

**Spokane County, Washington**

## ***Critical Areas Ordinance***

**for the Protection of Wetlands, Fish and Wildlife Habitats,  
Geo-hazard Areas and Critical Aquifer Recharge Areas**

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*This ordinance may be purchased at the above address for a nominal fee. This ordinance is also available at the above Web Site.*

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**SPOKANE COUNTY**

**Spokane County Code**  
**Chapter 11.20**  
**CRITICAL AREAS ORDINANCE**  
For the Protection of Wetlands, Fish and Wildlife Habitats,  
Geo-hazard Areas and Critical Aquifer Recharge Areas

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## **11.20.010 - TITLE, PURPOSE AND INTENT**

### **Sections:**

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### **A. Title**

This Ordinance shall be known and may be cited as the "Critical Areas Ordinance for the Protection of Wetlands, Fish and Wildlife Habitats, Geo-hazard Areas and Critical Aquifer Recharge Areas."

### **B. Purpose**

The purpose of this Ordinance is to implement the overall critical areas goals, and the specific goals and policies for wetlands, fish and wildlife habitat, geo-hazard areas, and critical aquifer recharge areas contained in the Spokane County Comprehensive Plan, Chapter 10 Natural Environment and Chapter 36.70A RCW, Growth Management Act of the State of Washington. The specific goals for wetlands, fish and wildlife habitat, geo-hazard areas, and critical aquifer recharge areas are listed in each section. Goals for frequently flooded areas are listed in the Spokane County Comprehensive Plan and implemented by the Spokane County Code Chapter 3.20, Flood Damage Protection, also referred to as the "Flood Ordinance," or as amended. Furthermore, it is expressly the purpose of this Ordinance to protect the health, safety and welfare of the general public.

### **C. General Purpose of this Ordinance**

In addition to the purpose set forth in Section 11.20.010(B), the following are general purposes of this Ordinance.

1. To protect the public health, safety and welfare by preserving, protecting, restoring and managing through the regulation of development and other activities within wetland, fish and wildlife habitat conservation areas, geologically hazardous areas and critical aquifer recharge areas.
2. To recognize wetlands, fish and wildlife habitat conservation areas geologically hazardous areas and critical aquifer recharge areas as important natural resources which provide significant environmental functions and values including: vital importance to critical fish and wildlife habitat, surface and ground water quality, aquifer recharge, flood control, shoreline anchorage and erosion control, scientific research and education, open space, aesthetic values, historic and cultural preservation, passive recreation and contribute to quality of life currently enjoyed by citizens of Spokane County.

3. To maintain consistency with County, state and federal protective measures, utilizing the Best Available Science to support policies and regulations to protect the functions and values of critical areas.
4. To avoid duplication and over-regulation by limiting regulatory applicability to those development and activities with significant impacts.
5. To minimize impacts of regulation on private property rights.
6. To identify and protect wetlands, fish and wildlife habitat conservation areas, geologically hazardous areas and critical aquifer recharge areas without violating any citizen's constitutional rights.
7. To alert appraisers, assessors, owners and potential buyer or lessees of property to the development limitation within wetlands, fish and wildlife habitat conservation areas and geologically hazardous areas.
8. To prevent degradation of critical aquifer recharge areas.
9. Strive to achieve no net loss of critical areas functions and values, including fish and wildlife habitat.

**D. Intent**

1. The intent of these regulations is to avoid or, in appropriate circumstances, to minimize, rectify, reduce, or compensate for impacts arising from land development and other activities affecting wetlands, fish and wildlife habitat conservation areas, geologically hazardous areas and critical aquifer recharge areas; and to maintain and enhance the biological and physical functions and values of these areas.
2. When avoiding impacts to wetlands is not reasonable, mitigation shall be implemented to achieve no net loss of wetlands in terms of acreage, function, and value.
3. It is recognized that land development will not always be compatible with preservation of fish and wildlife and their habitats. Some wildlife will be eliminated as development occurs. It is the intent of these regulations to preserve wildlife when possible through thoughtful planning and consideration of wildlife needs.
4. It is the intent of these regulations to allow development in geo-hazard areas only when hazards can be mitigated to protect the public health, safety and general welfare.
5. In addition, the intent of these regulations is to recognize that property rights and public services are an essential component of our legal and economic environment. Where such rights and public services are seriously compromised by the regulations contained in this Ordinance, impacts may be permitted provided there is appropriate mitigation.



## 11.20.020 - DEFINITIONS

For the purposes of this chapter, the following definitions shall apply:

For the purposes of definitions related to Fish & Wildlife Habitat & Species Conservation Areas, see Section 11.020.060

**Activity or Activities:** See "Regulated Activity".

**Agricultural Activities:** Those activities conducted on lands defined in RCW 84.34.020(2), or as amended, which are either (a) lands in any contiguous ownership of twenty or more acres (i) devoted primarily to the production of livestock or agricultural commodities for commercial purposes, or (ii) enrolled in the federal conservation reserve program or its successor administered by the United States Department of Agriculture; (b) any parcel of land five acres or more but less than twenty acres devoted primarily to agricultural uses, which has produced a gross income from agricultural uses equivalent to one hundred dollars or more per acre per year for three of the five calendar years preceding the date of application for classification under this chapter; or (c) any parcel of land of less than five acres devoted primarily to agricultural uses, which has produced a gross income from agricultural uses equivalent to one thousand dollars or more per acre per year for three of the five calendar years preceding the date of application for classification under this chapter. Agricultural lands shall also include farm wood lots of less than twenty and more than five acres and the land on which appurtenances necessary to the production, preparation or sale of the agricultural products exist in conjunction with the lands producing such products.

Agricultural lands shall also include any parcel of land of one to five acres, which is not contiguous, but which otherwise constitutes an integral part of farming operations being conducted on land qualifying under this section as "farm and agricultural lands."

Agricultural activities shall also include those existing and ongoing activities involved in the production of crops or livestock; for example, the operation and maintenance of farm and stock ponds or drainage ditches, operation and maintenance of ditches, irrigation drainage ditches, changes between agricultural activities and normal maintenance, repair, or operation of existing serviceable structures, facilities, or improved areas. Activities which bring an area into agricultural use are not part of an ongoing operation. An operation ceases to be ongoing when the area on which it is conducted is converted to a non-agricultural use or has lain idle for more than five years, unless the idle land is registered in a federal or state soils conservation program, or unless the activity is maintenance of irrigation ditches, laterals, canals, or drainage ditches related to an existing and ongoing agricultural activity. Forest practices are not included in this definition.

**Applicant:** A person who files an application for permit under this chapter and who is either the owner of the land on which that proposed Regulated Activity would be located or is the authorized agent of the owner.

**Best Available Science:** Current scientific information used in the process to designate, protect, or restore critical areas, which is derived from a valid scientific process as defined by WAC 365-195-900 through 365-195-925. Sources of the best available science are included in *Citations of Recommended Sources of Best Available Science for Designating and Protecting Critical Areas*, or as amended, published by the Washington State Department of Community, Trade and Economic Development.

**Biosolids:** Municipal sewage sludge that is a primary organic, semi-solid product resulting from the wastewater treatment process, that can be beneficially recycled and meets all applicable requirements

under WAC Chapter 173-308. Biosolids includes material derived from biosolids, and septic tank sludge, also known as septage, that can be beneficially recycled and meets all applicable requirements under WAC Chapter 173-308. For the purpose of this rule, semisolid products include biosolids or products derived from biosolids ranging in character from mostly liquid to fully dried solids.

**Board:** The Board of Spokane County Commissioners.

**Buffer Area:** A designated area along the perimeter of a wetland, fish and wildlife habitat or other critical area which is regulated to minimize impacts of adjacent activities and uses from intruding into the critical area.

**Building Envelope:** An area where regulated activities and uses are confined.

**Compensatory Mitigation:** Replacing project-induced wetland losses or impacts, and includes, but is not limited to, the following:

- a. Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former or degraded wetland. For the purpose of tracking net gains in wetland acres, restoration is divided into **b** and **c**:
- b. Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former wetland. Re-establishment results in a gain in wetland acres (and functions). Activities could include removing fill material, plugging ditches, or breaking drain tiles.
- c. Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural or historic functions of a degraded wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres. Activities could involve breaching a dike to reconnect wetlands to a floodplain or return tidal influence to a wetland.
- d. Creation (Establishment): The manipulations of the physical, chemical, or biological characteristics present to develop a wetland on an upland or deepwater site where a wetland did not previously exist. Establishment results in a gain in wetland acres. Activities typically involve excavation of upland soils to elevations that will produce a wetland hydroperiod, create hydric soils, and support the growth of hydrophytic plant species.
- e. Enhancement: The manipulation of the physical, chemical, or biological characteristics of a wetland site to heighten, intensify, or improve specific function(s) or to change the growth stage or composition of the vegetation present. Enhancement is undertaken for specified purposes such as water quality improvement, flood water retention, or wildlife habitat. Enhancement results in a change in some wetland functions and can lead to a decline in other wetland functions, but does not result in a gain in wetland acres. Activities typically consist of planting vegetation, controlling non-native or invasive species, modifying site elevations or the proportion of open water to influence hydroperiods, or some combination of these activities.
- f. Protection/Maintenance (Preservation): Removing a threat to, or preventing the decline of, wetland conditions by an action in or near a wetland. This includes the purchase of land or easements, repairing water control structures or fences, or structural protection such as repairing a barrier island. This term also includes activities commonly associated with the term *preservation*. Preservation does not result in a gain of wetland acres, may result in a gain in functions, and will be used only in exceptional circumstances.

**Critical Aquifer Recharge Areas:** Areas with a critical recharging effect on aquifers used for potable water, including areas where an aquifer that is a source of drinking water is vulnerable to contamination that would affect the potability of the water, or is susceptible to reduced recharge.

**Critical Areas:** Critical areas include the following areas and ecosystems: (a) Wetlands; (b) areas with a critical recharging effect on aquifers used for potable water; (c) fish and wildlife habitat conservation areas; (d) frequently flooded areas; and (e) geologically hazardous areas. "Fish and wildlife habitat conservation areas" does not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of and are maintained by a port district or an irrigation district or company.

**Critical Material (Critical Material List):** A substance present in sufficient quantity that its accidental or intentional release would result in the impairment of one or more of the beneficial uses of aquifer water. Current beneficial uses of aquifer water include, but are not limited to, domestic and industrial water supply, agricultural irrigation, stock watering and fish raising. The Critical Materials List is set forth in Chapter 3.15, as amended, of the Spokane County Code. The list includes the names of specific chemicals and classes of chemicals which, based on current criteria and standards, are known to affect the beneficial use of water.

**Critical Materials Handbook:** A document prepared specifically to assist in the administration of this Chapter, containing examples of best management practices, which may be employed to meet the performance standards of this Chapter, as associated with Critical Materials.

**Critical Materials Use Activity:** An activity or land use which has been determined to use, transport or store a critical material.

**Dedication:** Conveyance of land to the County or other not-for-profit entity by deed or other instrument of conveyance.

**Degraded Wetland:** A wetland altered through impairment of some physical or chemical property which results in reduction of one or more wetland functions and values.

**Density Transfer:** The process of transferring all or some portion of the amount of development associated with a site to another portion of the site.

**Department:** The Public Works Department of Spokane County.

**Developable Area:** Land outside of wetlands, wetland buffers or any other restricted area on a particular piece of property.

**Development:** Any construction or expansion of a building, structure, or use; any change in use of a building or structure or changes in the use of land that require a development permit from the County.

**Director:** The official of Spokane County designated to carry out the planning functions pursuant to RCW 36.70 and RCW 36.70A or his/her authorized designee.



**Documented Habitat:** Habitat where endangered, threatened, sensitive species or species of local importance have been "documented" or are known to exist as confirmed by state or federal agencies.

**Ecosystem:** A dynamic and interrelating complex of plant and animal communities and their associated environment.

**Emergent Wetland:** A wetland with at least 30 percent of the surface area covered by erect, rooted, herbaceous wetland vegetation as the uppermost vegetative strata.

**Enforcement Authority:** All Divisions of Spokane County Public Works, as applicable.

**Enhancement:** See "Compensatory mitigation."

**Erosion:** The wearing away of the ground surface as a result of mass wasting or the movement of wind, water, soil and/or ice.

**Exotic:** Any species of plants or animals which are foreign to the planning area.

**Extraordinary Hardship:** The strict application of the provisions of this ordinance and/or rules adopted to implement this ordinance would prevent all reasonable use of the property.

**Fish and Wildlife Habitat Conservation Areas:** Areas that serve a critical role in sustaining needed habitats and species for the functional integrity of the ecosystem, and which, if altered, may reduce the likelihood that the species will persist over the long term. These areas may include, but are not limited to, rare or vulnerable ecological systems, communities, and habitat or habitat elements including seasonal ranges, breeding habitat, winter range, and movement corridors; and areas with high relative population density or species richness.

Fish and wildlife habitat conservation areas include:

- a. Areas with which primarily endangered, threatened and candidate species have a primary association and;
- b. Habitats and species of local importance;
- c. Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish or wildlife habitat;
- d. Waters of the state;
- e. Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity; or
- f. State natural area preserves and natural resources conservation areas;
- g. Wildlife corridors and landscape linkages;
- h. Candidate and monitored species;
- i. Priority habitats and areas in which priority species have a primary association as identified by the Department of Wildlife (WDFW) in the priority habitat and species lists; priority habitats as identified by WDFW, are areas with one or more of the following attributes: comparatively high wildlife density, high wildlife species richness, significant wildlife seasonal ranges, wildlife travel corridors, limited availability and/or highly vulnerable habitat. Priority habitats in Spokane County include wetlands, riparian areas, urban natural open space, shrub steppe, moose habitat, elk habitat, white tail deer winter range, cavity nesting duck habitat, water fowl habitat, cliff/bluff, old growth and mature forest, and aspen stands.
- j. Fish and wildlife habitat conservation areas do not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or

drainage ditches that lie within the boundaries of and are maintained by a port district or an irrigation district or company.

**Forested Wetland:** A wetland area with at least 30 percent of the surface area covered by woody vegetation greater than 20 feet in height and at least ¼ acre in size or comprise at least 10% of the total area of the wetland.

**Forest Practice:** Any activity conducted on or directly pertaining to forestland relating to growing, harvesting, or processing timber, including but not limited to:

- a. Road and trail constructions;
- b. Harvesting, final and intermediate;
- c. Pre-commercial thinning;
- d. Reforestation;
- e. Fertilization;
- f. Prevention and suppression of diseases and insects;
- g. Salvage of trees; and
- h. Brush control.
- i. Forest practice shall not include preparatory work such as tree marking, surveying and road flagging, and removal or harvesting or incidental vegetation from forest lands such as berries, ferns, greenery, mistletoe, herbs, mushrooms, and other products which cannot normally be expected to result in damage to forest soils, timber, or public resources (RCW 76.09.020(8)).



**Forest Practice Class 4:** As defined by the Forest Practice Act WAC 222-16-030, or as amended.

**Functions "Beneficial Functions," or "Functions and Values":** The beneficial roles served by wetlands including, but not limited to, water quality protection and enhancement, fish and wildlife habitat, food chain support, flood storage, conveyance and attenuation, groundwater recharge and discharge, erosion control, wave attenuation, historical and archaeological and aesthetic value protection, and recreation. These beneficial roles are not listed in order of priority.

**Geologically Hazardous Areas:** Areas that, because of their susceptibility to erosion, sliding, earthquake, or other geological events, are not suited to siting commercial, residential, or industrial development consistent with public health or safety concerns.

**Grading:** Excavation or fill or any combination thereof, including, but not limited to, the establishment of a grade following the demolition of a structure or preparation of a site for construction or development.

**Hearing Body:** The individual, committee, or agency designated by the Board of County Commissioners to conduct public hearings and render decisions on subdivisions, amendments, special permits, conditional uses, appeals and other matters as set forth in the Spokane County Zoning Code.

**High Quality Vegetative Buffer:** A wetland buffer comprised of multi-level dense native vegetation including shrubs.

**Hydric Soil:** Soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper part. The presence of hydric soil shall be determined following the methods described in Corps of Engineers Regional Supplement to the Corps of

Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) or as amended; U.S. Army Corps of Engineers September 2008 and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) or as amended; and United States Department of Agriculture, Natural Resources Conservation Service. 2010. Field Indicators of Hydric Soils in the United States Version 7.0 L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils, or as amended.

**Hydrophytic Vegetation:** Macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content. The presence of hydrophytic vegetation shall be determined following the methods described in the Washington State Wetlands Identification and Delineation Manual (1997), or as amended, and the Corp of Engineers Arid West Interim Regional Supplement (2007), or as amended.

**In-kind Mitigation:** The restoration or replacement of a wetland with hydrogeomorphic characteristics closely approximating those of a specified wetland.

**Isolated Wetlands:** Those wetlands which:

- a. Are outside of and not contiguous to any 100-year floodplain of a lake, river, or stream; and
- b. Have no contiguous hydric soil or hydrophytic vegetation between the wetland and any surface water.

**Landscape Linkage:** A movement corridor in which the complete range of community and ecosystem processes continue to operate through time. Plants and small animals are able to move between larger landscapes over a period of generations.

**Maintenance:** See definition of "Repair or maintenance."

**Mitigation:** The use of any or all of the following actions listed in descending order of preference:

- a. Avoiding the impact altogether by not taking a certain action or parts of an action;
- b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
- c. Rectifying the impact by repairing, rehabilitating or restoring the affected environment;
- d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
- e. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; or
- f. Monitoring the impact and the compensation project and taking appropriate corrective measures. Mitigation may include a combination of the above measures.

**Monitoring:** A periodic evaluation of a wetlands restoration, creation or enhancement site to determine changes at the site, such as vegetation growth, hydrologic changes, and soil development, use of the site by birds and animals.

**Native Vegetation:** Vegetation on a site or plant species which are indigenous to the area in question; or if the site has been cleared, species of a size and type that were on the site or reasonably could have been expected to have been found on the site at the time it was cleared.

**Non-Conforming Development:** A use or structure which was lawfully constructed or established prior to the effective date of this ordinance or amendments thereto, but which does not conform to present regulations or standards contained in this ordinance.

**Noxious Weeds:** Those plants which are non-native, highly destructive and competitive as defined by RCW 17.10, or as amended.

**Off-Site Mitigation:** Restoration or replacement of a wetland within its primary drainage basin, but not adjacent to the site on which a wetland has been or will be degraded. Locations within the County will be given preference over those outside the County.

**On-Site Mitigation:** Restoration or replacement of wetland at or very near the site where a wetland has been or will be degraded by a regulated activity.

**Open Water Component:** Wetlands having any areas of standing water present for more than one month at any time of the year without emergent, scrub-shrub, or forested vegetation. Open water includes any aquatic beds.

**Ordinary High Water Mark:** That mark on streams, lakes or water bodies that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in normal years, as to mark on the soil a character distinct from that of the abutting upland in respect to vegetation.

**Out-Of-Kind Mitigation:** The restoration or creation of a wetland with hydrogeomorphic characteristics not resembling those of a specified wetland.

**Owner:** Any person having title to, a substantial beneficial proprietary interest in, or control of a building or property, including but not limited to a lessee, guardian, receiver or trustee, and the owner's duly authorized agent.

**Person:** A natural person, his/her heirs, executors, administrators or assignees, or a firm, partnership or corporation and its or their successors and assignees, or a governmental entity.

**Person Aggrieved:** A corporation, company, association, society, firm, partnership or joint stock company, as well as an individual, a state, and all political subdivisions of a state or any agency or instrumentality thereof, not in agreement with a decision made by the Department or Hearing Body.

**Placeholder:** An area designated by the Washington State Department of Health to hold the place of a wellhead protection area for a well until completion of the wellhead protection plan.

**Pollution:** Such contamination, or other alteration of the physical, chemical or biological properties of wetlands, or such discharge of any liquid, gaseous, solid, radioactive or other substance into wetlands as will or is likely to cause a nuisance or render such wetlands harmful, detrimental or injurious to the public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses, or to livestock, wildlife, fish, native vegetation or other aquatic life.

**Practical Alternative:** An alternative that is available and capable of being carried out after taking into consideration cost, existing technology, and logistics in light of overall project purposes, and having fewer impacts to wetlands. It may involve using an alternative site in the general region that is available to the applicant and may feasibly be used to accomplish the project.

**Primary Drainage Basin:** The basin of the stream or tributary within which a project is proposed, not including basins of major tributaries. For the purpose of this regulation: the primary drainage basin of Latah Creek is not a part of the primary drainage basin of the Spokane River; the primary drainage basin of Marshall Creek is not a part of the primary drainage basin of Latah Creek.

**Priority Habitats and Species:** A fish or wildlife habitat or species that has been identified by the Washington State Department of Fish and Wildlife in the Priority Habitat and Species Program or by Spokane County as a species of local importance.

**Publicly Owned Treatment Works (POTW):** A treatment works treating domestic sewage that is owned by a municipality, a county, the state of Washington, or the federal government.

**Qualified Biologist:** The holder of a B.S. or B.A. or equivalent degree in biology from an accredited university, and at least two years of field and/or laboratory experience in evaluation of land use impacts on fish and wildlife species and their habitats, with evidence of peer-reviewed publications or other related professional literature.

**Qualified Erosion or Landslide Specialist:** An individual or team that has both the academic qualifications and field experience to implement the provisions of this ordinance.

**Qualified Geologist:** A Washington State licensed geologist or hydro-geologist, or a geologist from another state with a license recognized by the State of Washington.

**Qualified Professional:** For the purposes of water typing, means a person with a Bachelor of Science degree in Forestry, Wildlife, Ecology, or a related field and trained in the State of Washington water typing system as provided by Washington State Department of Natural Resources.

**Qualified Wetland Specialist:** A holder of a Society of Wetland Scientists (SWS) certification or has the equivalent in academic qualifications and field experience for making competent wetland delineation's, reports, and recommendations necessary to implement the provisions of this ordinance.

**Regulated Activity:** Any of the activities which are directly undertaken or originate in a critical area or its buffer as provided for in Sections 11.20.030, 11.20.050, and 11.20.075 of this ordinance.

**Repair or Maintenance:** Repair means to restore a development to its original condition within a reasonable period after decay or partial destruction except where repair involves total replacement which is not common practice or causes substantial adverse effects to the resource or environment; maintenance means those usual acts to prevent a decline, lapse or cessation from a lawfully established condition. Repair and maintenance also includes vegetation management or repair of structures used to provide electricity, natural gas, and/or other utility services to the public in existing utility rights-of-way.

**Residential Development:** Only single-family, two-family, multifamily, manufactured and mobile home, community residential facility, community treatment facility, dormitory, fraternity and sorority, as defined in the Spokane County Zoning Code, or as amended.

**Restoration:** See "Compensatory mitigation".

**Riparian:** Riparian areas are transitional between terrestrial and aquatic ecosystems and are distinguished by gradients in biophysical conditions, ecological processes, and biota. They are areas through which surface and subsurface hydrology connect water bodies with their adjacent uplands. They include those portions of terrestrial ecosystems that significantly influence exchanges of energy and matter with aquatic ecosystems (i.e. a zone of influence). Riparian areas are adjacent to perennial, intermittent, and ephemeral streams, lakes, and estuarine-marine shorelines.



**Scrub-Shrub Wetland:** An area of vegetated wetland with at least 30 percent of its surface area covered by woody vegetation less than 20 feet in height as the uppermost strata.

**Serviceable:** Presently usable.

**Site:** Any lot or parcel of land or contiguous combination thereof, where activities are proposed, performed or permitted.

**Subject Property:** The site where an activity requiring a permit or approval under this ordinance will occur.

**Unavoidable and Necessary Impacts:** Impacts to wetlands that remain after an applicant for a wetland permit has demonstrated that no practicable alternative exists for the proposed project.

**Urban Growth Area (UGA):** Areas within which urban growth shall be encouraged and outside of which growth can occur only if it is not urban in nature as defined in RCW 36.70A.110.

**Utilities:** Enterprises or facilities serving the public by means of an integrated system of collection, transmission, distribution, and processing facilities through more or less permanent physical connections between the plant of the serving entity and the premises of the customer. Included are systems for the delivery of natural gas, electricity, telecommunications services, and water, and for the disposal of sewage.

**Vegetative Classes:** Certain types of wetlands plant vegetation as defined by the Washington State Wetlands Rating System for Eastern Washington (2004), or as amended, and must be at least ¼ acre in size or comprise at least 10% of the entire wetland.

**Vernal Wetland System:** Seasonal depressional wetlands typically occurring high in the drainage that derive their hydrology from rainfall and snow and a small immediate watershed. Vernal systems are formed as a result of accumulation of surface water in an isolated basin that at no time of the year would have a natural inlet or outlet and water is entirely absent from the surface part of the year.

**Water Dependent:** A use which cannot exist in any other location and is dependent on the water by reason of the intrinsic nature of its operations; such as, but not limited to, bridges, marinas, dams for domestic/industrial water supply, flood control, and/or hydroelectric production; water diversion structures and facilities for water supply, irrigation and/or fisheries enhancement; flood water and drainage pumping plants and facilities; hydroelectric generating facilities and appurtenant structures; structural and nonstructural flood damage reduction facilities, and stream bank stabilization structures and practices.

**Water Types:** Water Typing System established by WAC 222-16-031 or as amended and implemented by Washington State Department of Natural Resources for classifying streams, lakes and ponds as Type S Water (Shorelines of the State), Type F Water (Fish), Type Np Water (Nonfish perennial), Ns (Nonfish seasonal) see section 11.20.060(1)(h).

**Wetland or Wetlands:** Consistent with RCW 36.70A.030(21), "Wetland" or "wetlands" means areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales,

canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas created to mitigate conversion of wetlands.

**Wetland Banking:** Involves the off-site created, restoration, and/or enhancement of wetlands to compensate for unavoidable wetlands impacts associated with development. The newly created or restored site functions as a 'bank' which can issue credits to compensate for future wetland impacts.

**Wetland Buffer or Wetland Buffer Area:** An area that surrounds and protects a wetland from adverse impacts to the functions and values of a wetland. The buffer width shall be determined according to the rating assigned to the wetland in accordance with Section 11.20.050 of this ordinance. Buffer width is measured outward from the wetland boundary.

**Wetlands Delineation Manual:** The Washington State Wetlands Identification and Delineation Manual (1997), or as amended, the Corp of Engineers Arid West Interim Regional Supplement (2007), or as amended, or any other wetlands delineation adopted or recommended for use by the Washington State Department of Ecology.

**Wetlands Exempt From Regulation:** Those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, landscape amenities (RCW 36.70A.030), and wetlands created by existing and ongoing mining operations.

**Wetlands of Local Significance:** Wetlands evaluated for a higher category utilizing the Washington State Wetlands Rating System for Eastern Washington (2004), or as amended.

**Wetlands Permits:** Any permit, modification, revision or variance issued, conditioned or denied pursuant this ordinance.

**Wetland Types:** Categories of wetlands based on specific attributes such as rarity, sensitivity to disturbance, and functions and consistent with the rating system described in the Washington State Wetlands Rating System for Eastern Washington (2004) or as amended.



**Wildlife Corridor:** A landscape feature that facilitates the biologically effective transport of animals between larger patches of habitat dedicated to conservation functions. Such corridors may facilitate several kinds of traffic, including frequent foraging movements, seasonal migrations, or the once-in-a-lifetime dispersion of juvenile animals. These are transitional habitats and need not contain all the habitat elements required for the long-term survival or reproduction of its migrants.

## 11.20.030 - GENERAL PROVISIONS

### A. Applicability

This ordinance shall apply to all unincorporated areas of Spokane County. No action shall be undertaken by any person that impacts critical aquifer recharge areas or results in any alteration of a wetland, fish and wildlife habitat or geologically hazardous area and their buffer areas as defined in this ordinance, except in conformance with this ordinance. Uses and activities listed in Table 11.20.030A are allowed in wetlands, fish and wildlife habitat areas, geologically hazardous areas and their buffer areas only if: (1) The use or activity is in compliance with the requirements of this ordinance and (2) The use or activity is in compliance with all other applicable provisions of the Spokane County Code. **Uses and activities listed in Critical Aquifer Recharge Areas (CARA) Section 11.20.075 Table 11.20.075B shall conform with requirements in this Ordinance.** In addition, other uses and activities not listed shall not violate the intent of this ordinance.

**TABLE 11.20.030A--ALLOWABLE USES AND ACTIVITIES WITHIN WETLANDS,  
FISH AND WILDLIFE HABITATS AND GEO-HAZARD AREAS**

Uses & Activities Permitted Without County Review	Wetlands & Buffers	Fish and Wildlife Habitats	Geo-Hazard Areas
Passive Recreation, Scientific Research	P	P	P
Agriculture - Existing, On-going	P	P	P
Agriculture Ditch Maintenance	P	P	P
Floating Docks Boat Mooring, Buoys	P	P	P
Conservation Activities	P	P	P
Harvesting of Wild Crops	P	P	P
Noxious Weed Control	P	P	P
Open Space, Natural Area	P	P	P
Road Repair & Maintenance	P	P	P
Signs (interpretive markers)	P	P	P
* Utilities Repair Maintenance	P	P	P
* Diseased Vegetation Removal, Vegetation Removal within 30' of Existing Structure	P	P	P

<b>TABLE 11.20.030A</b>			
<b>Uses and Act. Regulated</b>	<b>Wetlands and Buffers</b>	<b>Fish and Wildlife Habitats</b>	<b>Geo-Hazard Areas</b>
Water Well Pump House, Wild- life Blind, Nesting Structure,	P	P	P
Single Family Residence and Accessory Structures and Decks	L	L	L
Septic Drain field for Single Family Residence	L	P	L
Single Family Private Access Road/Driveway	L	L	L
Building Construction, Institutional, Commercial, Industrial, Recreational	L	L	L
Agriculture Building	L	L	L
Excavation, Filling, Grading < 50 Cubic Yards	L	L	P
Excavation, Filling, Grading, > 50 Cubic Yards	L	L	L
Draining	L	L	NA
Dredging	L	L	NA
Road, Expansion of Existing Corridor Road or Bridge,	L	L	L
Road, New Public or Private, Serving more than 1 Residence	L	L	L
Pedestrian/Bike Trail,	L	L	P
Aquatic Vegetation Management	L	L	NA
Vegetation Removal, non- forest practice	L	L	P
Vegetation Removal, Forest Practice Class I	L	L	P
Vegetation Removal, Forest Practice Class II, III	SP	SP	SP

<b>TABLE 11.20.030A</b>			
<b>Uses and Act. Regulated</b>	<b>Wetlands and Buffers</b>	<b>Fish and Wildlife Habitats</b>	<b>Geo-Hazard Areas</b>
Vegetation Removal, Forest Practice Class IV (general conversions)	L	L	L
Stormwater Detention/Disposal Facility	L	L	L
Utility Facility	L	L	L
Utility Transmission Lines	L	L	L
Radio/TV Towers	L	L	L
Parks, Camps	L	L	L
Golf Course	L	L	L

P = Permitted Without County Review Under This Ordinance

L = Limited Uses. These Uses Are Allowed Provided They Comply With The Standards Of This Ordinance and Applicable Agency Review.

SP = State Permit

NA = Not Applicable

\* = Exempt from new or additional mitigation if all of the following criteria are met:

- a. The operation, maintenance, or repair activities do not require construction permits.
- b. The activity does not further alter or increase impact to or encroach further within the critical area or its associated buffer beyond that allowed in the establishment of the original rights-of-way.
- c. There is no increased risk to life or property as a result of the proposed operation, maintenance, or repair.
- d. Endangered species are not directly impacted.

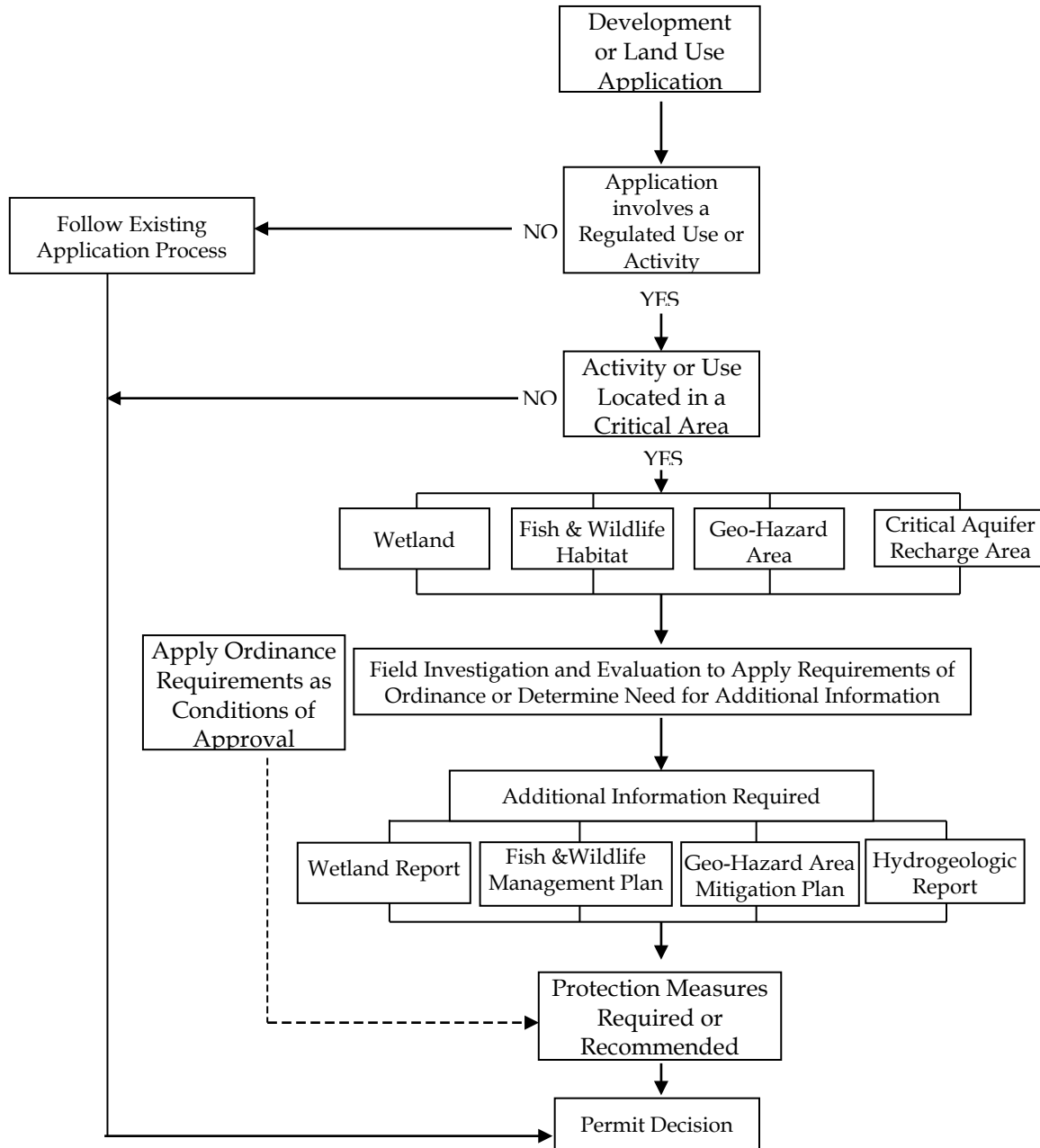
Note: Other uses and activities not listed may be allowed or denied by the Director, subject to the purpose and intent of this ordinance.

## **B. Coordination with Other Permit Processes**

1. This ordinance may require review and/or permit in addition to those otherwise required by County ordinances (e.g., a Hydraulic Project Approval from Washington Department of Fish and Wildlife).
2. The performance standards and other requirements of this ordinance shall be applied to uses and activities shown in Table 11.20.030A or Table 11.20.075B through any permit or approval process otherwise required by County Ordinances.
3. Uses and activities in a critical area or buffer for which no permit or approval is required by any other county Ordinance remain subject to the performance standards and other requirements of this Ordinance.

4. Spokane County may approve, approve with conditions or deny any permit application for a use or activity listed in Table 11.20.030A or Table 11.20.075B in order to comply with the requirements of this Ordinance.
5. This ordinance may be used in conjunction with the Spokane County Flood Ordinance, the Shoreline Management Program for Spokane County, and the Spokane County Erosion and Sediment Control Ordinance, or as amended.

**C. Process-Regulation of Wetlands, Fish and Wildlife Habitats, Geo-hazard Areas and Critical Aquifer Recharge Areas**



NOTE: Appeal process follows route of associated permit. Appeals of administrative decisions regarding provisions of this Ordinance use the administrative appeal process as provided in Section 11.20.030 of the Spokane County Code.

#### **D. Wetland, Fish and Wildlife Habitats, Geo-hazard and Critical Aquifer Recharge Areas Maps**

1. The Spokane County Building and Planning Department maintains maps of wetlands, fish and wildlife habitats, geo-hazard areas, critical aquifer recharge areas, DNR water types, flood hazard and shoreline maps to provide information to the public and to aid in the administration of this Ordinance. The maps are not regulatory in nature.
2. The maps will be used to identify the possible existence of wetlands, fish and wildlife habitats, geo-hazard areas and critical aquifer recharge areas. The maps, in conjunction with site visits and other information, will be used as a basis for requiring field investigations such as wetland reports, fish and wildlife management plans, geo-technical studies and hydrogeologic reports. In the event of a conflict between the information shown on the maps and information shown as a result of field investigations, the latter shall prevail.
3. Additions, corrections, and periodic updates to the maps shall be made when new or additional information is available. Omission of a site from the map will not exempt the site from complying with the provisions of this Ordinance. When an interpretation is needed as to the existence of a wetland, fish and wildlife habitat, geo-hazard area or critical aquifer recharge areas, the Director shall make such determination according to the criteria and characteristics contained in this Ordinance and consultation with an agency or agencies of expertise as deemed appropriate by the Director.

#### **E. Compliance by Owners**

The obligation to comply with any requirements within the scope and provisions of this Ordinance is with the owner of the property or land.





## F. Appeal of an Administrative Decision

The provisions of this section shall apply to any appeal involving an administrative decision on the requirements of this Ordinance.

Any person aggrieved by an administrative decision of this Ordinance may file an appeal by:

1. Following the appeal procedures of the associated application; or
2. If there is no associated application or appeal process, appealing to the Spokane County Hearing Examiner using the following procedures.
  - a. A written notice of appeal shall be filed with the Public Works Division rendering the decision within fourteen (14) calendar days of the written decision.
  - b. A fee shall accompany the notice of appeal equal to the fee charged for appeals of other administrative decision by the Public Works Division rendering the decision.
  - c. Upon receipt of the notice of appeal and the fee, an open record hearing date shall be determined. Notice for the hearing shall be given pursuant to the notice of hearing requirements for appeals of administrative decisions contained in Chapter 13.700 (Notice of Hearing) of the Spokane County Code.
  - d. Notice of the Hearing Examiner's decision on the appeal, or regarding any request for reconsideration, shall be provided by certified mail to the appellant, and by first class mail to parties of record, and to the Public Works Division whose administrative decision was appealed.
  - e. The Hearing Examiner's decision on any appeal shall be final and conclusive, and given the effect of a final decision by the Board of County Commissioners.
  - f. A party with standing may appeal the Hearing Examiner's decision pursuant to section 11.20.030G.





### G. Appeal of a Decision by the Hearing Examiner

1. Appeals of a Hearing Examiner's decision shall be as provided for by the Spokane County Hearing Examiner Ordinance and Chapter 36.70C RCW.
2. Pending completion of all conditions of approval which need to be completed prior to permit issuance, permits can be released prior to the lapse of appeal period; provided, that the County has no liability for expenses, delays, or inconvenience incurred by the applicant if the project/proposal is overturned or altered upon appeal.

### H. Non-conforming Provisions

The provisions of Chapter 14.508 (Non-conforming Uses) of the Spokane County Zoning Code, or as amended, shall apply in determining the non-conforming status of a lot, use, building or structure under the provisions of this Ordinance.

### I. Amendments

An amendment to this Ordinance may be initiated by the Board of County Commissioners, the Planning Commission, the Department or an interested person. Amendments to this Ordinance shall be consistent with the Spokane County Comprehensive Plan. In the case of an amendment initiated by an interested person, the Department shall collect a fee to cover normal processing and the cost of legal notices as identified in the Department Fee Schedule for a "Change in Zoning Code Text". Such an amendment may be adopted, modified or denied by the Board of County Commissioners in accordance with the procedures specified in Section 14.402.080 of the Spokane County Zoning Code, or as amended.

### J. Enforcement/Violation Penalty

1. **Intent.** It is the intent of this Section to provide authority for, and the procedures to be used in, enforcing the provisions of this Ordinance to the end of furthering the purposes and objectives thereof.
2. **Enforcement.**
  - a. It shall be the duty of the Director, except as otherwise provided herein, to interpret and enforce the provisions of this Ordinance and conditions of approval imposed by actions of the Board, Hearing Examiner and/or Building and Planning Department.
  - b. It shall be the duty of other Public Works Divisions to enforce the provisions of this Ordinance or conditions of approval imposed by actions of the Board, Hearing Examiner, or Division as they pertain to the licenses or permits issued or required by their Division.
  - c. The procedures set forth in this section are not exclusive. These procedures shall not in any manner limit or restrict the County from remedying violations or abating violations in any manner authorized by law.
3. **Violation – A Misdemeanor/ Civil Violation.**
  - a. Where violations of this ordinance occur, it shall be the duty of the property owner after notification from the Department to immediately provide any necessary temporary mitigation/stabilization of damaged critical areas to prevent further degradation of the

critical area, pending completion of required permit processes, management or mitigation plans, or similar actions.

- b. Any person, firm or corporation who violates, disobeys, omits, neglects or refuses to comply with, or who resists the enforcement of, any of the provisions of this Ordinance or conditions of approval imposed by actions of the Board, Hearing Examiner or the Enforcement Authority shall be guilty of a misdemeanor and shall be punished by imprisonment in the County Jail for a maximum term fixed by the court of not more than ninety (90) days or by a fine in an amount fixed by the court of not more than one thousand (1,000) dollars, or by both such imprisonment and fine. Each day that a violation is permitted to exist shall constitute a separate offense.
  - c. As an alternative to the above, as determined by the Enforcement Authority, any person, firm or corporation who violates, disobeys, omits, neglects or refuses to comply with, or who resists the enforcement of, any of the provisions of this Ordinance or conditions of approval imposed by actions of the Board, Hearing Examiner or the Enforcement Authority shall be deemed to have committed a civil violation subject to the monetary penalties set forth in section 14.408.140 of the Spokane County Zoning Code , or as amended. Each day that a violation is permitted to exist shall constitute a separate civil violation.
4. **Civil Investigation Procedures.** The Enforcement Authority may initiate an investigation of a violation of this Ordinance in response to a signed written complaint, field observations by a public agency employee in the course of his/her official duties, or other reliable information. Written complaints may be subject to disclosure pursuant to the State Public Disclosure Law.

The following procedures shall apply to an investigation of a violation of this Ordinance.

- a. A physical inspection of the property and/or circumstances identified in the complaint or referral shall be conducted. The physical inspection must comply with legal right of entry requirements, as established by state and constitutional law; and
- b. The Enforcement Authority shall determine, based on information derived from sources such as field observations, the statements of witnesses, relevant documents and applicable County codes, whether a violation has occurred; and
- c. When a violation has been confirmed, a Notice of Investigation shall be mailed to the property owner of record and/or those person(s) who are creating or contributing to the violation. The notice shall



contain those items specified in section 11.20.030(5).

5. **Notice of Investigation - Determination of a Civil Violation.** A Notice of Investigation represents a determination by the Enforcement Authority that a civil violation has been committed. The Notice of Investigation shall include the following.
  - a. A statement that the Notice of Investigation represents a determination by the Enforcement Authority that the person named in the notice has committed a civil violation.
  - b. A statement of the options provided in this Ordinance for responding to the Notice of Investigation and the procedures necessary to exercise these options.
  - c. A statement that the person must respond to the Notice of Investigation and show proof of compliance as provided for in this section within fourteen (14) days.
  - d. A statement that failure to respond to a Notice of Investigation and show proof of compliance may result in a civil violation.
  - e. A statement that a civil violation is a non-criminal offense and a violation thereof is not subject to imprisonment.
  - f. A statement of the specific civil violation for which the Notice of Investigation is being issued.
  - g. A statement of the monetary penalty established for the civil violation.
  
6. **Civil Notice of Violation Procedures.**
  - a. The person(s) to whom a Notice of Investigation is sent, as set forth in section 11.20.030J shall have fourteen (14) days to respond or show proof of compliance. Proof of compliance includes, but is not limited to, entry into a Voluntary Compliance Agreement.
  - b. If proof of compliance is not received within the fourteen (14) day period, the Enforcement Authority may issue a Level I Notice of Violation and assess monetary penalties pursuant to section 14.406.140 of the Spokane County Zoning Code, or as amended;
  - c. The Enforcement Authority may issue a Level II Notice of Violation and assess monetary penalties pursuant to section 14.406.140 of the Spokane County Zoning Code, or as amended if:
    - i. Neither a response nor proof of compliance was received within the fourteen (14) day period from the date of service of a Level I Notice of Violation; or
    - ii. The terms of a Voluntary Compliance Agreement have been violated or have not been met; or
    - iii. Repeat violations have occurred on the same property within an eighteen (18) month period of time.
  - d. For each day the violation continues to exist, after the date of service of a Level II Notice of Violation, cumulative civil penalties may be assessed pursuant to section 14.406.140 of the Spokane County Zoning Code, or as amended.

- e. The Civil Notice of Violation shall contain the required information for a Notice of Violation pursuant to section 14.406.070(5) of the Spokane County Zoning Code, or as amended.
  - f. A copy of the Civil Notice of Violation shall be served upon the person(s) to whom it is directed either personally, or in the manner provided for personal service of notices or complaints in District Court, or by mailing a copy of the Civil Notice of Violation by certified mail, postage prepaid, return receipt requested, to such person at the person's last known address. Proof of personal service shall be made at the time of service by a written declaration under penalty of perjury executed by the person affecting service, declaring time, date and manner by which service was made.
  - g. The Enforcement Authority for good cause shown may extend the date for correction in the Civil Notice of Violation, provided that such an extension shall not affect or extend the time within which an administrative appeal must be commenced.
  - h. A copy of all Civil Notices of Violations may be sent to other agencies if the violation may also be a violation of other agencies' regulations.
  - i. The Enforcement Authority may withdraw or modify a Civil Notice of Violation issued under this section if the original Civil Notice of Violation was issued in error. Such withdrawal or modification shall identify the reasons and underlying facts.
  - j. A Civil Notice of Violation shall carry a monetary penalty pursuant to section 14.406.140 of the Spokane County Zoning Code, or as amended. The payment of monetary penalty does not relieve a person(s) responsibility for correcting a violation.
  - k. The Enforcement Authority may dispense with some or all of the Civil Investigative Procedures and Notice of Investigation procedures and immediately issue a Level II Notice of Violation as set forth in 11.20.030(6)(c); or a Level I or II Notice of Violation for those violations determined to be immediately hazardous to the general public health or safety.
  - l. The procedures set forth in this section are not jurisdictional and failure to meet them in any particular case shall not affect the County's enforcement authority.
  - m. Complainants who provide a mailing address may request information regarding enforcement of a civil violation. The Enforcement Authority shall mail copies of all public records pertaining to the enforcement effort to the complainants that are subject to disclosure under the State Public Disclosure Law.
- 7. Voluntary Compliance Agreement.** Whenever the Enforcement Authority determines that a code violation has occurred or is occurring, the Enforcement Authority shall make reasonable efforts to secure voluntary compliance from the person responsible for the violation. A Voluntary Compliance Agreement may be entered into any time after a Notice of Investigation has been sent to the violator. The agreement shall be in accordance with section 14.406.100 of the Spokane County Code.
- 8. Collection of Civil Violation Monetary Penalty.**
- a. The Enforcement Authority, on behalf of Spokane County, and/or the Prosecuting Attorney is authorized to collect the monetary penalties by any and all appropriate legal means including, but not limited to, commencing appropriate legal proceedings in the Spokane

County District Court Small Claims Department. No further action in an open meeting by the Board is necessary to authorize initiation of any legal action.

b. The monetary penalty is due and payable on the later of:

i. Fourteen (14) days after the service of the Notice of Violation; or

ii. Fourteen (14) days after the service of the Notice of Decision on any appeals.

c. The assessment or payment of monetary penalties does not relieve a person(s) responsible for code compliance of his or her duty to correct the violation, nor does it prevent the assessment of additional monetary penalties so long as the violation continues to exist.

9. **Appeals.** Appeal of a Civil Notice of Violation issued under this section shall be to the Spokane County Hearing Examiner according to the procedures set forth in section 14.406.150 of the Spokane County Zoning Code, or as amended. Decisions made under this section are not subject to the provisions of section 11.20.030F (Appeal of an Administrative Decision).

10. **Judicial Enforcement.** In addition to any other remedy provided for herein, the Prosecuting Attorney, on behalf of Spokane County, may seek enforcement of any provisions of this code by filing an appropriate legal action.



## 11.20.040 - EMERGENCY PERMITS, REASONABLE USE EXCEPTION

### A. Emergency Activities - Temporary Emergency Permit

1. **Criteria for Granting a Temporary Emergency Permit.** Notwithstanding the provisions of this Ordinance or any other laws to the contrary, the Director may issue a temporary emergency wetlands permit or allow regulated uses or activities in a Fish and Wildlife Habitat Conservation Area or Geologically Hazardous Area if:



*45% Slope and Erosion Areas*

- a. The Director determines that an imminent threat to public health, safety or the environment will occur if an emergency permit is not granted; and
- b. The threat or loss may occur before a wetlands permit or Fish and Wildlife Habitat Conservation Area review can be issued or conditioned under the procedures otherwise required by this Ordinance.

2. **Conditions of Emergency Permit.** Any emergency permit granted shall:

- a. Incorporate to the greatest extent practicable the standards and criteria required for non-emergency activities;
- b. Be limited in duration to the time required to complete the authorized emergency activity, not to exceed ninety (90) days without re-application; and
- c. Contact Washington Department of Fish and Wildlife for an emergency Hydraulic Project Approval (HPA) if necessary.



- d. Require the restoration of any wetland, Fish and Wildlife Habitat Conservation Area or Geologically Hazardous Area altered as a result of the emergency activity within ninety days following the emergency repair, or during the growing season after the emergency repair.



**B. Reasonable Use Exception**

**1. Requirements.** If an applicant for a development proposal demonstrates to the satisfaction of the Director that application of the standards of this Ordinance would deny all reasonable use of the property, development as conditioned shall be allowed. The applicant shall pay a fee as determined by the Board which may cover mailing and processing and submit documentation on forms provided by the Department demonstrating all of the following to the satisfaction of the Director:

- a. Reasonable intent to mitigate impacts to critical areas and buffers consistent with the purpose and standards of this Ordinance; and,
- b. Applications of this Ordinance would deny all reasonable use of the property; and,
- c. There is no reasonable use with less impact on the wetland, fish and wildlife habitat or Geo-hazard area; and,
- d. The requested use or activity will not result in any damage to other property and will not threaten the public health, safety or welfare on or off the property; and,
- e. Any alteration to the wetland, fish and wildlife habitat or Geo-hazard area is the minimum necessary to allow for reasonable use of the property; and,
- f. The inability of the applicant to derive reasonable use is not the result of actions by the applicant in subdividing the property or adjusting boundary lines thereby creating the undevelopable condition after the





effective date of this ordinance.

g. Consistency with sections 11.20.050(C)(3)(4) and 11.20.060(H)(I)(J)

2. **Decision.** The Director shall include findings on each of the evaluation criteria listed above in a written decision. The written decision shall be mailed to the applicant and adjacent property owners, including property owners across public rights of way or private easements. The written decision shall include conditions necessary to serve the purposes of the Ordinance and shall provide an appeal procedure as contained in Section 11.210.030F of this Ordinance.





## 11.20.050 - WETLANDS

### Wetland Goals

The following wetland goals are consistent with the Spokane County Comprehensive Plan, Natural Environment Element, or as amended:

1. Ensure "no net loss" of wetland functions, value and quantity as a result of land use activities and establish a long-term goal of measurable gain of wetlands function and value;
2. Establish wetlands management programs that include identification of wetlands and a classification system;
3. Protect and enhance wetlands so that they are able to perform their natural functions and maintain their beneficial values; and
4. For agricultural and forestry activities within a wetland or its buffer area, encourage the use of better management practices and adherence to federal and state laws.

### A. Wetland Reports

When a regulated use or activity (refer to Table 11.20.030A) or other use or activity determined by the Director subject to the purpose and intent of this section, is proposed on a property containing a wetland or wetland buffer area, a wetland report is required. The applicant or proponent shall provide a wetland report, prepared by a Qualified Wetland Specialist, according to the standards found in the 1987 Corps of Engineers Wetlands Delineation Manual and appropriate Regional supplements, including the Arid West Final Regional Supplement and the Western Mountains, Valleys and Coast Regional Supplement, or references found in Appendix A - I, or as amended.

1. **Modifications to Wetland Reports.** The Director shall have the authority to modify the requirements for the wetland report. The wetland report requirement may be modified for lots in existence prior to the effective date of this Ordinance and for lots, tracts or parcels which are equal or greater than five (5) acres in size. A partial or modified determination of a wetland boundary may be approved if the following is provided:
  - a. The owner designates a building envelope(s) on the property which would restrict regulated activities as defined by this Ordinance to an area of the property where no significant effect on the wetland is likely;
  - b. The building envelope(s) shall be recorded on the property with the Spokane County Auditor's Office that contain such restrictions to ensure compliance with this Ordinance;
  - c. A statement shall be recorded on the property which contains the following language "The property is subject to building envelope restrictions which were placed on the property to protect wetland and wetland buffer areas. An actual wetland determination, wetland boundary determination, wetland rating, and wetlands report as provided for in this Ordinance has not been completed and the property owner is subject to the provisions of this Ordinance."

The Director, in modifying the requirement for a wetland report shall consider but not be limited to the following: i) evidence of the wetland location; ii) the proposal and its proximity to the wetland

and wetland buffer areas and its probable environmental impacts; and iii) the proposed use or activity is at least 250 feet from the appropriate wetland boundary.

Where the applicant has provided a delineation of the wetland boundary and/or a mitigation plan consistent with Section 11.20.050(D), the Department shall verify the accuracy of the delineation and/or mitigation plan through consultation with the Washington State Department of Ecology or other agency of expertise as determined by the Department, and may render adjustments to the boundary delineation.

## B. Wetlands Rating System

The following rating system, adapted from the State Department of Ecology publication, Washington State Wetlands Rating System for Eastern Washington (2014), or as amended, together with Wetlands in Washington State Volume 1 and 2 (2005), or as amended, are hereby adopted by reference for the purpose of categorizing wetlands, determining the size of wetland buffers, determining mitigation ratios, and reviewing permits under this Ordinance. In using the rating system, the County will not consider aspen-dominant forested wetlands larger than ¼ acre as Category 1 Wetlands unless they also meet one or more of the criteria for a Category 1 Wetland. Wetland rating categories shall not change due to illegal modifications made by the applicant or with the applicant's knowledge.

1. **Category 1 Wetlands.** Wetlands which are: alkali wetlands, wetlands that are identified by scientists of the Washington Natural Heritage Program (DNR) as high-quality wetlands, bogs and calcareous fens, mature old-growth forested wetlands over 1/4 acre with slow-growing trees, and wetlands that function at a very high level (scores of 22-27 points or more). These wetlands typically are:
  - a. Unique or rare wetland types
  - b. Are more sensitive to disturbance than most wetlands
  - c. Are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime
  - d. Provide a high level of functions
  - e. Documented Wetlands of local significance as adopted according to the process outlined in Section 11.20.050B(5).
  
2. **Category 2 Wetlands.** Wetlands which are: forested wetlands in the floodplains of rivers, mature and old-growth forested wetlands over ¼ acre with fast-growing trees, vernal pools, and wetlands that have function scores between 19-21 points. These wetlands typically are:
  - a. Difficult, though not impossible, to replace
  - b. Provide high levels of some functions
  - c. Documented Wetlands of local significance as adopted according to the process outlined in Section 11.20.050B(5).

3. **Category 3 Wetlands.** Wetlands which are: vernal pools that are isolated, and wetlands with function scores between 16-18 points, may have been disturbed in some way, often smaller and less diverse and/or more isolated in the landscape than Category II wetlands.
4. **Category 4 Wetlands.** Wetlands having the lowest function scores between 9-15 points. These are wetlands capable of being replaced and/or improved and provide some important functions.
5. **Wetlands of Local Significance, Nomination Procedure.** In order to increase the rating of a wetland and adjust buffering requirements accordingly, the following nomination procedure is provided.
  - a. To nominate a wetland of local significance an individual or organization must submit written and/or graphic information to the Department which demonstrates a need for increased protection based on:
    - i. Potential for degradation based on nature or intensity of
    - ii. Surrounding land use;
    - iii. Uniqueness in area;
    - iv. Potential for educational value;
    - v. Benefit to wildlife;
    - vi. Significance for aquifer recharge;
    - vii. Significance for stormwater management and treatment;
    - viii. Others.
  - b. The submittal shall include a wetlands delineation, values and functions assessment and rating meeting the standards of this section.
  - c. A statement requesting category I or category II status for the wetland and any supporting information.
  - d. A statement of support for the nomination signed by the owner of the property on which the wetland is located.
  - e. Submitted proposals will be reviewed for accuracy and effectiveness by the Department staff and other agencies or experts deemed appropriate by the Director.
  - f. A public hearing will be scheduled on complete nominations before the appropriate hearing body.

**C. Wetland Buffer Areas**

**1. Buffer Area Widths.** Wetland buffer areas shall be required for all wetlands adjacent to regulated uses and activities or other uses or activities determined by the Director subject to the purpose and intent of this section. Any wetland created, restored or enhanced as compensation for approved wetland alterations shall also include the buffer required for the category of the created, restored, or enhanced wetland. All buffers shall be measured from the wetland boundary as determined in the field pursuant to the requirements of Section 11.20.050A. The width of the wetland buffer area shall be determined according to the category assigned to the wetland in accordance with Section 11.20.050B and consistent with Wetlands in Washington State, Volume 2; Protecting and Managing Wetlands, Guidance on Buffers and Ratios (Appendix 8-D), or as amended, for wetland category, intensity of impacts, and wetland functions or special characteristics. Wetland buffer widths shall be determined by one of the following alternatives:

**a. Alternative 1.** Width based only on wetland category.

Wetland Category	Minimum Buffer Width (in feet)
I	250
II	200
III	150
IV	50

- b. **Alternative 2.** Width based on wetland category and the intensity of impacts from proposed changes in land use. Land use intensity shall be determined as follows:

Impact from Proposed Change in Land Use	Types of Land Use Based on Common Zoning Designations
High	Commercial, Industrial and Institutional Residential (more than 1 unit/acre) High-intensity recreation (golf courses, ball fields, etc.) Conversion to high intensity agricultural (dairies, nurseries, greenhouses, growing and harvesting crops requiring annual tilling and raising and maintaining animals, etc.) Hobby Farms
Moderate	Residential (1 unit/acre or less) Moderate-intensity active open space (parks with biking, jogging, etc.) Conversion to moderate intensity agriculture (orchards, hay fields, etc.) Paved trails Building of logging roads Utility corridor or right-of-way shared by several utilities and including access/maintenance road
Low	Forestry (cutting of trees only) Passive open space (hiking, bird-watching, etc.) Unpaved trails Utility corridor without maintenance road and little or no vegetation management.

Wetland Category	Minimum Buffer Width (in feet)		
	Low Impact	Moderate Impact	High Impact
I	125	190	250
II	100	150	200
III	75	110	150
IV	25	40	50

- c. **Alternative 3.** Width based on wetland category, intensity of impacts (as used in alternative 2), and wetland functions or special characteristics. Alternative 3 provides three buffer widths based on habitat scores. Where more than one width applies based on score for function or based on special characteristics, the calculation providing the widest buffer shall be used.

Category I Wetlands - Width of Buffers - Alternative 3				Other Measures Recommended for Protection
Wetland Characteristics	Minimum Buffer Width (in feet)			
	Low Impact	Moderate Impact	High Impact	
Score for habitat = 8-9	100	150	200	Maintain connections to other habitat areas Restore degraded parts of buffer
Score for habitat = 5-7	75	110	150	No recommendations at this time
Score for habitat less than 5 Score for water quality = 8-9	50	75	100	No additional surface discharges of untreated runoff
Wetlands of High Conservation Value, Natural Heritage Wetland	125	190	250	No additional surface discharges to wetland or its tributaries No septic system within 300 feet Restore degraded parts of buffer
Bogs, Calcareous Fens	125	190	250	No additional surface discharges to wetland or its tributaries Restore degraded parts of buffer
Alkali	100	150	200	No additional surface discharges to wetland or its tributaries Restore degraded parts of buffer
Forested	Buffer size to be based on score for habitat functions or water quality functions.			If forested wetlands score high for habitat, need to maintain connectivity to other natural areas Restore degraded parts of buffer
Not meeting any of the above characteristics	50	75	100	No recommendation at this time



Category II Wetlands = Width of Buffers - Alternative 3				Other Measures Recommended for Protection
Wetland Characteristics	Minimum Buffer Width (in feet)			
	Low Impact	Moderate Impact	High Impact	
Score for habitat 8-9	100	150	200	Maintain connections to other habitat areas
Score for habitat 5-7	75	110	150	No recommendations at this time
Score for habitat less than 5 Score for water quality 8-9	50	75	100	No additional surface discharges of untreated runoff.
Vernal Pool	100	150	200	No intensive grading or tilling in the wetland
Vernal Pool with Regional Plan*	40	60	80	No intensive grading or tilling in the wetland
Riparian Forest	Buffer width to be based on score for habitat functions or water quality functions			Riparian forest wetlands need to be protected at a watershed or sub-basin scale (protection of the water regime in the watershed) Other protection based on needs to protect habitat and/or water quality functions
Not meeting above Characteristics	50	75	100	No recommendations at this time
* Develop a regional plan to protect the most important vernal pool complexes - buffers of vernal pools outside protection zones can then be reduced.				

Category III Wetlands = Width of Buffers - Alternative 3				Other measures Recommended for Protection
Wetland Characteristics	Minimum Buffer Width (in feet)			
	Low Impact	Moderate Impact	High Impact	
Score for habitat 5-7*	75	110	150	No recommendation at this time
Score for habitat less than 5	40	60	80	No recommendation at this time
* If wetland scores 8-9 habitat points, use the alternative 3 table for category II buffers.				

Category IV Wetlands = Width of Buffers - Alternative 3				Other measures Recommended for Protection
Wetland Characteristics	Minimum Buffer Width (in feet)			
	Low Impact	Moderate Impact	High Impact	
Score for all three-basic functions (improving water quality, hydrologic, habitat) is less than 16 points	25	40	50	No recommendation at this time

2. **Increased Wetland Buffer Area Width.** The County may require increased buffer area widths on a case-by-case basis as determined by the Director when a larger buffer is necessary to protect wetland functions and values. This determination shall be supported by appropriate documentation showing that it is reasonably related to protection of the functions and values of the wetland. The documentation must include but not be limited to the following criteria:
  - a. The wetland is used by a plant or animal species listed by the federal government or the state as endangered, threatened, candidate, sensitive, monitored or documented priority species or habitats, or essential or outstanding habitat for those species or has unusual nesting or resting sites such as heron rookeries or raptor nesting trees; or
  - b. The adjacent land is susceptible to severe erosion and erosion control measures will not effectively prevent adverse wetland impacts; or
  - c. The adjacent land has minimal vegetative cover or slopes greater than 30 percent.
3. **Buffer Width Averaging.** Wetland buffer areas may be modified by averaging buffer widths. Wetland buffer width averaging may be allowed for the following:
  - a. Averaging to improve wetland protection may be permitted when all of the following conditions are met:
    - i. The wetland has significant differences in characteristics that affect its habitat functions, such as a wetland with a forested component adjacent to a degraded emergent component or a "dual-rated" wetland with a Category I area adjacent to a lower rated area
    - ii. The buffer is increased adjacent to the higher-functioning area of habitat or more sensitive portion of the wetland and decreased adjacent to the lower-functioning or less sensitive portion
    - iii. The total area of the buffer after averaging is equal to the area required without averaging
    - iv. The buffer at its narrowest point is never less than 3/4 of the required width for parcels  $\geq$  5 acres in size and 1/2 of the required width for parcels < 5 acres in size
  - b. Averaging to allow reasonable use of a parcel may be permitted when all of the following are met:

- i. There are no feasible alternatives to the site design that could be accomplished without buffer averaging
  - ii. The averaged buffer will not result in degradation of the wetland's functions and values as demonstrated by a report from a qualified wetland expert
  - iii. The total buffer area after averaging is equal to the area required without averaging
  - iv. The buffer at its narrowest point is never less than 3/4 of the required width for parcels  $\geq$  5 acres in size and 1/2 of the required width for parcels  $<$  5 acres in size
4. **Reduction of Wetland Buffer Area Width.** The Department may reduce the wetland buffer area width on a case-by-case basis as determined by the Director if there are no feasible alternatives to the site design that could be accomplished without buffer averaging, consistent with Wetlands in Washington State, Volume 2; Protecting and Managing Wetlands, Guidance on Buffers and Ratios (Appendix 8-D), or as amended, if:
- a. For wetlands that score moderate or high for habitat (20 points or more for the habitat functions), the width of the buffer can be reduced if the following criteria are met:
    - i. A relatively undisturbed vegetative corridor of at least 100 feet in width is protected between the wetland and any other priority habitats; and
    - ii. The protected area is preserved by means of easement, covenant or other measure; and
    - iii. Measures identified in subsection b. are taken to minimize the impact of any proposed land use.
  - b. For wetlands that score less than 20 points for habitat, the buffer width can be reduced to that required for moderate land-use impacts by applying the following measures to minimize the impacts of the proposed land uses:

Disturbance	Examples of Measures to Minimize Impacts
Light	Direct lights away from wetland
Noise	Locate activity that generates noise away from wetland.
Toxic runoff*	Route all new untreated runoff away from wetland while ensuring wetland is not dewatered, establish covenants limiting use of pesticides within 150', apply integrated pest management
Stormwater run-off	Retrofit stormwater detention and treatment for roads and existing adjacent development, prevent channelized flow from lawns that directly enters the buffer.
Change in Water Regime	Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns.
Pets and human disturbance	Use privacy fencing; plant appropriate vegetation to discourage disturbance.
Dust	Use best management practice to control dust.

\* These examples are not necessarily adequate for minimizing toxic runoff if threatened or Endangered species are present at the site.

5. **Wetland Buffer Maintenance.** Except as otherwise specified, wetland buffer areas shall be retained in their natural condition. Where buffer disturbances have occurred before or during

construction or as a result of a violation of this section, re-vegetation with native vegetation shall be required.

- 6. Permitted Uses in a Wetland Buffer Area.** Regulated activities shall not be allowed in a buffer area except for the following:
- a. Activities having minimal adverse impacts on buffers and no adverse impacts on wetlands. These may include low intensity, passive recreational activities such as public pedestrian/bike trails which should be located in the outer 25% of a wetland buffer, designed to avoid removal of significant trees, and shall be a maximum of 5' in width with permeable surfaces (unless a project requires conformance with ADA standards), nonpermanent wildlife watching blinds, short term scientific or education activities, and sports fishing or hunting; (refer to Table 11.20.030A)
  - b. A private pedestrian trail, not exceeding 5' in width for a single access point, may be allowed in a buffer area for access to wetland areas. Private trails, for pedestrians only, may utilize the natural topography along with stepping stones or a stairway on pilings as approved by the Director. Grading, cutting, or filling shall not be allowed for private trails in buffer areas.
  - c. Stormwater management facilities including biofiltration swales, if designed according to the Spokane County Stormwater Management Guidelines, if sited and designed so that the buffer area as a whole provides the necessary biological, chemical and physical protection to the wetland in question. Biofiltration swales will take into account the scale and intensity of the proposed land use, be located within the outer 25% of a category III or IV wetland buffer provided that no other location is feasible, and will not degrade the functions and values of the wetland or its buffer.
  - d. Motorized vehicles as part of an approved mitigation plan or non-regulated activity such as agriculture.

#### **D. Wetland and Buffer Mitigation**

Wetland mitigation shall be consistent with Wetland Mitigation in Washington State, Parts 1 and 2 (2006), or as amended, to provide consistency for applicants who must also apply for state and federal permits.

- 1. Mitigation Options.** As a condition of any permit allowing alteration of wetlands and/or wetland buffers or to repair damage resulting from a violation of this section, the applicant will engage in the restoration, creation or enhancement of wetlands and/or wetland buffers in order to offset the impacts resulting from the applicant's or violator's actions. The applicant shall develop an appropriate mitigation plan that provides for mitigation measures as outlined below. Wetland mitigation means the use of any or all of the following actions listed in descending order of preference:
- a. Avoiding the impact altogether by not taking certain action or parts of an action;
  - b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
  - c. Rectifying the impact by repairing, rehabilitating or restoring the affected environment;

- d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
  - e. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; or
  - f. Monitoring the impact and the compensation project and taking appropriate corrective measures. Mitigation may include a combination of the above measures.
2. **Wetlands Mitigation Ratios.** Any person who degrades wetlands shall restore, create, or enhance equivalent areas or greater areas of wetlands than those altered in order to compensate for loss of wetland acreage or functions according to the following ratios:

#### Mitigation ratios for Eastern Washington

Category and Type of Wetland Impacts	Re-establishment Or Creation	Rehabilitation Only	Re-establishment Or Creation (R/C) and Rehabilitation (RH) <sup>24</sup>	Re-establishment or Creation (R/C) and Enhancement (E) <sup>24</sup>	Enhancement Only <sup>24</sup>
All Category IV	1.5:1	3:1	1:1 R/C and 1:1 RH	1:1 R/C and 2:1 E	6:1
All Category III	2:1	4:1	1:1 R/C and 2:1 RH	1:1 R/C and 4:1 E	8:1
Category II Forested	4:1	8:1	1:1 R/C and 4:1 RH	1:1 R/C and 6:1 E	16:1
Category II Vernal pool	2:1 Compensation must be seasonally ponded wetland	4:1 Compensation must be seasonally ponded wetland	1:1 R/C and 2:1 RH	Case-by-case	Case-by-case
All other Category II	3:1	6:1	1:1 R/C and 4:1 RH	1:1 R/C and 8:1 E	12:1
Category I Forested	6:1	12:1	1:1 R/C and 10:1 RH	1:1 R/C and 20:1 E	24:1
Category I based on score for functions	4:1	8:1	1:1 R/C and 6:1 RH	1:1 R/C and 12:1 E	16:1
Category I Natural Heritage site	Not considered possible <sup>25</sup>	6:1 Rehabilitation of a Natural Heritage site	R/C Not considered possible <sup>25</sup>	R/C Not considered possible <sup>25</sup>	Case-by-case
Category I Alkali	Not considered possible <sup>25</sup>	6:1 Rehabilitation of an alkali wetland	R/C Not considered possible <sup>25</sup>	R/C Not considered possible <sup>25</sup>	Case-by-case
Category I Bog	Not considered possible <sup>25</sup>	6:1 Rehabilitation of a bog	R/C Not considered possible <sup>25</sup>	R/C Not considered possible <sup>25</sup>	Case-by-case

NOTE: Ratios for preservation are discussed in Section 6.5.5 Wetland Mitigation in Washington State

<sup>24</sup> These ratios are based on the assumption that the rehabilitation or enhancement actions implemented represent the average degree of improvement possible for the site. Proposals to implement more effective rehabilitation or enhancement actions may result in a lower ratio, while less effective actions may result in a higher ratio. The distinction between rehabilitation and enhancement is not clear-cut. Instead, rehabilitation and enhancement actions span a continuum. Proposals that fall within the gray area between rehabilitation and enhancement will result in a ratio that lies between the ratios for rehabilitation and the ratios for enhancement (see Wetland Mitigation in Washington State, Appendix H for further discussion).

<sup>25</sup> Natural Heritage sites, alkali wetland, and bogs are considered irreplaceable wetlands because they perform some functions that cannot be replaced through compensatory mitigation. Impacts to such wetlands would therefore result in a net loss of some functions no matter what kind of compensation is proposed.

**3. Wetland Buffer Mitigation Ratios.**

Compensation for wetland buffer impacts, other than buffer averaging, shall occur at the following minimum ratios:

Wetland Buffer	Compensation Ratio
Category I	2.5:1
Category II	1.5:1
Category III	1:1
Category IV	1:1

Compensatory mitigation for buffer impacts may include enhancement of degraded buffers by planting native species, removing structures and impervious surfaces within buffers, and other measures.

- 4. Wetland and Buffer Enhancement.** Any applicant proposing to degrade wetlands and/or wetland buffers may propose to enhance existing wetlands and/or wetland buffers in combination with replacement of a wetland area, through re-establishment or creation, in order to compensate for wetland losses. Applicants proposing to enhance wetlands shall identify how enhancement conforms to the overall goals and requirements of the wetlands protection program. A wetlands enhancement compensation project shall be considered, provided that enhancement for one function and value will not degrade another function or value. Acreage replacement ratios shall be consistent with Section 11.20.050(2)(3).

- 5. Pre-development Replacement Ratios.** The following ratios apply when a replacement wetland of the same category is created prior to impact to an existing wetland. The replacement wetland must be of the same category as the wetland being impacted and provide equal or superior wetland functions for at least one complete growing season prior to impacting the existing wetland.

Wetland Category	Pre-development Wetland Replacement Ratio
Category II	2:1
Category III	1.5:1
Category IV	1.25:1

Note: Category 1 not considered possible.

- 6. Increased Replacement Ratio.** The replacement ratio may be increased under one or more of the following circumstances:

- a. High degree of uncertainty as to the probable success of the proposed restoration or creation;
- b. Significant period of time between destruction and replication of wetland functions;
- c. Projected losses in functional value and other uses, such as recreation, scientific research and education, are relatively high;
- d. Not possible to create or restore same type of wetland;
- e. Off-site compensation is offered.

7. **Decreased Replacement Ratio.** The replacement ratio may be decreased under the following circumstance:

Scientifically supported evidence which demonstrates that no net loss of wetland functions or value is attained under the decreased ratio. In all cases a minimum acreage replacement ratio of 1.25:1 shall be required.

**In-Kind/Out-Of-Kind Mitigation.** In-kind mitigation shall be provided except where the applicant can demonstrate that either:

- a. The wetland system is already degraded and out-of-kind replacement will result in a wetland with greater functional value; or
- b. Technical problems such as exotic vegetation and changes in watershed hydrology make implementation of in-kind mitigation impossible.

Where out-of-kind replacement is accepted, greater acreage replacement ratios may be required to compensate for lost functional values.

8. **On-Site/Off-site Mitigation.** On-site mitigation shall be provided except where the applicant can demonstrate that:

- a. On-site mitigation is not scientifically feasible due to problems with hydrology, vegetation, soils, or factors such as other potentially adverse impacts to and from surrounding land uses; or
- b. Existing functional values at the site of the proposed off-site mitigation area are significantly greater than lost wetland functional values; or
- c. Goals for flood storage, flood conveyance, habitat or other wetland functions have been established and strongly justify location of mitigation measures at another site.

9. **Mitigation Outside of Primary Drainage Basin.** Wetland creation or restoration shall occur within the same primary drainage basin as the wetland loss occurred, unless the applicant can demonstrate that the hydrology and ecosystem will not be substantially damaged by the loss within that primary drainage basin; and

- a. In-basin mitigation is not scientifically feasible due to problems with hydrology, vegetation, soils, or other factors such as other potentially adverse impacts to and from surrounding land uses; or
- b. Existing functional values in a different primary drainage basin are significantly greater than lost wetland functional values; or
- c. Established goals for flood storage, flood conveyance, habitat or other wetland functions have been established and strongly justify location of mitigation measures in a different primary drainage basin.

10. **Mitigation Banking.**

Mitigation banking shall be consistent with RCW 90.84. Credits from a wetland mitigation bank may be approved for use as compensation for unavoidable impacts to wetlands when:

- a. The bank is certified under Chapter 173-700 WAC;
- b. The Director determines that the wetland mitigation bank provides appropriate compensation for the authorized impacts; and
- c. The proposed use of credits is consistent with the terms and conditions of the bank's certification.

Replacement ratios for projects using bank credits shall be consistent with replacement ratios specified in the bank's certification.

Credits from a certified wetland mitigation bank may be used to compensate for impacts located within the service area specified in the bank's certification. In some cases, the service area of the bank may include portions of more than one adjacent drainage basin for specific wetland functions.

**11. Timing of Mitigation.** Where feasible, mitigation projects shall be completed prior to activities that will disturb wetlands. Construction of mitigation projects shall be timed to reduce impacts to existing wildlife and flora.

**12. Components of Mitigation Plans.** All wetland restoration, creation and/or enhancement projects required pursuant to this chapter either as a permit condition or as the result of an enforcement action shall follow a mitigation plan which meets County requirements. The applicant or violator must receive written approval by the Director for mitigation plan prior to commencement of any wetland restoration, creation or enhancement activity. The mitigation plan shall contain at least the following components:

- a. **Baseline Information.** A written assessment and accompanying maps of the impacted and/or proposed mitigated wetland including, at a minimum, a wetland report consistent with Section 11.20.050(A).
- b. **Environmental Goals and Objectives.** A written report shall be provided identifying goals and objectives and describing; site selection criteria; mitigation goals; target evaluation species and resource functions; dates for beginning and completion; and a complete description of the functions and values sought in the new wetland. The goals and objectives shall be related to the functions and values of the original wetland, or if out-of-kind, the type of wetland to be emulated. The report shall also include an analysis of the likelihood of success of the mitigation project at duplicating the functions and values of the original wetland, and the long-term viability of the project, based on the experiences of comparable projects, if any.
- c. **Monitoring Program.** Specific measurable criteria approved by the Director, shall be provided for evaluating whether the goals and objectives of the project are being achieved, and for determining when and if remedial action or contingency measures should be implemented. Such criteria may include water quality standards, survival rates of planted vegetation, species abundance and diversity targets, habitat diversity indices, or other ecological, geological or hydrological criteria. The mitigation plan manager will assure work is completed in accordance with the mitigation plan and, if necessary, the contingency plan. The monitoring program will include mitigation construction oversight, be bonded, and occur for five years from the date of plant installation or ten years where forested or shrub wetlands is the intended result. Reporting results of the monitoring data will be provided by the applicant on a yearly basis to the Director. Where a ten year plan is proposed, the report shall be provided biennially.



- d. **Detailed Construction Plans.** Written specifications and descriptions of mitigation techniques shall be provided, as specified by the Director.
- e. **Construction Oversight.** The construction of the mitigation project will be monitored to insure that the project fulfills its goals.
- f. **Contingency Plan.** The plan must identify potential courses of action that can be taken when monitoring or evaluation indicates project performance standards are not being met.
- g. **Permit Conditions.** Any mitigation plan prepared pursuant to this section shall become part of the wetland permit application.
- h. **Consultation with Other Agencies.** Applicants are encouraged to consult with federal, state, local agencies having expertise or interest in a mitigation proposal.

#### E. Protection of Wetlands and Wetland Buffer Areas

1. **Easements, Title Notices, Plat Dedications.** The applicant may be required to create a separate tract(s) containing wetland(s) and/or wetland buffer areas as a condition of approval. Wetland or wetland buffer areas shall be protected by one or more of the following methods:

- a. A conservation easement or deed restriction prohibiting alteration and requiring protection of native vegetation within a wetland or wetland buffer area may be dedicated to the Spokane County Parks and Recreation Department or other public or non-profit entities (e.g. land trusts) specified by the hearing body or the Department;
- b. A title notice shall be recorded on the property or portion of the property containing a wetland or wetland buffer area. The title notice shall provide notice of a wetland delineation, if any exists, or indicate location of wetlands or wetland buffer areas on the property (see Section 11.20.090G Appendix G for example).

A required title notice shall prohibit in perpetuity the development, alteration or disturbance of vegetation within the wetland or wetland buffer area except when in conformance with this Ordinance.

- c. Any land division which requires the recording of a final plat shall provide on the face of such plat the boundary of such wetland and wetland buffer area with a reference to separately recorded conservation easements, title notices or deed restrictions as appropriate. Subdivisions with tracts of land which are equal to or greater than five (5) acres may provide for building envelopes as provided in Section 11.20.050A(1) of this Ordinance.
- d. Regardless of the method chosen to protect and preserve the wetland or wetland buffer area, such areas shall be maintained by the land owner, adjacent lot owner(s), home owner's association, the permit applicant or agent, or an appropriate entity as approved by the hearing body or the Department.

2. **Access Limitations, Signs, Fencing and Best Management Practices.** Access to wetlands and wetland buffer areas will normally be allowed, subject to unique conditions which warrant access limitations;

- a. The perimeter of the wetland and wetland buffer areas to be disturbed pursuant to an approved wetland permit or authorization shall be marked in the field, inspected by the

review authority prior to the commencement of permitted activities. This temporary marking shall be maintained throughout the duration of the development activity;

- b. As a condition of any permit or authorization issued pursuant to this Ordinance, the applicant may be required to install permanent signs along the boundary of a wetland or wetland buffer area. In some instances, a tree, hedge row, or other permanent physical location may be used to mark the boundary as approved by the Director. The sign shall be made of a treated wood or metal face attached to a treated wood or metal post, or another material of equal durability. The sign shall be worded as follows or with alternative language approved by the Director:

"Wetland or Wetland Buffer Area  
Do Not Disturb Natural Area  
Contact Spokane County Building and Planning Department  
Regarding Uses and Restrictions"

- c. As a condition of any permit or authorization issued pursuant to this Ordinance, the applicant may be required to utilize best management practices as prescribed by the Natural Resource Conservation Service. This may include the installation of a permanent fence around the wetland and wetland buffer area when domestic grazing animals are present or may be introduced within the project.

#### **F. Time Period, Authorized Activity**

1. Authorization to undertake regulated activities within a wetland or wetland buffer area shall normally be valid for the period of the underlying permit.
2. Prior to the granting of an extension to an underlying permit, the review authority may require updated studies and/or additional hearings if, in its judgment, the original intent of the permit is altered or enlarged by the renewal, or if the applicant failed to abide by the terms of the original permit.

#### **G. Bonding, Financial Performance Guarantee, or Other Security Acceptable to the Department**

1. The Director may require the applicant of a development proposal to post a cash performance bond or other security acceptable to the Department in an amount and with surety and conditions sufficient to fulfill the requirements set forth in the permit.
2. In the event of a breach of any condition of any such bond or other security acceptable to the Department, the Director may initiate action consistent with Section 11.20.030(J) in Spokane County Superior Court to execute the bond or other security acceptable to the Department.
3. The Director shall release the performance bond or other security acceptable to the Department upon determining that:
  - a. All activities, including any required compensatory mitigation, have been completed in compliance with the terms and conditions of the permit and the requirements of this Ordinance, and
  - b. Posting of a maintenance bond or other security acceptable to the Department by the applicant, if applicable.

4. Principal or surety cannot be terminated or canceled without written release of the bond or other financial performance guarantee or other security acceptable to the Department by the Department.
5. The Director shall release the maintenance bond or other security acceptable to the Department upon determining that performance standards established for evaluating the effectiveness and success of the structures, improvements and/or mitigation as established in the mitigation plan have been satisfactorily met for the required period.
6. For mitigation projects, the performance standards shall be those contained in the mitigation plan developed and approved during the permit review process. The maintenance bond or other security acceptable to the Department applicable to this project shall not be released until the Director determines that performance standards established for evaluating the effect and success of the project have been met.
7. Performance Bonds, Financial Performance Guarantee, or other security acceptable to the Department. The applicant shall provide demonstration of administrative, supervisory, and technical competence, financial resources, and scientific expertise of sufficient standing to successfully execute the mitigation plan. The applicant will name a mitigation project manager and provide the qualifications of each team member involved in preparing, implementing, and supervising the mitigation plan. This shall include educational background and areas of expertise, training and experience with comparable projects. In addition, bonds ensuring fulfillment of the mitigation project, monitoring program, and any contingency measure shall be posted in the amount of one hundred and twenty five (125) percent of the expected project cost of mitigation, plus a factor to be determined to allow for inflation during the time the project is being monitored. An administration fee for the mitigation project may be assessed to reimburse the Department for costs incurred during the course of the monitoring program.



## 11.120.060 - FISH and WILDLIFE HABITAT CONSERVATION AREAS

### Fish and Wildlife Habitat Conservation Area Goals

The following Fish and Wildlife Habitat Conservation Area goals are consistent with the Spokane County Comprehensive Plan, Natural Environment Element, or as amended:

1. Identify Fish and Wildlife Habitat Conservation Areas and their ecosystems. Recognize the multiple values of Fish and Wildlife Habitat Conservation Areas and educate people as to these values.
2. Protect, maintain, and improve critical fish and wildlife habitat conservation areas and habitats of local importance through a variety of methods including public ownership of the most critical areas and incentives for privately owned land.
3. Minimize fragmentation of habitat by: 1) protecting important fish and wildlife areas and open space; and 2) interconnecting corridors to form a continuous network of fish and wildlife habitat and ecosystems.
4. Ensure that priority fish and wildlife species, as identified by the Washington Department of Fish and Wildlife, and species of local importance, do not become increasingly imperiled due to land use changes, habitat alteration, and other human activities.

### A. Priority Habitats and Species Designation

1. **Washington State Priority Habitat and Species Program.** The priority habitats and species of WDFW Region 1 are identified in Table 11.20.060A and are adopted from the Washington State Priority Habitats and Species Program, or as amended. Due to the dynamic nature of Fish and Wildlife populations and their habitats, the Priority Habitats and Species program will be revised periodically as species and habitats are added, deleted or redefined. The location of these priority habitats and known habitats such as den or nest site used by priority species are depicted on the Spokane County Fish and Wildlife Conservation Areas Map which is available at the Building and Planning Department.

**TABLE 11.20.060A**  
PRIORITY HABITATS AND SPECIES OF WDFW REGION 1

**Priority Habitat**

**Criteria**

**Aspen Stands**

Pure or mixed stands of aspen greater than 0.8 ha (2 acres).

**Criteria:** High fish and wildlife species diversity, limited availability, high vulnerability to habitat alteration.

**Caves**

A naturally occurring cavity, recess, void, or system of interconnected passages (including associated dendritic tubes, cracks, and fissures) which occurs under the earth in soils, rock, ice, or other geological formations, and is large enough to contain a human. Mine shafts may mimic caves, and those abandoned mine shafts with actual or suspected occurrences of priority species should be treated in a manner similar to caves. A mine is a man-made excavation in the earth usually used to extract minerals.

**Criteria:** Comparatively high wildlife density, important wildlife breeding habitat and seasonal ranges, limited availability, vulnerability to human disturbance, dependent species.

**Cliffs**

Greater than 7.6 m (25 ft) high and occurring below 1524 m (5000 ft).

**Criteria:** Significant wildlife breeding habitat, limited availability, dependent species.

**Elk Habitat**

Generally, the winter and summer ranges of a herd of elk are geographically separate. In eastern Washington, winter range consists of shrub-steppe, bunch grass of shrub plant communities adjacent to forest zones.

Special features of elk habitat include corridors and wallows. These features are characterized by screening vegetation and lack disturbance. During hunting season elk seek the largest cover patches in their range. At other times of the year, smaller cover patches within 600 feet of forage areas are most important.

**Freshwater Wetlands and Fresh Deepwater**

**Freshwater Wetlands:** Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands must have one or more of the following attributes: the land supports, at least periodically, predominantly hydrophytic plants; substrate is predominantly undrained hydric soils; and/or the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.

**Fresh Deepwater:** Permanently flooded lands lying below the deepwater boundary of wetlands. Deepwater habitats include environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. The dominant plants are hydrophytes; however, the substrates are considered nonsoil because the water is too deep to support emergent vegetation. These habitats include all underwater structures and features (e.g., woody debris, rock piles, caverns).

**Criteria:** Comparatively high fish and wildlife density and species diversity, important fish and wildlife breeding habitat, important fish and wildlife seasonal ranges, limited availability, high vulnerability to habitat alteration

**Instream**

The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

**Criteria:** Comparatively high fish and wildlife density and species diversity, important fish and wildlife seasonal ranges, limited availability, high vulnerability to habitat alteration, dependent species.

**Juniper**

**Savannah**

All juniper woodlands.

**Criteria:** High fish and wildlife species diversity, important fish and wildlife breeding habitat and seasonal ranges, limited availability.

**Moose Habitat**

Aquatic feeding sites are found in areas of slow moving water, ponds, swamps and pot holes which contain abundant submergent and emergent vegetation. Larger aquatic areas are preferred. These sites are characterized by a broad zone of hiding cover around the perimeter of the feeding site.

Calving sites are characterized by roadless blocks of mature timber of 80 acres or greater which provide hiding cover and are adjacent to good forage where human disturbance is minimal.

**Old-growth/  
Mature Forests**

Old-growth east of Cascade crest: Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 25 trees/ha (10 trees/acre) > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 - 3 snags/acre) > 30-35 cm (12-14 in) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions.

Mature forests: Stands with average tree diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west and 80 - 160 years old east of the Cascade crest.

**Criteria:** High fish and wildlife density, high fish and wildlife species diversity, important fish and wildlife breeding habitat, important fish and wildlife seasonal ranges, limited and declining availability, high vulnerability to habitat alteration.

**Prairies and  
Steppe**

Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.

**Criteria:** Comparatively high fish and wildlife density, high fish and wildlife species diversity, important fish and wildlife breeding habitat, important fish and wildlife seasonal ranges, limited and declining availability, high vulnerability to habitat alteration, unique and dependent species.

**Riparian**

The area adjacent to aquatic systems that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. In riparian systems, the vegetation, water tables, soils, microclimate, and wildlife inhabitants of terrestrial ecosystems are influenced by perennial or intermittent water. Simultaneously, the biological and physical properties of the aquatic ecosystems are influenced by adjacent

vegetation, nutrient and sediment loading, terrestrial wildlife, as well as organic and inorganic debris. Riparian habitat encompasses the area beginning at the ordinary high water mark and extends to that portion of the terrestrial landscape that is influenced by, or that directly influences, the aquatic ecosystem. Riparian habitat includes the entire extent of the floodplain and riparian areas of wetlands that are directly connected to stream courses or lakes.

**Criteria:** High fish and wildlife density, high fish and wildlife species diversity, important fish and wildlife breeding habitat, important wildlife seasonal ranges, important fish and wildlife movement corridors, high vulnerability to habitat alteration, unique or dependent species.

### Rural Natural Open Space

A priority species resides within or is adjacent to the open space and uses it for breeding or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially areas that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and surrounded by agricultural developments. Local consideration may be given to open space areas smaller than 4 ha (10 acres).

**Criteria:** Comparatively high fish and wildlife density, high fish and wildlife species diversity, important fish and wildlife breeding habitat, important fish and wildlife seasonal ranges, important fish and wildlife movement corridors, high vulnerability to habitat alteration, unique species assemblages in agricultural areas.

### Shrub-steppe

Large Tracts: Tracts of land >259 ha (640 ac) consisting of plant communities with one or more layers of perennial grasses and a conspicuous but discontinuous layer of shrubs. Large tracts of shrub-steppe contribute to the overall continuity of the habitat type throughout the region because they are relatively unfragmented, contain a substantial amount of interior habitat, and are in close proximity to other tracts of shrub-steppe. These tracts should contain a variety of habitat features (e.g., variety of topography, riparian areas, canyons, habitat edges, plant communities). Another important component is habitat quality based on the degree with which a tract resembles a site potential natural community, which may include factors such as soil condition and degree of erosion; and distribution, coverage, and vigor of native shrubs, forbs, grasses, and cryptogams.

Small Tracts: Tracts of land <259 ha (640 ac) with a habitat type consisting of plant communities with one or more layers of perennial grasses and a conspicuous but discontinuous layer of shrubs. Although smaller in size and possibly more isolated from other tracts of shrub-steppe these areas are still important to shrub-steppe obligate and other state-listed wildlife species. Also, important are the variety of habitat features and habitat quality aspects as listed above.

**Criteria:** Comparatively high fish and wildlife density and species diversity; important fish and wildlife breeding habitat and seasonal



ranges, limited availability, high vulnerability to habitat alteration, unique and dependent species.

### **Snags and Logs**

Snags and logs occur within a variety of habitat types that support trees. Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and > 30 cm (12 in) in eastern Washington, and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. Abundant snags and logs can be found in old-growth and mature forests or unmanaged forests of any age, in damaged, burned, or diseased forests, and in riparian areas. Priority snag and log habitat includes individual snags and/or logs, or groups of snags and/or logs of exceptional value to wildlife due to their scarcity or location in a particular landscape. Areas with abundant, well distributed snags and logs are also considered priority snag and log habitat. Examples include large, sturdy snags adjacent to open water, remnant snags in developed or urbanized settings, and areas with a relatively high density of snags.

**Criteria:** Comparatively high fish and wildlife density and species diversity, important fish and wildlife breeding habitat and seasonal ranges, limited availability, high vulnerability to habitat alteration, large number of cavity dependent species.

### **Talus**

Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

**Criteria:** Limited availability, unique and dependent species, high vulnerability to habitat alteration.

### **Urban Natural Open Space**

A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development. Local considerations may be given to open space areas smaller than 4 ha (10 acres).

**Criteria:** Comparatively high fish and wildlife density, high fish and wildlife species diversity, important fish and wildlife breeding habitat, important fish and wildlife movement corridors, limited availability, high vulnerability to habitat alteration.

### **White-tailed Deer Winter Range**

Winter range is determined by a combination of factors: elevation, Winter Range slope, aspect, snow depth, browse quality and quantity, presence of closed canopy mature forests, temperatures and traditional deer movement patterns. Closed canopies of mature forests along streams are extremely important whitetail habitat.

**Landscape Linkages**

Landscape linkages differ from a movement corridor in that the complete range of community and ecosystem processes continue to operate within it through time. Plants and smaller animals are able to move between larger landscapes over a period of generations.

**Wildlife Corridors**

Wildlife Corridors are landscape features that facilitate the biologically effective transport of animals between larger patches of habitat dedicated to conservation functions. Such corridors may facilitate several kinds of traffic including frequent foraging movements, seasonal migrations or the once in a lifetime dispersal of juvenile animals. These are transitional habitats and need not contain all the habitat elements required of the long term survival or reproduction of its migrants.

**Priority Species**

**Status**

*INVERTEBRATES*

**Molluscs**

Giant Columbia River limpet	State Candidate <i>Any occurrence</i>
Great Columbia River spire Snail	State Candidate <i>Any occurrence</i>
California floater	State Candidate <i>Any occurrence</i>

**Arthropods**

Columbia River tiger beetle	State Candidate <i>Any occurrence</i>
Juniper hairstreak	State Candidate <i>Any occurrence</i>
Mann’s mollusk-eating Ground beetle	State Candidate <i>Any occurrence</i>
Shepard’s parnassian	State Candidate <i>Any occurrence</i>
Silver-bordered fritillary	State Candidate <i>Any occurrence</i>

*VERTEBRATES*

**Fish**

Bull trout/Dolly Varden	State Candidate Game <i>Any occurrence</i>
Channel catfish	Game <i>Any occurrence</i>
Chinook salmon	State Candidate Food fish <i>Any occurrence</i>
Kokanee	Game <i>Any occurrence</i>
Lake chub	State Candidate

Largemouth bass	<i>Any occurrence</i> Game
Leopard dace	<i>Any occurrence</i> State Candidate
Margined sculpin	<i>Any occurrence</i> State Candidate
Mountain sucker	<i>Any occurrence</i> State Candidate
Pygmy whitefish	<i>Any occurrence</i> State Candidate
Rainbow trout/steelhead	<i>Any occurrence</i> State Candidate Game
Smallmouth bass	<i>Any occurrence</i> Game
Umatilla dace	<i>Any occurrence</i> State Candidate
Walleye	<i>Any occurrence</i> Game
White sturgeon	<i>Any occurrence</i> Food fish
	<i>Any occurrence</i>

### **Amphibians**

Rocky Mountain Tailed-frog	State Candidate <i>Any occurrence</i>
Columbia spotted frog	State Candidate <i>Any occurrence</i>
Northern leopard frog	State Candidate <i>Any occurrence</i>
Western toad	State Candidate <i>Any occurrence</i>

### **Reptiles**

Sagebrush lizard	State Candidate <i>Any occurrence</i>
Striped whipsnake	State Candidate <i>Any occurrence</i>

### **Birds**

American white pelican	State Candidate <i>Breeding areas, regular and regular large concentrations</i>
Bald eagle	State Candidate <i>Breeding areas, communal roosts, regular and regular large concentrations, regularly-used perch trees in breeding areas</i>
Black-crowned night heron	<i>Breeding areas</i>
Black-backed woodpecker	State Candidate <i>Breeding areas and regular occurrences</i>
Blue grouse	Game <i>Breeding areas, regular concentrations</i>

Burrowing owl	State Candidate <i>Breeding areas, foraging areas, regular concentrations</i>
Chukar	Game <i>Regular and regular large concentrations in WDFS's Preliminary Management Zones for chukar</i>
Ferruginous hawk	State Candidate <i>Breeding areas, including alternative nest sites. If breeding area is not known, approximate with a 7.0 km<sup>2</sup> (4.35 mi<sup>2</sup>) area around nest sites, foraging areas</i>
Flammulated owl	State Candidate <i>Breeding areas, foraging areas, regular concentrations</i>
Cavity-nesting ducks (includes Barrow's goldeneye, Bufflehead, Common goldeneye, Hooded merganser, Wood Duck, Harlequin duck)	Game <i>Breeding areas</i>
Common loon	State Candidate <i>Breeding areas, regular and regular large concentrations</i>
Cormorants	<i>Breeding areas</i>
Golden eagle	State Candidate <i>Breeding areas and foraging areas</i>
Great blue heron	<i>Breeding areas</i>
Lewis' woodpecker	State Candidate <i>Breeding areas</i>
Loggerhead shrike	State Candidate <i>Regular occurrences in breeding areas, regular and regular large concentrations</i>
Merlin	State Candidate <i>Breeding sites</i>
Mountain quail	Game <i>Any occurrence</i>
Northern goshawk	State Candidate <i>Breeding areas, including alternate nest sites, post-fledging foraging areas</i>
Peregrine falcon	State Candidate <i>Breeding areas, regular occurrences, hack sites</i>
Phalaropes, Stilts, and Avocets	<i>Breeding areas</i>
Pileated woodpecker	State Candidate <i>Breeding areas</i>
Prairie falcon	<i>Breeding areas</i>
Red-necked grebe	<i>Breeding areas</i>
Ring-necked pheasant	Game <i>Self-sustaining birds observed in regular or regular large concentrations in WDFW's eastern Washington Primary Management Zone for pheasant</i>
Sage grouse	State Candidate <i>Breeding areas, leks, regular and regular large concentrations</i>

Sage sparrow	State Candidate <i>Breeding areas, regular occurrences in suitable habitat during breeding season</i>
Sage thrasher	State Candidate <i>Breeding areas, regular occurrences in suitable habitat during breeding season</i>
Sandhill crane	State Candidate <i>Breeding areas, regular large concentrations, migration staging areas</i>
Sharp-tailed grouse	State Candidate <i>Breeding areas, leks, regular and regular large concentrations, critical wintering habitat (riparian zones)</i>
Terns	<i>Breeding areas</i>
Trumpeter swan	Game <i>Regular and large concentrations</i>
Tundra swan	Game <i>Regular and large concentrations</i>
Upland sandpiper	State Candidate <i>Any occurrence</i>
Vaux's swift	State Candidate <i>Breeding areas, communal roosts</i>
Waterfowl concentrations	Game <i>Significant breeding areas and regular large concentrations in winter</i>
Western bluebird	State Candidate
Grebe	<i>Breeding areas</i>
White-headed woodpecker	State Candidate <i>Breeding sites, regular occurrences</i>
Wild turkey	Game <i>Regular and regular large concentrations and roosts in WDFW's Primary Management Zones for wild turkeys</i>
Yellow-billed cuckoo	State Candidate <i>Any occurrence</i>

**Mammals**

Big brown bat, Myotis bats, Pallid bat	<i>Regular large concentrations in naturally occurring breeding areas and other communal roosts</i>
Bighorn sheep	Game <i>Breeding areas, regular and regular large concentrations</i>
Fisher	State Candidate <i>Any occurrence</i>
Gray Wolf	State Candidate <i>Any occurrence</i>
Grizzly bear	State Candidate <i>Any occurrence</i>
Lynx	State Candidate <i>Any occurrence</i>
Marten	Game <i>Regular occurrences</i>
Mink	Game <i>Regular occurrences</i>

Moose	Game <i>Regular occurrences</i>
Mountain goat	Game <i>Breeding areas, regular concentrations</i>
Merriam's shrew	State Candidate <i>Any occurrence</i>
Pygmy rabbit	State Candidate <i>Any occurrence</i>
Pigmy Shrew	State Candidate
Rocky Mountain elk	Game <i>Calving areas, migration corridors, regular and regular large concentrations in winter</i>
Rocky Mountain mule deer	Game <i>Breeding areas, migration corridors, regular and regular large concentrations in winter</i>
Washington ground squirrel	State Candidate <i>Regular and regular large concentrations</i>
White-tailed Deer	Game
White-tailed jackrabbit	Game <i>Regular and regular large concentrations</i>
Wolverine	State Candidate <i>Any occurrence</i>
Woodland caribou	State Candidate <i>Any occurrence</i>

Note—Definitions for species are contained in the Washington Department of Fish and Wildlife Management Recommendations for Priority Species and in WAC 232-12, or as amended. A complete Priority Habitat and Species list is available from Washington Department of Fish and Wildlife or available at its website: <http://wdfw.wa.gov/>

## **B. Regulated Uses and Activities in Priority Habitats**

1. For the purposes of this Ordinance, Spokane County may restrict the regulated uses and activities shown in Table 11.20.030A or other use or activity determined by the Director subject to the purpose and intent of this section, which lie within a priority habitat by definition or within 1/4 mile of the location of a non-game priority species habitat through the application of the performance standards contained in Section 11.20.060C below.
2. In cases where differences in regulations occur because of overlapping priority habitats or buffer areas, the regulation which provides the greatest degree of protection shall apply.

## **C. Performance Standards for Regulated Uses and Activities**

1. Riparian habitat performance standards
  - a. Except as otherwise specified, riparian areas shall be retained in their natural condition to provide necessary ecological function. Riparian vegetation in buffer areas shall not be removed except in the case of fire or disease unless there is no alternative. For lots or parcels with water frontage on type F waters, one view/access corridor to the ordinary high water mark may be cleared of riparian vegetation as long as the view/access corridor does not exceed a width of 25 feet.

- b. Roads within riparian buffer areas shall be kept to a minimum and shall not run parallel to the water body. Crossings where necessary, shall cross riparian areas at as near right angles as possible. If no alternative exists to placement of a roadway within a riparian area, a habitat management plan and mitigation shall be required. Mitigation measures shall be specified in the habitat management plan and may include, but are not limited to:
  - i. Fencing of riparian buffer area to protect remaining vegetation and;
  - ii. Enhancement of remaining riparian buffer area through planting of native vegetation.
  - iii. In-stream enhancements (e.g. root-wads, larger culverts).
- c. Water crossings shall be approved by the Washington State Department of Fish and Wildlife according to RCW 77.55.021 for a Hydraulic Project Approval (HPA), or as amended.
- d. Public non-motorized multi-use equestrian, pedestrian/bike trails shall only be allowed in the shoreline buffer when:
  - i. Accompanied by a Habitat Management Plan meeting the requirements of Section 11.20.060D herein;
  - ii. Parallel pathways and trails are located at the landward edge of the shoreline buffer with the following exceptions: (1) When physical constraints, public safety concerns, or public ownership limitations merit otherwise, or (2) when the trail will make use of an existing constructed grade such as those formed by an abandoned rail grade, road or utility; or (3) when it can be demonstrated in the Habitat Management Plan that the trail will enhance the shoreline ecological functions of the riparian area;
  - iii. Perpendicular pathways and trails and river crossings are sited in a location that has the least impact to shoreline ecological functions with mitigation sequencing as specified herein. Previously altered or disturbed locations shall be preferred;
  - iv. Located, constructed, and maintained so as to avoid, to the maximum extent possible, removal and other impacts to perennial native vegetation, including trees, standing snags, forbes, grasses and shrubs, consistent with the Habitat Management Plan;
  - v. Alternatives to impervious paving should be considered and are encouraged.
  - vi. Total trail width inclusive of shoulders will be the minimum width necessary to achieve the intended use and shall not exceed 14 feet;
  - vii. Disturbed areas (outside of the designated trail and trail shoulders) shall be re-vegetated with native vegetation consistent with the Habitat Management Plan.
- e. A private pedestrian trail, not exceeding 5' in width for a single access point, may be allowed in a buffer area for access to riparian/wetland areas. Private trails, for pedestrians only, may utilize the natural topography along with stepping stones or a stairway on pilings as approved by the Director. Grading, cutting, or filling shall not be allowed for private trails in buffer areas.
- f. Other use or activity: Off-road motorized vehicle use in riparian buffers areas is prohibited.

- g.** Waters bodies will be classified under WAC 222-16-031.
- h.** Riparian buffer areas shall be established from the bankfull width for Types S, F, and N Water. Water bodies classified by the Water Typing System (WAC-222-16-0301) have the following buffer area requirements:

Water Type, General Description (see WAC-222-16-031)	Buffer
Type <b>S</b> Water, Shorelines of the State	250 feet
Type <b>F</b> Water, Fish	100 feet
Type <b>N*</b> Water, Non-Fish Perennial ( <b>Np</b> )	75 feet
Non-Fish Seasonal ( <b>Ns</b> )	25 feet

\*Field verification shall be provided by a qualified professional. Absent verification, 100' buffer required for Type N Water.

- i.** The Director has the authority to reduce the buffer widths shown above by up to 25 % if:
  - i.** A riparian buffer area is fenced to prevent damage to vegetation by livestock along its entire length or;
  - ii.** A riparian buffer area is enhanced using native plants including trees and shrubs according to a plan prepared in consultation with the Spokane County Soil Conservation District and the Washington State Department of Fish and Wildlife. The plan shall include numbers and species of plants, a planting schedule and maintenance agreement to insure long term survival.
- j.** The Director has the authority to increase the buffer widths shown above by up to 25% on a case by case basis when a larger buffer is necessary to protect the fish and wildlife using the stream and riparian area. This determination shall be supported by appropriate documentation showing that the increased buffer width is reasonably related to the protection of the fish and/or wildlife using the stream and riparian area as indicated by meeting one of the following criteria:
  - i.** The land adjacent to the water is susceptible to severe erosion and other erosion control measures will not prevent adverse impacts.
  - ii.** The land adjacent to the water has minimal vegetative cover or slopes greater than 30 percent.
- k.** The Director has the authority to modify the standard buffer widths by averaging buffer widths. Averaging of buffer widths shall be allowed only when all of the following are demonstrated:
  - i.** Averaging will provide the necessary biological, chemical and physical support necessary to protect the fish and wildlife using the riparian area in question, taking into account the type, intensity, scale and location of the proposed use or activity;
  - ii.** The riparian area contains variations in sensitivity due to existing physical characteristics which justify the averaging;



- iii. The land uses causing the least disturbance would be located adjacent to areas where the buffer width is reduced and that such land uses are guaranteed in perpetuity by covenant, deed restriction, easement or other legally binding mechanism;
  - iv. The total area contained within the buffer after averaging is no less than that contained within the standard buffer prior to averaging.
2. A management plan, if required, will be used by Spokane County to evaluate the impact of a use or activity on a priority habitat or species and may require mitigating measures to protect fish and wildlife based on the management plan recommendations.
  3. Wetland habitat performance standards shall be according to the provisions of Section 11.20.050.
  4. All development proposals shall follow the Bald Eagle Protection Rules (RCW 77.12.655 and WAC 232.12.292), as now or hereafter amended, when the proposal is likely to have a direct impact on the habitat of the Bald Eagle.

#### **D. Habitat Management Plans**

A habitat management plan shall be prepared for regulated uses or activities (refer to Table 11.20.030A) or other use or activity determined by the Director subject to the purpose and intent of this section, which lie within a priority habitat or within 1/4 mile of a non-game priority species habitat location if it is determined by the Director that the proposal is likely to have a significant adverse impact on the priority habitat or species. The determination of a need for additional information (habitat management plan) shall be made by the Director in consultation with the Washington State Department of Fish and Wildlife or other authority as determined by the Director. The following describes the requirements of a Habitat Management Plan.

This report shall identify how the impacts from the proposed use or activity will be avoided or mitigated through habitat mitigation which meets the purposes of this Ordinance. The *Management Recommendations for Washington's Priority Species and Management Recommendations for Washington's Priority Habitat*, or as amended, and consultation with a habitat biologist from the Washington State Department of Fish and Wildlife shall be the basis for the report.

The Habitat Management Plan shall be prepared by a qualified biologist shall be approved in writing by the Director and shall contain but not be limited to the following information:

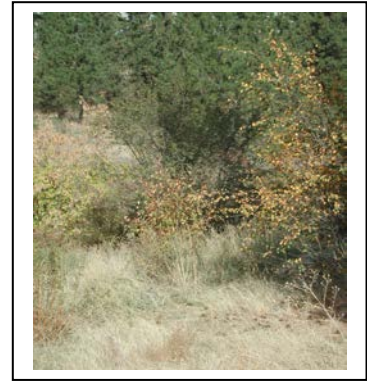
1. A map(s) prepared at an easily readable scale, showing:
  - a. The location of the proposed site;
  - b. The relationship of the site to surrounding topographic and built features;
  - c. The nature and density of the proposed use or activity;
  - d. Proposed building locations and arrangements;
  - e. A legend which includes:
    - i. A complete and accurate legal description. The description shall include the total acreage of the parcel;
    - ii. Title scale and north arrow;

- iii. Date;
  - iv. Certification by a qualified biologist.
  - f. Existing structures and landscape features including the name and location of all water bodies.
  - g. Location of priority habitat types or priority species point locations.
2. A report which contains:
- a. A description of the nature, density and intensity of the proposed use or activity in sufficient detail to allow analysis of such land use change upon identified wildlife habitat;
  - b. An analysis of the effect of the proposed use or activity upon fish and wildlife species and their habitats, identified within the Priority Habitat and Species Program as defined in this Ordinance.
  - c. A plan which explains how the applicant will avoid, minimize or mitigate adverse impacts to fish and/or wildlife habitats created by the proposed use or activity. Mitigation measures within the plan may include, but are not limited to:
    - i. Establishment of buffer areas;
    - ii. Preservation of critically important plants and trees;
    - iii. Limitation of access to habitat area;
    - iv. Seasonal restriction of construction activities;
    - v. Clustering of development and preservation of open space;
    - vi. Signs marking habitats or habitat buffer areas;
    - vii. Title notice or plat dedication warning statements;
    - viii. Conservation easements.
  - d. Review comments by a habitat biologist from the Washington State Department of Fish and Wildlife (WDFW). If the habitat management plan recommends mitigation involving federally listed threatened or endangered species, migratory waterfowl or wetlands, the U.S. Fish and Wildlife Service shall receive a copy of the draft habitat management plan and their review comments shall be included in the final report.

The Washington State Department of Fish and Wildlife and, if required, the U.S. Fish and Wildlife service shall respond in writing to the Director with review comments or a request for additional information within 15 days from the date of issuance of a draft habitat management plan. If review comments or a request for additional information is not received in the prescribed time frame, the state and/or federal review comments on the habitat management plan shall not be required. The Director shall have the authority to approve habitat management plans or require additional information.

**E. Financial Guarantees**

The director may require the applicant to post a performance bond or other security acceptable to the Department according to the guidelines contained in Section 11.20.050G to ensure implementation of the requirements of any mitigation plan approved pursuant to this section.



**F. Habitats and Species of Local Importance**

In addition to the Priority Habitats and Species recognized by WDFW, a process is provided for listing or delisting other habitats and species that are important locally to the people of Spokane County. This action may be initiated at the request of the Washington State Department of Fish and Wildlife, other government agency, county staff, non-profit organization or interested citizen. Any such request shall be in writing and shall include:

1. The common and scientific name for a species under consideration;
2. Habitat location on a map (scale 1:24,000);
3. Demonstrate a need for special consideration based on:
  - a. Declining or increasing population;
  - b. Sensitivity to habitat manipulation; or
  - c. Commercial or game value or other special value, such as public appeal.
4. Habitat management recommendations, including potential uses and restrictions of the habitat areas, seasonally sensitive areas and other guidelines necessary for the protection of the species;
5. Reasons for the species/habitat to be designated or deleted from designation as a priority habitat or species.
6. Name and address of the nominator, along with a statement of support for the nomination signed by the owner of the property on which the habitat is located.
7. Other supporting documentation.

Submitted proposals will be reviewed by county staff, WDFW and/or other local, state or federal agencies or experts for comments and recommendations regarding accuracy of the data and effectiveness of proposed management strategies.

A public hearing shall be held for proposals found to be completed pursuant to the process contained in Section 14.402.060 of the Spokane County Zoning Code, or as amended. Approved nominations will be



designated priority habitats/species as appropriate and will be given all protection under this Ordinance afforded other priority habitats and species.

**G. Incentives and Stewardship Options**

A variety of incentives and stewardship options which are available for preservation of priority habitats are presented in Section 11.20.080 of this Ordinance.

## 11.20.070 - GEOLOGICALLY HAZARDOUS AREAS

### Geologically Hazardous Area Goals

The following Geologically Hazardous Area goals are consistent with the Spokane County Comprehensive Plan, Natural Environment Element, or as amended:

1. Development should be discouraged in geologically hazardous areas unless it can be demonstrated that hazardous areas can be developed consistent with public health and safety. Development permits may be conditioned to mitigate certain hazards.
2. Geologically hazardous areas may be used as open space for recreational, rangeland, forest, wildlife habitat and other uses, as appropriate.

### A. Classification Characteristics

Geologically Hazardous Areas shall include erosion, landslide, or seismic hazard areas and be determined by the following characteristics:

1. Erosion, landslide, or seismic hazard areas in Spokane County shall contain at least one of the following characteristics:
  - a. A slope of 30% or greater;
  - b. Soils identified by Natural Resource Conservation Service as having a severe potential for erosion (see Section 11.20.090M Appendix M);
  - c. Hydraulic factors such as existing on-site surface and groundwater or changes in hydraulic factors, caused by proposals that create a severe potential for erosion or landslide hazard.
  - d. Areas that historically have been prone to landsliding (areas adjacent to lakes, streams, springs) or any one of the following geologic formations alluvium, landslide deposit, Latah formation;
  - e. Areas of uncompacted fill;
  - f. Areas which are unstable as a result of rapid stream or stream bank erosion.



**30% Or Greater Slope**



- g. Seismic hazards include the following areas identified on the Liquefaction Susceptibility Map of Spokane County, Washington (source: Washington State Department of Natural Resources, Sept. 2004):
  - i. For public buildings and public assembly buildings and uses those areas classified as having a liquefaction susceptibility of moderate; and
  - ii. For all buildings and public assembly uses those areas classified as having liquefaction susceptibilities of “moderate to high”, “high”, or “peat deposit.”
- h. Seismic hazards include the following areas identified on the Site Class Map of Spokane County, Washington (source: Washington State Department of Natural Resources, Sept. 2004):
  - i. For public buildings and public assembly buildings and uses those areas classified as having a site class of “D”; and
  - ii. For all buildings and public assembly uses those areas classified as having a site class of “D to E”, “E”, or “F.”

## B. Identification and Mapping

Data sources are available from Spokane County which are used in the mapping of the characteristics for Geologically Hazardous Areas. The existing map sources provide a general level of information and are not intended to pinpoint erosion, landslide, or seismic hazards on individual sites or properties. Specific information may be provided by the applicant to indicate characteristics are not present on the site or that the proposal is not located within nor will impact a Geologically Hazardous Area. In addition, there may be areas not designated on Spokane County maps that exhibit the characteristics of Geologically Hazardous Areas. It is the intent of this Ordinance to require all areas which meet the classification characteristics of Geologically Hazardous Areas to meet the requirements of this section.



Lands that meet the classification characteristics for erosion, landslide, or seismic hazard areas are mapped and used to flag areas within Spokane County that have a high probability to meet the classification characteristics. The Geologically Hazardous Areas maps shall be updated as more accurate information becomes available to aid the public and project reviewers. Classification characteristics are identified as follows:

1. Soil Characteristics are identified as those areas containing soils which according to the U.S. Department of Agricultural, Natural Resources Conservation Service Classification System may experience severe to very severe erosion based on



a formula which is based on several factors including rainfall, slope, soil erodability and other factors. The formula and a listing of soils within Spokane County which have a severe potential for erosion are listed in Section 11.20.090M Appendix M. Landslide hazard areas are based on a combination of geologic, topographic (slope) and hydraulic factors and have a high susceptibility to landslides.

2. Geologic Characteristics are areas identified and described by the Washington State Department of Natural Resources and include:
  - a. Alluvium
  - b. Landslide deposits
  - c. Latah Formation
  - d. Seismic hazards 11.20.070(1)(g)(h)
3. Topographic Characteristics include areas within Spokane County with severe site topography or slopes of 30% or greater and have a severe potential for erosion and/or landslide hazards.
4. Other Characteristics. Hydraulic features include surface and groundwater conditions and the hydraulic changes resulting from a proposal. Un-compacted fill-areas or steep-cuts as a result of site grading, construction activities or resource extraction.

### C. Regulations

The following regulations shall be used when a regulated use or activity as described in Table 11.20.030A or other use or activity determined by the Director subject to the purpose and intent of this section, which lie within geo-hazard areas:

1. Spokane County Code, Title 3 Buildings and Structures, including Chapter 3.20 Flood Damage Protection, or as amended.
2. Spokane County Erosion and Sediment Control Ordinance, or as amended.

If the regulations noted above do not provide adequate mitigation of impacts as determined by the Director, then a Geo-hazard Mitigation Plan prepared by a qualified landslide, erosion, or seismic specialist shall be required.

### D. Geo-hazard Mitigation Plan and Geo-hazard Evaluation

1. **Geo-hazard Mitigation Plans.** When the Director determines that the impact of a use or activity located in a geo-hazard area cannot be mitigated through standards identified in Section 11.20.070C. A Geo-hazard Mitigation Plan shall be prepared to identify construction standards for the proposal. Geo-hazard Mitigation Plans shall conform to Spokane County guidelines for stormwater management or any subsequent regulation adopted by Spokane County providing erosion, landslide, or seismic protection. A Geo-hazard Mitigation Plan, prepared by a qualified landslide, erosion, or seismic specialist, shall be prepared for building permits, road



construction, utilities and storm drainage facility installations within a geo-hazard area.

2. **Geo-hazard Evaluation, Preliminary Report.** A Geo-hazard Evaluation or Feasibility Report shall be prepared by a qualified landslide, erosion, or seismic specialist and submitted with applications for preliminary plats, short plats, P.U.D.'s, binding site plans, zone reclassifications, conditional use permits, variances, manufactured home park site plans or top soil removal permits located in geologic hazard areas.

The Geo-hazard Evaluation shall document the extent and nature of geo-hazard on the subject property and shall provide mitigating measures and an assessment of geo-hazards associated with the proposal. A more detailed Geo-hazard Mitigation Plan may be required at the time of building permit application or actual construction approvals.

3. **Subdivision Dedication Notice.** Final subdivisions, short plats and binding site plans located within geo-hazard areas shall contain language in the plat dedication to indicate lots or portions of lots that are affected by geo-hazards.

In addition, building setback lines may be drawn on lots, parcels and tracts so as to indicate suitable areas for construction of structures or improvements.



## 11.20.075 - Critical Aquifer Recharge Areas

The Growth Management Act requires Spokane County to designate areas and adopt development regulations for the purpose of protecting areas within the unincorporated areas of Spokane County critical to maintaining ground water recharge and quality. This section specifies the requirements to be enacted when regulated development within these areas is proposed to occur. This section applies to any person, firm, or corporation, which establishes or proposes to establish new, expanded, enlarged or different land use or activity identified in Table 11.20.075B, or a use or activity determined by the Director, in consultation with the Utilities Director or the Hearing Examiner as subject to the intent and purpose of this section, within a designated Critical Aquifer Recharge Areas in the unincorporated areas of Spokane County.

The following Critical Aquifer Recharge Area goals are consistent with the Spokane County Comprehensive Plan, Natural Environment Element, or as amended.

### Critical Aquifer Recharge Area Goals

1. Prevent degradation of groundwater quality in Spokane County and improve water quality of aquifers that do not meet state standards.
2. Protect groundwater quality from development impacts.
3. Secure adequate water quantity for the residents of Spokane County.
4. Provide public information programs for land users to demonstrate how to protect critical aquifer recharge areas from degradation.
5. Consistently enforce regulations, effectively monitor compliance and provide incentives to protect critical aquifer recharge areas.
6. Regularly update critical aquifer recharge area protection measures so they are effective, enforceable and equitable.

### A. Designation and Rating

1. Critical Aquifer Recharge Areas are those areas with a critical recharging effect on aquifers used for potable water as defined by WAC 365-190-030(2). Critical Aquifer Recharge Areas have prevailing geologic conditions associated with infiltration rates that create a high potential for contamination of ground water resources or contribute significantly to the replenishment of ground water.
2. Aquifer recharge areas are rated as having a high, moderate, or low susceptibility based on a scientific analysis of soils, hydraulic conductivity (the ease with which water moves between the surface and aquifers), annual rainfall, the depth to aquifers, the importance of the material between soils and aquifers (Vadose zone), and wellhead protection information. See Appendix N for an explanation of the Aquifer Susceptibility Map.
3. If a parcel lies within two or more susceptibility rating designations, the higher susceptibility rating designation shall apply to the whole parcel.
4. Designated wellhead protection areas, and areas within a 1,000-foot radius of wells without reported plans, are additionally treated as high-susceptibility areas. As wellhead protection plans

are completed for wells, the 1,000-foot radius placeholder will be replaced by the Washington State Department of Health-certified wellhead protection area.

**B. Uses and Activities Regulated in Critical Aquifer Recharge Areas**

Table 11.20.075B establishes the following uses and activities regulated by the requirements of this section. The Director, in consultation with the Utilities Director or the Hearing Examiner may determine that other uses or activities are also subject to the intent and purpose of this section. This table should be interpreted with the corresponding performance standards set forth in section 11.20.075C.



TABLE 11.20.075B

Uses and Activities regulated in Critical Aquifer Recharge Areas	Aquifer Susceptibility Rating (See Aquifer Susceptibility Map)		
	High***	Moderate	Low
Biosolids land application	N	L-1	L-1
Critical Material storage, handling, generating or use	L-2, L-3	L-2, L-3	L-2, L-3 **
Cultivation of land (commercial)	L-1	L-1	P
Dairy	L-1*	L-1	L-1
Feed lot	N	L-1	L-1
Feed mill	L-2	L-2	P
Floriculture (flower growing)	L-1	L-1	P
Grazing	L-1	L-1	P
Greenhouse - commercial	L-1	L-1	P
Horse boarding and training	L-1	L-1	P
Horticulture (vegetable growing)	L-1	L-1	P
Landfill, demolition, inert	N	L-6	L-6
Landfills (all others)	N	N	L-6
Large Animal raising and/or keeping	L-1	L-1	P
Mining	L-5	L-5	L-5
Nursery - wholesale	L-1	L-1	P
Orchard	L-1	L-1	P
Poultry-raising, commercial	N	L-1	L-1
Riding stable	L-1	L-1	P
Sanitary waste discharge	L-3	L-3	P
Stormwater disposal systems	L-4	L-4	L-4
Tree farming	L-1	L-1	P
Truck gardening	L-1	L-1	P
Vineyard	L-1	L-1	P

## INDEX:

Uses and activities are defined in the Spokane County Zoning Code.

**P** = Permitted without County Review under this Ordinance

**N** = Not permitted

**L** = Limited Uses. These uses are permitted if they comply with the standards of this Ordinance and the corresponding performance standards listed in section 11.20.075C.

\*A hydrogeologic study is required for this use.

\*\*When there are low susceptibility areas hydrologically connected to moderate and high- susceptibility areas, the regulations for moderate or high susceptibility areas apply. Hydrologic connection is determined by a hydrogeologic study.

\*\*\*Designated wellhead protection areas and areas within a 1,000-foot radius of wells without reported plans, are additionally treated as high aquifer susceptibility areas.

### C. Performance Standards for Uses and Activities in Critical Aquifer Recharge Areas

The following are the performance standards applicable to the uses and activities listed in Table 11.20.075B, or a use or activity determined by the Director, in consultation with the Utilities Director or the Hearing Examiner as subject to the intent and purpose of this section. The uses and activities are defined in the Spokane County Zoning Code.

**L-1 Agriculture:**

1. Agricultural practices that impact critical aquifer recharge areas shall be mitigated by having a conservation plan prepared and the subject property shall be required to comply with approved land management and/or conservation practices that protect groundwater, as set forth in the United States Department of Agriculture Natural Resource Conservation Service (NRCS) Technical Guides, and all local, state and federal regulations and their amendments governing agricultural practices. The NRCS Technical Guide is available at the local field office of the Natural Resource Conservation Service.
  
2. Agricultural practices that are accessory to a primary residential use, including animal raising and/or keeping, and that exist for the personal enjoyment of the property resident, shall be exempt, and this subsection shall be advisory only as to those accessory agricultural practices.



**L-2 Critical Materials Storage, Handling, Generating or Use:**

Critical materials subject to the following performance standards are set forth in the Critical Materials List adopted and amended pursuant to Chapter 3.15, or as amended, of the Spokane County Code.

1. All facilities related to the use of critical materials shall be designed so that:
  - a. Any spilled or leaked critical materials are contained on site;
  - b. Any spilled or leaked critical materials cannot infiltrate into the ground; and
  - c. No disposal of any waste containing critical materials shall be allowed on site.
  
2. Stormwater draining facilities in areas where critical material spills could occur shall be designed so that:
  - a. Mingling of stormwater and spilled critical materials is prevented; and
  - b. Spill cleanup procedures are enhanced.
  
3. Underground storage tanks used for containing critical material shall be installed and maintained according to the provisions in Chapter 3.15 of the Spokane County Code.

- a. Surface or subsurface disposal of a critical material is prohibited.

**L-3** Wastewater Disposal shall be consistent with the Spokane County Comprehensive Plan, Capital Facilities and Utilities Element goals and policies for sanitary sewer systems together with the following standards:

- 1. Performance standards applicable to all unincorporated areas.

Critical Material Use Activities that produce a process waste instead of or in addition to sanitary waste shall utilize one of the following methods for waste management and disposal:

- a. Separate waste disposal systems shall be provided so those sanitary and process wastes are handled separately. The process waste shall be disposed of by collection in sealed holding tanks and shall be transported and disposed of at a site licensed for disposal of this effluent. An agreement to dispose of process waste under this section shall be recorded in the Spokane County Auditor's office and shall not be removed without approval by Spokane County.
- b. Sanitary and/or process waste waters shall be managed in compliance with a valid authorization from a Publicly Owned Treatment Works (POTW), which shall include any required pretreatment or monitoring;
- c. Sanitary and/or process wastewaters shall be managed in compliance with a valid surface water discharge permit, which is obtained from the Washington State Department of Ecology.

- 2. Performance standards for new development located outside of the Urban Growth Area Boundary.

- a. Nonresidential uses and activities in moderate and high susceptibility areas that produce more than 90 gallons of wastewater per acre, per day, and any Critical Material Use Activity that produces sanitary wastewater discharge, shall have a disposal system that protects the aquifer equal to or greater than one of the following:
  - i. Treatment utilizing sealed lagoons;
  - ii. Treatment utilizing holding tanks with transport and disposal at a site licensed for disposal of the particular effluent;
  - iii. Treatment in compliance with a valid surface water discharge permit obtained from the Washington State Department of Ecology; or
  - iv. Treatment in a mechanical wastewater treatment plant that produces less than 3500 gallons per day of effluent which meets the Washington State Drinking Water Standards prior to disposal into the ground using an infiltration system or subsurface disposal system; or
  - v. Treatment in a mechanical wastewater treatment plant that produces more than 3500 gallons per day of effluent in compliance with a valid state waste discharge permit obtained from the Washington State Department of Ecology and meeting the Ground Water Standards, Chapter 173-200 WAC, or as amended.
- b. The evaluation of any plans submitted under RCW 90.48.110 must include consideration of opportunities for the use of reclaimed water as defined in RCW 90.46.010. Wastewater plans submitted under RCW 90.48.110 must include a statement describing how

applicable reclamation and reuse elements will be coordinated as required under RCW 90.46.120(2).

- c. Nonresidential uses and activities in low susceptibility areas that produce more than 90 gallons of wastewater per acre per day may utilize on-site disposal subject to approval by the Spokane Regional Health District or Washington State Department of Health.
  - d. Nonresidential uses and activities not involving Critical Material Use Activities and which produce less than 90 gallons of wastewater per acre, per day, may utilize on-site disposal subject to approval by the Spokane Regional Health District or Washington State Department of Health.
  - e. Residential uses with lots legally created after March 21, 2000 which requires a new on-site sewage system shall have a minimum lot size of five (5) acres per dwelling unit with the following exceptions.
    - i. Lots which are part of an approved Rural Cluster Development.
    - ii. Non-conforming lots that complied with state and local development regulations at the time the parcel was created.
    - iii. For Rural Activity Centers (RAC).
3. Performance standards for new development located inside of the Urban Growth Area Boundary.
- a. Public sewer services consistent with the adopted Levels of Service and concurrency requirements set forth in the Spokane County Comprehensive Plan and the Spokane County Zoning Code, or as amended, are required for all new residential and nonresidential uses.
- L-4** Stormwater disposal shall be consistent with the Spokane County Comprehensive Plan, Capital Facilities and Utilities Element goals and policies for stormwater together with the following standards:
- 1. Within the unincorporated areas of the Liberty Lake Sewer District, stormwater management policies of Spokane County and the Liberty Lake Sewer District shall apply.
  - 2. Development shall provide for the treatment of stormwater run-off from impervious surfaces in a manner consistent with Chapter 9.14 of the Spokane County Code, or as amended, and adopted Stormwater Control Ordinances, or as amended.
  - 3. Direct injection wells without an associated drainage swale or drainage swale system for stormwater disposal within special protection zones of wellhead protection areas are prohibited.

#### **L-5 Mining**

Mining shall be subject to the standards of the Mining Zone (M), Chapter 14.636 of the Spokane County Zoning Code, or as amended. For subsequent uses of mining sites, the performance standards for the next-higher category of aquifer susceptibility shall apply using the site's pre-mining susceptibility rating as the base standard

#### **L-6 Landfill**

All landfills shall comply with Chapters 173-350 and 173-351 WAC and shall be approved by the Spokane Regional Health District and the Washington State Department of Ecology.

#### **D. Procedures for Hydrogeologic Report/ Study**

When a use or activity identified in Table 11.20.075B is proposed, or a use or activity determined by the Director in consultation with the Utilities Director or the Hearing Examiner as subject to the intent and purpose of this section, it shall be subject to the following:

1. The property shall be reviewed for susceptibility of the aquifer and whether mitigation measures for ground water protection are required. The Aquifer Susceptibility Map serves as the first level for review. Section 11.20.075C establishes the minimum mitigation required.
2. The Utilities Director or the Hearing Examiner may require an applicant to submit a Hydrogeologic Report if:
  - a. There is insufficient groundwater information to perform an adequate review to assure aquifer protection; or
  - b. There is evidence of groundwater degradation, or known groundwater contamination in the vicinity of a proposed project, and the project could influence or be influenced by the water quality degradation (for example, the identified quality degradation may render the proposed water source unusable or the proposed project may add to existing quality degradation and may render some other users' water source unusable).

An applicant may also voluntarily submit a site-specific Hydrogeologic Report to evaluate the aquifer susceptibility to contamination from a project site.

3. The Utilities Director, in consultation with agencies of expertise, shall review and accept or reject the Hydrogeologic Report.
4. The Utilities Director or Hearing Examiner may approve or deny a proposed project based on the information in the Hydrogeologic Report, or the Utilities Director may adjust the aquifer susceptibility rating of the site and apply appropriate mitigation measures provided for in section 11.20.075C.
5. A Hydrogeologic Report may recommend alternative mitigation measures that the Utilities Director or Hearing Examiner may approve, provided the measures give equal or greater protection to the aquifer.
6. A qualified geologist, as defined in this Ordinance, shall prepare the Hydrogeologic Report. The report shall include, but is not limited to, the following information.
  - a. A site location map that depicts the site and land parcels within 1,000 feet of the site. The map shall include roads, topography, existing and proposed structures and shall identify land uses within 1,000 feet of the boundaries of the site.
  - b. Geologic setting, including well logs and other well information for wells within 1,000 feet of the boundaries of the site.
  - c. Any current available data on any springs or seeps within 1,000 feet of the boundaries of the site.

- d. Background water quality data.
- e. Water source/supply to facility.
- f. Any sampling schedules necessary.
- g. Depth/location of any perched water tables or geological features that could form perched water tables if recharge is increased.
- h. Groundwater flow direction and gradient.
- i. An analysis of aquifer susceptibility to include:
  - i. Soil types (from the Natural Resources Conservation Service Soil Survey of Spokane County;
  - ii. Hydraulic conductivity;
  - iii. Annual recharge (based on estimate of monthly precipitation at the site and an appropriate recharge model).
  - iv. Depth to water (the depth to the water-bearing zone, not the potentiometric surface);
  - v. Importance of the Vadose Zone based on the geology above the aquifer;
  - vi. Discussion of the effects of the proposed project on groundwater resources;
  - vii. Discussion of potential mitigation measures if the proposed project should have an adverse impact on groundwater resources; and
  - viii. Other information as required by the Utilities Director or Hearing Examiner in consultation with other agencies of expertise.



7. An applicant may elect to meet the appropriate performance standards in lieu of preparing a Hydrogeologic Report if the Utilities Director or Hearing Examiner finds the performance standards provide adequate aquifer protection.

**E. Monitoring and Reporting**

1. The Utilities Director, Building and Planning Director, or the Hearing Examiner may require a monitoring program as a condition of approval to document compliance with permit conditions and to determine whether the project contributes to water quality degradation.



2. Monitoring shall be by a qualified individual as determined by the County, and shall be paid for by the applicant.



3. The Building and Planning Department shall periodically review monitoring programs to determine compliance with conditions of approval in cooperation with the Division of Utilities, Spokane Regional Health District, Spokane Aquifer Joint Board and other agencies responsible for aquifer protection.

4. For critical material users, the Hearing Examiner or the Building and Planning Director shall establish a periodic inspection program to determine compliance with permit requirements and the provisions of this section.



## 11.20.080 - INCENTIVES

### A. Property Tax and Income Tax Advantages

- 1. Property Tax Relief.** The Spokane County Assessor shall consider the Wetlands and Wetland Buffer Areas, Fish and Wildlife Habitat Conservation Areas and Geologically Hazardous Areas contained within this Ordinance when determining the fair market value of land.

Any owner of a wetland, wetland buffer area, fish and wildlife habitat conservation area who has dedicated a conservation easement or entered into a perpetual conservation restriction with a department of the local, state, or federal government; or a nonprofit organization to permanently control some or all the uses and activities within these areas may request that the Spokane County Assessor reevaluate that specific area consistent with those restrictions and provisions of open space land current use taxation.



- 2. Federal Income Tax Advantages.** There are significant federal income tax advantages that can be realized by an individual or estate for gifts of real property for conservation purposes to local governments or non-profit organizations such as land trusts. The specific rules on federal income tax deductions can be found in Section 170 of the Internal Revenue Code.

### B. On-Site Density Transfer

Residential density may be transferred from a wetland, wetland buffer area or buffer area which is required to protect priority habitats, species areas or geologically hazardous areas. On-site residential density transfer shall be determined by the zone classification of the property. The use of on-site residential density transfer or clustering and use of the Planned Unit Developments (PUD's) Overlay Zone and Bonus Density is encouraged as a means to protect and preserve Wetlands, Wetland Buffers and Fish and Wildlife Habitat Conservation Areas. The provisions of the Spokane County Zoning Code shall control the use of on-site density transfer or clustering, the use of Planned Unit Developments (PUDs) and Bonus Density.

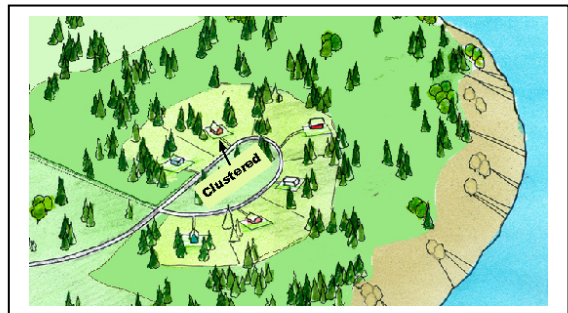
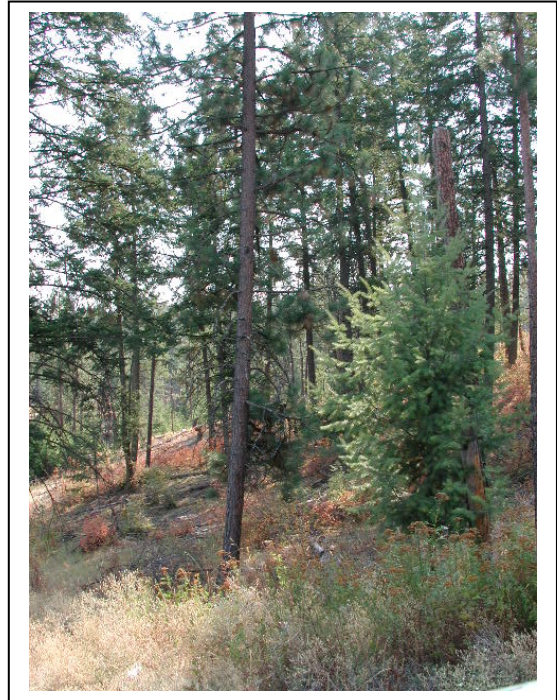
### C. Transfer of Development Rights

If a site contains a regulated Wetland, Wetland Buffer, or buffer area which is required to protect Priority Habitats or Species Areas or Geologically Hazardous Areas, a person may transfer residential development rights (TDR) by meeting the following criteria:

- 1.** The TDR must be associated with a complete Planned Unit Development (PUD) residential development application filed with Spokane County for the receiving site(s). The TDR request shall be included in the application.
- 2.** The Hearing Body shall consider the request for TDR at the public hearing for the land use proposal for the receiving site.



3. To assure that the sending site (Wetland, Wetland Buffer, Priority Habitat or Species Areas or Geologically Hazardous Areas) is adequately protected, a restriction shall be placed on the deed of the pending designated areas. This restriction shall be required regardless of the number of dwelling units for which development rights are transferred. A memorandum of agreement (MOA) between the applicant and the Department shall be recorded with the Spokane County Auditor. The MOA shall refer to all deed restrictions and restrictions on activities in the designated area.
4. If the designated area is degraded as a result of human or agricultural activity, the applicant may be required to enhance the designated area according to an enhancement plan approved by the Department.
5. Except for required enhancement, the designated area shall remain in a natural condition. This shall be indicated by a note on the face of any final plat, final site plan, or other final approval for activity on the sending site. In the case of a formal subdivision, the designated area shall be placed in a separate tract.
6. TDR shall not exceed the number of dwelling units which would be allowed in the designated area of the sending site according to the zoning designation of the sending site, if there were no development restrictions tied to the designated areas. This number of dwelling units shall be equal to the number of dwelling units that could be produced on the designated area if the sending site were subdivided in terms of the minimum requirements of the underlying zone.
7. TDR may go to more than one receiving site; however, this shall not increase the total number of transferred dwelling units which are allowed.
8. The increased number of dwelling units on the receiving site(s) shall not be more than the number of dwelling units allowed according to the zoning designation of the receiving site(s). The beginning number of dwelling units (that is, the allowed number prior to TDR) at the receiving site(s) shall be equal to the number of dwelling units that can be produced on the same site if the site were subdivided in terms of the minimum requirements of the underlying zone.



9. TDR shall be allowed only if the land use proposal on the receiving site(s) is designed in such a way that the increased density:

- a. Is consistent with any land use plan associated with the receiving site and with goals, purposes, and intents of the zoning designation of the receiving site; and
- b. Is compatible with existing and likely future developments in the vicinity; and
- c. Adequately addresses infrastructure, natural constraints and other constraints, and does not result in significant environmental impacts.



10. The TDR shall not be approved until final plat approval or other required final approval for the receiving site is granted by Spokane County.



**11.20.090A**  
**APPENDIX A**

**1987 Corps of Engineers Wetlands Delineation Manual or as amended**

**Copies of this document are available from the  
Spokane County Building and Planning Department**





**11.20.090B**

**APPENDIX B**

**INTERIM REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS  
WETLAND DELINIATION MANUAL 1987, or as amended: ARID WEST REGION, together with,  
INTERIM REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINIATION  
MANUAL 1987, or as amended: WESTERN MOUNTAINS, VALLEYS AND COAST REGION,  
or as amended**

**Copies of this document are available from  
the Spokane County Building and Planning Department**



**11.20.090C**

**APPENDIX C**

**WASHINGTON STATE WETLANDS  
RATING SYSTEM FOR EASTERN  
WASHINGTON (2014), or as amended**

**Copies of this document are available from  
the Spokane County Division of Buildings and Planning**



**11.20.090D**

**APPENDIX D**

**WETLANDS IN WASHINGTON STATE  
VOL. 1 AND 2 (2005), or as amended**

**Copies of this document are available from  
the Spokane County Division of Buildings and Planning**



**11.20.090E**

**APPENDIX E**

**WETLAND MITIGATION IN  
WASHINGTON STATE  
PARTS 1 AND 2 (2006), or as amended**

**Copies of this document are available from  
the Spokane County Division of Buildings and Planning**





## **11.20.090F**

### **APPENDIX F**

#### **INFORMATION TO BE INCLUDED IN A WETLAND REPORT**

- A.** A wetland report shall include the following:
- 1.** Contact information, owner name and/or applicant, address, telephone, other;
  - 2.** Vicinity map;
  - 3.** When available, a copy of a National Wetland Inventory Map (U.S. Fish and Wildlife Service and/or a Spokane County Wetland Inventory Map) identifying the wetlands on or adjacent to the site;
  - 4.** A site map setting forth all of the following:
    - a.** Surveyed wetland boundaries based upon a delineation;
    - b.** Site boundary property lines and roads;
    - c.** Internal property lines, rights-of-way, easements, etc.;
    - d.** Existing physical features of the site including buildings, fences, and other structures, roads, parking lots, utilities, water bodies, etc.;
    - e.** Contours at the smallest readily available intervals, preferably at 2-foot intervals;
    - f.** Hydrologic mapping showing patterns of surface water movement and known subsurface water movement into, through, and out of the site area.
    - g.** Location of all test holes and vegetation sample sites, numbered to correspond with flagging in the field and field data sheets.
    - h.** The Department may require an air photo with overlays displaying the site boundaries and wetland delineation.
  - 5.** A report which includes the following:
    - a.** Location information (legal description, parcel number and address);
    - b.** Delineation report. The wetland boundaries on the site established by the delineation shall be staked and flagged in the field. If the wetland extends outside the site, the delineation report shall discuss all wetland areas within 150 feet of the site, but need only delineate those wetland boundaries within the site;
    - c.** General site conditions including topography, acreage, and surface areas of all wetlands identified in the Spokane County Wetland Atlas and water bodies within one quarter mile of the subject wetland(s);

- d. Hydrological analysis, including topography, of existing surface and known significant sub-surface flows into and out of the subject wetland(s);
  - e. Analysis of functional values of existing wetlands, including vegetative, faunal, and hydrologic conditions;
6. A summary of proposed activity and potential impacts to the wetland(s);
  7. Recommended wetland category, including rationale for the recommendation;
  8. Recommended buffer boundaries, including rationale for boundary locations;
  9. Proposed on-site residential density transfer from wetlands and/or buffers to upland areas.
  10. Site plan of proposed activity, including location of all parcels, tracts, easements, roads, structures, and other modifications to the existing site. The location of all wetlands and buffers shall be identified on the site plan.

**11.20.090G**

**APPENDIX G**

EXAMPLE

**TITLE NOTICE  
FOR WETLANDS AND WETLAND BUFFER AREAS**

FILED BY:

Spokane County Public Works Department or Property Owner (*present owners name*)  
1026 West Broadway  
Spokane, WA. 99260  
(509) 456-2205

Assessors Tax Parcel Number: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
Legal Description: (use existing legal unless a specific lot or easement description is used)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOTICE IS GIVEN TO ALL PARTIES WITH INTEREST IN THE ABOVE DESCRIBED PROPERTY,  
Authority: \_\_\_\_\_

Spokane County Ordinance

This property contains a (specific critical area) as defined by the Spokane County Wetlands, Fish and Wildlife Habitat and Geo-hazard Areas Protection Ordinance. Restrictions on use or alteration of the (specify critical area) exist due to the natural conditions of the property and resulting regulations. The property was the subject of a proposal for a (*type of permit*). A copy of the application has provided information on the location of the (specify critical area) and restriction on their use. A copy of the plan showing the (specify critical area) and restrictions on their use. A copy of the plan showing the (specify critical area) is attached hereto. Additional information is available for inspection at the Spokane County Building and Planning Department, see File No. \_\_\_\_\_. Restricted and allowed use within these areas are provided in the Spokane County Critical Areas Ordinance.

EXECUTED this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

\_\_\_\_\_  
\_\_\_\_\_

STATE OF WASHINGTON            )  
COUNTY OF SPOKANE            )

On this day personally appeared before me \_\_\_\_\_, to me known to be the individual(s) described in and who executed the within and foregoing instrument, and acknowledged that they signed the same as their free and voluntary act and deed, for the uses and purposes herein mentioned.

GIVEN under my hand and official seal \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_.

\_\_\_\_\_  
NOTARY PUBLIC in and for the state of  
Washington, residing at \_\_\_\_\_

THE TERMS OF THIS NOTICE SHALL RUN WITH THE LAND AND APPLY TO THE APPLICANT, OWNERS, HEIRS, ASSIGNS AND SUCCESSORS IN INTEREST. RELEASE OF THIS TITLE NOTICE CAN ONLY BE ACCOMPLISHED THROUGH THE AUTHORITY OF THE SPOKANE COUNTY BUILDING AND PLANNING DEPARTMENT OR ITS SUCCESSOR BY RECORDING OF A "TITLE NOTICE EXTINGUISHMENT" BASED UPON A FINDING THAT SUCH RELEASE SHOULD OCCUR.

BY SPOKANE COUNTY PUBLIC WORKS DEPARTMENT:

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

=====

**11.20.090H**

**APPENDIX H**

**MANAGEMENT RECOMMENDATIONS  
FOR WASHINGTON'S PRIORITY HABITATS AND SPECIES, or as amended**

**Copies of this document are available from the Spokane County  
Building and Planning Department**



**11.20.090I**

**APPENDIX I**

**WASHINGTON PRIORITY HABITATS AND SPECIES (1993), or as amended**

**Copies of this document are available from the Spokane  
County Building and Planning Department**





**11.20.090J**

**APPENDIX J**

**SPOKANE COUNTY CODE TITLE 3  
BUILDINGS AND STRUCTURES CHAPTER 3.20  
FLOOD DAMAGE PROTECTION, or as amended**

**Copies of this document are available from the Spokane  
County Building and Planning Department**



**11.20.090K**

**APPENDIX K**

**SHORELINE MASTER PROGRAM  
FOR SPOKANE COUNTY, or as amended**

**Copies of this document are available from the Spokane  
County Building and Planning Department**



**10.20.090L**

**APPENDIX L**

**BUILDING SITE  
DEVELOPMENT  
WATER EROSION  
HAZARD**

**USDA - Natural Resource Conservation Service  
Rock Pointe Tower II  
316 W. Boone Ave., Suite 450  
Spokane, WA. 99201-2348**

**July 1994**

Water erosion can be predicted or estimated using the Universal Soil Loss Equation (USLE). The USLE equation estimates or predicts tons of soil loss per acre per year with the formula  $A = RKLSCP$

A = Estimate average annual erosion (tons/acre/yr.)

R = Rainfall factor (rainfall plus snow melt)

K = Soil erodibility factor

L = Length of slope

S = Percent slope

C = Cover factor (vegetation, mulch, etc.)

P = Conservation practices factor (terraces, etc.)

A modified version of USLE was used to estimate erosion hazard for building site development. The C and P of the USLE equation are erosion management factors. Depending on the type of management

applied they have values from near zero (0) to one (1). The value 1 represents no management applied that benefits erosion reduction.

Management factors (C and P) are not used when identifying the erosion hazard of map units for land use planning. This enables identification of the soil map units inherent erosion hazard potential that can aid in planning.

R factor is related to how much rainfall occurs and when. The higher the annual precipitation the higher the R factor. For the Spokane area an R of 54 was used.

K soil erodibility factor is the soils susceptibility of soil detachment by water. The soils K factor is based on the relationship of five soil factors; 1) percent silt plus very fine sand, 2) percent sand greater than 0.10 mm, 3) organic matter content, 4) soil structure, and 5) permeability. K factor values range from 0.02 to 0.64.

L and S are used together and are referred to as the LS factor. The L part is the length of Slope, which is the distance from a point of origin of overland flow to the point where the slope gradient decreases enough that deposition begins or where runoff water enters a well defined channel that may be part of a drainage network. The S part is the percent slope between two points.

LS value is the relationship between the length of slope and steepness of slope. For example LS for slope lengths of 50 feet are .76 and 8 percent slope, 1.01 at 12 percent slope, and 1.42 at 20 percent slopes (see table below).

The LS value is the value at the intersection of the length of slope land percent slope. Slope length is the distance in feet of an uninterrupted uniform slope.

*See Table, Section 11.20.090M - Appendix M*

The Building Site Development Water Erosion Hazard Table was created using the modified version of USLE. Soil loss from water erosion was calculated for various soil K factors at slope groups of 0 to 8 percents, 8 to 15 percent and more than 15 percent. It is assumed that construction will expose the soil surface for a period of 3 to 6 months. Using the estimated erosion for the period of time the soil is exposed, an index based on K factor and slope was calculated. This index is then used to assign erosion hazard ratings of slight, moderate or severe. The index is a product of K times the average slope of the soil map unit ( $K * \text{ave slope}$ ). Slight has an index of less than or equal to 3.0 (less than 5 tons/acre/yr.), moderate has an index of 3.0 to 4.0 (5 to 8 tons/acre/yr.), and severe has an index of greater than 4.0 (greater than 8 tons/acre/yr.). Only soils with a severe rating are shown on the table that follows.

The Building Site Development Water Erosion Hazard Table for Spokane County provides a tool for broad land use planning and identifying areas with developmental concerns. The information, however, has limitations. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil. The information is not site specific and does not eliminate the need for on-site investigation of the soils.

Soil Survey Spokane County, Washington 7/6/94

Map Symbol	Map Unit Name	Erosion factors K	T	Erosion hazard
AaC	ATHENA SILT LOAM, 5 to 30 % SLOPES	0.37	5	severe
AaD	ATHENA SILT LOAM, 30 to 55 % SLOPES	0.37	5	severe
AaE	ATHENA SILT LOAM, 55 to 70 % SLOPES	0.37	5	severe
AaD	ATHENA SILT LOAM, 5 to 55 % SLOPES	0.37	5	severe
AIC	ATHENA-LANCE SILT LOAMS, 0 to 30 % SLOPES	0.37	5	severe
AID	ATHENA-LANCE SILT LOAMS, 30 to 55 % SLOPES	0.37	5	severe
BaB	BERNHILL SILT LOAM, 0 to 20 % SLOPES	0.43	5	severe
BaC	BERNHILL SILT LOAM, 20 to 30 % SLOPES	0.43	5	severe
BaD	BERNHILL SILT LOAM, 30 to 55 % SLOPES	0.43	5	severe
BbB	BERNHILL SILT LOAM, MODERATELY SHALLOW 30 to 55% SLOPES	0.37	2	severe
BfD	BERNILL VERY STONY SILT LOAM, 20 to 55% SLOPES	0.24	5	severe
BhD	BERNHILL SOILS, 20 to 55 % SLOPES	0.24	5	severe
BkC	BERNHILL VERY ROCKY COMPLEX, 0 to 30 % SLOPES	0.43	5	severe
BkD	BERNHILL VERY ROCKY COMPLEX, 30 to 55 % SLOPES	0.43	5	severe
BrC	BONG AND PHEOBE COARSE SANDY LOAMS, 20 to 30 % SLOPES	0.24	5	severe
BxD	BRICKEL STONY LOAM, 20 to 55 % SLOPES	0.24	2	severe
CeB	CEDONIA SILT LOAM, 5 to 20 % SLOPES	0.37	5	severe
CeC3	EDONIA LILT LOAM, 20 to 30 % SLOPES, SEVERLY ERODED	0.37	5	severe
CtB	CLAYTON LOAM, 5 to 20 % SLOPES	0.37	3	severe
DaB	DREARYTON SILT LOAM, 5 to 20 % SLOPES	0.32	3	severe
DaC	DREARYTON LILT LOAM, 20 to 40 % SLOPES	0.32	3	severe
DrC	DRAGOON SILT LOAM, 0 to 30 % SLOPES	0.37	2	severe
DsC	DRAGOON STONY SILT LOAM, 0 to 30 % SLOPES	0.32	2	severe
DsD	DRAGOON STONY SILT LOAM, 30 to 55% SLOPES	0.32	2	severe
DvD	DRAGOON VARIANT, VERY ROCKY COMPLEX 20 to 50 % SLOPES	0.37	1	severe
EID	ELOIKA VERY STONY SILT LOAM 30 to 55 % SLOPES	0.24	3	severe
FaB	FREEMAN SILT LOAM, 30 to 55 % SLOPES	0.32	5	severe
FAB3	FREEMAN SILT LOAM, 5 to 20 % SLOPES, SEVERELY ERODED	0.32	5	severe
FaC3	FREEMAN SILT LOAM, 20 to 30 % SLOPES, SEVERELY ERODED	0.32	5	severe
GaC3	GARDFIELD SILTY CLAY LOAM, 0 to 30% SLOPES, SEVERELY ERODED	0.32	5	severe
GpB	GLENROSE SILT LOAM, 5 to 20 % SLOPES	0.32	5	severe
GpC	GLENROSE SILT LOAM, 20 to 30 % SLOPES	0.32	5	severe
GpD	GLENROSE SILT LOAM, 30 TO 55 PERCENT SLOPES	0.32	5	severe
GrD	GLENROSE SILT LOAM, 20 TO 55 PERCENT SLOPES	0.24	5	severe
GsD	GLENROSE STONY SILT LOAM, 20 TO 55 PERCENT SLOPES	0.32	5	severe
GtB	GREEN BLUF SILT LOAM, 5 TO 20 PERCENT SLOPES	0.32	5	severe
HfC	HAGEN LOAMY FINE SAND, 0 TO 30 PERCENT SLOPES	0.32	5	severe
HvD	HESELTIME VERY ROCKY COMPLEX, 30 TO 55 PERCENT SLOPES	0.10	1	severe

LaD	LAKESOL SILT LOAM, 20 TO 55 PERCENT SLOPES	0.32	5	severe
LeB	LAKETON SILT LOAM, 5 TO 20 PERCENT SLOPES	0.37	5	severe
LmC	LANCE SILT LOAM, 0 TO 30 PERCENT SLOPES	0.55	5	severe
LmC3	LANCE SILT LOAM, 0 TO 30 PERCENT SLOPES, SEVERELY ERODED	0.55	5	severe
LnB2	LARKING SILT LOAM, 5 TO 20 PERCENT SLOPES, ERODED	0.32	5	severe
	LARKING SILT LOAM 20 TO 45 PERCENT SLOPES, ERODED	0.32	2	severe
MmC	MOSCOW SILT LOAM, 0 TO 30 PERCENT SLOPES	0.32	2	severe
MmD	MOSCOW SILT LOAM, 30 TO 55 PERCENT SLOPES	0.32	2	severe
MoC	MOSCOW SILT LOAM, SHALLOW, 0 TO 30 PERCENT SLOPES	0.37	1	severe
MoD	MOSCOW SILT LOAM, SHALLOW, 30 TO 55 PERCENT SLOPES	0.37	1	severe
MsC	MOSCOW VERY ROCKY COMPLEX, 0 TO 30 PERCENT SLOPES	0.37	1	severe
MsE	MOSCOW VERY ROCKY COMPLEX, 30 TO 70 PERCENT SLOPES	0.37	1	severe
NaC	NAFF SILT LOAM, 5 TO 30 PERCENT SLOPES	0.32	5	severe
NaC2	NAFF SILT LOAM, 5 TO 30 PERCENT SLOPES, ERODED	0.32	5	severe
NaC3	NAFF SILT LOAM, 0 TO 30 PERCENT SLOPES, SEVERELY ERODED	0.32	5	severe
NaD2	NAFF SILT LOAM, 30 TO 45 PERCENT SLOPES, ERODED	0.32	5	severe
NpB	NEZ PERCE SILT LOAM, 5 TO 20 PERCENT SLOPES	0.32	5	severe
NpB3	NEZ PERCE SILT LOAM, 5 TO 20% SLOPES, SEVERELY ERODED	0.32	5	severe
PaC	PALOUSE SILT LOAM, MODERATELY SHALLOW, 20 TO 30% SLOPES	0.32	2	severe
PbC2	PALOUSE SILT LOAM, 5 TO 30 PERCENT SLOPES, ERODED	0.32	5	severe
PcE	PALOUSE VERY ROCKY COMPLEX, 30 TO 70 PERCENT SLOPES	0.10	1	severe
RdB	REARDAN SILT LOAM, 5 TO 20 PERCENT SLOPES	0.37	3	severe
RdB2	REARDAN SILT LOAM, 5 TO 20 PERCENT SLOPES, ERODED	0.37	3	severe
RdC2	REARDAN SILT LOAM, 20 TO 30 PERCENT SLOPES, ERODED	0.37	3	severe
SaC	SCHUMACHER SILT LOAM, 20 TO 30 PERCENT SLOPES	0.32	3	severe
SaC2	SCHUMACHER SILT LOAM, 20 TO 30 PERCENT SLOPES, ERODED	0.32	3	severe
SaD	SCHUMACHER SILT LOAM, 30 TO 55 PERCENT SLOPES	0.32	3	severe
ScD	SCHUMACHER GRAVELLY SILT LOAM, 30 TO 55 PERCENT SLOPES	0.20	3	severe
ScD2	SCHUMACHER GRAVELLY SILT LOAM, 30 TO 55% SLOPES, ERODED			
SnC	SNOW SILT LOAM, 5 TO 30 PERCENT SLOPES	0.32	5	severe
SoE	SPEIGLE VERY STONEY SILT LOAM, 30 TO 70 PERCENT SLOPES	0.20	5	severe
SpC	SPOKANE LOAM, 0 TO 30 PERCENT SLOPES	0.28	2	severe



SpD	SPOKANE LOAM, 30 TO 55 PERCENT SLOPES	0.28	2	severe
SrE	SPOKANE STONY LOAM, 30 TO 70 PERCENT SLOPES	0.24	2	severe
SsC	SPOKANE COMPLEX, 0 TO 30 PERCENT SLOPES	0.28	2	severe
SsE	SPOKANE COMPLEX, 30 TO 70 PERCENT SLOPES	0.28	2	severe
StE	SPOKANE VERY ROCKY COMPLEX, 30 TO 70 PERCENT SLOPES	0.28	2	severe
SuE	SPOKANE EXTREMELY ROCKY COMPLEX, 20 TO 70% SLOPES	0.24	2	severe
SzE	SPRINGDALE GRAVELLY LOAMY SAND, 30 TO 70 PERCENT SLOPES	0.10	5	severe
TeC	TEKOA GRAVELLY SILT LOAM, 20 TO 30 PERCENT SLOPES	0.24	2	severe
TeD	TEKOA GRAVELLY SILT LOAM, 30 TO 55 PERCENT SLOPES	0.24	2	severe
TkD	TEKOA VERY ROCKY COMPLEX, 25 TO 55 PERCENT SLOPES	0.24	2	severe
UhB	UHLIG SILT LOAM, 5 TO 20 PERCENT SLOPES	0.37	5	severe
UmC	UHLIG VARIANT SILT LOAM, MOD. SHALLOW, 5 TO 30 PERCENT SLOPES	0.37	2	severe
VaC	VASSAR SILT LOAM, 0 TO 30 PERCENT SLOPES	0.32	3	severe
VaD	VASSAR SILT LOAM, 30 TO 55 PERCENT SLOPES	0.32	3	severe
VsD	VASSAR VERY ROCKY SILT LOAM, 20 TO 55 PERCENT SLOPES	0.32	3	severe



**11.20.090M**  
Appendix M  
LS Values Table

2018 Printing

PERCENT SLOPE	LS VALUES																			
	SLOPE LENGTH IN FEET																			
	25	50	75	100	110	120	130	140	150	160	180	200	225	250	300	325	350	400	425	450
0.50	0.08	0.11	0.13	0.16	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22	0.23	0.25	0.27	0.28	0.29	0.31	0.32	0.33
1.00	0.13	0.18	0.22	0.25	0.27	0.28	0.29	0.30	0.31	0.32	0.34	0.36	0.38	0.40	0.44	0.46	0.47	0.51	0.52	0.54
2.00	0.21	0.29	0.36	0.41	0.43	0.45	0.47	0.49	0.50	0.52	0.55	0.58	0.62	0.65	0.71	0.74	0.77	0.82	0.85	0.87
3.00	0.27	0.39	0.47	0.55	0.57	0.60	0.62	0.65	0.67	0.69	0.73	0.77	0.82	0.86	0.94	0.98	1.02	1.09	1.12	1.16
4.00	0.33	0.47	0.58	0.67	0.70	0.73	0.76	0.79	0.82	0.84	0.89	0.94	1.00	1.05	1.15	1.20	1.25	1.33	1.37	1.41
5.00	0.39	0.55	0.67	0.78	0.82	0.85	0.89	0.92	0.95	0.99	1.04	1.10	1.23	1.23	1.35	1.40	1.46	1.56	1.61	1.65
6.00	0.44	0.63	0.77	0.88	0.93	0.97	1.01	1.05	1.08	1.12	1.19	1.25	1.40	1.40	1.53	1.59	1.65	1.77	1.82	1.88
7.00	0.49	0.70	0.85	0.98	1.03	1.08	1.12	1.16	1.21	1.24	1.32	1.39	1.56	1.56	1.70	1.77	1.84	1.97	2.03	2.09
8.00	0.54	0.76	0.93	1.08	1.13	1.18	1.23	1.28	1.32	1.37	1.45	1.53	1.71	1.71	1.87	1.95	2.02	2.16	2.23	2.29
9.00	0.59	0.83	1.01	1.17	1.23	1.28	1.34	1.39	1.43	1.48	1.57	1.66	1.85	1.85	2.03	2.11	2.19	2.34	2.41	2.48
10.00	0.63	0.89	1.09	1.26	1.32	1.38	1.44	1.49	1.54	1.59	1.69	1.78	1.99	1.99	2.18	2.27	2.36	2.52	2.60	2.67
12.00	0.71	1.01	1.24	1.43	1.50	1.56	1.63	1.69	1.75	1.81	1.91	2.02	2.26	2.26	2.47	2.57	2.67	2.85	2.94	3.03
14.00	0.79	1.12	1.37	1.58	1.66	1.74	1.81	1.88	1.94	2.00	2.13	2.24	2.51	2.51	2.75	2.86	2.97	3.17	3.27	3.36
16.00	0.87	1.23	1.50	1.73	1.82	1.90	1.98	2.05	2.12	2.19	2.33	2.45	2.74	2.74	3.00	3.13	3.24	3.47	3.57	3.68
18.00	0.94	1.33	1.62	1.88	1.97	2.05	2.14	2.22	2.30	2.37	2.52	2.65	2.97	2.97	3.25	3.38	3.51	3.75	3.87	3.98
20.00	1.01	1.42	1.74	2.01	2.11	2.20	2.29	2.38	2.46	2.54	2.70	2.84	3.18	3.18	3.48	3.62	3.76	4.02	4.14	4.26
22.00	1.07	1.51	1.85	2.14	2.24	2.34	2.44	2.53	2.62	2.71	2.87	3.02	3.38	3.38	3.70	3.86	4.00	4.28	4.41	4.54
24.00	1.13	1.60	1.96	2.26	2.37	2.48	2.58	2.68	2.77	2.86	3.03	3.20	3.58	3.58	3.92	4.08	4.23	4.52	4.66	4.80
26.00	1.19	1.68	2.06	2.38	2.49	2.60	2.71	2.81	2.91	3.01	3.19	3.36	3.76	3.76	4.12	4.29	4.45	4.76	4.90	5.04
28.00	1.24	1.76	2.16	2.49	2.61	2.73	2.84	2.95	3.05	3.15	3.34	3.52	3.94	3.94	4.31	4.49	4.66	4.98	5.13	5.28
30.00	1.30	1.84	2.25	2.60	2.72	2.84	2.96	3.07	3.18	3.28	3.48	3.67	4.10	4.10	4.50	4.68	4.86	5.19	5.35	5.51
32.00	1.35	1.91	2.34	2.70	2.83	2.96	3.08	3.19	3.30	3.41	3.67	3.81	4.27	4.27	4.67	4.86	5.05	5.40	5.56	5.72
34.00	1.40	1.98	2.42	2.79	2.93	3.06	3.19	3.31	3.42	3.53	3.75	3.95	4.42	4.42	4.84	5.04	5.23	5.59	5.76	5.93
36.00	1.44	2.04	2.50	2.89	3.03	3.16	3.29	3.42	3.54	3.65	3.87	4.08	4.56	4.56	5.00	5.20	5.40	5.77	5.95	6.12
38.00	1.49	2.10	2.58	2.97	3.12	3.26	3.39	3.52	3.64	3.76	3.99	4.21	4.70	4.70	5.15	5.36	5.57	5.95	6.13	6.31
40.00	1.53	2.16	2.65	3.06	3.21	3.35	3.49	3.62	3.75	3.87	4.10	4.33	4.84	4.84	5.30	5.51	5.72	6.12	6.31	6.49
42.00	1.57	2.22	2.72	3.14	3.29	3.44	3.58	3.71	3.84	3.97	4.21	4.44	4.96	4.96	5.44	5.66	5.87	6.28	6.47	6.66
44.00	1.61	2.27	2.78	3.21	3.37	3.52	3.66	3.80	3.94	4.07	4.31	4.55	5.08	5.08	5.57	5.79	6.01	6.43	6.63	6.82
46.00	1.64	2.32	2.85	3.29	3.45	3.60	3.75	3.89	4.02	4.16	4.41	4.65	5.20	5.20	5.69	5.92	6.15	6.57	6.77	6.97
48.00	1.68	2.37	2.91	3.35	3.52	3.67	3.82	3.97	4.11	4.24	4.50	4.74	5.30	5.30	5.81	6.05	6.28	6.71	6.92	7.12
50.00	1.71	2.42	2.96	3.42	3.59	3.75	3.90	4.05	4.19	4.32	4.59	4.84	5.41	5.41	5.92	6.16	6.40	6.84	7.05	7.25
52.00	1.74	2.46	3.01	3.48	3.65	3.81	3.97	4.12	4.26	4.40	4.67	5.22	5.50	5.50	6.03	6.27	6.51	6.96	7.17	7.38
54.00	1.77	2.50	3.06	3.54	3.71	3.88	4.03	4.19	4.33	4.48	4.75	5.31	5.59	5.59	6.13	6.38	6.62	7.08	7.29	7.51
56.00	1.80	2.54	3.11	3.59	3.77	3.94	4.10	4.25	4.40	4.54	4.82	5.39	5.68	5.68	6.22	6.48	6.72	7.19	7.41	7.62
58.00	1.82	2.58	3.16	3.64	3.82	3.99	4.16	4.31	4.46	4.61	4.89	5.47	5.76	5.76	6.31	6.57	6.82	7.29	7.51	7.73
60.00	1.85	2.61	3.20	3.69	3.87	4.05	4.21	4.37	4.52	4.67	4.95	5.54	5.84	5.84	6.40	6.66	6.91	7.39	7.61	7.83



**11.20.090N****APPENDIX N**Explanation of  
Aquifer Susceptibility Map**A method for assessing ground water susceptibility in Spokane County****A. Introduction**

In the language of water resources management the term vulnerability describes the potential risk for the contamination of an aquifer. Vulnerability depends on two factors: aquifer susceptibility (the level of ground water protection provided by the natural environment) and the pollution potential (land use activities above the aquifer). This document describes the development and application of a susceptibility model for Spokane County.

The SHADI ground water susceptibility model is based on the same general approach as the DRASTIC model. DRASTIC is a model developed by the National Water Well Association in cooperation with the U.S. EPA (Aller, L., *et al*, 1987). DRASTIC has been used in its original and modified form in most areas of the United States (Swanson, R., 1994; Palmquist, R., 1991). The SHADI modification developed for use in Spokane County uses the following five environmental characteristics to assess susceptibility:

- Soil Media
- Hydraulic Conductivity
- Annual Recharge
- Depth to Ground Water
- Importance of the Vadose Zone

To use the SHADI model data, each of the five characteristics must be mapped at a common level of resolution. Collecting the required data is a time consuming process if summary data in map or tabular form is not available for the characteristics. For the Spokane County simplifying the model to five elements greatly reduces the work required to develop the model without losing the ability to resolve differences in susceptibility. These five characteristics reflect essentially the same range of variability that the seven DRASTIC characters would reflect when applied to Spokane County.

The result of applying the SHADI model is a set of “susceptibility ratings,” usually presented in map form, for discrete geographic units in the study area. The following relationship is used to calculate the final susceptibility value:

$$\text{Aquifer Susceptibility} = (S \times W_s) + (H \times W_h) + (A \times W_a) + (D \times I)$$

Where S, H, A, D, and I are described above and  $W_s$ ,  $W_h$ , and  $W_a$  are weighting factors to bring the relative importance of soil, hydraulic conductivity and annual recharge into balance with the depth to water – vadose zone term. Both the ranking values and weighting values used in SHADI are consistent with those used in DRASTIC.

Aquifer susceptibility using methods like SHADI can be applied “manually” by mapping the various characteristics on tissue paper, overlaying the maps of the characteristics, tracing the boundaries of areas with a unique set of characteristics and manually totaling the ratings for each area. However, this process is easily accomplished using Geographic Information System computer software. The SHADI data sets for Spokane County will be developed in a format that will allow the automated delineation of “unique area” boundaries and the totaling of the final susceptibility rating for those

areas. Like DRASTIC, SHADI is intended to establish the relative risk to contamination that exists for aquifers examined using a consistent database. The model results from one “study” should not be compared with those from another. Similarly, once a study area has been defined it should be treated as a whole. Breaking a study area into subsets requires a reassessment of the ratings applied.

## B. Explanation of Ratings shown on SHADI Map Layers

1. **Soil Media.** For most purposes, soil is considered to be that part of the earth’s surface in which plants grow. The soil layer extends from the land surfaces to the bottom of the root zone – the depth to which plant roots extend. The soil zone is characterized by high biological activity. In a semi-arid climate like that around Spokane a root zone of 5 to 6 feet is common.

For most contaminant discharges within an aquifer recharge area the soil is the first line of defense against contamination. Many of the biochemical actions that take place in the soil can destroy potentially harmful wastes, result in their removal by plants or lead to their being bound up as part of the soil matrix. Most of these processes depend on the amount of clay, silt and organic material in the soil. High levels of one or more of these components lead to better ground water protection.

Table 1 provides a summary of the SHADI ratings for the soil types common in Spokane County.

Table 1. SHADI Ratings for Soil Type	
Soil Type	SHADI Rating
Silty Loam	3
Sandy	6
Rocky/Gravelly	9
Weighting factor: 2	

2. **Hydraulic Conductivity.** Hydraulic conductivity refers to the ease with which water moves through the aquifer media. This is dependent on the amount of interconnected void space in the aquifer. Loose sand and gravel or highly fractured rock have the highest hydraulic conductivity. Aquifers with high hydraulic conductivity more easily disperse contaminants away from the point where they enter the ground water.

Table 2 provides a summary of the SHADI ratings for the hydraulic conductivity of the common aquifer types found in Spokane County.

Table 2. SHADI Ratings for Hydraulic Conductivity	
Hydraulic Conductivity - feet/sec	SHADI Rating
High > 0.025	10
Medium High 0.001 - 0.025	8
Medium 0.00025 - 0.001	6
Medium Low 0.00001 - 0.00025	4
Low < 0.00001	2
Weighting factor: 6	

3. **Annual Recharge.** The amount of water recharged to an aquifer is an important element in assessing ground water susceptibility because it is the recharge water that carries contaminants to the ground water. In general, the greater the amount of recharge, the greater the potential

impact. Because precipitation, as with all climatic characteristics, varies greatly from year to year, annual recharge also varies greatly. For long term planning purposes using “average” values for precipitation to calculate recharge should produce good results for tracking potential ground water impacts and estimating the amount of water available for use. However, recharge levels at both extremes can skew the overall impact. Extremely high recharge may dilute the concentration of contaminants to below the background levels in ground water. Conversely, extremely low recharge over a period of time may result in the accumulation of contaminants in the soil. A normal or above normal recharge period could then flush these contaminants into ground water in a short period of time.

The susceptibility rating values associated with various levels of recharge found in Spokane County are summarized in Table 3.

Annual Recharge - inches	SHADI Rating
2-4	3
4-7	6
7-10	8
10 +	8
Weighting factor: 4	

4. **Depth to Water.** Depth to water is important in establishing the susceptibility of an aquifer because it determines the thickness of the material through which contaminated water must travel before it reaches ground water. In general the more material contaminated water moves through the greater the probability that some or all of the contaminants will be removed. A number of physical (e.g. filtration of suspended solids), chemical (e.g. precipitation of phosphorus) and biological (bacterial break down of organic chemicals into CO<sub>2</sub> and water) may affect the contaminants in recharge water. In addition to the amount of material that the water must pass, deeper water tables usually mean longer travel times. The longer the travel time, the greater the opportunity for contaminant removal.

Table 4 provides a summary of the SHADI ratings for the several depth to water ranges found in Spokane County.

Depth to Water - feet	SHADI Rating
0 - 15	10
15 - 50	8
50 - 100	6
100 +	4
Weighting factor: <i>Importance of the Vadose Zone</i>	

5. **Importance of the Vadose Zone.** The vadose zone is the unsaturated zone between the bottom of the root zone and the water table. As a rule the vadose zone is composed of material similar to that found in the soil or that which contains the aquifer. Because it is below the root zone there is little biological activity under ordinary conditions, so while the vadose zone is important for some of the same reasons a soil is likely to be less effective than soil. As indicated above, the finer the material the better the vadose zone is at removing contaminants. Where the vadose zone is composed of “solid” rock, the size of cracks and fractures and the complexity of the fracture zone determine the contaminant removal ability.

The main difference between SHADI and DRASTIC lies in how the nature of the material in the vadose zone is accounted for in the model. Not all materials have the same ability to retain contaminants or facilitate their decomposition; silty materials will retain more water and hold it longer than coarse gravel. The larger surface area exposed by finer materials usually increases the amount of contaminants that can be removed. In SHADI the Importance of the Vadose Zone is used as a “weighting factor” for Depth to Water. Under this scheme a thick layer of coarse material may be a poorer buffer to contamination than a thin layer of finer soil

Where there are “confining layers” between the land surface and the water table these zones increase the removal of contaminants by providing longer travel times and providing a zone of fine material that increases contaminant removal.

Table 5 provides a summary of the SHADI ratings for the vadose zone materials common in Spokane County.

Material	SHADI Rating*
Clay and Metasedimentary rock	2
Silt and Crystalline rock	4
Weathered basalt	6
Sand	8
Flood gravels	10
Weighting factor: <i>Depth to Water</i>	

*\*Subtract 1 for each confining layer up to 2.*

### C. Results from the application of SHADI

The product of the analysis of ground water susceptibility using SHADI is a set of six maps. Maps one through five depict the characteristics of the environment considered by SHADI. Map six is the susceptibility rating itself. Maps one through five are based on 1) existing mapped data, 2) interpretation of well drillers’ logs and 3) a combination of the above.

Soil and Annual Recharge are taken from the mapping contained in the Spokane County Soil Survey (Donaldson and Giese, 1968) and annual precipitation maps prepared by the National Weather Service (NOAA, 1990). These maps probably represent the range of resolution for the mapping. The Soil Survey maps show variations in soil type for parcels as small as five acres. Annual precipitation at any given point in Spokane County varies greatly from year to year. The precipitation map, and therefore the annual recharge map, cannot show this variation. The areas of equal annual recharge can move a mile to the east or west from year to year. The resolution of the annual recharge map is good in the center of the ranges and poor at the edges. This means that the resolution of this factor ranges from 640 acres to 2560 acres.

Hydraulic Conductivity is derived from tests on individual wells penetrating the various ground water bearing formations. The distribution of Hydraulic Conductivity in the various ground water units is based on both the individual well information and the existing geology maps, which delineate the areas in which aquifers with similar characteristics might be found. Given the level of detail in the geology maps, the amount of individual well data used and the range of values for hydraulic conductivity employed in SHADI the resolution of this mapping is estimated to be about 160 acres.



Depth to Water for most of the urbanizing area of the county is derived from special studies that show considerable detail. The resolution of this characteristic for these areas is about 40 acres. For the rest of the county the information for Depth to Water was derived in the same manner as Hydraulic Conductivity and thus has a resolution of about 160 acres.

Importance of the Vadose Zone is based on a recently completed geologic map of Spokane County (Johnson, 1997). The resolution of this map is about 40 acres.

The Geographic Information System (GIS) used a GRID process to calculate the susceptibility rating. The grid process divides the 5 source maps into squares that are the same size and positions throughout the whole county. The values (rate times weight) of the stacked squares in all 5 layers are added together for the final susceptibility rating. The GRID process was programmed to use squares 300 feet on a side (2.1 acres). SHADI rating areas less than 40 acres in size were combined with adjacent areas to create the final SHADI rating map.

#### **D. SHADI Rating Map revised to create Aquifer Susceptibility Map**

The SHADI rating map was revised to create the Aquifer Susceptibility Map by adding additional areas to coordinate wellhead protection throughout Spokane County. The Washington State Department of Health provided the data for wellhead protection coordination based on site specific (well specific) determination of susceptibility of contamination to wells. The data includes designated wellhead protection areas and areas within 1000-foot radius of Group A community and Group A community transient wells without reported plans. As wellhead protection plans are completed for wells, the 1,000-foot radius placeholder will be replaced by the Washington Department of Health-certified wellhead protection area. These areas are treated as high aquifer susceptibility areas. It is the intent of the Aquifer Susceptibility Map to coordinate the wellhead protection program with protection of critical aquifer recharge areas. Uses and activities within designated wellhead protection areas subject to critical aquifer recharge area regulations are required to meet the standards for high aquifer susceptibility. However, applicants have the opportunity to provide evidence to support a low or medium aquifer susceptibility rating by means of a hydrogeologic report. The Spokane County Director of Utilities, in consultation with agencies of expertise, shall review and accept or reject the hydrogeologic report.

The Aquifer Susceptibility Map will be revised as required to display updated data on wellhead protection areas received from the Washington State Department of Health. The Aquifer Susceptibility Map is available from the Spokane County Building and Planning and the Spokane County Division of Utilities.



**11.20.090O**

**Appendix O**

**Critical Areas Ordinance MAPS,  
or as amended**

**Wetlands Map**

**Fish and Wildlife Habitat Map**

**Geo-hazard Map**

**Critical Aquifer Recharge Areas Map**

**DNR Water Types Map**

**Flood Hazard Map**

**Shoreline Map**