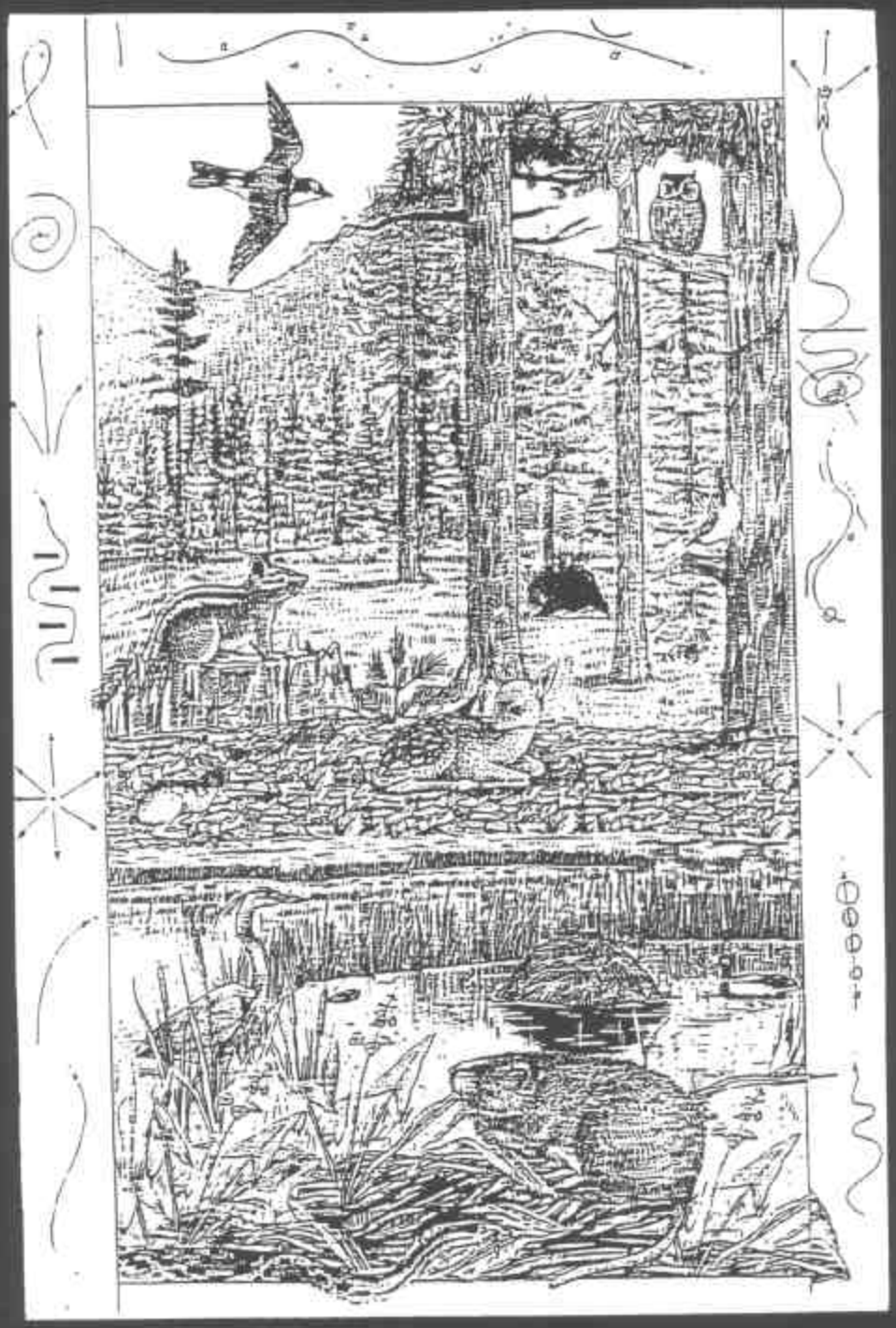

City of Spokane

CRITICAL AREAS REPORT

City of Spokane Critical Areas Report
November 14, 1994
A part of the Comprehensive Plan

City of Spokane
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REPORT ADOPTION

The "City of Spokane Critical Areas Report" was adopted by the City Plan Commission on October 26, 1994 and by the City Council on November 14, 1994, as part of the Comprehensive Plan for Spokane, Washington. The purpose of the report is to guide both public actions and private development to protect critical areas and the public health, safety, and welfare, and to enhance the quality of life for the citizens of Spokane.

On November 14, 1994, the City Council also adopted Ordinance No. C31252, relating to interim development control of sensitive areas. This ordinance extends the protection found in the report--its goals, policies, classifications, and designations--to the city's critical areas during the period between adoption of the report and adoption of final implementing regulations. The City of Spokane's final development regulations to implement the "Critical Areas Report" will be presented to the City Council in the winter of 1994-95.

ACKNOWLEDGEMENTS

The City Plan Commission is grateful to the members of the Critical Areas Task Force for their exemplary dedication and direction in developing the "Critical Areas Report." Appreciation is also extended to staff of various departments of the City who provided valuable input and assistance during the preparation of the report. Task force members and staff are listed in Appendix A.

November 7, 1994

The Honorable Jack Geraghty and
City Council Members
City of Spokane

Re: Proposed City of Spokane Critical Areas Report

The City Plan Commission is pleased to present the attached City of Spokane Critical Areas Report for your consideration. If adopted, the Report will become an important tool for protecting critical areas and the public heath, safety, and welfare, and for enhancing the quality of life of the citizens of Spokane. Application of the proposed Interim Development Control and the subsequent adoption of the City's final development regulations (to be presented to the Council later this winter) will ensure that the Report's goals and policies come into fruition.

State Mandate for Critical Areas

Washington State's Growth Management Act (passed in 1990) requires all cities to classify and designate their critical areas. In July of 1993, the City of Spokane became subject to the full mandates of GMA, which include a requirement to also provide interim protection for critical areas. GMA defined critical areas as:

- ?? fish and wildlife habitat conservation areas;
- ?? geologically hazardous areas;
- ?? aquifer recharge areas;
- ?? frequently flooded areas;
- ?? wetlands.

The state developed "Minimum Guidelines" to provide jurisdictions guidance as they plan for critical areas. The guidelines emphasized that this stage of critical areas planning is interim, so that critical areas are not lost while comprehensive plans are developed.

History-City Planning for Critical Areas

The City's planning process for its critical areas of fish and wildlife habitat and geologically hazardous areas began in early 1993 with the appointment of the Critical Areas Task Force (CATF). (The City addressed wetlands in its Spokane Wetlands Protection Program, adopted in 1992; aquifer recharge areas and frequently flooded areas were addressed in existing plans and regulations, though opportunity for citizen participation for these areas was provided in the critical areas process described below.)

The CATF was composed of citizens representing a wide variety of interests and public servants from federal, state, and city agencies. Three public workshops were held in early 1994 to determine citizen's concerns and issues they wished to see addressed. The Task Force worked diligently throughout 1994 to develop the draft Report; two subcommittees focused on goals and policies, and regulations. The state's "Minimum Guidelines" and public input received during workshops were guiding forces throughout development of the Report.

The Plan Commission was updated periodically throughout the critical areas planning process of its progress. The Commission held public hearings on the draft Report on September 28 and October 26. As a result of these hearings, the Commission made minor changes, mostly clarifications. Three issues were discussed in detail:

(1) While concern was expressed about including the issue of view corridors and view points in the Report (p. 12), the Commission decided to retain it, to provide needed goal and policy guidance. The Commission recognizes the need in the future to identify view corridors and develop regulations or other mechanisms to protect them while also protecting property rights.

(2) The Commission agreed to "Require a licensed landscape architect to prepare all required landscape plans, to insure sensitive, quality environmental design" (implementation action 3, p. 8). One of the aims of the Report is to mitigate impacts of development rather than prohibit development; thus, evaluation and solutions from experts such as landscape architects is needed.

(3) The Commission agreed that public notice of staff decisions regarding projects involving potential critical areas was needed and would be included in the regulatory process.

Major Concepts of the Proposed Report

Major concepts of the Report include:

- ?? protecting critical areas through a variet of mechanisms-both regulatory and non-regulatory.
- ?? including public participation as a vital element of critical areas management;
- ?? using Washington State Department of Fish and Wildlife recommendations for classifying, designating, and protecting wildlife species and habitat areas;
- ?? protecting the bulic from erosion, landslide, and seismic hazardous areas;
- ?? evaluating potential impacts of development as early as possible in the proposal process;
- ?? locating critical areas by a combination of generalized mapping and a self-identification process during the permitting process;
- ?? addressing critical areas as "Development Sensitive Areas" (DSAs) in the City's "Zoning Code." The City's philosophy in protecting DSAs is to add no more limitations on the private use of land that necessary, and to mitigate impacts of land use and development rather than prohibit development.

Recommendation

On October 26, 1994 the Plan Commission voted to send this revised version of the draft Report (dated November 1, 1994) to the City Council with a recommendation of adoptions.

Respectfully submitted,

H.J. "Jim" Kolva, President

HJK:SJF:sfj

INTRODUCTION

A. Purpose

The purpose of this report is to provide for the interim protection of Spokane's critical areas, to protect the public health, safety, and welfare, and to enhance the quality of life of the citizens of Spokane. Critical areas are:

(1) fish and wildlife habitat conservation areas;
(2) geologically hazardous areas;
(3) aquifer recharge areas;
(4) frequently flooded areas; and
(5) wetlands.

The interim protection provided in this report is intended to meet the requirements of the State of Washington's Growth Management Act of 1990 (RCW 36.70A) to address Spokane's critical areas until a more complete conservation or protection program is developed. This interim program will be reviewed, refined, and incorporated into the final report, which is to be completed by the end of 1997.

The health and well-being of the people of Spokane is an interconnected and dependent relationship with both the local natural environment and the global ecosystem. Future generations have a right to an environment with at least the same qualities and quantities of environmental assets as present generations enjoy.

Spokane's long-term economic progress and the need for local environmental protection must be seen as mutually interdependent. Sustainable development meets the needs of the present without compromising the future. Spokane is a complex urban environment that requires people and the natural environment to work together. As members of our urban ecosystem, we all have a responsibility for its stewardship.

B. Report Development and Content

This report is a guide to help fulfill the needed stewardship for Spokane's critical areas. Preparation of this report was overseen by the Critical Areas Task Force, a City Plan Commission-appointed group of citizens representing a wide variety of interests. Other public involvement included city-wide public meetings, bi-monthly meetings of the Critical Areas Task Force (CATF), and newsletter and newspaper articles. Others participating in the preparation of this report include the City Plan Commission and mutually dedicated local, state, and federal agencies. The importance of coordinating with Spokane County on critical areas planning was recognized early in the planning process. Several CATF members served on both the City's and County's critical areas task forces, which helped provide good linkage between the two jurisdictions.

The report includes goals, policies, and implementation actions:

- *Goals* indicate general desired aims, directions, or accomplishments.

- *Policies* serve as rules or guides for decisionmaking, to accomplish the goals.

- *Implementation actions* are specific, definable actions or techniques to accomplish the goals and implement the report; both regulatory and nonregulatory implementation actions are included.

The goals and policies in this plan do not include modifiers such as "when appropriate" or "significant." Such undefined modifiers were not included since it was believed that they do not contribute to a clear understanding of the goal or policy. In addition, it is assumed that decisionmakers, in using their judgment when applying the goals and policies in specific cases, will balance tradeoffs and consider how the goals and policies apply to the specific case.

Many existing City plans contain goals and policies pertaining to critical areas issues. The following City plans were reviewed and used in developing this report: *Generalized Land Use Plan, Shoreline Master Program, Spokane Wetlands Protection Program, Park and Open Spaces Plan, Latah Creek Specific Plan, Lincoln Heights Specific Plan,* and *Indian Trail Specific Plan.* In addition, Spokane County's *Critical Areas* section of its *Comprehensive Plan* was also used during the City's critical areas planning process, to help fulfill the interest in coordinating with the County on critical areas planning.

Upon adoption of this report by the City Council, the goals and policies contained herein should be considered as supplemental to those contained within other City planning documents. However, if there is an apparent conflict between a policy of this report and one from any other element of the Comprehensive Plan, the policies contained herein shall be considered applicable.

C. Summary of Citizens' Concerns

Throughout the citizen participation planning process for fish and wildlife habitat conservation areas and geologically hazardous areas, several broad issues or themes were frequently mentioned as important to the people of Spokane. These major themes are summarized below.

Support for Reliable Planning that Benefits the Entire Community

The public expressed strong support for planning that benefits the entire community. The public wants planning that:

- is proactive, not reactive;
- considers community-wide values and interests--such as the need to preserve wildlife in the city and consider geologically hazardous areas;
- seeks and listens to input from the public early in the process;
- is consistent and community-wide--that does not evaluate projects individually or on a case-by-case basis;
- includes greater enforcement to ensure the intent of public policies and regulations is met; and
- takes into consideration the "intangible values" we need as humans (not just material values).

Public concern for the interests of the entire community was shown by the specific suggestions citizens made for improvements:

- increase policing of litter and illegal dumping;
- take care of existing publicly-owned open spaces and parks;
- improve public notification of development projects;
- increase communication between developers and community;
- monitor and verify responses given in a development "checklist" process; and
- improve enforcement, education, and communication of current regulations.

Wildlife Seen as Important to Spokane's Quality of Life

Wildlife is seen by many as an important contributor to Spokane's quality of life. People believe there is an inherent value in preserving the city's wildlife for the city and its residents. The presence of wildlife in Spokane is one of the features that make the city a distinctive, pleasant, and interesting place to live.

During a series of three public meetings held in February 1994, citizens identified a wide variety of wildlife they had seen within the city, including: deer, eagles, bald eagles, coyotes, skunks, raccoons, game birds, blue herons, quail, porcupines, squirrels, falcons, hawks, red tail hawks, marmots, owls, elk, osprey, fish, rubber boa snake, cougar, geese, mountain bluebird, mice, gophers, herons, ducks, snakes, turtles, pheasants, partridge, rabbits, birds, grasshoppers, common redpoles, common meadowlarks, yellow bellied marmots, wood ducks, insects, ground squirrels, possums, moose, magpies, doves, grouse, hummingbirds, bear, and "106 variety of birds."

While many species of wildlife were identified in the city, this wildlife was not only as identified as *existing* in the city, it was also identified as being important to *preserve* in the city. Not only were endangered and threatened species (such as bald eagles) seen as important, but more common wildlife such as quail, squirrels, and pheasants were also considered important to preserve.

The Importance of Wildlife Habitats

For wildlife to remain in the city, the people of Spokane recognize the essential need to preserve healthy, viable wildlife habitats. Spokanites recognize, as the Department of Wildlife states, that "wildlife management is based on habitat management." Wildlife habitat features such as native plants, open spaces, and corridors that link habitat areas were all identified as important by citizens.

The people of Spokane also recognize the need to prevent the formation of isolated pockets of small, marginal habitats. Citizens recognize, as the Department of Wildlife cautions, that "Habitat that remains after urbanization, agricultural conversion, and other land use changes often consists of isolated fragments or 'islands' of original habitat." Healthy, viable habitat areas need to be connected with nature corridors (undeveloped habitat, such as riparian areas). This does not mean that small or isolated habitats are not of value; they too should be preserved and connected with corridors and/or open spaces when possible.

The relationship of wildlife habitats, connecting corridors, and other open spaces (such as recreational spaces) needs to be considered. Coordination and cooperation between the City and County is important, as the two jurisdictions plan for their fish and wildlife habitat areas.

Importance of Not "Over-Engineering" Geologically Hazardous Areas

Many also believe that some areas are not suitable for development and therefore should not be developed--there are some areas where technology does not provide good solutions, but would only be "over-engineered." People expressed concerns about erosion, drainage, and flooding problems caused by poorly designed or constructed development on steep slopes and/or unstable soils, and damage to nearby properties when rock is blasted. Although engineering solutions may produce development that is feasible by the laws of physics and the material sciences, those engineering solutions may not produce development that is appropriate or desirable in the eyes of citizens.

I. OVERALL GOALS, POLICIES, AND IMPLEMENTATION ACTIONS FOR CRITICAL AREAS

A. Existing Policies Fundamental to Critical Areas

The Growth Management Act requires planning for critical areas. Existing City of Spokane plans, however, also support the need to plan for these areas.

The following six policies from the City's *Generalized Land Use Plan** were originally adopted in 1983 and amended in 1988. These existing City policies are reaffirmed here, to provide both support for the imperative need to plan for these areas and direction for how to go about it.

Policy 1:

Limit the types of uses and establish comprehensive performance standards for proposed development of areas containing steep slopes.

[Generalized Land Use Plan goal 1, policy 2]

Policy 2:

Establish construction practices and land management regulations to protect native plant communities and natural drainage courses and minimize erosion.

[Generalized Land Use Plan goal 1, policy 3]

Policy 3:

Develop standards and criteria for use in various land use regulations, establishing the limits of adverse environmental impacts.

[Generalized Land Use Plan goal 3, policy 3]

Policy 4:

Modify or condition development proposals to avoid or mitigate identified adverse environmental impacts.

[Generalized Land Use Plan goal 3, policy 4]

Policy 5:

Maintain the Environmental Inventory for the City of Spokane in an up-to-date condition, reflecting most recent available data. Identify specifically those conditions and areas which represent natural hazards.

[Generalized Land Use Plan goal 3, policy 1]

Policy 6:

Utilize the procedures of the Washington State Environmental Policy Act (SEPA) and City Environmental Policy Ordinance to evaluate the potential impacts of proposed development.

[Generalized Land Use Plan goal 3, policy 2]

* From Chapter 2, "Natural Hazards Effect on Development."

B. Policies for the Planning Process

The following policies relate to the planning process for critical areas. The intent of these policies is to improve the quality of the planning that addresses the protection and well-being of critical areas. Some of these issues were also identified by Spokane County in its planning process, and are included in its *Critical Areas* plan.

Policy 1:

Manage critical areas in a way that includes protection, preservation, enhancement, mitigation, and education.

Policy 2:

Manage critical areas through a variety of mechanisms, including regulatory and nonregulatory mechanisms.

Policy 3:

Consider the cumulative effects of land use activities on critical areas in land use decisions.

Policy 4:

Develop and implement a critical areas checklist process to identify proposed land uses that may impact critical areas.

Policy 5:

Include public participation as a vital element of critical areas regulations and management programs. The City should actively seek individuals and local groups to assist in identifying and protecting critical areas.

Policy 6:

Periodically review and update the City of Spokane's critical areas program.

Policy 7:

Recognize the critical importance of cooperative and coordinated land use planning between the City of Spokane and Spokane County.

Policy 8:

Where private development of critical areas is not in the public interest, measures--such as donations, easements, or purchase of land--to acquire development rights should be pursued. Private property shall not be taken for public use without just compensation having been made.

C. Overall Critical Areas Goals and Policies

Primary Goal:

Protect critical areas and public health, safety, and welfare and enhance the quality of life of citizens by controlling the adverse impacts of growth and development.
[based on: Land Use Plan, Natural Hazards goal 3]

Policy 1:

Regulate development in critical areas to ensure protection of both the critical area and the public's health, safety, and welfare.

Policy 2:

Minimize the impacts of development that occurs in critical areas; however, favor prevention of problems over mitigation of problems.

Policy 3:

Evaluate the potential environmental impacts of proposed development as early as possible in the development proposal process, at the beginning of site analysis.

Policy 4:

Prohibit development in critical areas where development impacts cannot be mitigated; where all reasonable use of a property is denied, recognize the potential need for public purchase of the area.

Policy 5:

Acquire under public ownership areas containing sensitive natural features or maintain them as private open space within developments.
[based on: Land Use Plan, Natural Hazards chapter, goal one, policy 5]

Policy 6:

Educate the public about the importance of sustaining plant and animal life, why it should be preserved, and the need for sensitive development in and adjacent to critical areas.

Goal--Restoration:

Restore damaged areas within critical areas to a rehabilitated condition, when the opportunity arises.

Policy 1:

Evaluate the condition of the critical area and integrate rehabilitation in the development proposal site analysis and site planning.

Goal--Vegetation:

Recognize the importance and value of native plant communities and encourage its preservation and use.
[based on: Shoreline Master Program, restoration goal]

Policy 1:

Treat all site components--soil, rock, water and plant communities--as resources, not waste products.

Policy 2:

Minimize site disturbance.

Policy 3:

Incorporate native plant communities in developments within critical areas and their buffer areas. The native vegetation planted in buffers should be the same as and/or complement (naturally progress) that found in the adjacent critical area.

Policy 4:

Promote use of native plant communities throughout the city.

Policy 5:

Control noxious weeds (non-native, highly destructive, and competitive plants) to protect native plant communities, control erosion, and preserve wetlands, open spaces, and wildlife food sources, shelter, nesting areas, and other habitat. Use the least intrusive control approach necessary to achieve the needed control.

Implementation Action 1:

Develop an urban forestry program to plan for, protect, and increase the number of the city's street trees.

Implementation Action 2:

Incorporate use of native plant communities in landscaping requirements.

Implementation Action 3:

Require a licensed landscape architect to prepare all required landscape plans to insure sensitive, quality environmental design.

Implementation Action 4:

Recognize and promote the Spokane County Noxious Weed Control Board and its efforts to control noxious weeds (a requirement of state law).

Goal--Water:

Protect the Spokane-Rathdrum Aquifer, Spokane River, Latah Creek, Marshall Creek, waterways, watersheds, springs, seasonal ponds, wetlands, and other water areas to safeguard water quality and riparian habitats.
[based on: Shoreline Master Program, master goal]

Policy 1:

Adopt comprehensive watershed planning and protection.
Discussion: Maintaining and protecting natural conditions -- surface and subsurface -- will protect water quality and reduce environmental degradation. Development should provide mitigating measures which eliminate negative impacts to channel morphology, water quantity and quality.
[based on: Latah Creek Specific Plan, policy 3]

Implementation Action 1:

Continue to work with Spokane County to plan and enact regulations designed to protect the Spokane-Rathdrum Aquifer and other ground waters.
[based on: Land Use Plan, policy 2]

Implementation Action 2:

Continue efforts to work through the "208" Technical Advisory Committee to achieve regional, interstate aquifer protection.

Implementation Action 3:

Continue to maintain and use the Shoreline Master Program, the Flood Prevention Control Ordinance, and the Wetlands Program for protection of water resources.
[based on: Land Use Plan, policy 1]

Implementation Action 4:

Work with local water purveyors to implement wellhead protection plans.

Implementation Action 5:

Support the creation and operation of a city storm water management program.

Policy 2:

Maximize natural water storage and infiltration opportunities within drainage basins.
Discussion: Following this policy will provide such benefits as the storing and regulating of storm water runoff, purifying surface water, and supporting biological activities, and avoid damage such as flooding, erosion, and sedimentation.

Implementation Action 1:

Promote the conservation of forest cover and natural vegetation.

Implementation Action 2:

Maintain natural storage reservoirs and drainage corridors including depressions, areas of permeable soils, swales, and intermittent streams.

Implementation Action 3:

Avoid ground water contamination when designing infiltration systems.

Discussion: A compatible grading, paving and erosion control ordinance will be useful as will cooperation during the watershed planning process. For example, it is imperative that storm water facilities planned by the county be compatible with facilities planned by the city. Storm water is a system that does not recognize jurisdictional boundaries.

Implementation Action 4:

Protect and augment natural drainage systems as part of the City's storm water management program.

Policy 3:

Manage storm water and surface water to prevent flooding and stream channel erosion. Protect the predevelopment hydrology, hydrodynamics, and water quality in surface bodies of water.

[based on: Indian Trail, policy 4]

Implementation Action 1:

Respect natural seasonal water supply fluctuations.

Implementation Action 2:

Adopt standards to maintain peak runoff discharge rates from developed sites at no greater than the predevelopment rates.

Implementation Action 3:

Adopt zero rise floodplain standards.

Policy 4:

Require water resource protection during site planning and construction of new development.

Implementation Action 1:

Establish effective erosion and sediment control programs.

Implementation Action 2:

Prohibit pre-existing wetlands or bodies of water from being used for sedimentation of solids from construction phase runoff.

Policy 5:

Stimulate public awareness and value of water resources to establish protective attitudes in the community.

Implementation Action 1:

Expand educational programs regarding human impacts upon water resources.
Discussion: Human impacts include the proper use and disposal of fertilizers and pesticides, automobile maintenance, the importance of maintaining buffers, and the care of animals in such a way as to reduce water pollution.

Implementation Action 2:

Provide interpretive signboards at points of public access adjacent to bodies of water informing residents of their functions and beneficial uses, protective measures taken, and other relevant information.

Policy 6:

Manage urban impacts on bodies of water.

Implementation Action 1:

Support code enforcement and code revisions to control littering and destruction of wetland and riparian vegetation.

Implementation Action 2:

Support neighborhood efforts to control destruction of wetland and riparian vegetation.

Implementation Action 3:

Recognize Department of Health approved wellhead protection areas as types of critical aquifer recharge areas (CARAs).

Implementation Action 4:

Evaluate alternatives for the control of runoff quantities and water quality from both new and existing developments.

Implementation Action 5:

Set pollutant loading limits.
Discussion: Continue support of the detergent phosphorus ban.

Policy 7:

Bring existing developments up to standards that now apply to new developments.

II. FISH AND WILDLIFE HABITAT CONSERVATION AREAS

A habitat is an animal's home--the place where it finds what it needs to survive. A livable habitat should offer a tolerable climate, a varied terrain, ample space, and a dependable supply of food and water. It should have safe places for feeding, playing, hiding, resting, and raising young. A habitat, in effect, is the answer to an animal's everyday needs. These needs may change throughout a year, or throughout the animal's life. Very often, one of these habitats is the "preferred" one. This is the place where the animal spends most of it time, and gets most of its important needs fulfilled. Often, it is where it breeds and raises its young.

Most animals depend on a variety of habitat types to meet their daily needs. The best of all worlds is an area that has patches of old and young trees, both needleleaf and broadleaf, relieved occasionally by clearings and sources of clean water. This kind of diversity is healthy for the whole ecosystem. A diverse habitat, like a diversified economy, is less likely to crash when one element fails. [*Wildlife Habitats*]

Habitat Conservation

In its *Minimum Guidelines* for assisting jurisdictions to protect habitats, the state's Department of Community, Trade, and Economic Development (DCTED) noted:

> Fish and wildlife habitat conservation means land management for maintaining species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not created. This does not mean maintaining all individuals of all species at all times, but it does mean cooperative and coordinated land use planning is critically important among counties and cities in a region.

DCTED identified the following issues as important considerations when classifying and designating fish and wildlife habitat conservation areas:

- creating a system of fish and wildlife habitat with interconnecting corridors between larger habitat blocks and open spaces;
- the level of human activity in such areas including presence of roads and level of recreation type (passive or active recreation may be appropriate for certain areas and habitats);
- protecting riparian ecosystems;
- evaluating land uses surrounding ponds and fish and wildlife habitat areas that may negatively impact these areas; and
- establishing buffer zones around these areas to separate incompatible uses from habitat areas.

Riparian Areas

Riparian areas are those lands adjacent to water bodies. They are one of the most important habitats because of the abundance and diversity of species of plants and animals they support. They provide water, food, vegetative cover, and travel corridors for wildlife. Riparian vegetation benefits fish by keeping water temperatures from fluctuating, providing habitat for insects which drop into the water and become food, and decreasing sedimentation which degrades fish spawning areas. In addition to the benefit to wildlife, retention of riparian areas in their natural condition maintains groundwater recharge and water quality.

According to the Washington Department of Fish and Wildlife (WDFW), the riparian habitats along the Spokane River and Latah Creek are the most important wildlife habitats within the city limits. Due to the topographic relationship of the Spokane River to the adjoining "upland" communities, Spokane's riparian habitats are often confined to a narrow strip of vegetation immediately adjacent to the river. This vegetative zone is best augmented by an associated upland zone of relatively undisturbed habitat which provides a buffer between the riverine environment and areas characterized by more intensive land uses and the negative impacts associated with development and urbanization.

Corridors

Riparian and other sections of native and nonnative (parks, golf courses) vegetation also function as important connective links or corridors used by wildlife for migration and dispersal between larger habitat blocks, or between fragmented blocks of once contiguous habitat (as between urban "islands" of natural habitat and the surrounding rural habitats). The Spokane River and Latah Creek riparian habitats are important habitat corridors providing connectivity between the Palouse, Dishman Hills, Tower Mountain and the northern timber habitats of Spokane.

Minimum effective widths of corridors required by different species of wildlife for migration to winter feeding grounds, breeding and birthing habitats, etc., are not well established. This makes it extremely important to maintain and / or enhance riparian and other corridors as intact, unfragmented components of the landscape. Interconnecting wildlife corridors should be maintained that create a system of habitats with connections between larger habitat blocks and open spaces. This would minimize the fragmentation of habitat and assist in maintaining wildlife populations and their genetic diversity in an increasingly developed environment.

Several factors contributing to riparian, wetland, and corridor vegetative loss have the potential to negatively impact wildlife. These include: direct habitat loss resulting from development, secondary habitat loss and/or reduction in quality due to trampling of vegetation and soil compaction in high use recreation areas, fragmentation or isolation of existing habitat blocks, and increased disturbance to wildlife resulting from increases in recreational uses of remaining open spaces.

A. Goals, Policies, and Implementation Actions

Primary Goal:

Protect, conserve, and restore the viability of fish and wildlife habitat, and encourage species diversity and genetic diversity of wildlife.

Policy 1:

Provide opportunities for food, cover, nesting, breeding and movement for fish and wildlife.

Policy 2:

Protect and maintain interconnecting wildlife corridors to create a system of habitats that minimize habitat fragmentation.

Policy 3:

Protect and enhance fish and wildlife habitat conservation areas by using buffer areas to "buffer" the impacts of adjacent areas on the habitat.

Policy 4:

Inventory and identify during site analysis the priority species and habitats, and habitats and species of local importance.

Policy 5:

Provide educational, scientific study, and other opportunities that respect and do not degrade fish and wildlife habitat.

Policy 6:

Recognize that the Washington Department of Fish and Wildlife manages fish and wildlife resources; coordinate with WDFW in land use planning and management of fish and wildlife resources.

Implementation Action 1:

Educate citizens on the importance of species diversity and habitats, especially concerning sensitivity to habitats, control of domestic pets, and human practices that affect the natural environment. Use programs such as: Partners at Large, City Parks Department's Conservation Districts, Spokanimal, WSU Extension, and WDFW's Backyard Wildlife Sanctuary Program.

Implementation Action 2:

Plan with Spokane County to protect the integrity and continuity of wildlife corridors.

Goal--Wildlife Habitat and Vegetation

Retain, protect, and restore native plant communities in fish and wildlife habitat areas, and encourage their use throughout the city.

Policy 1:

Identify and inventory existing trees and other vegetation in the site analysis process; site design should maximize retention of existing trees and native plant communities.

Policy 2:

Preserve natural rock outcroppings and other geologic features that support fish and wildlife habitat.

Policy 3:

Provide natural buffers at top of cliffs and bluffs to preserve cliff and hillside vegetation and to maintain critical natural water systems.

Policy 4:

Incorporate native plant communities into landscaping plans within habitat areas and buffer areas, as well as throughout the city, to help:

- *minimize impacts to wildlife habitat by maintaining nesting and/or foraging destinations;*
- *serve as a natural buffer between developments and open space habitat areas; and*
- *minimize soil disruption and erosion by decreasing the amount of vegetation that is removed during construction.*

[based on: Indian Trails policy 6 and Lincoln Heights policy 4]

Implementation Action 1:

Support programs that promote retaining and incorporating native plant communities into landscaping plans and encourage sustainable landscapes in our region. One example is the Spokane County Cooperative Extension Sustainable Landscape Project.

Implementation Action 2:

Support establishing an urban forestry management plan and program to preserve and increase the number of the city's trees. Examples include: the existing Spokane Area Urban Forestry Program (a County-wide program) or developing a new program with the Parks and Recreation Department.

Implementation Action 3:

Use the City of Spokane's Parks Department "Conservation Areas" program to acquire fish and wildlife areas for public ownership.

Conservation areas are lands held either in public ownership or protected by easement right to preserve natural features and other historic or scenic values, to conserve natural resources or to avoid development of lands subject to flooding, landslides or nuisances

destructive to property and life. The size and location varies with the purpose being served. Conservation areas may also serve as open space in an urban area, or may include developed park facilities. Other land uses which are compatible with the goals of conservation areas might be allowed. Farming and commercial tree farms are examples of uses that could be compatible. Development of recreational facilities on conservation lands is a secondary objective. *Park Lands designated fish and wildlife conservation areas have very limited recreational use; at the most, passive recreational uses such as minor trails or pathways.*
[source: Parks and Open Spaces Plan--italicized text added]

Conservation Land Recommendations: There are other areas in the city, besides those described above, that have steep slopes, are subject to flooding and erosion, contain fauna or fragile flora or have significant historic values. These areas should continue to be acquired by the city. Where public ownership is not possible, the city should work with private land owners to mitigate development impacts in critical areas.

The City Parks and Recreation Department, will consider and respond to the City's fish and wildlife habitat conservation areas in their land acquisition program, which acquires and retains land under public ownership.
[source: Parks and Open Spaces Plan--italicized text added]

B. Classifications

Fish and wildlife habitat conservation areas include:

- **I. Areas with priority species**
- **II. Priority habitats**
- **III. Habitats and species of local importance**
- **IV. Naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat**
- **V. Waters of the state**
- **VI. Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity**
- **VII. State natural area preserves and natural resource conservation areas**

These classifications of fish and wildlife habitat conservation areas are described below.

I. Areas with Priority Species

Areas with priority species are areas that priority species have a primary association with or are essential to the survival of the species. Priority species are determined by Washington Department of Fish and Wildlife (WDFW) and are included in its Priority Habitats and Species program. Priority species consist of the following categories:

Endangered species
Threatened species
Sensitive species
Candidate species
selected Monitor species
other protected species (game and nongame)

Descriptions of the six priority species categories follow:

Priority Species

Endangered Species

Endangered species are wildlife species native to the state of Washington that are seriously threatened with extinction throughout all or a significant portion of their range within the state. Endangered species are legally designated in WAC 232-12-014.

Threatened Species

Threatened species are wildlife species native to the state of Washington that are likely to become an endangered species within the foreseeable future throughout a significant portion of their range within the state without cooperative management or removal of threats. Threatened species are legally designated in WAC 232-12-011.

Sensitive Species

Sensitive species are wildlife species native to the state of Washington that are vulnerable or declining and are likely to become endangered or threatened in a significant portion of their range within the state without cooperative management or removal of threats. Sensitive species are legally designated in WAC 232-12-011.

Candidate Species

WDFW has prepared a list of candidate species that will be reviewed for possible listing as endangered, threatened, or sensitive species. Candidate species are designated in Wildlife Policy 4802.

Monitor Species

Monitor species are wildlife native to Washington that are of special interest because of their natural history (e.g., were formerly endangered/threatened, require habitat of limited availability, are indicators of environment quality). WDFW does not include all monitor species in its PHS program. (Currently, only 21 of the 149 species listed as monitor in Washington State are included in the PHS program.) While monitor species are important and worthy of special consideration in land use planning, WDFW feels that the survival needs of most of these species will be met by adequately protecting priority habitats. Monitor species are designated in Wildlife Policy 4803.

Other Protected Species (Game and Nongame)

A sixth category of protected species are, for the most part, wildlife species not included in any of the above categories that are listed due to their vulnerability and/or recreational importance. These include both game and nongame, hunted and nonhunted species.

Endangered, threatened, sensitive, and candidate species are included together in WDFW's Priority Habitats and Species program under the criterion of "Listed Species." WDFW states:

> Listed species are those officially designated by the State Department of Wildlife and/or U.S. Fish & Wildlife Service as endangered, threatened, sensitive, or candidate. These are species known to be experiencing or have experienced failing or declining populations due to factors such as limited numbers, disease, predation, exploitation, or a loss of suitable habitat. These species are in jeopardy of extirpation or extinction because of population declines. (Source: WDFW, PHS, p. 2.)

Monitor and other protected (game and nongame) are referred to in WDFW's Priority Habitats and Species program under the criterion of "Vulnerable Species":

> Vulnerable Species includes those susceptible to significant population declines because they are uncommon (either within a specific area or statewide, have a very limited distribution, or have special space or habitat requirements. These

characteristics make them particularly vulnerable to significant population declines because of disease, extreme weather, or loss of suitable habitat. Some monitor and game species fall under this criterion. (Source: WDFW, PHS, p. 3.)

Priority Species currently (May 1994) located within the Spokane City limits are listed below.

Priority Species within the City of Spokane
(as of May 1994)

Endangered Species

Peregrine falcon

Threatened Species

Bald eagle

Sensitive Species

(currently no species are listed as Sensitive)

Candidate Species

Spotted frog
Pileated woodpecker
Western bluebird

Monitor Species

Osprey
Great blue heron*

Other Protected Species (Game and Nongame)

Cavity-nesting ducks
White-tailed deer
Red-tailed hawk

fish:
Rainbow trout

* While great blue herons are seen within Spokane city limits, WDFW management recommendations are designed to protect their rookeries. No rookeries currently exist within the city limits.

Additional information about the priority species currently (May 1994) identified within the City is found in the appendix: "City of Spokane Priority Species Descriptions."

WDFW's Recommendations for Classifying Priority Species

WDFW recommends that jurisdictions include these priority species categories in their classifications and designations, to effectively plan for wildlife. In the publication "Wildlife and the Growth Management Act," produced by WDFW to assist jurisdictions plan under GMA, WDFW states:

> In response to the GMA's requirement to classify, designate, and regulate fish and wildlife habitat conservation areas, some cities and counties may consider protection only for species classified as "endangered" or "threatened" by WDFW. Restricting planning activities to only endangered and threatened species would in WDFW's view, inadequately address wildlife issues in this state by omitting important categories of Washington wildlife. It would also appear contrary to the principles and best practices of the art and science of land use planning. Endangered and threatened species represent mistakes that have already happened, poor judgements that have already been made, or lack of adequate consideration in land use changes that have already occurred. A single focus on just these two categories of wildlife is a reactive mode of planning that only addresses ways to mend past neglect and mismanagement. The true spirit of land use planning anticipates potential conflicts and responds to these in a proactive manner before they become real problems. Therefore, effective planning for wildlife must include consideration of those species that are currently being pushed in the direction of endangered or threatened status. This can be done by including PHS species that are now classified as sensitive, candidate, monitor, or game/protected as priority species in the local jurisdiction's responses to the GMA. (p. 8)

WDFW clarifies what including the priority species in the classification system means. WDFW states:

> [WDFW] has regulatory authority only pertaining to bald eagles and work within the high water mark of streams. The agency's primary role in protecting wildlife is that of being an advisor to city and county governments ... in land use planning, reviewing development proposals, and timber harvest planning. ("Wildlife and the Growth Management Act", p. 1.)

> [Including] these categories does not mean that an area containing these species is automatically locked up and prohibited from development of any kind. Rather, it simply means that the survival needs of these species will be included as one of the many components in the land use planning process, and that priority wildlife resources will be a part of the equation as development decisions are being made. This will insure that land use decisions will consciously seek to minimize adverse impacts to important species and habitats, that degradation of priority habitat and species through ignorance will be avoided, and that vulnerable species and habitats will be offered more than blind chance for their survival. (WDFW Penland memo, April 8, 1992, re: DCD's Generic Ordinance, p. 2.)

II. Priority Habitats

Priority habitats are areas the WDFW has determined have one or more of the following attributes:

high wildlife density
high species diversity
important wildlife breeding habitat
important wildlife seasonal ranges
important movement corridors
limited availability
high vulnerability to habitat alteration

The following are the priority habitats identified by WDFW within the City of Spokane:

Priority Habitats within the City of Spokane

Riparian
Urban natural open space
Freshwater wetlands and deepwater habitats
Old growth
Grasslands, meadows, prairies, steppes

III. Habitats and Species of Local Importance

In addition to the Priority Species and Priority Habitats recognized by WDFW and classified above, there is opportunity for recognizing other species and habitats that are important locally to the people of Spokane. There are several opportunities to plan for and address these "Habitats and Species of Local Importance." These include both regulatory and nonregulatory mechanisms.

Regulatory Mechanism to Establish Habitats and Species of Local Importance

A regulatory mechanism for officially adding a species/habitat of local importance into the wildlife ordinance is provided here. Adding a local species or habitat includes providing designation and protection for the local species or habitat.

To nominate "Habitats/Species of Local Importance" as candidates for designation, an individual or organization must:

1. Demonstrate a need for special consideration based on:
   (a) declining population;
   (b) sensitivity to habitat manipulation; or
   (c) commercial or game value or other special value, such as public appeal.
2. Provides species habitat location(s) on a map (scale 1:24,000);

3. Propose relevant management strategies considered effective and within the scope of this plan and accompanying ordinance.

Submitted proposals will be reviewed by Planning Services department staff, WDFW, and/or other local and state agencies or experts for comments and recommendation regarding accuracy of data and effectiveness of proposed management strategies.

The City of Spokane will hold a public hearing for proposals found to be accurate, potentially effective, and within the scope of and in compliance with this plan and accompanying ordinance. Approved nominations will become designated "Habitats/Species of Local Importance" and will be subject to the provisions of this plan and accompanying ordinance.

Nonregulatory Mechanisms to Promote Non-"Priority" Habitats and Species

In addition to the regulatory mechanism specified above to officially add a species/habitat of local importance into the wildlife ordinance, nonregulatory mechanisms are also included in the plan to benefit wildlife and their habitats in the city of Spokane. These nonregulatory mechanisms include, for example, the Backyard Wildlife Sanctuary Program, incorporating the City of Spokane into the Spokane County Conservation District (which includes programs to preserve urban forests); and expanding the Spokane City Parks Conservation program to further the preservation and expansion of habitat within the Parks system.

In addition, it is hoped and intended that classifying, designating, and offering protection to the priority species and habitats will benefit other species as well.

IV. Naturally occurring ponds under 20 acres and their submerged aquifer beds that provide fish or wildlife habitat

The *Minimum Guidelines* states:

> Naturally occurring ponds do not include ponds deliberately designed and created from dry sites such as canals, detention facilities, waste-water treatment facilities, farm ponds, temporary construction ponds (of less than three years duration) and landscape amenities. However, naturally occurring ponds may include those artificial ponds intentionally created from dry areas in order to mitigate conversion of ponds, if permitted by a regulatory authority.

The Spokane City Wetlands Protection Program addresses ponds under twenty acres and their submerged aquatic beds. The purpose of the program is to allow no net loss of wetland area, functions, and values. One value/function identified in the program is critical wildlife habitat. For example, in Category 1 Wetlands one of the criteria is documented habitat for endangered or

threatened fish or animal species, and requires a 200-foot buffer zone.

There are four categories in the wetlands program, all of which require buffers of different widths. In addition, larger buffer requirements may be imposed by the City on a case-by-case basis when a larger buffer is necessary to protect wetland functions and values. The program states:

> The wetland is used by a plant or animal species listed by the federal or state government as endangered, threatened, sensitive, or documented priority species or habitats, or essential or outstanding potential habitat for those species or has unusual nesting or resting sites such as heron rookeries or raptor nesting trees.

The Wetlands Ordinance also regulates the maintenance of wetland buffers, stating:

> wetland buffer zones shall be retained in their natural condition. Where buffer disturbances have occurred before or during construction, revegetation with native vegetation shall be required.

V. Waters of the State

Waters of the State include streams, lakes, and ponds as defined in WAC 222 — the Forest Practices Rules and Regulations. This regulation employs a five-tier classification system of water bodies on the basis of the water body's channel width, volume of flow, significance for fish, and other factors. For example Type 1 streams are those which have a minimum annual stream flow of 20 cubic feet per second. Type 5 streams, in contrast, are intermittent, typically flowing only a portion of the year.

Within Spokane City limits, two of the most significant water bodies are the Spokane River and Latah Creek; both are rated as Type 1 water bodies. As Type 1 they are also identified as Shorelines of the State and as such are regulated by the City's Shoreline Master Program. This program includes policies for preservation of fish and wildlife. Under this program a 50 feet natural vegetation buffer along both sides of the river is required. It also regulates the allowed uses and building setbacks according to the designation of the area. There are five different designations of Latah Creek and the Spokane River in the Shorelines Program:

Central Falls Intensive Urban
Upriver Transition Urban
Upriver Urban and Conservancy
Downriver Gorge Conservancy
Latah Creek Rural

Particularly sensitive (i.e., valuable wildlife habitat) shoreline areas of the Type 1 streams are designated as the "conservancy environments." In these, the primary intent is to preserve the natural systems present, including fish and wildlife habitats. This is accomplished by providing additional protection for riparian habitats and natural vegetation.

Protection for all the types of water bodies is contained in the draft management

recommendations for riparian habitat from the Washington Dept. of Fish and Wildlife. In addition, Latah Creek and the Spokane River are both classified as priority habitats, specifically Urban Natural Open Spaces. A small section of upper Latah Creek is designated as riparian habitat, another priority habitat.

Aside from inclusion in their riparian management recommendations, Types 2 — 5 are not all presently identified by WDFW as priority habitats. This may be due to a lack of data on the part of WDFW or it may reflect those waterways through central urban areas that no longer function as wildlife habitat. Some or all may be currently protected by the Wetlands Protection Program.

VI. Lakes, Ponds, Streams, and Rivers Planted With Game Fish By a Governmental or Tribal Entity

Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity includes game fish planted in these waters under the auspices of a federal, state, local, or tribal program or which supports priority fish as identified by WDFW. [source: *Minimum Guidelines*.]

Game fish plantings by governmental agencies within the city are limited to the Spokane River. These plantings are undertaken by Washington Water Power in conjunction with WDFW as mitigation measures for hydrological disturbances in the Spokane River. As of July 1994, games fish plantings for 1994 are on hold, due to contamination levels in the fish found in the river. WWP expects that plantings will resume in 1995.

The Spokane River is included in the WDFW's PHS system as fish and wildlife habitat (it is designated as Urban Natural Open Space, Wetlands, and Fish Habitat).

VII. State Natural Area Preserves and Natural Resource Conservation Areas

State natural area preserves are defined, established, and managed by the State Department of Natural Resources under the State Natural Heritage Program. The annual plan of the Natural Heritage Program sets goals, implementation objectives, and includes a plan for future acquisition of sites. There are no state natural area preserves within the City limits [resource: Ken Carr, Riverside State Park]. There is, however, a state natural area preserve close to the city, two miles west of the city in Riverside State Park.

There are no natural resource conservation areas within the city limits [resource: Lynn Broderson, Department of Natural Resources]. There is, however, one located in the county which is an important area of habitat reaching into an urbanized portion of the valley. There is a linkage between this area and the Tower Mountain area which is close to the city limits and is presently being considered by the county as a future conservation area. Both these areas are important habitat and connecting corridors, serving as routes for wildlife movement between the

city and county. Loss of these corridors would affect the amount and diversity of wildlife seen in the city.

C. Designations

WDFW's Priority Habitats and Species maps for Washington's Priority Habitat and Species are adopted to designate the fish and wildlife habitat conservation areas within the City of Spokane. These maps contain the best currently available graphic depiction of fish and wildlife habitat conservation areas. The maps are for information purposes only and are not regulatory in nature. These maps are intended to inform the public (including the development community, appraisers, and current or prospective property owners), of the possible existence of a development-limiting factor based on fish and wildlife issues.

The maps may be relied upon by the planning department as a basis for requiring field investigation and special reports. In the event of a conflict between information shown on the maps and information shown as a result of field investigation, the latter shall prevail.

Fish and wildlife habitat conservation areas not shown on the maps are protected under all the provisions of this plan. In the event any of the designations shown on the maps conflict with the criteria set forth in this plan, the criteria and site specific conditions shall control.

The source for mapped information is WDFW priority species and habitat data.

Updating of Designations and Mapping

The maps will be updated as data becomes available to WDFW and the City. Updating of the maps is a crucial task that is necessary to further the intent and goals of this plan. The City supports and will rely on WDFW's ongoing efforts to continue mapping of fish and wildlife habitat conservation areas within the city.

How Classification Categories Are Currently Designated on the Maps

As noted above, maps will be updated as further data becomes available. Detail on how each classification category is currently designated on the maps for this interim plan is provided below.

I. Areas with Priority Species

Designations of areas with which Priority Species have a primary association are found on the PHS maps.

II. Priority Habitats

Designations of priority habitats are found on the PHS maps.

III. Habitats and Species of Local Importance

Designations of habitats and species of local importance as fish and wildlife habitat conservation areas will be added to the maps as the locally important areas are adopted.

IV. Naturally Occurring Ponds Under 20 Acres and Their Submerged Aquatic Beds that Provide Fish or Wildlife Habitat

Designation of natural occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat as fish and wildlife habitat conservation areas is accomplished at this interim level by including those areas that are presently identified on the PHS maps by WDFW.

In addition, the City's wetlands maps included as the part of the critical areas mapping indicate all wetlands in the city. Some, but not necessarily all, of these wetlands may provide fish or wildlife habitat. In the future, more complete identification of the city's fish and wildlife habitats could be provided by incorporating the information found on the wetlands maps with the updating of the fish and wildlife habitat maps. This information may be referred to by WDFW as it updates its PHS maps.

V. Waters of the State

Waters of the State types 1-5 are designated on DNR's stream typing map. However, while all waters of the state are identified on the DNR maps, not all are included on the City's wildlife map as priority habitats. Only those designated by WDFW as priority habitats were included. (As noted earlier, the difference between DNR and WDFW mapping may reflect a current lack of data or that some urban streams may not presently function as wildlife habitat.)

VI. Lakes, Ponds, Streams, and Rivers Planted with Game Fish By a Governmental or Tribal Entity

As stated above, the one body of water planted with game fish by a governmental or tribal entity in the city is the Spokane River, which is included on WDFW's PHS maps.

VII. State Natural Area Preserves and Natural Resource Conservation Areas

As stated above, there are no state natural area preserves or natural resource conservation areas within the city.

III. GEOLOGICALLY HAZARDOUS AREAS

Geologically hazardous areas are areas that pose a threat to the health and safety of citizens when incompatible commercial, residential, or industrial development is sited in areas of significant geological hazard. Geological hazards include susceptibility to erosion, sliding, earthquakes, and other geological events. Some geological hazards can be reduced or mitigated by engineering, design, or modified construction practices so that risks to health and safety are acceptable. When technology cannot reduce risks to acceptable levels, building in geologically hazardous areas is best avoided.

In its 1983 *Generalized Land Use Plan*, the City of Spokane addressed issues relating to geologically hazardous areas. Chapter 2 of the plan, titled "Effects of Natural Hazards on Development," focused on past land development trends and practices impacting Spokane's natural environment and presented goals and policies aimed at protecting certain natural (physical and hydrological) features within the city.

In the introduction to the Natural Hazards chapter, the City provided some background as to the importance of considering and planning for the effects of natural hazards:

> **PURPOSE**
> The conditions of the earth and environment are very slowly but continuously changing, in response to persistent natural forces. As we develop and use the land, we interfere to a greater or lesser degree with and disrupt those physical processes, alter their effect on the land's surface, and create conditions which may be out of natural balance. The extent of our effect on the environment and its natural processes is directly related to our knowledge of earth science information, and our sensitivity to the potential impacts of our actions.
>
> Local government has long felt obligated to deal with direct hazards to people which may result from catastrophic natural events such as landslides or flooding. Protecting the physical environment for its own sake has more recently been considered a legitimate area for government involvement. Degradation of the environment may create hazards to people. Such degradation may be substantially hidden in the natural processes and not easily identified. For example, pollution of ground water systems gradually, over a long period of time, may not immediately cause alarm but, in the long term, creates a public hazard. As our knowledge of earth sciences grows, showing us the delicate balances and interrelationships of nature, we become more aware of the far-ranging effects of our actions.
>
> The National Environmental Policy Act (NEPA) was adopted in 1969, with most states developing similar legislation during the following several years. The State of Washington, in 1971, enacted its own Environmental Policy Act (SEPA), with language and intent nearly identical to NEPA. Subsequently, the City of Spokane adopted an Environmental Policy Ordinance in 1978 which is a local supplement

to SEPA.

TRENDS AND DEMANDS

The environmental character of the Spokane area has influenced the pattern and development of urban growth. The flat, easily worked lands along the Valley of the Spokane River and the terraces to the north and south were developed first, partially because construction was easy and relatively inexpensive. Areas with steep slopes, marshes and other surface water conditions, surface bedrock and similarly difficult physical characteristics were bypassed during initial development.

However, as easily built-upon land becomes depleted, attention is increasingly turning to those bypassed lands where the impacts of physical development are more acute. Building in these areas may create potential hazards to both the human users and the natural environment itself. Local governmental concern for construction in natural hazard areas motivated the adoption of the Goals and Policies contained in this Chapter.

The environmental conditions in and around the City of Spokane have been inventoried and extensively studied since the mid-1970's. Some characteristics of the natural environment are relatively static in that, in the absence of human modification, their conditions do not change noticeably over time periods of 50 to 100 years. these characteristics typically include slope, soils, geology, water features, and plant and animal habitats. They have the most profound effect on urban development because they are sensitive to man's actions and, when disturbed, create unstable, even unsafe, conditions. The cost of satisfactorily overcoming hazards created by building in such situation may be extremely high. The effects on the environment are usually irreversible.

Other parts of the physical environment are much more dynamic, with characteristics that can be changed significantly over shorter periods of time, such as five to ten years. They respond positively to public policy emphasis or capital investment, and commonly include air quality, noise, water quality and various aesthetic quality of life features.

In recent years, development regulations have been enacted, addressing some of the more sensitive environmental conditions. It is important to note these regulations do not preclude development but rather prescribe certain uses, performance and control standards designed to protect the public and physical environment. Regulations of the Shoreline Master Program and the Flood Damage Prevention Ordinance are examples, and work has progressed on regulations to protect the quality of the Spokane Aquifer. Further work is needed to address hillside development and other slope-related problems, as well as conditions of unstable geologic/soil features.
[source: *Generalized Land Use Plan*, Natural Hazards chapter]

A. Goals, Policies, and Implementation Actions

Primary Goal:

Protect natural topographic, geologic, and hydrological features and the public health, safety, and welfare and enhance the quality of life of citizens by mitigating adverse impacts of development in geologically hazardous areas.
[based on: Land Use Plan, Natural Hazards, Goal One]

Policy 1:

Follow the City's Generalized Land Use Plan Natural Hazards chapter, goal one, policy one, which states:

"Consider, unsuitable for development lands containing one or more of the following features:

(1) slopes in excess of 30%;
(2) known unstable soils or slopes;
(3) evidence of old or recent slides or identified slope hazard areas; or
(4) evidence of soil creep.

Allow development in these areas when it has been demonstrated that it can be accomplished in a manner which:

(A) assures the protection and safety of persons and property; and
(B) is harmonious with the existing natural environment; and
(C) will not result in significant on-site or downstream erosion; and
(D) assures long-term slope and soil stability with minimum maintenance."

[source: General Land Use Plan, Natural Hazards chapter, goal one, policy one.]

Policy 2:

When development occurs in geologically hazardous areas, design the development so that it protects the public's health, safety, and welfare; prevents property damage and environmental degradation; and enhances wildlife habitats and corridors.
[based on: Latah Creek, policy 7]

Policy 3:

Approve, condition, or deny development proposals based upon the degree to which the geologically hazardous areas pose a risk to public and private property and to the extent the risk can be avoided or mitigated.
[based on: Spokane County]

Policy 4:

Use engineering studies as a tool to assess the suitability of development, the susceptibility of hillsides to erosion and/or landslides, and the capability to satisfactorily provide roads, utilities, and building sites.
[based on: Lincoln Heights, policy 4]

Policy 5:

Consider public acquisition by purchase, donation, or easement of areas containing sensitive natural features or maintain them as private open space within developments. Grant on-site density bonuses or allow transfer of development potential to developers preserving these areas in a natural open space condition.

[based on: Land Use Plan, Natural Hazards chapter, goal one, policy 5]

Policy 6:

Require development to be set back from the top of steep slopes to maintain banks and preserve critical areas.

[based on: Conservation Goal, Policy D, 4, Shoreline Master Program]

Implementation Action:

Just do it.

Goal 2:

Preserve and enhance natural features which contribute to the unique character of an area.

[based on: Lincoln Height plan]

Policy 1:

Incorporate the natural topography in site planning to enhance the appearance and contribute to the function of new development.

[based on: Lincoln Height, policy 1]

Policy 2:

Minimize the adverse impacts of development to the natural and built environment, to the site, and to adjacent properties.

[based on: Spokane County]

Policy 3:

Restrict clearing and grading activities in geologically hazardous areas based upon weather and site limitations.

[based on: Spokane County]

Policy 4:

Preserve rock outcroppings and incorporate them as a part of site design.

Implementation Action:

Develop a vegetation removal, grading, drainage control, and erosion control ordinance.

Goal 3:

Restore significant environmental features that have been degraded.

Policy 1:

Restore degraded slope and bluff areas with soil bioengineering techniques to arrest the processes of erosion, sedimentation and flooding as well as to enhance wildlife habitat.

[based on: Restoration Goal, Policy C, 2, Shoreline Master Program]

B. Classifications

Classification is the process of determining what geological hazardous areas will be identified in order to establish standards that protect public safety and the natural environment from inappropriate development. Classifications are based on a set of guidelines designed by the Department of Community, Trade, and Economic Development (DC TED). The guidelines help cities and counties classify and designate critical areas. The Critical Areas Task Force (CATF) has chosen to adopt a modified version of the minimum guidelines for local use. Areas that are susceptible to one or more of the following types of hazards shall be classified as geologically hazardous:

I. Erosion hazard;
II. Landslide hazard;
III. Seismic hazard;
IV. Areas subject to other geological events such as coal mine hazards and volcanic hazards including: mass wasting, debris flows, rockfalls, and differential settlement.

These classifications of geologically hazardous areas are described below.

I. Erosion Hazard Areas

Erosion hazard areas are susceptible to severe erosion and may require mitigation measures, engineering solutions, or restrictions to development to protect public safety. The guidelines established by DC TED define erosion hazard areas as "at least those identified by the Soil Conservation Service (SCS) as having a severe rill and interrill erosion hazard." The SCS, using their existing database, compiled a table that identifies all soils in the City of Spokane having a severe rill or interrill erosion hazard. This Building Site Development Water Erosion Hazard Table will be used to classify erosion hazard areas.

II. Landslide Hazard Areas

Landslide hazard areas are potentially subject to landslides based on a combination of geologic, topographic, and hydrologic factors. These include areas susceptible to landslides because of any combination of bedrock, soil, slope, structure, hydrology, or other factors. Classification of landslide hazard areas include:

a. slopes greater than 80% subject to rockfall during seismic shaking;

b. any area with a slope of 33% or greater, except areas composed entirely of rock;

c. areas with all three of the following characteristics: slopes greater than 15%, steep hillsides intersecting permeable sediment overlying an impermeable sediment or bedrock, and springs or ground water seepage;

d. slopes that are parallel or sub-parallel to planes of weakness (such as bedding-planes, joint systems, and fault planes) in subsurface materials;

e. areas of historical failure identified by the SCS as having a severe limitation for building site development;

f. areas of historic failure designated on Department of Natural Resources (DNR) maps as landslides;

g. areas potentially unstable as a result of bank caving and erosion, areas located in a canyon or on an active alluvial fan subject to inundation by debris flows or catastrophic flooding;

h. areas of the "Latah Formation" (sedimentary layers of clay interlain between basalt flows) that are subject to landslides.

III. Seismic Hazard Areas

Seismic hazard areas are subject to severe risk of damage as a result of earthquake induced ground shaking, slope failure, settlement, soil liquification, or surface faulting. It does not appear that the Spokane region is in an area of severe risk. Further study by the United States Geological Service (USGS) will help determine the earthquake risks in Spokane. Areas of concern for earthquake damage will be covered in other geological hazardous areas (i.e. steep slopes, unstable and highly erodible soils, and landslide prone areas). The Uniform Building Code (UBC) also classifies the City of Spokane in a moderate Seismic Zone 2B. All building activity is subject to the provisions of the UBC, which provides structural safeguards to reduce the risks from seismic activity.

IV. Other Geological Hazard Areas

Other geological hazard areas include volcanic and mine hazards. Initial research and investigation has determined that no mine hazards exist in the City of Spokane. In the past the City has been impacted by volcanic ash, but this is not considered a geological hazard and does not warrant classification or designation.

C. Designations

The process for designating areas classified as geological hazardous includes mapping, self disclosure, field investigation and technical reports. Mapping includes those classifications that the City currently has the technical ability to identify and map. Each mapped classification is a layer in the overall geological hazardous area composite map. The geological hazardous area composite map is further layered with the other critical areas (wetlands, wildlife, frequently flooded areas, and aquifer recharge areas) to establish a critical area composite map. The critical area composite map will be used to determine if an applicant's property is in an area that warrants further analysis by a staff investigation or technical report. The mapping will be advisory only and will not be considered an official geological hazardous area map or overlay zone. Geologically hazardous areas that are not currently mapped will be mapped as information and resources become available.

I. Erosion Hazard Areas

All the soils identified as severe are mapped using the Building Site Development Water Erosion Hazard Table. This map is used as a layer in the geological hazardous area composite map.

II. Landslide Hazard Areas

Designation of landslide hazard areas are as follows:

a. Slopes greater than 80% subject to rockfall during seismic shaking will be identified by either a self disclosed checklist, staff investigation, or further technical studies.

b. Slopes of 30% or greater with at least 20 feet of vertical relief are mapped city wide and is used as a layer in the geological hazardous area composite map to help identify areas that require further investigation. The classification for designation of geological hazardous area will remain at 33% which will be determined by a staff investigation or further technical studies.

c. Areas with all three of the following characteristics: slopes greater than 15%, steep hillsides intersecting permeable sediment overlying an impermeable sediment or bedrock, and springs or ground water seepage; will be identified by either a self disclosed checklist, staff investigation, or further technical studies.

d. Slopes that are parallel or sub-parallel to planes of weakness (such as bedding-planes, joint systems, and fault planes) in subsurface materials will be confirmed by a geotechnical study if a staff investigation or geotechnician field check indicates the condition may exist.

e. Areas of historic failure that are identified by the SCS as having a severe limitation for building site development are mapped using the *Building Site Development Report*. This map is used as a layer in the geological hazardous area composite map.

f. Historic failures that are identified on DNR geologic maps as landslides are mapped for the City of Spokane. This map is used as a layer in the geological hazardous area composite map.

g. Areas potentially unstable as a result of bank caving and erosion, and areas located in a canyon or on an active alluvial fan subject to inundation by debris flows or catastrophic flooding, will be identified by either self disclosed checklist, staff investigation, or further technical studies. Some of these areas may already be classified, designated, and regulated under the existing City of Spokane Flood Hazard Ordinance.

h. Areas of the "Latah Formation" that are subject to landslides will be initially identified by geologically hazardous area mapping, but will require further analysis by a geotechnical study to confirm landslide hazards.

III. Seismic Hazard Areas

As identified in the classification section of this report, the City of Spokane is not in an area of severe risk for seismic hazards, therefore no designation of these areas is warranted at this time.

IV. AQUIFER RECHARGE AREAS

One of the five critical areas designated under the Growth Management Act is "areas with a critical recharging effect on aquifers used for potable water." These areas are defined in DCTED's *Minimum Guidelines* as including "areas where an aquifer which is an essential source of drinking water is vulnerable to contamination that would create a significant hazard to public health."

The City has recognized the importance of this critical area (referred to in this report as an "aquifer recharge area") in a variety of policies and protective actions. The most significant of these actions was the City's participation in the adoption of the Aquifer Sensitive Area, a multi-jurisdictional designation that addresses the Spokane-Rathdrum Aquifer, the region's sole-source aquifer. The Aquifer Sensitive Area includes nearly all of the City; it is defined in the *Spokane Municipal Code* as:

> That area or overlay zone from which run-off directly recharges the aquifer [the Spokane-Rathdrum aquifer], including the surface over the aquifer itself, and the hillside areas immediately adjacent to the aquifer. The area is shown in the map adopted as part of Section 11.10.190. (SMC 11.10A.0304)

The City, often working in conjunction with Spokane County, has developed a multi-faceted approach for protecting this important resource. As a result, protecting aquifer recharge areas is addressed through a variety of plans and programs. For example, the City's *Generalized Land Use Plan* includes general goals and policies which address the aquifer. However, the primary plan the City uses for protecting the aquifer is the *Spokane Aquifer Water Quality Management Plan.*

A summary of the approaches used to address and protect the City's aquifer recharge areas follows, listed by the relevant document or program. *For complete descriptions or additional information, the relevant document and/or office should be consulted.*

"GENERALIZED LAND USE PLAN"

The City's *Generalized Land Use Plan* establishes the overall framework or basis for planning for the City's future development. Two chapters of the plan directly address aquifer recharge areas: Chapter Two and Chapter Nine.

Chapter Two: "Effects of Natural Hazards on Development"

The purpose of Chapter 2, "Effects of Natural Hazards on Development," is "to focus attention on past land development trends and practices impacting Spokane's natural environment and to present several goals and policies aimed at protecting certain physical and hydrological features within the City" (p. 2-1).

Goal Two of the chapter states:

> *Surface and ground water resources and associated land features should be protected and preserved.*

Policy Two under Goal Two states:

> *In concert with Spokane County, continue to plan and enact regulations designed to protect the Spokane Aquifer and other ground waters.*

Chapter Nine: "Special Programs and Planning Areas"

Chapter nine summarizes specialized planning studies that provide policy guidance and/or lead to land use regulations with much finer detail than the *Generalized Land Use Plan*. One of the studies summarized (on pages 9-3 to 9-7) is the *Water Quality Management Plan* (or "208 Plan"). (The plan is also described in the following section below.) The summary contained in chapter nine states in part:

> As prescribed in the Spokane Aquifer Water Quality Management Plan, the city is pursuing a comprehensive strategy of protecting the existing resources [the Spokane river and aquifer] by correcting or curing problems that have been identified. This water quality management strategy is oriented to both the river and the aquifer. Individual decisions should strive to balance both interests.
>
> The City of Spokane, as a party and supporting agency of the Spokane Aquifer Water Quality Management Plan, is committed to approaching these problems with an area-wide perspective. All water quality management planning and regulation is to be closely coordinated with the area-wide Plan while individual management decisions must consider effects both within the city and beyond its corporate limits. (pages 9-3 to 9-4)

The summary also contains six goals with accompanying policies designed to control and guide land use activities that have the potential for polluting surface and ground water. The summary states: "These goals and policies are partial fulfillment of the City's obligation to implement the '208' Plan..., and provide specifically tailored guidance reflecting the city's management techniques." The six goals are listed below; the 24 policies that accompany the goals can be found in the *Generalized Land Use Plan* (pages 9-4 to 9-7).

Goal One: *The City should seek to prevent further degradation of surface and ground waters.*

Goal Two: *A city priority sewer service area should be established for providing sanitary sewer service.*

Goal Three: *Storm water runoff associated with new land development should be controlled and managed to protect the quality of surface and ground water.*

Goal Four: *Surface mining activities should be controlled to protect surface and ground water resources.*

Goal Five: *Responsible development and management must be promoted for industrial and commercial activities which use critical materials in the aquifer sensitive area as a means of protecting surface and ground water resources.*

"SPOKANE AQUIFER WATER QUALITY MANAGEMENT PLAN"

The primary plan that guides aquifer protection in the City is the *Spokane Aquifer Water Quality Management Plan*. This multi-jurisdictional plan was developed in cooperation with Spokane County over a two-year period under the direction of citizens and technical advisory committees of the Spokane County Water Quality Management Program. (The plan and program are sometimes referred to as the "208 plan" and the "208 program," after section 208 of the federal Water Pollution Control Act. The Act, commonly called the Clean Water Act, calls for waste treatment management plans.) As stated in the plan foreword:

> Protection of the water quality in the Spokane-Rathdrum Aquifer in Washington is the principal objective of this program. ... The Spokane-Rathdrum Aquifer is of special significance since it is the sole source of water supply for the Spokane Metropolitan area and its preservation a resource is essential to the health and welfare of Spokane area residents. This Water Quality Management Plan contains the framework for aquifer water quality preservation. (p. vi)

Completed in 1979, the *Spokane Aquifer Water Quality Management Plan* provides an in-depth analysis of the protection of the aquifer on a multi-jurisdictional level. The plan includes extensive background information, as well as recommended policies and actions for protection of the aquifer water quality. The plan "Abstract" states:

> The Spokane-Rathdrum Aquifer Water Quality Management Plan was developed utilizing the advice of a citizen representatives Core committee and a technical advisory Committee by program staff. The committees, after developing an understanding of the aquifer and cause and effect relationships between aquifer water quality and the activities of man, recommend a policy of "no further degradation" as a basic planning goal and the principle of control of potential pollutants at their source to realize the goal. Specific recommendations were developed for the control of pollutants from the following activities: gravel extraction, solid waste disposal, storm-water runoff disposal, agricultural activities, industrial activities and sanitary wastewater disposal. Recommendations for land use and wastewater management planning were developed and intergovernmental coordination and cooperation are recommended.

> The Plan recommends that planning activities for the aquifer sensitive area recognize the limited capability of the aquifer to accept pollutants and retain its present quality. Since all pollutants from man's activities cannot be mitigated, the expansion of these activities, even with mitigation of pollutants from present and future sources, has an ultimate limit. The Plan contains recommendations aimed at mitigating specific threats to aquifer quality and mitigating current pollutant loads to allow additional development without increasing the total loading of pollutants on the aquifer area. (p. v)

And in the following "Foreword" the plan states:

> The express planning goal of "no further degradation" of aquifer water quality and the earlier demonstration of the effect of ground surface activities of man on water quality are key Plan elements. The Plan has been developed by a consortium of citizens representing all facets of activity and interest in the Spokane area, technical representatives of government agencies and the program staff and consultants. Plan implementation becomes the responsibility of governmental units serving the public interest. (p. vi)

The City of Spokane includes implementation of the plan in Chapter 11.10A of the *Spokane Municipal Code* and its Critical Materials Review, described below. In addition, the City continues to participate in the interstate Technical Advisory Committee (TAC), which continues to provide input to the program and program staff as they continue their work. One particular benefit of the TAC is the opportunity it provides for interagency exchange of information regarding aquifer protection and status.

CRITICAL MATERIALS REVIEW AND UNDERGROUND STORAGE TANK REGULATIONS

The City, in chapter 11.10A of its *Spokane Municipal Code* (SMC), states:

> This chapter relates to land use and other activities, disclosure and construction requirements for specified land uses and improvements. It is also directed towards the purposes expressed in Title 11, Section 11.01.020, with special emphasis upon the protection of the Spokane Aquifer through the implementation of the Spokane Aquifer Water Quality Management Plan. (11.10A.010)

Section 11.10A specifies a critical materials review (SMC. 11.10A.0314), defined as:

> The process of evaluating a land use permit request or other activity to determine whether Critical Materials or Critical Materials Activities are involved, and if so, of determining what appropriate measures should be required for protection of the

aquifer and/or implementation of the Spokane Aquifer Water Quality Management Plan. (SMC 11.10A.0314)

The review is essentially a process that attempts to identify and prevent potential sources of surface and ground water (aquifer) pollution by controlling work-place use and storage of chemicals. To undertake the review, the City's Construction Services department requires completion of a "Critical Materials Survey Form" as part of its review for building permits and land use applications. City staff review the form and other documents required as part of an application to determine adequacy of measures proposed for containment of spills. Critical materials are defined in the "Critical Materials Handbook," which was prepared by the Spokane Water Quality Management Program Coordination Office with the assistance of its Technical Advisory Committee. The handbook contains:

- Critical Materials List
- Critical Materials Activities List
- other technical specifications and information

In addition, the SMC also includes sections regulating underground storage tank construction, leak protection, monitoring, permitting, and inventorying (SMC 11.10A).

WASTEWATER MANAGEMENT

The City and County both continue their commitments to sewer areas over the aquifer and to eliminate septic tanks. The City's wastewater treatment facility serves a majority of the region's wastewater treatment needs.

The City, along with other governmental entities, has banned the use of phosphate detergents in an effort to protect surface and groundwater quality.

STORMWATER MANAGEMENT

Both the City and County require stormwater facilities for all new development. The City is currently in the process of developing a comprehensive stormwater program to address anticipated state and federal mandates and appropriately minimize stormwater-related damages.

SOLID WASTE MANAGEMENT

Over the last eight years, the City has spent $24 million in covering and closing the Northside Landfill, located in the Aquifer Sensitive Area. The City also spent $7 million closing the Southside Landfill, located just outside of the Aquifer Sensitive Area. These landfills have largely been replaced by the Spokane Regional Recycling/Transfer and Waste to Energy Facility. The City and County solid waste recycling/transfer stations (North County, Valley, and Waste to

Energy Recycling Center) currently accept free of charge household dangerous waste and appropriately dispose of these wastes off the aquifer. (Local, state, and federal regulations control chemical waste disposal.)

AQUIFER MONITORING

The City and County have and continue to conduct chemical analysis of the aquifer. In addition to chemical testing, research continues on the physical state of the aquifer (including aquifer thickness, direction of flow, and rate of flow). The City's efforts, through the Water Department, have been primarily directed at City drinking water sources, while the County's activities (through the Spokane Aquifer Water Quality Management Program) span the entire aquifer area within the County.

WELLHEAD PROTECTION PROGRAM

The City is currently working on a wellhead protection program. The 1986 amendments to the federal Safe Drinking Water Act mandate that every state and all federally defined public water systems using ground water as a source, develop and implement a wellhead protection program. (The City of Spokane is defined as such a water system.)

The City plans on accomplishing federal requirements for a wellhead protection program in two phases. The first phase will include technical and data gathering tasks to accomplish delineation, contaminant source inventorying (in cooperation with and augmenting the County's previous work), and contingency planning. The second phase will include the public participation and management plan elements of the program. In January 1994, a Technical Advisory Committee for the process was established. The City successfully applied for a 50 percent matching grant from the State Department of Ecology to help complete the Phase I tasks; the City awarded a contract to begin the Phase I effort in June of 1994. The City expects this $492,000 project to be completed by December of 1995.

V. FREQUENTLY FLOODED AREAS

Frequently flooded area are defined as being "lands in the floodplain subject to a one percent or greater chance of flooding in any given year. These lands include, but are not limited to, streams, rivers, lakes, coastal areas, wetlands, and the like." (DCTED's *Minimum Guidelines*).

The City has planned for flood hazards for many years. The City's *Flood Damage Prevention Ordinance* (adopted in 1980, and commonly referred to as the flood hazard ordinance) and *Uniform Building Code* are used to plan for safe development from flood hazards. In addition, the City's 1983 *Generalized Land Use Plan* contains goals and policies related to flood hazard areas.

These measures which the City uses to address frequently flooded areas are summarized below. *For complete descriptions or additional information, the relevant document and/or office should be consulted.*

"GENERALIZED LAND USE PLAN"

The City's *Generalized Land Use Plan* establishes the overall framework or basis for planning for the City's future development. Chapter two of the plan, "Effects of Natural Hazards on Development," addresses the natural environment. The chapter states its purpose as: "to focus attention on past land development trends and practices impacting Spokane's natural environment and to present several goals and policies aimed at protecting certain physical and hydrological features within the City" (p. 2-1). Among the goals and policies that pertain to flood hazard areas are the following:

Goal Two of the chapter states:

> *Surface and ground water resources and associated land features should be protected and preserved.*

Policy One under Goal Two states:

> *Continue to maintain and utilize the Shoreline Master Program and the Flood Prevention Control Ordinance for protection of resources.*

"FLOOD DAMAGE PREVENTION ORDINANCE"

A summary of the City's ordinance for flood hazard areas is included in the City's *Generalized Land Use Plan*, in chapter nine, "Special Programs and Planning Areas." One of the chapter's summaries of specialized planning studies is for: "Flood Hazard Area Management Ordinances." It states:

> The City of Spokane has areas which are subject to periodic flooding that may result in the loss of life and property, in health and safety hazards, in disruption of commerce and government services, and in extraordinary public expenditures for flood protection and relief, all of which affect the public welfare. Therefore, in

> August, 1980, the Flood Damage Prevention Ordinance was adopted, authorizing rules and regulations locally implementing the National Flood Insurance Program.
>
> In order to accomplish its purpose, the Flood Damage Prevention Ordinance includes several provisions. It restricts or prohibits uses which are dangerous to health, safety and property due to water or erosion hazards, or which increase erosion, flood heights or velocities. It requires that uses be protected against flood damage at the time of initial construction. It also controls the alteration of natural flood plains, stream channels and natural development which may increase flood damage. It prevents and regulates the construction of flood barriers which will unnaturally divert flood waters, which may increase flood waters, or which may increase flood hazards in other areas. (p. 9-2)

The flood zone areas established for the city by the *Flood Damage Prevention Ordinance* (Ordinance No. C25610) are based on identification, including mapping, by the Federal Insurance Administration. Section 2.2 of the ordinance states the "Basis for Establishing the Areas of Flood Zones":

> The areas of Flood Zones were identified by the Federal Insurance Administration in their report entitled "The Flood Insurance Study for the City of Spokane", dated May 1978, with accompanying Flood Insurance Maps (21 in number)are hereby adopted by reference and declared to be a part of this Ordinance. These maps may be amended from time to time as described in this Ordinance Administrative Rules and Procedures as additional information is known concerning flooding and high ground water.... (p. 2)

The *Spokane Municipal Code* includes the ordinance's provisions for flood protection in chapter 11.13, "Flood Insurance."

OTHER RELATED CITY PLANS AND PROGRAMS

Other City plans and programs also relate to frequently flooded areas. The *Spokane Wetlands Protection Program* was adopted by the Spokane City Council on April 6, 1992, pursuant to the Growth Management Act's critical areas mandate. The City began work on its Riverfront Development Program in 1967; the program was completed and adopted in phases, with the final increment being adopted in March, 1975. In 1974 the Shoreline Master Program was adopted, to help implement the Riverfront Development Program; a Shoreline Master Plan Update was adopted in 1982. In 1988 a Citizen's Advisory Committee was formed by the City Plan Commission to begin a new update; this most recent update to the Shoreline Master Program is currently under consideration by the City Plan Commission.

VI. WETLANDS

On April 6, 1992 the Spokane City Council adopted the *Spokane Wetlands Protection Program*, pursuant to the Growth Management Act's mandate to protect critical areas and its requirement for citizen participation. The *Spokane Wetlands Protection Program* states in its introduction that:

> Phase I of the City of Spokane Wetlands Protection Program provides the policy basis to implement locally the recently adopted state and federal government policy of "No Net Loss Of Wetlands Area And Functions." State and federal agencies are now guided by this policy in their funding, regulatory and facility construction activities. The City Wetlands Protection Program will fill in the present regulatory and policy gaps and provide the element of local land use policy, regulation and leadership vital to any comprehensive wetlands protection program. This report demonstrates that, without city participation in the wetlands protection and regulation process, a major portion of our wetlands will continue to be converted by development to urban uses.

The intent of the *Spokane Wetlands Protection Program* was accomplished with the adoption of the City's wetlands regulations on November 1, 1993.

VII. REGULATORY IMPLEMENTATION

Although programs and projects can be effective measures to realize planning goals, regulation of development is the principal means of protecting critical areas. Critical area regulations are a part of the City's *Zoning Code* which contains the bulk of the City's rules for using and developing land.

Article III of the *Zoning Code* covers Special Districts, areas of the City that have characteristics or conditions that are distinct from the general form of urban development. Among these districts are "Development Sensitive Areas (DSAs)" that contain environmental issues (air and water quality, etc.) or physical conditions (steep slopes, flood plains, etc.) that can be negatively impacted by urban development. Critical areas, as defined by the Washington State Growth Management Act, fall within the regulatory scope of the City's Development Sensitive Areas.

The City's philosophy in protecting DSAs is to add no more limitations on the private use and enjoyment of land than are necessary to protect project proponents, adjacent landowners, and the general public from harm, consistent with the intent of zoning regulations to promote the public's general health, safety, and welfare. DSA regulations are designed to mitigate impacts of land use and development rather than prohibit development. However, the regulations also recognize that there are situations that present potential impacts that are beyond the scope of mitigation, and the ability to develop should be severely constrained or, of necessity, fully prohibited. The application and permitting process provides opportunity to identify impacts generated by any change in the site, beginning with the first step of development. The process includes Director authority to grant minor variances and respond to emergencies. Provisions also include opportunities for the applicant to appeal all determinations, decisions or conditions of approval. An adjacent property owner or other party affected by an administrative decision may also file an appeal with the Hearing Examiner.

The following summary describes how each of the State-mandated critical area topics are addressed as Development Sensitive Areas:

1. Geological Hazards: The *Uniform Building Code* has been the only basis to preclude unsafe development where there is uncertain site stability. As a Development Sensitive Area in the *Zoning Code*, a site that evidences a geological hazard now requires an administrative special permit from the Director as well as a building permit. This requirement expands the technical scrutiny of the site to other departments and agencies that have expertise in identifying site constraints and suggesting appropriate mitigation of impacts. A full explanation of the permit process including a schematic representation of the process is presented below.

2. Fish and Wildlife Habitat: The protection of habitat is a new regulatory responsibility for the City. Site development that poses adverse impacts to critical area habitat requires an administrative special permit from the Director as a Development Sensitive Area.

3. Wetlands: In addition to some prior protection afforded through Shoreline Master Plan regulations and the environmental review process, wetland critical areas are now

protected as Development Sensitive Areas and require an administrative special permit.

4. Flood Hazards: The City has regulated flood hazards for many years, using the 1974 *Flood Hazard Ordinance* and *Uniform Building Code* to insure safe development. Development in flood hazard areas is also subject to the requirement for an administrative special permit as a Development Sensitive Area.

5. Aquifer Recharge Areas: Most of the City sits over the Aquifer Sensitive Area which contributes to recharge of the water supply. The importance of this resource has been recognized in City policies and protective actions for many years. Although current development requirements and permitting procedures have provided some degree of protection to the aquifer recharge area, new understandings of potential impact, such as the threat to wellheads and other sources, will likely require additional controls to avoid water quality degradation. However, it is neither necessary nor practical to subject nearly every development proposal in the City to the administrative special permit requirement as a Development Sensitive Area to preserve the recharge ability of these lands. Rather, this permit requirement will be utilized to address specific protective issues, such as wellhead protection, that are not present on every site.

Permitting Process

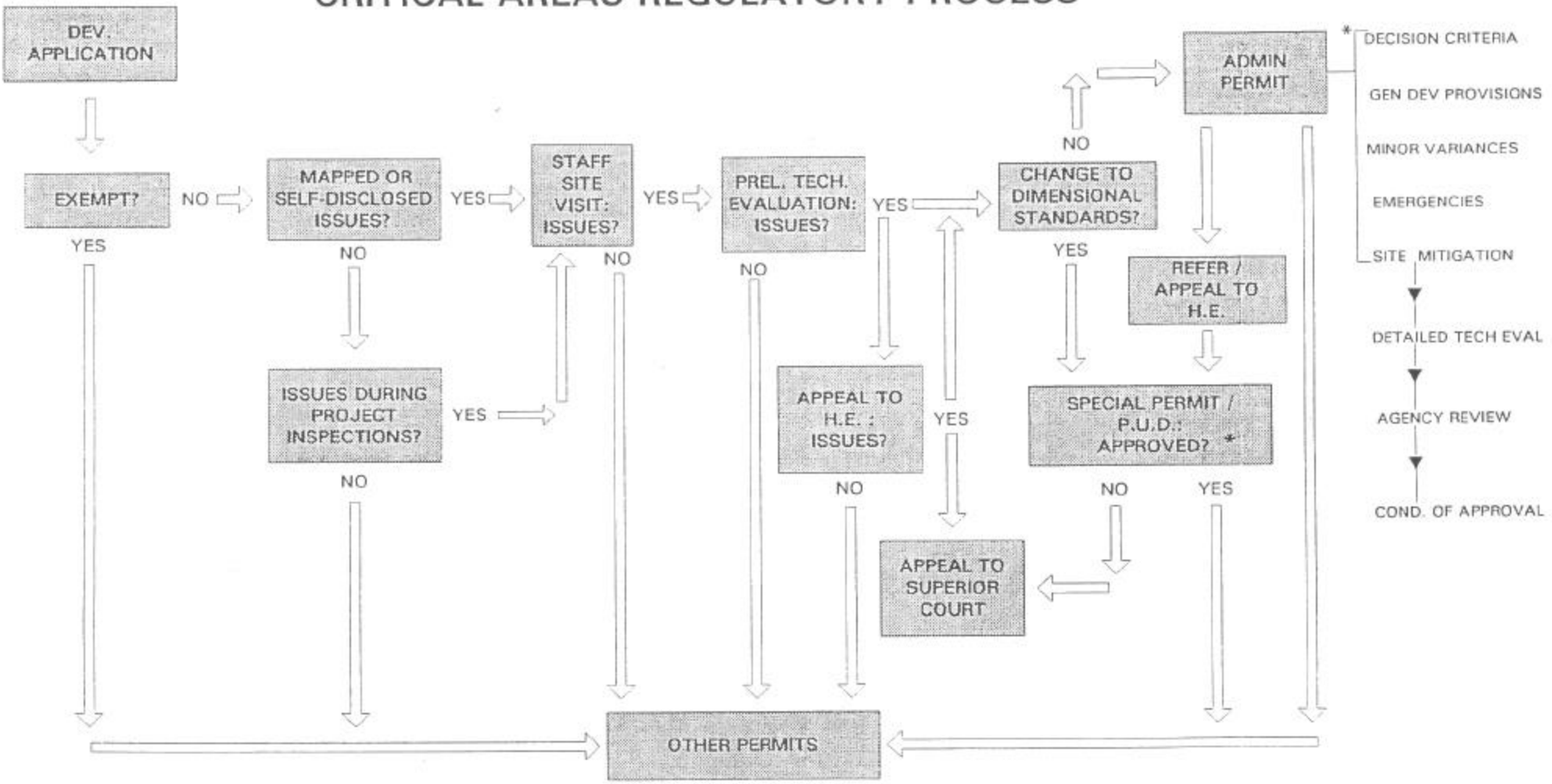
The applicability of Development Sensitive Area regulations to a project site is an administrative determination of the Director. Four mechanisms are utilized to insure that regulations are applied appropriately to property within the City: 1) generalized or specific mapping of physical conditions, 2) self-disclosure of issues as an applicant's response to a questionnaire submitted with the development application, 3) site inspections by City staff prior to or during development, and 4) written technical evaluation by qualified professionals. Some activities which are deemed to be so minor in nature as to not pose any possible impact to critical areas are exempted from the regulations.

Projects which are determined to be subject to Development Sensitive Area requirements must apply for an administrative special permit from the Director or a Planned Unit Development (PUD) approval from the Hearing Examiner. A PUD approval is required for any project which entails deviations from dimensional standards prescribed in the *Zoning Code* in order to mitigate development impacts. The Director is given discretion to refer applications that pose impacts of such adversity as to warrant public review and comment to the Hearing Examiner for a special permit.

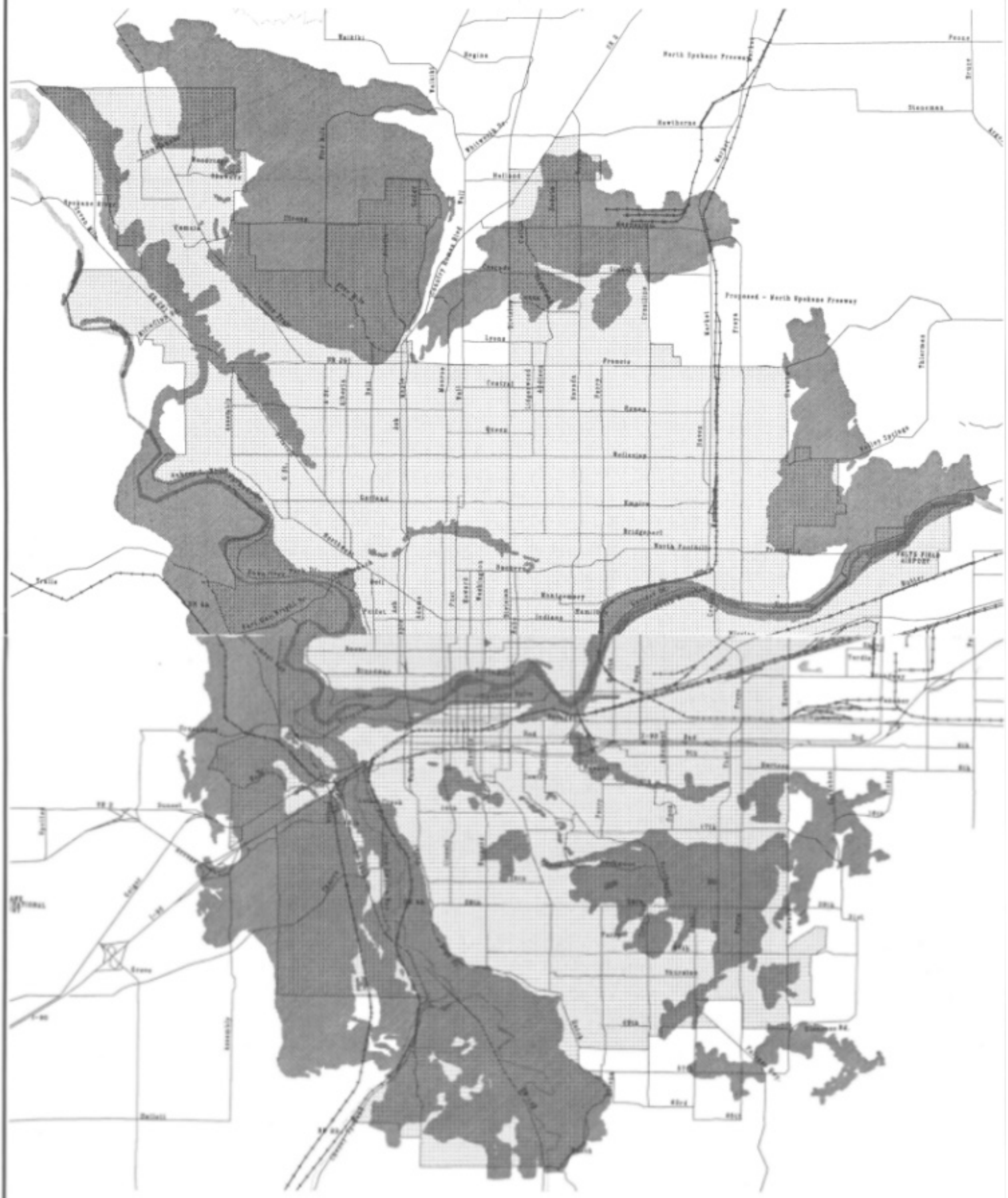
Actions on administrative special permits, PUD applications, and Hearing Examiner special permits are guided by formal decision criteria provided in the *Zoning Code.* General development provisions which apply to all projects within a DSA are also listed. Requirements for specific site mitigation are based on detailed technical studies required of the applicant and project review by various public agencies. Mitigating measures are included as conditions of approval for all permits.

CRITICAL AREAS REGULATORY PROCESS

SEPTEMBER 28, 1994



POTENTIAL CRITICAL AREAS*



[See reverse for details on this map.]

* This map was created using Tiger/Line 1992 Software.
* SEE REVERSE FOR ELEVATION PERSPECTIVE VIEW.

* DATA SOURCE OF MOST ACCURATE REPRODUCTION.
* MAP CREATED FROM U.S. CENSUS BUREAU 1:100,000 SCALE TIGER/LINE DIGITAL FILES.

SRTC

MAP PREPARED BY:
SPOKANE REGIONAL
TRANSPORTATION COUNCIL

SPOKANE

***Wildlife & Geologically Hazardous Areas**

DATE:
11-30-94

SCALE: NONE
1:100,000

SUPERSEDES:

LEGEND

SPOKANE CITY LIMIT

POTENTIAL CRITICAL AREAS

The "Potential Critical Areas" map on the reverse indicates the general location of currently identified (as of November 1994) *potential* fish and wildlife habitat areas and geologically hazardous areas. As noted previously in the report in the "Designations" sections, mapping for fish and wildlife habitat conservation areas and geologically hazardous areas is advisory only, provided for general information and planning purposes. *The mapping does not provide the final delineation of those critical areas within the city.* Additional identification tools such as field investigations and technical reports, as well as further mapping in the future, will be used to more specifically identify the locations of these critical areas.

APPENDIX A:
MEMBERSHIP, CRITICAL AREAS TASK FORCE

Critical Areas Task Force Members

Member	Interest Represent
Bonita Zahara (chair)	urban refuge
Carmen Antoneggi	Department of Wildlife
Robbi Castleberry	Centennial Trail
Dan Clark	land development
Sue Delucchi	general community
Dinah Demers	Department of Wildlife
Easy	open space retention
Carol Ellis	Audubon Society
Clyde Haase	Building Industry Association
Jim Harakas	geologic conditions
Buster Heitman	Building Industry Association
Frank Ide	private land development
Patti Idlof	private land development
Moritz Kundig	nature space interests
Doug Pineo	Department of Ecology
Shawn Woodard	Soil Conservation Service
Stan Stirling	Plan Commission liaison

City Planning Staff

Charlie Dotson
Chris Hugo
Steve Franks
Roy Eadie
Jo Cook
Chris Hankins

Other Participating City Staff

Lloyd Brewer, Environmental Programs
Debbie Clem-Olsen, Parks and Recreation
David Nakagawara, Construction Services
Larry Neil, Public Works

APPENDIX B:
DEFINITIONS

Aquifer recharge areas: include areas where an aquifer which is an essential source of drinking water is vulnerable to contamination that would create a significant hazard to public health. They are areas which, due to the presence of certain soils, geology, and surface water, act to recharge ground water by percolation.

Aquifer Sensitive Area (ASA): the area or overlay zone from which runoff directly recharges the Spokane Aquifer, including the surface over the aquifer itself, and the hillside areas immediately adjacent to the aquifer. The area is shown in the map adopted as part of Spokane Municipal Code 11.10.040.

Bank carving: incorporation of masses of alluvium or other weak bank materials into a stream channel because of undermining, usually in high flow stages.

Bank erosion: incorporation of masses of alluvium or other weak bank materials into a stream channel.

Bedding planes: planes of separation between individual strata in a sequence of sedimentary rock.

Candidate species: a species of wildlife in the WDFW's Priority Habitat and Species system which is being reviewed for possible classification as threatened or endangered.

Cliffs: a type of habitat in WDFW'S Priority Habitat and Species system that is considered a priority due to its limited availability, unique species usage, and significance as breeding habitat. Cliffs are greater than 25 feet high and below 5,000 feet elevation.

Conservancy environments: those areas in the Spokane Shoreline Master Program designated as the most environmentally sensitive and providing the most protection.

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.

Debris flow: a moving mass of rock fragments, soil, and mud, more than half of the particles being larger than sand size.

Development: any man-made change to the improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filing, grading, paving, excavation or drilling operation.

Endangered species: wildlife species whose prospects for survival are in immediate danger

because of a loss or change in habitat, exploitation, predation, competition, disease, disturbance, or contamination, and designated as such by a governmental agency.

Extirpation: the destruction of or extermination of a species.

Erosion: the process whereby wind, rain, water, and other natural agents mobilize and transport particles.

Fault plane: a fault surface that is more or less planar.

Fauna: animal life.

Flora: plant life.

Forbs: any herbaceous plant other than a grass, especially in a field or meadow.

Frequently flooded areas: areas in the flood plain subject to a one percent (1%) or greater chance of flooding in any given year (100-year flood plain). These areas include, but are not limited to, streams, lakes, coastal areas, and wetlands.

Genetic diversity: the variety or amount of different genes within a species. The larger the variety of genes in the gene pool of a species, or the less related the breeding individuals are, the greater the chances of that species surviving various adversities such as disease.

Geotechnical study: a professional report by a certified geotechnician/civil engineer on a land development project, to determine susceptibility of geological hazards such as erosion, land slides, earthquakes, and other geologic events

Habitat: the sum total of all the environmental factors of a specific place that is occupied by an organism, population, or a community.

Habitat blocks: sections of habitat such as grasslands, forest lands, or riparian areas. These can be either adjacent to other sections, or blocks, of habitat or isolated within urban areas.

Habitat conservation: protection or preservation of habitat by various means such as regulation or acquisition.

Habitat fragmentation: the separation or breakup of a habitat area into smaller sections or habitat blocks by activities such as development, logging, and agriculture; often resulting in degraded habitat due to blocked migration corridors, decreased access to water and feeding areas, etc. It can also create isolated populations of wildlife and a decrease in their genetic diversity.

Impermeable sediment: sediment restricting the flow of water.

Joint system: two or more groups of generally parallel joints that intersect.

Joints: internal bedrock fracture surfaces of hairline thickness along which no slippage has occurred.

Landslide: rapid sliding of large masses of rock, soil, or material on steep mountain slopes or from high cliffs.

Mass wasting: spontaneous downward movement of soil, regolith, and bedrock under the influence of gravity.

Mitigation: a negotiated action involving the avoidance, reduction or compensation for possible adverse impacts. This includes:

1. Avoiding the impacts altogether by not taking action;
2. Reducing or eliminating impacts by preservation or maintenance;
3. Minimizing impacts by limiting degree or magnitude;
4. Rectifying impact by repairing, rehabilitating or restoring;
5. Compensating for impacts by in kind replacement; or
6. Monitoring impacts by a planned evaluation process.

Monitor species: wildlife species native to Washington that are of special interest because they were formally endangered or threatened, require habit of limited availability, and/or are indicators of environmental quality.

Native plant community: the collective product of individual plants indigenous to a particular locale responding to shared habitats.

Ordinary high water mark: that mark that will be found by examining the bed and banks of a water body and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil and vegetation a character distinct from that of the abutting upland.

Permeable sediment: sediment permitting the flow of water.

Priority habitats: habitat areas determined by WDFW to have unique or significant value to many species and meet one or more of the following criteria:

1. High wildlife density;
2. High species diversity;
3. Important wildlife breeding habitat;
4. Important wildlife seasonal ranges;
5. Important movement corridors;
6. Limited availability;
7. High vulnerability to habitat alteration.

Priority species: wildlife species requiring protective measures for their perpetuation due to their population status, their sensitivity to habitat alteration, and/or their recreational importance.

Protected species: a general classification of animals by WDFW that includes all those species not classified as listed, game, fur-bearing, or non-protected. This also includes all birds not classified as game or non-protected.

Riparian ecosystem: interacting environment of water, soils, plants, and animal life creating important wildlife habitat characterized by a diversity of natural vegetation.

Riverine: situated alongside or associated with a river.

Salmonid: belonging to the family of Salmonidae, including the salmons, trouts, chars, and whitefishes.

Sedimentation: accumulation of settling of soil particles from soil erosion, often within streambeds.

Sensitive species: WDFW classification of a priority species known to be in jeopardy due to population declines; also designated as a listed species.

Soil liquefaction: occurs during major earthquake and results from the loss of all strength in water-saturated, cohesionless soil because of intense ground shaking.

Spokane-Rathdrum Aquifer: a subterranean body of flowing water that runs from Pend Oreille Lake to the Little Spokane River. Sometimes referred to as the Spokane Aquifer or Spokane Valley-Rathdrum Aquifer.

Submerged aquatic beds: wildlife habitat area made up of those areas permanently under water including the submerged beds of rivers and lakes and their aquatic plant life.

Threatened species: WDFW classification of a priority species known to be in jeopardy due to population declines; also designated as a listed species.

Urban forestry management: management of the trees within urban areas including trees lining city streets and those found in parks and open spaces.

Urban natural open space: WDFW priority habitat consisting of those areas located within or adjacent to urban development and used by a priority species or as a connecting corridor to other priority habitats.

Vulnerable species: those species susceptible to significant population declines because they are uncommon (either within a specific area or statewide), have a very limited distribution, or have special space or habitat requirements.

Waters of the state: a 5-tier classification system of water bodies set up by the State in the Forest Practices Rules and Regulations (WAC 222).

Wellhead protection area: that area around a drinking water well delineated by the purveyor using Washington State Department of Health (WA-DOH) guidelines and subsequently approved by WA-DOH. The purpose of which is to define an area for management of potential ground water contaminants.

Wellhead protection plan: a plan required of water purveyors for protection of their source of ground water from potential sources of contamination.

Wildlife corridors: connecting areas animals to use to move from one habitat to another, often on a seasonal basis to reach winter or summer feeding grounds or a daily basis to move from cover to water. Also known as movement or migration corridors.

APPENDIX C:
ACRONYMS/ABBREVIATIONS

ASA: Aquifer Sensitive Area

CATF: Critical Areas Task Force

DNR: Department of Natural Resources

GMA: Growth Management Act

DCD: Department of Community Development [renamed DCTED]

DCTED: Department of Community, Trade, and Economic Development

DSA: Development Sensitive Area

PHS: Priority Habitats and Species

PUD: Planned Unit Development

SCS: Soil Conservation Service

SEPA: State Environmental Policy Act

SMC: Spokane Municipal Code

USGS: United States Geological Service

UBC: Uniform Building Code

WDFW: Washington Department of Fish and Wildlife

APPENDIX D:
RESOURCES

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Organizations

Department of Community, Trade, and Economic Development, Growth Management Division; State of Washington
906 Columbia Street SW
PO Box 48300, Olympia WA 98504-8300

Department of Ecology; State of Washington
Spokane office: 4601 N. Monroe Street
Spokane, WA 99205
(509) 456-2926

Department of Fish and Wildlife; State of Washington
State Office: 600 Capitol Way North
Olympia, WA 98501-1091
206-902-2200
Spokane Office: 8702 N. Division
Spokane WA 99218
509-456-4082
Growth Management Program Manager:
Stephen Penland

16018 Mill Creek Blvd.
Mill Creek, WA 98012-1296
(206) 775-1311 ext. 112

Department of Natural Resources; State of Washington;
Division of Geology and Earth Resources
Main Office: PO Box 47007
Olympia, WA 98504-7007
206-902-1450
Field Office: 904 W. Riverside
Spokane, WA 99201-1011
509-456-3255
Northeast Regional Office:
225 S. Silke Rd. / PO Box 190
Colville WA 99114-0190
509-574-7474

National Institute for Urban Wildlife
P.O. Box 3015, Shepardstown, WV 25443

Spokane Nature Place Task Force
East 116 40th, Spokane, WA 99203
(509) 747-5738.

Soil Conservation Service; U.S. Department of Agriculture
Spokane County Conservation District
222 N. Havana, Spokane WA 99202
(509) 353-2120

Spokane County Noxious Weed Control Board
N. 222 Havana, Spokane, WA 99202
(509) 456-5777

U.S. Geological Survey
W. 920 Riverside, Spokane WA 99201-1088
Water Resources Division: 353-2633
Geological Division: 353-2641

Washington Water Power
(Eric Johnson, fish biologist)
E. 1411 Mission, Spokane WA 99202
(509) 489-0500

APPENDIX E:
CITY OF SPOKANE
PRIORITY HABITATS AND PRIORITY SPECIES, AND
RELATED WDFW MANAGEMENT RECOMMENDATIONS

I. City of Spokane Priority Habitats

Five types of priority habitats, as identified by WDFW, are found within the City of Spokane. They are: (1) riparian; (2) urban natural open space; (3) freshwater wetlands and deepwater habitats; (4) old growth; and (5) grasslands: meadows, prairies, steppe. Definitions follow.

Riparian

Riparian habitat is characterized by a diversity of natural vegetation and by a diversity of wildlife using it. It provides to wildlife these essential needs: food, water, cover, and places to bear and raise young.

Riparian habitats are areas where land vegetation is adjacent to water bodies. It includes the stream channel and that portion of the land affected by elevated water tables, flooding, and water holding soils. It can also include naturally non-vegetated areas, like rocky canyon walls or gravel bars which contribute nutrients and inorganic material to the stream.

The land and water areas of riparian habitat each have their own ecosystems, which influence each other. The plant and animal life, soil, water table, and even the microclimate of the land habitat is affected and/or determined by the presence of permanent and seasonal water. In turn the fish and insect habitats and physical properties of the water ecosystems are influenced by the land vegetation. The shade of the land vegetation keeps the temperature of the water cooler which is preferred by fish. It also provides habitat for insects which fall into the water and become fish food. In addition the riparian vegetation on the land filters storm waters before they enter the water bodies and prevents erosion. Preventing erosion keeps the gravel of fish spawning areas from becoming filled with sedimentation.

Criteria used by WDFW to classify a riparian habitat as a "priority habitat" are: high wildlife density, high wildlife species diversity, important wildlife breeding habitat, important wildlife seasonal ranges, important wildlife movement corridors, high vulnerability to habitat alteration.

All riparian areas have value for and are important to fish and wildlife. Even those riparian areas of relatively low value to fish and wildlife are directly connected to other high value areas. Adverse impacts to low value riparian areas may be felt downstream by high value riparian areas.

Urban Natural Open Space (UNOS)

Urban Natural Open Spaces (UNOS), are areas associated or impacted with urbanization that may be used by priority species of wildlife or function as locally important habitats. These habitats are used by wildlife for breeding, regular feeding, or as movement corridors between other priority habitats. It can also be an isolated remnant of natural habitat larger than ten acres and surrounded by urban development. Local considerations can be given to open space areas smaller than ten acres.

UNOS habitats may differ greatly from one another in the type of habitat they contain and the species using them. Different priority species are associated with and documented within different UNOS habitats and may influence the management of the habitat.

Criteria used by WDFW to classify an Urban Natural Open Space as a "priority habitat" are: comparatively high wildlife density, high wildlife species diversity, important wildlife breeding habitat, important wildlife movement corridors, limited availability, high vulnerability to habitat alterations.

Freshwater Wetlands and Deepwater Habitats

Wetland habitats are transitional lands 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 predominantly aquatic type plants, at least periodically; the surface layer, or substrate, of the land is predominantly undrained soils; and/or the substrate is nonsoil and saturated with water or covered by shallow water at some time during the growing season of each year.

Deepwater habitats are permanently flooded lands where the surface water is permanent and often so deep that the primary habitat for wildlife is that area below the surface.

Criteria used by WDFW to classify freshwater wetlands and deepwater habitats as "priority habitat" are: comparatively high wildlife density, high wildlife species diversity, important wildlife breeding habitat, important wildlife seasonal ranges, limited availability, high vulnerability to habitat alteration.

Old Growth

Old growth habitats (east of the Cascade crest) are stands of trees that are in general greater than 150 years old with 10 trees/acre greater than 21 inches in diameter, and 1-3 snags/acre greater than 12-14 inches in diameter.

Criteria used by WDFW to classify an old growth habitat as a "priority habitat" are: high wildlife density, high wildlife diversity, important wildlife breeding habitat, important wildlife seasonal ranges, limited (and declining) availability, high vulnerability to alteration.

Grasslands: Meadows, Prairies, and Steppe

Grassland (meadows, prairies, and steppes) habitats are areas with predominantly native undisturbed vegetation in the form of grasses and/or forbs. There are species dependant upon this habitat but it is of limited availability due to farming, grazing, and development. It has a high vulnerability to alteration.

Criteria used by WDFW to classify a grassland (meadows, prairies, and steppes) habitat as a "priority habitat" are: important wildlife seasonal ranges, limited availability, high vulnerability to habitat alteration, unique and dependent species.

II. City of Spokane Priority Species

Eleven priority species have been identified (August 1994) by WDFW within the Spokane city limits. They are: spotted frog, peregrine falcon, bald eagle, pileated woodpecker, western bluebird, osprey, great blue heron, cavity-nesting ducks (wood duck and hooded merganzer), red-tailed hawk, white-tailed deer, and rainbow trout.

Amphibians:

Spotted frog
Status: State and Federal Candidate
Priority areas: all occurrences.

Birds:

Peregrine falcon
Status: State and Federal Endangered
Priority areas: breeding areas; regular individuals.

Bald eagle
Status: State and Federal Threatened
Priority areas: breeding territories, communal roosts, regular small and large concentrations in winter, regularly-used perch trees in breeding territory.

Pileated woodpecker
Status: State Candidate
Priority areas: breeding areas; regular foraging areas.

Western bluebird
Status: State Candidate
Priority areas: breeding areas.

Osprey
Status: State Monitor
Priority areas: breeding areas, foraging and roosting adjacent to water.

Great blue heron
Status: State Monitor
Priority areas: breeding areas; [There are no known rookeries within the City at the present time (May 1994)].

Cavity-nesting ducks
Status: other protected
Priority areas: breeding areas.

Red-tailed hawk
Status: other protected species
Priority areas: breeding areas in urban or urbanizing areas only.

Mammals:

White-tailed deer
Status: other protected species
Priority areas: breeding areas, migration corridors, regular small or large concentrations in winter.

Fish:

Rainbow trout
Status: other protected species (game)
Priority areas: all occurrences.

III. WDFW Management Recommendations

A. Priority Species Management Recommendations

Management recommendations from WDFW for priority species are currently (August 1994) in draft form only; final recommendations are due out Fall 1994. The recommendations included in this report are a summary of the WDFW's draft recommendations and are intended as guidelines or factors to consider when addressing these areas.

Endangered Species:

Peregrine Falcon: protect breeding areas, and where individual birds occur on a regular basis.
Recommendations:

1. Avoid disturbance during breeding season (March through June).
2. Preserve major perches by retaining snags and large trees.
3. Route powerlines away from eyries.
4. Avoid applying pesticides near eyries and where winter prey species congregate.

Threatened Species:

Bald Eagle: protect breeding territories, communal roosts, regular small and large concentrations in the winter, regularly-used perch trees in breeding territory.
Recommendations:

Bald eagles are protected under RCW 77.12.655, RCW 77.12.650, and WAC 232.12.292. RCW 77.12.655 covers habitat buffer zones and gives the WDFW the authority to define the extent of habitat and buffer. It also gives them the authority to write a management plan. RCW 77.12.650 allows cooperative protection such as in conjunction with shoreline regulations.

Candidate Species:

Western Bluebird: protect breeding areas including artificial nesting boxes, protect areas where regular individuals are seen in the breeding season in suitable habitat.
Recommendations:

1. Retain snags and defective trees around the edges of clearings.
2. Install bird boxes where snags are lacking but habitat is otherwise suitable.
3. Avoid use of all pesticides in western bluebird habitat. Avoid use of organochlorine, organophasphate, and carbamate insecticides at all times.
4. Appropriate buffer widths for insecticide application range from 100 — 1100 feet. Buffer width calculations for insecticide application near possible western bluebird foraging areas should take into account the droplet size and if possible, maintain a buffer of 1100 feet.

Pileated Woodpecker: protect breeding areas; regular foraging areas.
Recommendations:

1. Maintain timber, especially snags and trees in various stages of decay, in known nesting/foraging areas.

Spotted Frog: protect all occurrences. WDFW states that the spotted frog is protected under the City of Spokane's Wetlands Protection Program.

Monitor Species:

Osprey: protect breeding, foraging, and roosting areas adjacent to water.
Recommendations:

1. Restrict all human activity within 660 feet of any active nest between April 1 to October 1 (close roads).
2. Establish "no cut" zone within a 200 foot radius of the nest. Beyond this retain 3-5 live or dead dominant trees suitable for nesting or roosting or nesting within 660 feet. Where vandalism is unlikely, mark nest trees with metal sign to prevent destruction by uninformed individuals.
3. Do not cut trees within 200 feet around bodies of water with nests.

4. Do not apply chemicals to any watershed used by ospreys.

Protected Species:

Red-tailed hawk: protect breeding areas in urban or urbanizing areas only.
Recommendations:

1. Preserve nest tree (or cliffs if nesting in them) and at least one acre of the nesting woodlot or area around the nest. Maintain and protect all trees within the woodlot 50 feet tall and greater. Maintain and protect nearby woodlots when possible.
   Educate about effects of disturbance and legal consequences of taking, harming, or killing.
2. Restrict clearing, grading, construction, and other human activity, including recreational, around the nest site during the nesting period (Feb. 1 — July 31).
   Heavy activity such as clearing, grading, or outside construction should be prohibited within a radius of 660 feet of the nest during the nesting period.
   Walking, driving, and daily human activity should be restricted within 650 feet of the nest. Site specific management plans may be considered for each site tailoring management to site characteristics, amount of urbanization and type of human activity, and providing as much buffer as possible. Sites with greater vegetational buffer may require a smaller restricted area.
3. Preserve hunting fields adjacent to nesting woodlot. Preserve hunting perches within territory or erect artificial perches such as utility poles.
4. Reclaim hunting field vegetation by clearing shrubs and seeding with native forbs and grasses. Restrict pesticide use in and adjacent to hunting habitat.

Game Species

Cavity-nesting ducks: protect breeding areas.
Recommendations:

1. Maintain and create snags near suitable wetlands to meet nesting cavity requirements.
2. Avoid logging flooded timber and maintain 50-75% woody and emergent vegetation in shallow wetlands.
3. Provide and maintain nest boxes where lack of suitable cavities is limiting potential production.

White-tailed deer: protect breeding areas, migration corridors, and regular small or large concentrations in winter.
Recommendations:

1. Restrict timber cuts to less than 20 acres in size.
2. Timber harvest should not reduce overstories to less than 70% crown closure.
3. Maintain 50% of habitat in mature stands of conifers at least 600 feet in diameter.
4. Maintain quality, disturbance-free fawning areas and reduce disturbance during winter.
5. Maintain minimum feasible road construction standards and maintain road

densities below 0.5 miles per mile of habitat on winter range.

6. Use appropriate types of fencing for residential development in designated migration corridors. Fence should consist of no more than 4 horizontal, well stretched, evenly spaced wires, placed so that the top wire is no more than 42" above the ground and the bottom wire is at least 17" from the ground and all other wires at intervals evenly spaced no less than 8", 16", and 24" below the top wire.

   If posts are set more than 16 feet apart, the wires shall be supported by stays, placed not more than 8 feet from each other or from the posts. All other fences as strong and as well calculated as the fence described above shall be allowed.

   Fencing for dog kennels, garden fences, corrals, sheep pastures, agricultural crops, etc., may consist of materials that will create a continuous solid enclosure. Fence material shall be securely fastened to substantial posts.

   (Source: derived from Okanogan Critical Areas Ordinance, developed in conjunction with WDFW.)

7. Planned developments in priority habitats should require common open space dedicated as wildlife open space. These open spaces should be planned such that they are connected with open spaces of existing or future developments. These spaces should be restricted in their use and maintained as wildlife habitat.

   (Source: derived from Okanogan Critical Areas Ordinance, developed in conjunction with WDFW.)

Rainbow trout: protect all occurrences.
No management recommendations have been provided by WDFW as of yet.

B. Priority Habitat Management Recommendations

Management recommendations from WDFW for priority habitats are currently under development. As of August 1994 the only available WDFW management recommendations are for riparian habitat; these are currently undergoing review by biologists. There is no projected date for when the other habitat recommendations will become available. The recommendations below for Urban Natural Open Spaces are a summary of suggestions from several wildlife biologists.

Riparian Habitat

WDFW goals for riparian habitats:

1. Maintain or enhance the structural and functional integrity of riparian habitat needed to support fish and wildlife populations.
2. Cease and reverse the current trend toward loss of critical habitat by retaining riparian habitat. Riparian habitat presently in good condition should receive the highest priority for protection.

Characteristics to retain or restore: habitat connectivity; vegetation diversity in terms of age, plant species composition, and layers; vegetation vigor, abundance of snags and woody debris; natural rather than human-induced disturbance; and irregular shape, width,

and depth that resemble natural conditions.

Buffers:

WDFW recommends using buffers to maintain riparian habitat. WDFW defines buffer zones as the zone around the perimeter of an area where land use activities are limited in order to protect certain features of the area. Examples of buffered areas are wetlands in order to protect water features, and wildlife habitat areas to allow undisturbed activities such as feeding, breeding, and migration. Widths of buffer zones vary depending on importance of the feature being protected. Recommendations:

1. Fixed buffer widths are recommended using on-site modification when necessary. These are the minimum buffer widths generally needed to protect fish and wildlife. Larger buffers may be needed to protect certain species and to respond to site-specific conditions. Widths apply to both sides of the stream and should be measured horizontally beginning at the ordinary high water mark. Buffer widths are determined by DNR stream type classification and mapping:

   Type 1, 1+ streams (Shorelines of the State and Shorelines of Statewide significance associated with rivers and streams): 325 foot buffer

   Type 2, 3, 4 streams: 100 foot buffer

   Type 5 streams: 50 foot buffer

   Larger buffers may be needed where key wildlife resources (e.g., priority species) occur.
2. Buffers are intended as restricted use areas. Activities that degrade riparian habitat such as tree cutting, roading, clearing, earth moving, or construction of buildings, should not take place within the buffer. Activities that maintain or enhance fish and wildlife habitat should be allowed.

Land Use Activities:

Recommendations:

Urbanized Areas

Adopt recommended riparian buffers wherever possible; where not possible:

1. Retain the greatest buffer possible. Reduced buffers should be mitigated by enhancement or restoration efforts in degraded riparian habitat and by larger buffers elsewhere.
2. Emphasize minimum impact developments that have greater compatibility with fish and wildlife (e.g. parks, low intensity agriculture).
3. Retain or restore natural stream hydrology; altered hydrology may compromise the benefits of riparian buffers. Strive to ensure that no more than 15% of an urban watershed is impervious surface.

Agriculture

1. Avoid crop planting and harvesting in recommended riparian buffers.
2. Avoid siting feedlots, stockyards, and waste treatment and control facilities such as manure lagoons within 600 feet of water courses.
3. Utilize techniques to eliminate or minimize soil erosion, including crop selection

and harvest techniques in all areas.

Pesticides

1. No insecticide application within 325 feet of stream or wetland.
2. No fertilizer application within 100 feet of stream or wetland.
3. Apply herbicides in riparian buffers only as a last resort (use biological and mechanical control where possible). Use hand application methods only.
4. In or near riparian areas, avoid use of fertilizer application on frozen ground or on soils with immature crops or where no crops have yet been planted.
5. Phase out environmentally damaging pesticides in favor of natural management practices and limited pest controls on all lands.
6. Utilize crop residues and other natural fertilizers instead of artificial fertilizers; use artificial fertilizers sparingly.

Roads, Stream Crossings, and Utility Lines

1. Avoid construction of road, utility line, or other stream crossings in riparian buffers.
2. Where no viable alternative exists, facilities should be perpendicular rather than parallel to streams and located and constructed in a manner that produces the least disturbance. Bridges are the preferred crossing structure.

Recreational Use

Avoid any new recreational facilities in riparian habitat; if they can't be avoided, then adopt the following guidelines:

1. Limit high impact recreational facilities in riparian habitat.
2. Retain natural vegetation and structures in recreational facilities.
3. Place new facilities in areas with less potential for impact: stable slopes, etc.
4. Locate facilities well away from streams (use appropriate buffers).
5. High impact trails should be a minimum of 1200 feet away from the stream.

Restoration

1. Utilize current techniques in restoring degraded riparian areas to create habitat features important to fish and wildlife (e.g., snags and large organic debris).
2. Seek assistance from fish and wildlife biologists for all restoration and enhancement efforts.
3. Emphasize revegetation with native plants and plant densities found in natural areas.
4. Use nonstructural stream bank protection methods, such as soil bioengineering, wherever possible.

Urban Natural Open Space (UNOS)

Management recommendations from WDFW for Urban Natural Open Space (UNOS) habitats are currently in the research stage, and no date has been given for when they will be available. The City has consulted several wildlife biologists (including Patricia Thompson of the WDFW office in Mill Creek; Kate Stenberg, staff wildlife biologist for King County; and Carmen Antoneggi, WDFW habitat biologist for the Spokane area) regarding managing this habitat type.

A summary of their and others' thoughts and ideas follows:

Much of the difficulty in managing this habitat type comes from the diversity of habitats they represent. Some UNOS habitats may be isolated native grasslands completely surrounded by urban development with no connections to other habitats. Other UNOS may be strips of habitat used by wildlife along developed streamsides that were historically riparian. And some may be sparsely developed areas acting as buffers with urban development along one side and forested habitat along the other. Each of these habitats may be used by different species and numbers of wildlife. And their use by a species may be continuous or seasonal. Some UNOS may serve only as movement routes to other habitats, though these may be essential routes to critical feeding areas. Some UNOS may contain WDFW's priority species, others may qualify as a priority habitat just by the large numbers of non-priority species they may attract or support.

There were two suggestions from several sources to help simplify a management approach for this habitat type. The first suggestion was to prioritize the City's habitats and manage them according to their importance as habitat. This would be along the same lines as the WDFW's criteria: diversity of species, density of species, unique species, species dependency, movement corridors, etc. In addition to WDFW's criteria would be criteria specific to the City of Spokane: the function of the habitat to wildlife movement in and out of the City, the size of the habitat, the relationship of the habitat in the City to County habitat, the political feasibility of conservation or acquisition, the opportunity for local viewing of wildlife, etc. Those habitats prioritized as most important would be the most intensely managed. Latah Creek and the Spokane River were often identified by these wildlife biologists as the most important habitats the City has.

The second suggestion in managing Urban Natural Open Spaces was to tailor the management of the habitat to that species identified as using it or potentially using it. Management of the development site in question would then be tailored to the needs of the species along the lines of management recommendations for the species. Examples of this are the Spokane Five Mile Prairie habitat designated as an Urban Natural Open Space. It has been identified as significant western bluebird habitat by WDFW and could be managed as such. An additional suggestion was the use of site specific assessments to verify habitat conditions and update city data.