for goods and people. 	<ul style="list-style-type: none"> Loss of some ecosystem services and economic value of open space still possible. Mitigation is required, which increases the cost to build facilities. Mitigation costs could be passed on to County, thus increasing taxes. 	+1

Table B-1 Economic Consequences of Limiting Conflicting Uses

Use Category	Positive Economic Consequences	Negative Economic Consequences	Net Effect
Public and private utilities	<ul style="list-style-type: none"> Similar to transportation, with economic development enhanced through provision of essential services to support it in some areas. 	<ul style="list-style-type: none"> Similar to transportation with costs to develop passed on to taxpayers or consumers. 	0
Energy exploration, production and processing	<ul style="list-style-type: none"> Energy use achieves most of its potential for economic use of property. Some improvements to jobs and tax base associated with increased economic activity. 	<ul style="list-style-type: none"> Similar to transportation facilities except that negative impacts are potentially greater and mitigation costs are passed on to consumers rather than to tax payers. 	+1

Table B-2 Social Consequences of Limiting Conflicting Uses

Use Category	Positive Social Consequences	Negative Social Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Community scenic, historic, and cultural values are preserved for the most part and may be enhanced by mitigation. Mitigation sites can become an amenity. Supports cultural values associated with desire for rural lifestyle. Access to nature and recreation provides social benefits for residents. 	<ul style="list-style-type: none"> Some potential loss of scenic, historic and cultural values could still occur which cannot be offset by mitigation. Light, noise, and traffic impacts associated with new development may negatively impact existing residents. Air and water quality impacts may negatively impact existing residents. 	+1
Limited civic and commercial development	<ul style="list-style-type: none"> To the extent that these uses are permitted within resources and impact areas, they provide community gathering places. Potential jobs and other economic impacts have beneficial social consequences. 	<ul style="list-style-type: none"> Similar to residential, but impacts may be more significant due to the larger size of the developments. 	0
Parks, open space and trails	<ul style="list-style-type: none"> Same as civic and commercial. Opportunities for active recreation provide community health benefits. Enhanced access to clean air and water provide positive health benefits. 	<ul style="list-style-type: none"> Similar to residential, but with potentially fewer or minimal impacts depending on amount of active recreation area and non-native landscaping provided. 	+1
Transportation facilities	<ul style="list-style-type: none"> If achieved, connectivity can help encourage use of active transportation modes, which can improve public health. 	<ul style="list-style-type: none"> Similar to residential, but with greater potential for impacts to riparian areas due to development size, potential for noise, light, and glare. 	0

Table B-2 Social Consequences of Limiting Conflicting Uses

Use Category	Positive Social Consequences	Negative Social Consequences	Net Effect
Public and private utilities	<ul style="list-style-type: none"> Telecommunications facilities can allow for telecommuting, reducing pollution and improving public health. 	<ul style="list-style-type: none"> Similar to residential. 	0
Energy exploration, production or processing	<ul style="list-style-type: none"> Positive impacts associated with employment, income, and living standards. 	<ul style="list-style-type: none"> Consequences similar to residential, but with greater potential for impacts due to potential size of use; consequences reduced by limitations or mitigation requirements. Noise and related impacts have negative impact on rural character and quality of life; can be mitigated by limitations, requirements. 	-1

Table B-3 Environmental Consequences of Limiting Conflicting Uses

Use Category	Positive Environmental Consequences	Negative Environmental Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Most ecosystem services are retained. Opportunities for mitigation and restoration of degraded resources. 	<ul style="list-style-type: none"> Some loss of ecosystem services could still occur but more opportunities to reduce impacts, given rural densities. Potential adverse impacts on microclimates and shade, but can be substantially minimized by placement of dwellings. Potential changes in stream flow, channel dynamics, and flood storage, but can be minimized. Some potential impacts on water quality and riparian wildlife habitat but can be minimized. 	0
Limited civic and commercial development	<ul style="list-style-type: none"> Same as residential development. 	<ul style="list-style-type: none"> Similar to residential, but with potentially greater impacts from light and glare. 	0
Parks, open space and trails	<ul style="list-style-type: none"> Same as residential development, with increased potential for resource enhancement. Public ownership may help ensure that resource units are maintained in the future. 	<ul style="list-style-type: none"> Similar to residential, but with potentially fewer impacts if limits require native vegetation and limit the use of pesticides and fertilizers. 	+1

Table B-3 Environmental Consequences of Limiting Conflicting Uses

Use Category	Positive Environmental Consequences	Negative Environmental Consequences	Net Effect
Transportation facilities	<ul style="list-style-type: none"> Connectivity and access can encourage the use of active transportation modes and lessen travel times and vehicle miles traveled which can reduce greenhouse gas emissions. 	<ul style="list-style-type: none"> Similar to residential, with potentially higher impact due to light and noise from automobile traffic, introduction of polluted runoff from the transportation facilities, and vulnerability that accidents that may introduce high levels of pollutants. 	0
Public and private utilities	<ul style="list-style-type: none"> Telecommunication facilities allow residents to telecommute or purchase goods and services online, reducing impacts on air pollution and carbon emissions. 	<ul style="list-style-type: none"> Similar to transportation. 	0
Energy exploration, production or processing	<ul style="list-style-type: none"> Creates local opportunities for energy production and utilizes potential available energy sources. 	<ul style="list-style-type: none"> Similar to residential development but with potential greater impacts due to increased areas of activity. 	0

Table B-4 Energy Consequences of Limiting Uses

Use Category	Positive Energy Consequences	Negative Energy Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Most ecosystem services are retained reducing the energy needed to build and maintain public facilities. Opportunities to reduce out-of-direction travel are increased. 	<ul style="list-style-type: none"> Possible increased energy consumption due to loss of vegetation and microclimate effects. Increased energy to travel from new homes in rural areas to urban area employment and services. 	0
Limited civic and commercial development	<ul style="list-style-type: none"> Providing needed services reduces energy needed for transportation by nearby residents. 	<ul style="list-style-type: none"> Possible increased energy consumption due to loss of vegetation and microclimate effects. 	+1
Parks, open space and trails	<ul style="list-style-type: none"> Similar to residential. In addition, allowing trails encourages non-motorized modes of transportation. 	<ul style="list-style-type: none"> Similar to residential, although impacts could be less depending on the amount of impervious area. 	+1
Transportation facilities	<ul style="list-style-type: none"> Good connectivity encourages use of active transportation modes and lessen travel times and vehicle miles traveled. 	<ul style="list-style-type: none"> Similar to residential development but to a lesser degree. 	+1
Public and private utilities	<ul style="list-style-type: none"> Most ecosystem services are retained reducing the energy needed to build and maintain public facilities. Telecommunication facilities allow residents to telecommute or purchase goods and services online, reducing energy usage. 	<ul style="list-style-type: none"> Similar to transportation but to a lesser degree. 	+1

Table B-4 Energy Consequences of Limiting Uses

Use Category	Positive Energy Consequences	Negative Energy Consequences	Net Effect
Energy exploration, production or processing	<ul style="list-style-type: none">Creates local opportunities for energy production and utilizes potential available energy sources.	<ul style="list-style-type: none">Similar to residential development but with potential greater impacts due to increased areas of activity.	+1

Table B-5 summarizes the net effect of limiting the conflicting uses. The cumulative net effect column shows the “strength” of the positive or negative consequences of limiting 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 limiting the conflicting use would provide a net benefit to the County, whereas a negative score would suggest that the use should not be limited, but should be either allowed or prohibited if one of those scenarios provides a greater net benefit. Results of this table are carried forward to the program recommendation section of this analysis.

As shown in Table B-5, the net effect of limiting conflicting uses is positive for all categories. This is primarily due to the positive economic and energy consequences. The environmental consequences are more often neutral in recognition that mitigation may be costly and may not provide all of the ecosystem services that are lost. Social consequences are typically positive or neutral except for energy exploration, production, and processing uses.

Table B-5 Summary of Consequences of Limiting Conflicting Uses

Use Category	Economic	Social	Environ- mental	Energy	Cumulative Effect
Residential Development	+1	+1	0	0	+2
Limited Civic and Commercial Development	+1	0	0	+1	+2
Parks, Open Space and Trails	0	+1	+1	+1	+3
Transportation Facilities	+1	0	0	+1	+2
Public and Private Utilities	0	0	0	+1	+1
Energy Exploration, Production and Processing	+1	-1	0	+1	+1

2.5.3. SCENARIO C - PROHIBITING CONFLICTING USES WITHIN THE RESOURCE AND IMPACT AREAS

Under this scenario conflicting uses would be completely prohibited within the Goal 5 resource or its impact area. Existing water quality regulations implemented by the Oregon Department of Environmental Quality, the Corps of Engineers, and the Division of State Lands would remain in effect. Tables C-1 through C-4 identify the likely positive and negative consequences of prohibiting the conflicting use. The expected net effect of prohibiting the conflicting use, either positive (+1), neutral (0), or negative (-1), is identified in column 4.

Table C-1 Economic Consequences of Prohibiting Conflicting Uses

Use Category	Positive Economic Consequences	Negative Economic Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Existing ecosystem services are preserved eliminating need to replace services or repair impacts. Amenity/development premium for adjacent parcels is preserved. Environmental impact costs are avoided. 	<ul style="list-style-type: none"> Property owners don't realize full development potential of parcels. Decrease in potential tax revenues to County. 	0
Limited civic and commercial development	<ul style="list-style-type: none"> Same as residential development. 	<ul style="list-style-type: none"> Development potential of parcels not realized. Reduces potential for local economic development. Decrease in potential tax revenues to County. Does not help to satisfy governmental long-term capital facility needs. Loss of potential economic self-sufficiency benefits. 	-1
Parks, open space and trails	<ul style="list-style-type: none"> Similar to residential. Lower municipal service costs relating to maintenance, law enforcement, etc. 	<ul style="list-style-type: none"> Recreation facilities, which are a community attraction that may enhance potential for local economic development, are not provided. 	0
Transportation facilities	<ul style="list-style-type: none"> Existing ecosystem services (e.g., higher potential costs due to flood damage risk) are preserved. Environmental impact costs are avoided. 	<ul style="list-style-type: none"> Connectivity and movement of people and goods is restricted, impacting potential for local economic development and economic self-sufficiency. Cost of building transportation facility is increased. 	-1
Public and private utilities	<ul style="list-style-type: none"> Same as transportation. 	<ul style="list-style-type: none"> Ability to obtain essential services needed for economic activity is not available. Loss of potential economic self-sufficiency benefits. Cost of building facilities is increased. 	-1
Energy exploration, production and processing	<ul style="list-style-type: none"> Same as residential uses. 	<ul style="list-style-type: none"> Property owners lose portion of economic value of their property. The cost of obtaining and processing energy resources increases. Reduced economic development and tax base revenue potential. Loss of potential economic self-sufficiency benefits. 	-1

Table C-2 Social Consequences of Prohibiting Conflicting Uses

Use Category	Positive Social Consequences	Negative Social Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> • Scenic, historic, and cultural values of existing resources are preserved. • Passive recreational and educational opportunities of existing resources are preserved. 	<ul style="list-style-type: none"> • " Negatively impacts cultural values associated with desire for rural lifestyle. • Diminishes direct access to nature and recreation and associated social benefits for additional residents. 	-1
Limited civic and commercial development	<ul style="list-style-type: none"> • Same as residential development. 	<ul style="list-style-type: none"> • Reduces social benefits associated with income and employment. • Civic and commercial developments could be impacted, thus reducing community gathering places. 	-1
Parks, open space and trails	<ul style="list-style-type: none"> • Same as residential development. 	<ul style="list-style-type: none"> • Parks and open space, which provide community gathering places, are impacted. • Opportunities for active recreation and outdoor education, which provide community benefits, could be precluded or reduced. 	-1
Transportation facilities	<ul style="list-style-type: none"> • Same as residential development. 	<ul style="list-style-type: none"> • Good connectivity, which encourages the use of active transportation modes and can improve public health, may not be possible. • Reduces social benefits associated with income and employment. 	-1
Public and private utilities	<ul style="list-style-type: none"> • Same as residential development. 	<ul style="list-style-type: none"> • Access to essential services for communication, social well-being, and health are more limited or costly. 	-1
Energy exploration, production and processing	<ul style="list-style-type: none"> • Same as residential development • Potential noise, pollution impacts of energy-related activities are eliminated. 	<ul style="list-style-type: none"> • Cost of energy could increase. 	+1

Table C-3 Environmental Consequences of Prohibiting Conflicting Uses

Use Category	Positive Environmental Consequences	Negative Environmental Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> • Microclimate and shade benefits are maintained. • Water quality and ecosystem services values are maintained. • Riparian wildlife habitat is maintained. • Stream flow and dynamics and flood storage are maintained. 	<ul style="list-style-type: none"> • None. 	+1
Limited civic and commercial development	<ul style="list-style-type: none"> • Same as residential uses. 	<ul style="list-style-type: none"> • None. 	+1
Parks, open space and trails	<ul style="list-style-type: none"> • Developed parks and open space don't displace native riparian and wildlife habitat. • Maintenance practices don't occur which could introduce pesticides and fertilizers. 	<ul style="list-style-type: none"> • None. 	+1
Transportation facilities	<ul style="list-style-type: none"> • Similar to residential uses but to a lesser degree. • Impact due to light and noise from automobile traffic, introduction of polluted runoff from the transportation facility, and vulnerability that accidents that may introduce high levels of pollutants are avoided. 	<ul style="list-style-type: none"> • Out-of-direction travel is increased. • Good connectivity, which encourages the use of active transportation modes and lessen travel times and vehicle miles traveled, thus reducing greenhouse gas emissions, may be precluded. 	0
Public and private utilities	<ul style="list-style-type: none"> • Similar to transportation uses but to a lesser degree. 	<ul style="list-style-type: none"> • Lack of ability to telecommute or purchase goods and services online requires increased use of automobiles, increasing air & water pollution and runoff. 	0
Energy exploration, production and processing	<ul style="list-style-type: none"> • Similar to residential development but to a potentially greater degree. • Impacts from activities such as removing native vegetation and disturbing stable slopes and soil, are avoided. 	<ul style="list-style-type: none"> • Extraction of resources cannot be undertaken, thus increasing the need for transportation of energy and associated resources, potentially increasing air quality impacts. 	0

Table C-4 Energy Consequences of Prohibiting Conflicting Uses

Use Category	Positive Energy Consequences	Negative Energy Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Additional energy is not required to build and maintain supporting public facilities. No increased energy consumption due to loss of vegetation and microclimate effects. May push residential uses into more cost-effective, urban locations to serve with public facilities. 	<ul style="list-style-type: none"> None. 	+1
Limited civic and commercial development	<ul style="list-style-type: none"> Same as residential development. 	<ul style="list-style-type: none"> Efficient siting may reduce energy cost due to transportation, solar access, and the provision of infrastructure services. Less energy would then be needed to access and operate the facilities. 	+1
Parks, open space and trails	<ul style="list-style-type: none"> Similar to residential, although benefits could be less depending on the amount of impervious area. 	<ul style="list-style-type: none"> Similar to civic and commercial. Allowing trails encourages non-motorized modes of transportation. 	-1
Transportation facilities	<ul style="list-style-type: none"> Additional energy is not required to build and maintain facilities. 	<ul style="list-style-type: none"> Good connectivity encourages the use of active transportation modes and lessens travel times and vehicle miles traveled. 	-1
Public and private utilities	<ul style="list-style-type: none"> Same as transportation. 	<ul style="list-style-type: none"> Lack of ability to telecommute or purchase goods and services online requires increased use of automobiles, increasing energy use. 	-1
Energy exploration, production and processing	<ul style="list-style-type: none"> Additional energy is not required to build and maintain supporting public facilities. No increased energy consumption due to loss of vegetation and microclimate effects. 	<ul style="list-style-type: none"> Loss of opportunity to produce energy locally. Loss of potential energy sources for meeting other local needs. 	-1

Table C-5 summarizes the net effect of prohibiting the conflicting uses. The cumulative net effect column shows the “strength” of the positive or negative consequences of prohibiting 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, prohibiting the conflicting use would provide a net benefit to the County, whereas a negative score would suggest that the use should not be prohibited. Results of this table are carried forward to the program recommendation section of this analysis.

As shown in Table C-5, the net effect of prohibiting conflicting uses is negative or neutral for all categories, except residential. This is primarily due to negative economic, social, and energy consequences. The environmental consequences are either positive or neutral because natural resource values and ecosystem services would be maintained.

Table C-5 Summary of Consequences of Prohibiting Conflicting Uses

Use Category	Economic	Social	Environ- mental	Energy	Cumulative Effect
Residential Development	0	-1	+1	+1	+1
Limited Civic and Commercial Development	-1	-1	+1	+1	0
Parks, Open Space and Trails	0	-1	+1	-1	-1
Transportation Facilities	-1	-1	0	-1	-3
Public and Private Utilities	-1	-1	0	-1	-3
Energy Exploration, Production and Processing	-1	+1	0	-1	-1

2.6. PROGRAM RECOMMENDATIONS

This section includes draft recommendations as to whether to allow, limit, or prohibit identified conflicting uses within significant riparian corridors and associated impact areas identified in this report based on the ESEE analysis in section 2.5 above. A decision to prohibit or limit conflicting uses protects the natural resources. 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 shall be reached with regard to conflicting uses for a resource site:

- (a) The County may decide that a significant riparian corridor is of such importance compared to the conflicting uses and that the ESEE consequences of allowing the conflicting uses are so detrimental to the resource that the conflicting uses should be prohibited.
- (b) The County may decide that both the significant natural riparian corridor 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 to a desired extent or requires mitigation of lost riparian corridors and impact areas and associated values and functions.
- (c) The County may decide that the conflicting use should be allowed fully, notwithstanding the possible impacts on the significant riparian corridors and impact areas. The ESEE analysis must demonstrate that the conflicting use is of sufficient importance relative to the resource and must

indicate why measures to protect the resource to some extent should not be provided, as per subsection (b) of this section.

2.6.1. SUMMARY OF GENERAL RECOMMENDATION

Table 3, below, identifies the “net effect” from Tables A-5, B-5, and C-5 and provides a general recommendation for each use category. The possible numeric values range from -4 to +4. A value of -4 suggests that the scenario (allow, limit, prohibit) would likely result in negative economic, social, environmental, and energy consequences for that use category. Whereas, a value of +4 suggests that the scenario would likely result in positive consequences for that use category. The recommendation is generally based on encouraging the strongest positive outcome, along with balancing relevant regulatory and other factors.

The analysis and weighing of the ESEE factors from the three scenarios suggests that overall the limit scenario offers the greatest net benefit in all use categories; thus a general recommendation of “limit” is appropriate. However, the Private and Public Utilities and Transportation Facilities use categories also received a positive result under the Allow scenario; indicating that a greater degree of flexibility to accommodate these uses may be appropriate.

Table 3: Summary of Net Effect of Allowing, Limiting or Prohibiting Conflicting Uses within Significant Riparian and Impact Areas

Use Category	Allow (from Table A-5)	Limit (from Table B-5)	Prohibit (from Table C-5)
Residential Development	-4	+2	+1
Limited Civic and Commercial Development	-1	+2	0
Parks, Open Space and Trails	-1	+3	-1
Transportation Facilities	+1	+2	-3
Public And Private Utilities	+1	+1	-3
Energy Exploration, Production and Processing	-2	+1	-1

2.6.2. PROGRAM RECOMMENDATIONS TO IMPLEMENT LIMIT OR ALLOW SCENARIO

As noted in Table 3 above, the limit scenario offers the greatest net benefit in all use categories; thus a program that limits conflicting uses is appropriate. More specifically, the program should accomplish the following objectives in order to achieve the net benefit to the County anticipated by this approach:

- Avoid impacts where possible. Where impacts cannot be avoided require mitigation for resource impacts to help ensure that lost ecosystem services are replaced to the extent possible.
- Support the location and/or 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.
- Recognize that certain types of Private and Public Utilities and Transportation Facilities uses may also warrant an “Allow” scenario, while more impactful uses warrant a “Limit” scenario but still

may require a greater degree of flexibility to allow for the crossing of resources and the temporary impacts associated with underground utilities.

- Recognize that energy extraction and transmission facilities may have higher levels of impacts than other types of development and may warrant higher levels of limitation or regulation.

There are a number of existing regulations and policies, which apply to significant riparian corridors, and which address these objectives. These regulations and policies are currently implemented by the County through its base zoning code standards and its SEC-Streams overlay zone, as well as state statutes and administrative rules and include:

- **SEC-Streams Overlay Requirements.** The County's Zoning Ordinance (Section 33.4500-4550 and 33.4575) prohibit non-exempt development proposed in SEC-S resource and associated impact areas unless it can be demonstrated through submittal of an SEC permit application that development will enhance the fish and wildlife resources, shoreline anchoring, flood storage, water quality, and visual amenities characteristic of the stream in its pre-development state, as documented in a Mitigation Plan. The County's SEC requirements also include design standards for stream crossings, tree removal and replanting, erosion control, and other measures to protect water quality and riparian habitat. SEC-S provisions are included in Appendix A of this report.
- **SEC-Streams Overlay Exemptions.** A number of uses and activities are exempt from SEC-S requirements, including the following:
 - Farm use, as defined in ORS 215.203 (2).
 - Propagation of timber or cutting of timber for public safety or personal use or the cutting of timber in accordance with the State Forest Practices Act.
 - Customary dredging and channel maintenance and the removal or filling, or both, for the maintenance or reconstruction of structures such as dikes, levees, groins, riprap, drainage ditch, irrigation ditches, and tile drain systems as allowed by ORS 196.905 (6);
 - The placing, by a public agency, of signs, markers, aids, etc., to serve the public;
 - Activities to protect, conserve, enhance, and maintain public recreational, scenic, historical, and natural uses on public lands;
 - The expansion of capacity, or the replacement, of existing communication or energy distribution and transmission systems, except substations;
 - The maintenance and repair of existing flood control facilities;
 - Limited alteration or expansion of existing structures;
 - Type A Home Occupations;
 - Single utility poles necessary to provide service to the local area;
 - Right-of-way widening for existing rights-of-way when additional right-of-way is necessary to ensure continuous width;

- Stream enhancement or restoration projects limited to removal by hand of invasive vegetation and planting of any native vegetation on the Metro Native Plant List;
- Enhancement or restoration of the riparian corridor for water quality or quantity benefits, or for improvement of fish and wildlife habitat; and
- Routine repair and maintenance of structures, roadways, driveways, utility facilities, and landscaped areas that were in existence prior to the effective date of this ordinance.

These exemptions would be consistent with an “Allow” scenario for a number of farm and forest uses, as well as certain types of transportation and public and private utility uses. Other transportation and public and private utility uses would be subject to SEC-S mitigation requirements and/or to conditional use requirements as noted below.

- **Review and Conditional Uses.** A limited set of land uses allowed in the zones within the study area are uses allowed outright, with many other uses allowed only under certain conditions and approval criteria. For example, most types of commercial uses, community service uses, forest products processing, and production and processing of most energy sources are allowed only as conditional uses in most of the zones within the study area. One of the County’s criteria for approval of a conditional use is that the use will not adversely impact natural resources. As a result, approval of the use requires a finding by the County that the use, as proposed, will meet this criterion.
- **Oregon Forest Practices Act (FPA).** A large portion of the FPA rules are aimed at the protection of water resources. For example, timber harvesting, road building, and chemical use are restricted near streams, rivers, lakes, and wetlands. Regulations also require landowners to leave forested buffers and other vegetation along streams, wetlands, and lakes to protect water quality and fish and wildlife habitat. If a road must cross a stream, it must not block fish passage. Typically, either a bridge or a properly sized culvert will be installed. In addition, spraying pesticides and herbicides near streams is prohibited where they might kill vegetation along the banks, get into the water, or harm insects and fish. These regulations essentially act as “Limit” scenario in commercial forest use zones or other zones where commercial timber harvest, propagation, and processing are allowed.
- **Other state and federal requirements related to riparian resources.** A variety of federal and state regulations also protect water qualities. For example, the federal Clean Water Act establishes limits on pollutants that can be discharged to or present in streams and rivers. This act is implemented in part through the National Pollutant Discharge Elimination System (NPDES) requirements which require permits for discharge of pollutants to waterways. These and other related requirements are typically administered by the Oregon Department of Environmental Quality (DEQ) in Oregon. In addition, a recent biological opinion prepared by the National Oceanographic and Atmospheric Agency Fisheries department (also known as the National Marine Fisheries Service or NMFS) released a biological opinion in 2015 that will impact how local

communities regulate floodplains and other riparian areas in the future to protect fish and other aquatic species.

Application of these regulations, in concert with a variety of policies in the Comprehensive Plan cited previously, as applied to riparian corridors would provide an appropriate level of protection to achieve the recommendation for “limit”.

3. WILDLIFE HABITAT

3.1. INVENTORY AND DETERMINATION OF SIGNIFICANCE

The West Hills Reconciliation Report (1996) included an ESEE analysis of impacts on wildlife habitat areas within the West Hills and resulted in application of the County’s SEC-Habitat (SEC-H) overlay zone within the West Hills Rural Planning Area (west of US 30). As part of the process of updating Multnomah County’s Comprehensive Plan, consistent with Statewide Planning Goal 5 requirements, the County reviewed currently available data related to wildlife habitat areas. Goal 5 provisions related to wildlife habitat include:

OAR 660-023-0100 Wildlife Habitat

(2) Local governments shall conduct the inventory process and determine significant wildlife habitat as set forth in OAR 660-023-0250(5) by following either the safe harbor methodology described in section (4) of this rule or the standard inventory process described in OAR 660-023-0030.

(3) When gathering information regarding wildlife habitat under the standard inventory process in OAR 660-023-0030(2), local governments shall obtain current habitat inventory information from the Oregon Department of Fish and Wildlife (ODFW), and other state and federal agencies. These inventories shall include at least the following:

- (a) Threatened, endangered, and sensitive wildlife species habitat information;*
- (b) Sensitive bird site inventories; and*
- (c) Wildlife species of concern and/or habitats of concern identified and mapped by ODFW (e.g., big game winter range and migration corridors, golden eagle and prairie falcon nest sites, and pigeon springs).*

(4) Local governments may determine wildlife habitat significance under OAR 660-023-0040 or apply the safe harbor criteria in this section. Under the safe harbor, local governments may determine that "wildlife" does not include fish, and that significant wildlife habitat is only those sites where one or more of the following conditions exist:

- (a) The habitat has been documented to perform a life support function for a wildlife species listed by the federal government as a threatened or endangered species or by the state of Oregon as a threatened, endangered, or sensitive species;*
- (b) The habitat has documented occurrences of more than incidental use by a species described in subsection (a) of this section;*
- (c) The habitat has been documented as a sensitive bird nesting, roosting, or watering resource site for osprey or great blue herons pursuant to ORS 527.710 (Oregon Forest Practices Act) and OAR 629-024-0700 (Forest Practices Rules);*

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

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

The ODF&W and USFWS have mapped areas of critical habitat and winter range in the vicinity of the Multnomah Channel in the western portion of the County for big game (bear, elk, and black-tail deer). For the purposes of this report we're assuming that these inventories can be relied upon and that all mapped critical habitat and winter range is significant. No additional wildlife inventory work was conducted as a part of this analysis. Pursuant to the Goal 5 provisions, the County is adopting this inventory as significant wildlife habitat.¹

The County also is including fish in its definition of wildlife. However, habitat for fish (fish-bearing streams) is covered by the inventories for riparian corridors and resources described in the previous sections of this report. Therefore, the remainder of this section will focus on upland wildlife habitat and specifically habitat for big game identified by ODF&W.

3.2. IMPACT AREA

As noted in Section 2.2 above, the "Impact area" is a geographic area within which conflicting uses could adversely affect a significant Goal 5 resource.

Also as noted previously, we intend to rely on the data available from the ODF&W to define wildlife habitat areas for big game (elk, black bear, and black tail deer). The habitat area is coincident with the impact area in this case. Neither ODFW nor state regulations provide guidance on delineating an impact area that extends beyond the habitat area. In identifying resource and impact areas for upland wildlife habitat as part of the Title 13 process, Metro identified the resource and impact areas as coincident and several other jurisdictions in the Portland metropolitan area have taken the same approach.

Table 4: Summary of Impact Areas by Zone

	EFU	MUA20	Total
Sauvie Island/Multnomah Channel	340.34	1318.12	1,658.45

¹ In establishing the SEC-H overlay in the West Hills, the County previously did not include land within the Rural Center of Burlington in the overlay at that time, given that the area was already developed to an urban form and does not function as a viable wildlife habitat area. As a result, that area also is not included within the impact area identified for this analysis.

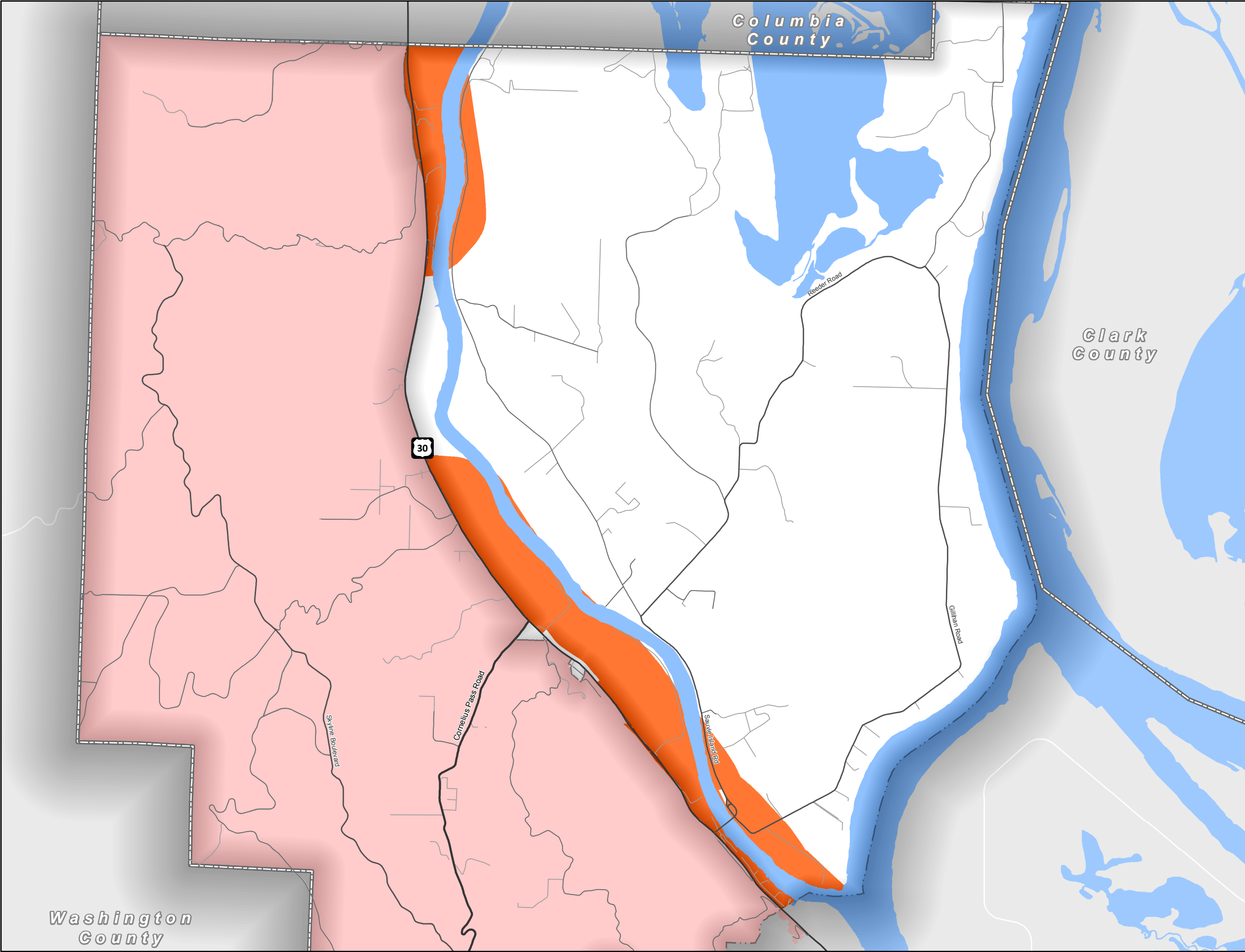
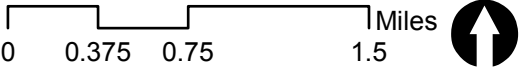
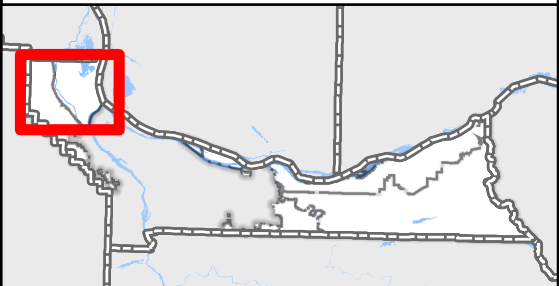


Figure 6 - Significant Wildlife Habitat Areas and Impact Areas

- SEC Habitat
- Impact Area - Sauvie Island/Multnomah Channel
- Subareas
- County Boundaries



Prepared By: Angelo Planning Group
Date: 7/15/2016

Coordinate System:
NAD 1983 HARN State Plane Oregon North FIPS 3601
Disclaimer:
Unofficial depiction, for illustrative purposes only.

3.3. CONFLICTING USES

The areas where wildlife habitat resources not already within the County's SEC-h overlay zone are located are designated for a combination of multiple use agriculture (MUA-20) and exclusive farm uses (EFU) on the County's zoning map. Uses which are permitted outright or conditionally within in these zones fall into the following general categories:

- **Residential development.** Single family detached dwellings and accessory structures are allowed in all zones within the study area. Tax lots that include wildlife habitat vary in size from 0.02 to 229.15 acres. In addition, grading, excavation, filling, hauling, and soil compaction; installing utility connections such as sewers and stormwater pipes; building stormwater control structures; and landscaping with non-native vegetation (e.g., establishment of lawns, addition of non-native landscape features – trees, shrubs, groundcover, etc.) also can lead to loss of wildlife habitat.
- **Limited civic and commercial development** (e.g., Type A, B or C home occupations, sales of agricultural products, health care, schools, churches, fire stations, and cemeteries). A number of civic and commercial uses are permitted as outright or permitted as review or conditional uses within the zones within the study area. The potential impacts of these uses are similar to those described for residential uses; however, civic and commercial developments may have larger building footprints and more impervious area due to parking than residential development.
- **Parks, open space, and trails.** Parks require conditional use approval. Where parks include buildings or parking areas, the impacts of these activities are similar to those described for civic and commercial uses except that normally a smaller percentage of land area is covered by impervious surfaces. Depending on the nature and intensity of the uses, parks, and open spaces uses may have a higher or lower degree of impact on wildlife related to human intrusion. Impacts related to roads, grading, excavation, filling, hauling, soil compaction, and landscaping typically will be lower.
- **Transportation facilities.** Similar to other types of development, constructing streets and sidewalks results in the removal of vegetation, grading, excavation, filling, hauling, and new impervious surfaces. As noted previously, transportation facilities also can act as barriers to wildlife movement and migration and can increase wildlife deaths due to collisions with automobiles.
- **Public and private utilities.** This category includes water, sewer and storm drainage pipes, telecommunication facilities, electric power lines and substations, and gas pipelines. Other than transmission lines, which are permitted outright, these uses require conditional use approval. Although operation of existing facilities may have few adverse environmental effects, construction and maintenance practices for new basic utilities have some adverse effects associated with clearing or grading. Where facilities include a building or parking area, impacts are similar to commercial development.

- **Energy exploration, production, and processing.** This category includes activities associated with solar and wind power generation, mineral/aggregate excavation and processing, geothermal exploration and production, and oil and gas exploration and operations. Impacts of these uses are similar to those from civic and commercial development but may have greater impacts on land form and topography due to excavation and other activities, including more significant direct loss of wildlife habitat.

3.4. TYPES OF IMPACTS

The uses described in the previous section can have a variety of different positive or negative consequences on economic, social, environmental, and energy resources and conditions. Following is a summary of the different types of impacts considered and which are referenced in the text and tables in the following section of the Report. Many of these impacts are similar to those associated with riparian areas described in previous sections of this report. This is particularly true for economic, social and energy consequences.

3.4.1. ECONOMY

Economic values and potential impacts associated with wildlife habitat in the study area include the following.

Economic value derived from development. The ability to develop a property to the maximum level or density of development allowed under County zoning will increase the economic or market value of a property or allowed improvements. This type of impact is most important for residential, commercial, and energy uses. It is relatively less applicable to transportation, utility, or community facilities, or to parks, open spaces, or trails. Allowing conflicting uses provides the highest economic benefit in this regard, while prohibiting those uses provides the lowest benefits.

Tax revenues. A large percentage of tax revenues in Oregon come from a combination of property, income, and payroll taxes. Maximizing the development of a property will generally increase the property tax revenues associated with it. Income and payroll taxes also will increase for employment-related uses (primarily commercial, civic, and energy uses, with a smaller impact from transportation, utilities and parks, recreation, and open space). In general, the highest positive economic consequences in this regard will be for allowing employment-related uses, followed by residential uses, with parks, open space, and trails uses receiving the lowest net benefit in this regard. For larger properties, the relative positive consequences for allowing residential uses will be lessened if it is possible to located residential structures and other improvements on portions of the lot outside the impact area. Prohibiting uses will generally have a negative economic impact in relation to tax revenues.

Employment. For commercial or other uses that provide job opportunities, employment generates personal and business income, which has a positive economic consequence if development is allowed and a negative impact if it is prohibited.

Self-sufficiency and economic equity. The majority of County households earn enough money to cover their basic household needs – i.e., are economically self-sufficient. However, a certain percentage of households do not. In particular, workers in the food and drink service and retail sectors are less likely to earn wages that result in self-sufficiency while workers in construction, manufacturing, and distribution jobs are more likely to do so. Land uses that promote economic self-sufficiency have a higher economic net benefit associated. Development of transportation facilities allows transportation of goods produced or distributed in higher-wage sectors and provides higher-wage jobs associated with construction and maintenance of transportation and utility facilities.

Open space value. People value open space for its potential recreational amenities, as well as its scenic value and it is possible to quantify this intrinsic value. Developing open space for non-park or open space purposes has a negative economic consequence in this regard, with larger scale development having a greater impact. Prohibiting such development can have a positive economic consequence.

Ecosystem services. Wildlife habitat can provide ecosystem goods and services, which in turn provide economic and social value. Ecosystem services include water conveyance, purification, and flood control, air cooling and purification, carbon sequestration, soil fertilization and pollination. Ecosystem goods include commodities like food, fuel, fisheries, timber, minerals, etc. Ecosystem goods also include supporting recreation and tourism. In general, wetlands provide the highest level of ecosystem services, followed by shallow water riparian areas and then by upland habitat (e.g., forest/woodlands, shrubland, and grassland). Allowing conflicting uses will result in negative economic consequences in this regard while prohibiting them will have positive consequences. The degree of impact will depend on the amount of area affected, the type of resources and the proximity to it.

The economic benefits of ecosystem services come in large part from the savings associated with building infrastructure (stormwater conveyance systems, water filtration plants, etc.) to otherwise serve development or mitigate the impacts of it, as well as from amenity values associated with natural areas which increase property values. While the economic value of ecosystem services associated with certain types of resources can be relatively high, they are typically lower than economic values associated with employment and tax revenues.

3.4.2. SOCIAL

Social values and potential impacts associated with wildlife habitat in the study area include the following.

Human health and welfare. Physical and mental health and welfare are related to a variety of factors that can be positively or negatively impacted by conflicting uses. They include:

- *Employment opportunities.* Household income is one of the most important factors in determining human health and welfare and is directly dependent on employment. Income can provide access to better quality food and housing, as well as health care services. Similar to economic self-sufficiency, jobs with higher wages will have a more positive impact on social

welfare. Allowing conflicting uses that will provide employment opportunities will have a positive impact on social resources in this regard while prohibiting them will have a negative impact.

- *Access to nature and recreation.* Access to natural areas and the recreational opportunities they provide, including access to viewing wildlife, have positive impacts on physical and mental health. Recreation has multiple health benefits, including improving overall physical health, strengthening immune systems, and preventing a variety of diseases and medical conditions. In addition, studies show that viewing vegetation and wildlife can reduce stress and aggression, improve cognitive development, and enhance medical recovery. Allowing conflicting uses will generally have a negative impact on social resources in this regard while limiting or prohibiting them will have a positive impact.
- *Air and water quality.* Air and water pollution adversely impact human health. Conflicting uses can impact air quality in two ways, either by introducing pollutants into the air or by eliminating vegetation that can help filter pollutants and improve air quality. Relatively few of the specific conflicting uses allowed in these zones produce point sources of air or water pollution. However, increased use of automobiles or equipment that produce carbon or other emissions associated with virtually all of the uses allowed can have some impact on air quality, as well as water quality via stormwater runoff from roads or other impervious surfaces or via erosion. In all cases, consequences would be negative for allowing or limiting uses and positive for prohibiting uses, except possibly for parks and open space uses where natural areas would be retained. Energy exploration uses likely would have the highest negative impacts due the size of areas impacted, while park and open space and residential uses typically would result in the lowest level of impacts.
- *Light, noise, and traffic.* Both noise and light can have negative consequences, including reducing enjoyment of leisure activities; contributing to health effects such as hypertension, heart disease, and sleep interruption; reduction of property values; and/or elimination of the ability to see the night sky (for light). Noise and light can come from human activity, equipment, and/or traffic associated with the majority of the conflicting uses described previously. Similar to air and water quality, consequences would be negative for allowing or limiting uses and positive for prohibiting uses, except possibly for parks and open space uses where natural areas would be retained. Energy exploration uses likely would have the highest negative impacts due the size of areas impacted, the type of equipment used, and truck traffic generated, while park and open space and residential uses typically would result in the lowest level of impacts.
- *Opportunities for social interaction.* Opportunities for social interaction have positive benefits on psychological health, formation of social networks, and the ability for community members to collectively discuss and achieve community goals. Allowing uses that promote or provide opportunities for social interaction will have positive effects in this regard. Prohibiting or limiting such uses will have negative impacts, with the highest negative impacts from prohibiting them.

Cultural values associated with Native American values and habitation. The first Europeans to explore the Columbia and Willamette Rivers arrived in the late 18th century. Prior to that, the area was populated by various aboriginal tribes who settled along sections of these rivers for 6,000 to 9,000 years. The creation stories of these tribes held that the people were created in these places. The rivers provided a travel route for trade of goods among tribes, and they also provided a rich diversity of food that was fairly obtainable for most of the year. Besides fish that could be caught over a period of several months a year, and game and fowl that could be hunted, Native peoples also gathered plants that were available much of the year in the temperate climate. There is evidence of Native habitation in the Sauvie Island area. Most types of land use and development have the potential to disturb Native American artifacts during the course of grading or other soil-disturbing activities. To the extent that land use or development degrades environmental resources, it also has potential negative impacts on the cultural value associated with those resources. Limiting development can significantly lessen these impacts by either shifting the location of development to minimize impacts or requiring investigation, documentation, and preservation of archeological resources if they are discovered during the course of development.

Other historic and heritage values. Multnomah County residents value historic structures and resources as evidenced by policies in the County's Comprehensive Plan (updated in 2016) which direct the County to inventory and establish protection programs for such resources. Allowing land uses or development of properties with historic resources could negatively impact them. Limiting development to avoid such impacts would lessen these impacts.

Other cultural values. Multnomah County and Oregon residents place a high value on the environment and quality of life. Numerous policies in the County's Comprehensive Plan aimed at protecting and conserving these resources confirm these values. Allowing development which can adversely impact wildlife habitat areas can have an effect on these values. At the same time, many rural residents live in the rural areas of the County out of a desire for privacy and the ability to manage their own land and resources. They also have a strong history of valuing individual property rights and opposing what they consider to be undue levels of regulation. As a result, allowing development has both potentially negative and positive impacts on these somewhat conflicting cultural values.

3.4.3. ENVIRONMENT

Environmental functions and potential impacts associated with wildlife habitat in the study area include the following.

Direct loss of habitat. Clearing of trees or vegetation associated with building structures, roads or other forms of development will directly reduce the amount of wildlife habitat in the area.

Edge effects. Loss of habitat can impact the viability and quality of remaining adjacent wildlife habitat. Impacts can include increased vulnerability of remaining trees to wind throw, increased predation of wildlife due to proximity and visibility to predators, and increased travel of wildlife outside the habitat area where they also are more prone to predation or other adverse impacts.

Roads and fences. Roads introduce increased impervious areas and present hazards and barriers to wildlife movement, including hazards from vehicles. This is particularly true for small mammals and amphibians and for reptiles which may seek warm road surfaces for heat and subsequently be killed by vehicles. Large mammals tend to either avoid roads, restricting their movement, or follow road corridors to forage which can increase their risk of death or injury from vehicles. Fences also create barriers to wildlife movement although wildlife-friendly design of fences can lessen these impacts. US Highway 30 is the primary roadway impacting wildlife in the habitat areas assessed in this report. As an arterial road with high posted speed limits, and when coupled with the railroad tracks which parallel the road, this can be a formidable barrier to less mobile wildlife. Concentrations of development on the west side of the highway exacerbate these effects. Relatively few other roads are present within the wildlife habitat study area and are generally relatively small paved and unpaved local or access roads.

Fragmentation. Large tracts of forested land are necessary to sustain forest-based wildlife species. If wildlife habitat areas are broken up into small fragments, the resulting area can become too small to support wildlife or will not support the same diversity of wildlife. This is particularly true for small animals, including amphibians and mammals with short dispersal distances, as well as those that depend on structures found within larger forested areas (downed trees, snags, etc.).

Native Vegetation Removal. Native vegetation typically provides important habitat for wildlife. Removal of native vegetation through rural residential, commercial, or other development increases the potential for erosion and flooding; reduces the availability of food and cover for wildlife; results in replacement by other plant species, leading to less biodiversity; and can result in an increase in nutrient loading and chemicals if native vegetation is replaced with lawns or gardens.

Application of pesticides, insecticides, and fertilizers. Use of these chemicals can reduce or destroy habitat diversity and plants that provide food and cover for wildlife. It also introduces toxins into the soil and water that are harmful to wildlife health, either by killing insects that serve as food to other species or by directly harming them. As noted above, fertilizers also can increase nutrient loading to streams and waterways, decreasing water quality, and allowing non-native vegetation to thrive.

Excavation and topsoil removal. Soil excavation and removal typically removes vegetation, increases erosion, and adds sedimentation to streams and wetlands. It also can make it more difficult for vegetation to become re-established. All of these effects are detrimental to wildlife habitat.

Human intrusion. Impacts of human intrusion associated with development or other activities range from frightening animals by human presence and vegetation damage by off-road driving to shooting animals.

Pet impacts. If allowed to roam free, cats, dogs, and other domestic animals will prey on a variety of small vertebrates including moles, shrews, and small birds, among others. If dogs form packs, they can chase and run off deer, elk, and other large animals.

Increased impervious surface areas. Virtually all types of development, including road and utility construction, residential and commercial development, and mining can increase impervious surfaces. This

generally results in loss of vegetation and increased surface water runoff, impacting erosion and water quality, as well as related impacts described previously.

Water quality impacts. Many of the effects described above adversely impact water quality. Reduced water quality affects the viability of aquatic wildlife and other wildlife that depend on aquatic species for food.

Development within wildlife habitat areas can introduce these impacts. In general, allowing development would have the greatest potential impacts while limiting it to avoid or reduce impacts to the resource areas would have a lower impact. Prohibiting development would have the least impact.

3.4.4. ENERGY

The following types of energy related impacts are considered in this analysis.

Transportation. Different types of development will have varying impacts on energy associated with transportation. In general, allowing more residential development in rural communities increases the expenditure of energy associated with transportation between new homes and available retail and commercial services and employment centers in nearby urban areas. Conversely, allowing commercial and other services that support local residents can decrease energy associated with transportation. Allowing for schools, parks, and trails can have similar impacts. Allowing extractive uses can increase energy costs associated with transportation of extracted materials in general, but it can reduce those energy costs if the sources of materials are relatively closer to nearby urban areas than similar resources in other parts of the region or state. Allowing streets to cross riparian corridors can reduce out of direction travel. Similarly, utilities may need to cross corridors to ensure an efficient network.

Energy production. Allowing energy extraction and transmission uses will generally have positive energy impacts by allowing energy to be distributed to homes and businesses that need it and by reducing energy related transportation impacts to the extent that energy production in the study area is relatively closer to nearby market areas in comparison to other energy production sources.

3.5. ESEE CONSEQUENCES

In this section, the ESEE consequences that could result from decisions to allow, limit, or prohibit a conflicting use are analyzed for each category of conflicting uses. Within the West County study area, wildlife habitat areas addressed in this analysis represent a total of approximately 1,658 acres.

As described in section 3.3 above, potential conflicting uses can generally be grouped into one of six categories. In the tables that follow, each of the conflicting use categories is considered under each scenario (i.e., Allow, Limit, Prohibit) and the expected net effect of either allowing, limiting or prohibiting the conflicting use is identified as either positive (+1), neutral (0) or negative (-1). In some situations a mix of both positive and negative outcomes is possible. The net effect is intended to reflect the cumulative end result (either positive, neutral or negative) of all potential consequences.

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 areas would be subject to development allowed by existing base zone regulations.

Scenario B - Limiting conflicting uses within the resource and impact areas. In evaluating the consequences of **limiting** conflicting uses, the assumption is that rules would be established to limit the impacts of allowable development in areas containing significant wildlife habitat. Areas containing significant wildlife habitat could still be subject to development, but additional development restrictions would exist in addition to base zone regulations.

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

3.5.1. SCENARIO A - ALLOWING CONFLICTING USES WITHIN THE RESOURCE AND IMPACT AREAS

Under this scenario there would be no land use regulations restricting conflicting uses within the Goal 5 (riparian) wildlife habitat areas. Tables A-6 through A-9 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 related economic value provided by the significant wildlife habitat area). The expected net effect of allowing the conflicting use, either positive (+1), neutral (0), or negative (-1), is identified in column 4.

Table A-6 Economic Consequences of Allowing Conflicting Uses

Use Category	Positive Social Consequences	Negative Social Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Property owners realize full development potential of parcels; structures not required to avoid riparian areas. Residential improvements increase property tax base. No mitigation is required, which reduces the cost to develop. 	<ul style="list-style-type: none"> Loss of ecosystem services results in higher costs, either to replace services or repair impacts (e.g., repair flood or erosion damage). Amenity/development premium for parcels adjacent to resource areas is eliminated. Environmental impact costs passed on to County could lead to increased taxes. Higher cost to develop and maintain private utilities. 	-1

Table A-6 Economic Consequences of Allowing Conflicting Uses

Use Category	Positive Social Consequences	Negative Social Consequences	Net Effect
Limited civic and commercial development	<ul style="list-style-type: none"> • Development potential of parcels fully realized enhancing potential for local economic development. • Commercial improvements increase property tax base. • Depending on development type, potential increase in property values for adjacent landowners. • Helps to satisfy governmental long-term capital facility needs. • Potential benefits associated with economic self-sufficiency. 	<ul style="list-style-type: none"> • Same as residential, but with lesser loss of amenity value and greater potential for increased costs resulting from lost ecosystem services due to larger development area size associated with civic and commercial development. 	+1
Parks, open space and trails	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • May decrease property values for adjacent landowners if higher pedestrian traffic or active recreation create a nuisance. • Higher municipal service costs relating to maintenance, law enforcement, etc. • Some loss of ecosystem services possible with certain types of parks facilities (e.g., active recreation facilities). 	0
Transportation facilities	<ul style="list-style-type: none"> • Potential for improved connectivity and movement of people and goods. • No mitigation is required, which reduces the cost to develop streets and roads. • Potential positive benefits associated with economic self-sufficiency. 	<ul style="list-style-type: none"> • Loss of ecosystem services (e.g., higher potential costs due to flood damage or erosion risk). • Environmental impact costs could be passed on to County, thus increasing taxes. 	+1
Public and private utilities	<ul style="list-style-type: none"> • Provides essential services for other land uses. • No mitigation is required, which reduces costs to develop facilities. • Potential positive benefits associated with economic self-sufficiency. 	<ul style="list-style-type: none"> • Loss of ecosystem services (e.g., higher potential costs due to flood damage or erosion risk). • Environmental impact costs could be passed on to County, thus increasing taxes. 	+1
Energy exploration, production or processing	<ul style="list-style-type: none"> • Energy use achieves full potential for economic use of property. • Improvements to jobs and tax base associated with increased economic activity. 	<ul style="list-style-type: none"> • Loss of ecosystem services (e.g., higher potential costs due to flood damage or erosion risk). • Amenity/development premium for parcels adjacent to resource areas is eliminated. • Potential adverse impacts are relatively more significant than for other uses. 	0

Table A-7 Social Consequences of Allowing Conflicting Uses

Use Category	Positive Social Consequences	Negative Social Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Provides residents with access to nature and recreation. Positive impacts of allowing for rural residential lifestyle. 	<ul style="list-style-type: none"> Potential impact to historic, aesthetic, and cultural values or resources. Potential loss of passive recreational opportunities. Potential impacts to air and water quality result in potential negative health impacts. Residences located relatively far from most needed services. 	-1
Limited civic and commercial development	<ul style="list-style-type: none"> Civic and commercial development provide community gathering places with positive social benefits. Employment opportunities represent positive social benefits. 	<ul style="list-style-type: none"> Same as residential, but with greater potential for impacts to riparian corridors due to development size and lesser health-related impacts. Potential light, noise, and traffic impacts on residents associated with additional commercial traffic. 	-1
Parks, open space and trails	<ul style="list-style-type: none"> Parks and open space provide community gathering places. Opportunities for active recreation provide community health benefits. 	<ul style="list-style-type: none"> Consequences similar to, but less than, residential, depending on amount of active recreation area and non-native landscaping provided. 	0
Transportation facilities	<ul style="list-style-type: none"> Good connectivity encourages the use of active transportation modes, which can improve public health. Provides enhanced ability to access social activities, benefits. 	<ul style="list-style-type: none"> Same as residential, but with a potentially lower degree of impact, depending on nature of improvements. Potential light, noise, and traffic impacts on residents associated with additional commercial traffic. 	0
Public and private utilities	<ul style="list-style-type: none"> Utilities and telecommunication facilities provide ability for residents to communicate, gather, and socialize. 	<ul style="list-style-type: none"> Same as residential, but with potentially lower degree of impact, depending on nature of improvements. 	0
Energy exploration, production or processing	<ul style="list-style-type: none"> Positive impacts associated with employment, income, and living standards. 	<ul style="list-style-type: none"> Consequences similar to residential, but with greater potential for impacts due to potential size and intensity of uses. Noise and related impacts have negative impact on rural character and quality of life. 	-1

Table A-8 Environmental Consequences of Allowing Conflicting Uses

Use Category	Positive Environmental Consequences	Negative Environmental Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> • Opportunities for voluntary good stewardship practices by property owners. 	<ul style="list-style-type: none"> • Direct loss of habitat. • Barriers to wildlife movement due to roads and fences. • Increased fragmentation reduces habitat quality and diversity. • Application of chemicals impacts wildlife health. • Human intrusion and pet impacts impact large mammals. • Reduced water quality impacts health of large mammals. 	-1
Limited civic and commercial development	<ul style="list-style-type: none"> • Same as residential development. 	<ul style="list-style-type: none"> • Similar to residential, but with potentially greater impacts from the size of the development and related impacts on vegetation removal, fragmentation, traffic impacts, and water quality. • Lesser impacts related to fencing and pet intrusion. 	-1
Parks, open space and trails	<ul style="list-style-type: none"> • Public ownership may help ensure that resource units are maintained in the future. 	<ul style="list-style-type: none"> • Developed parks and open space may displace native riparian and wildlife habitat. • Maintenance practices may introduce pesticides and fertilizers. • Human intrusion and pet impacts similar to residential development. 	-1
Transportation facilities	<ul style="list-style-type: none"> • Good connectivity encourages the use of active transportation modes and lessen travel times and vehicle miles traveled which can reduce greenhouse gas emissions. 	<ul style="list-style-type: none"> • Similar to residential, with potentially greater impact due to light and noise from automobile traffic, impervious area impacts, and barriers to wildlife movement, and injury or death associated with automobile conflicts. 	-1
Public and private utilities	<ul style="list-style-type: none"> • Telecommunication facilities allow residents to telecommute or purchase goods and services online, reducing vehicle miles traveled and greenhouse gas emissions. 	<ul style="list-style-type: none"> • Similar to residential, with varying impacts due to size and scope of facility. 	-1
Energy exploration, production or processing	<ul style="list-style-type: none"> • Production of wind or solar energy can have positive impacts in relation to other forms of energy. 	<ul style="list-style-type: none"> • Similar to transportation and residential uses, but with potential greater impacts due to increased areas of activity and potential greater impacts to land form, topography and drainage. 	-1

Table A-9 Energy Consequences of Allowing Conflicting Uses

Use Category	Positive Energy Consequences	Negative Energy Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> • Opportunities to reduce out-of-direction travel are increased. 	<ul style="list-style-type: none"> • Possible increased energy consumption due to loss of vegetation and microclimate effects. • May encourage residential uses away from more cost-effective, urban locations to serve with public facilities. • Increased energy to travel from new homes in rural areas to urban area employment and services. 	-1
Limited civic and commercial development	<ul style="list-style-type: none"> • Providing needed services reduces energy needed for transportation by nearby residents. 	<ul style="list-style-type: none"> • Similar to residential development. 	0
Parks, open space and trails	<ul style="list-style-type: none"> • Similar to civic and commercial. In addition, allowing trails encourages non-motorized modes of transportation. 	<ul style="list-style-type: none"> • Similar to residential, although impacts could be less depending on the amount of impervious area. 	0
Transportation facilities	<ul style="list-style-type: none"> • Good connectivity encourages use of active transportation modes and lessen travel times and vehicle miles traveled. 	<ul style="list-style-type: none"> • Possible increased energy consumption due to loss of vegetation and microclimate effects. 	+1
Public and private utilities	<ul style="list-style-type: none"> • Telecommunication facilities allow residents to telecommute or purchase goods and services online, reducing energy usage. • Improves efficiency of energy grid and potentially reduces transmission-related energy losses. 	<ul style="list-style-type: none"> • Same as residential development but to a lesser degree. 	+1
Energy exploration, production or processing	<ul style="list-style-type: none"> • Creates local opportunities for energy production and utilizes potential available energy sources. 	<ul style="list-style-type: none"> • Similar to residential development but with potential greater impacts due to increased areas of activity. 	0

Table A-10 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 without limitations or should be prohibited entirely. Results of this table are carried forward to the program recommendation section of this analysis.

Table A-10 Summary of Consequences of Allowing Conflicting Uses

Use Category	Economic	Social	Environmental	Energy	Cumulative Effect
Residential Development	-1	-1	-1	-1	-4
Limited Civic and Commercial Development	+1	-1	-1	0	-1
Parks, Open Space and Trails	0	0	-1	0	-1
Transportation Facilities	+1	0	-1	+1	+1
Public and Private Utilities	+1	0	-1	+1	+1
Energy Exploration, Production and Processing	0	-1	-1	0	-2

As shown in Table A-10, the net effect of allowing conflicting uses is positive for transportation and utility facilities and negative for all uses except residential. The economic and energy consequences are positive or neutral for most uses. Environmental consequences are negative for all uses while social consequences are neutral or negative for all uses.

3.5.2. SCENARIO B - LIMITING CONFLICTING USES WITHIN THE RESOURCE AND IMPACT AREAS

Under this scenario conflicting uses would be limited (by regulations) within the Goal 5 resource or its impact area. Uses would be permitted in resource or impact areas if it could be demonstrated that they would have a positive effect on Goal 5 resources or if their negative effects can be mitigated or minimized and uses and activities would be located on portions of a land parcel which are outside the resource and impact areas where feasible. Tables B-6 through B-9 identify the likely positive and negative consequences of limiting the conflicting use. The expected net effect of limiting the conflicting use, either positive (+1), neutral (0), or negative (-1), is identified in column 4.

Table B-6 Economic Consequences of Limiting Conflicting Uses

Use Category	Positive Economic Consequences	Negative Economic Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Property owners realize most of the development potential of parcels through clustering of residential development. Economic development still facilitated by allowing development of residential land for relocating/new employees. Most ecosystem services are retained reducing costs to replace services or repair impacts (e.g., repair erosion or flood related damage). Most of the amenity/development premium for adjacent parcels is preserved and may be enhanced by mitigation. 	<ul style="list-style-type: none"> Loss of some ecosystem services still possible. Steps to enhance Goal 5 resources are required, which increases the cost to develop. 	+1
Limited civic and commercial development	<ul style="list-style-type: none"> Some of the development potential of parcels fully realized. Enhances potential for local economic development by providing some opportunities for commercial development and employment. Depending on development type, potential increase in property values for adjacent landowners. Helps to satisfy governmental district long-term capital facility needs. 	<ul style="list-style-type: none"> Similar to residential, but with greater potential for increased costs resulting from lost ecosystem services and greater need for mitigation as a result of larger scale facilities. 	+1
Parks, open space and trails	<ul style="list-style-type: none"> Limited amount of parks, open space, and trail development allowed within the resource or impact area may create a development premium and amenity for adjacent parcels and a community attraction, enhancing potential for local economic development. Most ecosystem services are provided. 	<ul style="list-style-type: none"> Similar to residential, but to these extent these facilities are allowed, they may decrease property values for adjacent landowners if higher level of use creates a nuisance. Higher municipal service costs relating to maintenance, law enforcement, etc. 	0
Transportation facilities	<ul style="list-style-type: none"> To the extent that some facilities are allowed within resources and impact areas, connectivity can be achieved. Potential for local economic development is enhanced by providing access for goods and people. 	<ul style="list-style-type: none"> Loss of some ecosystem services and economic value of open space still possible. Mitigation is required, which increases the cost to build facilities. Mitigation costs could be passed on to County, thus increasing taxes. 	+1

Table B-6 Economic Consequences of Limiting Conflicting Uses

Use Category	Positive Economic Consequences	Negative Economic Consequences	Net Effect
Public and private utilities	<ul style="list-style-type: none"> Similar to transportation, with economic development enhanced through provision of essential services to support it in some areas. 	<ul style="list-style-type: none"> Similar to transportation with costs to develop passed on to taxpayers or consumers. 	0
Energy exploration, production and processing	<ul style="list-style-type: none"> Energy use achieves most of its potential for economic use of property. Some improvements to jobs and tax base associated with increased economic activity. 	<ul style="list-style-type: none"> Similar to transportation facilities except that negative impacts are potentially greater and mitigation costs are passed on to consumers rather than to tax payers. 	+1

Table B-7 Social Consequences of Limiting Conflicting Uses

Use Category	Positive Social Consequences	Negative Social Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Community scenic, historic, and cultural values are preserved for the most part and may be enhanced by mitigation. Mitigation sites can become an amenity. Supports cultural values associated with desire for rural lifestyle. Access to nature and recreation provides social benefits for residents. 	<ul style="list-style-type: none"> Some potential loss of scenic, historic and cultural values could still occur which cannot be offset by mitigation. Light, noise, and traffic impacts associated with new development may negatively impact existing residents. Air and water quality impacts may negatively impact existing residents. 	+1
Limited civic and commercial development	<ul style="list-style-type: none"> To the extent that these uses are permitted within resources and impact areas, they provide community gathering places. Potential jobs and other economic impacts have beneficial social consequences. 	<ul style="list-style-type: none"> Similar to residential, but impacts may be more significant due to the larger size of the developments. 	0
Parks, open space and trails	<ul style="list-style-type: none"> Same as civic and commercial. Opportunities for active recreation provide community health benefits. Enhanced access to clean air and water provide positive health benefits. 	<ul style="list-style-type: none"> Similar to residential, but with potentially fewer or minimal impacts depending on amount of active recreation area and non-native landscaping provided. 	+1
Transportation facilities	<ul style="list-style-type: none"> If achieved, connectivity can help encourage use of active transportation modes, which can improve public health. 	<ul style="list-style-type: none"> Similar to residential, but with greater potential for impacts to wildlife habitat areas due to development size, potential for noise, light, and glare. 	0

Table B-7 Social Consequences of Limiting Conflicting Uses

Use Category	Positive Social Consequences	Negative Social Consequences	Net Effect
Public and private utilities	<ul style="list-style-type: none"> Telecommunications facilities can allow for telecommuting, reducing pollution and improving public health. 	<ul style="list-style-type: none"> Similar to residential. 	0
Energy exploration, production or processing	<ul style="list-style-type: none"> Positive impacts associated with employment, income, and living standards. 	<ul style="list-style-type: none"> Consequences similar to residential, but with greater potential for impacts due to potential size of use; consequences reduced by limitations or mitigation requirements. Noise and related impacts have negative impact on rural character and quality of life; can be mitigated by limitations, requirements. 	-1

Table B-8 Environmental Consequences of Limiting Conflicting Uses

Use Category	Positive Environmental Consequences	Negative Environmental Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Most ecosystem services are retained. Opportunities for mitigation and restoration of degraded resources. 	<ul style="list-style-type: none"> Direct loss of habitat. Barriers to wildlife movement due to roads and fences. Increased fragmentation reduces habitat quality and diversity. Application of chemicals impacts wildlife health. Human intrusion and pet impacts impact large mammals. Reduced water quality impacts health of large mammals. Most adverse impacts can be reduced or mitigated through regulatory requirements 	-1
Limited civic and commercial development	<ul style="list-style-type: none"> Same as residential development. 	<ul style="list-style-type: none"> Similar to residential, but with potentially greater impacts from the size of the development and related impacts on vegetation removal, fragmentation, traffic impacts, and water quality. Lesser impacts related to fencing and pet intrusion. 	-1

Table B-8 Environmental Consequences of Limiting Conflicting Uses

Use Category	Positive Environmental Consequences	Negative Environmental Consequences	Net Effect
Parks, open space and trails	<ul style="list-style-type: none"> • Same as residential development, with increased potential for resource enhancement. • Public ownership may help ensure that resource units are maintained in the future. 	<ul style="list-style-type: none"> • Developed parks and open space may displace native riparian and wildlife habitat. • Maintenance practices may introduce pesticides and fertilizers. • Human intrusion and pet impacts similar to residential development but can be mitigated. 	0
Transportation facilities	<ul style="list-style-type: none"> • Connectivity and access can encourage the use of active transportation modes and lessen travel times and vehicle miles traveled which can reduce greenhouse gas emissions. 	<ul style="list-style-type: none"> • Similar to residential, with potentially greater impact due to light and noise from automobile traffic, impervious area impacts, barriers to wildlife movement, and injury or death associated with automobile conflicts. • Impacts can be mitigated or reduced through limitations on location and design of facilities. 	-1
Public and private utilities	<ul style="list-style-type: none"> • Telecommunication facilities allow residents to telecommute or purchase goods and services online, reducing impacts on air pollution and carbon emissions. 	<ul style="list-style-type: none"> • Similar to residential and transportation, with varying impacts due to size and scope of facility. • Impacts generally less than for other uses and less than for allowing this use. 	0
Energy exploration, production or processing	<ul style="list-style-type: none"> • Creates local opportunities for energy production and utilizes potential available energy sources. 	<ul style="list-style-type: none"> • Similar to transportation and residential uses, but with potential greater impacts due to increased areas of activity and potential greater impacts to land form, topography and drainage. • Some impacts can be mitigated through limitations in size, location, design, and mitigation requirements. 	-1

Table B-9 Energy Consequences of Limiting Uses

Use Category	Positive Energy Consequences	Negative Energy Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Most ecosystem services are retained reducing the energy needed to build and maintain public facilities. Opportunities to reduce out-of-direction travel are increased. 	<ul style="list-style-type: none"> Possible increased energy consumption due to loss of vegetation and microclimate effects. Increased energy to travel from new homes in rural areas to urban area employment and services. 	0
Limited civic and commercial development	<ul style="list-style-type: none"> Providing needed services reduces energy needed for transportation by nearby residents. 	<ul style="list-style-type: none"> Possible increased energy consumption due to loss of vegetation and microclimate effects. 	+1
Parks, open space and trails	<ul style="list-style-type: none"> Similar to residential. In addition, allowing trails encourages non-motorized modes of transportation. 	<ul style="list-style-type: none"> Similar to residential, although impacts could be less depending on the amount of impervious area. 	+1
Transportation facilities	<ul style="list-style-type: none"> Good connectivity encourages use of active transportation modes and lessen travel times and vehicle miles traveled. 	<ul style="list-style-type: none"> Similar to residential development but to a lesser degree. 	+1
Public and private utilities	<ul style="list-style-type: none"> Most ecosystem services are retained reducing the energy needed to build and maintain public facilities. Telecommunication facilities allow residents to telecommute or purchase goods and services online, reducing energy usage. 	<ul style="list-style-type: none"> Similar to transportation but to a lesser degree. 	+1
Energy exploration, production or processing	<ul style="list-style-type: none"> Creates local opportunities for energy production and utilizes potential available energy sources. 	<ul style="list-style-type: none"> Similar to residential development but with potential greater impacts due to increased areas of activity. 	+1

Table B-10 summarizes the net effect of limiting the conflicting uses. The cumulative net effect column shows the “strength” of the positive or negative consequences of limiting 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 limiting the conflicting use would provide a net benefit to the County, whereas a negative score would suggest that the use should not be limited, but should be either allowed or prohibited if one of those scenarios provides a greater net benefit. Results of this table are carried forward to the program recommendation section of this analysis.

Table B-10 Summary of Consequences of Limiting Conflicting Uses

Use Category	Economic	Social	Environ- mental	Energy	Cumulative Effect
Residential Development	+1	+1	-1	0	+1
Limited Civic and Commercial Development	+1	0	-1	+1	+1
Parks, Open Space and Trails	0	+1	0	+1	+2
Transportation Facilities	+1	0	-1	+1	+1
Public and Private Utilities	0	0	0	+1	+1
Energy Exploration, Production and Processing	+1	-1	-1	+1	0

As shown in Table B-10, the net effect of limiting conflicting uses is positive for all categories except energy exploration, production, and processing where it has a neutral net effect. This is primarily due to the positive economic and energy consequences for most use categories. The environmental consequences are more often neutral or negative in recognition that most uses will adversely impact the environmental value of wildlife habitat, even if limitations reduce or mitigate those impacts. Social consequences are typically positive or neutral except for energy exploration, production, and processing uses.

3.5.3. SCENARIO C - PROHIBITING CONFLICTING USES WITHIN THE RESOURCE AND IMPACT AREAS

Under this scenario conflicting uses would be completely prohibited within the Goal 5 resource or its impact area. Tables C-6 through C-9 identify the likely positive and negative consequences of prohibiting the conflicting use. The expected net effect of prohibiting the conflicting use, either positive (+1), neutral (0), or negative (-1), is identified in column 4.

Table C-6 Economic Consequences of Prohibiting Conflicting Uses

Use Category	Positive Economic Consequences	Negative Economic Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Existing ecosystem services are preserved, eliminating need to replace services or repair impacts. Amenity/development premium for adjacent parcels is preserved. Environmental impact costs are avoided. 	<ul style="list-style-type: none"> Property owners don't realize full development potential of parcels. Decrease in potential tax revenues to County. 	0
Limited civic and commercial development	<ul style="list-style-type: none"> Same as residential development. 	<ul style="list-style-type: none"> Development potential of parcels not realized. Reduces potential for local economic development. Decrease in potential tax revenues to County. Does not help to satisfy governmental long-term capital facility needs. Loss of potential economic self-sufficiency benefits. 	-1
Parks, open space and trails	<ul style="list-style-type: none"> Similar to residential. Lower municipal service costs relating to maintenance, law enforcement, etc. 	<ul style="list-style-type: none"> Recreation facilities, which are a community attraction that may enhance potential for local economic development, are not provided. 	0
Transportation facilities	<ul style="list-style-type: none"> Existing ecosystem services (e.g., higher potential costs due to flood damage risk) are preserved. Environmental impact costs are avoided. 	<ul style="list-style-type: none"> Connectivity and movement of people and goods is restricted, impacting potential for local economic development and economic self-sufficiency. Cost of building transportation facility is increased. 	-1
Public and private utilities	<ul style="list-style-type: none"> Same as transportation. 	<ul style="list-style-type: none"> Ability to obtain essential services needed for economic activity is not available. Loss of potential economic self-sufficiency benefits. Cost of building facilities is increased. 	-1
Energy exploration, production and processing	<ul style="list-style-type: none"> Same as residential uses. 	<ul style="list-style-type: none"> Property owners lose portion of economic value of their property. The cost of obtaining and processing energy resources increases. Reduced economic development and tax base revenue potential. Loss of potential economic self-sufficiency benefits. 	-1

Table C-7 Social Consequences of Prohibiting Conflicting Uses

Use Category	Positive Social Consequences	Negative Social Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> • Scenic, historic, and cultural values of existing resources are preserved. • Passive recreational and educational opportunities of existing resources are preserved. 	<ul style="list-style-type: none"> • " Negatively impacts cultural values associated with desire for rural lifestyle. • Diminishes direct access to nature and recreation and associated social benefits for additional residents. 	-1
Limited civic and commercial development	<ul style="list-style-type: none"> • Same as residential development. 	<ul style="list-style-type: none"> • Reduces social benefits associated with income and employment. • Civic and commercial developments could be impacted, thus reducing community gathering places. 	-1
Parks, open space and trails	<ul style="list-style-type: none"> • Same as residential development. 	<ul style="list-style-type: none"> • Parks and open space, which provide community gathering places, are impacted. • Opportunities for active recreation and outdoor education, which provide community benefits, could be precluded or reduced. 	-1
Transportation facilities	<ul style="list-style-type: none"> • Same as residential development. 	<ul style="list-style-type: none"> • Good connectivity, which encourages the use of active transportation modes and can improve public health, may not be possible. • Reduces social benefits associated with income and employment. 	-1
Public and private utilities	<ul style="list-style-type: none"> • Same as residential development. 	<ul style="list-style-type: none"> • Access to essential services for communication, social well-being, and health are more limited or costly. 	-1
Energy exploration, production and processing	<ul style="list-style-type: none"> • Same as residential development • Potential noise, pollution impacts of energy-related activities are eliminated. 	<ul style="list-style-type: none"> • Cost of energy could increase. 	+1

Table C-8 Environmental Consequences of Prohibiting Conflicting Uses

Use Category	Positive Environmental Consequences	Negative Environmental Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> • Microclimate and shade benefits are maintained. • Ecosystem services values are maintained. • Wildlife habitat is maintained. • Water quality is maintained. • Wildlife connectivity is maintained. • Barriers to wildlife migration and movement are avoided. • Impacts of human intrusion and pets are avoided. 	<ul style="list-style-type: none"> • None. 	+1
Limited civic and commercial development	<ul style="list-style-type: none"> • Same as residential uses. 	<ul style="list-style-type: none"> • None. 	+1
Parks, open space and trails	<ul style="list-style-type: none"> • Developed parks and open space doesn't displace wildlife habitat. • Maintenance practices don't occur which could introduce pesticides and fertilizers. 	<ul style="list-style-type: none"> • None. 	+1
Transportation facilities	<ul style="list-style-type: none"> • Similar to residential uses but to a lesser degree. • Impact due to light and noise from automobile traffic, introduction of polluted runoff from the transportation facility, and vulnerability that accidents that may introduce high levels of pollutants are avoided. • Collisions between automobiles and wildlife are avoided or reduced. 	<ul style="list-style-type: none"> • Out-of-direction travel is increased. • Good connectivity, which encourages the use of active transportation modes and lessen travel times and vehicle miles traveled, thus reducing greenhouse gas emissions, may be precluded. 	+1
Public and private utilities	<ul style="list-style-type: none"> • Similar to transportation uses but to a lesser degree. 	<ul style="list-style-type: none"> • Lack of ability to telecommute or purchase goods and services online requires increased use of automobiles, increasing air & water pollution and runoff. 	+1
Energy exploration, production and processing	<ul style="list-style-type: none"> • Similar to residential development but to a potentially greater degree. • Impacts from activities such as removing native vegetation and disturbing stable slopes and soil, are avoided. 	<ul style="list-style-type: none"> • Extraction of resources cannot be undertaken, thus increasing the need for transportation of energy and associated resources, potentially increasing air quality impacts. 	+1

Table C-9 Energy Consequences of Prohibiting Conflicting Uses

Use Category	Positive Energy Consequences	Negative Energy Consequences	Net Effect
Residential development	<ul style="list-style-type: none"> Additional energy is not required to build and maintain supporting public facilities. No increased energy consumption due to loss of vegetation and microclimate effects. May push residential uses into more cost-effective, urban locations to serve with public facilities. 	<ul style="list-style-type: none"> None. 	+1
Limited civic and commercial development	<ul style="list-style-type: none"> Same as residential development. 	<ul style="list-style-type: none"> Efficient siting may reduce energy cost due to transportation, solar access, and the provision of infrastructure services. Less energy would then be needed to access and operate the facilities. 	+1
Parks, open space and trails	<ul style="list-style-type: none"> Similar to residential, although benefits could be less depending on the amount of impervious area. 	<ul style="list-style-type: none"> Similar to civic and commercial. Allowing trails encourages non-motorized modes of transportation. 	-1
Transportation facilities	<ul style="list-style-type: none"> Additional energy is not required to build and maintain facilities. 	<ul style="list-style-type: none"> Good connectivity encourages the use of active transportation modes and lessens travel times and vehicle miles traveled. 	-1
Public and private utilities	<ul style="list-style-type: none"> Same as transportation. 	<ul style="list-style-type: none"> Lack of ability to telecommute or purchase goods and services online requires increased use of automobiles, increasing energy use. 	-1
Energy exploration, production and processing	<ul style="list-style-type: none"> Additional energy is not required to build and maintain supporting public facilities. No increased energy consumption due to loss of vegetation and microclimate effects. 	<ul style="list-style-type: none"> Loss of opportunity to produce energy locally. Loss of potential energy sources for meeting other local needs. 	-1

Table C-10 summarizes the net effect of prohibiting the conflicting uses. The cumulative net effect column shows the “strength” of the positive or negative consequences of prohibiting 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, prohibiting the conflicting use would provide a net benefit to the County, whereas a negative score would suggest that the use should not be prohibited. Results of this table are carried forward to the program recommendation section of this analysis.

Table C-10 Summary of Consequences of Prohibiting Conflicting Uses

Use Category	Economic	Social	Environmental	Energy	Cumulative Effect
Residential Development	0	-1	+1	+1	+1
Limited Civic and Commercial Development	-1	-1	+1	+1	0
Parks, Open Space and Trails	0	-1	+1	-1	-1
Transportation Facilities	-1	-1	+1	-1	-2
Public and Private Utilities	-1	-1	+1	-1	-2
Energy Exploration, Production and Processing	-1	+1	+1	-1	0

As shown in Table C-10, the net effect of prohibiting conflicting uses is negative or neutral for all categories, with the exception of residential development. This is primarily due to negative economic, social and energy consequences. The environmental consequences are uniformly positive because natural resource values and ecosystem services would be maintained.

3.6. PROGRAM RECOMMENDATIONS

This section includes draft recommendations as to whether to allow, limit, or prohibit identified conflicting uses within significant wildlife habitat areas identified in this report based on the ESEE analysis in section 3.5 above. A decision to prohibit or limit conflicting uses protects the wildlife habitat. 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 shall be reached with regard to conflicting uses for a resource site:

- (a) The County may decide that a significant wildlife habitat 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.
- (b) The County may decide that both the significant wildlife habitat resource 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 to a desired extent or requires mitigation of lost wildlife habitat areas and associated values and functions.
- (c) The County may decide that the conflicting use should be allowed fully, notwithstanding the possible impacts on the significant wildlife habitat areas. The ESEE analysis must demonstrate

that the conflicting use is of sufficient importance relative to the resource and must indicate why measures to protect the resource to some extent should not be provided, as per subsection (b) of this section.

3.6.1. SUMMARY OF GENERAL RECOMMENDATION

Table 5, below, identifies the “net effect” from Tables A-10, B-10, and C-10 and provides a general recommendation for each use category. The possible numeric values range from -4 to +4. A value of -4 suggests that the scenario (allow, limit, prohibit) would likely result in negative economic, social, environmental, and energy consequences for that use category. Whereas, a value of +4 suggests that the scenario would likely result in positive consequences for that use category. The recommendation is generally based on encouraging the strongest positive outcome, along with balancing relevant regulatory and other factors.

The analysis and weighing of the ESEE factors from the three scenarios suggests that overall the limit scenario offers the greatest net benefit in all use categories; thus a general recommendation of “limit” is appropriate. However, the Private and Public Utilities and Transportation Facilities use categories also received a positive result under the Allow scenario; indicating that a greater degree of flexibility to accommodate these uses may be appropriate.

Table 5: Summary of Net Effect of Allowing, Limiting or Prohibiting Conflicting Uses within Significant Wildlife Habitat Areas

Use Category	Allow (from Table A-10)	Limit (from Table B-10)	Prohibit (from Table C-10)
Residential Development	-4	+1	+1
Limited Civic and Commercial Development	-1	+1	0
Parks, Open Space and Trails	-1	+2	-1
Transportation Facilities	+1	+1	-2
Public and Private Utilities	+1	+1	-2
Energy Exploration, Production and Processing	-2	0	0

3.6.2. PROGRAM RECOMMENDATIONS TO IMPLEMENT LIMIT OR ALLOW SCENARIO

As noted in Table 5 above, the limit or allow scenarios offer the greatest net benefit in almost all use categories; thus a program that limits or allows conflicting uses is appropriate for those categories of uses. For residential and energy related uses, a limit or prohibit scenario indicate approximately equal net benefits.

In general a limit scenario for residential uses results in more beneficial impacts related to economic and social consequences and less benefit related to environmental and energy consequences, in comparison to a prohibit scenario. The same pattern is true for energy exploration, production, and processing uses. In both cases, prohibiting these uses can lead to a number of problems from a land use regulatory and financial context, including:

- Prohibiting all beneficial economic use of a property can result in a “takings” of the property, requiring the County to essentially pay the property for the lost economic value. Given its limited resources, it is unlikely that the County will be able to purchase these areas or compensate owners for these economic losses.
- Prohibiting future residential or other uses where similar uses already exist on a property will make the current use “nonconforming” making improvements to the use difficult and potentially leading to deterioration of structures or other improvements, resulting in adverse safety, health, and aesthetic impacts.

In addition, much of the wildlife habitat in the study area is within areas already managed for wildlife habitat protection (including the Burlington Bottoms area) and the potential for future residential or energy-related development of these areas is limited. For these reasons, a limit scenario and program is recommended for residential and energy-related uses in the area.

More specifically, the limit program should accomplish the following objectives in order to achieve the net benefit to the County anticipated by this approach:

- Limit forest products processing, residential, commercial, and civic development, parks, open spaces and trails, and energy exploration, production, and processing in wildlife habitat and associated impact areas.
- Avoid impacts where possible. Where impacts cannot be avoided, require mitigation for resource impacts to help ensure that impacts on wildlife habitat are minimized to the extent possible.
- Support the location and/or 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.
- Allow certain categories of transportation uses which have lesser impacts on surrounding habitats (e.g., improvements to existing facilities), given that the limit and allow scenarios have approximately equivalent net benefit outcomes. Limit more intensive transportation uses to reduce or mitigate impacts on wildlife habitat areas and wildlife movement.
- Allow certain types of public and private utilities (such as placement of underground utility lines, single utility poles, repair of facilities, and other uses or activities which have relatively limited impact on wildlife habitat). Limit more intensive public and private utility uses.

There are a number of existing regulations and policies, which apply to significant wildlife habitat areas, and which address these objectives. These regulations and policies are currently implemented by the County through its base zoning code standards and its SEC-Habitat overlay zone, as well as state statutes and administrative rules and include:

- **SEC-Habitat Overlay Requirements.** The County's Zoning Ordinance SEC-H zone includes a variety of provisions to minimize impacts on wildlife, including the following:
 - Preparation of a wildlife conservation plan.
 - Standards for fencing that facilitate wildlife passage.
 - Clustering and other locational requirements for roads and structures that reduce the combined impacts of multiple development activities.
 - Standards for landscaping, including use of native plant species.

SEC-H provisions are included in Appendix A of this report.

- **SEC-Habitat Overlay Exemptions.** A number of uses and activities are exempt from SEC-H requirements, including the following:
 - Farm use, as defined in ORS 215.203 (2).
 - Propagation of timber or cutting of timber for public safety or personal use or the cutting of timber in accordance with the State Forest Practices Act.
 - Customary dredging and channel maintenance and the removal or filling, or both, for the maintenance or reconstruction of structures such as dikes, levees, groins, riprap, drainage ditch, irrigation ditches, and tile drain systems as allowed by ORS 196.905 (6);
 - The placing, by a public agency, of signs, markers, aids, etc., to serve the public;
 - Activities to protect, conserve, enhance, and maintain public recreational, scenic, historical, and natural uses on public lands;
 - The expansion of capacity, or the replacement, of existing communication or energy distribution and transmission systems, except substations;
 - The maintenance and repair of existing flood control facilities;
 - Limited alteration or expansion of existing structures;
 - Type A Home Occupations;
 - Single utility poles necessary to provide service to the local area;
 - Right-of-way widening for existing rights-of-way when additional right-of-way is necessary to ensure continuous width;

- Stream enhancement or restoration projects limited to removal by hand of invasive vegetation and planting of any native vegetation on the Metro Native Plant List;
- Enhancement or restoration of the riparian corridor for water quality or quantity benefits, or for improvement of fish and wildlife habitat; and
- Routine repair and maintenance of structures, roadways, driveways, utility facilities, and landscaped areas that were in existence prior to the effective date of this ordinance.

These exemptions would be consistent with an “Allow” scenario for certain types of transportation and public and private utility uses. Other transportation and public and private utility uses would be subject to SEC-S mitigation requirements and/or to conditional use requirements as noted below.

- **Review and Conditional Uses.** A limited set of land uses allowed in the zones within the study areas are uses allowed outright, with many other uses allowed only under certain conditions and approval criteria. For example, commercial uses, planned developments, forest, and agricultural products processing, dog kennels, and production and processing of most energy sources are allowed only as conditional uses in the zones within the study area. One of the County’s criteria for approval of a conditional use is that the use will not adversely impact natural resources. As a result, approval of the use requires a finding by the County that the use, as proposed, will meet this criterion. In addition, another criterion is that the use will be located outside a big game winter habitat area as defined by the Oregon Department of Fish and Wildlife or that agency has certified that the impacts will be acceptable. Both of these criteria act as a limiting feature for conditional uses in the study area.
- **Oregon Forest Practices Act (FPA).** The FPA applies to any commercial harvesting of timber, including within the study area. A number of provisions of the FPA rules are aimed at the protection of wildlife habitat. For example, forestry activities must be timed to avoid excessive disturbance to certain wildlife species. In addition, timber harvest operators must leave a certain number of live trees standing and fallen logs on site to provide habitat for specific types of wildlife.

Application of these regulations, in concert with a variety of policies in the Comprehensive Plan cited previously, as applied to wildlife habitat, would provide an appropriate level of protection for those types of uses that are recommended to be limited.

Appendix A

SIGNIFICANT ENVIRONMENTAL CONCERN

(Ord. 997, Repealed and Replaced, 10/31/2002; Ord. 990, Amd, 09/26/2002; Ord. 953 §2, Reorg&Renum, 11/30/2000)

§ 33.4500- PURPOSES

The purposes of the Significant Environmental Concern subdistrict are to protect, conserve, enhance, restore, and maintain significant natural and man-made features which are of public value, including among other things, river corridors, streams, lakes and islands, domestic water supply watersheds, flood water storage areas, natural shorelines and unique vegetation, wetlands, wildlife and fish habitats, significant geological features, tourist attractions, archaeological features and sites, and scenic views and vistas, and to establish criteria, standards, and procedures for the development, change of use, or alteration of such features or of the lands adjacent thereto.

(Ord. 997, Repealed and Replaced, 10/31/2002; Ord. 953 §2, Reorg&Renum, 11/30/2000)

§ 33.4505 AREA AFFECTED

Except as otherwise provided in MCC 33.4510 or MCC 33.4515, this subsection shall apply to those lands designated SEC on the Multnomah County Zoning Map.

(Ord. 997, Repealed and Replaced, 10/31/2002; Ord. 953 §2, Reorg&Renum, 11/30/2000)

§ 33.4510 USES; SEC PERMIT REQUIRED

(A) All uses permitted under the provisions of the underlying district are permitted on lands designated SEC; provided, however, that the location and design of any use, or change or alteration of a use, except as provided in MCC 33.4515, shall be subject to an SEC permit.

(B) Any excavation or any removal of materials of archaeological, historical, prehistorical or anthropological nature shall be conducted under the conditions of an SEC permit, regardless of the zoning designation of the site.

(C) Activities proposed for lands designated as scenic waterways under the Oregon Scenic Waterways System shall be subject to an SEC permit in addition to approval from the Oregon Parks and Recreation Department.

§ 33.4515 EXCEPTIONS

(A) Except as specified in (B) below, a SEC permit shall not be required for the following:

(1) Farm use, as defined in ORS 215.203 (2) (a), including buildings and structures accessory thereto on "converted wetlands" as defined by ORS 541.695 (9) or on upland areas;

(2) The propagation of timber or the cutting of timber for public safety or personal use or the cutting of timber in accordance with the State Forest Practices Act;

(3) Customary dredging and channel maintenance and the removal or filling, or both, for the maintenance or reconstruction of structures such as dikes, levees, groins, riprap, drainage ditch, irrigation ditches and tile drain systems as allowed by ORS 196.905 (6);

(4) The placing, by a public agency, of signs, markers, aids, etc., to serve the public;

(5) Activities to protect, conserve, enhance, and maintain public recreational, scenic, historical, and natural uses on public lands;

(6) The expansion of capacity, or the replacement, of existing communication or energy distribution and transmission systems, except substations;

(7) The maintenance and repair of existing flood control facilities;

(8) With respect to a structure lawfully established on or before January 7, 2010; alteration or expansion of such structure that:

(a) For the SEC, SEC-w, and SEC-v overlays, do not require any alteration or expansion of the exterior of the structure;

(S-1 LU 2013)

(b) For the SEC-h and SEC-s overlays, result in the alteration or expansion of 400 square feet or less of the structure's ground coverage. With respect to expansion, this exception does not apply on a project-by-project basis, but rather extends only to a maximum of 400 square feet of additional ground coverage as compared to the structure's ground coverage on the date above; and

(c) For the SEC-h overlay, alteration or expansion of 400 square feet or less of a driveway.

(9) All type A Home Occupations;

(10) Alteration, repair, or replacement of septic system drainfields due to system failure;

(11) Single utility poles necessary to provide service to the local area;

(12) Right-of-way widening for existing rights-of-way when additional right-of-way is necessary to ensure continuous width; and

(13) Stream enhancement or restoration projects limited to removal by hand of invasive vegetation and planting of any native vegetation on the Metro Native Plant List;

(14) Enhancement or restoration of the riparian corridor for water quality or quantity benefits, or for improvement of fish and wildlife habitat, pursuant to a plan that does not include placement of buildings or structures and does not entail grading in an amount greater than 10 cubic yards. This exemption is applicable to plans that are approved by Soil and Water Conservation District, the Natural Resources Conservation District, or the Oregon Department of Fish and Wildlife under the provisions for a Wildlife and Habitat Conservation Plan, and submitted to the County.

(15) In the SEC-v district, a solar energy system, including solar thermal and photo-

voltaic, that is installed on an existing building is allowed in the general zone district when:

(a) The installation of the solar energy system can be accomplished without increasing the footprint of the residential or commercial structure or the peak height of the portion of the roof on which the system is installed;

(b) The solar energy system would be mounted so that the plane of the system is parallel to the slope of the roof; and

(c) Uses materials that are designated as anti-reflective or has a reflectivity rating of eleven percent or less.

(16) Routine repair and maintenance of structures, roadways, driveways, utility facilities, and landscaped areas that were in existence prior to the effective date of this ordinance.

(B) Within Metro's 2009 jurisdictional boundary, an SEC-s permit is required for agricultural buildings, structures and development associated with farm practices and agricultural uses, except that agricultural fences shall not require an SEC-s permit.

(Ord. 1198, Amended, 3/14/2013; Ord. 1192, Amended, 05/17/2012; Ord. 1152, Amended, 01/07/2010; Ord. 997, Repealed and Replaced, 10/31/2002; Ord. 953 §2, Reorg&Renum, 11/30/2000)

§ 33.4520 APPLICATION FOR SEC PERMIT

An application for an SEC permit for a use or for the change or alteration of an existing use on land designated SEC, shall address the applicable criteria for approval, under MCC 33.4560 through 33.4575.

(A) An application for an SEC permit shall include the following:

(1) A written description of the proposed development and how it complies with the applicable approval criteria of MCC 33.4560 through 33.4575.

(2) A map of the property showing:

- (a) Boundaries, dimensions, and size of the subject parcel;
- (b) Location and size of existing and proposed structures;
- (c) Contour lines and topographic features such as ravines or ridges;
- (d) Proposed fill, grading, site contouring or other landform changes;
- (e) Location and predominant species of existing vegetation on the parcel, areas where vegetation will be removed, and location and species of vegetation to be planted, including landscaped areas;
- (f) Location and width of existing and proposed roads, driveways, and service corridors.

(Ord. 1009, Amended, 04/03/2003; Ord. 997, Repealed and Replaced, 10/31/2002; Ord. 953 §2, Reorg&Renum, 11/30/2000)

§ 33.4525 APPLICABLE APPROVAL CRITERIA

(A) The approval criteria that apply to uses in areas designated SEC-w, SEC-v, SEC-h and SEC-s on Multnomah County zoning maps shall be based on the type of protected resources on the property, as indicated by the subscript letter in the zoning designation, as follows:

Zoning Designation	Approval Criteria (MCC#)
SEC-w (wetlands)	33.4560
SEC-v (scenic views)	33.4565
SEC-h (wildlife habitat)	Type I Permit – 33.4567 Type II Permit – 33.4570
SEC-s (streams)	33.4575

(B) The zoning maps used to designate the Stream Conservation Areas (SEC-s zoning subdistricts) were created digitally by interpreting various data sources including the hand drawn maps contained in the Goal 5 ESEE report and

Metro's riparian and wildlife habitat inventories. Care was taken in the creation of the maps, but in some instances mapping inaccuracies have occurred during the process. In the event of a mapping inconsistency, the SEC-s zoning subdistrict shall be interpreted to be the defined Stream Conservation Area.

(C) An application for a use on a property containing more than one protected resource shall address the approval criteria for all of the designated resources on the property. In the case of conflicting criteria, approval shall be based on the ability of the proposed development to comply as nearly as possible with the criteria for all designated resources that would be affected.

(D) For protected stream resources, the approval criteria shall be used to determine the most appropriate location, size and scope of the proposed development, in order to make the development compatible with the purposes of this section, but shall not be used to prohibit a use or be used to require removal or relocation of existing physical improvements to the property.

(Ord. 1198, Amended, 03/14/2013; Ord. 1152, Amended, 01/07/2010; Ord. 1009, Amended, 04/03/2003; Ord. 997, Repealed and Replaced, 10/31/2002; Ord. 953 §2, Reorg&Renum, 11/30/2000)

§ 33.4530 SEC PERMIT - REQUIRED FINDINGS

A decision on an application for an SEC permit shall be based upon findings of consistency with the purposes of the SEC district and with the applicable criteria for approval specified in MCC 33.4560 through 33.4575.

(Ord. 1009, Amended, 04/03/2003; Ord. 997, Repealed and Replaced, 10/31/2002; Ord. 953 §2, Reorg&Renum, 11/30/2000)

§ 33.4550 SCOPE OF CONDITIONS

(A) Conditions of approval of an SEC permit, if any, shall be designed to bring the application into conformance with the applicable criteria of MCC 33.4560 through 33.4575 and any other requirements specified in the Goal 5 protection program for the affected resource. Said conditions may relate to the locations, design, and maintenance of existing and proposed im-

provements, including but not limited to buildings, structures and use areas, parking, pedestrian and vehicular circulation and access, natural vegetation and landscaped areas, fencing, screening and buffering, excavations, cuts and fills, signs, graphics, and lighting, timing of construction and related activities.

(B) Approval of an SEC permit shall be deemed to authorize associated public utilities, including energy and communication facilities.

(Ord. 1009, Amended, 04/03/2003; Ord. 997, Repealed and Replaced, 10/31/2002; Ord. 953 §2, Reorg&Renum, 11/30/2000)

§ 33.4560 CRITERIA FOR APPROVAL OF SEC-W PERMIT - SIGNIFICANT WETLANDS

Significant wetlands consist of those areas designated as *Significant* on aerial photographs of a scale of 1 inch = 200 feet made a part of the supporting documentation of the Comprehensive Framework Plan. Any proposed activity or use requiring an SEC permit which would impact those wetlands shall be subject to the following:

(A) In addition to other SEC Permit submittal requirements, the application shall also include:

(1) A site plan drawn to scale showing the wetland boundary as determined by a documented field survey, the location of all existing and proposed watercourses, drainageways, stormwater facilities, utility installations, and topography of the site at a contour interval of no greater than five feet;

(2) A description and map of the wetland area that will be affected by the proposed activity. This documentation must also include a map of the entire wetland, an assessment of the wetland's functional characteristics and water sources, and a description of the vegetation types and fish and wildlife habitat;

(3) A description and map of soil types in the proposed development area and the locations and specifications for all proposed draining, filling, grading, dredging, and vegetation removal, including the amounts and methods;

(S-1 LU 2013)

(4) A study of any flood hazard, erosion hazard, or other natural hazards in the proposed development area and any proposed protective measures to reduce such hazards;

(5) Detailed Mitigation Plans as described in subsection (D), if required;

(6) Description of how the proposal meets the approval criteria listed in subsection (B) below.

(B) The applicant shall demonstrate that the proposal:

(1) Is water-dependent or requires access to the wetland as a central element of its basic design function, or is not water dependent but has no practicable alternative as described in subsection (C) below;

(2) Will have as few adverse impacts as is practical to the wetland's functional characteristics and its existing contour, vegetation, fish and wildlife resources, shoreline anchoring, flood storage, general hydrological conditions, and visual amenities. This impact determination shall also consider specific site information contained in the adopted wetlands inventory and the economic, social, environmental, and energy (ESEE) analysis made part of the supporting documentation of the comprehensive plan;

(3) Will not cause significant degradation of groundwater or surface-water quality;

(4) Will provide a buffer area of not less than 50 feet between the wetland boundary and upland activities for those portions of regulated activities that need not be conducted in the wetland;

(5) Will provide offsetting replacement wetlands for any loss of existing wetland areas. This Mitigation Plan shall meet the standards of subsection (D).

(C) A finding of no practicable alternative is to be made only after demonstration by the applicant that:

(1) The basic purpose of the project cannot reasonably be accomplished using one or more other practicable alternative sites in Multnomah County that would avoid or result in less adverse impact on a wetland. An *alternative site* is to be considered *practicable* if it is available for purchase and the proposed activity can be conducted on that site after taking into consideration costs, existing technology, infrastructure, and logistics in achieving the overall project purposes;

(2) The basic purpose of the project cannot be accomplished by a reduction in the size, scope, configuration, or density of the project as proposed, or by changing the design of the project in a way that would avoid or result in fewer adverse effects on the wetland; and

(3) In cases where the applicant has rejected alternatives to the project as proposed due to constraints, a reasonable attempt has been made to remove or accommodate such constraints.

(4) This section is only applicable for wetland resources designated "3-C".

(D) A Mitigation Plan and monitoring program may be approved upon submission of the following:

(1) A site plan and written documentation which contains the applicable information for the replacement wetland as required by MCC 33.4560 (A);

(2) A description of the applicant's coordination efforts to date with the requirements of other local, State, and Federal agencies;

(3) A Mitigation Plan which demonstrates retention of the resource values addressed in MCC 33.4560 (B) (2);

(4) Documentation that replacement wetlands were considered and rejected according to the following order of locational preferences:

(a) On the site of the impacted wetland, with the same kind of resource;

(b) Off-site, with the same kind of resource;

(c) On-site, with a different kind of resource;

(d) Off-site, with a different kind of resource.

(Ord. 997, Repealed and Replaced, 10/31/2002; Ord. 953 §2, Reorg&Renum, 11/30/2000)

§ 33.4565 CRITERIA FOR APPROVAL OF SEC-V PERMIT -SIGNIFICANT SCENIC VIEWS

(A) Definitions:

(1) *Significant scenic resources* consist of those areas designated SEC-v on Multnomah County sectional zoning maps.

(2) *Identified Viewing Areas* are public areas that provide important views of a significant scenic resource, and include both sites and linear corridors. Identified Viewing Areas are:

Bybee-Howell House
Virginia Lakes
Sauvie Island Wildlife Refuge
Kelley Point Park
Smith and Bybee Lakes
Highway 30
The Multnomah Channel
The Willamette River
Public roads on Sauvie Island

(3) *Visually subordinate* means development does not noticeably contrast with the surrounding landscape, as viewed from an identified viewing area. Development that is visually subordinate may be visible, but is

not visually dominant in relation to its surroundings.

(B) In addition to the information required by MCC 33.4520, an application for development in an area designated SEC-v shall include:

- (1) Details on the height, shape, colors, outdoor lighting, and exterior building materials of any proposed structure;
- (2) Elevation drawings showing the appearance of proposed structures when built and surrounding final ground grades;
- (3) A list of identified viewing areas from which the proposed use would be visible; and,
- (4) A written description and drawings demonstrating how the proposed development will be visually subordinate as required by (C) below, including information on the type, height and location of any vegetation or other materials which will be used to screen the development from the view of identified viewing areas.

(C) Any portion of a proposed development (including access roads, cleared areas and structures) that will be visible from an identified viewing area shall be *visually subordinate*. Guidelines which may be used to attain visual subordination, and which shall be considered in making the determination of visual subordination include:

- (1) Siting on portions of the property where topography and existing vegetation will screen the development from the view of identified viewing areas.
- (2) Use of nonreflective or low reflective building materials and dark natural or earthtone colors.
- (3) No exterior lighting, or lighting that is directed downward and sited, hooded and shielded so that it is not highly visible from identified viewing areas. Shielding and

hooding materials should be composed of nonreflective, opaque materials.

(4) Use of screening vegetation or earth berms to block and/or disrupt views of the development. Priority should be given to retaining existing vegetation over other screening methods. Trees planted for screening purposes should be coniferous to provide winter screening. The applicant is responsible for the proper maintenance and survival of any vegetation used for screening.

(5) Proposed developments or land use shall be aligned, designed and sited to fit the natural topography and to take advantage of vegetation and land form screening, and to minimize visible grading or other modifications of landforms, vegetation cover, and natural characteristics.

(6) Limiting structure height to remain below the surrounding forest canopy level.

(7) Siting and/or design so that the silhouette of buildings and other structures remains below the skyline of bluffs or ridges as seen from identified viewing areas. This may require modifying the building or structure height and design as well as location on the property, except:

(a) New communications facilities (transmission lines, antennae, dishes, etc.), may protrude above a skyline visible from an identified viewing area upon demonstration that:

1. The new facility could not be located in an existing transmission corridor or built upon an existing facility;
2. The facility is necessary for public service; and
3. The break in the skyline is the minimum necessary to provide the service.

(D) Mining of a protected aggregate and mineral resource within a PAM subdistrict shall be done in accordance with any standards for mining identified in the protection program approved during the Goal 5 process. The SEC Application for Significant Scenic Views must comply only with measures to protect scenic views identified in the Goal 5 protection program that has been designated for the site.

(E) The approval authority may impose conditions of approval on an SEC-v permit in accordance with MCC 33.4550, in order to make the development visually subordinate. The extent and type of conditions shall be proportionate to the potential adverse visual impact of the development as seen from identified viewing areas, taking into consideration the size of the development area that will be visible, the distance from the development to identified viewing areas, the number of identified viewing areas that could see the development, and the linear distance the development could be seen along identified viewing corridors.

(Ord. 997, Repealed and Replaced, 10/31/2002; Ord. 953 §2, Reorg&Renum, 11/30/2000)

§ 33.4567 SEC-H CLEAR AND OBJECTIVE STANDARDS

At the time of submittal, the applicant shall provide the application materials listed in MCC 33.4520(A) and 33.4570(A). The application shall be reviewed through the Type I procedure and may not be authorized unless the standards in 33.4570(B)(1) through (4)(a)-(c) and (B)(5) through (7) are met. For development that fails to meet all of the criteria listed above, a separate land use application pursuant to MCC 33.4570 may be submitted.

(Ord. 1198, Added, 03/14/2013)

§ 33.4570 CRITERIA FOR APPROVAL OF SEC-H PERMIT -WILDLIFE HABITAT

(A) In addition to the information required by MCC 33.4520 (A), an application for development in an area designated SEC-h shall include an area map showing all properties which are adjacent to or entirely or partially within 200 feet of the proposed development, with the fol-

lowing information, when such information can be gathered without trespass:

(1) Location of all existing forested areas (including areas cleared pursuant to an approved forest management plan) and non-forested "cleared" areas;

For the purposes of this section, a *forested area* is defined as an area that has at least 75 percent crown closure, or 80 square feet of basal area per acre, of trees 11 inches DBH and larger, or an area which is being reforested pursuant to Forest Practice Rules of the Department of Forestry. A *non-forested "cleared"* area is defined as an area which does not meet the description of a forested area and which is not being reforested pursuant to a forest management plan.

(2) Location of existing and proposed structures;

(3) Location and width of existing and proposed public roads, private access roads, driveways, and service corridors on the subject parcel and within 200 feet of the subject parcel's boundaries on all adjacent parcels;

(4) Existing and proposed type and location of all fencing on the subject property and on adjacent properties and on properties entirely or partially within 200 feet of the subject property.

(B) Development standards:

(1) Where a parcel contains any non-forested "cleared" areas, development shall only occur in these areas, except as necessary to provide access and to meet minimum clearance standards for fire safety.

(2) Development shall occur within 200 feet of a public road capable of providing reasonable practical access to the developable portion of the site.

(3) The access road/driveway and service corridor serving the development shall not exceed 500 feet in length.

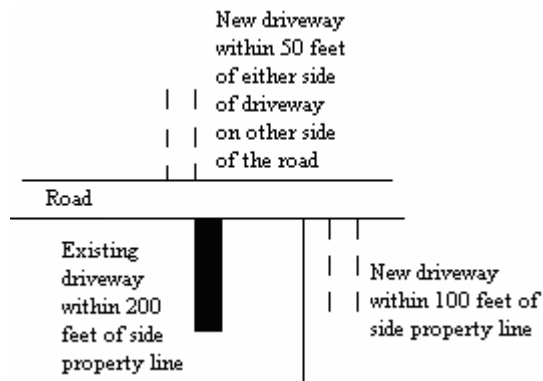
(S-1 LU 2013)

(4) For the purpose of clustering access road/driveway approaches near one another, one of the following two standards shall be met:

(a) The access road/driveway approach onto a public road shall be located within 100 feet of a side property line if adjacent property on the same side of the road has an existing access road or driveway approach within 200 feet of that side property line; or

(b) The access road/driveway approach onto a public road shall be located within 50 feet of either side of an existing access road/driveway on the opposite side of the road.

(c) Diagram showing the standards in (a) and (b) above.



(d) The standards in this subsection (4) may be modified upon a determination by the County Road Official that the new access road/driveway approach would result in an unsafe traffic situation using the standards in the Multnomah County "Design and Construction Manual," adopted June 20, 2000, (or all updated versions of the manual). Standards to be used by the Road Official from the County manual include Table 2.3.2, Table 2.4.1, and additional referenced sight distance and minimum access spacing standards in the publication A Policy on Geometric

Design of Highways and Streets by the American Association of State Highway and Transportation Officials (AASHTO) and the Traffic Engineering Handbook by the Institute of Transportation Engineers (ITE).

1. The modification shall be the minimum necessary to allow safe access onto the public road.

2. The County Road Official shall provide written findings supporting the modification.

(5) The development shall be within 300 feet of a side property line if adjacent property has structures and developed areas within 200 feet of that common side property line.

(6) Fencing within a required setback from a public road shall meet the following criteria:

(a) Fences shall have a maximum height of 42 inches and a minimum 17 inch gap between the ground and the bottom of the fence.

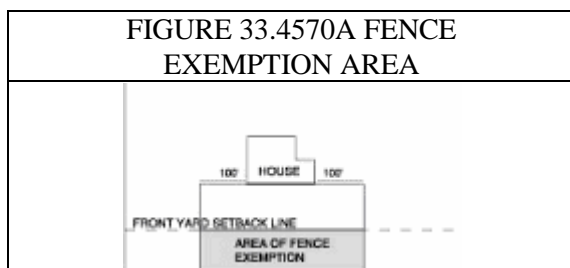
(b) Wood and wire fences are permitted. The bottom strand of a wire fence shall be barbless. Fences may be electrified, except as prohibited by County Code.

(c) Cyclone, woven wire, and chain link fences are prohibited.

(d) Fences with a ratio of solids to voids greater than 2:1 are prohibited.

(e) Fencing standards do not apply in an area on the property bounded by a line along the public road serving the development, two lines each drawn perpendicular to the principal structure from a point 100 feet from the end of the structure on a line perpendicular to and meeting with the public road serving the development, and the front yard setback

line parallel to the public road serving the development.



(f) Fencing standards do not apply where needed for security of utility facilities.

(7) The following nuisance plants shall not be planted on the subject property and shall be removed and kept removed from cleared areas of the subject property:

Scientific Name	Common Name
<i>Chelidonium majus</i>	Lesser celandine
<i>Cirsium arvense</i>	Canada Thistle
<i>Cirsium vulgare</i>	Common Thistle
<i>Clematis ligusticifolia</i>	Western Clematis
<i>Clematis vitalba</i>	Traveler's Joy
<i>Conium maculatum</i>	Poison hemlock
<i>Convolvulus arvensis</i>	Field Morning-glory
<i>Convolvulus nyctagineus</i>	Night-blooming Morning-glory
<i>Convolvulus seppium</i>	Lady's nightcap
<i>Cortaderia selloana</i>	Pampas grass
<i>Crataegus sp. except C. douglasii</i>	hawthorn, except native species
<i>Cytisus scoparius</i>	Scotch broom
<i>Daucus carota</i>	Queen Ann's Lace
<i>Elodea densa</i>	South American Water-weed
<i>Equisetum arvense</i>	Common Horsetail
<i>Equisetum telemateia</i>	Giant Horsetail
<i>Erodium cicutarium</i>	Crane's Bill
<i>Geranium roberianum</i>	Robert Geranium
<i>Hedera helix</i>	English Ivy
<i>Hypericum perforatum</i>	St. John's Wort
<i>Ilex aquafolium</i>	English Holly
<i>Laburnum watereri</i>	Golden Chain Tree
<i>Lemna minor</i>	Duckweed, Water Lentil

Scientific Name	Common Name
<i>Loentodon autumnalis</i>	Fall Dandelion
<i>Lythrum salicaria</i>	Purple Loosestrife
<i>Myriophyllum spicatum</i>	Eurasian Watermilfoil
<i>Phalaris arundinacea</i>	Reed Canary grass
<i>Poa annua</i>	Annual Bluegrass
<i>Polygonum coccineum</i>	Swamp Smartweed
<i>Polygonum convolvulus</i>	Climbing Binaweed
<i>Polygonum sachalinense</i>	Giant Knotweed
<i>Prunus laurocerasus</i>	English, Portugese Laurel
<i>Rhus diversiloba</i>	Poison Oak
<i>Rubus discolor</i>	Himalayan Blackberry
<i>Rubus laciniatus</i>	Evergreen Blackberry
<i>Senecio jacobaea</i>	Tansy Ragwort
<i>Solanum dulcamara</i>	Blue Bindweed
<i>Solanum nigrum</i>	Garden Nightshade
<i>Solanum sarrachoides</i>	Hairy Nightshade
<i>Taraxacum officinale</i>	Common Dandelion
<i>Utricularia vulgaris</i>	Common Bladderwort
<i>Urtica dioica</i>	Stinging Nettle
<i>Vinca major</i>	Periwinkle (large leaf)
<i>Vinca minor</i>	Periwinkle (small leaf)
<i>Xanthium spinosum</i>	Spiny Cocklebur
<i>various genera</i>	Bamboo sp.

(C) Wildlife Conservation Plan. An applicant shall propose a wildlife conservation plan if one of two situations exist.

(1) The applicant cannot meet the development standards of Section (B) because of physical characteristics unique to the property. The applicant must show that the wildlife conservation plan results in the minimum departure from the standards required in order to allow the use; or

(2) The applicant can meet the development standards of Section (B), but demonstrates that the alternative conservation measures exceed the standards of Section (B) and will result in the proposed development having a less detrimental impact on forested wildlife habitat than the standards in Section (B).

(3) Unless the wildlife conservation plan demonstrates satisfaction of the criteria in subsection (C)(5), the wildlife conservation plan must demonstrate the following:

(a) That measures are included in order to reduce impacts to forested areas to the minimum necessary to serve the proposed development by restricting the amount of clearance and length/width of cleared areas and disturbing the least amount of forest canopy cover.

(b) That any newly cleared area associated with the development is not greater than one acre, excluding from this total the area of the minimum necessary accessway required for fire safety purposes.

(c) That no fencing will be built and existing fencing will be removed outside of areas cleared for the site development except for existing cleared areas used for agricultural purposes.

(d) That revegetation of existing cleared areas on the property at a 2:1 ratio with newly cleared areas occurs if such cleared areas exist on the property.

(e) That revegetation and enhancement of disturbed stream riparian areas occurs along drainages and streams located on the property.

(4) For a property meeting (C)(1) above, the applicant may utilize the following mitigation measures for additions instead of providing a separate wildlife conservation plan:

(a) Each tree removed to construct the proposed development shall be replaced on a one to one ratio with a six foot tall native tree.

(b) For each 100 square feet of new building area, the property owner shall plant, one, 3-4 foot tall native

tree or three native tree seedlings. The trees shall be planted to improve wildlife habitat first within non-forested cleared areas contiguous to forested areas, second within any degraded stream riparian areas before being placed in forested areas or adjacent to landscaped yards.

(c) Existing fencing located in the front yard adjacent to a public road shall be consistent with MCC 33.4570(B)(6).

(d) For non-forested “cleared” areas that require nuisance plant removal pursuant to MCC 33.4570(B)(7), the property owner shall set a specific date for the work to be completed and the area replanted with native vegetation. The time frame must be within two years from the date of the permit.

(5) Unless the wildlife conservation plan demonstrates satisfaction of the criteria in subsection (C)(3) of this section, the wildlife conservation plan must demonstrate the following:

(a) That measures are included in order to reduce impacts to forested areas to the minimum necessary to serve the proposed development by restricting the amount of clearance and length/width of cleared areas and disturbing the least amount of forest canopy cover.

(b) That any newly cleared area associated with the development is not greater than one acre, excluding from this total the area of the minimum necessary accessway required for fire safety purposes.

(c) That no fencing will be built and existing fencing will be removed outside of areas cleared for the site development except for existing

cleared areas used for agricultural purposes. Existing fencing located in the front yard adjacent to a public road shall be consistent with MCC 33.4570(B)(6).

- (d) For mitigation areas, all trees, shrubs and ground cover shall be native plants selected from the Metro Native Plant List. An applicant shall meet Mitigation Option 1 or 2, whichever results in more tree plantings; except that where the total developed area (including buildings, pavement, roads, and land designated as a Development Impact Area) on a Lot of Record will be one acre or more, the applicant shall comply with Mitigation Option 2:

1. *Mitigation Option 1.* In this option, the mitigation requirement is calculated based on the number and size of trees that are removed from the development site. Trees that are removed from the development site shall be replaced as shown in the table below. Conifers shall be replaced with conifers. Bare ground shall be planted or seeded with native grasses or herbs. Non-native sterile wheat grass may also be planted or seeded, in equal or lesser proportion to the native grasses or herbs.

Tree Replacement Table

Size of tree to be removed (inches in diameter)	Number of trees and shrubs to be planted
6 to 12	2 trees and 3 shrubs
13 to 18	3 trees and 6 shrubs
19 to 24	5 trees and 12 shrubs
25 to 30	7 trees and 18 shrubs

over 30	10 trees and 30 shrubs
---------	------------------------

2. *Mitigation Option 2.* In this option, the mitigation requirement is calculated based on the size of the disturbance area associated with the development. Native trees and shrubs are required to be planted at a rate of five (5) trees and twenty-five (25) shrubs per every 500 square feet of disturbance area (calculated by dividing the number of square feet of disturbance area by 500, and then multiplying that result times five trees and 25 shrubs, and rounding all fractions to the nearest whole number of trees and shrubs: for example, if there will be 330 square feet of disturbance area, then 330 divided by 500 equals .66, and .66 times five equals 3.6 so three trees must be planted, and .66 times 25 equals 16.5, so 17 shrubs must be planted). Bare ground shall be planted or seeded with native grasses or herbs. Non-native sterile wheat grass may also be planted or seeded, in equal or lesser proportion to the native grasses or herbs.

- (e) *Location of mitigation area.* All vegetation shall be planted within the mitigation area located on the same Lot of Record as the development and shall be located within the SEC-h overlay or in an area contiguous to the SEC-h overlay; provided, however, that if the vegetation is planted outside of the SEC-h overlay then the applicant shall preserve the contiguous area by executing a deed restriction, such as a restrictive covenant. (Note: an off-site mitigation option is provided in a streamlined discretionary review process). The mitigation area shall first be located within any existing non-forested cleared areas contiguous to forested areas, second within any degraded stream riparian areas and last in forested areas or adjacent to landscaped yards.

- (f) Prior to development, all work areas shall be flagged, fenced, or otherwise marked to reduce potential damage to habitat outside of the work area. The work area shall remain marked through all phases of development.
 - (g) Trees shall not be used as anchors for stabilizing construction equipment.
 - (h) Native soils disturbed during development shall be conserved on the property.
 - (i) An erosion and sediment control plan shall be prepared in compliance with the Grading and Erosion Control standards set forth in MCC 29.330 through MCC 29.348.
 - (j) **Plant size.** Replacement trees shall be at least one-half inch in caliper, measured at 6 inches above the ground level for field grown trees or above the soil line for container grown trees (the one-half inch minimum size may be an average caliper measure, recognizing that trees are not uniformly round), unless they are oak or madrone which may be one gallon size. Shrubs shall be in at least a 1-gallon container or the equivalent in ball and burlap and shall be at least 12 inches in height.
 - (k) **Plant spacing.** Trees shall be planted between 8 and 12 feet on-center and shrubs shall be planted between 4 and 5 feet on-center, or clustered in single species groups of no more than four (4) plants, with each cluster planted between 8 and 10 feet on-center. When planting near existing trees, the drip line of the existing tree shall be the starting point for plant spacing measurements.
 - (l) **Plant diversity.** Shrubs shall consist of at least two (2) different species. If 10 trees or more are planted, then no more than 50% of the trees may be of the same genus.
 - (m) **Nuisance plants.** Any nuisance plants listed in (B)(7) above shall be removed within the mitigation area prior to planting.
 - (n) **Planting schedule.** The planting date shall occur within one year following the approval of the application.
 - (o) **Monitoring and reporting.** Monitoring of the mitigation site is the ongoing responsibility of the property owner. Plants that die shall be replaced in kind so that a minimum of 80% of the trees and shrubs planted shall remain alive on the fifth anniversary of the date that the mitigation planting is completed.
- (6) For Protected Aggregate and Mineral (PAM) resources within a PAM subdistrict, the applicant shall submit a Wildlife Conservation Plan which must comply only with measures identified in the Goal 5 protection program that has been adopted by Multnomah County for the site as part of the program to achieve the goal.
- (D) Optional Development Impact Area (DIA). For the purpose of clustering home sites together with related development within the SEC-h overlay, an applicant may choose to designate an area around the home site for future related development and site clearing. For the purposes of establishing the ap-

appropriate mitigation for development within the DIA, existing vegetation within the DIA is presumed to be ultimately removed or cleared in the course of any future development within the DIA. Establishment of a DIA is subject to all of the applicable provisions in MCC 33.4570 and the following:

- (1) The maximum size for a DIA shall be no greater than one acre, excluding from this total the area of the minimum necessary accessway required for fire safety purposes.
- (2) Any required mitigation for the DIA site under an approved wildlife conservation plan shall be completed within one year of the final approval of the application.
- (3) The DIA shall contain an existing habitable dwelling or approved dwelling site.
- (4) No more than one DIA is permitted per Lot of Record.
- (5) The DIA can be any shape, but shall be contiguous and shall fit within a circle with a maximum diameter of 400 feet.
- (6) For new dwellings that will be located on a Lot of Record that does not currently contain a dwelling, the DIA should be located within 200 feet of a public road or in the case of properties without road frontage, as close as practicable (accounting for required setbacks and fire safety zones) to the entry point of the vehicular access serving the property.
- (7) No part of a DIA may be located in an SEC-s subdistrict, mapped wetland, or flood hazard zone.
- (8) All development within the DIA is subject to all development criteria in effect for the underlying zone and overlay zones at the time of development. Approval of a DIA does not preclude the applicant's responsibility to obtain all other required approvals.
- (9) Once a DIA is approved and all pre-development conditions of approval are met,

development within the DIA may commence at anytime thereafter provided the applicable approval criteria of MCC 33.4570 are the same as the criteria under which the DIA was originally approved. This provision does not waive the approval timeframe and/or expiration of any other permit approvals.

(Ord. 1222, Amended, 08/20/2015; Ord. 1198, Amended, 03/14/2013; Ord. 1187, Amended, 11/17/2011; Ord. 1079, Amended, 07/27/2006; Ord. 997, Repealed and Replaced, 10/31/2002; Ord. 953 §2, Reorg&Renum, 11/30/2000)

§ 33.4575 CRITERIA FOR APPROVAL OF SEC-S PERMIT -STREAMS

(A) Definitions:

(1) *Protected Streams* Those streams which have been found through a Goal 5 ESEE analysis and protected by Ordinance 830 and those streams and wetlands mapped by Metro's Title 13 as Habitat Conservation Areas as modified through the planning process are designated SEC-s on the Multnomah County Zoning Maps.

(2) *Development* – Any act requiring a permit stipulated by Multnomah County Ordinances as a prerequisite to the use or improvement of any land, including a building, land use, occupancy, sewer connection or other similar permit, and any associated grading or vegetative modifications.

(3) *Stream Conservation Area* – For the protected streams originally designated by Ordinance 830 (West Hills Rural Area Plan), the Stream Conservation Area designated on the zoning maps as SEC-s is an area which extends 300 feet from the centerline on both sides of the protected stream. Within Metro's jurisdictional boundaries, the Stream Conservation Area protected by Ordinance 1152, adopted January 7, 2010, varies and shall be as depicted on the Multnomah County Zoning Maps and is from the centerline on both sides of the protected stream for the width of the mapped overlay.

(4) *Nuisance or Invasive Non-Native Plants:* Nuisance and invasive non-native plants include the those plants listed in the latest edition of the Metro Nuisance Plant List and the Prohibited Plant List, and include those plants listed in the latest edition of the State of Oregon Noxious Weed List.

(B) Except for the exempt uses listed in MCC 33.4515, no development shall be allowed within a Stream Conservation Area unless approved by the Approval Authority pursuant to the provisions of MCC 33.4575 (C) through (F).

(C) In addition to other SEC Permit submittal requirements, any application to develop in a Stream Conservation Area shall also include:

(1) A site plan drawn to scale showing the Stream Conservation Area boundary, the location of all existing and proposed structures, roads, watercourses, drainageways, stormwater facilities, utility installations, and topography of the site at a contour interval equivalent to the best available U.S.Geological Survey 7.5' or 15' topographic information;

(2) A detailed description and map of the Stream Conservation Area including that portion to be affected by the proposed activity. This documentation must also include a map of the entire Stream Conservation Area, an assessment of the Stream Conservation Area's functional characteristics and water sources, and a description of the vegetation types and fish and wildlife habitat;

(3) A description and map of soil types in the proposed development area and the locations and specifications for all proposed draining, filling, grading, dredging, and vegetation removal, including the amounts and methods;

(4) A study of any flood hazard, erosion hazard, and/or other natural hazards in the proposed development area and any proposed protective measures to reduce such hazards as required by (E) (5) below;

(5) A detailed Mitigation Plan as described in subsection (D), if required; and

(6) A description of how the proposal meets the approval criteria listed in subsection (D) below.

(D) For the protected stream resources, the applicant shall demonstrate that the proposal:

(1) Will enhance the fish and wildlife resources, shoreline anchoring, flood storage, water quality and visual amenities characteristic of the stream in its pre-development state, as documented in a Mitigation Plan. A Mitigation Plan and monitoring program may be approved upon submission of the following:

(a) A site plan and written documentation which contains the applicable information for the Stream Conservation Area as required by MCC 33.4575 (C);

(b) A description of the applicant's coordination efforts to date with the requirements of other local, State, and Federal agencies;

(c) A Mitigation Plan which demonstrates retention and enhancement of the resource values addressed in MCC 33.4575 (D) (1);

(d) An annual monitoring plan for a period of five years which ensures an 80 percent annual survival rate of any required plantings.

(E) Design Specifications

The following design specifications shall be incorporated, as appropriate, into any developments within a Stream Conservation Area:

(1) A bridge or arched culvert which does not disturb the bed or banks of the stream and are of the minimum width necessary to allow passage of peak winter flows shall be utilized for any crossing of a protected streams.

(2) All storm water generated by a development shall be collected and disposed of on-site into dry wells or by other best management practice methods which emphasize groundwater recharge and reduce peak stream flows.

(3) Any exterior lighting associated with a proposed development shall be placed, shaded or screened to avoid shining directly into a Stream Conservation Area.

(4) Any trees over 6" in caliper that are removed as a result of any development shall be replaced by any combination of native species whose combined caliper is equivalent to that of the trees removed.

(5) Satisfaction of the erosion control standards of MCC 33.5520.

(6) Soil disturbing activities within a Stream Conservation Area shall be limited to the period between June 15 and September 15. Revegetation/soil stabilization must be accomplished no later than October 15. Best Management Practices related to erosion control shall be required within a Stream Conservation Area.

(7) Demonstration of compliance with all applicable state and federal permit requirements.

(F) For those Stream Conservation Areas located within Metro's jurisdictional boundaries, the following requirements apply in addition to (C) through (E) above:

(1) The planting of any invasive non-native or noxious vegetation as listed in MCC 33.4570(B)(7) and MCC 33.4570(A)(4) is prohibited. A list of native plants can be found in the latest edition of the Metro Native Plant List.

(2) Outside storage of hazardous materials as determined by DEQ is prohibited, unless such storage began before the effective date of this ordinance; or, unless such

storage is contained and approved during development review.

(G) For Protected Aggregate and Mineral (PAM) resources within a PAM subdistrict, the Mitigation Plan must comply only with measures identified in the Goal 5 protection program that has been designated for the site.

(Ord. 1152, Amended, 01/07/2010; Ord. 997, Repealed and Replaced, 10/31/2002; Ord. 953 §2, Reorg&Renum, 11/30/2000)