CHAPTER 8

NATURAL RESOURCES

The dramatic increase in population in the past 2 decades has created significant development and growth pressures within the City, and this trend is likely to continue for the next 20 years. Under such pressure, natural resources can easily be compromised, altered, or lost forever. It is the objective of the City of Victor to implement policies to help protect our unique natural resources so that they can be preserved for generations to come.

Teton County, Idaho consists of approximately 459 square miles (294,012 acres). Most of the County is in private holdings (65%), with Federal or State managed lands constituting approximately 34% of the County.

The remaining 1% of land base consists of waterways. The topography ranges from the high elevation (6,000 ft. average) Teton Basin that drains the Teton River and its tributaries, to the Big Hole Mountains in the southwest portion of the County, where peaks reach 9,000 ft. Counties that border Teton County include Bonneville, Madison, and Fremont Counties, as well as the State of Wyoming's own Teton County.

VEGETATION

Teton County is predominantly a high elevation valley habitat, with traditional riparian areas of grasses, sedges and low brush. In the higher elevations, rising from the basin floor, numerous forested areas dot the landscape, exhibiting timber species of Douglas fir, sub-alpine fir, lodgepole pine and Englemann spruce. Understory within the forested areas consists of numerous forbs, grasses and shrubs.

Sagebrush/grass communities are common at lower elevations or on south and southwest aspects. The lower elevation transitions to mixed conifer forests in most of the county with some mixed fir at higher elevations on North, and East aspects. At higher elevations spruce/fir and lodgepole pine forests are common. Most privately owned lands are within the Sagebrush/grass or the mixed conifer/quaking aspen community types of Teton County.

Fire has played an important role in the development of the vegetation in the County. Exclusion of fire, or mechanical treatment of the mixed conifer and aspen forests of the County, has resulted in increased wildfire fuels accumulation, with overabundant seedlings and saplings on areas of private and public lands. This accumulation, combined with development in or adjacent to the forests of the County, has increased risk of economic loss by wildfire to residents of these areas. The vegetation regimes in Teton County and their condition serve as a significant factor in predicting wildfire hazard.

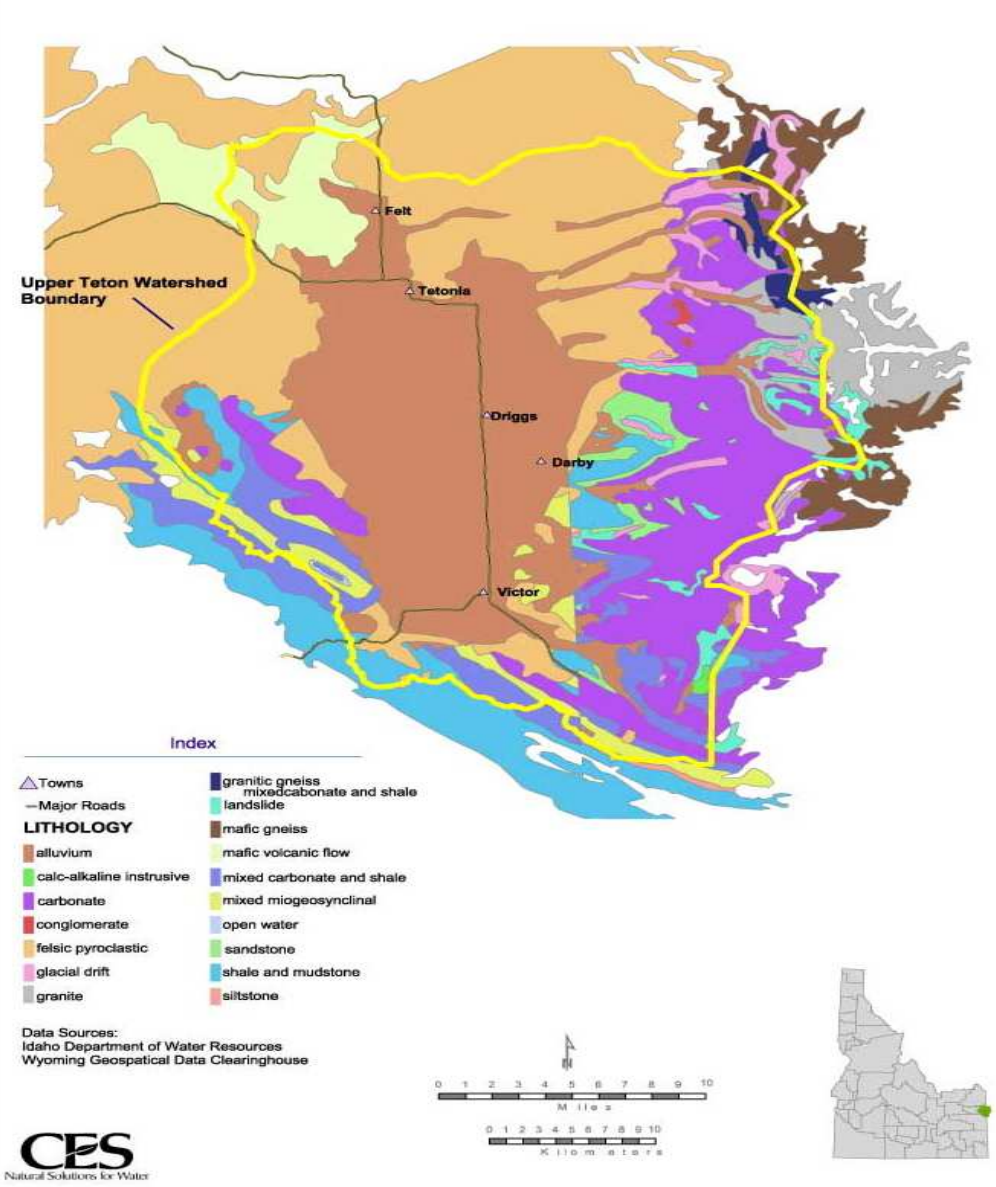
The grass and shrub vegetation, cultivated fields and Conservation Reserve Program

(CRP) lands in the lower elevations of the Teton Valley are near the county's main communities and pose an additional wildfire threat once cured.

Vegetation in Teton County is instrumental in providing stability to and preventing soil erosion, maintaining water quality, and providing areas for recreation and wildlife habitat.

GEOLOGY

Teton County is within the Wyoming Overthrust Belt System located in eastern Idaho and western Wyoming. Only the main basin that runs the center length of the County is relatively level, with the surrounding mountainous landscape brought about by historic uplifts, faults, fault blocks, alluvial deposits and stream cutting action that has created steep narrow canyons. Approximately 50% of Teton County has slopes steeper than 40%.



LANDSCAPE

The origins of the Teton Basin landscape make a fascinating geological story. The continuing uplift of the Tetons, the thrust faulting that created the Snake River Range, volcanic eruptions, glaciations, windstorms, and the persistence of running water are all reflected in the spectacular scenery surrounding the City of Victor. Geologic history is beyond the scope of this document, but the landforms it created are a critical basis for the development of this comprehensive plan.

Mountain Slopes. The Southern Teton Basin is surrounded on three sides by mountain slopes. These slopes are composed predominantly of rock outcrops and shallow colluvial (developed in place) soils derived from those sedimentary rocks. Isolated areas of volcanic rock occur at the base of the mountains. These volcanic rocks may have filled the valley during the time of active volcanism in the Yellowstone area, but most have been eroded away. There are also landslide scars on the slopes of the Tetons: the largest extends over 1000 feet onto the valley floor. The vegetative cover on the face of the Tetons consists of sagebrush, stands of aspen, and a coniferous forest on the moister north-facing aspects. The gentler slopes of the Snake River Range and Big Hole Mountains have a more even forest cover.

SOILS

There are a wide variety of soils found throughout Teton County. Surface soils are typically moderate with coarse loams and soils weathered from igneous and sedimentary sources. These sandy loams have little adhesion or cohesion. Sedimentation monitoring and mitigation can assist in stabilizing soils, especially on steep slopes.

Aeolian Deposits. Aeolian (transported by the wind) deposits, or loess, blanket the lower slopes of the Snake River Range and Big Hole Mountains. They are also found, But not continuously, along the base of the Tetons. Loess is a silty soil that results form long-term accumulation of wind-borne “dust”. It appears to have originated in extensive mudflats associated with ancient glacial outwash areas. Most Aeolian soils in the southern Teton Basin are farmed, but the steeper aeolian deposits support a forest cover.

Alluvial Fan/Glacial Outwash Deposits. The relatively level valley floor, where Victor is situated, is the product of alluvial action: the downstream transport of materials eroded form mountain slopes. Some geological maps indicate that the gravelly materials of the valley floor in the Fox Creek watershed north of Victor are, in part, a result of glacial outwash. Both Fox Creek and Trail Creek have created alluvial fans: the roughly triangular (fan-shaped) landforms created by the gradual deposition of materials carried downstream form the mountains. An alluvial fan begins at a canyon mouth, where spring runoff and summer flash floods begin to lose velocity. Floodwaters enter the fan in a single channel, but the deposition of sediment diverts the flow to a series of “braided” channels. Floodwaters may even flow as a sheet across the entire lower surface of the fan. This process results in the deposition of gravel, sand, and finer materials across the valley floor. The alluvial deposits fill the center of the Teton Basin to a depth of over 300 feet.

The soils developed on the alluvial fans are silt loams over gravel and gravelly loams. The valley floor near Victor is mostly farmed but small areas of sagebrush-dominated rangeland do remain.

Floodplain Deposits. Extensive deposits of alluvium (gravel, sand, silt, and clay transported by streams) have been carried into the Teton Basin by the Teton River and its tributaries. The flood plain deposits interfinger with the very similar alluvial fan deposits of the valley floor. Both consist predominantly of coarse gravel, but the presence of water and the vegetation it supports, makes a visible difference. Corridors of riparian and wetlands vegetation mark the course of the Teton River and its tributaries across the valley floor.

Each of the landscape features described here makes a unique contribution to the quality of life. Victor occupies only a small part of the alluvial fan created by Trail Creek, but the quality of the view from the City can be destroyed by the insensitive us of the mountain slopes to the east. Likewise, the aesthetic and recreational value victor residents receive from the wildlife of the area will be diminished (or even lost) if wetlands and other habitats are developed. Maintaining the integrity of the southern Teton Basin landscape while accommodating projected growth will require that development proceed only with respect for the natural limitations described below.

Slope Hazards. Parts of the southern Teton Basin have slopes of 8% or more. There is an area in the center of the valley where slopes are one percent or less. Intensive development in such an extremely level area will experience surface ponding and other drainage problems. Virtually all mountain slopes have a high soil erosion hazard. Disturbance of these areas will result in soil erosion and downstream sedimentation. It may also result in slope failure. The ancient landslide northeast of Victor occupies nearly 60 acres and is a powerful reminder that the stability of these mountain slopes is not guaranteed. The open slopes surrounding the Teton Basin are visible from almost anywhere on the valley floor. Every resident will be constantly reminded of insensitive development on the mountain slopes.

Wetlands. Wetlands are areas where the water table is at or near the land surface for at least part of the year. The topographic center of the Teton Basin is filled with wetlands. Wetlands corridors are also found along Trail Creek and the other tributaries. Wetlands have important functional values: they help reduce downstream flood peaks and serve as living “filters” that enhance water quality. Wetlands also provide habitat for waterfowl and other wildlife. These wetlands values are complemented by the severe limitations wetlands impose on development. Any excavation fills with groundwater and as previously explained, wetlands have poor surface drainage. Some wetland soils consist of peat (an accumulation of partially decayed organic matter) and all tend to have a low bearing strength. Wetlands soils also tend to severe frost heaving. Finally the high water table and rapidly permeable layers underlying the wetlands soils make these areas highly vulnerable to groundwater contamination.

Flood Hazards. There is a one percent chance of flooding in any given year in FEMA

designated flood hazard areas. Special flood hazard areas overlap with wetlands and riparian wildlife habitats, Making development in the floodplain both dangerous, for occupants and their property, and potentially damaging to water quality and wildlife habitat values. Unpredictable, but extensive sheet flooding can occur on alluvial fans and debris flows can affect areas near canyon mouths. A single violent storm on July 15, 1954 caused 50 debris flows in the Teton Basin area, rendered Victor's water supply unusable for four days, and destroyed the fishery in Moose Creek.

Water Quality. Rainfall, surface runoff from the mountains, and irrigation water percolate through the coarse soils of the Teton Basin's alluvial fans and floodplains to recharge an aquifer (a body of groundwater) in the course alluvium that fills the valley. That aquifer (a body of groundwater) in the coarse alluvium that fills the valley. That aquifer then discharge into the Teton River and nearby wetlands. The volume of the Teton Basin aquifer is not known, but well test data indicate that its transmissibility (the rate at which water can move through the aquifer) is extremely high. The water level in Teton Basin wells fluctuates directly with seasonal variations in precipitation and irrigation. This fluctuation occurs in even comparatively deep (160 feet) wells, indicating that contaminants spilled on, or flushed into, the rapidly permeable soils of the valley floor could reach the aquifer and, eventually, the Teton River. The aquifer recharge areas of the southern Teton Basin are potentially vulnerable to groundwater contamination and the high water table areas along the Teton River and Trail Creek are also highly vulnerable.

Agricultural Lands. These are generally areas of Aeolian soils with a Soil Conservation Service Land Capability Classification of III. Some of the deeper alluvial fan soils are also included. The land capability classification system assigns a I to the best croplands, but the short growing season of the Teton Basin (71 frost-free days in the average year) limits local land capability ratings to III or lower. Class III soils are a limited resource: they occupy only about 10% of the southern Teton Basin. Conversion of these soils to nonagricultural use will signal the end of the area's traditional economy and the traditional land use pattern of productive open space.

Wildlife Habitat. The southern Teton Basin supports a variety of wildlife species. The critical habitat elements for some of those species include the Teton River, the wetlands that follow the river through the valley, and the open, south or west facing slopes near the base of the Teton Range. The principal local fishery is the Teton River. The river and adjoining wetlands are also important habitat for waterfowl and many non-game species. The riparian corridors along the tributary streams provide cover for whitetail deer, moose, and other species. The sunny slopes of the Teton Range offer accessible winter browse for mule deer and elk. The quantity and diversity of wildlife in the southern Teton Basin depend on limited open space resources. Only small areas of insensitive development would be needed to end the winter range value of the open slopes or destroy the continuity of the riparian corridors.

The Land types of the southern Teton Basin show how the landscape of the Victor area is composed of distinct, but interrelated elements. Each of these landscape elements, the

steep mountain slopes, the fertile Aeolian soils, the aquifer recharge areas of the alluvial fans, and the wetlands and floodplains of the stream corridors, imposes some limitations on human land use. Each also offers unique values that may be diminished or lost by insensitive land development.

Teton County has a wide variety of wildlife species and habitats. The Idaho Department of Fish and Game manages wildlife populations and the U.S. Forest Service, BLM and Idaho Department of Lands are responsible for wildlife habitats on lands they manage. Large mammals that are found in Teton County include mule deer, whitetail deer, moose, elk, grizzly bear, black bear, and an occasional gray wolf. Coyote, bobcat, wolverine, snowshoe hare, cottontail rabbits, red fox, badgers, beavers, pine martens, porcupines, and skunks can also be found within the county.

Upland birds present in Teton County include blue grouse, spruce grouse, and sharp-tail grouse. Raptor species include golden eagles, osprey, prairie falcon, red-tailed hawk, and wintering bald eagles.

Waterfowl habitat is widespread throughout the Teton Basin. Waterfowl present include Canada geese, numerous duck species, trumpeter swans, and sandhill cranes.

Other birds common to Teton County are flickers, woodpeckers, robins, killdeer, stellar jays, dippers, mountain blue birds, hummingbirds, red-winged blackbirds, ravens, crows, and magpies.

BODIES OF WATER:
RIVERS, CREEKS, WATERSHEDS

The main waterway in Teton County is the Teton River, which forms the valley/basin that is the backbone and main thoroughfare within the county.

Besides providing recreational opportunities and watershed provisions, the river and its tributaries provide a water source for engines and helicopters during wildfire suppression operations. Most rivers/creeks in Teton County are accessible, with either a direct or adjacent road access. River flow rates generally peak in June with low flow rates in August and September.

Watersheds in Teton County directly influence downstream water use for irrigated farmland within the County and neighboring counties. Watershed protection, stabilization, and water quality are high priorities for the County's private, state, and federal land managers or owners.

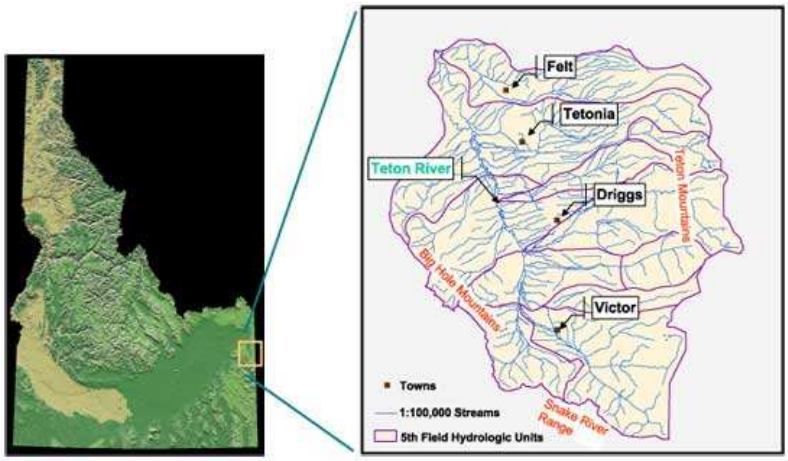


FIGURE 8.2

USDA-FOREST SERVICE ROADS

The USDA Forest Service, Caribou-Targhee Forest, has built and maintains numerous two-lane gravel roads throughout the county for recreation, and logging. Some of these have been closed and many are currently gated with access allowed for seasonal use or during a wildfire.

The Caribou-Targhee National Forest has recommendations and requirements for these off road or trail travel.

GOALS AND POLICIES

NATURAL RESOURCE GOALS
1. To encourage the preservation of open space, wildlife, clean water and air, native vegetation, for use by future generations.
2. Develop natural resources according to local priorities without doing environmental damage.
3. Conserve wildlife habitat and water resources.
4. Aquifer Protection
5. Enhance and Preserve Scenic and River Corridors.
6. Encourage Water Conservation.
7.Preserve and Protect Wetlands and Open Space in Victor and within the City Impact Area.

Policy No. 1: Preserve open space. Require open space in the Trail Creek Flood Plain and in other critical lands within the area of city impact.

Policy No. 2: Preserve natural habitat by careful zoning control in areas adjacent to habitat.

Policy No. 3: Control Light Manufacturing and Commercial Land Uses adjacent to sensitive areas.

Policy No. 4: Recognize the importance of the surface water and groundwater resources of the City.

Policy No. 5: Recognize the need to protect and reserve existing water rights and encourage the preservation of existing water right use.

Policy No. 6: Consider air quality programs that are fair. Consider land use and transportation issues as important factors in reducing air pollution.

Policy No. 7: Encourage development in the Impact Area to proceed sequentially to minimize sprawl and to minimize both acreage and the visual impact of the remaining land.

Policy No. 8: Encourage developers to protect critical open space areas by "clustering" within developments.

Policy No. 9: Promote noxious weed control by property owners in areas of disturbed soil.

Policy No. 10: Actively work to eliminate noxious weeds in public land areas.

Policy No. 11: Regulate development to adhere to the Dark Sky ordinance and recognize our dark night skies as a valuable resource.