



Chapter 2: Natural Features and Open Space





Natural Features and Open Space

Adopted Amendments

EFFECTIVE DATE	ORD #	CHANGES
November 18, 1998	Resolution #2247	Comprehensive Plan Update
December 6, 2016	NS-2271	Format update, minor text changes to remove outdated text



BACKGROUND

Context

Open space and natural features are an integral part of the Bend Urban Area plan. A wide range of types and sizes of open space and natural features within the urban area should provide: diverse plant and animal habitat, visual and spatial breaks from urban uses, places for recreation and sports activities, facilities for community events, trails for pedestrian and bicycle transportation and recreation, and many other uses. As defined in the plan, open space and natural features may be in the form of: parks, public school grounds, trails, natural areas and areas of special interest, river and stream corridors, open space easements and right-of-way, and lands excluded from development. The preservation and enhancement of open space and natural features, and their incorporation into the infrastructure of the Bend Urban Area is a function of the plan and related ordinances.

Bend is in the center of some of Central Oregon's most exquisite natural resources. The Deschutes National Forest to the west offers easy access for multiple recreational activities, and provides the backdrop of mountain peaks captured in thousands of photos of Bend. To the east of the urban area, there are thousands of acres of juniper and sagebrush lands. These lands form the edge of the Great Basin, and offer a different type of open space.

The interaction of land, water, plants, and wildlife through the millennia created a place that attracted—and still attracts—people because of its beauty and natural features. Bend is a community that values the area's natural features and has tried to incorporate natural features in the design of the built environment. Volcanic rock has been incorporated into hundreds of retaining walls, foundations, porches, steps, chimneys, and even in the main walls of homes and businesses. Public parks and trails follow the river through town. Mature pine and juniper trees have been preserved in developments, in parks, and in the design of sidewalks and streets.

Maintaining the natural features and open space in an urban area is a difficult task and one that becomes more complex during periods of rapid population growth. However, providing open space in the urban area for the benefit of existing and future residents is important. To help ensure Bend's livability, the following additional goals should be implemented to provide long-term protection of open space and natural features:

- to preserve interesting and distinct geologic formations and areas of natural vegetation;
- to provide land for recreational uses such as hiking, photography, bicycling, jogging, or fishing;
- to preserve water resources, riparian areas, and wildlife habitats;
- to establish a system of trails, greenways and wildlife corridors that are interconnected;
- to shape the urban development and provide visual relief from developed land;
- to soften the appearance of street corridors with planter and median strips;
- to encourage environmental awareness so that citizens will become stewards of our natural areas; and
- to support the coordinated efforts of public agencies, private organizations and individuals to preserve and enhance the area's natural features and open space.

The Bend Comprehensive Plan and implementing codes support management practices to



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preserve, maintain, and create natural features, open space, and Areas of Special Interest. The Preamble, the goal statements, and several Plan policies in this chapter speak to the importance of preserving and managing natural features. The city and county zoning codes also regulate development within the Deschutes River Corridor to protect the riparian areas and river rimrocks. Site plan reviews provide the opportunity to preserve natural areas through building setbacks, conservation easements, and other measures.

Overview

This chapter describes the many types of open space and natural features that add to the quality of life for our residents. Public parkland and natural areas, an important component of Bend's quality of life, are mentioned briefly in this chapter as a type of open space. The public parks and recreation programs in the urban area are described in more detail in Chapter 3, *Community Connections*. Other related topics that also contribute to our quality of life are covered in the Chapter 9, *Community Appearance* and Chapter 10, *Natural Forces*.

That the settlement of Bend is here at all is a result of dynamic natural forces that shaped the landscape. The lava flows and volcanic ash, in place before the elk and cougar roamed the area, form the canyon walls and punctuate the urban area with rock outcroppings, ridges, and cinder cones. The Deschutes River, and smaller streams that have long since disappeared, cut through the lava and ash, and brought life to the land. Animal and plant species that adapted to the dry summers and snowy winters of Central Oregon over hundreds of thousands of years still grace the urban area today.

A city is the sum of physical, biological, and historical processes that shape the social values and image of the community. The natural features such as the rock outcroppings, native vegetation, the river, and wildlife frame Bend's special character and sense of place. Which natural features have some intrinsic value, and how much land should be preserved, are questions that Bend area residents wrestle with as they seek to balance the value of growth and the value of preserving natural areas.

As regional and national developers "discover" Bend they seek to bring their national look to the urban area. The city and county will need to be stronger in reflecting the community's desire to incorporate natural features and native materials into commercial and residential development.

Open Space

The irregular terrain and native vegetation in Bend give the area a distinctive visual character and quality. These features limit views within the community, thereby creating a sense of a smaller urban area. Land in all parts of the urban area that has been vacant for decades is being developed. This development is changing the feel of the community from a rural town to an urban city. The expansion of development may reduce or change the open space and natural features that "break-up" the appearance of the man-made environment.

Open space is clearly a broad term that can apply to many types of undeveloped and improved land. Table 2-1 describes six types of "open space" that exist to a greater or lesser degree within the urban area.

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Table 2-1 Types of Open Space

Table	Purpose	Examples	How to provide/conserv
Natural areas	<ul style="list-style-type: none"> • retain or restore natural landscape and vegetation • provide wildlife habitat 	<ul style="list-style-type: none"> ▪ undeveloped park or public land ▪ landscape areas left in natural state ▪ PUD common areas ▪ subdivision common areas 	<ul style="list-style-type: none"> ○ PUD development ○ flexible subdivision standards ○ commercial landscape standards ○ private or public land trust
Large developed	<ul style="list-style-type: none"> • active or passive recreation • places for gatherings 	<ul style="list-style-type: none"> ▪ community and neighborhood parks, ▪ school grounds, ▪ PUD common areas, ▪ golf courses 	<ul style="list-style-type: none"> ○ property tax revenues ○ user fees / SDCs ○ PUD requirements ○ private investment
Small developed	<ul style="list-style-type: none"> • areas for quiet enjoyment • relaxation or resting spot • visual break 	<ul style="list-style-type: none"> ▪ 'pocket parks', ▪ excess right-of-way, ▪ planter in middle of cul-de-sac bulb, ▪ subdivision entrance, ▪ commercial plaza, ▪ grounds around public utility facilities 	<ul style="list-style-type: none"> ○ require during development ○ property owners association ○ flexible subdivision standards ○ property tax measures ○ sensitive design and construction
Corridor or linear	<ul style="list-style-type: none"> • visual break • community appearance • design rhythm • pedestrian amenity • wildlife corridor 	<ul style="list-style-type: none"> ▪ irrigation canals ▪ developed trails ▪ river canyon ▪ pedestrian walkways ▪ street planter strip and median strip 	<ul style="list-style-type: none"> ○ easements or dedications ○ setback regulations ○ transportation corridor designs ○ property tax revenues
Perimeter	<ul style="list-style-type: none"> • physical or visual break between uses • passive recreation • wildlife habitat / corridor 	<ul style="list-style-type: none"> ▪ forest and BLM lands, ▪ regional park land ▪ subdivision buffer to protect wildlife 	<ul style="list-style-type: none"> ○ public acquisition or ownership ○ developer design ○ conservation easement
Private spaces	<ul style="list-style-type: none"> • passive or active recreation • relaxation and resting • wildlife habitat 	<ul style="list-style-type: none"> ▪ house or multi-family yards ▪ private recreation facilities 	<ul style="list-style-type: none"> ○ private ownership ○ association dues ○ land trust purchase

The list below is from the city's inventory of open space lands held by both public and private parties within the Urban Growth Boundary. The inventory is based on tax parcel ownership, and therefore provides only a rough estimate since some trail corridors, Planned Unit Development (PUD) common areas, irrigation District easements, and golf course properties may not have distinct tax parcel numbers.

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Public park and recreational facilities	917	acres
City, county and other public properties	1,321	acres
School district holdings	524	acres
Private open space and recreational sites	1,537	acres
Irrigation Districts	178	acres
Total Acres	4,166	acres

Commented [QK1]: BPRD owns 3,035 acres of developed and undeveloped park and recreational facilities, 917 acres are within the Bend UGB.

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Although this number gives a rough estimate of total acreage, it does not describe the size, type, or land use that is currently considered as “open space.” The city and county will continue to monitor the creation and conversion of open space in the urban area, and evaluate or modify as necessary the open space designations on the Plan map. The types and amount of open space will be reviewed in future updates of the Plan.

“Areas of Special Interest” and Natural Features

One of the common desires mentioned by residents through more than 20 years of community planning has been to retain and conserve the natural character of Bend as the community grows and changes. Although it is difficult to precisely define what “the natural character” means to people, it can be considered a composite of features typical



to Bend: ancient volcanic rock outcroppings, large ponderosa pines and junipers, the Deschutes River, improved public and private open space, and a relative abundance of wildlife and waterfowl.

“Areas of Special Interest” are designated on the Land Use Map because they have features typical of Central Oregon, or represent important wildlife areas. The most significant are the River Corridor Areas of Special Interest along the Deschutes

River, which includes the river canyons and rimrocks in the north and south portions of the urban area. At the south edge of the urban area the River Corridor Area of Special Interest includes wildlife habitat areas along the river canyon and a cinder cone. The smaller, scattered Areas of Special Interest on the Plan Map are the more prominent rock outcrops and rockridges in the urban area. They are not specifically inventoried with respect to size, quality, or importance. These high points break the line of sight so that the area retains a feeling of undeveloped open space. Because these

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Areas of Special Interest are small and the scale of the Plan Map is large, the indication on the Map represents the approximate location of the area. More detailed contour maps have been developed and the sites inventoried to determine the specific boundaries of the Areas of Special Interest.

Keeping these features relatively intact will help retain the natural character of Central Oregon as the community grows. The Areas of Special Interest and other natural areas can be retained as either public or private open space. Some sites within the urban area are already protected because they are owned and managed by public agencies.

The city has changed its codes to provide incentives or encourage developers to preserve natural features. Such code changes shall include, but are not limited to, the following:

- A new “cluster housing” subdivision option specifically aimed at preserving natural features;
- Flexible minimum residential density standards on sensitive lands to protect natural features.
- Provide density credit equivalent to the area being preserved;
- Flexible setbacks, lot coverage, and parking standards for site development;
- Opportunities for tax benefit in accordance with the provisions of the Deschutes County Tax Assessor;

Local governments and special districts can also preserve or conserve natural areas through several non-regulatory measures. They can:

- seek donations or gifts of land from private parties;
- request transfer of land from federal agencies or other governmental organizations;
- purchase land using revenue from bonds, system development charges, or other fees;
- obtain conservation easements along the river or other sensitive areas to protect wildlife habitat;
- include natural features and open space in the design of reservoirs, pump stations, and other such utility facilities; and
- locate transportation and utility systems to avoid natural features and Areas of Special Interest.

Natural areas can also be retained in private ownership in a variety of ways without adversely affecting the density or development potential of a site. The city and county encourage the private sector to preserve natural areas within subdivisions and other developments. Many local developers have accommodated the goal of conserving natural features by incorporating rock outcroppings, mature trees and native vegetation and related features into their projects by:

- including them within common areas in Planned Unit Developments or subdivisions;
- including them within the undeveloped street right-of-way;
- adjusting lot lines and street patterns to leave them in the non-buildable setback areas; and
- making them part of the required landscape area in commercial, industrial, and



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multi-family projects.

Deschutes River Corridor

The Deschutes River is a thread that weaves the fabric of the community together. It runs for eight miles through the middle of the urban area, and flows past industrial, commercial, mixed-use, parks, and all categories of residential lands.



The river has served many needs of the community, and in doing so, has become a common reference for the citizens. The Deschutes River was used to transport and store logs for the two sawmills south of downtown. It is a source of water for agricultural lands and power for homes. It has been the setting for recreation, community festivals, and entertainment for decades. With stretches of both fast-moving and still waters, the Deschutes River provides food and home for wildlife, and a respite for humans from the pressures of work and life.

The importance of the river is underscored by state and local actions. In 1983 Deschutes County and Bend established a moratorium on hydroelectric facilities and created the Deschutes Basin Task Force committee to study the natural resources of the Deschutes River and its tributaries. The reports and other studies produced by this task force are background documents for

this Plan, and the work from this committee influenced the development of rules to protect the river resources. Policy recommendations from the Task Force are included in a separate section of policies in this chapter and also included in the Deschutes County Comprehensive Plan.

In 1988 a statewide voters' initiative added several miles of the Deschutes River to the state's scenic waterway program, including about two and one-half miles within the urban area. The area from the south urban growth boundary line to the Central Oregon Irrigation district diversion is classified as the *South Bend River Community Area* in the state's scenic waterway program. At the other end of the urban area, the stretch of river from the south edge of Sawyer Park to the north urban growth boundary is classified as the *North Bend River Community Area*. Both scenic waterway areas are considered significant "Goal 5" resources under Oregon's land use planning program. The Oregon Parks and Recreation Department has the authority to review and approve any development along these scenic waterway segments. In addition to the river segments protected by the State, the City recognizes the significance of the north and south river canyons for their beauty and recreational opportunities. Both the north and south river canyons have been included in the City's inventory as a "Goal 5" scenic resource.

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In the early 1990s the city and county adopted special Deschutes River Corridor development standards to recognize and respect the unusual natural beauty and character of the Deschutes River. The city has also adopted a Mixed-use Riverfront zone that allows for the redevelopment of land along the river previously used by sawmills. This zoning district is designed to enhance the natural character of the river and to encourage access to and the enjoyment of the river corridor.

Wetlands and Riparian Areas

Wetlands and riparian areas have a variety of native plant species that are adapted to growing in locations where the soils are wet during all or part of the year. Well established wetlands and riparian areas provide a complex ecosystem that support a diverse combination of plants and animals.

It is important to conserve and improve the wetlands and riparian areas along the Deschutes River and Tumalo Creek in Bend. These areas serve several functions that protect and enhance the quality of both animal and human life within the urban area in many ways. Wetlands and riparian areas:

- Reduce stream velocities that can erode or damage streambanks and property.
- Provide storage for water during peakflows and flooding conditions.
- Trap or filter sediment and runoff water from upland areas and impervious surfaces.
- Provide shade over the river that helps water quality by reducing the warm water temperatures that produce algal blooms.
- Provide shade to help moderate water temperature to support fish and other aquatic animals.
- Provide vegetation and woody debris that serve as habitat and nesting areas for a variety of aquatic animals, birds, and mammals.
- Provide a safe corridor for birds, amphibians, and mammals that live and feed along the river.



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- Provide a transition area between aquatic and upland habitat areas during animal migration.

Wetlands within Bend were inventoried and evaluated in the summer of 2000 as part of the preparation of a Local Wetland Inventory, a required Periodic Review update of the Comprehensive Plan. The photo below is an example of the significant and non-significant wetlands mapped during this Local Wetland Inventory process. Table 2-2 lists the significant wetlands. All of the significant wetland sites are along the Deschutes River.

Bend's Local Wetland Inventory replaces the older National Wetlands Inventory map for the urban area.



In 2000, the riparian areas within Bend were also inventoried and evaluated. The riparian area along the Deschutes River and Tumalo Creek are considered significant resources under Statewide Planning Goal 5. Conflicting uses within the riparian corridor are primarily existing and future residential development, new park development, commercial development and other uses such as roads, trails, and docks.

Any development within the bed of the Deschutes River or Tumalo Creek, or within the riparian corridor, including the removal or enhancement of riparian vegetation, must meet standards in the city's land division and zoning codes. In addition to local code requirements, the Oregon Division of State Lands and Oregon Department of Fish and Wildlife have responsibility to review and approve developments within wetlands and the Deschutes River.

Table 2-2 Significant Wetlands in Bend

Inventory Field Code	General Location of Wetland
R9	At south edge of UGB on east side of river. Land area about 2.5 acres
R8a	Upstream from COI hydroelectric plant. Land area about 1.5 acres.
R8	Downstream from COI hydroelectric plant. Land area about 1 acre
R7	Downstream from old log deck footbridge, east side. Land area less than 1 acre.
R5	Upstream from Colorado Ave. bridge on west side. Land area about 6.5 acres.
R4	Downstream below Newport Bridge on east side. Land area about 1 acre.
R3	Both sides of river below 1st Street rapids along the River Run trail and below cliffs. Land area about 5 acres.
R2a	Just upstream from North Unit dam. Land area about 2.5 acres.
R1	Between Riverhouse motel to Sawyer Park. Land area about 5 acres.

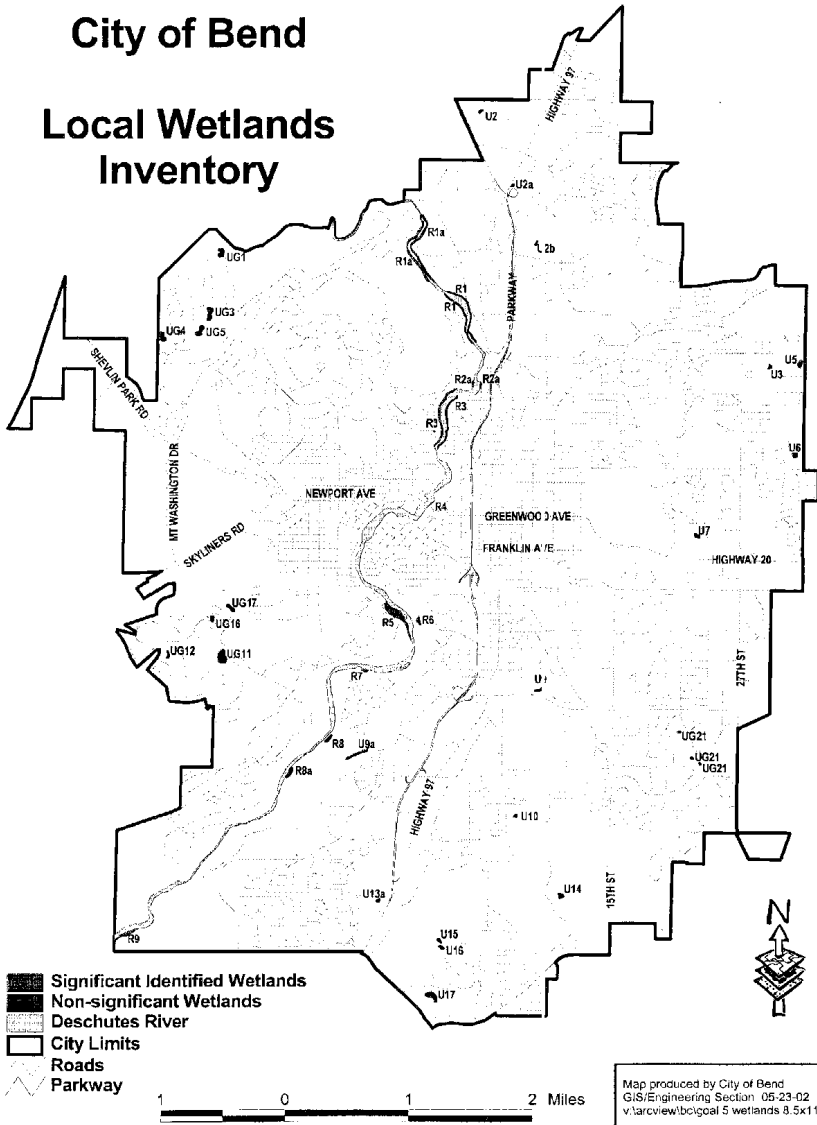
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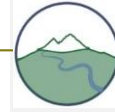
R1a	Series of small wetlands from Sawyer Park to RimRock Village footbridge. Land area about 3 acres.
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City of Bend Local Wetlands Inventory



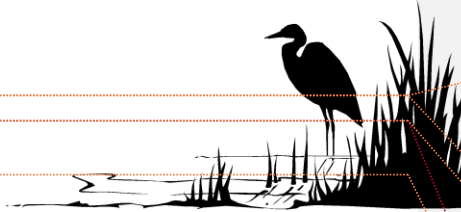
City of Bend Local Wetlands Inventory



Fish and Wildlife

There are several key wildlife areas in Bend. The most important, and most diverse, wildlife area is the riparian corridor and canyon walls along the Deschutes River. The combination of still waters, rapids, the many species of shrubs, bushes, and trees, and the rock outcroppings provide a variety of important habitats and food sources. Wildlife species that inhabit the Deschutes River corridor include: deer, elk, cougar, otter, beaver, mink, raccoon, osprey, red-tailed hawk, bald eagle, kingfisher, trout, whitefish, and several species of reptiles, amphibians, and waterfowl. Although there are many species that occupy the river corridor, the Oregon Department of Fish and Wildlife has determined that there are no significant wildlife habitat areas or nesting sites within the urban area that require special land use protection. Even though there are no "significant" wildlife resource areas, because of its value to wildlife and its related benefit to area residents, the river canyon corridors in the south and north parts of the urban area identified as an Area of Special Interest in the Comprehensive Plan and shown on the Plan Land Use Map.

At the west edge of the urban area is Tumalo Creek, a second important riparian and wildlife area. The Bend Park and Recreation District manages about ~~963~~ acres along the creek for passive recreation such as hiking and picnicking.



Most of the area along Tumalo Creek is in a more natural condition than the urban portion of the Deschutes River. Because of that, the Tumalo Creek area is a more diverse and complex habitat than the Deschutes River corridor, and supports larger wildlife such as coyote and cougar. The Oregon Department of Fish and Wildlife has not identified any significant habitat areas or nesting sites within the city portion of Tumalo Creek that warrant special protection measures.

West of the urban area in the Urban Reserve and adjacent forest lands there are areas where deer and elk herds feed during the winter when they move down to lower elevations out of the deep snow.

The winter range is mainly north of the river, but herds may also move across the river into the southwestern portion of the urban area. The Oregon Department of Fish and Wildlife has designated and mapped elk habitat and deer winter range areas, but these designations do not extend into the urban area. Lands within the UGB are not critical to managing the elk herds and maintaining healthy herd populations.

In addition to these two areas, there are many smaller, more separate enclaves of natural features and native vegetation that the community seeks to conserve within developments. Several species of squirrels and chipmunks, lizards, snakes, quail, and many other bird species all find food and shelter in small natural areas and even in patches of natural habitat common to many residential yards.

Besides being beneficial to the wildlife, these habitat areas also provide opportunities for residents and visitors to observe and enjoy the interaction of natural plant, animal,

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and aquatic communities within our urban area.

Policies

Natural Features and Open Space

- 2-1** The city will inventory and maintain a list of natural features and open space lands that are important to the community.
- 2-2** The city and Bend Park and Recreation District shall share the responsibility to inventory, purchase, and manage public open space, and shall be supported in its efforts by the city and county. [The City recognizes the Park and Recreation District as the urban service provider of parks within the UGB.](#)
- 2-3** During January of each “odd numbered” calendar year, individuals may apply to the City for new ASI designations to be added to the Comprehensive Plan and the zoning maps. During the same period of time, the City shall review city owned properties for potential new ASI designations.
- 2-4** Detailed maps of the Areas of Special Interest shall provide guidance to property owners and staff in interpreting the ASI boundary location.
- 2-5** The City shall review proposed developments that include Areas of Special Interest and natural features identified on the Plan Map to ensure they follow the policies of this Plan.
- 2-6** Major rock outcrops, stands of trees, or other prominent natural features identified in the Comprehensive Plan shall be preserved as a means of retaining the visual character and quality of the community.
- 2-7** Natural tree cover should be retained along streets in new developments to retain the natural character of Central Oregon within the urban area as the community grows.
- 2-8** All residential development should respect the natural ground cover of the area, and the city shall work with developers to preserve mature trees within the subdivision.
- 2-9** The City shall develop standards to conserve mature native trees and standards that describe the types of trees for commercial and industrial developments that are compatible with Central Oregon’s climate.
- 2-10** The City shall participate with other governments, special districts,

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non-profit organizations, land trusts, interested businesses, and citizens in protecting open space.

- 2-11** The City shall develop flexible subdivision and development standards that make it easier for developers to provide open space within a neighborhood.
- 2-12** The City shall evaluate and adopt standards for the types of landscape materials and amount of open area buffers around structures that reduce the risk of loss from wildfires at the edge of the urban area.
- 2-13** The City shall have the primary responsibility for [reviewing land development that includes](#) opportunities for the creation of private open space areas.
- 2-14** The City will consider how best to protect important native fauna and flora within the Bend urban area, as identified by the open space and natural features inventory.

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Deschutes River Corridor

- 2-15** The City shall seek opportunities to retain the banks and canyon of the Deschutes River as public or private open space throughout its entire length within the planning area.
- 2-16** Within the Areas of Special Interest designated on the Plan Map, the city and county may allow developments that carry out the intent of the Plan to enhance the variety and livability of the Bend Urban Area, and provided that such developments:
- are not subject to natural hazards;
 - would not inflict irreversible harm to the riparian zone;
 - would enhance public open space, parks and access;
 - are designed to be compatible with natural features; and
 - provide access to the river or a trail along the river corridor to the extent allowed by law.
- 2-17** The City shall prepare development regulations to further reduce visual and ecological impacts of development along Tumalo Creek and the Deschutes River.
- 2-18** The City shall request that the ODFW develop a list of trees and vegetation appropriate for planting along the Deschutes River. The list shall be used during design review of proposed riverfront development when landscaping or screening issues are considered.



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Fish and Wildlife

- 2-19** The City shall ensure through conditions of approval that development in the Urban Reserve Area adjacent to or within one mile of lands designated by the County's wildlife overlay zone incorporate setbacks or buffers to protect designated wildlife areas.
- 2-20** All trout spawning areas shall be considered significant habitat and shall be protected.
- 2-21** The City shall promote and support educational programs on riparian natural history, river maintenance and courtesies, impacts of habitat alteration, and habitat disturbance by domestic animals and human activities.
- 2-22** The City shall request that the USFS and ODFW adopt a winter elk management plan for the Benham Falls elk herd. Emphasis should be given to identification of their sensitive habitat in order to minimize potential conflict with development and recreational activities.
- 2-23** If significant Goal 5 wildlife habitat areas or nesting sites are documented during future Periodic Review inventory work the City will adopt new protection measures if existing codes are not adequate to protect the resource.

Wetlands and Riparian Areas

- 2-24** The City's Local Wetland Inventory map and list in the Comprehensive Plan replaces the National Wetlands Inventory map for the area within the Urban Growth Boundary.
- 2-25** Wetland areas that are significant Goal 5 resources to be protected through the city's riparian corridor standards are those areas listed and mapped in the Comprehensive Plan.

Deschutes Basin Study Policies

The following policies were developed by the city, county, and a citizens committee in the late 1980s in response to a number of issues that could impact the Deschutes River. Most of the policies deal with issues of regional or statewide significance, and are therefore beyond the scope of the Bend Area Comprehensive Plan.

1. The City and county shall establish a water conservation committee including, but not limited to, local representatives from the irrigation districts, Department of Water Resources, Department of Fish and Wildlife (ODFW), United States Forest Service (USFS), Deschutes County and the City of Bend Planning Department, and Deschutes County and Bend Planning Commissions to provide an ongoing forum regarding water management on the Deschutes River and its tributaries and to make recommendations to

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appropriate agencies. The committee should:

- i. Request assistance through Bonneville Power Administration's (BPA) technical assistance program for technical improvements in methods of irrigation and means of conservation of both water and energy.
 - ii. Request assistance from the Water Resources Department, Bureau of Reclamation, and Soil and Conservation Districts to initiate an in-depth study of, and to set priorities for, actions that should be taken to improve the irrigation districts' delivery systems.
 - iii. Assist the county and City in the implementation of the goals and policies of this section.
2. The City and county shall petition the Water Resources Department to amend the appropriate provisions in the Deschutes River Basin Plan to reflect the recommendations of the River Study Task Force.
3. The City and county shall petition the State Legislature to amend state law to designate in-stream use as a beneficial use to ensure that rights designated to in-stream use shall not be subject to downstream appropriation by holders of equal or junior rights, and petition the Water Resources Department to adopt a uniform, easily-accomplished process for the transfer of water rights in the Deschutes River Basin to in-stream use.
4. The City and county shall petition the Bureau of Reclamation to conduct a feasibility study on the Manner Reservoir site, including (a) the non-irrigation flow required for filing, (b) to what extent gravity feed irrigation would be possible, and (c) to what extent low flows below Wickiup Dam could be augmented during the non-irrigation season.
5. The City and county shall petition the Bureau of Reclamation, USFS, United States Geological Survey (USGS), and the Oregon Department of Environmental Quality (DEQ), to establish a bedload of sediment monitoring program and to determine an appropriate maximum discharge from Wickiup Dam, which program addresses the effects of bankerosion on rehabilitation of spawning habitat, riverfront property, recreation and scenic values, and accomplishes the determination of flow regime through interagency cooperation with the affected irrigation districts.
6. The City and county shall petition the Bureau of Reclamation to determine what the consequences would be to irrigation districts, recreation use, and the stabilizing of water releases below Wickiup Dam by maintaining a lower level of water in Crane Prairie Reservoir, and diking off known high loss areas within the reservoir to minimize excess seepage.
7. The City and county shall encourage the Water Resources Department, irrigation districts, and municipalities utilizing diverted waters to enforce the



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“without waste” provision in appropriated water rights.

8. The City and county shall support efforts by the irrigation districts to provide financial incentives to conserve water. This incentive could be determined for example, by a water use fee on the minimum amount of water required (commensurate with the plant/soil requirements determined by the soil and water conservation districts) and an excess charge for water used over the base amount.
9. The city and county shall support efforts by the irrigation districts within the upper and middle Deschutes River Basin to allow expansion of irrigated land within a district’s boundaries, as part of a means to share conserved water, for those districts that implement water conservation and in-stream flow enhancement programs.
10. The City and county shall encourage examination by irrigation districts and the Water Resources Department of options for providing additional flows below the North Canal Dam during the irrigation season. These additional flows shall not take the place of the current 30 CFS spilled by agreement with Central Oregon Irrigation District (COID), and North Unit Irrigation District (NUID). Options that might be considered include shared conserved water, public participation in irrigation district improvements, public “buy down” of interest rates on improvement loans, and public or private purchase/transfer of water rights for in-stream use.
11. The City and county shall continue to replace the Tumalo water supply pipeline. When this pipeline is complete, gates should be installed at the intake, which would help stabilize withdrawals from Tumalo Creek
12. The City and county and Tumalo Irrigation District shall explore options to improve in-streamflows and fish habitat in Tumalo Creek. Tumalo Irrigation District should consider apportioning their water draws to maximize the use of the Tumalo Feed Canal rather than the Columbia Southern Canal. This action should increase water flows through Shevlin Park and minimize the excessive water losses that now occur in the Columbia Southern Canal.
13. The City and county shall continue to strongly support and promote the conservation of all forms of energy resources through cooperation with the Northwest Power Planning Council, Bonneville Power Administration programs, recycling, solar ordinances, energy-efficient building standards, and appropriate geothermal resources.
14. Hydroelectric projects that are not physically connected to an existing dam, diversion, or conduit are prohibited.
15. The City and county shall develop a program to assure that hydroelectric projects located within existing man-made transmission systems and using existing flow regimes, or physically connected to an existing dam, diversion, or conduit, but not using existing flow regimes, are subject to the following provisions:

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- i. Are consistent with federal and state law.
 - ii. Hydroelectric projects shall not increase the maximum surface area of an impoundment behind an existing dam or diversion.
 - iii. Hydroelectric projects shall not be located in significant/sensitive fish or wildlife areas unless it can be demonstrated that the project, if constructed, would restore significant/sensitive fish or wildlife habitat in the reach affected by the project.
 - iv. Hydroelectric projects shall stabilize stream flows, restore degraded trout habitat, and provide public access to as great an extent as practical.
 - v. Hydroelectric projects shall avoid adverse impacts if possible. Where not practicable, impacts shall be minimized, while providing for restoration of already adversely impacted areas along the river or stream. Restoration does not necessarily have to be in the immediate project vicinity.
 - vi. Hydroelectric projects shall have no adverse impact to water-related and water-dependent recreation unless it can be shown that existing water-related and water-dependent recreation of the same type, quality, and quantity as that which may be lost can be restored or enhanced in the project vicinity. Recreational activities include those activities that occur now and which may reasonably be expected to occur in the future.
 - vii. Hydroelectric projects shall include a river restoration plan documenting both on-site and off-site restoration and enhancement strategies consistent with adopted goals and policies. The plan shall identify costs, time schedules, and coordination actions with all affected parties. The plan shall address, but not be limited to stabilizing water flows, trout habitat restoration, and public access. No hydroelectric project shall be permitted until the plan has been approved through the public review process.
 - viii. Hydroelectric projects shall post a performance and restoration bond to ensure implementation of the approved restoration plan.
 - ix. Hydroelectric projects shall be consistent with the provision of the Columbia River Fish and Wildlife Program and the Northwest Power Plan as adopted by the Northwest Power Planning Council.
16. The City and county shall recommend to the State Transportation Commission that the Deschutes River from below Wickiup Dam downstream to the first COI diversion, and from Sawyer Park north to the county line be included in the State and Federal Scenic Waterways Programs.
17. The City and county shall support the designation of appropriate segments of Fall River, Little Deschutes River, and Crooked River as state and/or



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federal scenic waterways.

18. Support the creation of a nonprofit, private organization that would take a complementary role in the acquisition of property to further the goals of preserving areas for the scenic, recreational, fish and wildlife values.
19. Buildings near the riverfront district should not constitute a physical barrier between the core and the river.
20. The City and county may require public access for any land use action adjacent to the Deschutes River and Tumalo Creek. Access may be limited to foot traffic only; other non-motorized traffic may be negotiated by the city or county.
21. The City and county shall include in all public access easement provisions addressing safety, security, vandalism, litter and any other maintenance concerns expressed by the landowner. The cooperation of the State Police and County Marine Patrol should be sought in working with these landowners and in maintaining the easement agreement.
22. The City and county may accept by donation, fee title ownership for any riparian land for which public access is being required. If the city or county refuses to accept ownership, any required public access shall be waived.
23. The City or county may grant exceptions to the public access requirement where access would be near the nest sites of protected or sensitive wildlife species. In such cases, the city or county shall instead require a conservation easement to protect the nest sites from harassment and disturbance, using the assistance of the USFS, ODFW, and citizens knowledgeable of the nesting requirements of these species prior to drafting the easement.
24. The City and county shall request the Legislature to allow the County Assessors to recognize these public access easements in their assessment policies.
25. The visual impact of excavations or structures that will be erected or substantially modified along the rimrocks bordering the Deschutes River or Tumalo Creek shall be minimized.
26. Citizens groups, business associations, and private foundations and organizations should be involved in developing and implementing a greenway plan along the Deschutes River and Tumalo Creek.
27. The City and county shall support a riverfront development plan in conjunction with a county- wide greenway project.