



Chapter 9

Natural Environment

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9.1 INTRODUCTION

This chapter addresses the natural environment of Spokane and the surrounding region. The natural environment element includes topics such as rivers, wetlands, the urban forest, nature areas, the aquifer, clean air, shorelines, trails, energy, agricultural lands, the economy, and wildlife.

Goals and policies address restoration, protection, and enhancement of the natural environment, as well as guiding incentives, regulations, future plans, and public investments. These measures aim to bring back and maintain all that can be great in Spokane: clean rivers and streams, healthy air, natural areas with native vegetation, trails, sacred and historic sites, trees, native land forms, and citizens who understand the impacts of growth on the natural environment and the opportunities to make positive changes.

Natural Setting

Spokane enjoys an extensive natural environment for an urban area. Not many other cities have the amount of nature space and the presence of native plants and animals as Spokane. Spokane must continue to protect and enhance the natural environment in order to maintain and improve this region's quality of life.



9.2 VISION AND VALUES

Citizen volunteers working on the Comprehensive Plan identified important themes in relation to Spokane's current and future growth. A series of visions and values was crafted for each element of the Comprehensive Plan that describes specific performance objectives. The Comprehensive Plan's goals and policies were generated from the Visions and Values document, adopted in 1996 by the City Council.

The natural environment is identified by its conservation areas, parks (natural places), topography, geology, views and vistas, habitat corridors, environmental quality, and natural energy benefits.

Vision

"Spokane will be responsible stewards of the environment to ensure clean air and water and healthy trees and parks. Residents will have convenient access to natural and recreational areas inside and outside the city."

Values

"The things that are important to Spokane's future include:

- Protecting and replanting street trees, trees in parks, and private trees;
- Guaranteeing good clean air and water;
- Preserving the natural environment outside the city;
- Maintaining a close connection to the outdoors, recreation, and nature areas;
- Using alternatives to personal automobiles to save energy and protect the environment;
- Recognizing the uniqueness of the four seasons and the climate;
- Recycling;
- Being responsible stewards of the environment;
- Keeping areas where wildlife live;
- Maintaining the availability of open space, golf courses, and trails;
- Maintaining tree-lined streets and the natural beauty; and
- Preserving the Spokane River and Latah Creek."



9.3 GOALS AND POLICIES

Goals and policies provide specificity for planning and decision-making. Overall, they indicate desired directions, accomplishments, or aims in relation to the growth and development of Spokane.

NE 1 WATER QUALITY

Goal: Protect the Spokane Valley - Rathdrum Prairie Aquifer and other water sources so they provide clean, pure water.

Policies

NE 1.1 Aquifer Study

Continue to study the aquifer and utilize strategies to remedy all sources or activities of contamination.

Discussion: All studies and strategies shall be based on the best scientific information available. Focus on moving land use activities that have the potential for groundwater pollution away from being over the aquifer.



NE 1.2 Stormwater Techniques

Encourage the use of innovative stormwater techniques that protect ground and surface water from contamination and pollution.

Discussion: The city is engaged in a process to ensure that stormwater runoff does not negatively impact surface and ground water sources. As part of this process, the city has adopted amendments to the municipal code that encourage and incentivize the use of low-impact mitigation tools, such as swales or rain gardens. The city should also ensure that identified techniques do not negatively impact adjacent properties, consider homeowner protections, and are coordinated regionally.

NE 1.3 Regional Water Board

Continue to support the regional watershed group in their efforts to conduct aquifer planning, allocating, monitoring, and study responsibilities for the entire watershed.

NE 1.4 Water Quality Report

Prepare an annual water quality report that identifies the year's water quality and quantity and compares these to prior years.

NE 1.5 Mining Activities

Prohibit open pit mining that exposes the aquifer or ground water to potential contamination.



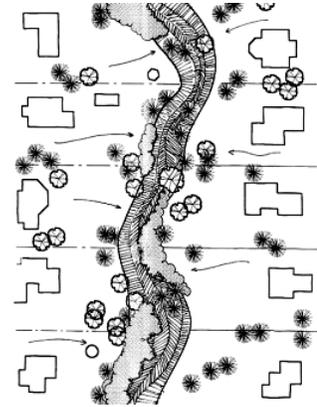
NE 1.6 Natural Water Drainage

Identify and preserve areas that have traditionally provided natural water drainage.

Discussion: Natural drainage areas should be preserved or acquired to accommodate future stormwater runoff and protect surface and ground water.

NE 1.7 Wellhead Protection

Allow only non-polluting land uses within the water recharge zones of the public water wells.



NE 1.8 Toxic Dumping Restrictions

Retain and enforce laws against dumping toxic fluids where they may reach the aquifer.

NE 1.9 Sewer Requirement

Ensure that every developed property in the city and the adjacent urban growth area is served by sewer to minimize aquifer contamination.

NE 2 SUSTAINABLE WATER QUANTITY

Goal: Ensure all aquifers and water sources are not diminished below sustainable recharge or flow levels.

Policies

NE 2.1 Water Conservation

Support a water conservation program that decreases household, commercial, industrial, and agricultural water use.

Discussion: Although the city is not facing any apparent water shortages, prudent use of water should be practiced until more is known about the capacity of the aquifer. Benchmark standards should be established to monitor water consumption and aquifer capacity. Further, water billing practices should be revised to encourage water conservation. Opportunities to recycle water in industrial coolant activities and the use of treated water for non-food irrigation purposes should be explored.

NE 2.2 Landscaping Requirements

Use incentives in landscape requirements that encourage application of drought tolerant native trees and plants.



NE 2.3 Native Tree and Plant Protection

Preserve native vegetation in parks and other publicly owned lands in the design and construction of new public facilities.

NE 3 SHORELINES

Goal: Protect the natural state of shorelines while providing community access that does not negatively impact riparian habitats, fragile soils, and native vegetation.

Policies pertaining to shoreline management are located in Chapter 14, Shoreline Master Program.

NE 4 SURFACE WATER

Goal: Provide for clean rivers that support native fish and aquatic life and that are healthy for human recreation.

Policies

NE 4.1 Watershed Plan

Continue to support and further develop watershed plans for all watersheds that are associated with the geographic boundaries of the city.

Discussion: Coordinate with all interested agencies, jurisdictions, and citizens groups in the development of watershed plans.

NE 4.2 Zero Pollution Industrial Parks

Develop zero pollution industrial parks that focus on manufacturing activities that recycle wastes within their facilities or through adjoining industries in the park.

NE 4.3 Impervious Surface Reduction

Continue efforts to reduce the rate of impervious surface expansion in the community.

Discussion: Impervious surfaces do not allow stormwater to naturally percolate into the soil and recharge ground and surface waters, and cause an increased amount of stormwater runoff that can affect adjacent properties or water bodies. Mitigating the negative effects of increased stormwater often requires expensive engineered solutions. Some impervious surfaces are contaminated with substances that are carried with stormwater to ground and surface waters. Increases in impervious surface area do not need to accompany all growth; the alternative is to grow more efficiently and effectively. This can be accomplished by maintaining natural drainage patterns, increased use of pervious surface materials in development, vertical



development, and higher housing densities (which decreases the amount of impervious surfaces per person).

NE 5 CLEAN AIR

Goal: Work consistently for cleaner air that nurtures the health of current residents, children and future generations.

Policies

NE 5.1 Clean Heating Sources

Encourage the use of heating sources that do not negatively affect Spokane’s air quality.

Discussion: As a member of the Spokane Regional Clean Air Agency (SRCAA), the city should support SRCAA’s efforts to maintain clean air for Spokane’s residents.

NE 5.2 Facility Review



Review and determine public benefits in comparison to the environmental impacts of new and existing public or private facilities that negatively impact the region’s air quality and health of its citizens.

Discussion: As a periodic activity, monitoring and evaluation of such facilities and operations as the Waste to Energy Plant, Regional Solid Waste Compost Facility, the Nelson Service Center should be conducted to ensure that they are the best solutions for the community’s well-being.

NE 5.3 Packaging Reduction

Create and support legislation, education, and other means that reduce product packaging so that waste disposal is decreased.

NE 5.4 Profit from Waste

Recruit industries that can make use of and profit from Spokane’s solid waste in a manner that minimizes or mitigates environmental impacts.

NE 5.5 Vegetation

Plant and preserve vegetation that benefits local air quality.

Discussion: Plants provide life-essential oxygen. The amount of trees required to mitigate local air pollution should be studied. Plant areas of the city that are most impacted by air pollution with native plants.



Additional policies that may have an effect on air quality are included in Chapter 3, Land Use; Chapter 4, Transportation; and Chapter 5, Capital Facilities and Utilities.

NE 6 NATIVE SPECIES PROTECTION

Goal: Protect and enhance diverse and healthy native species, such as plants, trees, animals, and fungi, for present and future generations and respect the ecological necessity of bio-diversity.

Policies

NE 6.1 Native and Non-Native Adaptive Plants and Trees

Encourage the use of and development of standards for using native and non-native adaptive plants and trees in landscape designs for public and private projects.

Discussion: The benefits of using native vegetation in project designs include water conservation and increased habitat. An example of an incentive for this practice is to provide design assistance to applicants in the development of native landscape plans.

NE 6.2 Citizen Recognition

Recognize citizens who use native plantings in their yards.

Discussion: A program for formal acknowledgment of citizens who practice native landscaping could be created by the city's Urban Forestry Committee. Certificates of appreciation and recognition by the media are potential forms of acknowledgement.

NE 6.3 Habitat Network

Identify, preserve or purchase, and maintain existing and potential links between wildlife habitat areas in order to form a network of wildlife habitats.

NE 6.4 Fish and Wildlife Protection

Continue to identify and protect those fish and wildlife and their habitats which are identified as a priority by citizens and scientific experts.

NE 6.5 Protection of Adjacent Wildlife Habitats

Coordinate with adjacent jurisdictions and agencies to designate, protect, and acquire wildlife habitats that abut or straddle the city limits or urban growth boundary.



NE 7 NATURAL LAND FORM

Goal: Preserve natural land forms that identify and typify our region.

Policies

NE 7.1 Land Form Identification

Define, identify, and map natural land forms that typify our region and warrant protection.

Discussion: Some of the natural land forms in the Spokane region include the following: pine forests, Mount Spokane skyline, aquifer springs, Palouse hills, scablands, Spokane River falls and rapids, basalt cliffs, Missoula flood stones, granite hillsides, basalt ponds and wetlands, camas fields, and shrub steppe drylands.

NE 7.2 Land Form Protection

Purchase lands that contain natural land forms or protect them with incentives, clustering, or transfer of development rights.

Discussion: The city should consider the protection of natural land forms in the decision criteria for public land purchase.

NE 7.3 Rock Formation Protection

Identify and protect basalt rock formations that give understanding to the area's geological history, add visual interest to the landscape, and contribute to a system of connected conservation lands.

Discussion: Two primary tools for rock formation protection are acquisition with funding sources, such as Conservation Futures, and encouraging to developers to protect a site's natural features.

NE 7.4 Unstable Slope Protection

Continue to designate unstable slopes as not suitable for development.

Discussion: Ground stability is an increasingly critical issue as landforms exceed 30 percent slope. Only proposals that demonstrate the ability for safe development without harming current or future occupants of the site or neighboring properties should be allowed. In most instances, the expertise of a licensed geo-technical engineer is required to make this proof.



NE 7.5 Slope Protection

Integrate the protection of slopes with wildlife corridor and natural area designations and acquisitions.



NE 7.6 Geologically Hazardous Areas

Continue to classify, designate, and protect Geologically Hazardous Areas as identified in the Critical Areas Ordinance.

NE 7.7 Wetlands

Enforce regulations that achieve no overall net loss in acreage and functions of the remaining wetland base and, over the long term, increase the quantity and quality of wetlands in the city.

Discussion: Wetland policies and regulations should be monitored to ensure the function and values of wetlands are being fully protected.



NE 8 AGRICULTURAL LANDS

Goal: Preserve land and provide opportunities for farming that generates produce for local markets and supports the farming economy.

Policies

NE 8.1 Agricultural Lands of Local Importance

Designate areas of the city that have been used traditionally for agricultural purposes, have at least Soils Conservation Services Class II soils or are designated prime agriculture lands, and are at least one acre in size as agricultural lands of local importance.

NE 8.2 Compatible Agricultural Activities

Allow agricultural activities adjacent to urban uses without compromising farmers' rights to farm their land.

Discussion: Preservation of agricultural activity within a broader urban setting poses potential operational, environmental, and lifestyle conflicts. The designation of agricultural lands within the city should address the allowed agricultural activities to ensure urban compatibility, particularly at the immediate interfaces with urban uses.

NE 9 SUSTAINABLE ECONOMY

Goal: Enhance the natural environment to support a thriving sustainable economy.

Policies

NE 9.1 Environment and the Economy

Identify, preserve, and enhance the natural environment elements that define Spokane's quality of life and help sustain the economy.

Discussion: High environmental quality is one of the area's assets and reasons for businesses to locate or expand in Spokane. For many people, the area's natural setting and environmental resources are their primary reason to live here.

NE 10 NATURAL ENVIRONMENT AND EMPLOYMENT

Goal: Create employment that enhances the natural environment.

Policies

NE 10.1 Environment Supporting Businesses

Provide incentives for businesses that restore and benefit the natural environment while providing jobs for local residents.

NE 10.2 Local Business Support

Support and provide incentives for businesses that employ local people, use local materials, and sell their products and/or services locally.

Discussion: Using local resources and selling products/services locally preserves existing businesses and saves in transportation costs and impacts.

NE 10.3 Economic Activity Incentives

Identify and provide incentives for economic activities that combine the goals and principles of economy, ecology, and social equity.



NE 11 NATURAL AREAS

Goal: Designate a network of natural areas (natural areas and connecting corridors) throughout Spokane that supports native habitats and natural land forms.

Policies

NE 11.1 Identification of Natural Areas

Identify natural areas throughout the city, based on neighborhood input, existing city-owned conservation lands, wildlife habitats, steep slopes, wetlands, riparian areas, adjacency to county natural areas, and proximity to state parks.

NE 11.2 Corridor Links

Identify corridors that link natural areas.

NE 11.3 Acquisition Techniques

Acquire natural areas and connecting corridors using acquisition techniques to create a network of natural areas.

Discussion: Ideas for acquisition beyond outright purchase include tax incentives, Spokane County Conservation Futures funds, volunteer fund drives or donations of lands, transfer of development rights, clustering of development, development set asides, easements or contribution requirements, and application of grant funding.

NE 11.4 Natural Area Paths

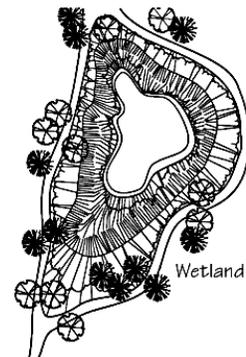
Develop soft, permeable, low impact paths in natural areas.

Discussion: In the process of developing new paths, identify existing soft pathways. New pathways should be located away from environmentally sensitive portions of the natural areas.

NE 11.5 Spokane River Gorge

Pursue the Spokane River Gorge as a natural area and maintain this place as one of our region's greatest resources.

Discussion: The Spokane River Gorge is a natural connection between Riverfront Park, Latah Creek, Indian Canyon, and Riverside State Park. The historical significance of the Gorge to native and early pioneering cultures should be emphasized in how the area is protected. Various historical and cultural experiences should be developed without harming the riparian habitat.



NE 12 URBAN FOREST

Goal: Maintain and enhance the urban forest to provide good air quality, reduce urban warming, and increase habitat.

Policies

NE 12.1 Street Trees

Plant trees along all streets.

Discussion: Installing street trees along all residential and arterial streets is the easiest and most cost effective way to secure the environmental benefits of urban forestry. Street trees planted in buffer strips between the curb and sidewalk should be included in every street project or private development.



NE 12.2 Urban Forestry Programs

Participate in the Spokane County Conservation District for urban forestry programs, protection, and maintenance.

NE 12.3 Protection Techniques

Use incentives and acquisition to protect forested areas both on publicly and privately owned land.

NE 12.4 Forest Inventory Database

Maintain an inventory of the urban forest in the city's Geographic Information System.

NE 12.5 Tree Replacement Program

Do not allow tree removal in the public right-of-way without a program for tree replacement.

Discussion: The city should adopt a practice of “no net loss” in street trees. Permits to remove street trees should only be granted when they are determined by the city to be sick, damaged, or near the end of life. Removal for life, safety, or other emergencies is the determination of public safety officials.



NE 13 CONNECTIVITY

Goal: Create a citywide network of paved trails, designated sidewalks, and soft pathways that link regional trails, natural areas, parks, sacred and historical sites, schools, and urban centers.

Policies

NE 13.1 Walkway and Bicycle Path System

Identify, prioritize, and connect places in the city with a walkway or bicycle path system.

Discussion: At a minimum, this system shall include connection to the regional trails, natural areas, soft path networks, community parks, sacred and historic sites, schools, the downtown area, and community and neighborhood centers.

NE 13.2 Walkway and Bicycle Path Design

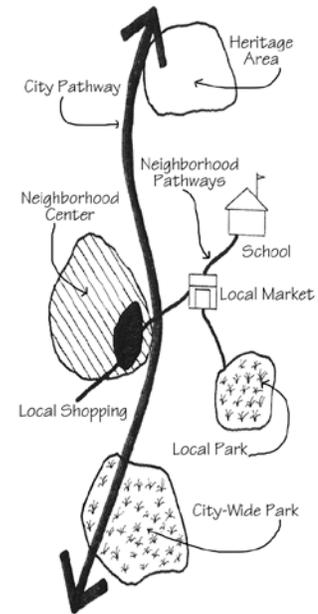
Design walkways and bicycle paths based on qualities that make them safe, functional, and separated from automobile traffic where possible.

NE 13.3 Year-Round Use

Build and maintain portions of the walkway and bicycle path systems that can be used year-round.

NE 13.4 Winter Trail Network

Link soft trails, parks, and golf courses with the walkway and bicycle path system to develop a winter trail network.



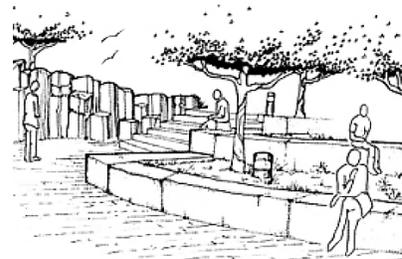
NE 14 PLAZA DESIGN WITH NATURAL ELEMENTS

Goal: Develop or revitalize plazas using local nature elements, including water, vegetation, wildlife, and land forms.

Policies

NE 14.1 Plaza Inventory and Improvements

Inventory existing plazas that lack nature elements and that are not used actively and identify natural element features that will improve them.



NE 14.2 New Plaza Design

Develop plazas with native natural elements and formations, such as basalt, Missoula flood stones, stream patterns, river character, native trees, and plants that attract native birds.

NE 15 NATURAL AESTHETICS

Goal: Retain and enhance nature views, natural aesthetics, sacred areas, and historic sites that define the Spokane region.

Policies

NE 15.1 Protection of Natural Aesthetics

Protect and enhance nature views, natural aesthetics, sacred areas, and historic sites within the growing urban setting.

Discussion: Consult with local Native Americans and historians to establish criteria and identify features to be protected. Standards for protection should then be adopted to implement the protection program.

NE 15.2 Natural Aesthetic Links

Link local nature views, natural aesthetics, sacred areas, and historic sites with the trail and path system of the city.



NE 15.3 Community Education

Educate the community on the meaning of sacred and historic sites so that they value their protection and enhancement.

NE 15.4 Naming Culturally Historic Sites

Identify local nature views, natural aesthetics, sacred areas, and historic sites that define the Spokane region with the original names local historic cultures gave to them.

Discussion: The city's Park Board could assist in realizing this policy by considering both Indian and non-Indian names for city park properties such as Wyakin Park, the ecological park in northwest Spokane.

NE 15.5 Nature Themes

Identify and use nature themes in large scale public and private landscape projects that reflect the natural character of the Spokane region.



Discussion: Nature themes for Spokane include: pine forests, the Mount Spokane skyline, aquifer springs, Palouse hills, scab lands, Spokane Falls, basalt cliffs, Missoula flood stones, granite hillsides, basalt ponds and wetlands, native plants, Spokane River, the gorge with basalt rapids, camas fields, and shrub steppe drylands. An example of this policy application is the Northwest Museum of Arts & Culture (MAC) grounds.

NE 16 QUALITY OF LIFE

Goal: Compile social, natural environment, and economic indicators of a healthy Spokane community on an annual basis, and compare them to prior years in order to assess Spokane’s progress.

Policies

NE 16.1 Quality of Life Indicators

Coordinate with other groups and agencies to develop quality of life indicators based upon what others have previously identified.

Discussion: Spokane Community Indicators is one existing community process that monitors natural environment quality of life indicators.

NE 16.2 Benchmark Adoption

Develop quality of life benchmarks based on identified indicators that the community wants to obtain over time.

NE 17 NATURAL ENVIRONMENT EDUCATION

Goal: Educate children and the community on how to improve Spokane’s natural environment.

Policies

NE 17.1 Protection and Recognition

Develop a program that formally recognizes activities, development, businesses, groups, and people that contribute to the protection and improvement of Spokane’s natural environment.

Discussion: An effective recognition program is based on a collaborative effort of the city, media, environmental groups, business organizations, and neighborhoods.

NE 17.2 Natural Environment Sources

Create a central source within city government to disseminate information on anything affecting the city’s natural environment, programs to enhance the natural environment, and environmental education opportunities.



NE 17.3 Environmental Education for Children

Educate children about the interrelationship between people and nature so that an understanding and respect for human impacts and the benefits of nature is developed.

NE 18 ENERGY CONSERVATION

Goal: Promote the conservation of energy in the location and design of residential, service, and workplaces.

Policies

NE 18.1 Innovative Development

Encourage innovative residential development techniques that produce low energy consumption per housing unit.

Discussion: Examples include attached single-family and multifamily, solar enhancing site orientation, earth sheltering, and the use of renewable energy sources.

Additional policies related to energy conservation as it relates to housing location are included in Chapter 3, Land Use.

NE 19 FLOOD HAZARDS MANAGEMENT

Goal: Protect life and property from flooding and erosion by directing development away from flood hazard areas.

Policies

NE 19.1 Channel Migration Zone Management

Determine the channel migration zone of streams and rivers in the city that have a history of flooding.

Discussion: Constraining a stream or river from its natural course or meander can often lead to erosion or flooding.

NE 19.2 100-Year Flood Plain Reassessment

Conduct a reassessment of the 100-year flood plain in areas with a history of flooding.

Discussion: Observations and subsequent measurements have provided evidence that a more detailed analysis of the various flood plain boundaries is necessary.



NE 19.3 Land Acquisition/Home Relocation Program

Consider the purchase of homes and lands that are in the 100-year flood plain and maintain those areas as natural area corridors.

NE 19.4 Discourage Development in 100-Year Flood Plain

Discourage development and redevelopment of habitable structures that are within the 100-year flood plain.

Discussion: In order to function correctly as a relief valve for a flooding area, 100-year flood plains should remain free of new development.

NE 19.5 Public Awareness and Education

Develop a public awareness and education program for residents living within flood plains.

NE 19.6 Downstream Impacts Consideration

Consider the downstream impacts created by development, erosion control devices, and public works projects within or adjacent to rivers and streams.

Discussion: Public works projects like bridges, and erosion control devices like riprap, can negatively impact downstream properties.

