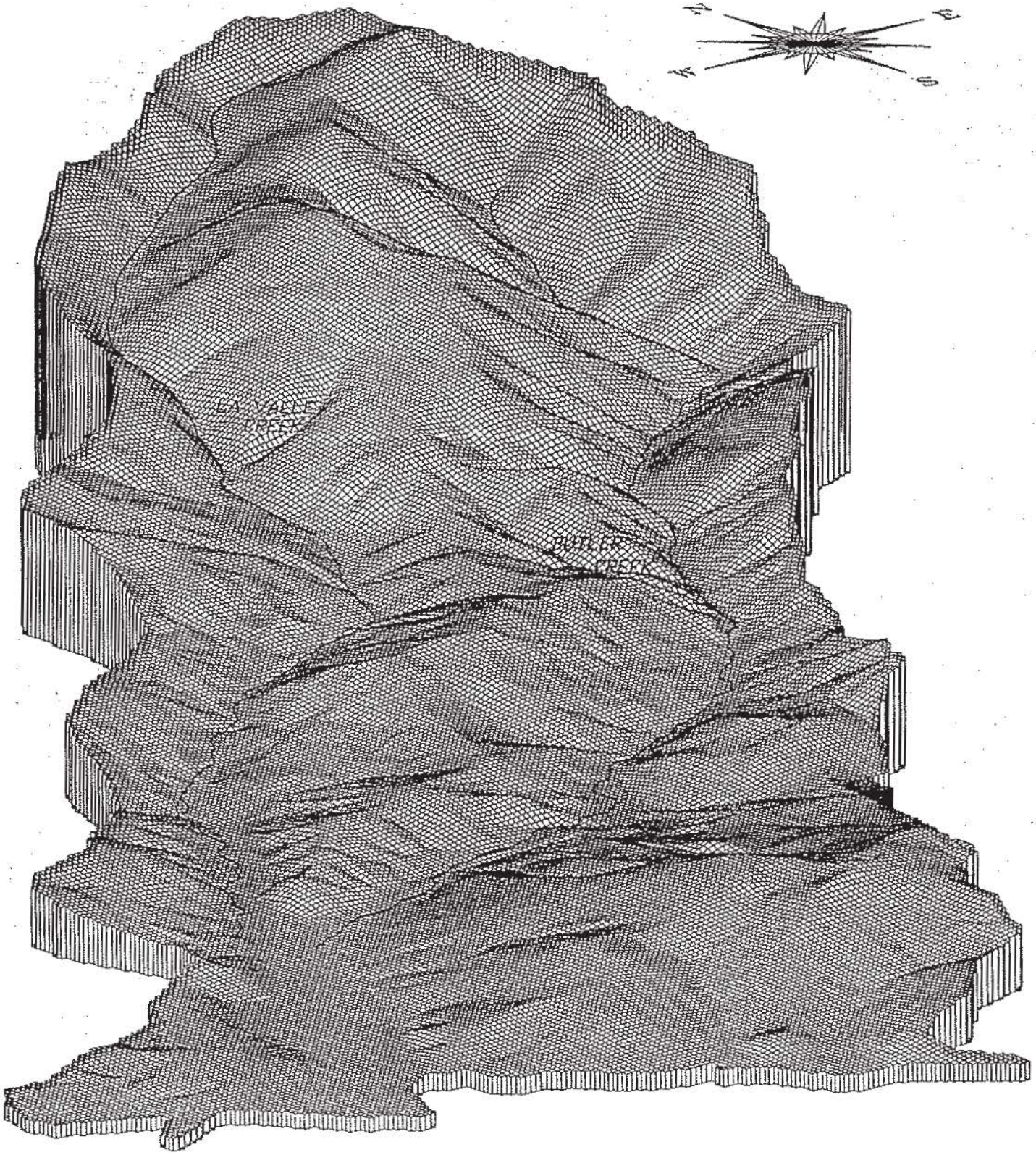
BUTLER CREEK AREA COMPREHENSIVE PLAN AMENDMENT 1996



RESOLUTION NUMBER 97-019

A RESOLUTION TO ADOPT THE BUTLER CREEK AREA COMPREHENSIVE PLAN UPDATE, IN ITS FINAL FORM, AS AN AMENDMENT TO THE MISSOULA COUNTY COMPREHENSIVE PLAN.

WHEREAS, 76-1-604 M.C.A. authorizes the Board of County Commissioners to adopt and amend comprehensive plans; and

WHEREAS, the Board of County Commissioners did adopt a comprehensive plan for the County in 1975; and,

WHEREAS, the Board of County Commissioners updated and amended this comprehensive plan in 1990 and has amended parts of it by adopting sub-area and neighborhood plans; and,

WHEREAS, the Butler Creek Area Comprehensive Plan Update represents an amendment to the 1990 Urban Area Comprehensive Plan Update; and,

WHEREAS, changes to the Butler Creek Area Comprehensive Plan Update were drafted by the Butler Creek Ranch property owners in cooperation with the County, and were reviewed by the Office of Planning and Grants and residents of the plan area; and,

WHEREAS, the Butler Creek Area Comprehensive Plan was reviewed at three public hearing, dated 8/20/96, 10/2/96, and 10/30/96; and,

WHEREAS, the Missoula Consolidated Planning Board has recommended adoption of the Butler Creek Area Comprehensive Plan Update subject to minor revisions; and,

WHEREAS, the Board of County Commissioners, based on public comment, included further modifications to the Plan Update as printed in the attached document; and,

WHEREAS, such revisions have been incorporated into the final draft form of the Plan, including all adopted changes and as printed in the attached document and maps:

NOW, THEREFORE, BE IT RESOLVED that the Board of County Commissioners of Missoula County hereby adopts this resolution to adopt the Butler Creek Area Comprehensive Plan Update, in its final form, a copy of which is available in the Missoula Office of Planning and Grants.

BE IT FURTHER RESOLVED that:

This Butler Creek Area Comprehensive Plan Update is an amendment to the Missoula Urban Comprehensive Plan. Its is a policy document intended to provide the County and other agencies and districts with a coordinated guide for change over a long period of time. When making decisions based on the Plan, not all of the goals and implementation proposals can be met to the same degree in every instance. Use of the Plan requires a balancing of its various components on a case-by-case basis, as well as a selection of those goals and implementation proposals most pertinent to the issue at hand.

The common theme of all the goals and implementation proposals is acceptance of them as suitable approaches toward problem-solving and goal realization. Other valid approaches may exist and may at any time be used. Adoption of the Plan does not necessarily commit the County to immediately carry out each policy to the letter, but does put the County on record as having recognized the desirability of the goals and implementation proposals and the decisions or actions they imply. The County can then begin to carry out the goals and implementation proposals to the best of its ability, given sufficient time and resources.

One way of meeting these goals will be to place a copy of the plan and of the map showing no-build zones with the Office of Planning and Grants staff responsible for issuing building permits. No building permits will be issued unless the proposed building complies with the Plan and associated maps.

PASSED AND ADOPTED THIS 30th day of October, 1996.

ATTEST

Vickie M. Zeier
Vickie Zeier, Clerk and Recorder

BOARD OF COUNTY COMMISSIONERS
Missoula County, Montana 3-24-97

Fern Hart, Chair

Barbara Evans, Commissioner

Michael Kennedy, Commissioner

Signed this 24th day of March, 1997

APPROVED AS TO FORM AND CONTENT:

County Attorney

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I. INTRODUCTION

A. Purpose

In 1991 Missoula County acquired 446 acres of industrial zoned land between Missoula County International Airport and Interstate 90: the Missoula County Development Park. Simultaneously, the County and community leaders pursued an interchange alignment from Interstate 90 to the airport and the Butler Creek vicinity. The Federal Highway Administration funded the interchange and the planning and design phases of the interchange are in progress. Construction was estimated to commence in the 1994 building season.

The Missoula County Commissioners realized the development of the industrial land and the placement of a highway interchange in close proximity to Butler Creek would undoubtedly impact the drainage. This combined with overall reality of increasing development pressures and need for housing in the Missoula Valley, prompted the Commissioners request for the Rural Planning Office to complete a Butler Creek Area comprehensive plan in 1993.

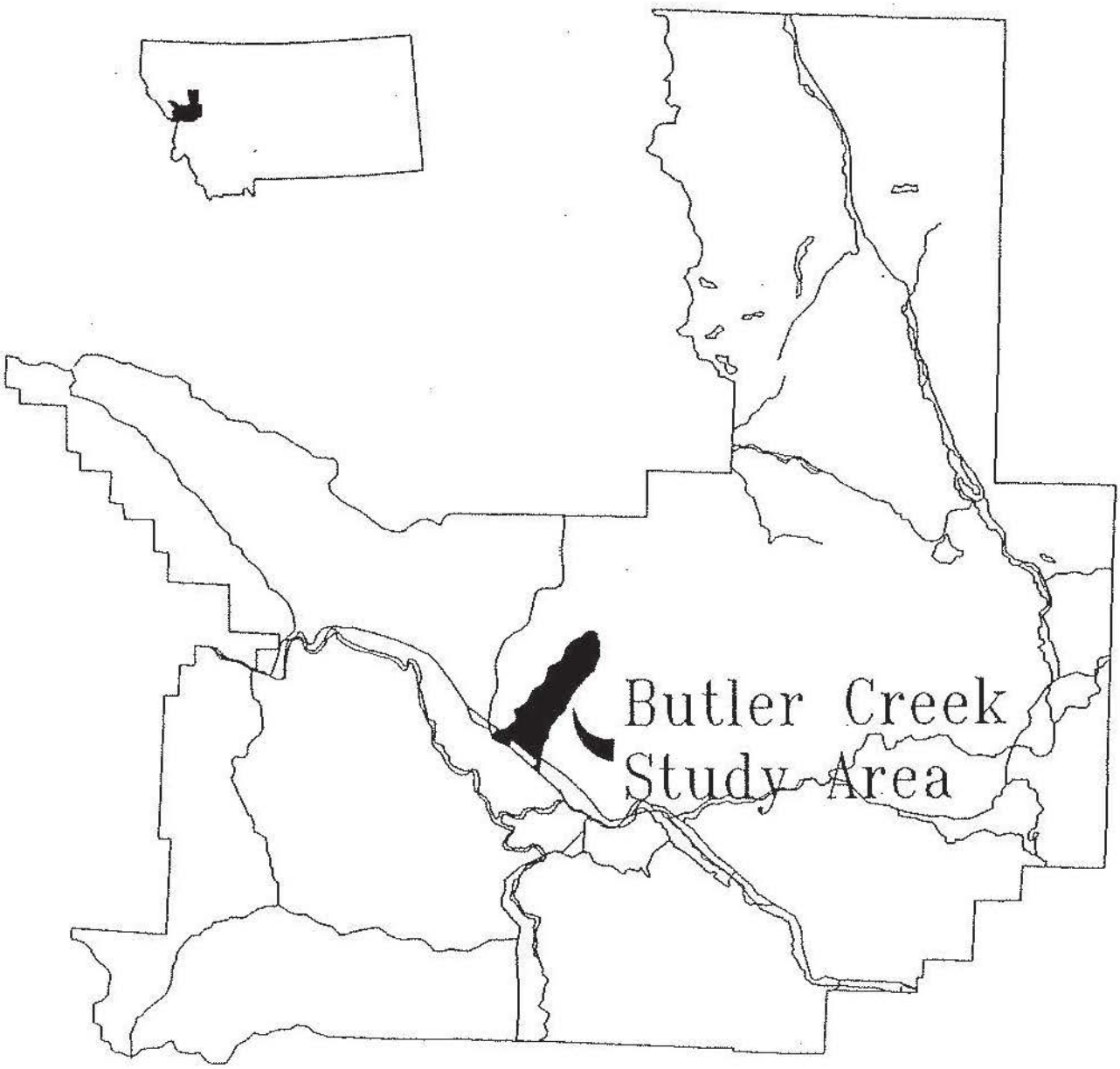
The residents and property owners within the study area participated in the development of this plan at open public meetings. (See Appendix) These meetings identified a number of land use issues that the residents felt should be investigated and whenever possible integrated into the plan. The Butler Creek Neighborhood Association is investigating a citizen initiated zoning effort in response to the current changes and demands that could potentially impact their area.

An amendment to the Butler Creek Comprehensive Plan was completed in 1996 to address a residential development located on approximately 800 acres, described as the "Dodd Ranch," to recommend standards that will protect the open and resource designation in a development with a density of one residence per 20 acres.

B. Study Area Location (See Figure 1)

The Butler Creek Valley is located West of the City of Missoula and North of the Missoula County International Airport in the Missoula Valley of Western Montana. The study area is defined by the watershed boundaries of LaValle Creek to the west and Butler Creek to the east. West Broadway (Old Highway 10) acts as the southern boundary, with the exception being the area comprising the County Development Park lands. The northern boundary is the Flathead Indian Reservation and the United

Figure A



States Forest Service land north of the Snowbowl Ski Area. Butler Creek begins at the top of the study area at an elevation of 7595 feet above sea level. The total acreage of the study area is 11,728 acres. The study area is also bounded by separate comprehensive plan amendments to the East and West; Grant Creek Comprehensive Plan 1980 and Wye/O'Keefe Creek Area Comprehensive Plan 1979, respectively.

Butler Creek has characteristically been a rural residential area combined with large scale agricultural operations. It is one of the last relatively undeveloped watersheds in the valley. This is significant, given its close proximity to the Missoula Urban Area.

C. Previous Planning Efforts

In 1975 Missoula County prepared a general Comprehensive Plan for the entire County. All of the Butler and LaValle Creek study area was studied and included in that plan. The area that was mapped in 1975 recommended a Rural Medium Density Residential classification be given to the southern portion of the study area (1 dwelling unit per 5 acres). This classification would enable the area to "allow for more intense development while reserving a certain amount of land to maintain a rural character." Clustering of houses was encouraged. The remaining lands in the northern portion of study area were characterized as Open and Resource Land (1 dwelling unit per 40 acres). Due to physical limitations or resource values this land was considered not suitable for development at that time.

In 1990, Missoula County adopted the Missoula Urban Comprehensive Plan Update which incorporated portions of the present study area. The 1990 update also recommended a rural residential classification for the southern portion of the study area (1 dwelling unit per 5-10 acres), with the intent to preserve the rural atmosphere of the area. Clustering of homesites was advised where feasible. Actual site characteristics are to be evaluated on a case by case basis to determine appropriate densities. The northern portion of the study area once again was classified as Open and Resource Land (1 dwelling unit per 40 acres). One dwelling unit per 20 acres is permitted on the Dodd Ranch, on the condition that building sites are located in areas designated as buildable on the map attached as Figure 13. Development of other land at a greater density is recommended if similar standards for resource protection are established.

D. Historical Land Uses

Land was homesteaded in the Butler and LaValle Creek drainages in the 1870's. Anaconda Copper Mining Co. owned vast sections of land in the Butler Creek drainage, but sold tracts to early homesteaders. The homesteaders attempted to secure a living from resource extraction and agriculture in the drainage. A lack of water for personal and agricultural operations made the drainages less desirable than other areas in the Missoula valley. Winters were severe, and many of the early residents fled the harsh weather. One of the first lumber mills in the Missoula Valley was located in the LaValle Creek drainage. The old growth ponderosa pine in the area was milled and used to construct many of the original buildings in the City of Missoula. Historic mine sites also exist in the drainage. None of the mines ever proved very productive and consequently were abandoned. However, some of the original homesteads in the area were constructed from limestone mined in the Grant Creek drainage.

Eventually, agriculture became the primary livelihood of the residents. As more and more land was cleared, and water sources were developed, crops of wheat were grown on the hillsides. Today primary agricultural uses include hay production and grazing sheep and cattle.

E. Present Land Uses

Butler Creek and LaValle Creek drainages have remained rural in character. In the southern and northern portion of the study area the lands are primarily used for agricultural operations: hay production and grazing cattle. The exceptions to this are few residential uses and the DeSmet Elementary School, which is the most intense land use in the study area, contributing a majority of vehicular trips in the southern portion of the area. The middle of the drainage, "the bottleneck", is where a significant amount of the residential development has taken place. The study area has been developed with differing densities and uses primarily due to the irregular land divisions and lack of agency review by using the certificates of survey process. The northern portion of the study area presently has fewer residential dwellings and ultimately ends at the headwaters of Butler Creek on the US Forest Service land leased by Montana Snowbowl Ski Area. The commercial ski area at the northern end of the study area provides recreational opportunity for the residents of Missoula, as well as the surrounding areas. No public access currently exists from the study area connecting to Snowbowl Road, Grant Creek and the ski area.

Timber on private lands in the northern portion of the study area has been logged, and roads have been constructed, which will potentially serve any development of this area.

US Forest Service land in the Lolo National Forest, Missoula Ranger District, borders the study area to the north. These forested lands are included in what is known as the USFS North Side Analysis Zone, a title given to the area between portions of Grant Creek to O'Keefe Creek for a proposed timber sale.

F. Potential Future Land Uses

The land in the Butler and LaValle Creek drainages has potential beyond present uses. The urban area surrounding the City of Missoula is growing at a rapid pace and many owners of large amounts of acreage in the study area have divided their tracts into twenty acre parcels through aliquot parcels or certificates of survey. These divisions open the door for potential development and marketing of the area. The financial pressure for large land owners to divide and sell the "working landscape" into ranchettes and residential units is extremely high given the current rate of growth and demand for housing in the Missoula Valley.

Missoula County plans on developing the industrial zoned Development Park land immediately south of the Butler Creek study area, and will be installing a water storage tank with a volume of at least 500,000 gallons to serve the County Development Park land. Future plans also indicate that another well and storage tank will be installed to serve the County Development Park land in response to the increased fire flow needs for the Park. City of Missoula municipal sewer lines currently serve the Missoula International Airport and will be extended to serve the needs of industrial users in the County Development Park. The close proximity of the municipal sewer, and the large water capacity at the southern end of the study area will provide a potential source of infrastructure that could serve development in the Butler Creek drainage.

Any changes in present land use should take into account the sensitivity of the resources on and adjacent to the proposed site. Due to the concerns for septic system and sewage disposal, development should be consistent with the recommendations of this plan.

A proposed timber sale and habitat enhancement project, the Northside Analysis, is currently under review. This proposed action by the US Forest Service, which

will be determined in 1994, is intended to potentially reduce the wildfire danger at the headwaters of Butler and LaValle Creeks and maintain habitat requirements for species in the area.

G. Butler Creek Land Use Goals

The following list of goals was compiled using goals from complimentary existing plans and the citizen input from the open public meetings. (See Appendix)

1. **Provide opportunities for public discussion and recommendations of specific land use proposals**

2. **Reduce potential water pollution: groundwater and surface water**

3. **Minimize air pollution/Preserve air quality**

4. **Preserve scenic views**

5. **Create or preserve open space corridors along creeks**

6. **Preserve wildlife habitat and riparian areas**

7. **Preserve existing habitat and landscape, encourage enhancement with endemic species and weed control**

8. **Improve traffic flow while minimizing effects on existing property owners by recommending appropriate development**

9. **Where desirable, include pedestrian and bicycle trails or corridors into plan in conjunction with other applicable planning documents**

10. **New development should be compatible with existing land uses, ie. rural character and open spaces**

11. **Promote the best use of land for residential, agricultural, commercial, industrial, open space, or other types of development consistent with the goals of the landowner, residents, and visitors**

12. **Provide opportunities for voluntary land use preservation techniques (easements, etc.) by the private sector**

13. **Preserve and enhance the health, safety and welfare of Butler Creek and Missoula County residents: participate in the development of fire contingency plans & Yellowstone Pipeline hazardous materials emergency plans**

H. Population

The 1990 Census figures for the study area indicate that 275 people reside in the Butler and LaValle Creek drainages. Due to boundary changes and restructuring of the census data collection methods, comparative data for the study area was undefinable.

II. PHYSICAL DESCRIPTION

A. Water Resources

Water has remained the sole limiting factor for development in the Butler and LaValle Creek drainages. The study area is a low elevation, low precipitation watershed, with impermeable soils that inhibit effective groundwater recharge. Average annual precipitation at the airport is 14 inches per year and 45 inches per year at Snow Bowl Ski Area.

aa. Surface Water

Butler and LaValle Creek flow through the study area and are the source of irrigation waters for portions of the drainages. The sources for both of these creeks, which have their physical origins in the mountain slopes of the western edge of the Rattlesnake Mountains, are surface runoff and spring flow from the subsurface geology. Both creeks are essentially isolated from the Clark Fork River by their intermittent flow and the Grass Valley French Ditch.

Butler Creek is approximately 12 miles long from its headwaters to the underpass of Interstate 90 where it flows intermittently until it enters the Grass Valley French Ditch. Like most of the smaller streams in the Missoula Valley, the creek is subject

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Butler Creek is approximately 12 miles long from its headwaters to the underpass of Interstate 90 where it flows intermittently until it enters the Grass Valley French Ditch. Like most of the smaller streams in the Missoula Valley, the creek is subject

to seasonal fluctuations in the amount of flow. Water flows continuously throughout most of Butler Creek above the ditch, but during dry years the stream can become intermittent at the lower reaches due to irrigation needs in the drainage.

LaValle Creek has its origins higher in the mountains and west of Butler Creek. Very little data has been collected concerning this drainage. It is approximately 13 miles long from its headwaters to where it intermittently flows into the Grass Valley French Ditch.

The floodplain and riparian zone along the creek act as buffers during seasonal high water flow. These brushy areas are comprised of cottonwoods and smaller trees and grasses that hold soil in place and create wildlife corridors and an open space resource. The riparian areas in some stretches of the creek have been impacted by stock grazing and crossings. A no-disturbance buffer extending 25 feet from the creek should be established in tracts 2, 3, and 4. This buffer is to prohibit construction of any king. The existing structures in this zone on tract 4 are "grandfathered." A floodplain map for Butler and LaValle Creek is included in the appendix.(see Figure 2)

Development in Butler Creek, including the Dodd Ranch, should include proper management of riparian resource along Butler Creek. Proper management will permit these riparian resource areas to improve in years to come.

ab. Groundwater

The study area is located within the boundaries of Missoula's Sole Source Aquifer and therefore part of the Missoula Water Quality District. Some hydrologists conclude that the water shortages in the study area are not due to poor quantity, but rather to poor extraction methods (wells and springs) and difficult soils. On the Dodd Ranch, seven (7) successful wells have been established. . However, it should be recognized that there is no guarantee that each lot will have sufficient water available. It is also unknown if new wells drilled on the Dodd Ranch will impact existing well users in the valley. The soils are generally tightly packed with small particle size restricting water flow within the subsurface geology. There are three main geologic sources of groundwater in the study area; the Pliocene-Holocene alluvium, Oligocene-Miocene sediments and the Precambrian bedrock. The aquifer has varying degrees of permeability depending on which band of geologic source is exploited. The coarser-grained alluvial sediments yield high rates but, as the particles get finer they are less permeable and produce lower rates. The Oligocene

sediments, below the alluvium, are less productive and less predictable due to surrounding confining clay layers. Precambrian bedrock is typically impervious, and does not provide significant quantities of water. The three aquifers generally recharge from precipitation, snowmelt, runoff and irrigation.
(See Figure 3 & 4)

B. Geology/Hydrogeology

The northern portion of the study area (the mountainous terrain) is composed of Precambrian sedimentary rocks belonging to the Belt Supergroup. The rocks have been identified as the Missoula Group and the Wallace formation. The inactive Hourglass Fault bisects the drainage in the southern portion of the study area and is potentially linked to the Clark Fork Fault. During the Tertiary Oligocene, the Butler Creek area was filled with erosion detritus in outwash fans known as the Renova formation equivalent. The ancient Clark Fork of the Columbia River carved away many of the Tertiary sediments. In the Pleistocene era Glacial Lake Missoula flooded the Missoula Valley and concentrated vast amounts of glacial clay and silt in the basin at elevations below 3,500 feet. The high terraces and present floodplain areas are post-Lake Missoula remnants from the old lake bottom.

Large landslides (Pleistocene age) primarily involving Oligocene-Miocene sediments exist in the Butler Creek drainage. The slides are identified by the hummocky terrain and disturbed bedding. These landslides are presently inactive, but similar types of areas have been known to become active with the introduction of disturbance, such as road construction and foundation excavation. The alignment of the slide activity coincides with the two faults; the Clark Fork and the Hourglass. The slides may have been caused by seismic activity or groundwater seepage along the faults. (See Figure 5).

C. Soils (See Figure 6)

There are 31 different soil map units within the study area belonging to 15 different soil groups. The soils are classified using the USDA Natural Resource Conservation Service definitions and limitation recommendations. A soils map and narrative description of the soils is included in the index.

The Argiborolls-Haploborolls complex comprises a significant portion of the southern portion of the study area. These soils vary in composition with loams and

a substratum of gravelly-clay and clay, and are generally suitable for development with the slope acting as the limiting factor. This is true for a majority of the soils in the drainage. Although there are some limiting soil factors such as slow percolation or "too quick" percolation, the overriding limiting factor is the excessive slopes at the northern portion of the study area.

However, one particular soil, Aquic Haploxerolls 0-2% slope, does have some serious development limitations due to the seasonal high water table at a depth of 20-40 inches. These soils are located adjacent to Butler Creek in the Dodd Ranch in the northern portion of the study area. These areas should be designated as "no build" zones.

D. Slope

A slope map of the study area is included in the appendix. (See Figure 7, Table 3) Slopes from 0-15% are generally appropriate for development, whereas slopes from 16-25% present greater challenges but can sustain some development and septic systems. Slopes greater than 25% severely limit development possibilities and septic system placement, and should be discouraged. The "no build" zones should include lands having a slope with a natural gradient of more than 25% (plus some isolated areas of less slope on steeper side hills) and lands lying within a designated riparian resource and/or 100-year floodplain. The suggested "no build" zones for the Dodd Ranch are described on the map attached as Figure 13. No buildings of any kind nor roads (excepting only those which pre-date these Amendments) should be constructed in the "no build" zones due to the 25% slope. Development in areas within 4 1/2 miles of the urban area of Missoula, the current building permit jurisdiction zone and a majority of the study area, require engineered plans for development on slopes greater than 25%. The plans must address the potential hazards from landslides and septic system placement.

The slope statistics for the Butler and LaValle Creek study area have been analyzed based on the following slope groups: 0-4% slope (734 acres), 5-8% slope (412 acres), 9-15% slope (1,553 acres), 16-25% slope (3,081 acres), and greater than 25% slope (5,943 acres). Based on this analysis, more than 50% of the study area is not suitable for conventional development.

Generally, areas within the Dodd Ranch with slopes in excess of 25% should be designated as "no build" zones. Certain lands having a slope with a natural gradient of more than 25% (plus some isolated areas of less slope on steeper side hills) and

lands lying within a designated riparian resource and/or 100-year floodplain should be designated as "no build" zones. The "no build" zones for the Dodd Ranch should be as described on the the map attached as Figure 13. No buildings of any kind nor roads (excepting only those which exist) should be constructed in the "no build" zones due to the 25% slope.

E. Ownership

At the time of the preparation of the Butler Creek Comprehensive Plan Amendment of 1994, there were 97 separate owners in the Butler and LaValle Creek study area, including Goodan Keil Estates and Snow Bowl Ski Area. The ownership is likely to change significantly based on the number of land divisions that have occurred in the study area through creation of aliquot parcels, certificates of survey, and other potential subdivisions and planned unit developments.

The Dodd Ranch has 19 separate owners. The 32 separate tracts each have suitable building sites, outside of the "no build" zone.

A map showing the patterns of present land divisions is included in the appendix. (See Figure 8)

F. Agricultural Resources

The lower portions of the study area are classified by the USDA Soil Conservation Service as prime farmland if irrigated, and important farmland statewide if irrigated. Presently, a majority of the large tracts of land are under cultivation as hay producing land and grazing pasture. The land and soils are satisfactory for agricultural operations. The soils and vegetation on the hillsides are suitable for controlled grazing.

More recently, the agricultural land has been losing ground to the spread of noxious weeds. These weeds, most notably spotted knapweed, leafy spurge and sulphur cinquefoil, are out-competing the native grass communities that serve as forage for stock and the wildlife species residing in the study area. This is true for most areas in the study area.

Owners in the Dodd Ranch should control noxious weeds on their property, and

comply with the Missoula County Weed District Noxious Weed Management Plan. Other developments within the Butler Creek Plan area should take similar measures to assist in the control of noxious weeds.

G. Historic and Cultural Resources

There are no known historic resources found within the study area, even though, as pointed out in the discussion on historic land uses, the drainages did play a major role in the development and economy of the Missoula Valley.

There is no doubt that Native Americans, particularly the Salish Tribe used portions of the study area for hunting and encampments, but no known culturally significant sites have been found in the study area.

H. Wildlife and Fishery Resources

The study area contains a number of significant conservation resources. The undeveloped hillside and ridgetop areas of the drainages are known winter ranges for elk, mule deer and whitetail deer (See Figure 9) and as habitat for small mammals, and song birds. The area is also habitat for predator species such as mountain lion and black bear. Birds of prey hunt on the open hillsides and pastures of the study area.

Wildlife biologists with the Montana Department of Fish, Wildlife and Parks have indicated that the portions of the study area within the Dodd Ranch are not winter ranges for elk or whitetail deer; however mule deer may utilize the higher ridges in Sections 17 and 20 as winter range. A limited number of elk may also traverse the ridge between Butler and Grant Creek in route to the slopes to the south of Dodd Ranch. The slopes along the northern portions of Sections 17 & 18 are, most likely, a mule deer travel corridor, as the mule deer move to their winter ranges to the west-southwest of the ranch. Designating slopes in excess of 25% on the Dodd Ranch as "no build" zones will assist in protecting these areas for usage by wildlife.

The northern portion of the study area is adjacent to management situation 1 grizzly bear habitat on the US Forest Service lands from Point Six east along the Reservation divide into the Rattlesnake Wilderness. This designation requires all activities proposed in the designated area to comply with specific USFS management criteria. Known gray wolf activity has also taken place along the reservation divide, although there are no special management activities in place. However, conflicts between

development and wildlife can be avoided if developments insist on the following:

(a) No rubbish or other waste is allowed to accumulate on the Dodd Ranch. All containers for the storage and disposal of garbage is kept in a clean and orderly condition. No junk yards, junk vehicles, or debris is allowed to remain on the property. No noxious weeds are allowed to accumulate on the property and landowners must comply with the Missoula County Weed District Noxious Weed Management Plan.

(b) All fencing should not exceed 42 inches in height except for fences immediately around the main dwelling house or barn/stable, and fences immediately surrounding gardens and fruit trees. [All wire fencing in heavily timbered areas should be topped with a pole or rail for better identification by wildlife.] Smooth wire is effective in these situations.

The upper reaches of both Butler and LaValle Creek contain pure strains of westslope cutthroat trout, a species of special concern. Both creeks are considered Class III fishery resources by the Montana Department of Fish, Wildlife and Parks. The fisheries are cut off from the Clark Fork River by the irrigation ditches and intermittent flow at the creeks' lower reaches.

The creek corridors act as significant open space resources, habitats for nesting birds, and corridor routes for wildlife in the study area. Riparian zones adjacent to the creeks provide the location for significant species diversity.

Another source of ecological diversity in the study area is fire. This ecosystem, like most of Western Montana, is dependent on forest fire to stabilize the forest condition by adding nutrients to the forest as well as removing, replacing and adding species.

I. Air Quality

Butler Creek Road is the source of most of the air quality concerns in the study area due its gravel surface and resultant dust problems. Wood stoves also contribute airborne particulates in the localized environment. No dust abatement program has been implemented for the County road that serves the study area. A majority of the study area is defined as being in the Missoula Air Stagnation Zone in which fireplaces have been banned since 1985. Presently class I and class II wood and pellet stoves are permitted within the Air Stagnation Zone. Gas insert fireplaces are allowed because of cleaner burning fuel and low particulate emission.

J. Open Space Resources

Due to the relatively unpopulated nature of the study area, significant open space resources exist in the drainages. Not only do the agricultural "working" lands act as open space, but creek corridors, trails, passive and active recreational areas, scenic hillsides and ridgelines as viewed from roads, rivers and creeks also serve as an important open space resources. Present and future residents should strive to preserve and enhance the open space resources that exist in the study area. The challenge is to allow development that will compliment the existing area.

In the Dodd Ranch, if slopes in excess of 25% and the riparian resource areas along Butler Creek within the boundaries of the Dodd Ranch are designated as "no build" zones, some 75% (600+ acres) of the ranch will remain undeveloped and privately owned. Future developments within the study area should take similar steps to preserve the rural nature of the area.

One problem attributed to unnecessary development impacts to open space resources and the "rural character" is the presence of bright undirected lights at night in the area.

Any development of the Dodd Ranch should discourage unreasonably bright lights (to include dusk-to-dawn security/mercury lights on tall poles) within the ranch. Similar measures should be incorporated in any future developments, and be considered by existing residents within the study area. All outside lighting or light fixtures should be directly shielded from the view of the adjoining lot owners so that no direct lighting should be visible from adjacent lots. All lights should be "down" lighting and should not be of the "radius" lighting type.

III. SERVICES AND FACILITIES

A. Water

Presently all the residential and agricultural water in the study area is provided by personal or community well systems. Well log data for the study area indicates that 139 wells have been drilled and information filed. These wells are classified by intended use: residential, stock watering, or irrigation.

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Presently all the residential and agricultural water in the study area is provided by personal or community well systems. Well log data for the study area indicates that 139 wells have been drilled and information filed. These wells are classified by intended use: residential, stock watering, or irrigation.

Mountain Water Company owns and operates a well in the study area. It is presently used as the source for the Missoula International Airport and the US Forest Service Aerial Fire Depot. This well, which fills a 40,000 gallon storage tank, is tentatively scheduled for expansion to a larger holding tank of at least 500,000 gallons in size. This, and the development of another commercial well on the industrial zoned land across from the airport for fire flow and redundancy within the system, will serve the demands of tenants at the Missoula County Development Park. This system will need to be designed to meet the fire flows of the future industrial users, therefore it will have a greater supply than the industrial land will initially need, creating a water surplus.

In spite of the apparent abundance of water in the lower reaches of the study area, residents remain concerned about water quantity. Many users have had to deepen or re-drill existing wells because their wells were running out of supply. It is well known by the residents of the area that water supply has always been a problem. Many wells produce good water, but at limited quantities, which may be attributed to demanding (pumping) more water than the well can immediately supply. Water resources are also negatively impacted by new wells in the drainage. The water supply in the drainage is adequate for moderate use, but care should be given when proposing new uses, and proper investigation should be completed before plans are finalized. Water is an issue of great concern to the residents of the study area, and it will continue to be into the future.

There is no guarantee that any present or future tracts in the planning area will have adequate water available. It is also unknown if new wells will cause impacts to existing well users in the area. One way of limiting excessive water use is for residential home owners to not have irrigated lawns larger than one-quarter to one-half acre.

In 1982, the Yellowstone Pipeline which bisects the study area ruptured and spilled an estimated 250,000 gallons of gasoline at the LaValle Creek Crossing point. Biologists from Region II Fish, Wildlife and Parks stated that the 1982 spill caused a near total fish kill in LaValle Creek. Correspondence from that time indicate concerns about long term ramifications of a hydrocarbon spill in that area. Agricultural operations were affected by the spill and financial settlements between the ranchers and the Yellowstone Pipeline Company followed.

B. Sanitation

Data for the study area are marginal for septic systems and drain fields. Based on data collected at the Missoula City/County Health Department from 1967 to present, 75 septic systems exist in the study area. These are approximate data due to the fact that no conclusive records were kept prior to 1967. This data excludes the homesteaders and other early residents of the study area. Presently, a County-wide carrying capacity and cumulative effects analysis is underway. Preliminary results from this analysis indicate that the nitrate levels (which indicate septic system failure) in the portion of the aquifer serving the study area are at acceptable levels, but are also at a point which cannot sustain much more concentration.

Site specific soils testing on the 20+ acre tracts within the Dodd Ranch indicate that acceptable locations for on-site drainfields exist on all 32 tracts within the ranch. If properly installed, the installation of 32 on-site septic systems within the boundaries of the Dodd Ranch should not have an adverse effect on the area.

A municipal sewer line from the City of Missoula Wastewater Treatment Plant currently serves the Missoula County International Airport and Momont Industrial Park just south of the study area. The municipal line is designed to serve the needs of the airport and the industrial park. The US Forest Service Aerial Fire Depot, adjacent to the southwestern boundary of the study area, is considering hooking on to the municipal line as well. Any additional connections to the municipal line have not been considered by the City Engineer's Office. Plans to extend the sewer line, or potentially hook up residential users, should be coordinated with the City Engineer.

C. Police, Fire and Ambulance

The study area is served by the Missoula County Sheriff's Department for police service. The Montana State Highway Patrol assists with traffic patrol and violations. As growth continues in the Missoula Valley and requests for service follows, manpower at the Sheriff's department will continue to be an important issue.

The Rural Fire Department serves the study area through Missoula Rural Fire Station #2 located on Highway 10 just West of Butler Creek Road. The Rural Fire Department has a cooperative agreement with the Department of State Lands to fight wildfires in the northern portions of the drainage. As development occurs so does the potential for wildfire starting at the developed area and progressing into the forest

from these developing areas. Potential population growth in the drainages will create a need for increased service. Available water sources for fire protection in the area are not a present concern, although as development continues, proper consultation with Rural Fire should take place concerning appropriate water sources for fire protection. If and when a municipal or community water system is developed in the drainages, appropriate numbers of fire hydrants should be placed to serve the needs of development in the area.

Developers of the Dodd Ranch have taken several steps to address concerns regarding possible wildland and/or structure fires, to include: the ranch has been annexed, in its entirety, into the Missoula Rural Fire District; roads have been constructed to Fire Code standards; a road connecting the Butler Creek and Grant Creek valleys has been constructed that can be used as an emergency access/escape route by both drainages. This private access road is to be maintained and controlled by the Butler Creek Ranch Homeowners Association. Additionally, the landowners in Butler Creek should adopt fire protection practices within the development. Each property owner should create a defensible space for fire protection purposes as approved by the appropriate fire jurisdiction. Vegetation should be removed and reduced around each building according to the slope. Single ornamental trees or shrubs are acceptable as long as all vegetation near them is reduced. Ornamental trees and shrubs should not touch any buildings. When planting, the property owner should select trees, shrubs, and vegetation that limit or retard fire spread, such as:

a. Perennial: Hardy perennial flowers that are adapted to our climate should be chosen.

b. Shrubs: Evergreen shrubs, such as dwarf conifers or junipers, should be avoided, unless well spaced.

c. Trees: Deciduous trees should be clumped, scattered, or planted in greenbelts or windbreak patterns. Evergreen trees should be spaced in accordance with the Missoula County Subdivision Fire Standard landscaping guidelines.

These recommendations are not intended to restrict or prevent the property owner from exercising good fire prevention practices in regard to vegetation removal or planting in the vicinity of buildings as recommended by local fire district personnel.

When ambulance care is needed in the study area a dual dispatch is sent from the 9-1-1 information center to both Missoula Emergency Services (formerly Arrow Ambulance) and the Rural Fire Department. Primary care is administered and Missoula Emergency Services then transports the victim to the hospital of choice: St. Patrick Hospital or Community Hospital. The construction of the private road between Butler Creek and Grant Creek will assist in providing emergency access and escape and limited emergency medical access.

D. Schools

Students residing in the Butler and LaValle Creek drainages are in DeSmet School District #20 and attend DeSmet Elementary School/Paul A. Hanson Middle School (Kindergarten - 8th grade) and Big Sky High School (9th -12th grade). The enrollment within the DeSmet school district has steadily increased. Any increase in development and residential use in the district will have implications for the school districts that serve the area. DeSmet Elementary is currently planning to expand their present facility to include four (4) more classrooms. Construction is scheduled to begin in 1994. The DeSmet Elementary School is characterized as a "feeder" school for Big Sky High School, which is a part of the Missoula County High School District. (See Table 2, Figure 10)

E. Transportation

Butler and LaValle Creek Roads are maintained by Missoula County crews. There is only public one entry and exit from the study area: Butler Creek Road. Connection to the US Forest Service Snow Bowl Road to the east has been completed in conjunction with a logging and land division project in the northern portion of the study area. This road, while maintained and controlled by the Butler Creek Homeowners Association, and although not to County standards, does provide a much needed emergency connection between the Butler Creek and Grant Creek Drainages. Butler Creek Road also connects to Point Six Road, and is a County Road through the Dodd Ranch. It turns into a US Forest Service road serving TV Mountain electronic sites, Point Six, and provides Forest Service access for administrative use and maintenance of US Forest Service roads.

Residential development in the study area may warrant improvements such as resurfacing and widening to the existing road conditions to enhance the health and safety of the residents within the study area.

Bicycle and pedestrian routes should be incorporated into future improvements. These bicycle and pedestrian paths should link and compliment suggested routes in the Missoula Non-Motorized Transportation Plan, 1994. This will address needs of students who will be en route to the DeSmet Elementary School/Paul A. Hanson Middle School. In order to achieve substantial compliance with the comprehensive plan, a mechanism should be in place to finance improvements to Butler Creek Road. The most effective mechanism would be to require that anyone within the planning area who requests a building permit be required to waive their right to protest cration of an RSID to finance improvements to Butler Creek Road as a condition of finding substantial compliance with the comprehensive plan.

The construction of the new interchange off of Interstate 90 to the southeast of the study area will also increase the amount of traffic adjacent to the study area. This interchange will serve as the western gateway to Missoula as well as serve the Missoula County Airport and the County Development Park. Truck traffic (commercial) and normal vehicular traffic will increase.

Average Daily Traffic Counts (ADTC) have been recorded for two distinct portions of Butler Creek Road. The ADTC is the number of cars crossing a counter at a specific location in a 24 hour period. (See Tables 4 & 5) The County Surveyor's office use these counts to assess the level of use of the roadway.

Given the number of trips currently made on Butler Creek Road and the potential for increased traffic, the Butler Creek railroad crossing should be investigated for safety and hazards.

As more development takes place within the study area, the pressure for, and likelihood of, the creation of a Rural Special Improvement District (RSID) for dust abatement or pavement of Butler Creek Road will increase.

F. Public Utilities

Electrical service to the study area is provided by Missoula Electric Cooperative and Montana Power Corporation.

Natural gas service is provided by Montana Power Corporation.

Telephone service is provided by US West Telecommunications.

Solid waste services are provided by BFI Waste Systems. A voluntary blue bag recycling program is also available to BFI customers.

G. Parks and Recreation

The only existing developed (swings, etc.) public recreation facility in the study area is adjacent to the DeSmet Elementary School. As the study area grows more land should be dedicated to park land, both active and passive, to satisfy the needs of the residents and their families. The undeveloped land serves as passive recreation space for the area. The US Forest Service lands to the north may be used for recreation and hunting, although no motorized access presently exists. Convenient quick access into the Rattlesnake Wilderness, and the Salish & Kootenai Tribal lands at the northern end of the study area is an issue of concern, that recreationalists should address before venturing into these areas.

The Dodd Ranch as created by COS #4198, is a large tract (20+ acre tracts) development located in Sections 17, 18 & 20, T14N, R19W. Some 75% of the ranch will be designated as "no build" zones due to slopes, riparian resources, and/or access. Residential tracts in excess of 20 acres inherently provide private open space/recreational opportunities, and currently are not required to set aside parkland by the Subdivision and Platting Act.

IV. **RECOMMENDATIONS**

The recommendations that follow address the goals that were outlined in section **I-G.** of this plan. (Note that some goals have been combined due to similar recommendations for action.)

1.& 11. **Opportunities for Public Discussion/Promote Consistent Development**: The residents of the study area have the ability to participate in the public review process of any development proposal. The neighbors could use this ability to encourage developers and future land owners to preserve the character of the area and work with existing owners.

Recommendation:

The neighborhood association should become registered with the City/County Office of Community Development, which will automatically inform them of the public comment period for any potential land use issue in the study area.

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2. **Reduce Potential Water Pollution**: To satisfy this goal the residents of the study area, both now and in the future, need to ensure that land use practices do not adversely affect water resources of LaValle or Butler Creek, which includes the aquifer that the residents tap for household water supply. The Missoula Valley Water Quality District, with the recommendations and advisory roles it provides, can serve as a tool for improving and protecting the water resources of the Valley and the study area.

Another means of protecting the surface waters of LaValle and Butler Creeks would be to contact the US Department of Agriculture Soil Conservation Service for specific site planning methods for creeks and adjacent lands.

Within the Dodd Ranch development a detailed riparian inventory was conducted, from which a "Riparian Area Management Plan" was developed. This Plan has been circulated to all current landowners and should be distributed to all future landowners. Proper management practices within the riparian areas along Butler Creek will aid in the filtration of pollutants out of runoff before it enters the stream, will protect the stream banks from erosion, provide shade for the stream thereby reducing temperatures to fish-friendly levels, and protect the fish from predators. Also, the diversity of plants and plant heights found in a well managed riparian area provide a tremendous variety of habitats or niches for many wildlife species.

Recommendations:

Ensure that properly operating household septic systems are in place and maintained regularly.

Prohibit current and future concentrated stock watering areas and crossings in Butler and LaValle Creeks on parcels less than 20 acres.

Maintain foliage and brush in riparian zones and floodplains to hold soil in place, prevent erosion, and serve as flood control during seasonal high water periods. Vegetation also assists the biological resources that use the riparian corridor.

Circulate and follow the recommendations of the "Riparian Area Management Plan."

In those cases where large tracts are proposed for development, creation of a community-type system for water and sewer, incorporating best technologies for grey water (used sink, bathtub, clothes washer water) recycling for irrigation (land

application) is encouraged. If effluent from toilets is to be used in land application, then primary treatment must first take place.

Irrigation using grey water from individual septic systems is not currently allowed under existing state regulations. Treated sewage from a community system, designed, engineered, and approved for such use must be reviewed by the State Water Quality Bureau and receive an operation permit.

Proper densities for development shall be determined by the overall carrying capacity of the sites proposed. Maximum densities shall not exceed present and future City/County Health Department regulations and limitations on septic system location and density.

Connections to the City of Missoula Wastewater Treatment Plant by sewer main hookup should be investigated for any high density development in the southern portion of the study area.

The following riparian management practices are recommended:

a. Access: Access to the riparian area should be restricted to landowners and their guests.

b. Vegetation Management: Native riparian vegetation should be maintained to protect and enhance the riparian resource. Removal of woody vegetation (shrubs and trees) should be limited to dead materials, and a very limited amount of live woody vegetation. Such removal of live woody vegetation should be limited to less than 10% of any particular area and should be solely for the purpose of permitting travel through the riparian area.

c. Weed Control: Since weed control in the riparian area is a concern, due to water quality, landowners in Butler Creek are encouraged to review information made available through the Missoula County Weed Control Office and the Missoula County Extension Office. Weed control options include:

(i) Mechanical: Mechanical control methods of hand-pulling, weed whipping, mowing, and other methods to physically remove individual plants or reduce their seed production should be permitted.

All bare soil exposed by weed removal should be reseeded

immediately with desirable species, such as a moist-site grass mixture available from local seed suppliers.

(ii) Cultural: Cultural control emphasizes the minimization of soil disturbance. If disturbed, such soils should be immediately revegetated with grasses or other vegetation. Additional cultural control is achieved by maintaining shade from tree and shrub species, and therefore, the removal of trees and shrubs should be limited.

(iii) Chemical: Chemical control methods should be limited in the riparian zone to large infestations which have not been successfully managed using other methods. Only chemicals labeled for use in riparian areas and near water bodies should be used. Current chemical control options can be obtained from the Missoula County Extension and Weed Control offices.

Chemical control methods should not be utilized on immediate stream banks, standing water areas, and swales or other drainage ways where runoff may occur, unless infestations are too large for other methods, and in that event application should be limited to careful, spot application. These areas are best treated by hand pulling or other means.

d. Vegetation Enhancement: Where woody vegetation has been completely removed from the streambank and the adjacent 50 foot buffer on either side of the stream, the land should be protected from grazing and the woody vegetation reestablished. Reestablishment may be accomplished by planting nursery stock (native woody riparian species), cutting and planting willow-springs, or a combination of these methods.

e. Grazing: Livestock grazing intensity should be managed so that grasses do not, on average, become shorter than four inches. Rotation grazing systems which leave the most standing vegetation possible are recommended in the riparian area. Constant winter feeding is not permitted.

Off-stream water developments should be implemented to provide stock water, unless:

(i) stock watering directly in the stream is controlled by the use of electric fencing and the location is changed on a weekly basis; or

(ii) a good, stable, straight stream section is chosen and armor (gravel and cobble size rock) is provided for the bank and bed to reduce sediment production.

f. Fencing: Fences, if constructed to delineate property boundaries, manage grazing, or for other purposes should be designed to provide the level of control needed for livestock and allow maximum wildlife movement. Electric and bare wire fences are recommended. Wire mesh fences, including those to contain sheep, should only be used on the border of riparian areas where absolutely necessary but are not permitted within these areas.

g. Stream Crossing: No additional stream crossings for vehicle traffic should be permitted. No roads within the riparian area, excepting those which exist, should be permitted.

h. No permanent buildings or non-permanent residential structures of any kind should be constructed or placed in the area designated as riparian resource.

i. Regulations: The landowners whose property include riparian resource area should comply with regulations covering activities in local riparian areas and in addition should follow the following:

(i) Missoula County Subdivision regulations restricts development in *Areas of Riparian Resource*. The riparian "no build" zone and management plan recommended by this Plan is in response to these regulations.

(ii) The Missoula County Office of Planning and Grants administer floodplain regulations which cover activities in the floodplain of local streams.

(iii) The Missoula County Soil Conservation District board of supervisors issue permits under the Montana Natural Land and Stream Bed Preservation Act (the 310 law) for all activities within the high water marks of all streams. This includes bank alteration, irrigation diversions, stream crossings, or any other machine or hand work within the high water marks.

(iv) The Army Corps of Engineers Helena office administers Section 404 of the federal Clean Water Act which requires a permit for any work in jurisdictional wetlands. A portion of the Butler Creek riparian area (the stream and other very wet sites) is classified as jurisdictional wetland.

(v) Montana water rights laws apply to any diversion of waters from Butler Creek or from wells. Permits are issued by the Montana Department of Natural Resources and Conservation--Water Resources Division office in Missoula, Montana.

3. **Minimize Air Pollution**: The air pollution in the study area can be attributed to dust from Butler Creek Road and LaValle Creek Road as well as to smoke from fireplaces and woodstoves. Another source of visible pollution identified in the issues meetings is light pollution: glare from outside lights during night hours.

Development of up to 32 residential homesites in the Dodd Ranch will add to the overall traffic on the Butler Creek Road, and to the dust generated. As more development takes place within the study area, the pressure for, and likelihood of, the creation of a Rural Special Improvement District (RSID) for dust abatement or pavement of Butler Creek Road should increase.

New construction, including homes to be built within the Dodd Ranch, will be required to meet current standards for wood burning devices, hence will generate significantly less air pollution than wood burning devices located in existing homes in the study area, most of which were installed prior to adoption of the present standards.

Recommendations:

A dust abatement program should be initiated to decrease the air quality problem arising from travel on existing unpaved roads.

As the population of the study area grows and traffic on the gravel roads increases and as financial resources become available, consideration should be given to paving the roads which would reduce the road dust problem.

In conjunction with any development in the study area, developers should be required to make road improvements such as paving that will meet or exceed the proposed needs of the development. Such improvements should meet Missoula County Road specifications.

New developments in the study area are required to adhere to the City/County Health Department regulations when installing woodstoves in residences within the Missoula Valley Air Stagnation Zone (Airshed). In order to obtain a building permit

for new construction in the portion of the study area within the defined 4 1/2 mile urban area (> 95% of area), the City/County Health Department must issue a permit stating that a Class I or Class II woodstove is being installed.

Residents in the study area should be encouraged to use directional or motion detecting night lights to preserve the night sky view from their property and reduce the amount of light pollution.

4. **Preserve Scenic Views**: The residents in the study area consistently stated that they wanted to preserve the "rural character" and scenic quality of the study area. The Missoula County Inventory of Conservation Resources indicates that a significant portion of the study area is considered scenic open space as viewed from major roads, waterbodies and the urban area. The creek corridors are also considered significant open spaces. The open hillsides and unobstructed ridgeline views provide the character of this unpopulated area. The challenge before the owners, residents and potential developers is to maintain the "rural feeling" that exists in the study area while allowing for some limited development in areas that are best suited for a change in land use.

Recommendations:

Residents and developers should not build on the ridgelines or have visible structures that break existing horizon lines. Limitations due to slope, soil type and geology should be analyzed when considering hillside development.

Natural land features such as streams, hillsides, rock formations, and unique vegetation should be used as strong design determinants (dictate the scale and placement of development) for any development proposal. These features should be incorporated into the planned development to enhance the visual quality of the proposal and provide opportunities for open space and recreational use.

Not only will future homes impact the appearance of the area, but the infrastructure that residential development requires also has a serious impact on appearance. Roads, powerlines and fences all will potentially degrade the scenic nature of the area. Consideration should be given to the appropriate placement of these improvements. Utility lines should be placed underground wherever feasible.

Methods for permanently preserving identified scenic views and preventing development should be investigated. Placing a perpetual conservation easement on

property is one method of protecting unique areas and views.

Clustering homes in areas that can sustain more intense development pressures in conjunction with open space/agricultural land preservation should be encouraged. Agricultural operations, not excluding small scale community gardens, hay production, limited grazing etc. should be incorporated into proposals.

Clustering should only occur in areas that can sustain the proposed density when taking into account other land characteristics such as soils, slope, wildlife habitat and surrounding land uses.

Exterior fencing should be limited to the immediate surrounding site locale which will blend landscapes rather than fragment landscapes and preserve the open appearance and of the landscape and allow free movement for wildlife species.

Agricultural operations should be encouraged to continue to operate in conjunction with limited development proposals. Agricultural uses and the "working landscape" that they create were identified as acceptable means for preserving the open space and rural character of the study area.

Transitional buffer areas, uses and densities (permanent landscaping, walkways/bike paths, gardens, etc.) should be placed between converted agricultural land and proposed developments to soften the changes in land use.

Developments should take into account natural limiting conditions such as slope, floodplains, drainage ways and other sensitive features, and minimize site disturbance to maintain the natural state of these areas.

Development should not be permitted on areas noted as being highly susceptible to "sliding" or slope failure or on slopes in excess of 25%.Restrictions placed on the development of tracts within the Dodd Ranch should designate slopes in excess of 25% and the riparian area along Butler Creek within the boundaries of the ranch as "no build" zones. Such restriction will prohibit construction of buildings and roads on the hillsides that are visible from major roads and the urban area, reserving the scenic open space.

All disturbances created by developing roads and underground utility lines should be revegetated within one year or sooner and returned to a near natural grade to prevent

erosion and lessen the visual impact of unreclaimed areas created by the improvements.

Graded slopes should avoid a manufactured appearance and should mimic the original slope of the hillside as much as possible.

Native vegetation should be used to revegetate and reclaim areas disturbed by development, recreating the natural look and preserving the scenic quality of the area.

5. **Create or Open Space Preserve Corridors along Creeks**: Through the creation of open space corridors (buffer areas) along the creeks a number of land use goals can be accomplished: scenic views, significant open space values, riparian wildlife and fishery habitat all can be protected.

Recommendations:

Designation of the riparian area along Butler Creek as a "no build zone" for its entire length within the Dodd Ranch will assure that this area will remain undeveloped in the future. Following the guidelines set forth in the "Riparian Area Management Plan", will also assure ongoing protection of the riparian wildlife and fishery habitat on the portion of Butler Creek within the boundaries of the ranch.

Corridors along the creeks should remain in their native state.

Consultation with Department of Fish, Wildlife and Parks biologists should occur to determine the present conditions and possible enhancements that could benefit the wildlife and fisheries using the creeks and corridors.

Wherever possible county floodplain maps should be used to identify the stream corridors. Floodplain regulations must be adhered to.

Developing appropriate non-motorized trails adjacent to the creek corridors should occur, but only in areas not adversely impacting wildlife habitat.

Follow the guidelines and recommendations set forth in "The Riparian Area Management Plan," a copy of which is available at the Missoula County Office of Planning and Grants.

6 & 7. **Preserve Existing Wildlife Habitat and Riparian Areas**: Significant portions of

the study area serve as winter range habitat for elk, mule deer and whitetail deer. Other species such as black bear, mountain lion, and a multitude of song birds and small mammals also inhabit the area.

"Attractant" sites often accompany development, and have significant impacts on wildlife and their habitats. Both prey and predator species may be enticed into developed areas unless precautions are taken.

Wildlife biologists with the Montana Department of Fish, Wildlife and Parks have indicated that the portions of the study area within the Dodd Ranch are not winter ranges for elk or whitetail deer, however mule deer may utilize the higher ridges in Sections 17 and 20 as winter range. A limited number of elk may also traverse the ridge between Butler Creek and Grant Creek in route to the slopes to the south of the ranch. The slopes along the northern portions of Sections 17 & 18 are also presumed to be a mule deer travel corridor to their winter ranges to the west-southwest of the ranch.

Recommendations:

Designation of slopes in excess of 25% on the Dodd Ranch as "no build zones" will assist in protecting these areas for usage by wildlife. Designation of riparian areas within the Dodd Ranch along Butler Creek as a "no build zone" will assure this area's ongoing protection of the riparian wildlife and fishery habitat on the portion of Butler Creek within the boundaries of the ranch.

Development in areas identified as winter range should be limited to areas that are not considered prime habitat.

All fencing erected should not exceed 42 inches in height except for fences immediately around the main dwelling house or barn/stable, and fences surounding gardens and fruit trees. All wire fencing in heavily timbered areas should be topped with a pole or rail for better identification by wildlife.

Seasonal use restrictions should be developed and applied to the areas identified as critical winter range.

Vegetation and dead standing trees (snags) should not be removed from the riparian area. This will encourage cavity nesting birds, perching and nesting raptors and mammals to inhabit these micro-habitats. Larger mammals also benefit from the

hiding cover and food which vegetation provides.

Every effort should be made to preserve identified wildlife corridors within the developed areas.

Domestic animals and pets should be properly restricted away from wildlife to avoid potential confrontations and habitat displacement.

Residential "attractants" such as gardens and compost piles should be fenced appropriately. Barbecue grills should be cleaned regularly and stored inside. Pet food should be stored and served indoors when possible. If food for pets or stock (horses, goats etc.) is stored outdoors, it should be stored in a wildlife-resilient container.

Whenever possible, native species should be planted and used in landscaping developments.

An aggressive attempt to control the spread of noxious weeds in the study area should be initiated.

8 & 9. **Improve Traffic Flow and Minimize Effects/Include Pedestrian and Bicycle Trails**: As more homes are built in the study area a corresponding increase in traffic will follow.

With the exception of Point Six Road, which is a County Road, roads within the Dodd Ranch are privately maintained by the homeowners association. Although no trails have been constructed as part of the development of the ranch, the 60 foot right-of-way easements are of sufficient width to permit the future installation of trails adjacent to the roadways should they become necessary or desirable. This development includes 32 tracts of 20+ acres in size, and typically the need for a structured trail system in a large tract development is much less than in higher density developments.

Recommendations:

The number of new and existing approaches onto the existing County roads should be consolidated in an effort to increase traffic safety.

When population increases and studies of road usage indicates the need, improvements to the roads such as widening and paving should occur in the best

interest of overall safety for the residents.

As improvements to the existing roads are made, accommodations for adjacent pedestrian and bicycle routes should be incorporated into the development. These improvements would be beneficial for children en route to DeSmet School. They encourage others to commute safely to work; reduce motorized transportation trips; and complement a developing network of non-motorized routes in the Missoula Valley.

Any planning and design work for an alternate Butler Creek Road access onto Highway 10 which avoids the railroad crossing should be phased so that improvements will be in place and operational at the time of the closing of the grade crossing. Residents should be made aware of the potential improvements on Butler Creek Road. Required rights-of-way should be acquired.

10. **Compatible New Development**: Due to the relatively undeveloped nature of the study area, opportunities to develop compatible transitions (limited development built in conjunction with the natural landscape) in land use exist. The close proximity to the urban area and present growth patterns and needs for housing in the Missoula Valley, indicate that it is in the best interest of Missoula County to encourage appropriate development, as defined in the recommendations of this plan, for the study area.

Many of the owners of large agricultural parcels of land in the study area are finding it more and more difficult to maintain and operate their ranches. As development occurs, less land is available for leasing and pasturing resulting in a reduction of accessible open lands which are needed to run a profitable operation. Bearing this in mind, many of these same owners have investigated their options regarding the future of their lands, including potential development.

The Dodd Ranch, by following the recommendations of this Plan, is an example of a development compatible with the area. This is a large tract (20+ acre tracts) development, created as a subdivision by Certificate of Survey. Construction within the area should be restricted by the designation of slopes in excess of 25% and the riparian area along Butler Creek as "no build zones". Site specific soils testing and drilling of several wells within the ranch provide data that suggests that this area is capable of supporting development at densities of 1 dwelling unit per twenty plus acres. However, it should be recognized there is no guarantee that each los will have sufficient water available.

Recommendations:

Development should occur in a sensitive manner taking into account natural characteristics of the land such as soils, slope, geology, water resources and wildlife habitat.

Applications for building permits on the Dodd Ranch should be reviewed by the Missoula County Office of Planning and Grants to assure compliance with the map attached as Figure 13.

Affordable housing, as defined by the Missoula Housing Task Force, should be incorporated into any large scale development proposals for the study area.

Great care should be given to siting and building homes that compliment the "rural character" of the study area giving special attention to the natural characteristics of the land such as slope, aspect, soils, wildlife habitat, geology as well as other attributes.

Proper densities for development shall be determined by the overall carrying capacity of the sites proposed. Maximum densities shall not exceed present City/County Health Department regulations and limitations on septic system location and density.

Development of community systems for sewer and water systems is encouraged.

Developing systems that will re-use grey water from community sewer systems and redistribute it for use as irrigation water (land application) should be encouraged. Given the variable nature of characteristics such as soils, geology, slope and wildlife habitat, proposed densities must be investigated for appropriateness.

Clustering of homes in patterns that are complementary to the natural landscape of the site should occur whenever possible. This will assist in maintaining the scenic open landscape of the study area.

The number of allowable "clustered" building sites should comply with the overall density recommendations for the parcel.

Areas presently recommended for densities of one (1) house per 5 - 10 acres in the 1990 Urban Comprehensive Plan Update should remain in effect. A site specific soils analysis must be completed and analyzed for proposals in the designated higher

density areas to determine the appropriate density due the extreme variability of the soils in this area. Determinations based on the soils analysis should act as the development density guide for this area.

Areas not outlined for densities of one (1) house per 5 - 10 acres are to be considered open and resource lands with a recommended density of one (1) dwelling unit per 40 acres. This designation restates the current recommended density for these lands, as outlined in the 1990 Urban Comprehensive Plan Update.

Increased densities may be appropriate when clustering homesites and leaving buffer areas and open space reserves to complement the proposal. Clustering homes and community systems can potentially defer the limitations based on soils and septic system density requirements.

Based on preliminary nitrate level studies and modeling done by the City/County Health Department in conjunction with the Missoula County Carrying Capacity and Cumulative Effects study, a majority of the study area can not sustain densities greater than one (1) unit per five (5) acres to one (1) unit per ten (10) acres. This is taking into account conventional development with individual septic systems for each site.

The extension of municipal sewer lines and development of community water systems in the study area will increase the carrying capacity of the land. The subsequent density of these serviced areas would increase accordingly and meet accepted best use development standards. It would be quite possible to accommodate three (3) single family units per one (1) acre with infrastructure. Densities could increase beyond three (3) per one (1) acre if multi-family housing is planned. Other carrying capacity criteria should be assessed to determine all impacts of developments.

Planned unit developments (PUD's) should be investigated as a means to develop areas with great consideration given to natural resource values and other issues of concern outlined in this document.

Missoula County should acquire a parcel at least 10 acres in size in the lower portion of the study area to be held in reserve to serve future public needs for the study area such as active recreational lands, school grounds, or another rural fire station.

12. **Provide Opportunities for Voluntary Land Use Preservation**: Perpetual

agreements concerning specific unique parcels should be encouraged and promoted in order to insure that appropriate lands within the study area remain agricultural and serve as open space or wildlife habitat.

Designating slopes in excess of 25% and the riparian area along Butler Creek within the boundaries of the Dodd Ranch as "no build" zones leaves approximately 75% of the ranch as open space and wildlife habitat.

On the Dodd Ranch, the fencing of the boundary lines of all boundary lines should be discouraged. Additionally, domestic animals (dogs) should be restrained by each respective property owner.

Recommendations:

Conservation easements, agricultural covenants and other designations that would protect scenic and unique lands perpetually should be investigated. The opportunity exists to incorporate these preservation tools into future development proposals for large undeveloped tracts which help maintain the rural character of the study area.

The Rural Planning Office shall continue to contact and inform property owners where significant conservation resources (open space, ecological, historic, recreational, wildlife or agricultural resources) exist. Staff will assist willing owners with investigating the different voluntary land use techniques that may be used to preserve these resources.

The County shall cooperate with and support non-profit organizations, local, state and federal agencies that acquire land for conservation purposes and public access.

13. **Preserve and Enhance Health, Safety and Welfare**: Emergency contingency plans should be reviewed to determine the accumulating impacts development has on the study area.

As part of the development of the Dodd Ranch a road was constructed connecting the Butler Creek and Grant Creek drainages. This road will be maintained and controlled by the homeowners association, and provides a much needed emergency link between these two drainages.

The private roads within the Dodd Ranch have been constructed to meet Fire Codes,

and the ranch has been annexed into the Missoula Rural Fire District. Also, homeowners should create and maintain a defensible space for fire protection purposes around their homes, and to exercise good fire prevention practices in the removal and platting of vegetation in the vicinity of structures.

In addition, prior to the issuance of building permits, each proposed homesite should be inspected by the Missoula Rural Fire Department to assure that the site and the access to the site meet fire codes.

Recommendations:

Fire contingency plans should be updated at a reasonable interval, depending on the rate of land use change in the study area.

Hazardous material contingency plans and response scenarios should be updated as deemed necessary for the Yellowstone Pipeline, which carries petroleum products (hydrocarbons) and bisects the study area.

Review of development proposals by emergency response agencies should occur to determine impacts on availability of services.

V. IMPLEMENTATION

Due to the very fact that land uses are subject to changes depending upon the needs of owners, and that plans become outdated, a continual review for applicability should correspond with this document. In order to insure that this plan reflects the desires of the public, and to insure the health, safety, and welfare of the public are protected, the County government should follow the following review schedule.

January 1994 - Missoula County Board of County Commissioners Adopt Butler Creek Area Comprehensive Plan Amendment

County agencies should continue to collect relevant natural resource data and monitor land use changes and development throughout the study area.

The Rural Planning Office will continue to contact property owners in area with significant conservation resource values and inform and assist in the use of voluntary land use preservation techniques.

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The Joint Review Committee (the formal cooperative committee consisting of representatives of Missoula County, US Forest Service-Lolo National Forest and Region 2 Department of Fish, Wildlife & Parks) should continue to address issues of mutual concern to insure cooperation, implementation as well as potential cost savings between agencies.

Missoula County should review and amend this document as needed, with a formal review and update occurring no later than the year 1999 (5 years).

APPENDIX

Butler Creek Land Use Planning Issues

The Rural Planning Office staff held two open public meetings to discuss the development of the comprehensive plan for the Butler Creek Area. The following list of issues, in no specific order, was developed and compiled by the public at two meetings at the DeSmet School.

These items were further explored and grouped when appropriate, to be included and addressed in the Butler Creek Area Comprehensive Plan.

Issues from April 29, 1993 and August 12, 1993 Meetings

1. Water
    a. Quantity (Groundwater)
    b. Quality (Groundwater)
    c. Creek Quality (Surface Water)

2. Traffic
    a. Dust
    b. Noise
    c. Road Condition

3. Wildlife

4. Sewage/Septic

5. Housing Density
    a. Clustering vs. Large Lot

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5. Housing Density
    a. Clustering vs. Large Lot

6. Open Space

7. Land Uses

8. School
    a. Tax Increment District

9. Riparian Zones

10. Rural Character

11. Citizen Control
    a. Future Plans for Drainage

12. Air Quality

13. Light Pollution (@ night)

14. Electronic Pollution
    a. Radar (Airport)
    b. Electronic Transmitters (Airport)

15. USFS Plans for adjacent properties

16. Airport (Plane flightpaths)

17. Interchange

18. Yellowstone Pipeline

19. Logging (Private & USFS)

20. Grant Creek Access

21. Fire Protection

22. Snowbowl Impact

23. Enforcement Plan (TEETH)

24. Housing in Tax Increment District (County Prop.)

25. Enforcement through Homeowners Association Covenants

26. Airport Comprehensive Plan

27. Interchange (Expressway)

28. Zoning

29. Financial Pressure on Large Owners vs. Subsidizing Large owners (Ag)

30. Cost of Supporting Infrastructure to Rural Area

BUTLER CREEK SOIL TYPES

(31 Types)

Source: USDA Soil Conservation Service - Missoula

1) **Aquic Haploxerolls**: 0-2% slope (SCS ID # 4)

This soil consists of deep poorly drained soils adjacent to streams and rivers in the valley bottoms. Some areas are subject to occasional flooding. Seasonal high water table is at a depth of 20-40 inches. The soil is extremely variable and therefore on-site investigation is required to determine land suitability and best management practices.

2-5) **Argiborolls - Haploborolls Complex**: 0-4% slope (SCS ID # 7)

Argiborolls - Haploborolls Complex: 4-15% slope (SCS ID # 8)

Argiborolls - Haploborolls Complex: 15-30% slope (SCS ID # 9)

Argiborolls - Haploborolls Complex: 30-60% slope (SCS ID # 10)

The texture of this complex is extremely variable with mixed sands and clays which make on-site investigation a must to determine the suitability of the specific site.

Argiborolls are deep and well drained. They are composed of gravelly loam, very gravelly loam, silt loam with the substratum comprised of gravelly clay loam to clay. Permeability is slow to moderate, runoff and erosion hazards are moderate.

Haploborolls are deep and well drained to excessively drained. Texture is extremely variable. Permeability is moderate to very rapid, runoff and erosion hazard are moderate.

Slope determines the suitability of the site for development or other management opportunities. The greater the slope the greater the possibility of erosion and incapabilities for development.

6) **Beeskove Gravelly Loam**: 30-60% slope (SCS ID # 14)

Deep well drained soils on mountain slopes. Due to excessive slope the sanitary capacity of the soils are extremely limited and listed as severe. The ability for homesite development is also extremely limited by the severe slope.

7-10) **Bigarm Gravelly Loam**: 0-4% slope (SCS ID # 16)

Bigarm Gravelly Loam: 4-15% slope (SCS ID # 17)

Bigarm Gravelly Loam: 15-30% slope (SCS ID # 18)

Bigarm Gravelly Loam: 30-60% slope (SCS ID # 19)

These soils are somewhat excessively drained. The capabilities of the soils are determined primarily by the slope of the site. The depth to the high water able is greater than 6 feet and the depth to bedrock is greater than 5 feet. The capability of the soils for both septic systems and development is limited by slope: 0-8% slope has few limitations, 8-15% slope has more moderate capabilities and slopes greater than 15% have severe limitations, but opportunities exist with proper engineering methods.

11) **Biglake Gravelly Sandy Loam**: 15-30% slope (SCS ID # 22)

This soil has deep excessively drained characteristics and is primarily found on escarpments and foothills. The soil has limitations for homesite development due to its severe slope, rapid permeability and soil instability. It is susceptible to eroding and due to the excessive drainage ability septic fields may contaminate surface and ground water sources. Cut banks for development or road construction are subject to slumping.

12) **Bignell Gravelly Loam**: 8-30% slope (SCS ID # 23)

This soil is deep and well drained, with some droughty characteristics. The depth to the high water table is greater than 6 feet and the depth to bedrock is greater than 5 feet. This soil has some sanitary limitations due to slow percolation rates and severe slope. Development of homesites is also limited by severe slope.

13) **Bignell-Winkler, Cool Complex** 30-60% slope (SCS ID # 24)

This soil is deep and well drained but due to its severe slope has limitations for homesite development and septic systems. The depth to the high water table is greater than 6 feet.

14-16) **Grassvalley Silty Clay Loam**: 0-4% slope (SCS ID # 45)

Grassvalley Silty Clay Loam: 4-8% slope (SCS ID # 46)

Grassvalley Silty Clay Loam: 8-15% slope (SCS ID # 47)

This soil is deep and well drained with a depth to the high water table greater than 6 feet and a depth to bedrock greater than 5 feet. The soil characteristically percolates slowly and therefore as slope increases the limitations increase. The homesite development also has limitations dependent on slope.

17-20) **Hollaway Gravelly Silt Loam**: 8-30% slope (SCS ID # 56)

Hollaway Gravelly Silt Loam: 30-60% slope (SCS ID # 57)

Hollaway Gravelly Silt Loam Cool: 8-30% slope (SCS ID # 58)

Hollaway Gravelly Silt Loam Cool: 30-60% slope (SCS ID # 59)

This soil is deep and excessively drained, with droughty characteristics. The depth to the high water table is greater than 6 feet and the depth to bedrock is greater than 5 feet. The sanitary and homesite limitations are dependent on the slope and its severity.

21) **Hollaway-Rock Outcrop Complex**: 50-80% slope (SCS ID # 60)

The soil has many limitations due primarily to its extreme slope and general characteristics. The soil does not drain very well due to the exposed rock outcroppings.

22) **Phillcher Silt Loam**: 4-30% slope (SCS ID # 86)

This soil is deep and somewhat excessively drained with a depth to high water table greater than 6 feet and a depth to bedrock greater than 5 feet. The sanitary limitations of the soil is dependent on the severity of the slope. (Slight limitations exist for slopes 4-8%, and moderate limitations exist for 8-15% slopes, severe limitations exist for slopes greater than 15%) Building homesite limitations exist dependent on the slopes for the proposed area. The greater the slope the greater the limitations. Permeability of the soil is moderately rapid, and hazard of water erosion is moderate.

23) **Phillcher-Rock Outcrop Complex**: 50-80% slope (SCS ID # 87)

This soil is excessively drained, due to the slope and impervious nature of the rock outcrop. Runoff is rapid and hazards from water erosion is high. Homesite development is severely limited due to the severe slope.

24-26) **Repp Very Gravelly Loam**: 30-60% slope (SCS ID # 89)

Repp Very Gravelly Loam Cool: 8-30% slope (SCS ID # 90)

Repp Very Gravelly Loam Cool: 30-60% slope (SCS ID # 91)

These are deep well drained soils found primarily on steep slopes. The depth to high water table is greater than 6 feet and the depth to bedrock is greater than 5 feet. The soil percolates slowly and therefore has limitations for sanitary uses all dependent on the slope. Homesite development has limitations dependent on the slope.

27) **Rock Outcrop-Rubble Land Complex** (SCS ID # 94)

This soil has severe limitations for homesite development due to the harsh characteristics of the soil. It has limitations due to poor permeability and potential for erosion.

28) **Tevis Gravelly Loam**: 30-60% slope (SCS ID # 102)

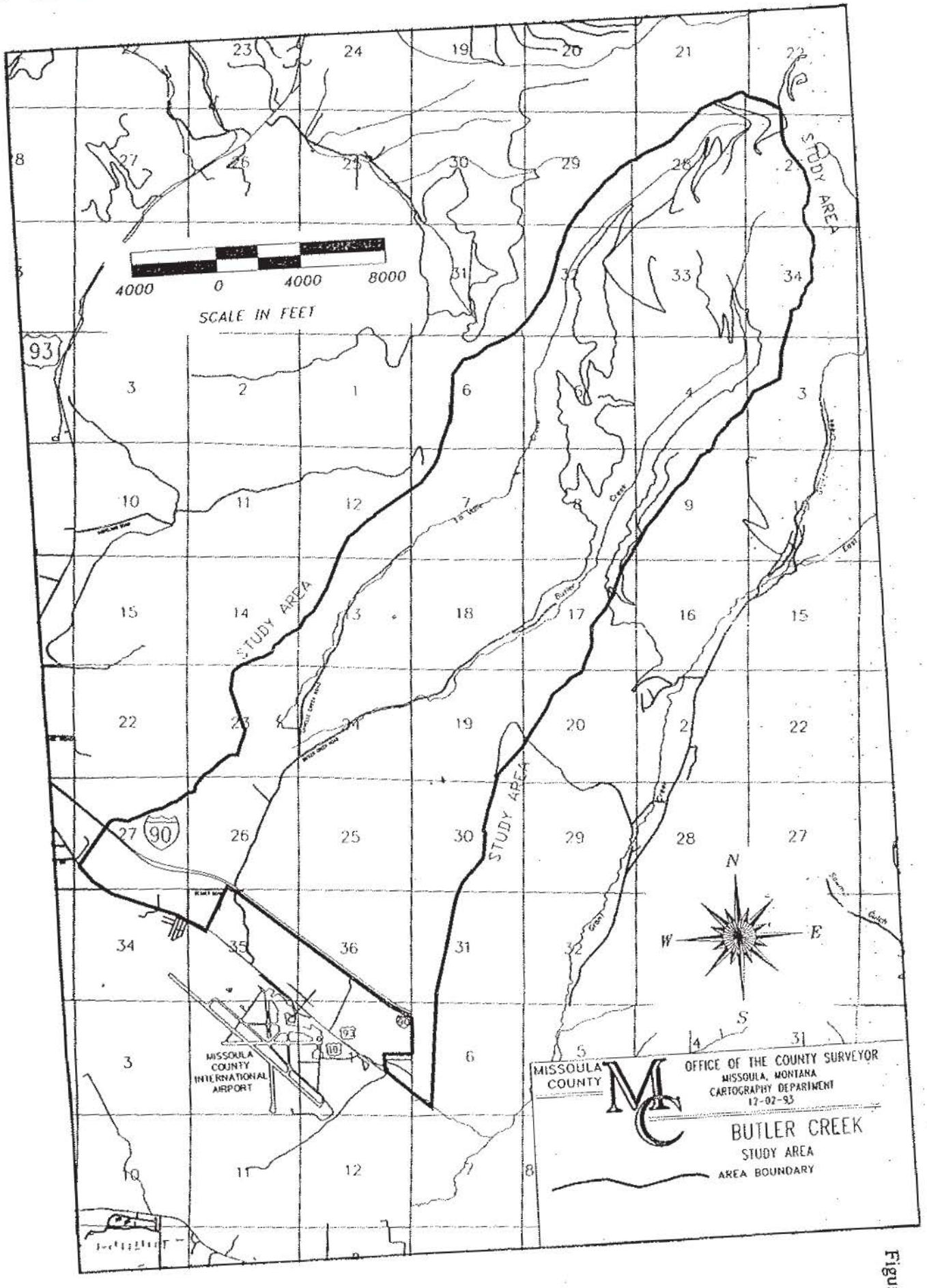
This is a deep excessively drained soil with a depth to the high water table greater than 6 feet and a depth to bedrock greater than 5 feet. Sanitary and homesite development limitations are dependent on slope of the site.

29-31) **Winkler Very Gravelly Sandy Loam**: 30-60% slope (SCS ID # 131)

Winkler Gravelly Loam, Cool: 8-30% slope (SCS ID # 132)

Winkler Gravelly Loam, Cool: 30-60 % slope (SCS ID # 133)

These soils are deep and excessively drained with a depth to the high water table greater than 6 feet and depth to bedrock greater than 5 feet. Sanitary and homesite development are limited by slope.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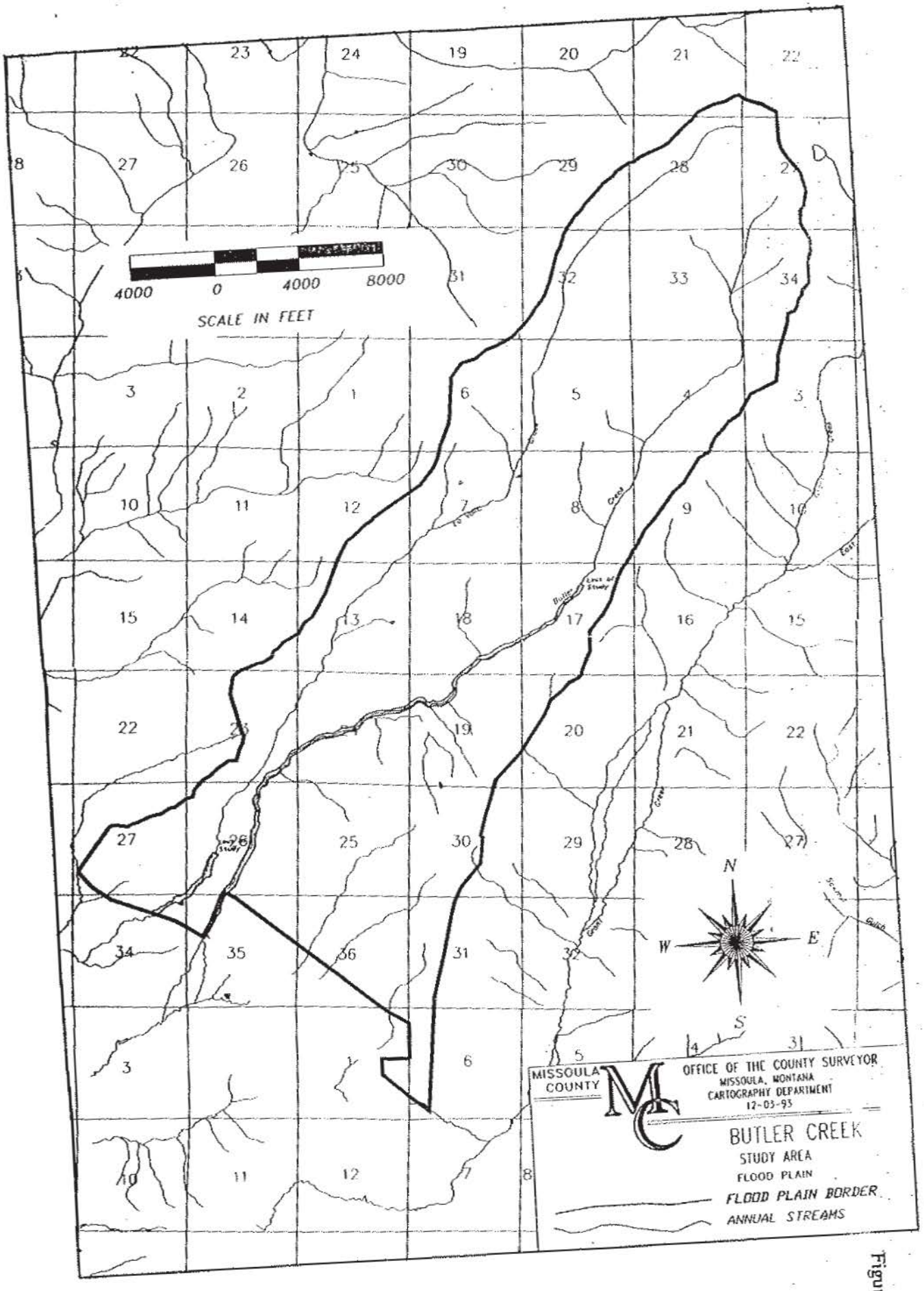
OFFICE OF THE COUNTY SURVEYOR
MISSOULA, MONTANA
CARTOGRAPHY DEPARTMENT
12-02-93
BUTLER CREEK
STUDY AREA
AREA BOUNDARY

Figure 1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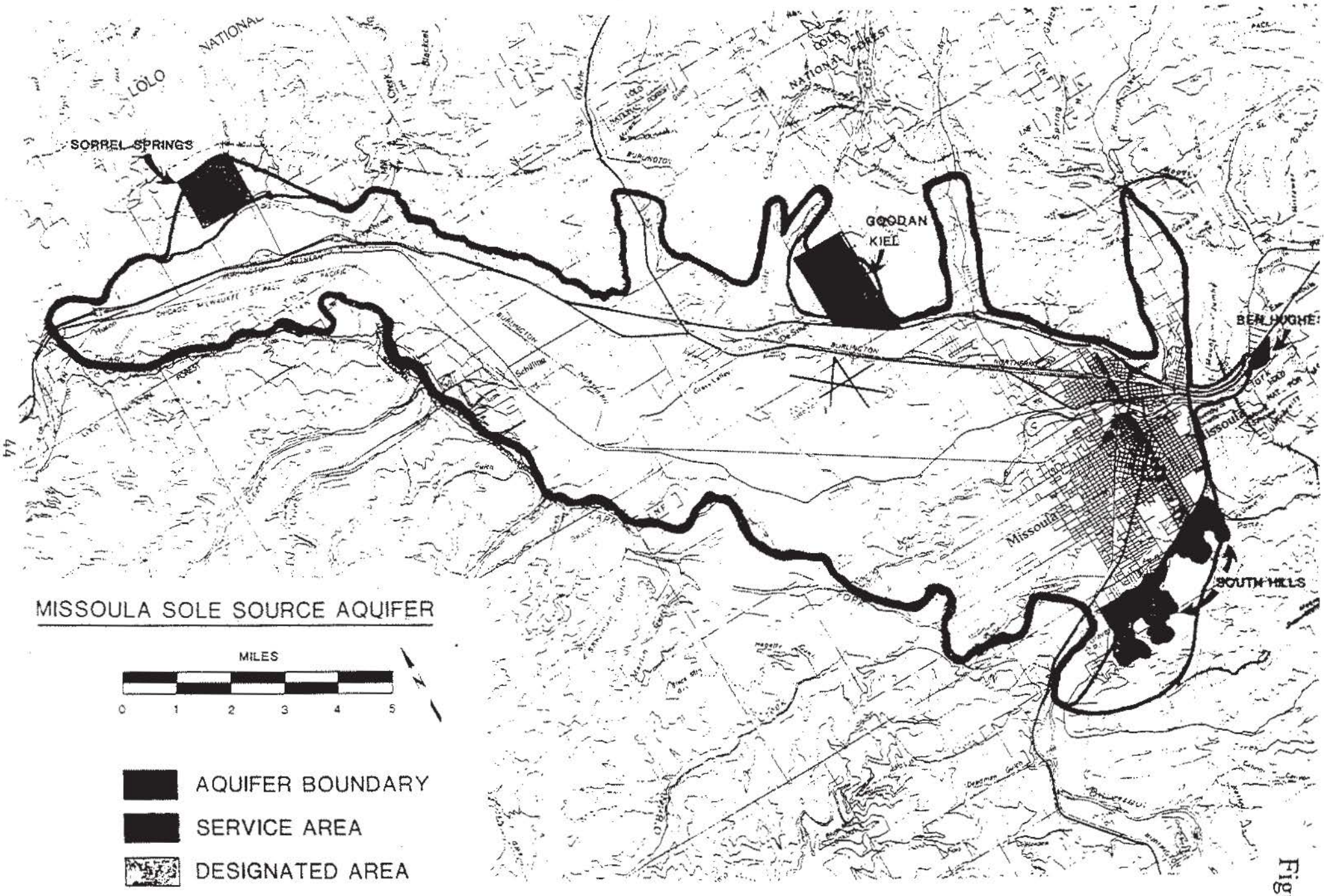
BUTLER CREEK
STUDY AREA
FLOOD PLAIN
FLOOD PLAIN BORDER
ANNUAL STREAMS

Figure 2


SORREL SPRINGS
GOODAN
KIEL
BEN HUGHES
SOUTH HILLS
Missoula
MISSOULA SOLE SOURCE AQUIFER
MILES
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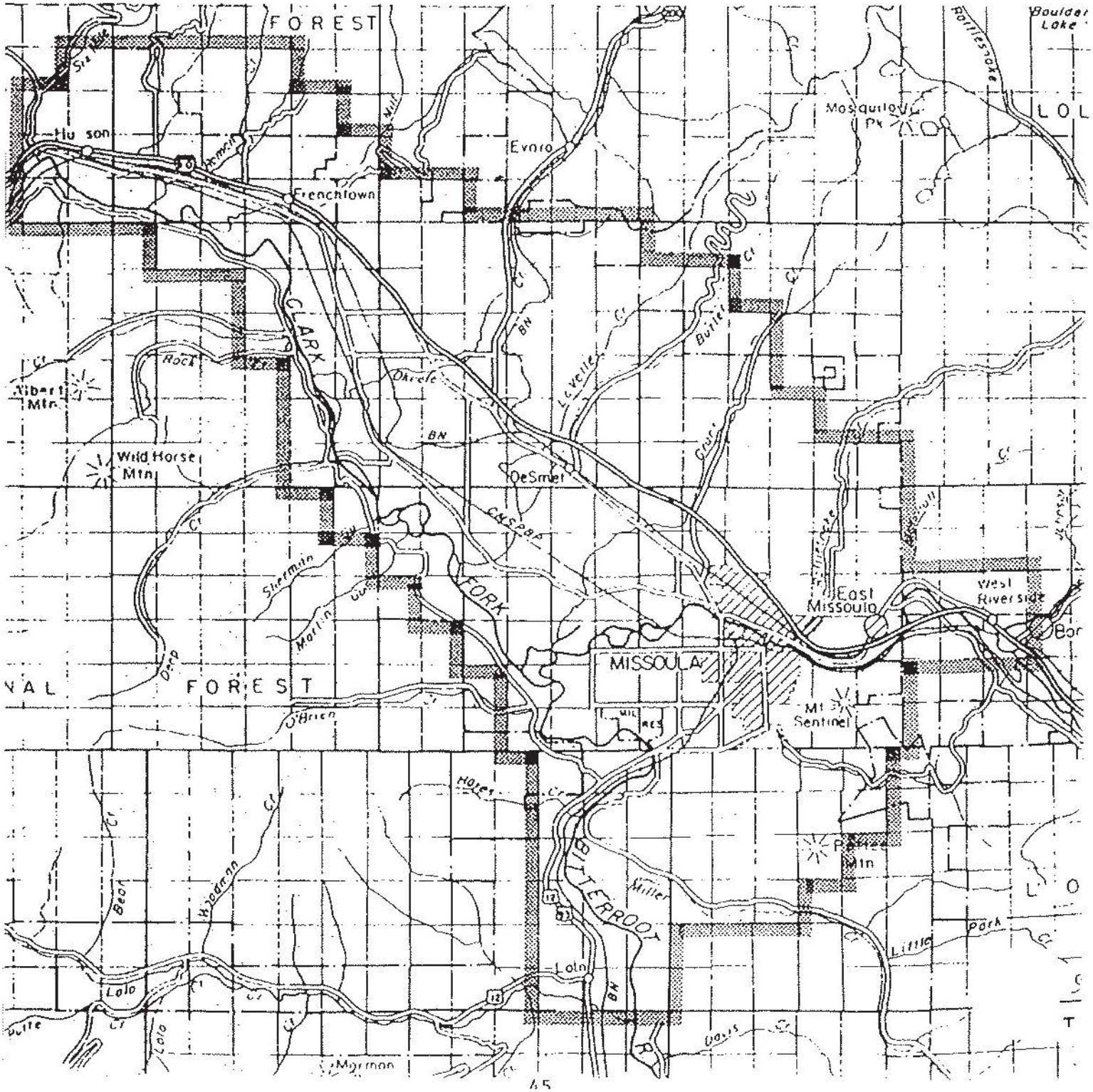
AQUIFER BOUNDARY
SERVICE AREA
DESIGNATED AREA

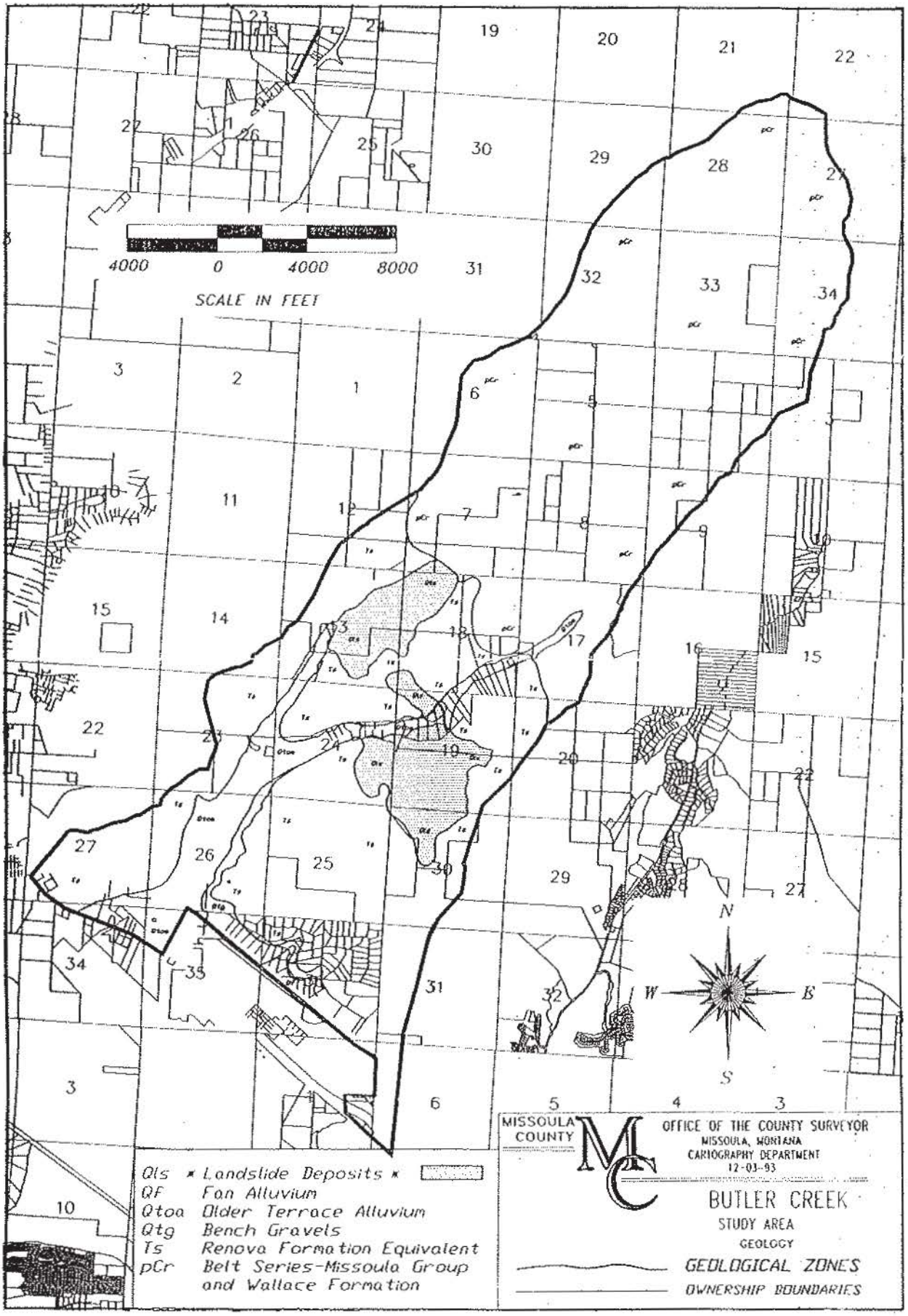
Figure 3

Figure 4

MISSOULA WATER QUALITY DISTRICT

DISTRICT BOUNDARY

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Qls * Landslide Deposits *
QF Fan Alluvium
Qtoa Older Terrace Alluvium
Qtg Bench Gravels
Ts Renova Formation Equivalent
pCr Belt Series-Missoula Group and Wallace Formation
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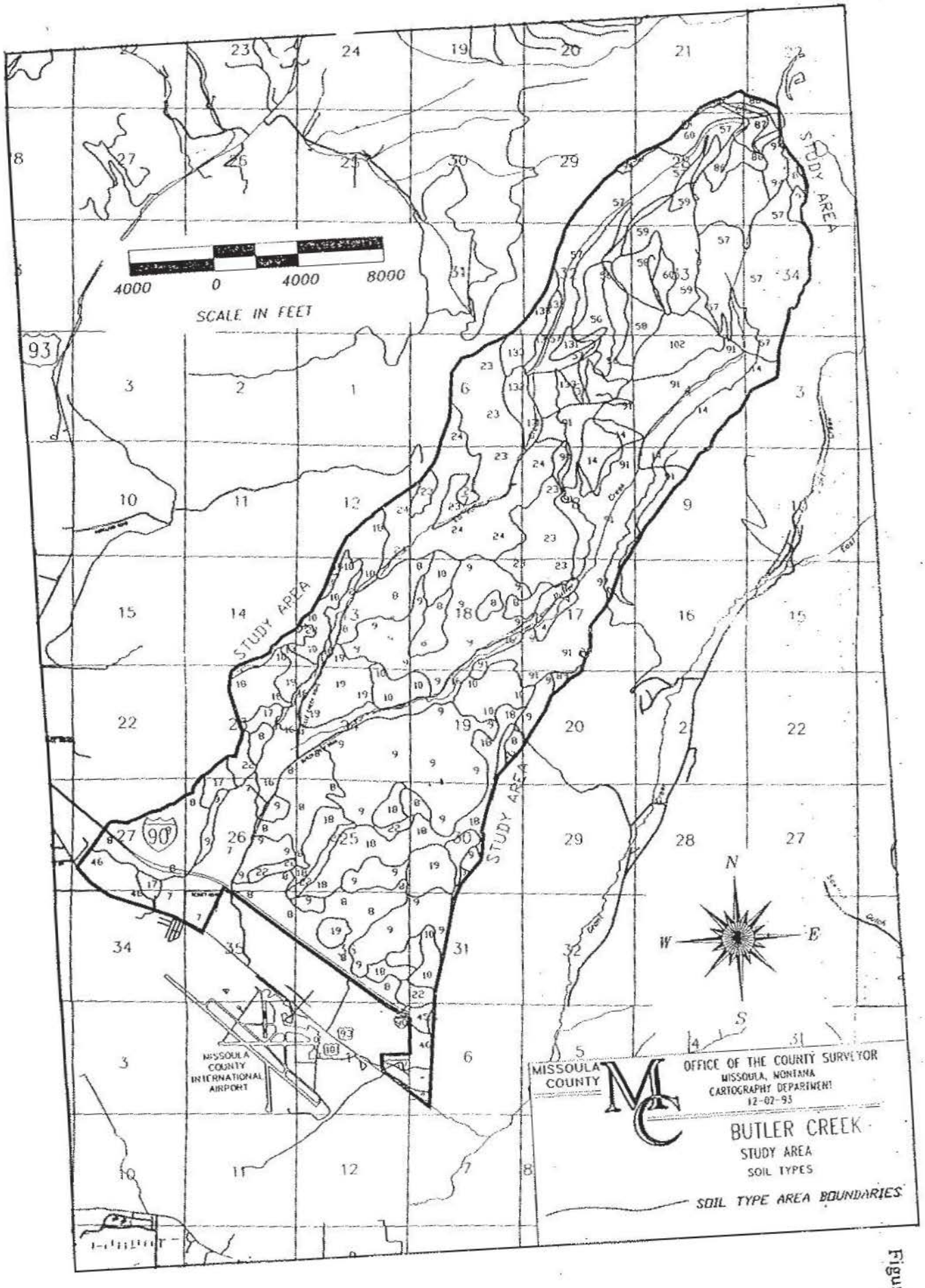
CARTOGRAPHY DEPARTMENT
12-03-93
BUTLER CREEK
STUDY AREA
GEOLOGY
GEOLOGICAL ZONES
OWNERSHIP BOUNDARIES

Figure 5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CARTOGRAPHY DEPARTMENT
12-02-93
BUTLER CREEK
STUDY AREA
SOIL TYPES
SOIL TYPE AREA BOUNDARIES

Figure 6

Table 1

Soil Types for Butler Creek Study Area

ID #	Soil Type Name
4	Aquic Haploxerolls 0-2% Slope
7	Argiborolls-Haploborolls 0-4 % Slope
8	Argiborolls-Haploborolls 4-15 % Slope
9	Argiborolls-Haploborolls 15-30% Slope
10	Argiborolls-Haploborolls 30-60% Slope
14	Beeskove Gravelly Loam 30-60% Slope
16	Bigarm Gravelly Loam 0-4% Slope
17	Bigarm Gravelly Loam 4-15% Slope
18	Bigarm Gravelly Loam 15-30% Slope
19	Bigarm Gravelly Loam 30-60% Slope
22	Biglake Gravelly Sandy Loam 15-30% Slope
23	Bignell Gravelly Loam 8-30% Slope
24	Bignell-Winkler, Cool Complex 30-60% Slope
45	Grassvalley Silty Clay Loam 0-4% Slope
46	Grassvalley Silty Clay Loam 4-8% Slope
47	Grassvalley Silty Clay Loam 8-15% Slope
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60	Hollaway-Rock Outcrop Complex 50-80% Slope
86	Phillcher Silt Loam 4-30% Slope
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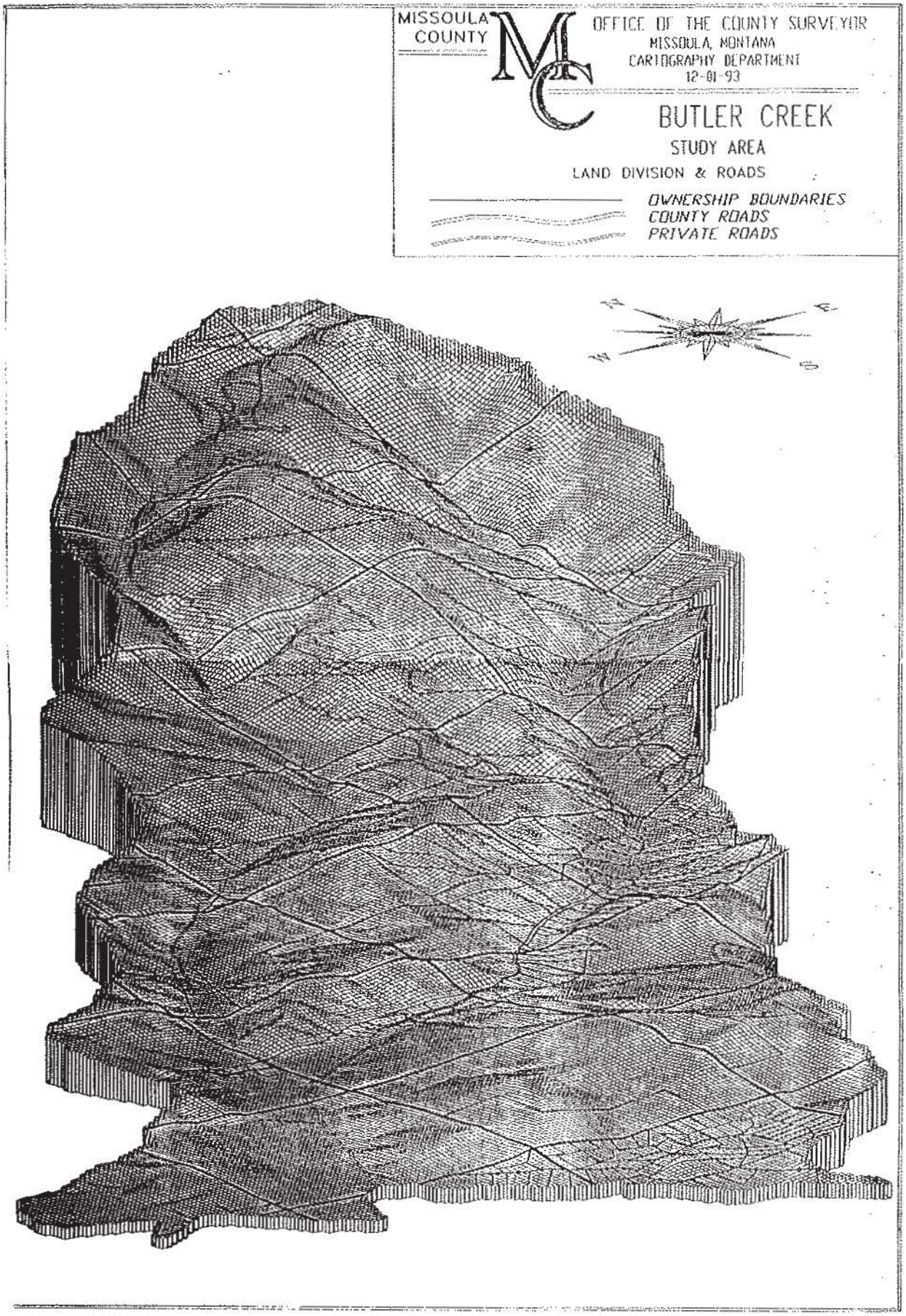
133	Winkler Gravelly Loam, Cool 30-60% Slope

Source: USDA Soil Conservation Service, Missoula, MT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CARTOGRAPHY DEPARTMENT
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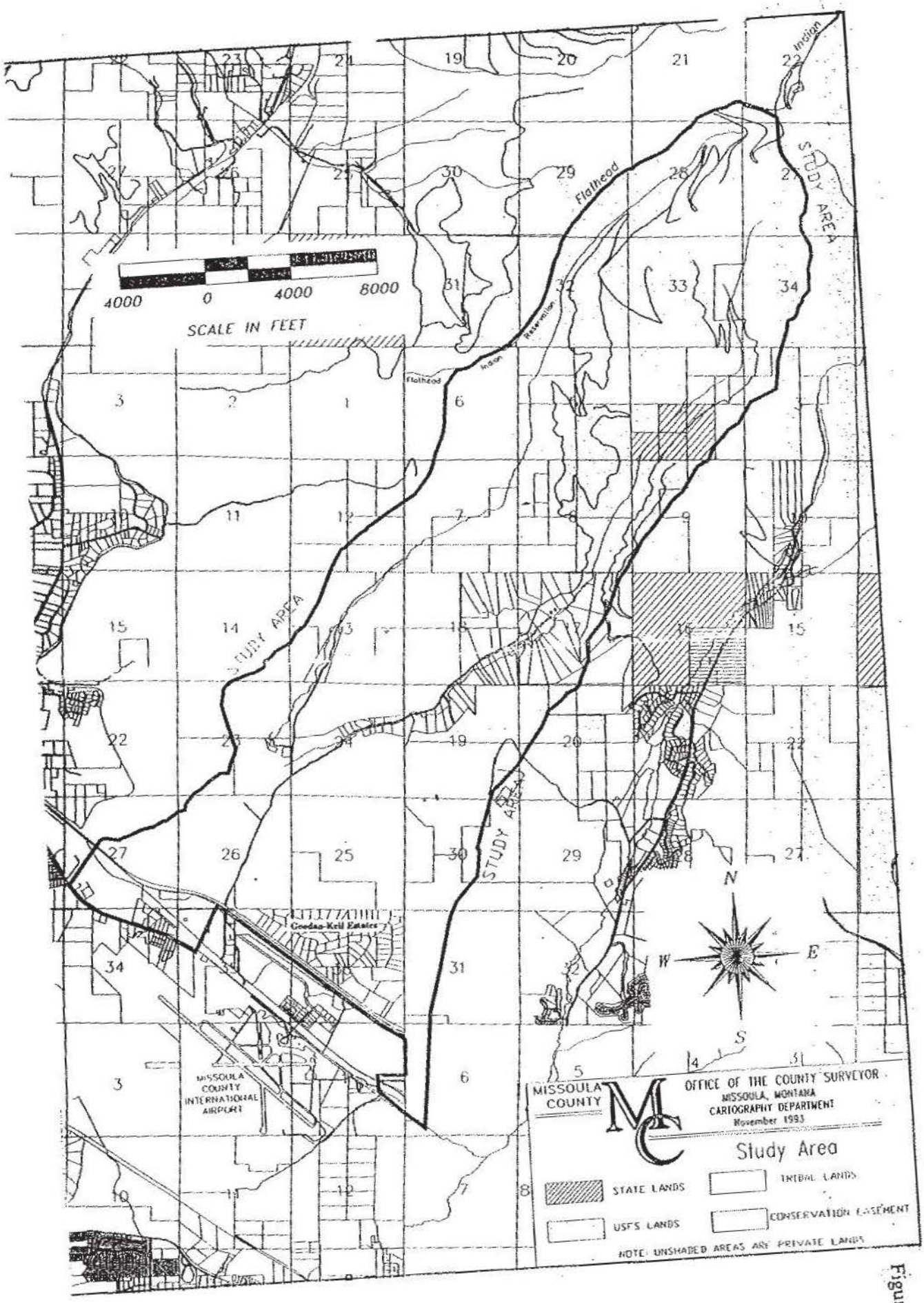
BUTLER CREEK
STUDY AREA
LAND DIVISION & ROADS
OWNERSHIP BOUNDARIES
COUNTY ROADS
PRIVATE ROADS

Figure 7

Table 3

Butler Creek Study Area Slope Statistics

Range	# of Acres	Percent of Area
0 - 4 %	735	6
5 - 8 %	412	3
9 - 15 %	1554	13
16 - 25 %	3082	26
> 25 %	5945	52
Total	11728	100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Flathead Indian Reservation
Goodan-Kril Estates
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OFFICE OF THE COUNTY SURVEYOR
MISSOULA, MONTANA
CARTOGRAPHY DEPARTMENT
November 1993
Study Area
STATE LANDS
TRIBAL LANDS
USFS LANDS
CONSERVATION EASEMENT
NOTE: UNSHADED AREAS ARE PRIVATE LANDS

Figure 8

Table 4

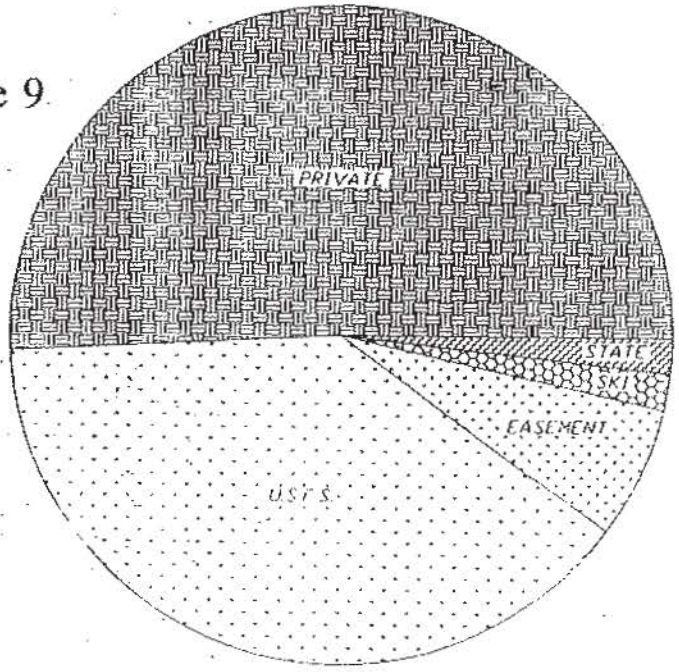
Ownership Acreage Within Study Area

Owner	Acreage	% of Total Acreage
Private	5,708	51%
USFS	4,393	39%
State Land	192	2%
Ski Area	198	2%
Easement	730	6%
Total	11,221	100%

note: includes only study area north of Interstate 90

Private acreage excludes those tracts located in the NE 1/4 of section 35 & all of section 36 North of I-90

Figure 9



NOTES

Acreage includes only that area that is within the study boundary and north of Interstate 90.

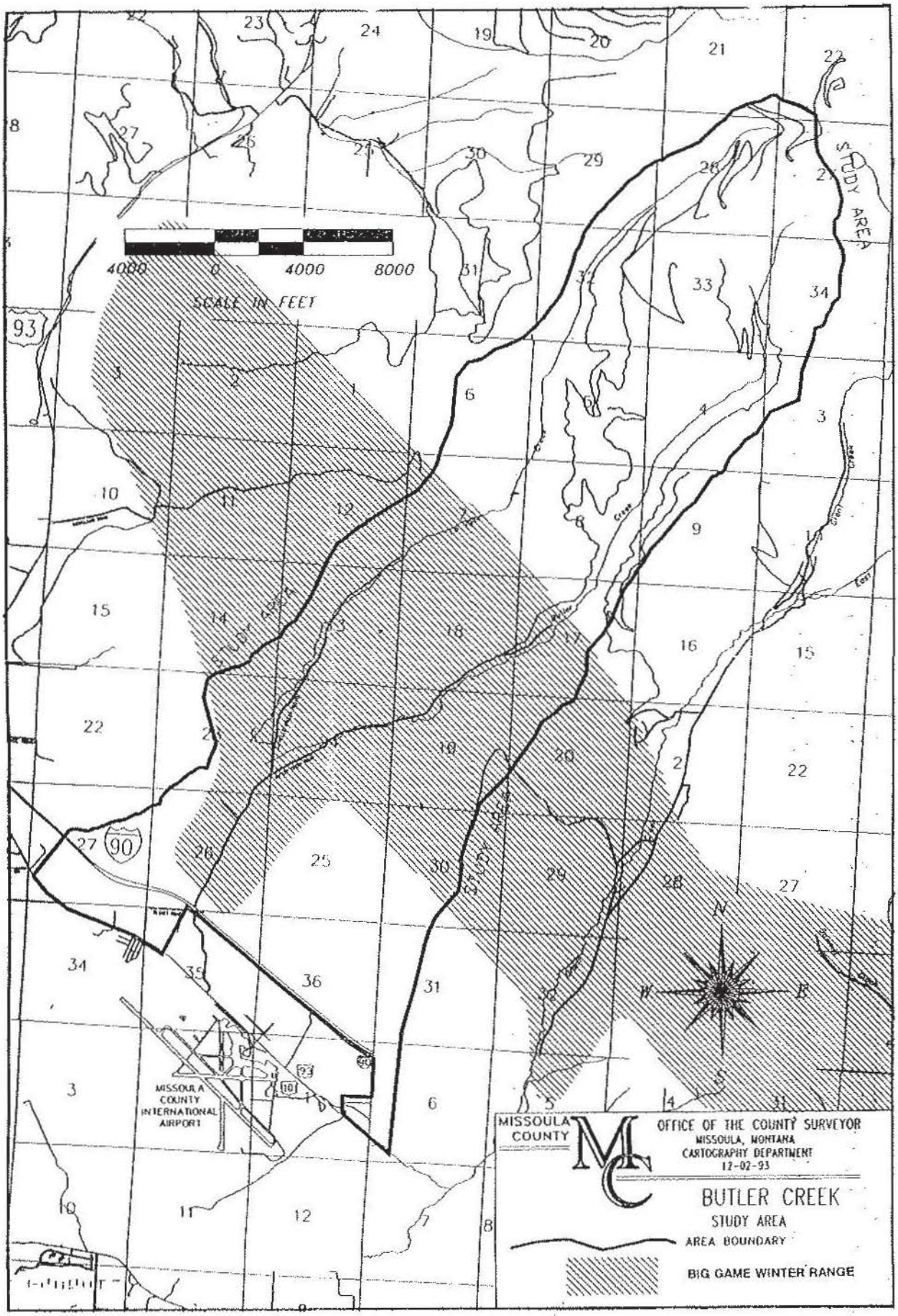
Private acreage excludes those tracts located in the N.E. 1/4 of section 35 and all those in section 36 north of the Interstate.

Table 5

Percent of Land Developable (based on slope of 25% or less)

	Ownership				
	Private	USFS	State Land	Ski Area	Easement
Total Acreage	5,708	4,393	192	198	730
Acreage Developable	3,947	640	7.5	17	584
Acreage Undevelopable	1,761	3,753	184.5	181	146
% Developable	69%	15%	4%	8%	80%
% Undevelopable	31%	85%	96%	92%	20%

note: The Easement lands are prohibited from development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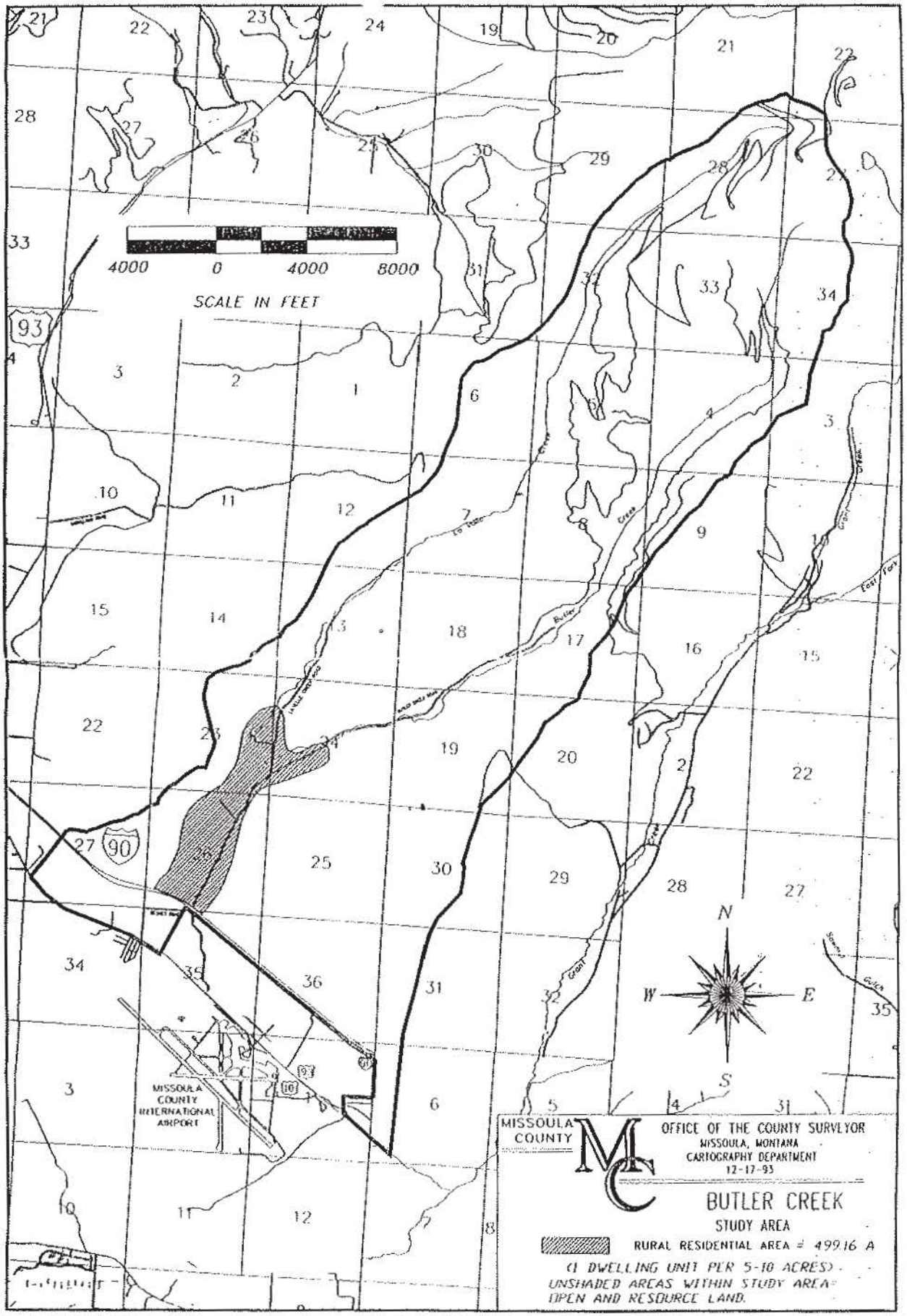
MISSOULA, MONTANA
CARTOGRAPHY DEPARTMENT
12-02-93
BUTLER CREEK
STUDY AREA
AREA BOUNDARY
BIG GAME WINTER RANGE

Figure 10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MISSOULA COUNTY
OFFICE OF THE COUNTY SURVEYOR
MISSOULA, MONTANA
CARTOGRAPHY DEPARTMENT
12-17-93
BUTLER CREEK
STUDY AREA
RURAL RESIDENTIAL AREA = 4991.6 A
(1 DWELLING UNIT PER 5-10 ACRES)
UNSHADED AREAS WITHIN STUDY AREA=
OPEN AND RESOURCE LAND.

Figure 11

Figure 12

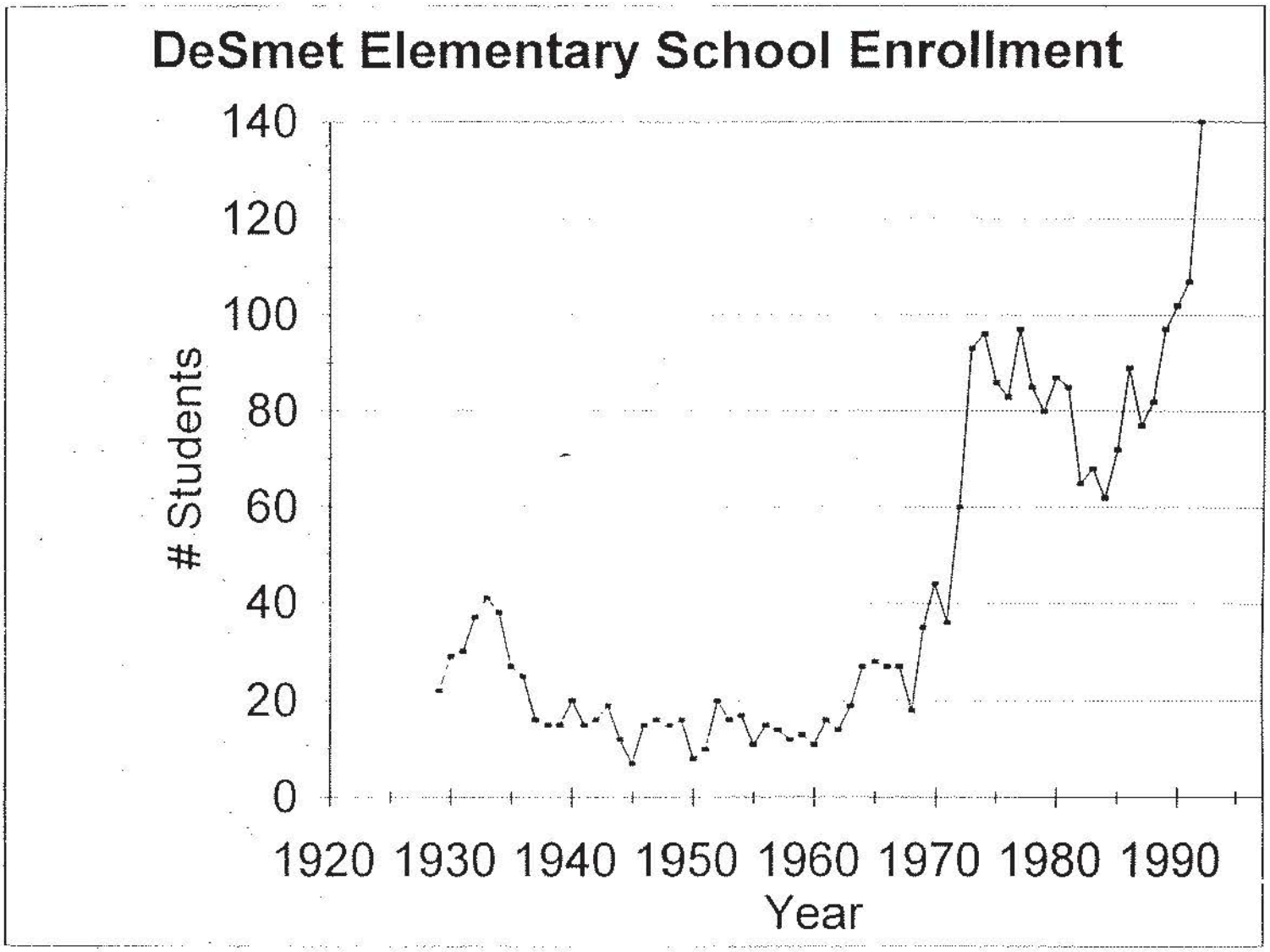


Table 2

Enrollment at DeSmet Elementary

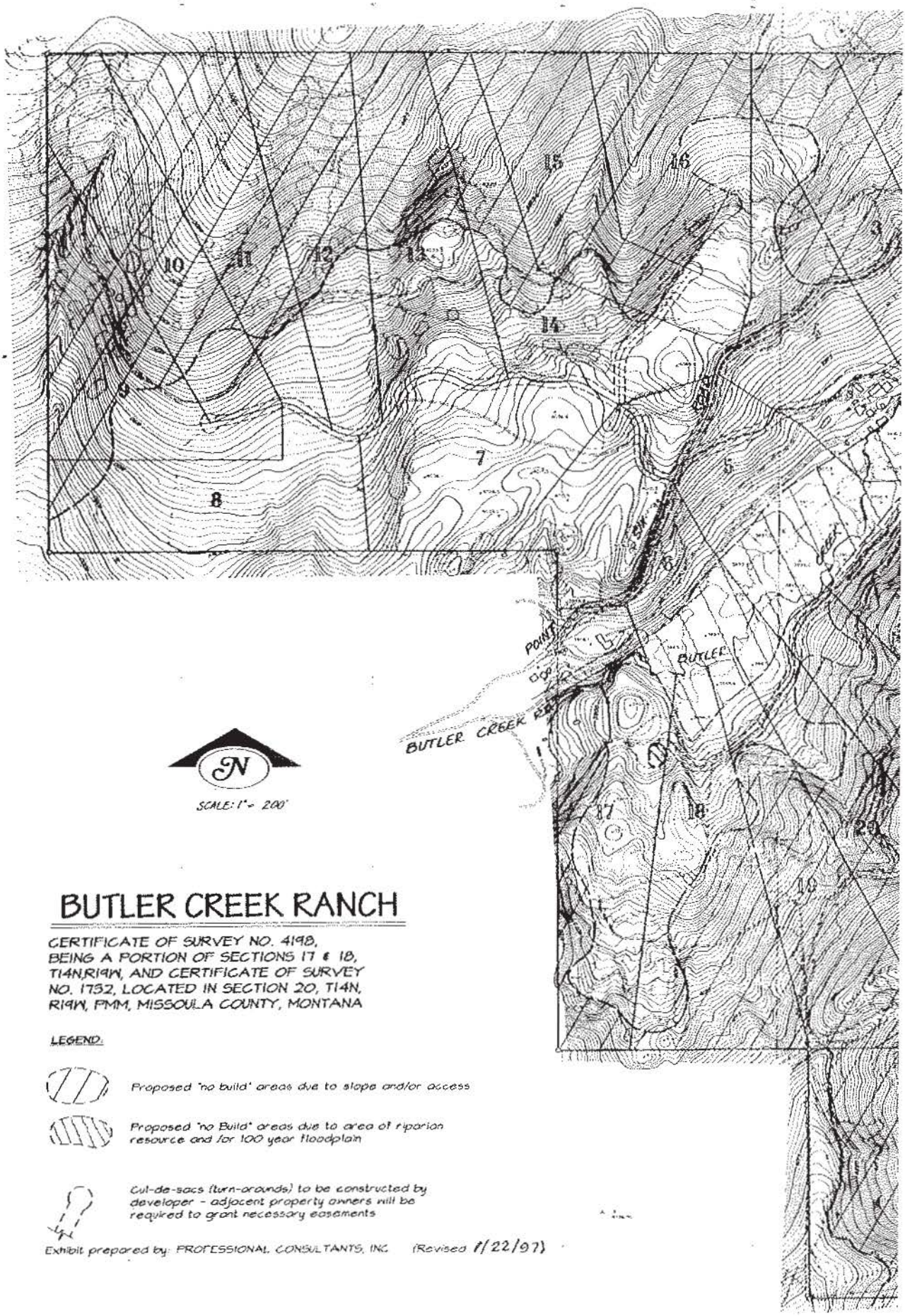
Year	Number of Students
1930	29
1940	20
1950	8
1960	11
1970	44
1980	87
1990	102

Table 6 Trips on Paved Portion of Butler Creek Road

DATE	AVERAGE DAILY TRAFFIC COUNTS
5/24/88	552
5/8/89	525
6/27/90	464
7/29/91	474
8/3/92	582

Table 7 Trips on Gravel Portion of Butler Creek Road N. of I-90

DATE	AVERAGE DAILY TRAFFIC COUNTS
5/8/89	275
6/27/90	292
7/29/91	238
8/10/92	271
6/14/93	310



SCALE: 1" = 200'

BUTLER CREEK RANCH

CERTIFICATE OF SURVEY NO. 4198,
BEING A PORTION OF SECTIONS 17 & 18,
T14N,R19W, AND CERTIFICATE OF SURVEY
NO. 1752, LOCATED IN SECTION 20, T14N,
R19W, PMM, MISSOULA COUNTY, MONTANA

LEGEND:

Proposed "no build" areas due to slope and/or access

Proposed "no Build" areas due to area of riparian resource and for 100 year floodplain

Cul-de-sacs (turn-arounds) to be constructed by developer - adjacent property owners will be required to grant necessary easements

Exhibit prepared by: PROFESSIONAL CONSULTANTS, INC (Revised 1/22/97)

Sources of Information

The development of the 1994 amendment was a compilation of existing data that could not have been accomplished without the efforts and expertise of many people. The following list of people and sources should be consulted when more information is requested.

Geology and Hydrogeology:	John F. Whittingham, Hydrogeology of the Butler Creek Drainage Basin, Montana, 1986. A paper presented in partial fulfillment of the requirements for the degree of Bachelor of Arts, University Montana.
	Howard Newman, Hydrologist.
	Candis Van der Poel, Geologist
Comprehensive Planning & Natural Resource Issues:	Missoula Urban Comprehensive Plan, 1990 Update
	Missoula County Inventory of Conservation Resources, 1992 Update
	The staff at the US Forest Service, Lolo National Forest
	The staff at Region 2, Montana Department of Fish, Wildlife & Parks
	Tim Hall and the staff at the Office of Planning and Grants

The development of this amended plan involved the input and expertise of several people, including the following:

Dodd Ranch:	Barry Dutton, Land & Water Consulting, who developed the plan for the management of riparian areas.
	Richard Ainsworth, Professional Consultants, Inc., who assisted in the designation of the "no build zones" and other protective recommendations set forth in the Amended Plan.
	Howard Newman, Hydrologist.