Department of Health and Environmental Sciences
STATE OF MONTANA HELENA, MONTANA 59601

ENVIRONMENTAL SCIENCES DIVISION
Telephone: 449-3946

A. C. Knight, M.D., F.C.C.P.
Director

DEC 18 1979

Honorable Thomas Judge, Governor, State of Montana, Helena, MT 59601
Honorable Ted Schwinden, Lieutenant Governor, State of Montana, Helena, MT 59601
Department of Community Affairs, Planning Division, Helena, MT 59601
Department of Fish, Wildlife and Parks, Wildlife Division, Helena, MT 59601
Department of Fish, Wildlife and Parks, Ecological Services Division, Helena, MT 59601
Department of Highways, Engineering Division, Helena, MT 59601
Department of Natural Resources, Energy Planning Division, Helena, MT 59601
Department of Natural Resources, Water Resources Division, Helena, MT 59601
Department of State Lands, Helena, MT 59601
Montana Bureau of Mines & Geology, c/o Montana Tech, W. Park St., Butte, MT 59701
Environmental Quality Council, Helena, MT 59601
Montana Historical Society, State Historic Preservation Program, Helena, MT 59601
Montana State Library, Helena, MT 59601
U.S. Environmental Protection Agency, Region VIII, 1860 Lincoln St., Suite 103
Denver, CO 80295
U.S. Environmental Protection Agency, Federal Building, 301 S. Park, Drawer 10096
Helena, MT 59601
U.S. Fish & Wildlife Service, Federal Building, Room 3035, 316 N. 26th Street,
Billings, MT 59101
U.S. Federal Energy Administration, Region VIII, 1075 S. Yukon, Box 26247,
Belmar Branch, Lakewood, CO 80226
District Engineer, Omaha District, Corps of Engineers, Attn: Operations Office
6014 U.S. Post Office and Courthouse, Omaha, NE 68102
Soil Conservation Service, Box 970, Bozeman, MT 59715
Honorable John Melcher, United States Senate, Washington, D.C., 20510
Honorable Max Baucus, United States Senate, Washington, D.C. 20510
Honorable Ron Marlenee, House of Representatives, 1641 Longworth Building,
Washington, D.C., 20515
Rita Sheehy, 1701 Choteau, Helena, MT 59601
Earl F. Colton, D.V.M., P.O. Box 206, Kalispell, MT 59901
Dr. John F. McGregor, Room 301, Great Falls National Bank, Great Falls, MT 59401
Dr. John Newman, Box 3493, Butte, MT 59701
Charles Shields, 1755 W. Central Avenue, Missoula, MT 59801
William Spoja, Jr., Box 882, Lewistown, MT 59457
Grace M. Edwards, 140 S. Crestwood Drive, Billings, MT 59102
Big Horn County, Attn: Commissioners, Hardin, MT 59034
Big Horn County, Attn: County Agent, Hardin, MT 59034
Big Horn County, Attn: Superintendent of Schools, Hardin, MT 59034
Big Horn County, Attn: Sheriff, Hardin, MT 59034
Big Horn County, Attn: County Attorney, Hardin, MT 59034
Big Horn County Library, Hardin, MT 59034
Mayor M.D. Marshall, Box 848, Sheridan, WY 82801
Sheridan County, Attn: Commissioners, Box 686, Sheridan, WY 82801
Sanderson/Stewart/Gaston, 1629 Avenue D, Billings, MT 59102
Buchanan Enterprises, Box 1643, Great Falls, MT 59403
Cumin Associates, Attn: Cal Cumin, 528 Grand Avenue, Box 20762, Billings, MT 59404
Billings Gazette, Attn: State Editor, Box 2507, Billings, MT 59103
Hardin Herald, Hardin, MT 59034

Spring Creek EIS

Montana Coal Council, 2301 Colonial Drive, Helena, MT 59601
Decker Coal Co., Box 12, Decker, MT 59025
Decker Coal Co., Box 3049, Sheridan, WY 82801
Spring Creek Mine, Box 67, Decker, MT 59025
Allen Rowland, President, Northern Cheyenne Tribal Council, Lame Deer, MT 59043
Forrest Horn, Chairman, Crow Tribe of Indians, Crow Indian Reservation, Crow Agency, MT 59022
Tri-County Ranchers Association, Attn: Ms. M. Hayes, R-Bar Ranch, Birney, MT 59012
Northern Plains Resource Council, 419 Stapleton Bldg., Billings, MT 59101
Department of Housing and Urban Development, Office of Interstate Land Sales Regulation, 909 17th Street, Denver, CO 80202
Friends of the Earth, Ed Dobson, Box 882, Billings, MT 59103
Montana Stockgrowers Association, Box 1679, First National Bank Bldg., Helena, MT 59601
Jim Goetz, Box 1322, Bozeman, MT 59715
Tribune Capitol Bureau, 515 N. Sanders, Helena, MT 59601
Lee State Bureau, Box 4249, Helena, MT 59601
Environmental Information Center, Box 1184, Helena, MT 59601
Northern Rockies Action Group, 9 Placer St., Helena, MT 59601
Resources Education Foundation, Inc., Box 5027, Helena, MT 59601
Western Environmental Trade Association, 1804 11th Avenue, Helena, MT 59601
Defenders of Wildlife, Attn: Hank Fischer, 947 Rimini Court, Missoula, MT 59801
Montana Wildlife Federation, Box 4373, Missoula, MT 59806
Montana Chamber of Commerce, Box 1730, Helena, MT 59601
Montana Realtors Association, 2021 11th Avenue, Helena, MT 59601

This environmental impact statement has been prepared for the proposed Spring Creek Subdivision, Big Horn County, and is being submitted for your consideration. Comments and questions will be accepted for 30 days after the date of this publication. All comments should be sent to: Subdivision Bureau, Environmental Sciences Division, Montana Department of Health and Environmental Sciences, Capitol Station, Helena, MT 59601

Sincerely,

Edward W. Casne, P.E.
Chief
Subdivision Bureau

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Spring Creek Subdivision
Developers:
Spring Creek Development, Ltd.
Billings, MT

MONTANA DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES DRAFT ENVIRONMENTAL IMPACT STATEMENT

SPRING CREEK

BIG HORN, COUNTY

Pursuant to the Montana Environmental Policy Act, Section 75-1-201, et. seq., MCA, the Sanitation in Subdivisions Act, Section 76-4-101, et. seq., MCA, and the Water Quality Act, Section 75-1-101, et. seq., MCA, the following environmental impact statement (EIS) was prepared by the Montana Department of Health and Environmental Sciences (DHES), Environmental Sciences Division, concerning the request for administrative approval of Spring Creek, a proposed subdivision near Decker, Montana.

DESCRIPTION

The new Community of Spring Creek, Montana, is a proposed subdivision near the northwest shore of the Tongue River Reservoir in southeastern Big Horn County. The 311-acre townsite would be on grazing land that was part of the 2,900-acre Montaylor Ranch. The townsite is about nine miles north of the Decker, Montana, post office, and about 30 miles north of Sheridan, Wyoming. It occupies parts of sections 22, 23 and 26 of Township 8 South, Range 40 East, P.M.M. (map #1).

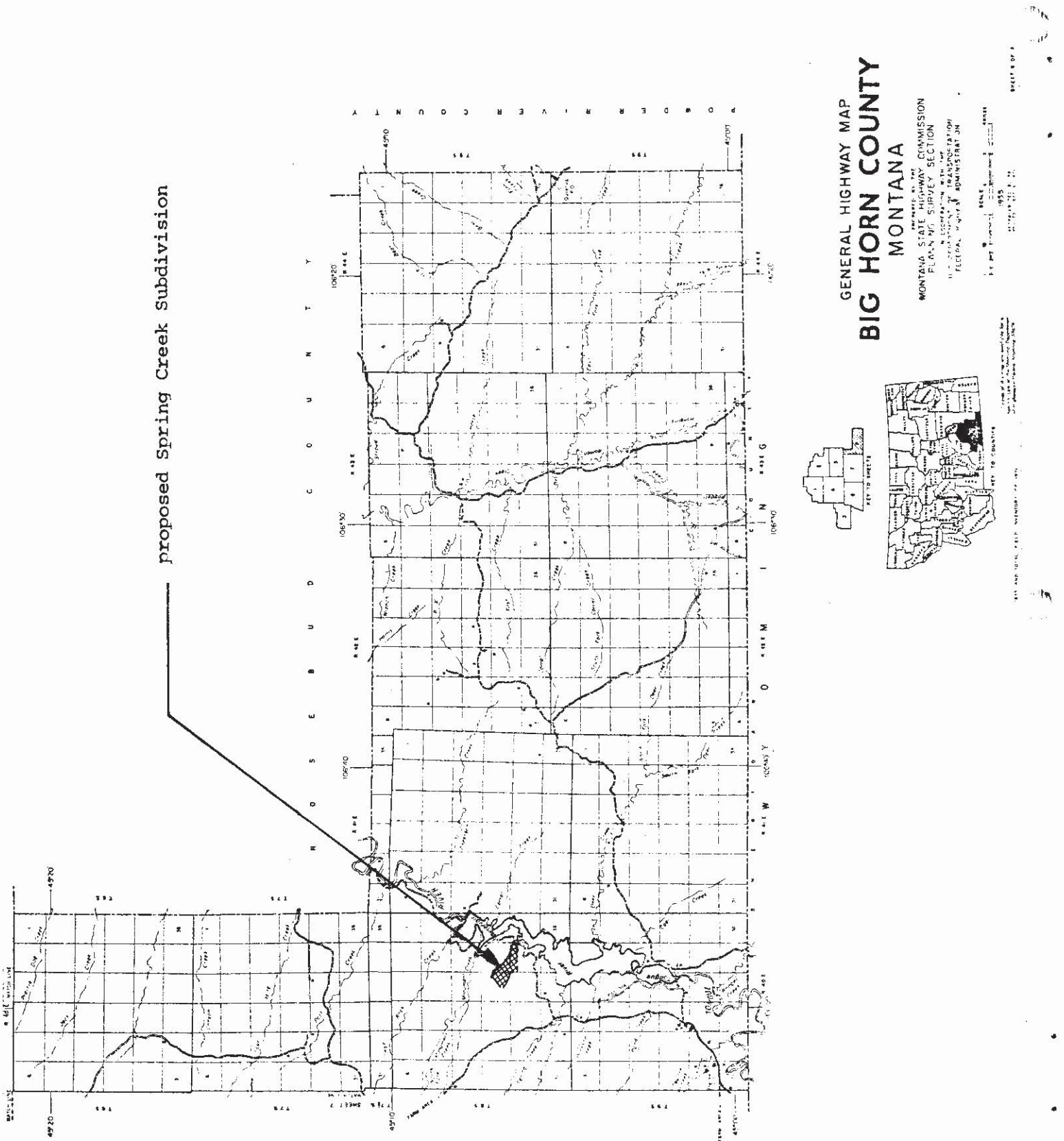
The purpose of the subdivision is to provide housing and services for miners employed at at least five coal strip mines in the immediate vicinity - The Decker Company's East, West and North Extension Mines, the Spring Creek Mine and the Pearl School Mine. Housing is almost non-existent in that part of Big Horn County, and miners and their families live, for the most part, around Sheridan. Developers see a Spring Creek population of about 3,000 by the mid-1980s.

Spring Creek will be developed in phases during the next several years. A total of 964 housing units are planned by 1985, including single-family units, townhouses, apartments, mobile homes and recreational vehicle space. A commercial center that includes law enforcement and emergency service headquarters is included in the master plan, as well as parks and recreational facilities.

The developers initially proposed to build an 80-lot subdivision. This first phase includes: a lot for a mobile home park, one for a school, one for a church, one for a recreational vehicle (RV) park, one for a motel, one for a shopping center, 26 lots for multi-family and townhouses, four commercial lots and 44 single family home lots.

The mobile home park will have 257 units, with 60 units constructed during Phase I. The RV park will be 54 units. The motel will have about 15 units and there will be about 40 multi-family and townhouse units. The shopping center will be 70,000-80,000 square feet.

Map #1


proposed Spring Creek Subdivision
GENERAL HIGHWAY MAP
BIG HORN COUNTY
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MONTANA STATE HIGHWAY COMMISSION
PLANS AND SURVEY SECTION
ROSEBUD COUNTY
POWDER RIVER COUNTY
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The development's planning firm, Cumin Associates of Billings, completed an environmental impact assessment of the new town in 1978. On June 1, 1978, the county commissioners of Big Horn County approved the first phase of the Spring Creek Subdivision, attaching nine conditions.[1]

CURRENT ENVIRONMENTAL CONDITIONS

The proposed townsite is now naturally-vegetated, cleft and rolling grazing land, about .6 of a mile from the shore of the Tongue River Reservoir. Until the early 1970s, the entire southeastern portion of Big Horn County was open ranch land. The nearest town of any size was Sheridan.

Now there is the West Decker mine, a few miles south of the townsite, and a small recreation area one mile south of the townsite on the Tongue Reservoir. Before the town of Spring Creek can get into full swing, however, three more strip mines will be located within a few miles of the site.

THE PHYSICAL ENVIRONMENT

TERRESTRIAL & AQUATIC LIFE AND HABITATS

By the time a new town realizes significant growth on the shore of the Tongue River Reservoir, at least four strip mines will have affected wildlife habitat of the area.

Winter range, important to the survival of larger mammals in the region, will be a vital factor in assessing the impact of the proposed town. Already, the carrying capacity of such winter ranges in the area has been greatly reduced by the building of the mines. According to the final environmental statement on the Spring Creek Mine, released in 1979, that mine will lower the carrying capacity of the ranges "...and possibly would affect animals for a distance of as much as 25 to 30 miles." The Spring Creek townsite falls well within that distance.

Antelope will be most affected by the loss of winter range at the townsite. Biologists and wildlife officials say that between 40 and 100 antelope have used the townsite area as a winter range between December and February since 1974. In a letter to the development's planners, Robert L. Phillips of the U.S. Fish and Wildlife Service said approximately 80 of the pronghorns used the site in the winter of 1977-78. In a second letter, Phillips suggested the developers buy or improve another winter range for the antelopes within five to 10 miles of the townsite to make up for the range lost at the townsite. The developers have decided not to pursue that suggestion.

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1 Conditional approval was given for Phase I of Spring Creek Subdivision based on the following conditions:

1) The access road from Highway 314 to the development should be improved to county standards and paved. Ownership of the road shall be determined before seeking final approval;

2) The developers work with the school board to find a satisfactory solution to the problem of additional student load;

That particular herd, Phillips wrote, uses several sections of land during the winter and would use more if the habitat were made suitable. Phillips also said:

> Once the townsite begins to develop and there is considerable activity in the area, most likely the antelope will not use it again. However, the carrying capacity of the area could remain the same if a suitable amount of habitat were gained in exchange for that lost by the town.

Near the townsite, there have been sightings of bald and golden eagles, deer, sage and sharptail grouse, Canadian geese, osprey, great blue herons and cormorants as well as the more common varieties of animals such as rabbits, horned toads and songbirds, according to the developer's environmental impact assessment.

Spring Creek's overall impact on these animals was summed up in a letter from Steven J. Knapp, fish and wildlife biologist with the state Department of Fish, Wildlife and Parks, to Cumin Associates, Knapp wrote:

> I would say that the actual building of homes and other structures in Section 23 (where the townsite will be located) will have some impact on some deer, antelope and birds, but that the impact is small or at least affects a relatively small number of wildlife. The big impact comes from the people. If 2,500 to 3,000 people live in this area as you estimate, this will have heavy and permanent impact on the wildlife resource. These people will recreate on the Tongue River Reservoir and river. I envision disturbance of the wintering bald eagles by human activities and possible elimination of this area as secure wintering habitat for the birds. Human disturbance may affect the breeding waterfowl, herons and cormorants, and especially the osprey. In my experience, where new towns are constructed and people from other areas and states move in, the spotlighting of deer can

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3) The conditional approval does not constitute approval of the recreational vehicle (RV) park and mobile home park design and layout. The concept and sites for the mobile home park and RV park are approved, however;

4) The sewer and water systems must be approved by the Department of Health and Environmental Sciences and the county sanitarian;

5) The solid waste disposal method and landfill site must be approved by the Department of Health and Environmental Sciences and the county sanitarian;

6) The developers install all sewer, water and road improvements before seeking final plat review or enter into an improvements agreement with the county guaranteeing the improvements will be installed;

7) The developer build and maintain the streets, sewer and water systems, the solid waste collection system and disposal site, as the county declines to accept responsibility for these services;

8) The developer provide the county with some assurance that it will work to establish a volunteer fire department as soon as the development warrants it, and

9) The conditional approval shall be effective for one year from June 1, 1978.

can become quite a problem. Legal hunting will also greatly increase.

As can be seen from the above statements, an action that starts out small and unpretentious can continue to grow. Even if the beginnings of a town in Section 23 have little impact on wildlife, its presence and growth will have a permanent and growing adverse affect on wildlife as the populations of humans grow and their activities increase in area and intensity.

Unpretentious in its beginnings or not, some of the planning for the town has taken into account, at least to a small degree, some of the impacts on wildlife. It was originally planned to construct a new road from Highway 314, southwest of the site, to provide access to the townsite. After talking to wildlife officials, however, developers learned that such new road construction would have a considerable impact on wildlife which use the flats as winter range and for access to the reservoir. Since then, another access road proposal - to follow a trail from an existing roadway along the reservoir - was considered. But the developers decided to stay with the original road plan.

Developers hope they can reduce disturbances to wildlife by providing a specific area for snowmobile and dirt bike riding and a shooting range.

It must be noted that the increased human habitation of the Decker area is already being realized without the town of Spring Creek. Mine workers are already buying or renting small plots of land on which they set trailers or campers in which to live. An occasional worker is simply "squatting" in his camper on public land around the reservoir.

Except for the added fishing pressure on the Tongue River and reservoir and on other nearby fishing streams, the rise of the new town of Spring Creek should place little impact upon aquatic life. Construction could affect Monument Creek, at the northeast edge of the development, and Spring Creek to the south, but those streams are ephemeral and contain no aquatic populations.

VEGETATION COVER, QUALITY AND QUANTITY

The vegetation on or near the townsite is generally that of the Montana mixed prairie association. The area is near the boundaries of the Palouse prairie and the ponderosa pine-juniper savanna. Grasses in the area are a mixture of cool-season bunchgrass and low-growing shrubs typical of the Palouse prairie, as well as sedges and short-tuft and sod-forming grasses typical of the short-grass plains lying to the east and south of the Decker area.

Two-thirds of the annual precipitation in the Decker area commonly occurs in the four-month period between March and June. The average annual precipitation is 11.79 inches. The area's vegetation is subject to, on the average, one year of drought out of every seven. The one-site vegetation delineated by the Big Horn County Soil Survey was bluebunch wheatgrass, western wheatgrass, needle-and-thread, sideoats grama, prairie junegrass, big sagebrush, fringed eaglewort, broom snakeweed, rubber rabbitbrush and cheatgrass. There are signs, however, that the vegetation at the townsite has been overgrazed. As part of the site design analyses, Dr. Norman D. Schoenthal, professor of biology at Eastern Montana College, was hired to investigate the townsite's vegetation. The following is part of his report:

All indications reflect that the site has been heavily grazed or overgrazed for a long period of time. The survey conducted indicates that blue grama, needle-and-thread, threadleaf sedge along with big sagebrush, plains prickly pear, fringed sagewort and phlox are the major plants. The high frequency of blue grama and the low occurrence of western wheatgrass is a good indication of prolonged overgrazing.

The woody vegetation on the side hills and the draws also indicate very heavy overgrazing at some point in the past. The scattered Rocky Mountain junipers all are or have been highlined by livestock. Present growth patterns indicate that it is not as severe now as some time in the past. The conspicuous absence of western snowberry and chokecherry along with the extremely heavy browsed skunkbush sumac in the draws also indicate the heavy overgrazing at some point in the past.

The following changes in vegetation will occur (when Spring Creek is built) in the draws and other areas that are left in native vegetation: There will be a gradual increase in the occurrence of western wheatgrass on the side hills. The juniper will fill out at the bottom and lose the bottle-brush appearance. The greatest change will occur in the protected draws that run through the townsite. At present one can walk up these draws with little or no difficulty. Redshoot gooseberry, prairie rose and woods rose, which are all armed (thorned), will increase. Snowberry, chokecherry, skunkbush sumac and Ponderosa pine will also increase in the draws.[2]

Although Dr. Schoenthal concluded that building the town will alter some of the native vegetation, he added that the town will prevent further overgrazing of natural vegetation that is left at the site and will actually improve the growth of the woody vegetation in the draws, many of which will be untouched by construction, developers say. "The latter will not occur," Schoenthal said, "unless restrictions are placed on the use of off-trail vehicles." Also, such activities as foot traffic and children's play will affect the growth of the remaining natural vegetation.

The loss of much of the natural vegetation in the construction areas will reduce cover and forage for some wildlife. But the relandscaping of the townsite with domestic grasses, trees and shrubs and the natural revegetation of the draws may benefit some types of wildlife. Dr. Schoenthal said this activity may bring about an increase in non-game bird life.

GEOLOGY & SOIL QUALITY, STABILITY AND MOISTURE

The Spring Creek townsite lies near the northwest edge of the Powder River Basin, a large depression in the earth's surface that has been filled with sedimentary formations - about 1,200 feet thick - ranging in age from Holocene to Cambrian. The uppermost bedrock is the Wasatch Formation of the Eocene Age, a sequence of interbedded claystone, shale, siltstone, sandstone and thin coal beds that crop out in the Badger Hills about eight miles south-southeast of the townsite. Underlying the Wasatch Formation is the Fort Union Formation of the Paleocene Age, a sequence of interbedded sandstone, siltstone, shale and coal

2 Cumin Associates and Sanderson-Stewart-Mueller Engineering, Inc., Spring Creek: A New Community, Evaluation of Vegetation and Wildlife in the Proposed Spring Creek Town Site Area, Appendix A, 1978.

beds that form the bedrock throughout most of the area. The Fort Union Formation is about 3,400 feet thick in this area, but only the upper 1,600 feet (called the Tongue River Member) contains thick coal beds of economic interest. Test boring discovered three coal layers beneath the townsite, but the shallowest one was between 110 and 122 feet deep, lowering the feasibility of commercial strip mining on the site.

In January, 1979, Robert E. Matson, chief of the energy division of the Montana Bureau of Mines and Geology, wrote the development's planners saying:

> . . . we estimate more than 10 million tons of coal underlying the townsite. . . however, only a small part of this reserve would be under a stripping limit ranging from about a 150 to 230 feet of overburden. I would therefore classify the mining potential in the area as medium to low, as compared to the other minable deposits in the Decker area.
>
> The Dietz No. 2 coal bed is the only one of consequence in this area, although there are some deeper coal beds. The Anderson-Dietz No. 1 coal bed has burned over the entire townsite, leaving clinkered ridges. I do not believe that there is any unburned minable coal in the Anderson-Dietz No. 1 underlying the townsite.

Geologic hazards due to rock, mud or snow slides are not anticipated in the area. There were no surface displacements that would indicate any recent movement along any of the faults in the area. Moreover, an undisturbed highgravel terrace which covers the trace of one nearby fault indicates no movement along the fault for thousands of years. A seismic map prepared by the National Oceanographic and Atmospheric Administration shows that only minor damage should be expected from any future earthquakes in the area. Blasting at nearby strip mines will probably be a minor seismic factor for the Spring Creek townsite because the blasting is done near the surface, minimizing any subsurface impact.

The Big Horn County Soil Survey has identified four soil types within the Spring Creek townsite. Basically, the soils are loams with a thickness of about 9 to 90 inches thick set upon rolling land - with slopes ranging from very gradual to very steep - with some ledges of sandstone and porcelanite boulders. For the most part, the soils are well drained. Some of the severe slopes and nearness of bedrock to the surface may cause the construction of roads, parking areas and basements in the townsite to be more difficult than normal. Instead of flattening the townsite, however, the developers say they plan to follow and "use" the contours of the land as much as possible.

Runoff

The drainages at the townsite drain relatively small areas and contain water only during periods of high precipitation. For example, when the extremely heavy snows of 1977-78 melted in the spring of 1978, only small, shallow amounts of water occurred, and only for a week's duration. A large drainageway - including about 2,070 acreas in its drainage area - skirts the north boundary of the Spring Creek site. A hydrologist who investigated the area for the developers concluded: "The probable effect of precipitation runoff causing serious loss of property values or human life in the development along the drainageway are remote."

The Spring Creek site sits atop massive beds of clinker, a material through which the water percolates to the water table almost as fast as it is absorbed.

The paved surfaces that would come with the building of Spring Creek would reduce the ground area available for water absorption. The Spring Creek planners, however, have chosen to use swales along the roads and French drains to handle the storm run-off. Excess runoff, which cannot be handled by the swales and French drains, will be channelled toward the naturally existing drainage patterns, the planners say. Thus, with such techniques for handling runoff, and because of the clinker substrata, the development of the townsite is not expected to seriously deplete the "recharge" the site now provides for the Tongue River Reservoir.

WATER QUALITY, QUANTITY AND DISTRIBUTION

The Spring Creek townsite is about .6 miles from the Tongue River Reservoir, but the town will not draw water directly from the reservoir. There is no surface water at the townsite itself.

The Tongue Reservoir was completed in 1940. At the spillway level of 3,424 feet above sea level, the reservoir floods an area of about 3,500 acres. It was estimated that the 1975 capacity of the reservoir was about 60,000 acre-feet. Virtually all of that water is committed to users other than the Spring Creek developers. Even if the town of Spring Creek had the rights to use Tongue Reservoir water, the town would have to encroach upon Department of Natural Resources land that rings the reservoir in order to obtain the water. "Using the reservoir water is an alternative for us," developer Cal Cumin of Billings said, "But the issue of our 'trespassing' on state land hasn't been worked out yet."

Spring Creek will rely on groundwater through a central well system that must be approved by the state Department of Health and Environmental Sciences (DHES). The principal sources of groundwater in the area include the aquifers formed by coal beds and associated lenses of sandstone in the Tongue River Member and by the saturated zones at the base of the clinker and alluvium. The coal beds are the most extensive aquifers in common use in that area.

Dependence on the coal beds for the town's water supply may cause problems. Those coal beds are to be extracted by nearby strip mines - especially by the proposed Spring Creek mine, just 2½ miles to the west and in the general direction of the aquifers recharge, and the Decker North Extension Mine just one mile to the southwest. Although a study of the mining's effect on Decker-area wells has been carried out by Wayne Van Voast of the Montana Bureau of Mines and Geology, the actual effect on the townsite's wells is unpredictable because of the site's distance from the mines and the fact that the Spring Creek Mine has not begun operation.

Van Voast found, in reports issued in 1974 and 1975, that the West Decker Mine rendered several adjacent stock wells unusable and caused water levels to decline in other wells. But he stated, "Other wells in the area will be virtually unaffected because of their distances from the mine or because they draw water from aquifers stratigraphically below the mined bed." The chemical quality of the water available to existing wells will probably not be affected as the mining proceeds, he added.

Should the town's wells be affected by the removal of the aquifer, the developers have decided upon two alternatives: move the wells to the north

where the aquifer may be undisturbed, or drill the wells up to 600 feet deeper. (Two test wells have been drilled by the developers at the townsite.)

In March 1978, Van Voast told the development's planners that the use of wells to supply water to Spring Creek should not have any negative effects on the existing wells in the area. Degradation of the groundwater is not expected to occur because of the use of a central sewage disposal system which will have to be approved by the DHES. Further, the developer has stated the use of salt products for snow and ice removal will be banned to avoid groundwater degradation. And where excess runoff enters the existing drainage patterns (as discussed in the previous section on Geology and Soils) baggle mechanisms will be provided to filter the water.

The projected population of Spring Creek by the mid-1980s is about 3,000 people. The development's planners estimate that each person will use about 150 gallons of water a day, or a total of 440,700 gallons a day. To meet those demands, the developers will build a completed municipal water supply system including several wells and a 500,000 gallon storage reservoir. The costs of the system will be about $652,700. The developer will be responsible for the operation and maintenance of the water system until the function is taken over by municipal ownership. The proposed system will meet the standards of the DHES.

In addition to the expected water supply from on-site wells, the developers also have water rights on Leaf Spring Creek, School House Coulee and the Tongue River.

The proposed water supply system for the original townsite, Spring Creek, Montana, consists of groundwater wells, a 120,000 gallon steel storage reservoir and a distribution system designed to provide domestic, light commercial and fire flows.

The wells are proposed to be drilled in the NW¼ of the NW¼ of Section 26, T8S, R40E. Two wells were drilled in June, 1979 and it appears the water supply will come from the "D-2" coal layer. Depending on the construction of the well and the nature of the aquifer, water may also be pumped from the clinker layer some six feet above the "D-2" layer. The project engineer proposes to provide 140 gallons per minute from the aquifer.

The storage and distribution systems appear to be capable of providing adequate service to the original townsite. There is some question of the ability of the "D-2" coal layer to provide an adequate water supply, however. The coal layer is only about 10-12 feet deep and little information is available to assess the ability of the aquifer to provide a continuous water supply of the proposed magnitude. Further testing of the aquifer will be required as the project expands; however the proposed water supply is adequate for Phase I of the proposed town.

The projected population of about 3,000 people could also generate about 298,300 gallons of sewage effluent a day, according to an environmental assessment of the subdivision carried out by the subdivision's planners. The developers plan to handle the effluent with a state-approved sewage system that utilizes lagoons. Effluent from the lagoons will be spray irrigated onto a field. Land

has been reserved on property owned by the developers southeast of the townsite for sewage treatment. Operation and maintenance of the sewage system will be handled by the developers until the town incorporates.

Spring Creek townsite will be served by a central sewage treatment system capable of handling 168,000 gallons per day of sewage or 1680 people. The treatment system will consist of three lagoon cells with aeration equipment. Aeration will be used whenever cell 1 or 2 is over six feet in depth or cell 3 is over eight feet in depth. The lagoons will pretreat and store sewage over the winter months. Spray irrigation of fodder crops will provide the ultimate treatment and disposal of effluent. Soil testing and evaluation of the spray site has been provided by the design engineers. At present, it is probable that groundwater monitoring will not be required.

The responsibility for operation and maintenance of the system will be taken by Sanderson/Stewart/Gaston, initially. Once development reaches a certain point, either the community will incorporate and take over operations and maintenance or the county will be requested to form a sewer district for the area.

Three-thousand people at Spring Creek will generate about 68,000 pounds of garbage every week, according to the planners' assessment. A sanitary landfill will be built east and south of the southeast corner of Spring Creek and a truck will be used to haul the waste to that landfill. The solid waste will be compacted and covered in accordance with the requirements of the DHES and the Big Horn County sanitarian. The plans for the solid waste disposal operation have been approved by the DHES.

Building a city creates design problems for water and sewer systems. The two extremes of the problem are: (1) Whether to design and construct the systems for ultimate population or (2) design and construct the systems only large enough to serve the initial phase. If the first alternative is taken, the systems are subjected to significant operational problems during the growth of the town. If the second extreme is chosen, the developer has no assurance of approval for the ultimate design. He only is assured of acceptance of Phase I. The developers choice between the alternatives must be based on economic considerations.

The water system (i.e. water quality, quantity, and distribution) is designed to meet the capacities necessary in Phase I while the sewer system is overdesigned for the initial phase. To avoid problems with the sewage lagoons, the developers will only rough grade cells 2 and 3. Final grading and sealing will occur when the cells are needed. This and other considerations discussed by the developers' engineer indicate they plan to operate the sewer system at low flows.

AIR QUALITY

The major air quality problem for Spring Creek residents will be dust.

Problems with dust would come in two categories. First, construction of roadways and buildings within Spring Creek would add to the dust already being generated in the area by the strip mines, especially the new East Decker Mine which is down from the prevailing winds. This construction-created dust would be temporary, however, and would subside after the major roadway and building construction was completed. Dust will still be created by a growing residental population driving on the area's dirt roads.

A more serious problem would come in the second category - dust created by the neighboring mines and its health hazards to the Spring Creek residents. According to the final environmental impact statement for the proposed Spring Creek Mine, dust generated by mining activities at the mine could have detrimental effects on mine employees and their families, as well as others who live in range of airborne particulates carried from the minesite. The town of Spring Creek will be located about 2½ miles due east of the Spring Creek Mine area and only about one mile north-northeast of the Decker Mine North Extension area. Prevailing winds in the area are basically from the northwest, but blow from the west between 10 and 15 percent of the time. Winds from the south and southwest occur less frequently, so much of the dust expected to affect the Spring Creek community will come from the Spring Creek Mine.

Based on cited studies of respiratory diseases among people who work and live in dusty environments, Dr. Dale Bergren of the Cardiovascular Research Institute in San Francisco described the occurrence of three common pulmonary disorders: silicosis, pneumoconiosis and industrial bronchitis. In addition to the contraction of lung disease by direct inhalation of dust, it is suggested that chronic bronchitis contracted by miners may have bacteriologically infectious aspects that can be passed on to families or others through contagion.

According to the Spring Creek Mine EIS, there is a potential increase of 21,000 tons of particulate emissions annually from the mine.

Although temperatures do not vary widely throughout the area, the seasonal variations are large. Daily temperatures may be expected to range from -13 degrees F in winter to 100 degrees F in summer. Regional weather data from Sheridan, Wyoming, indicate that the minimum daily temperature could be as low as -35 degrees F and the maximum as high as 106 degrees F. The mean annual temperature is 46 degrees F. The warmest month is July, with an average temperature of 71.5 degrees and the coldest month is January with an average temperature of 19.2 degrees. The frost-free period at Decker is estimated to be 90 to 110 days.

Further air quality impact could come from the burning of wood or coal-burning stoves in the Spring Creek homes, an increasing trend during these days of power conservation requirements. Consultant Cal Cumin has suggested that the homeowners will be encouraged to burn coal in their stoves, since it is more readily available in the area than wood. Emissions from the coal-burning stoves can be expected, therefore, to degrade the air quality around the Spring Creek area during the stove-burning seasons.

AESTHETICS

The Decker area of southeastern Big Horn County has never been more than a quiet isolated "backwater" region. The area around the Tongue River Reservoir has been, since the 1930s, a haven for hunters and fishermen. But no longer. The scene changed when the construction equipment rolled into the West Decker mine site in the early 1970s. The aesthetics of the area were on an irreversible course from rural solitude to industrial development.

Soon there will be five strip mines operating in the Decker area, with three on the very shores of the Tongue River Reservoir. There will be few of

the original aesthetics left for a new town to displace.

Much of the additional impact of the new town would depend on how well the town is planned and laid out; how well designed and maintained are such amenities as parks and roadways, and how well enforced are the proposed restrictive covenants. The developers say they've attempted to design the town and its buildings in harmony with the landscape, while keeping the overall area of the town as compact as possible. They have established the Spring Creek Architectural Review Board which will review all site planning and construction in the community.

If a compact community, such as the one Spring Creek planners envision, can pull in the many scattered residents now "homesteading" on the shores of the Tongue River Reservoir, the additional impact of the town on the area as a whole can be minimized.

One probability remains: In about 30 years, the existing strip mines will have shut down and the land reclaimed. However, the town of Spring Creek will not likely shut down, and will remain a permanent mark on the Decker area landscape.

ARCHEOLOGICAL AND HISTORIC SITES

No sites of major archeological or historic interest have been identified at the Spring Creek townsite, although cultural surveys are still being conducted in the area in connection with the Spring Creek Mine. Such studies have found several sites of archeological interest at the Spring Creek Mine lease area and the adjacent area.

In April, 1978, the University of North Dakota's Anthropology-Archeology Department carried out an intensive survey of the Spring Creek Townsite and found three sites of potential interest - sites on which they recommended further study be carried out. The sites, according to University's report are:

> Arroyo Flats Site - A lithic scatter area with a sparse amount of debitage. There may be some depth because of the alluvium along the creek. Perhaps a test pit could be located here if the area is to be disturbed.
>
> Head-of-the-Creek Site - Located in a swale that has received some silt covering by the recent spring run-off. A projectile point tip, biface, and one porcelanite flake were discovered here. Silt may be obscuring other debitage. Recommend an intensive survey of this site only at a later date when silt deposits have been blown away. This will facilitate assessing significance.
>
> Bison Trap Site - Numerous gray porcenalite flakes and a broken biface were discovered here. The site is located in an arroyo suitable for trapping - also found a bison metacarpal (-tarsal) in the creek bed downstream from the arroyo. Recommend test excavations at portions of this site if the area is to be disturbed.

The development's planners say the Arroyo Flats Site will probably be further investigated before it can be disturbed. The Head-of-the-Creek Site is located in a later phase of the development which allows time for further study. And the Bison Trap Site, developer Cumin said, is in an area planned for a park and will not be disturbed by construction. These sites, he said, have been "flagged" by the developers so they will not be wiped out.

More distant historical sites, such as old farm buildings in the area, the Rosebud Battlefield site to the north, and even the established Custer Battlefield Monument, can be expected to feel some impact from the population growth brought about by the new town of Spring Creek.

UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES

The creation of a new town on former ranch land will change the aesthetics of the area from rural to suburban and the vegetation from native to domestic. The ranging patterns of animals, particularly antelope, and birds will be affected. These impacts will be added to impacts from strip mines in the area, but in relation to the mines' impact, the town's impacts would be quite small.

There are no known endangered species of animals or plants in the townsite area.

DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AND ENERGY

Spring Creek will create demands on land, energy and water and will possibly contribute to air quality problems. Construction of the town will permanently alter the landscape and replace what is now grazing land. Electricity will be used for both power and heating, making it necessary for the area's electric cooperative to build a delivery system to the townsite.

If approved plans for water system, sewage disposal system, storm runoff control and solid waste disposal are not followed, water quality could be adversely affected. Dust and fireplace smoke generated by the town could damage air quality.

Moving miners and their families closer to the mine sites - one reason the town is being built - may actually save gasoline that is normally used by the miners in long-distance commuting from Sheridan. More gasoline would be required by the families, however, as longer shopping trips from Spring Creek to Sheridan would be required. Gasoline and electricity once purchased by miners mostly in Wyoming will be, with the building of Spring Creek, used by miners in Montana - meaning a small negative impact on energy supplies in Montana.

THE HUMAN ENVIRONMENT

CULTURAL UNIQUENESS AND DIVERSITY

Until the coal companies earnestly began focusing attention on the Decker area in the 1960s, the "panhandle"--as the southern section of Big Horn County is called by the local people--had been an area bypassed by large scale development.

Before the West Decker Mine opened in 1972, the land had been occupied mainly by large ranches. The average size of a ranch in a three-county area around Decker had been, in 1969, about 5,100 acres, twice the size of the average Montana ranch. Communities were, and still are, those places along a road where ranching units form small clusters. In a culture where independence has been the key to survival in a harsh, isolated land, these communities might consist of only a post office, bar and general store.

To discover how drastic a change a new town would be for the Decker area, one must first understand the unique structure of the county. Big Horn County is a relative newcomer in state history. It was formed in 1913 out of parts of Yellowstone and Rosebud Counties. Today, the county has only about 10,600 residents, 39 percent of whom are Indians. The county is divided into four distinct areas: a northern strip running near to but not touching the Yellowstone River; the Crow Indian Reservation, which takes up the huge portion of the central and southwest part of the county; half of the Northern Cheyenne Reservation, on the eastcentral border of the county, overlapping into Rosebud County to the east and the "panhandle," the extreme southeast L-shaped corner of the county. The county seat of Hardin, population 2,850, sits on the northern edge of the Crow Reservation and is separated from the panhandle by the two reservations. The panhandle itself has only three communities, each with only a handful of people, that are recognized on maps: Decker, Kirby and Quietus. Into this unpopulated area of Big Horn County the new town of Spring Creek would thrust a new community with a potential population larger than that of the county seat of Hardin.

The first permanent inhabitants of the area were the Crow Indians, an agriculture-based tribe of about 400 people who moved into the area in the 1600s. They soon became nomadic hunters, relying on the buffalo for their livelihoods. By the mid-1700s, the Crows had established themselves as the rightful owners of an area bounded by the Powder River on the east, the Wind River Mountains to the south, the Rockies in the west, and the Missouri River on the north.

Pushed westward by American and Canadian expansion, the Cheyenne tribe also moved into the plains in the 17th Century. Once dependent on agriculture, the Cheyennes too became nomadic hunters and, like the Crows, came into conflict with the white man over hunting grounds when the white man made his appearance on the plains in the early 1800s.

Ranching began in the Tongue River area in the mid-1800s when huge cattle companies, many of them foreign-owned, staked claim to thousand of acres of grassland with the checkerboard domination of watering holes and large herds of free-roaming cattle. The ranching, along with the building of the Northern Pacific railroad in the Yellowstone Valley to the north and the establishment of the Bozeman Trail to the southwest, brought further skirmishes between whites and Indians in the Tongue River area - skirmishes which culminated in the Indian Wars of the 1860s and 1870s. But during this time, the panhandle of Big Horn County remained in the "backwater" - neither ranching, military campaigns nor transportation played a part in changing its quiet, isolated nature.

In 1884, both the Crow and Northern Cheyenne Reservations were established - on land later found to be chocked with huge deposits of coal.

In the late 1800s and early 1900s, the Crows sold much of their reservation land to non-Indians to help pay for their own irrigation projects. But in 1958, some of this land was restored to the Crows by Congress along with the mineral rights to about 150,000 acres of coal land. The latest conflict for the Crows, who now number about 5,500 tribal members, came recently with the Shell Oil

Company which held a coal lease on the reservation. The Crows won a legal battle to get that coal lease cancelled in an attempt to get the terms of the lease renegotiated in their favor.

By contrast, the Northern Cheyennes increased the size of their reservation from 371,200 acres in 1884 to 444,308 in 1974 by purchasing land from non-Indians. But since the 1960s, controversy has existed over the 5.2 billion tons of coal estimated to underlie the Northern Cheyenne land. In 1976, a Supreme Court decision determined who controlled the coal, the Cheyennes or the allottees. The Cheyennes won.

Today, the proposed Spring Creek townsite sits between three cultural forces: two autonomous Indian reservations to the north, a ranching culture which has remained spread out over large ranches and tiny communities, and a new force, the mining industry which has made Sheridan, Wyoming, 30 miles south of the Decker area, the "cultural" center for the new mines in the area.

SOCIAL STRUCTURES AND MORES

There are three general reasons why an area such as the Decker area may develop more slowly than other regions: (1) the land is useless for any type of development; (2) no social stucture exists to develop the region or (3) conflicting social structures play against each other to prevent the development of either society.

We know that the land is not useless. It was a fine hunting ground for the Indians when the buffalo were abundant; ranchers found it to be adequate grazing land and, with irrigation, to sustain forage corps; and within the last decade, the land has become a nation's hope for energy independence through coal mining.

As we examined above, three cultures have surrounded the Decker area - the Indians, the ranchers and the mining interest. The use of the land by the Indians was, of course, inhibited by the invasion of the white man, predominantly ranchers. The Indians eventually were pushed onto the reservations and denied use of the Decker-area land. Likewise, the close proximity of the Crow Reservation to the west and the Northern Cheyenne Reservation to the north probably were also a deterrent to the development of any large-scale ranching operation in the Decker area - an operation of enough magnitude to hold the land for the single purpose of ranching. That brings us to the mining industry. Although underground mining had taken a foothold in the Sheridan area from the 1890s to 1953, it seemed as if the recent strip-mining "boom" might be thwarted by both Indians, with their legal battles of the 1970s, and the ranchers, who generally protect their agrarian life. But significant changes in the ranching-to-mining relationship began taking place as early as the 1930s.

In the Decker area, several ranch headquarters were wiped out in 1936 with the construction of the Tongue River Reservoir upon the shore of which the town of Spring Creek would sit. This caused many of the old established families to leave. In the meantime, a lack of community feeling was intensified by the size of ranches and, therefore, the distance between people. With more and more dependence on Sheridan and improved access to it, the people have been depending less and less on each other.

Even more significant, however, has been the economic squeeze on the rancher. Ray Gold, in his 1974 and 1975 studies for the University of Montana's Institute for Social Research, found many ranchers in the Decker area who expressed doubt that most ranchers can continue operating without some outside source of income. For them, leasing of the lands to coal companies was one means of remaining in the ranching business. According to Gold, people in Big Horn County, in 1975, were overwhelmingly opposed to strip mining - although it was tending to become more acceptable. But respondents to the study said that one thing ranchers dislike is owing anyone money, and perhaps the money guaranteed each year from coal leases can prevent ranchers from taking short-term loans.

Thus, a need for operating capital and an independence that has allowed ranchers to jump their cultural "ship" by leasing coal lands has allowed coal mining to gain a foothold in the Big Horn County panhandle and may allow it to become the dominant social and cultural entity.

The concern here is not the impact of coal mining facilities in the Decker area. Those impacts have been predicted in environmental impact statements dealing with coal mine proposals and are being confirmed or disproven as those mines go into operation. The concern here is the establishment of a permanent community of mining-oriented people in an area where no community of its proposed size has existed.

A Basis For Need

The Decker area may become one of the largest strip-mine areas in the world. Within a few miles of the proposed Spring Creek townsite, five mines will be in operation. There are several other proposed energy projects within a 50-mile radius of the site which could have an impact on the Spring Creek community in the future. At this time, the vicinity of the "panhandle" mines offers no housing for miners. Almost all of them live across the state line in Sheridan or in Sheridan County, Wyoming. A few of the workers, however, have taken to "squatting" in trailers and campers on any space they can find near the mines, much like the homesteaders of old.

These circumstances bring about several major problems:

(1) Sheridan is feeling severe impacts from rapid population growth as each new mine opens - culture shock, housing shortages and stress on government services. The trouble is, taxes on mine operations and even income taxes that are paid both to the state of Montana or to Big Horn County can't be used to mitigate the impacts in Wyoming.

(2) The mine workers themselves have a feeling of "taxation without representation." Their income taxes go to Montana though their homes - and most of their problems - are in Wyoming. Meanwhile, they must pay sales taxes and property taxes in Wyoming.

(3) The housing shortages in and around Sheridan have pushed the availability and prices of single-family homes out of the reach of even well-paid miners - and especially those people working in lower-paying "secondary" jobs.

(4) Families of Decker-area miners are facing an unfriendly atmosphere in Sheridan. Established Sheridan residents tend to shun the newcomers, and miners' families have established no community of their own in Sheridan. Scott Rosinsky, head of the Northern Wyoming Mental Health Center in Sheridan, said miners' wives often don't know how to meet people and are unaware of the social activities that do exist in Sheridan.

(5) A pocket of unplanned growth is springing up in the Decker area because of the "squatters." These people are forced to do without public services, and the haphazard development effects the aesthetic appeal of the area.

The proposed town of Spring Creek, if properly planned, could go a long way toward alleviating these problems.

First, Sheridan would be relieved of some of the strain caused by the growth of mining, especially if 48 percent of the miners lived in Spring Creek, as the development's planners predict (see succeeding chapter on Population Impact). It would also bring the miners and their impacts into the jurisdiction in which they can be aided by taxes paid in Montana and Big Horn County.

Second, Decker-area miners who moved to Spring Creek would no longer feel the "dual-taxation" pinch, although those who continued to shop in Sheridan would still pay Wyoming sales taxes.

Third, the Spring Creek developers have promised a controlling theme of an "economical living environment," although eventual purchase and rental prices have not been established. "The idea behind this housing is to provide quality living at a price the resident can afford..." say the developers in their own impact assessment. Such housing could alleviate some of the crunch on the Sheridan housing and mobile home park markets and bring single-family houses back within the reach of the miners.

Fourth, Spring Creek could provide a sense of "community" to miners and their families by bringing them together in one setting and providing social and recreational activities.

Fifth, if the dedication toward proper planning, as shown by the developers in their impact assessment, holds up, the town could be a boost for proper planning within Big Horn County. It would also dry up the need for "squatting" by mine workers.

The Impact on Population

The population of Big Horn County in 1976, compiled by a special census, was 10,618, an increase of only 2.1 percent since 1940. A 3.5 percent decrease in population between 1940 and 1950 has been reconciled by a 5.6 percent increase in the county between 1970 and 1976. The out-migration of the 40s was caused primarily by the mechanization of the agriculture industry. The migration of the 70s has been caused in large part by coal-mine development.

Now, developers want to build a town with a population they project will reach 2,938 by 1985. Without the Spring Creek subdivision and proposed Spring Creek Mine, the population of Big Horn County is projected to increase by only

about 1,100 people by 1985. That projection assumes that 90 percent of the mine workers will reside in Wyoming, with only 10 percent living in Big Horn County. A new town in Big Horn County would drastically alter that assumption.

By comparing the attractiveness of living in Sheridan with that of living in Spring Creek, the development's planners have projected that 48 percent of the Decker-area mine workers, both permanent and temporary, will choose to live in Spring Creek. If 80 percent of the workers chose Spring Creek, its population would rise to almost 4,500 by 1985, planners figure.

The projected employment at the three Decker-area mine complexes used in the developers' study will reach 1,612 by 1985. The estimated number of those workers who will live in the town of Spring Creek is 774. The report assumes that all the jobs are filled by in-migrating workers, excluding locals, and that half the construction workers and 80 percent of the permanent mine workers are married with 1.6 children per couple. Another study of a similar coal-impacted area showed that 71 mining jobs created 28.9 secondary jobs, 40 percent of which will be filled by members of the miners' families. That translates into roughly 300 secondary jobs from the 774 miners who'll live in Spring Creek. From these figures, the developers estimate that 964 housing units will be needed.

A problem arises from these projections. "Any population projection is necessarily speculative," the developers' report admits. "And," it adds, "the future of the new community's long-range population depends to a great extent on the direction that this country takes in future energy use." Which suggests that as coal production grows in southern Big Horn County and neighboring Sheridan and Rosebud Counties, so grows the town of Spring Creek.

If we assume that the projected population of Big Horn County - with the addition of the Spring Creek Mine and the town of Spring Creek - will remain somewhere just below 15,000 persons in 1985, then the 3,000 Spring Creek residents would make up at least 20 percent of the county's population.

Such a jump in population in a small area can be expected to bring about all the "increases" familiar with rapid growth such as, increased traffic, increased crime, increased conflict with established cultures and increased demands on services. But there is a more unique impact looming in a county with such a small population - a political impact.

A Change of Politics

The town of Spring Creek will produce one major commodity for Big Horn County - voters. These new citizens, all dependent directly or indirectly on the mining industry, will possess values quite different from those held by the long-standing ranching community.

Already, the mining influx has caused a rift between members of the ranching community. Opponents of mining now contend that ranchers who have supported mining have closed their eyes to social problems and have broken the traditional isolation of the Decker community. Gold, in his social impact studies, noted shifts in the selections of friends within rural Big Horn County. He also saw strains in communications between friends and neighbors of long standing. But even more dramatically, Gold saw a shift in the established power structure from the ranchers to the mining industrialists.

It's possible the new coal-town residents could provide a major block of votes for pro-development legislative and county-office candidates. Those candidates, if elected, might continue the trend away from the traditional agricultural values and toward the interests of mining. Therefore, Spring Creek could have a profound effect on the political and social structure of such a sparsely-populated area.

The Impact on Indians

Cattlemen once were nervous about setting up operations next to the Crow and Northern Cheyenne Reservations. Now, those Indian tribes are worried about the establishment of mining operations just outside their borders.

The two tribes have become increasingly protective of their land and cultures, fighting legal battles with coal companies and, in the case of the Northern Cheyennes, winning a Class I air designation for their reservation. But there is one problem the Crows and Cheyennes may have difficulty staving off - social assimilation.

In a report prepared in 1976 by the Northern Cheyenne Research Project, it is stated, "We have seen that tribal members fear that a sizable increase in the white population on or adjacent to their reservation would result in an increase in crime, alcoholism and drug abuse, thereby threatening mental health and family stability. The current law and order system is inadequate to meet the needs of a rapidly expanding population..."

A new and sizeable residential community near the reservations can be expected to increase the flow of traffic, both for travel and recreation purposes, through the reservations. Thus, the likelihood for conflicts between non-Indians and Indians will increase. Indeed, conflicts over recreation occurred within the last two years when armed Crow game wardens drove non-Indian fishermen off the Big Horn River.

The federal-state environmental impact statement recently completed for the Spring Creek Mine proposal predicts that increased recreational uses in the reservation areas will make tribal administration more complicated and more expensive.

Adding to the severity of a sudden population surge in the "panhandle" is the fact that Indians do not have all the options open to white ranchers or other members of impacted communities. The Northern Cheyenne report states: "We are a small tribe of people. Our reservation is small, but it is all we have. We have nowhere else to go . . . It is typical for impacted white ranchers, if they don't like the pollution or the difficult social environment, to sell out and move. They have this option. We do not." And the report quoted one tribal member as saying, "Our culture ties everything here, and we won't find it anywhere else."

But would the new town of Spring Creek provide economic or employment benefits to the Crows and Northern Cheyennes? It's doubtful. The final EIS for the proposed Spring Creek Mine simply states that no additional employment or income changes would be expected to occur on the reservations as a result of the mine. Remember, the town developers too have assumed in their population

projections that their residents will all be in-migrating leaving no room for "local" workers. The developers' study makes no mention of possible employment for Indians in secondary jobs (only that 60 percent of the secondary jobs might be open to other than miners' family members). In fact, during the construction boom at Colstrip, just north of the Northern Cheyenne Reservation, only 95 of the 895 workers there during the peak construction period in 1974 were Indians, this declined to 24 out of 758 workers by 1975.

The unemployment rate in Big Horn County was 7.5 percent in 1977, according to the Montana Employment Security Division. That was higher than Montana's 6.1 percent and twice as high as neighboring Sheridan County's 3.7 percent. That's attributed to the high rate of unemployment on the two Indian reservations - unemployment rates well above 40 percent.

The Northern Cheyenne Research Project has listed several causes for such high unemployment rates among the tribes. At least four of them come into play when the building of Spring Creek is considered:

(1) Prejudice in hiring. This could be a distinct possibility in a white, industry-oriented community.

(2) Indians are relatively unskilled. Many of them lack the education, training or experience needed for the higher-paying mining jobs. They may not necessarily be disqualified, however, from secondary jobs.

(3) Many of the Indians are part of the traditional rather than the modern cash economy. These "productive unemployed" people are not seeking work in the modern labor market. They contribute to community well-being by filling important cultural roles that do not necessarily have a cash value attributable to them.

(4) Culture conflict has resulted in a number of social problems, particularly alcoholism, that prevent people from being part of either the "productive unemployed" or the productively employed in the labor market.

A community of relatively well-paid miners built next to the reservations could actually have an adverse economic effect on tribal members. Such an effect would also be felt by lower-paid ranch workers in the area. In 1976, mine workers earned $19,000 to $20,000 annually, according to a study by Maxine Johnson and Randle White (Coal Development, Population Growth and Local Government Finance: A Handbook for Local Officials). In 1975, the median household income for Northern Cheyennes was only $5,402, less than half the national average. In late 1976, the median annual income for a Crow family was $4,500.

To suddenly have skilled workers spending their earnings in southern Big Horn County instead of having the payrolls flow southward to Sheridan could boost prices in the mining area. Skilled workers can benefit from increasing wages - but unskilled workers, including Indians and farm hands, must suffer with their low wages in the face of rising prices.

DEMANDS ON PUBLIC SERVICES

The advent of construction at Spring Creek will also be the beginning of new demands on public services. Those demands will grow as families move into the community. Big Horn County, as it is now equipped, is unable to meet those demands. Whether or not the county can provide needed services to Spring Creek

depends a great deal on tax revenues generated by mining and the subdivision.

Such services as the government cannot provide, at least initially, the developers have promised to provide. The more important elements are discussed below.

Schools

The Decker area has only one elementary school, Squirrel Creek. It's a one-room affair with little or no room for more than its present 18 students. Since most of the families related to the mine employment are relatively young, the major impact of the Spring Creek Community will occur at the elementary level.

Spring Creek would be located in the Lodge Grass High School District (Lodge Grass is located on the Crow Reservation, almost 60 miles by road from Decker). Twelve students from the Decker area attend high schools in Sheridan with Big Horn County paying the bill of about $1,500 per student. Sheridan officials are willing to continue this arrangement as long as space is available.

Roberta Snively, county superintendent of schools, said it would be extremely difficult to enlarge the Squirrel Creek elementary school. The school is not owned by the district and the well is just not capable of producing more water, she said. The Squirrel Creek district has only a small reserve of money, by law, and the district gets very little money from the state. But, Mrs. Snively added, "The tax base is there."

Money for growing school needs isn't her main concern. Her main problem, she says, is the lack of information from the development's planners. "We need a more firm anticipation of what to expect before we can set up a budget for the district," Mrs. Snively said. "We need proof of how many houses will be there, that there will be an X-number of students." She added, "Money isn't the only answer. We'll need time to hire staff, get supplies and so on."

When the Big Horn County Commissioners gave conditional approval to the Spring Creek subdivision plans on May 30, 1978, one of those conditions read: "That the developers work with the School Board to find a satisfactory solution of the problem of additional student load." According to Mrs. Snively, the developers have yet to approach school officials with any appreciable amount of help.

The master plan for Spring Creek has set aside 18.15 acres for a school and the planners have said they will provide at least a temporary classroom setup, if necessary, once the development gets under way. If they can supply a school building on their land, Mrs. Snively said, "that would be great."

The development's planners contracted with the University of Montana's Division of Educational Research and Services for a study on the specific school needs of the community.

The study found that the Squirrel Creek School can easily expect to have enrolled 50 to 100 children by the first fall classes after the development's first residents move in. By the time 350 miners choose to live at Spring Creek, 200 to 300 children will be enrolled in the Squirrel Creek district. By 1985, 1,000 families could generate 1,600 children under age 18. And, the study

observed, early evidence suggests there could be sufficient secondary students in the area by 1985 to consider the establishment of a secondary school.

The study listed four options open for the Squirrel Creek Elementary School:

(1) The school could remain at its present location. If student enrollment then grows beyond expectations, a emergency budget could be requested and the Spring Creek developers could be asked to provide temporary facilities. Also, the coal companies could be asked to provide water and sewer service for any temporary facilities added to the present school.

(2) A school site could be established in temporary facilities at the Spring Creek townsite to suffice until a permanent facility was completed there in full compliance with state codes.

(3) The school could remain at its present location until water, sewer, and road improvements become factual at Spring Creek, and the increasing number of families increase enough to merit a permanent school in the townsite. At that time, the school district could then consider a bond issue to provide the basis for the new facility.

(4) As enrollment increases during the early phases of Spring Creek development, the existing school could go to double shifts or split shifts and educational services could be increased at the present location without procuring additional facilities. "This is only a make-shift possiblity, and at best, can only serve as a stop-gap measure with the dissatisfaction of teachers, parents and students almost assured," the report said.

The UM study made the following recommendations:

(1) That Squirrel Creek School remain at its present location. If student enrollment increases as anticipated, an emergency budget should be requested from the state Department of Public Instruction. The Spring Creek developers should be requested to provide temporary facilities to adjoin to existing facilities. Water and sewer facilities would have to be upgraded.

(2) An application should be made to the state Coal Board to obtain funds for permanent facilities.

(3) If temporary facilities are not available from other sources, the district should enter into a lease agreement with a company who can supply a building which complies with Montana state codes.

(4) Any temporary facilities placed upon the present site should contain at least two classrooms and restrooms.

Law Enforcement

An increase in population in the "panhandle" is expected to bring an increase in crime. The Big Horn County Sheriff, with 13 deputies, now provides all the police protection for the county, except for reservation police. Twelve of the deputies, however, are stationed in Hardin and one in Lodge Grass and there is no full-time resident deputy in the Decker area.

According to the Spring Creek Mine EIS, "The area has had such an increase in problems and the serving of papers that it is considered imperative to station an officer there." In light of these problems, the Sheriff's Department recently leased a mobile home eight miles north of the Decker Mine and will have one man out of Hardin stationed in the area for up to two weeks. Planners are asking that this year's budget allow for the hiring of an additional man to be permanently stationed in Decker.

The national standard for law enforcement officers is two per 1,000 people. That would call for up to eight officers by 1985, with the Spring Creek population included, in an area now served by one rotating shift. Additional funding would be required for the county to provide those officers. According to the Southeast Big Horn County Facilities Needs Study, minimum law enforcement services can be provided to the expected 4,000 people of the study area by four officers and two patrol cars. A fifth officer could be included if the state Highway Patrol were to station a man in the area, an action the patrol is now considering.

A law enforcement headquarters building is being planned for the Spring Creek townsite, one that would incorporate a jail and a courtroom for a justice of the peace . There is currently no lower court system in the panhandle. Unless funding is provided for law enforcement needs, the level of protection will decrease as population increases.

Fire Protection

The fire protection nearest the Spring Creek townsite is about six miles away in Decker in the form of a 900-gallon pump truck, with a top speed of about 30 miles per hour, manned by county road crews. The truck also serves as a snowplow in the winter. The developers say there will be no organized fire protection service at the development itself during the initial construction phase, but that a volunteer fire department "will probably" be formed in Spring Creek as soon as a few families move in. The Facilities Needs Study says the area needs to immediately form a rural fire protection district, or volunteer fire department.

Additional fire equipment is now available at the mines, but generally not available outside the immediate mine area. The Decker Coal Company however, has agreed to provide a heated building at the East Decker Mine for storage of a new fire truck for the area until a more permanent facility can be built.

The development's planners have worked with the state fire marshal in planning future fire protection needs. In accordance with the marshal's advice, 48 fire hydrants have been worked into the Spring Creek water system plans.

HEALTH AND EMERGENCY SERVICES

Regional hospital services for the Decker area are located in Sheridan. However, population impacts have already made the Sheridan County Hospital overcrowded and its services severely strained. The hospital had a 43 percent increase in admissions from 1971 to 1976 and a 128 percent increase in out-patient visits. The emergency room has experienced a 508 percent increase in use since 1965 and is in critical need of space. Surgery needs two or more new operating rooms, according to information in the Spring Creek Mine draft EIS.

The town of Spring Creek is not expected to put new demands on the Sheridan County Hospital since residents would still live in the hospital's area if Spring Creek were not built. A real shortcoming for the townsite, however, will come in the area of ambulance and emergency medical service. Ambulance service for the Decker area is now provided by funeral homes in Sheridan which have a total of two ambulances and a backup unit. Both of those ambulances are 30 miles from the Spring Creek townsite, requiring a 60-mile run to pick up a patient and deliver him to the Sheridan hospital.

If Sheridan, as a regional medical center, seems well equipped with physicians, Big Horn County is not. The county is considered to need five or six more doctors now to meet the normal standard of one doctor per 1,222 people. Add at least two more doctors to that to cover Spring Creek's estimated 1985 population.

The Facilities Needs Study says planning must start immediately for providing a basic primary care facility to serve southeast Big Horn County. The facility, the study says, should be one similar to the SOS Clinic at Seeley Lake and the Colstrip Medical Clinic at Colstrip. The facility at Seeley Lake provides a complete primary health care clinic for a population that fluctuates from 2,000 to 5,000. It's operated by one full-time and one part-time registered nurse and a full-time secretary. An ambulance provides access to the nearest doctor, about 50 miles away in Missoula. The Colstrip Medical Clinic, serving about 4,000 people, has a doctor who puts in about 24 hours a week, two family-nurse practitioners, an optometrist, a dentist and two receptionists. The Spring Creek developers are now working with Dr. Daniel Gebhardt of Hardin in setting up a medical service system that would serve Spring Creek. Although no specifics have yet been developed between Dr. Gebhardt and the developers, the doctor is trying to get three more doctors interested in his program. Space for a medical facility is planned in Spring Creek's commercial center.

ROADS

The Spring Creek area is accessible from the north and south by Montana Federal-Aid Secondary Route 388 to the south, which then connects to Interstate 90 to Sheridan, and hits U.S. 212 about 33 miles to the north. From the Wyoming border to a point about five miles north of Decker, FAS 314 has an asphalt surface; beyond that point the surface is coated with crushed clinker or gravel. The Decker Coal Company has proposed the relocation of five miles of FAS 314 to the east along the Tongue River Reservoir to make way for the North Extension of the Decker Mine. The company and the state Highway Department are working on the design.

An all-weather gravel service road - which needs vast improvement, developers say - strikes out to the northeast from FAS 314 at a point about four miles north of Decker and two miles southwest of the Spring Creek townsite. This road winds along the northwest shore of the Tongue River Reservoir for at least two miles before its junction with the subdivision's proposed main boulevard. But this service road may not be a factor. The relocation of FAS 314 will bring the highway to within one-half mile of the townsite and the town would be connected to FAS 314 by a new paved road meeting secondary roadway standards.

The developers plan the construction of about 3,000 lineal feet of paved roadway for the main arterial and an additional 20,850 lineal feet of paved local access streets. Direct access onto the arterial street from residential lots will be prohibited, developers say. The main artery, Spring Creek Boulevard, is not designed to extend back (northwestward) to FAS 314 in the future. It is designed solely for access to the new community. If the community grows considerably larger than expected, the planners say the boulevard can be looped around the north end of the town, eventually connecting to a road extending eastward from the central commercial area of the town.

The development's planners expect that Spring Creek will generate approximately 13,000 trips per day, with traffic during peak periods reaching 1,390 trips. They say they've designed parks and walkways into the townsite with access to prime traffic generators kept in mind. That, they hope, will reduce overall traffic generation.

Traffic in the Decker-Spring Creek area has increased substantially in the last several years. More than 600 vehicles per day use FAS 314, mainly from daily round trips by mine workers to and from the Sheridan area. The building of new mines in the Decker area will increase the traffic, especially during shift-change hours. Some of this traffic should be alleviated by moving miners to Spring Creek, next to the mines. Roads between the mines and the subdivision would still carry the shift-change burden, however, And the roads between the mines and Sheridan will receive new commuters - those Spring Creek residents travelling to Sheridan for shopping trips, dining, movies and so on.

One problem with roads in the Decker area are the railroad crossings and the high volume of rail traffic. As more and more coal trains pass through the area, more traffic delays at unseparated grade crossings can be expected. These trains can hold up such vital vehicles as ambulances and fire trucks. There have been plans for construction of an overpass over the railroad tracks just south of the West Decker Mine where FAS 314 crosses the tracks. This project is presently being designed by the state Highway Department and construction will probably be within two years.

Any increase in traffic brought about by Spring Creek can be expected to raise accident rates, road deterioration and maintenance costs.

Part of the subdivision's approval by the County Commission was the stipulation that the Spring Creek developers construct and pay for an access highway off FAS 314. This the developers plan to do. All of the interior streets of Spring Creek will be paved, curbed, guttered and maintained by the developers. Once the access road has been constructed to a standard acceptable to the county, the county will own and be responsible for maintaining it, according to the project's planners. When Spring Creek incorporates, community streets would become the city's responsibilities, the planners say.

RECREATION

There isn't much in the way of urban recreational opportunities near the Spring Creek townsite. Residents would have to drive to Sheridan to find such facilities such as golf courses, skating rinks, and baseball fields. But other outdoor recreation is much closer at hand.

Most recreational use at Spring Creek would be concentrated on the Tongue River Reservoir, which provides opportunities for camping, picnicking, boating, fishing, water-skiing and waterfowl hunting. Existing recreational facilities at the reservoir are limited. A recreation area on the reservoir is located about a mile south of the townsite.

There have been plans for enlarging and upgrading this recreation area. The state legislature authorized the expenditure of $100,000 for construction of roads, trailer parking, latrines, tables and a boat ramp. This is to be matched with a $100,000 gift from the Decker Coal Company. Decker Coal has also agreed to contribute $5,000 per year for a 20-year period for the maintenance of the area.

One difficulty that may arise with the influx of Spring Creek residents will be the conflicts between them and private landowners in the area. Increased use of land by hunters and fishermen, by RV owners and motorcycle riders, by hikers and cross-country skiers may cause problems with so much private land around and in such close proximity to the Indian reservations. For example, recreational use of the Tongue River itself is limited, according to the Department of Fish, Wildlife and Parks because of a lack of designated access points.

The developers intend to provide about 56.65 acres of land for park and open space in Spring Creek. The park will contain a walkway-bikeway system. They've also planned room for a recreation facility for the exclusive use by motorcycles and snowmobiles just to the southeast of the townsite, where noise and dust will remain downwind. A rifle range may also be planned. The developers hope that such facilities will reduce the random off-trail use and target practicing that might take place on surrounding rangeland.

ECONOMICS AND TAXES

Unless the government of an area is in a surplus revenue situation, the increase in demand for public services requires increases in revenue. New revenues in Big Horn County would depend mostly on increased property valuation, or state or federal aid.

In 1978, a statewide reappraisal was conducted so assessed property values for that year do not directly compare with preceeding years. At the same time, however, the percentage used to figure taxable values was changed so it reflected an accurate picture of a county's total values from year to year. And in that picture we see that the taxable value of Big Horn County increased more than three times from 1971 to 1978 - from a total assessed valuation of $50.2 million to more than $157 million.

A breakdown of assessed values from 1971 to 1977 shows where the increase has occured - not in the value of real property (land and improvements) - but, most strikingly, in personal property (2½ times) and an almost 2,000-fold increase in the proceeds of the county's coal mines. Land values must be interpreted with the awareness that agricultural land, whose sale price is rising steadily, is assessed according to its productivity rather than its market value. Therefore it can readily be seen that the increase in the tax base of Big Horn County is based not on agriculture, which is the county's traditional economic base, but on the value of the coal mines.

As would be expected in a county whose value has increased so remarkably, mill levies did drop from the level early in the decade to a low in 1975-76 and 1976-77. The drop is especially noticeable in school district levies. The two incorporated towns in the county, Hardin and Lodge Grass, have not had the benefit of the increase in tax base caused by the coal mines, so their levies have actually had to increase over the same period.

Rising expenses, however, have caught up with and, in fact, exceeded the increase in valuation during the last two years and the levies have had to increase accordingly. However, the totals are still far below their 1970-71 levels. The taxable value of Big Horn County rose 288 percent from 1971 to 1977 while total expenses rose even more, 373 percent. This was due in part to a six percent increase in the county's population, but even more to the provision of an ever-increasing number of services.

The building of new mines in Montana generates little revenue for Wyoming, except for property taxes and sales taxes paid by miners living and shopping in Wyoming. Montana already taxes the miners' income. However, most of the negative social impacts occur in Wyoming now, out of reach of revenues generated in Montana by the operation of the mines.

With the addition of the Spring Creek Mine, state, county and school district revenues are estimated to increase in Big Horn County. For any impacts that occur in Big Horn County - forgetting for the moment about the Spring Creek town proposal - surplus property taxes should be available to solve many of the problems. The Spring Creek Mine EIS has projected that, with the mine, the county will have about a $2.4 million surplus in 1985 and the county's schools will have an $8.2 million surplus. On the other hand, Sheridan County, across the state line, is projected to have a $10 million county deficit and a $5.5 million school deficit. Should the town of Spring Creek be built, and its impact added to the debit side of the ledger, then Big Horn County's surplus of revenues will not be so substantial. What would be needed, then, is an increased tax base caused by the development.

With few specific facts at hand, it's impossible to know exactly how much the development will add to the county treasury. No one knows exactly how much the land or new dwellings and businesses in town will be worth, or what the county's mill levy will be in the future. What is known, however, is that the taxes reaped from the 311 acres that will comprise Spring Creek - 311 acres that are now grazing land - will increase dramatically. It should be noted that, in 1970, one mill raised approximately $800 in Squirrel Creek School District; in 1978 one mill raised approximatly $29,800 in the same district.

In 1977, the taxes on the entire 2,196-acre Montaylor Ranch, upon which the 311-acre townsite will be built, were $147.39. Most of that, $78, went to the county-wide school fund and $24.50 went to the District 1 school fund. Consider how the taxes would increase with the addition of 964 housing units the developers say will be placed on the land: 560 single-family units, 28 townhouse units, 95 apartment units, 256 mobile home units and 25 recreational vehicle units. And the developers say those numbers will increase if the market for them increases.

Throughout Montana, suburban tracts are taxed much more heavily than agricultural land, and local governments can tax both the land and the buildings. The taxes on homes and businesses are in proportion to the value of each. Thus, the taxes

on a $30,000 home are less than the taxes on a $70,000 home. Tax forecasting becomes muddled in this case because of the developers' inability to predict what the average values of the dwellings will be, although the developers predict the construction costs for houses to be around $10 to $45 per square foot.

Also, the value of the Spring Creek properties can be raised or lowered by several factors: Is the town a self-sustained community or is it merely a "bedroom" community for Sheridan; are there protective covenants (in the case of Spring Creek, there are); are the buildings designed to be permanent rather than short-term (the mobile homes in Spring Creek, for example, will not be placed on foundations, lowering slightly their taxable value), are the commercial enterprises attracted to the town those that will enhance or detract from it.

Mainly, it is proper planning and permanency that will help the tax income keep pace with the increased need for public services. However, if Spring Creek experiences poorly planned, rapid and highly dense development - the type that generates the least amount of tax revenues over the long run- then community services will suffer the consequences. The road taken by Spring Creek depends on the developers, the town's new residents and local officials.

As we've examined, the major benefit of building a new town next to the coal mines in the Decker area of Montana is that the impacts from new workers will be moved into the jurisdiction in which they can be mitigated by revenues generated by the mining.

Two such sources of revenue available to Montana for the mitigation of such impacts are: (1) a share of the federal royalties, and (2) the state's 30 percent coal-severance tax.

The proposed Spring Creek Mine has about 283 million tons of federal strippable coal. The royalty rate is 5 percent, or 37.25 cents per ton at current prices. The royalty, therefore, would produce $105,417,500 over the life of the mine, of which $52,708,750 (50 percent) would be returned to the state. Such funds may be used only for roads and schools within the state, but not necessarily within the county of origin.

The Montana coal severance tax would produce $2.23 per ton at current prices. If, over a 25-year period, the Spring Creek Mine were to produce 243-million tons of coal, the severance tax would bring in $543,000,000 to the state. A portion of that money is invested in a permanent coal-tax trust fund, but much of it - more than $17,000,000 as of January 1979 on coal taxes from existing mines - is disbursed to areas in Montana feeling adverse impacts from coal development. Future grants will depend on Coal Board priorities, the nature of the applications, future revenue sharing, and the availability of counties to finance services through traditional sources.

There are no means for sharing revenue in Montana with Wyoming.

This should not give the impression that coal impact monies can alleviate all social impacts. Money alone cannot undo the damage to the quality of life that once existed in the ranching and Indian cultures of southern Big Horn County.

EFFECTS ON AGRICULTURE

The townsite of Spring Creek displaces more than 300 acres of pasture formerly used by the old Montaylor Ranch. The secondary development that grows up around the town can be expected to displace even more grazing land.

That land has never been cultivated. According to Wayne Nipple, Big Horn County District Conservationist, the property, when in fair condition, would support about seven animal units for a period of nine months with three months of supplemental feeding. However, the property has a history of being overgrazed.

UTILITIES

The Spring Creek developers have arranged for telephone and electrical service with the area's utilities and are investigating the possibilities of obtaining natural gas. All utility lines, they say, will be placed underground.

In March, 1978, the developers received the following replies from the utilities involved:

Range Telephone Cooperative:

> The Range Telephone Cooperative does serve the area where the proposed new townsite is located and the surrounding area. We do intend to serve the new townsite with all buried facilities and we will furnish both commercial and residential service or any special services that are requested.

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In addition, the restrictive covenants of Spring Creek will require that each structure is designed to effectively utilize the solar orientation of the townsite as much as possible. The developers hope to reduce, thereby, the cost of utilities needed by the homeowner for heating and cooling.

The developers plan to provide cable television to the community, and a centralized computer communications system that can provide for emergency police and fire services and for centralized water billing and other community administrative needs.

INDUSTRIAL AND COMMERCIAL ACTIVITY

A commercial area, called the Homestead Center, has been planned in Spring Creek. There are also three commerical lots across the street from the center as well as a planned motel and service station. An architectural rendering and a scale model of the Homestead Center have been prepared by an architect but have not been approved by the developers.

It is planned that the Homestead Center also contain administrative offices for the community and related activities such as a fire station and ambulance area, medical offices, and law enforcement facility. The County Commissioners are presently awaiting a clearer delineation of space promised them by the developer for a sheriff's office in the center.

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The basic control on the growth of commercial and industrial land uses in Spring Creek is that exercised by the project developers who own all the land. Lots sold by the owners will have to conform to the masterplan as to future use. According to planner Cal Cumin: "The developers are aware that the market will not support more than one service station, for example, for probably several years, and, since the integrity of the town depends on the viablity of its individual activities close scrutiny will be made of proposed commerical activities and how they relate to existing needs."

LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS

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Of the 21 goals and objectives listed in the comprehensive plan, the most salient to the development of Spring Creek are:

"To encourage compact urban areas in the county and prevent random, sprawling developments along transportation routes through an awareness of county-wide land use controls.

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"Minimize the tax burden through efficient land use..."

"Encourage potential industrial developments to coordinate industrial planning with county-wide planning programs for harmonious provision of the needs industry generates for housing, transportation, utilities and public facilities."

In discussing the importance of the 1974 Comprehensive Plan, the plan's drafters wrote: "This planning document is the beginning of the planning program in Big Horn County which, if it is to be successful, must be an ongoing endeavor that becomes as much a part of the county as the functions of the city councils and the county commission. The comprehensive plan... should be constantly updated."

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A QUESTION OF LONG-TERM GROWTH

After all is said and done, the impact of the new town of Spring Creek will depend a lot on how much the town grows, how strictly the plans are adhered to, and how much secondary development springs up around Spring Creek.

The developers are unable to say exactly how much the town will grow. It all depends on the market, they have said. With new coal development and, for example, the proposed development of the Prairie Dog Creek power station just south of the state line, can Spring Creek mushroom into a city of 30,000 people instead of 3,000?

The developers do not plan to construct housing and facilities for 3,000 people and then hope that the market bears out the population projections. Rather, they plan to construct core services, such as one holding pond for sewage, a central water well, and the main access highway, with the remainder of the housing and services added in response to market demand.

The developers own as much as three times more area in the immediate vicinity of Spring Creek as exists in the community as now planned, so area is not really a limit to the town's growth. Accordingly, the developers say they've taken care to provide a buffer area around the town which would be under the developers' control to prevent "strip" and random development as spinoffs from the central community. Land-use control, they add, is easier in an area where most of the undeveloped land is controlled by one landowner.

One factor that may limit growth is the available water supply. Planner Cumin feels that water will probably be an important determinant in future local government decisions regarding expansion beyond Spring Creek's master plan.

Two other factors that may affect the growth of Spring Creek are proposals to build a construction camp at the Spring Creek Mine to house, in bachelor quarters, about 300 workers, and another proposed subdivision, Monument Creek, to be built next door to Spring Creek. After the construction camp is phased out after a couple of years, many of the workers there who will take on permanent jobs at the mine are likely to make the short move to Spring Creek instead of a longer move to Sheridan. Monument Creek, on the other hand, could attract residents away from Spring Creek; but, consultant Cumin says, Monument Creek offers a different type of residence than Spring Creek and isn't likely to put a serious kink into Spring Creek's plans.

The developers say that as soon as Spring Creek meets the state requirements for incorporation, the town will incorporate, taking much of the services and decision-making out of the hands of the developers and into the hands of a municipal government. The community may incorporate when it has 300 voters per square mile in two precincts. It is not known when Spring Creek will incorporate, but, given the distance to the county seat and the need for local administration, it is anticipated that incorporation will occur when the need for local control by residents offsets the rise in taxes caused by incorporation. The projects' developers say they do not want to be landlords for the town and experience similar problems to those of the Western Energy Company at Colstrip. Incorporation is, however, a decision the local voters will make.

One question the developers and planners cannot really answer is: What will happen to Spring Creek when the coal supplies in the area run out? (The life expectancy of a strip mine is usually about 20 to 30 years.) Cumin suggested that the town's design and location on the Tongue River reservoir will continue to attract residents. Basing his case on statistics from a 1977 publication of the Urban Land Institute, Cumin said, "The community should provide a viable, alternative small town for a growing nationwide population and trend which currently shows a migration from the larger communities to the more rural areas." But one trend he failed to mention was the movement of people away from areas with harsh climates to the Sun Belt.

"The question of where people who may live in Spring Creek are going to work when the coal runs out is valid," Cumin said. "However, in an age where people who came to this area in horse-drawn buckboards lived to see men walk on the moon, it is difficult to see 30 to 50 years in the future and surmise what may then occur."

SOCIAL AND ECONOMIC COSTS AND BENEFITS

Benefits:

1. Tax revenues for Big Horn County will increase.
2. Construction and secondary jobs may increase employment opportunities for "locals."
3. The strain on Sheridan, Wyoming, may be relieved.
4. Housing and taxation problems for miners will be alleviated.
5. Already-needed medical, fire protection and law enforcement facilities will be brought in by a new town.
6. A poorly-planned area will be replaced by a properly-planned community.

Costs:

1. There will be a need for more local government and human services.
2. Cultural conflict between the mining community and Indians and ranchers will increase.
3. Prices of goods and services in the area will probably be raised.
4. The traditional political power structure will be changed.
5. Dust generated by travel over unpaved roads after the development is completed will continue to impact air quality.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF ENVIRONMENTAL RESOURCES

As previously discussed, land use and aesthetics will be forever changed, along with possible negative impacts to air quality and wildlife habitat.

ENVIRONMENTAL COSTS AND BENEFITS

Benefits:

1. A scattered population of "homesteading" mine employees in the area may be brought into a compact, well-planned community that

has state-approved water, sewage and solid-waste disposal systems This would help lessen the area over which a residential population in the Decker region would spread environmental damage.

2. Further overgrazing at the site would be halted and many of the draws on the site would be allowed to revegetate.

Costs:

1. The development will cause a permanent change in aesthetics and land use.
2. Antelope winter range will be displaced and nesting birds along the Tongue River Reservoir may be adversely affected. Household pets may harass wildlife and domestic livestock in the area.
3. Native vegetation will be replaced by domestic vegetation.
4. Air quality may be degraded by dust, during construction, and by wood or coal-burning stoves.

SHORT-TERM VS. LONG-TERM ENVIRONMENTAL COSTS AND BENEFITS

Short-term

Costs: There will be some degradation and disruption of land during the construction of roads and buildings. Air quality will also be degraded by dust.

Benefits: Jobs will be created by construction and the community is being designed in such a manner as to reduce the impact of the influx of new miners upon the environment.

Long-term

Costs: There will be a loss of wildlife habitat and the area will change in terms of character and aesthetics.

Benefits: The reduction of grazing will benefit some of the draws which have been overgrazed in the past. The community may also be a boost to proper planning within Big Horn County which will have a beneficial long-term effect upon the environment.

ALTERNATIVES

The DHES has two alternatives: 1) Deny or 2) approve the proposed subdivision.

1. If the proposal is denied, the land could be divided into 20-acre parcels, thus avoiding a review by the state.

RECOMMENDATION

The DHES recommends alternative #2.

REFERENCES

A Social, Economic, and Cultural Study of the Crow Reservation; Crow Impact Study Office, 1977

Big Horn County Comprehensive Plan; County Planning Board, 1974-75

Big Horn County Tax Analysis; Cumin Associates, 1979

Billings Gazette: "Miners' Wives in Land of High Pay, Hostility," date unknown

Cal Cumin's response to questions, April 20, 1979 to June 4, 1979

Decker-Birney-Ashland Area and Coal Development; Randle V. White, Bureau of Business and Economic Research, University of Montana; June 1975

East Decker and North Extension Mines Final EIS; Geological Survey and Department of Lands, early 1977

Hardin Herald: "Foot Race on for New County Town," April 13, 1978; "Board Flashes Green Light at Spring Creek," May 18, 1978; "Commission, Decker People Hear Townsite Information," May 9, 1978

Hydrologic Effects of Strip Coal Mining in Southeastern Montana - Emphasis: one year of mining near Decker; Wayne A. Van Voast, Montana Bureau of Mines and Geology Bulletin 93, June 1974

Hydrological Aspects of Existing and Proposed Strip Mines Near Decker, Southeastern Montana; Wayne A. Van Voast and Robert B. Hedges, Montana Bureau of Mines and Geology Bulletin 97, December 1975

Interview with Roberta Snively, Big Horn County Superintendent of Schools, by telephone on April 13, 1979

Letter to Cumin Associates from Robert E. Matson, Chief of the Energy Division of the Montana Bureau of Mines and Geology concerning underlying coal, accompanied by graphics; January 23, 1979

Montana Graphic Profiles - Ranking Counties; Montana Department of Community Affairs; November 1978

Montana Historic Preservation Plan; Montana Fish and Game Commission, July 1975

Official Proceedings of the Big Horn County Commissioners meeting on June 11, 1978 (approval of Spring Creek)

Sheridan Press: "Spring Creek Mine Plan Reveals News Impact Study," March 10, 1979

Southeast Big Horn County Comprehensive Community Facilities Needs Study; prepared by Cumin Associates for Big Horn County Board of County Commissioners, October 1978

Spring Creek (a new community) Environmental Impact Assessment; Cumin Associates and Sanderson-Stewart-Mueller Engineering, Inc; 1978

Spring Creek Mine Final Environmental Statement; U.S. Geological Survey, Interior Department and State Department of Lands; 1979

The Northern Cheyenne Air Quality Redesignation Report and Request; Northern Cheyenne Research Project, December 11, 1976

The Northern Cheyenne Tribe and Energy Development in Southeastern Montana; Volume I, Social, Cultural and Economic Investigations; Northern Cheyenne Research Project, October 1977

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