# Appendices

# Appendix A - Tier Growth Boundaries

### Land Use and Growth Management Tiers and Levels of Service Standards

**Purpose**

Through the development of "Joint Planning Areas" with Beaver County, planned growth areas surrounding Beaver City will be developed and divided into "Tiers", to which an estimated time period for the development of public services has been estimated. The growth management plan which delineates "tiers," transportation corridors and joint planning areas is designed to achieve orderly growth, build-out and provision of public facilities and services.

The term "growth management," over time, has come to represent local government plan implementation strategies designed to affect one or more of the following attributes of new development: amount; location; type; density/intensity; quality; rate and timing; fiscal impact; need for adequacy and availability of public facilities and services. Growth management systems employed nationally have "mixed and matched" these objectives depending upon local circumstances, legal authority and specific comprehensive plan objectives. Frequently local governments have been concerned about only one of the above mentioned attributes of new development.

Each of these attributes can be addressed using one or more specific growth management implementation techniques. Managing growth does not mean stopping change or closing the door on new residents or employment and job creation. Properly designed and implemented, a comprehensive growth management system should provide a framework that enables local governments to balance and accommodate diverse and competing physical, economic and social interest while ensuring the quality of life in the region.

In most cases, growth management systems include "timing" and "sequencing" elements to insure that growth is properly assimilated into the City over the life of the General Plan.

**The growth Management System for Beaver City**

The growth management system for Beaver City will consist of four (4) interrelated techniques which operate at varying levels of detail. The techniques are :

1. Delineation of long-term "tier growth boundaries" designed to separate land surrounding Beaver City into tiers with a timed development plan.

2. Delineation of "tiers," transportation corridors and joint planning areas are designed to achieve orderly growth, build-out and provision of public facilities and services; designation of Joint Planning Areas shall be negotiated with Beaver County, on which the County and the Cities, shall develop plans consistent with Goal 4 of this Plan Element.

3. Concurrancy (or adequate public facility) requirements by which individual development proposals are reviewed to ensure that necessary public facilities and services, at adopted City level of service (LOS) standards are available and to ensure that such development does not contribute to or promote sprawl development patterns. Beaver City requires that adequate public facilities be available to all areas before development occurs. The development of adequate public facilities to all new developments is the developers responsibility, and the developer shall bear all costs for the facilities. In development a growth management plan (tiers) the developer and Beaver City may considered development any and all tiers sooner than this growth management plan states if: (1) The developer fronts all costs for developing the facilities to Beaver City's level of service standards; (2) that studies show that the providing services in an area is within the economy feasibility of Beaver City; and

4. Impact fees and other financing and regulatory measures to ensure that new development contributes its "fair share" towards the additional pubic capital expenses that will accrue as a result of such development.

1. Tier Growth Boundaries

The tier growth boundaries (TGB) will separate areas of the unincorporated county into areas which Beaver City has estimated the time periods at which public services maybe available. By discouraging growth in outlying areas while encouraging or facilitating growth in existing, developed areas, the TGB will channel development (and public facilities and infrastructure) into those areas most economically suitable for urban growth.

Urban growth strategies based upon geographic delineations can be either short-term, for example, based on public facility capacities which can be increased through infrastructure investment, or long-term, where the objective is to establish a permanent framework for growth in the community. This Plan includes the use of both methods. The adoption of a long-term geographic restraint will be done through the establishment of a perimeter or a boundary beyond which no urban scale development is presently contemplated. This boundary will be incorporated into the Growth Management Element of the General Plan and should not be changed absent compelling reasons. It is intended to be a fixed boundary for the life of the Plan. Because of the significance of this boundary on both the public and private sectors, delineation of the Urban Growth Boundary should be accomplished in a careful, thoughtful manner, utilizing available planning studies and data, relying on policy directives by the Planning Commission and the Beaver City Council, and capable of being justified and supported according to quantitative and qualitative standards and criteria. In addition, planning studies will demonstrate the adaptability of areas within the TGB to the extension of public facilities and services such as streets, sewers, water, and the inability or undesirability of servicing areas beyond the TGB. The Land Use Element and Map will ensure that the delineation of land use categories within and outside of the Tier Growth Boundary are consistent with the purposes and intent of the TGB as set forth herein. Implementing regulations will then be adopted which limit development outside the TGB to more rural uses and densities which do not require the provision or extension of urban facilities and services.

Tier growth areas should be of sufficient size to accommodate urban growth, taking into account the following considerations, which will influence the amount of land which must be designated for urban growth:

- land with natural constraints, such as critical areas (environmentally-sensitive land);
- agricultural land to be preserved;
- greenbelt and open space;
- the classification of corridors, centers and nodes of non-residential development activity;
- maintaining a supply of developable land sufficient to allow market forces to operate and to

preclude the possibility of a land monopoly, but no more than is absolutely essential to achieve the above purposes;
- existing projects with development potential at various stages of the approval or permitting process (i.e., the "pipeline");
- land use patterns already created by existing subdivisions, recorded plats or large lot divisions; and
- build-out of existing development and areas which are currently only partially built out.

The following factors will be considered in determining the precise location of urban growth area boundaries:

- geographic, topographic, and manmade features;
- public facility and service availability, limits and extensions;
- jurisdictional boundaries including special improvement districts;
- location of designated natural resource lands and critical areas;

Designation of the Beaver City TGB will provide the following advantages to the City:

- encourage an efficient development pattern
- avoid the unnecessary and premature consumption of land that cannot be developed efficiently
- provide a strategic focus for capital investments and the extension of public facilities
- maintain fiscal integrity by encouraging the utilization of existing transportation systems and other public facilities and services
- enhance the City's tax base
- encourage the development of local job opportunities
- protect and preserve natural and environmental features
- enhance the City's ability to provide a comprehensive open space/trail system
- provide certainty in the development approval process by mapping, in advance, those areas where public facilities are and will be made available at adequate capacities in the near future and those areas in which public facilities and services are not planned to be extended
- facilitate development by providing sufficient development tiers with zoning densities appropriate to support anticipated population and employment increases.

**Tier Standards**

The Beaver City TGB will be refined further by more specific application of density regulations, impact fees, concurrence requirements and environmental considerations. The functional planning area concept recognizes that different areas of the City present different problems relating to growth and development.

The "tier" framework for growth management allows for major issues to be addressed on a community-wide basis and on a smaller scale, this aids the City in understanding the interrelationships between, and implications of, varying growth policies, goals and implementation techniques. A breakdown into functional and geographic areas allows the City to describe goals and objectives for each area, to evaluate market forces and growth trends selectively for each area, and to consider implementation techniques that are specific for, and responsive to the needs of, each area. Thus, goals that would be competing or conflicting when applied uniformly throughout the entire TGB can be harmonized when viewed selectively by tiers.

The Beaver City growth management system recognizes the concepts of "growth" areas and "limited growth" areas. Tiers within the growth area are designated as "urbanizing," "Planned Urbanizing" and "Future Urbanizing."

The Urbanizing tier includes those areas which are undergoing active urbanization and which are presently served by public facilities. The Planned Urbanizing tier represents "new" growth areas (i.e., areas which may exhibit some existing development, but which are not served by the full range of necessary pubic facilities and services). Targeted areas would include transportation corridors, negotiated joint planning area, development "nodes," or activity centers. Growth in these tiers must be sensitive to compatibility and fit with the type and intensity of existing development, relying upon use of such techniques as:

- sliding scale buffering and screening requirements based on adjacent use considerations
- performance standards
- height and bulk limitations
- provision of open space
- flexible front, side and rear yard requirements
- protection of natural resources and environmentally-sensitive lands

The urbanizing area (Tier 1), should be delineated on the Capital Improvement Growth Areas map based on the following factors:

- Proximity to existing highway collector system
- Largely Developed Areas
- Existing or approved/developing subdivision plats
- Recognition of planned public capital improvement projects
- logical capital improvements phasing
- currently served by sewer
- Developed/developing commercial centers
- Developed/developing major recreational centers
- Availability for high-density infill development
- Developed/developing industrial park with appropriate access to transportation network
- Adjacency to joint planning area-urban expansion

The Planned Urbanizing area (Tier II) should also be delineated on the Capital Improvement Growth Areas Map. This area is already characterized by some urban growth that will be served by a combination of both existing public facilities and services and any additional needed public facilities and services that will be provided by either public or private sources and meets the following criteria:

- Logical capital improvements phasing would occur over a 10-20 year time horizon
- Road design does not meet ultimate capacity standards; no frontage roads
- Water quality/supply is poor
- Large tracts of undeveloped areas remain
- Potential sending area for transfer of development rights

The future Urbanizing area (Tier III) should also be designated on the Capital Improvement Growth Areas Map) and should not be open to urban development until the Urbanizing and Planned urbanizing areas are built out. Growth in this tier will relate to long range planning and capital improvements programming. Various techniques may be used to ensure that all property owners have reasonable use of their land within a reasonable period of time; these may include, but are not limited to, the following:

- conservation easements;

- preferential tax assessment;
- cluster housing, utilizing the presently authorized number of units;
- planned unit development transfer of development rights;
- purchase of property;
- open space corridor designation;
- greenbelt designation;
- other innovative techniques.

The Rural area is intended to be a permanent rural density development area. Rural areas, designated on the Capital Improvement Growth Areas Map, should meet the following criteria:

- Predominately rural/agricultural in use
- Sensitive lands, appropriate for protection as open space
- Lack of public facilities
- logical extension time of grater than 15 to 20 years
- existing/planned septic systems
- Distance to existing urban areas
- Lack of appropriate access to highway system

The delineation of the TGB and tiers superimposed on the Land Use Districts Map will create an urban form for Beaver City with the following attributes:

- a compact and efficient development pattern with phased urbanizing areas supporting growth of varying density/intensity;
- maintenance of the vitality of existing centers and "nodes"
- maintenance of the existing community and local identity;
- preservation of areas for rural use;
- creation of new centers and corridors with a mix of jobs and housing;
- definition of economic activity centers
- phasing of urban and suburban development over time consistent with the availability of public services and facilities;
- protection of floodplains;
- creation of regional open space/greenbelt system;
- retention of most hillsides in non-urban uses

Transportation corridors are designated areas that, due to planned transportation improvements and exiting infrastructure, will be target for future growth within the tier framework. Transportation corridors may be separately mapped to overlay the tier delineations. Some transportation corridors will pass through more than one tier and therefore may require the use of differing techniques.

The transportation corridor, by establishing a framework for the consistent linkage of transportation facilities and land uses, facilities joint development. Within the transportation corridor concept the exercise of the power of eminent domain to acquire land for joint public-private development serves a number of important public purposes. Effective utilization of the transportation corridor concept provides the public sector with significant public purposes and revenue generation.

The transportation corridor reflects a far broader concept than a mere highway system, both in terms of geographic configuration and function. The corridor is a mapped area whose central focus is a proposed or existing transportation facility, including, but not limited to a section of the state or interstate highway system. The boundaries of the transportation corridor will be established, based upon sound planning and study, to include not only all rights-of-way necessary to meet projected facility demands but also the entire area which is deemed to impacted by the facility at is ultimate capacity. Functionally, the transportation corridor is more than an area between two points used for

the movement of people and goods. Each corridor can be a nexus for major commercial, industrial and/or high density residential development.

3. Adequate Pubic facilities (Concurrence)

The adequacy and availability of public facilities and services to support growth and development has become a key issue in most areas, both because of the financial implications as well as the effect on the timing of development. While the delineation of urban growth boundaries addresses this issue in part, it does not do so on a case-by-case basis as development proposals are submitted and considered. A concurrence system requires that prior to the issuance of a land development permit, the applicant must demonstrate that all necessary pubic facilities and services are available and adequate at a specified level of service (LOS) standards.

The "adequacy" requirements provides that, for a development project to be approved, infrastructure must conform to level of service standards established in the General Plan.

The availability requirement establishes where needed public facilities or public facility capacity is indeed available for use by the proposed development. Unlike other resources which are sometimes used to measure carry capacity, infrastructure capacity is not static. It is increased as new capital improvements are added, and, it is decreased as other development comes on line. Development approvals can be denied deferred or recommended for phasing in order to keep infrastructure capacity and utilization in proper balance.

A key component of any concurrence management system is the determination of which pubic facilities are included and where they should be applied to all types of development.

Levels of Service can be adopted by the County for pubic facilities even if the County is not the service provider who is responsible for provision of those facilities.

4. Impact Fees and Financing of Capital Facilities

The financial implications of new growth have led many communities to adopt impact fees and other taxing and regulatory financing systems . Impact fees are a regulatory police power mechanism whereby the capital cost of a city's need to support new development is funded on a prorate basis by such development. Courts in many states, including Utah, have judicially approved the concept of impacts fees as long as various legal and constitutional requirements are met. Those requirements include procedural due process, substantive due process, equal protection and "earmarking." The later requirement insures that money collected from the payment of impact fees will be segregated from other City funds and used only for the purpose for which it has been collected. The constitutional standard for impact fees has generally been described as the "rational nexus" test. The test has two parts: (1) that the need for the public facility or public facility expansion is the direction result of the proposed new development; and (2) that the proposed new development will benefit from the provision of the pubic facility.

| FACILITY/ISSUE | ADOPTED LEVEL OF SERVICE | |
|---|---|---|
| | UNIT OF DEMAND/OPERATIONAL CHARACTERISTICS | LEVEL OF SERVICE |
| Transportation: State Roads | Operational characteristics as defined in the Transportation Research Board. *Highway Capacity Manual* (Special Report 209, 1985). | Level of Service "D" |
| Transportation: City Roads and Intersections | Operational characteristics as defined in the Transportation Research Board. *Highway Capacity Manual* (Special Report 209, 1985). | Level of Service "C" |
| Water: Source, Treatment and Management | Gallons per day per household or equivalent residential unit (ERU). | All applications for subdivision, site plan, or conditional use approval shall connect to a public water system as defined by the Safe Drinking Water Act (*Utah Code 19-4-101 et. seq.*), defined as a community water system and approved by the Executive Secretary of the Department of Environmental Quality. All applications for subdivision, site plan, or conditional use approval shall demonstrate that adequate water rights, as measured by subsection b, herein, are available and have been approved by the State Engineer.<br><br>Source and storage capacity requirements shall contain adequate capacity for indoor water use, irrigation, and fire flow as set forth in the applicable provisions of Utah Administrative Code rule 309-105 and section 16.1.11 below.<br><br>All applications for subdivision, site plan, or conditional use approval shall demonstrate that adequate water rights, as measured by subsection b, herein, are available and have been approved by the State Engineer. |

| FACILITY/ISSUE | ADOPTED LEVEL OF SERVICE | |
|---|---|---|
| | UNIT OF DEMAND/OPERATIONAL CHARACTERISTICS | LEVEL OF SERVICE |
| Water: Transmission and distribution | Pressure measured in pounds per sq. inch (psi) for peak instantaneous flow. | The distribution system must be sized to accommodate peak instantaneous flows with a minimum of 20 psi pressure existing in the system at all points, as measured by the equation set forth in Utah Administrative Code rule 309-105-1, and shall comply with the fire flow standards set forth in Utah Administrative Code rule 309-105-3. |
| Water Quality: | Biological Oxygen Demand (BOD) and Total Suspended Solids ( TSS). | Pollutant contributed per EDU is 200 ppm 5-day 20 centigrade BOD; 250 ppm TSS |
| Sanitary Sewer: Treatment facilities | Gallons per equivalent residential unit per day, derived from gallons per capita per day. | 320 gallons per day per dwelling unit or equivalent ERU. |
| Sanitary Sewer: | Gallons per equivalent residential unit per day, derived from gallons per capita per day. | 1,280 gallons per ERU. Mandatory hookup is required where a structure is located within 300' of a sewer line. |
| Sanitary Sewer: Interceptors and outfall sewers | Gallons per equivalent residential unit per day, derived from gallons per capita per day. | 800 gallons per ERU |
| Septic Tank: | Tank capacity in gallons; absorption area in sq. ft. per bedroom or sq. ft. | Tank capacity and absorption area standards established by the State Department of Environmental Quality |

| FACILITY/ISSUE | ADOPTED LEVEL OF SERVICE | |
|---|---|---|
| | UNIT OF DEMAND/ OPERATIONAL CHARACTERISTICS | LEVEL OF SERVICE |
| Fire Protection: Response time | Response time measured from dispatch of emergency vehicles to arrival at the scene of the fire. | The Beaver City Fire Service District shall be capable of providing an adequate response time as follows:<br>For development proposals in the Urbanizing Area, Planned Urbanizing Area and Future Urbanizing Area, a maximum response time of * minutes and an average response time of * minutes.<br>For development proposals in the Rural Area, a response time of * minutes. |
| Fire Protection: Water capacity and pressure | Gallons per minute (g.p.m.), as measured by the Insurance Service Office, Fire Suppression Rating Schedule (New York, New York 1980), over an established duration (measure in hours). | Water systems shall be interconnected wherever possible in order to insure adequate fire protection.<br><br>Water systems serving a proposed development shall be adequately sized and have sufficient pressure to provide needed fire flow as determined by the methodology set forth in the *Fire Suppression Rating Schedule*, for a period of time measured as follows:<br><br>Capacity Needed (g.p.m.) — Hours<br><br>1,000-2,999 — 2<br>3,000-3,999 — 3<br>4,000-4,999 — 4<br>5,000-5,999 — 5<br>6,000-6,999 — 6<br>7,000-7,999 — 7<br>8,000-8,999 — 8<br>9,000-9,999 — 9<br>10.000+ — 10 |
| Schools: | Spaces per capita (permanent population only) | As recommended by the Beaver County School District. |

# Appendix B - Census Data

1990 Census of Population and Housing

040 Utah
160 Beaver city

URBAN AND RURAL RESIDENCE
Total population . . . . . 1,998
Urban population . . . . . 0
Percent of total population . . . . . 0.0
Rural population . . . . . 1,998
Percent of total population . . . . . 100.0
Farm population . . . . . 0

RESIDENCE IN 1985
Persons 5 years and over . . . . . 1,839
Lived in same house . . . . . 1,222
Lived in different house in U.S. . . . . 617
Same State . . . . . 509
Same county . . . . . 355
Different county . . . . . 154
Different State . . . . . 108
Lived abroad . . . . . 0

CHILDREN EVER BORN PER 1,000 WOMEN
Women 15 to 24 years . . . . . 359
Women 25 to 34 years . . . . . 2,427
Women 35 to 44 years . . . . . 3,640

NATIVITY AND PLACE OF BIRTH
Native population . . . . . 1,963
Percent born in state of residence . . 83.5
Foreign-born population . . . . . 35
Entered the U.S. 1980 to 1990 . . . . . 14

LANGUAGE SPOKEN AT HOME
Persons 5 years and over . . . . . 1,839
Speak a language other than English . . . . . 110
Do not speak English 'very well' . . . . 32
Speak Spanish . . . . . 69
Do not speak English 'very well' . . . . 20
Speak Asian or Pacific Island language 12
Do not speak English 'very well . . . . . 3

SCHOOL ENROLLMENT
Persons 3 years and over enrolled in school . . . . . 654
Preprimary school . . . . . 50
Elementary or high school . . . . . 555
Percent in private school . . . . . 0.7
College . . . . . 49

EDUCATIONAL ATTAINMENT
Persons 25 years and over . . . . . 1,123
Less than 9th grade . . . . . 40
9th to 12th grade, no diploma . . . . . 136
High school graduate . . . . . 491
Some college, no degree . . . . . 288
Associates degree . . . . . 45
Bachelor's degree . . . . . 102
Graduate or professional degree . . . . . 21

Percent high school graduate or higher 84.3
Percent bachelor's degree or higher . . 11.0

DISABILITY OF CIVILIAN NONINSTITUTIONALIZED PERSONS
Persons 16 to 64 years . . . . . 1,030
With a mobility or self-care limitation . . . . . 8
With a mobility limitation . . . . . 6
With a self-care limitation . . . . . 2
With a work disability . . . . . 96
In labor force . . . . . 51
Prevented from working . . . . . 34
Persons 65 years and over . . . . . 284
With a mobility or self-care limitation . . . 30
With a mobility limitation . . . . . 24
With a self-care limitation . . . . . 17

VETERAN STATUS
Civilian veterans 16 years and over . . 197
65 years and over . . . . . 72

INCOME IN 1989
Households . . . . . 646
Less than $5,000 . . . . . 44
$5,000 to $9,999 . . . . . 96
$10,000 to $14,999 . . . . . 72
$15,000 to $24,999 . . . . . 169
$25,000 to $34,999 . . . . . 122
$35,000 to $49,999 . . . . . 95
$50,000 to $74,999 . . . . . 35
$75,000 to $99,999 . . . . . 5
$100,000 to $149,999 . . . . . 4
$150,000 or more . . . . . 4
Median household income(dollars) . 20,893

Families . . . . . 484
Less than $5,000 . . . . . 10
$5,000 to $9,999 . . . . . 35
$10,000 to $14,999 . . . . . 46
$15,000 to $24,999 . . . . . 146
$25,000 to $34,999 . . . . . 117
$35,000 to $49,999 . . . . . 86
$50,000 to $74,999 . . . . . 31
$75,000 to $99,999 . . . . . 5
$100,000 to $149,999 . . . . . 4
$150,000 or more . . . . . 4
Median family income (dollars) . . . . 25,403

Nonfamily household . . . . . 162
Less than $5,000 . . . . . 34
$5,000 to $9,999 . . . . . 64
$10,000 to $14,999 . . . . . 26
$15,000 to $24,999 . . . . . 24
$25,000 to $34,999 . . . . . 3
$35,000 to $49,999 . . . . . 7
$50,000 to $74,999 . . . . . 4
$75,000 to $99,999 . . . . . 0
$100,000 to $149,999 . . . . . 0
$150,000 or more . . . . . 0
Median nonfamily household income (dollars) . . . . . 7,901

Per capita income (dollars) . . . . . 8,435

INCOME TYPE IN 1989
Households . . . . . 646
With wage and salary income . . . . . 444
Mean wage and salary income (dollars) . . . . . 23,276
With nonfarm self-employment income 123
Mean nonfarm self-employment income (dollars) . . . . . 16,589
With farm self-employment income . . . . 42

Mean farm self-employment income (dollars) . . . . . 15,748
With Social Security income . . . . . 241
Mean Social Security income (dollars) 7,120
With public assistance income . . . . . 39
Mean public assistance income (dollars) . . . . . 2,561
With retirement income . . . . . 84
Mean retirement income (dollars) . . . . . 7,309

POVERTY STATUS IN 1989
All persons for whom poverty status is determined . . . . . 1,970
Below poverty level . . . . . 278

Persons 18 years and over . . . . . 1,234
Below poverty level . . . . . 173
Persons 65 years and over . . . . . 284
Below poverty level . . . . . 44

Related children under 18 years . . . . . 736
Below poverty level . . . . . 105
Related children under 5 years . . . . . 159
Below poverty level . . . . . 31
Related children 5 to 17 years . . . . . 577
Below poverty level . . . . . 74

Unrelated individuals . . . . . 178
Below poverty level . . . . . 52

All families . . . . . 484
Below poverty level . . . . . 54
With related children under 18 years . . 273
Below poverty level . . . . . 34
With related children under 5 years . . 124
Below poverty level . . . . . 25

Female householder families . . . . . 29
Below poverty level . . . . . 11
With related children under 18 years . . . 15
Below poverty level . . . . . 7
With related children under 5 years . . . . 5
Below poverty level . . . . . 5

Percent below poverty level:
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All persons . . . . . 14.1
Persons 18 years and over . . . . . 14.0
Persons 65 years and over . . . . . 15.5
Related children under 18 years . . . . 14.3
Related children under 5 years . . . . 19.5
Related children 5 to 17 years . . . . . 12.8
Unrelated individuals . . . . . 29.2

All families . . . . . 11.2
With related children under 18 years . 12.5
With related children under 5 years . 20.2

Female householder families . . . . . 37.9
With related children under 18 years . 46.7
With related children under 5 years 100.0

MORTGAGE STATUS AND SELECTED MONTHLY OWNER COSTS
Specified owner-occupied housing units 479
With a mortgage . . . . . 224

Less than $300 . . . . . 18
$300 to $499 . . . . . 119
$500 to $699 . . . . . 63
$700 to $999 . . . . . 22
$1,000 to $1,499 . . . . . 2
$1,500 to $1,999 . . . . . 0
$2,000 or more . . . . . 0
Median (dollars) . . . . . 460
Not mortgaged . . . . . 255
Less than $100 . . . . . 18
$100 to $199 . . . . . 195
$200 to $299 . . . . . 42
$300 to $399 . . . . . 0
$400 or more . . . . . 0
Median (dollars) . . . . . 163

SELECTED MONTHLY OWNER COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME IN 1989
Specified owner-occupied housing units . . . . . 479
Less than 20 percent . . . . . 293
20 to 24 percent . . . . . 54
25 to 29 percent . . . . . 44
30 to 34 percent . . . . . 27
35 percent or more . . . . . 61
Not computed . . . . . 0

GROSS RENT
Specified renter-occupied housing units 106
Less than $200 . . . . . 25
$200 to $299 . . . . . 33
$300 to $499 . . . . . 35
$500 to $749 . . . . . 6
$750 to $999 . . . . . 0
$1,000 or more . . . . . 0
No cash rent . . . . . 7
Median (dollars) . . . . . 257

GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME IN 1989
Specified renter-occupied housing units 106
Less than 20 percent . . . . . 44
20 to 24 percent . . . . . 5
25 to 29 percent . . . . . 16
30 to 34 percent . . . . . 6
35 percent or more . . . . . 28
Not computed . . . . . 7

LABOR FORCE STATUS
Persons 16 years and over . . . . . 1,340
In labor force . . . . . 781
Percent in labor force . . . . . 58.3
Civilian labor force . . . . . 779
Employed . . . . . 748
Unemployed . . . . . 31
Percent unemployed . . . . . 4.0
Armed Forces . . . . . 2
Not in labor force . . . . . 559

Males 16 years and over . . . . . 638
In labor force . . . . . 455
Percent in labor force . . . . . 71.3
Civilian labor force . . . . . 453
Employed . . . . . 435
Unemployed . . . . . 18
Percent unemployed . . . . . 4.0
Armed Forces . . . . . 2
Not in labor force . . . . . 183

Females 16 years and over . . . . . 702
In labor force . . . . . 326
Percent in labor force . . . . . 46.4
Civilian labor force . . . . . 326
Employed . . . . . 313
Unemployed . . . . . 13
Percent unemployed . . . . . 4.0
Armed Forces . . . . . 0
Not in labor force . . . . . 376

Females 16 years and over . . . . . 702
With own children under 6 years . . . . . 130
Percent in labor force . . . . . 60.0
With own children 6 to 17 years only . . . . . 144
Percent in labor force . . . . . 67.4

Own children under 6 years in families and subfamilies . . . . . 186
All parents present in household in labor force . . . . . 95

Own children 6 to 17 years in families and subfamilies . . . . . 544
All parents present in household in labor force . . . . . 332

Persons 16 to 19 years . . . . . 144
Not enrolled in school and not high school graduate . . . . . 8
Employed or in Armed Forces . . . . . 5
Unemployed . . . . . 3
Not in labor force . . . . . 0

COMMUTING TO WORK
Workers 16 years and over . . . . . 741
Percent drove alone . . . . . 79.9
Percent in carpools . . . . . 9.2

Percent using public transportation . . . . 0.0
Percent using other means . . . . . 0.5
Percent walked or worked at home . . . . 9.4
Mean travel time to work (minutes) . . . . 9.5

OCCUPATION
Employed persons 16 years and over 748
Executive, administrative, and managerial occupations . . . . . 72
Professional specialty occupations . . . . 62
Technicians and related support occupations . . . . . 16
Sales occupations . . . . . 99
Administrative support occupations, including clerical . . . . . 71
Private household occupations . . . . . 0
Protective service occupations . . . . . 14
Service occupations, except protective and household . . . . . 153
Farming, forestry, and fishing occupations 65
Precision production, craft, and repair occupations . . . . . 78
Machine operators, assemblers, and inspectors . . . . . 21
Transportation and material moving occupations . . . . . 50
Handlers, equipment cleaners, helpers, and laborers . . . . . 47

INDUSTRY
Employed person 16 years and over . 748
Agriculture, forestry, and fisheries . . . . . 72
Mining . . . . . 3
Construction . . . . . 51
Manufacturing, nondurable goods . . . . . 37
Manufacturing, durable goods . . . . . 7
Transportation . . . . . 32
Communications and other public utilities 14
Wholesale trade . . . . . 14
Retail trade . . . . . 249
Finance, insurance, and real estate . . . 23
Business and repair services . . . . . 23
Personal services . . . . . 48
Entertainment, and recreation services . . 4
Health services . . . . . 38
Educational services . . . . . 62
Other professional and related services 27
Public administration . . . . . 44

CLASS OF WORKER
Employed persons 16 years and over . . . . . 748
Private wage and salary workers . . . . 467
Government workers . . . . . 173
Local government workers . . . . . 106
State government workers . . . . . 40
Federal government workers . . . . . 27
Self-employed workers . . . . . 101
Unpaid family workers . . . . . 7

Total housing units . . . . . 775
YEAR STRUCTURE BUILT
1989 to March 1990 . . . . . .4
1985 to 1988 . . . . . 29
1980 to 1984 . . . . . 89
1970 to 1979 . . . . . 204
1960 to 1969 . . . . . 53
1950 to 1959 . . . . . 36
1940 to 1949 . . . . . 59
1939 or earlier. . . . . 301

BEDROOMS
No bedroom . . . . . 2
1 bedroom. . . . . 55
2 bedrooms . . . . . 205
3 bedrooms . . . . . 316
4 bedrooms . . . . . 135
5 or more bedrooms . . . . . 62

SELECTED CHARACTERISTICS
Lacking complete plumbing facilities . . . . 8
Lacking complete kitchen facilities . . . . . 8
Condominium housing units. . . . . 0

SOURCE OF WATER
Public system or private company . . . . 775
Individual drilled well . . . . . 0
Individual dug well. . . . . 0
Some other source. . . . . 0

SEWAGE DISPOSAL
Public sewer . . . . . 766
Septic tank or cesspool. . . . . 7
Other means. . . . . 2

Occupied housing units . . . . . 657

HOUSE HEATING FUEL
Utility gas. . . . . 0
Bottled, tank, or LP gas . . . . . 32
Electricity. . . . . 179
Fuel oil, kerosene, etc . . . . . 206
Coal or coke . . . . . 63
Wood . . . . . 177
Solar energy . . . . . 0
Other fuel . . . . . 0
No fuel used . . . . . 0

# Appendix C - Existing Land Uses by Acreage

**Table 12 - Existing Land Uses[12]**

| # of Acres | Land Use Category | % Total Area | % Built Area | % Unbuilt Area |
|---|---|---|---|---|
| | **Residential** | | | |
| 290.69 | Single Family | 33.39 | 40.30 | |
| 2.60 | Multi Family | 0.29 | 0.36 | |
| 12.41 | Trailer/MHP | 1.42 | 1.72 | |
| | **Commercial/Ind** | | | |
| .92 | Neighborhood | 0.10 | 0.12 | |
| 45.00 | General | 5.17 | 6.23 | |
| 1.80 | Intense | 0.20 | 0.24 | |
| 3.72 | Industrial | 0.42 | 0.51 | |
| 11.40 | Motel | 1.30 | 1.58 | |
| | **Public/Quasi Public** | | | |
| 7.38 | Church | 0.84 | 1.02 | |
| 15.66 | School | 1.79 | 2.17 | |
| 7.20 | Park | 0.82 | 0.99 | |
| 18.60 | Cemetery | 2.13 | 2.57 | |
| 1.60 | Public Building | 0.11 | 0.22 | |
| 1.37 | Quasi Public Building | 0.15 | 0.18 | |
| 2.21 | Public Safety Facility | 0.25 | 0.30 | |
| 3.03 | Medical Facility | 0.34 | 0.42 | |
| | **Agriculture** | | | |
| 75.15 | Agriculture | 8.63 | | 50.41 |
| | **Other** | | | |
| 73.91 | Unimproved | 8.49 | | 49.59 |
| 244.53 | Roadway | 28.09 | 33.90 | |
| 3.76 | Parking Lot | 0.43 | 0.52 | |
| **870.37** | **Total** | **100.00** | **100.00** | **100.00** |

[12]**Survey conducted by the Five County Association of Governments & the Beaver City General Plan Task Force**

| # of Acres | Land Use Category | % Total Area | % Built Area | % Unbuilt Area |
|---|---|---|---|---|
| 305.70 | Total Residential | 35.12 | 42.38 | |
| 244.53 | Total Roadway | 28.09 | 33.90 | |
| 171.08 | Total All Other (built) | 19.65 | 23.71 | |
| 149.06 | Total All Other(unbuilt) | 17.12 | | 100.00 |
| **870.37** | **Total Land Area** | **100.00** | **100.00** | **100.00** |

# Appendix D - Future Service Demand

**Future Service Demand:**

By classifying and projecting the total population by the types of age-specific services each group consumes, the city can adopt goals and policies now that will enable it to adequately deal with the increased future demands in areas such as child care, education, employment and health care.

**0-4** Day care and preschool users.

**5-17** In addition to after-school day care, all children must have access to tot lots, play fields, public schools and libraries for their development. Adolescents between the ages of 15-17 impact the higher schools, local transportation systems, public parks and recreational facilities.

**18-29** Those individuals between 18-29 are college bound and/or entering the labor force. Access to employment, multifamily housing, restaurants, entertainment, recreation and even laundromats is imperative.

**30-39** In light of surging home prices, the 30-39 year age group represents the first time home buyers of the 1990's. Necessary proximate services include supermarkets, shopping centers, churches and banks. The desirability of the area hinges upon the perceived quality of schools, employment opportunities, and the surrounding housing values.

**40-64** The 40-49 year olds will be in their prime earning and spending years and as a group represents the second or "move up" housing market. Access to the services listed above is necessary in addition to restaurants, cultural events and recreational opportunities. Persons in the 50-64 age group are well-established and usually do not make a change of residences until after retirement, if then. Cultural events, leisure recreation opportunities and commercial centers also attract person in this age group.

**65+** Research has proven that most people will choose to stay in their single-family homes as long as possible. Those who do move, however, seek smaller maintenance-free homes in communities where their grown children live. Golf course communities are becoming increasingly popular among the more affluent retirees. The sheer growth of persons 75 years of age or older takes on special significance because of this age categories relationship to health and social services in the planning area. Persons over 75 years of age are heavy users of the health care system and other institutional and non-institutional care services. The need for additional health care services on a daily basis usually draws seniors, specifically those over 75, to congregate to some form of care retirement housing.

**0-4 Age Group**

The 0-4 age group in Beaver County represents the users of child care, preschool and parks. Mothers of children of all ages have continued to increase their participation in the labor force in order to meet escalating housing costs. This trend will continue, particularly where housing market prices are driven up from many buyers living outside the region. Given the already high proportions of young children in Beaver County, pressure for child care space and public parks

will mount. The pressure for child care that families put on the marketplace is, and will increasingly be, perceived by employers, particularly those who depend upon a nonexpendable, highly skilled work force for whom child care is an issue. Policymakers, too, over time, will increasingly be pressured by constituents and advocates to adopt public action that will increase child care space.

**5-17 Age Group**

The 5-17 age groups roughly correspond to the "school age" years. Elementary school students are typically between the ages of 5-11. Children ages 12-13 attend junior high schools and those 14-17 are at the high school level. The population projections indicate that in 1990, 1,348 persons or 28.3 percent of the total population will be between the years of five and 17 years of age. The sheer number of persons within this age category will increase to a total of 1,522 by the year 2020, which would require approximately 51 class rooms to accommodate a teacher to student ratio of 1:30. However, this age group's proportionate share of the population will decrease from 28.3 percent of the population in 1990 to 23.4 in the year 2020 .

**18-29 Age Group**

In times past, if you were not married, with child, and living in your own home by 30, you were perceived as "different" from mainstream society. Today, the trend is to delay marriage until one's career path is well-defined and college is increasingly part of that process. Delays in earning capacity coupled with soaring housing prices prolong one's ability to attain the "American Dream." These trends impact Beaver County in two very important ways: (1) access to higher education; and (2) increasing demand for employment opportunities and affordable housing.

The estimated population between 18-29 years of age in 1990 is 533 persons with a projected growth rate of 74 percent over the next 30 years. As a percentage of the total population in 1990, approximately 11.2 percent fall into this age group, which is predicted to increase as a proportionate share of the population to 14.3 percent in 2020. The 18-29 age group plays a particularly important role in the shaping of Beaver County's future: namely, these young adults represent the future parents and educated professionals of Beaver County. However, this age category is characteristically "on the move," and will be drawn towards population centers offering higher education or areas considered "job rich." If there is an insufficient supply of employment opportunities, persons in this age category are more likely than persons in older age groups to seek more suitable locations. Because this age group contributes greatly to the total expenditures at fast-food chains, convenience stores, and entertainment centers--all tax revenue generating enterprises -- and, represents an invaluable source of semi-professional jobs, Beaver County should make every effort to secure its appeal among these individuals.

**30-39 Age Group**

Projections for the 30-39 age group suggest that between the year 1990 and the year 2020, this group will increase in total numbers by 18.7 percent. However, as a percentage of the total population this age category will only make up 11.4 percent of the total population by the year 2020. Realistically, today's home prices suggest that the majority of first-time home buyers will fall into this age group. According to the 1990 U.S. Census of Population and Housing, the average cost for a single-family home in Beaver County was $51,200. These data reveal that the current housing cost affordability index within the County is relatively healthy, due to a sluggish local market related to out-migration.

Mathematically, first time single-family home buyers with 10 percent down ($10,000), at 10 percent financing on a $51,200 home (excluding tax and homeowners association fees), require

an annual income of approximately $16,704 to qualify (if little other consumer debt exists). The 1990 Census data estimates the average household income at $21,092--well above the qualifying index. Like many other communities in Southwestern Utah , the first time home buyers in Beaver County will typically be double income households comprised of individuals who have been working for some time - - those over 30 years of age.

As Individuals are increasingly being forced to choose between the county's desirable location or other areas that offer better employment or access to higher education the 30-39 age group will leave or bypass Beaver County and flood to other areas of the State and region that are both "job rich" and "housing rich."

**40-64 Age Group**

The population between the ages of 40 and 64 will increase from 1102 persons in 1990 to 1,535 in 2020. Persons in this age range are in their peak earning and spending years. For reasons discussed in detail above, the 40-49 age group constitutes Beaver County's future second or "move up" home buyers market. These buyers seek upscale housing with many extras. However, as that 73 percent of these persons will fall into the 50-64 age category, and have already purchased their "move up" home, the move up housing market will not be driven by the local population.

The 50-64 year olds generally have good health and are about as active as they desire to be. Income levels in this age category are generally 15-20 percent higher than the median income for all households. Beaver County must be committed to the development of community amenities in order to meet the leisure and recreational needs of this market segment. Weak retention efforts will facilitate these age groups to take advantage of intervening opportunities offered elsewhere in the region.

**65+ Age Group**

Within Beaver County, the growing number of elderly population should be of concern to health and service planers, and to the taxpayers. In terms of actual growth, the population of 65 or older persons will grow approximately 59.4 percent from 1990 to the year 2020. In actual numbers, this age group will grow 460 persons over the next 30 years. It is easy to generate worst case scenarios of disastrous impact on public funds for health care and social services and a reduced quality of life for families' older relatives. In this atmosphere of fear, even early retirees are seen as a potential burden on the community, a stigma that sometimes reinforces negative responses toward the aged.

In all, 11 percent of the Gross National Product (GNP) is consumed by health-care expenditures and growth of these expenditures has exceeded inflation rates. Those over age 65, who make up 11 percent of the population, account for one third of the total health care consumption in the U.S. In this general age category, those over 85 use hospitals at a rate that is 77 percent higher than those age 65-74 and 23 percent higher than those between the age of 75 and 84 (U.S. Senate Special Committee on Ageing, 1984). By the year 2020 only two percent of this age group's population is anticipated to be 85 years of age or older.

Although current research suggests that older Americans have financial assets and net worth far our of proportion to their population share, the county must be prepared to address the health care and housing needs of a growing number of elderly who may not be as financially secure.

## HOUSING

The majority of housing in Beaver County is single family residential. According to the 1990 Census, 78.8 percent of all housing units in the county were comprised of single-family dwellings. This was equivalent to 1,733 housing units. Of the 2,200 dwelling units in the county, 79 percent fall within municipal boundaries. If the current ratio of dwelling units contained within the county is held constant through the next 20 years, the county's estimated housing needs are quite small.

Although single family detached homes still account for the majority of housing units (78.8%), the proportion of these units has decreased since 1980, where over 90% of all housing stock was of a single-family nature. There has been a steady increase in the proportion of multiple-family units to single-family units, including both smaller (two or four units) and larger (five or more units) building, in the past ten years. The number of multiple-family units in the planning area has increased by more than 5 % during the past ten years. Both the number and proportion of mobile homes in the county increased over 1980 levels, a typical trend in slow developing areas. According to the 1990 Census, there were 260 mobile homes in the planning area. Although the number of mobile homes is expected to continue to increase, several communities within the planning area have adopted more stringent ordinances in regards to design. Such ordinances include provisions for pitched roofs, non-reflective siding, and recessed foundations.

In an effort to identify the county's target distribution of housing types with the projected population growth, the county's total population can be separated into three general categories: (1) single family detached units; (2) single-family attached units; and (3) multi-family units:

TABLE 1.
Table 17 - Beaver County Population Projections by Age Group 1990-2020

| Age | 1990 | % | 2000 | % | 2010 | % | 2020 | % |
|---|---|---|---|---|---|---|---|---|
| **0-4** | 382 | 08.0 | 507 | 10.6 | 644 | 10.4 | 540 | 08.3 |
| **5-17** | 1,348 | 28.3 | 1,030 | 19.0 | 1,339 | 21.6 | 1,522 | 23.4 |
| **18-29** | 533 | 11.2 | 1,123 | 20.7 | 908 | 14.6 | 928 | 14.3 |
| **30-39** | 625 | 13.1 | 467 | 08.6 | 963 | 15.5 | 742 | 11.4 |
| **40-49** | 482 | 10.1 | 596 | 11.0 | 205 | 03.3 | 408 | 06.0 |
| **50-64** | 620 | 13.0 | 654 | 12.1 | 1,052 | 16.9 | 1.127 | 17.6 |
| **65+** | 775 | 16.3 | 1,040 | 19.2 | 1,099 | 17.7 | 1,235 | 19.0 |
| **Total Pop** | **4,765** | | **5,417** | | **6,210** | | **6,502** | |

Category 1 Age Groups 0-17, 40-49, 50-74

Category 2 Age Groups Ages 30-39, and 75+

Category 3 Age Groups 18-29

These age group populations can then be divided by the Census estimate of persons per household: 2.95 for single-family detached and single-family attached, and 2.1 for multi-family units to estimate a 30 year build-out by unit type. Using the methodology above, the county's future housing needs can be roughly estimated at : (1) 1,204 Single-family detached units (2) 454 Single-family attached, and (3) 441 multi-family units. Applying the following formula: Ideal Number of Housing Units= [Total Jobs/Workers per Household] x [1+5% (Desired Vacancy Rate)] , yields the following jobs to housing balance (if housing prices are commensurate with wages):

> 2,099 Dwelling Units = (2,618 New Jobs/1.31 Workers Per Household) x 1.05 (Desired Vacancy Rate).

The private sector should be encouraged to development of such housing as may be necessary to meet demands.

# Appendix E - Population Projections

## Table 16 - Beaver County Population Projections By Sex and Five Year Age Group

| Male | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Age** | **1980** | **1990** | **1995** | **2000** | **2005** | **2010** | **2015** | **2020** |
| **0-4** | 287 | 181 | 201 | 261 | 314 | 333 | 301 | 279 |
| **5-9** | 230 | 260 | 182 | 202 | 256 | 315 | 323 | 292 |
| **10-14** | 189 | 288 | 234 | 182 | 198 | 256 | 307 | 314 |
| **15-19** | 180 | 210 | 258 | 205 | 161 | 177 | 225 | 268 |
| **20-24** | 143 | 93 | 203 | 235 | 185 | 150 | 154 | 195 |
| **25-29** | 150 | 109 | 150 | 240 | 268 | 221 | 166 | 174 |
| **30-34** | 133 | 145 | 100 | 151 | 230 | 268 | 209 | 156 |
| **35-39** | 100 | 164 | 136 | 102 | 146 | 230 | 257 | 200 |
| **40-44** | 84 | 130 | 160 | 131 | 96 | 142 | 217 | 240 |
| **45-49** | 87 | 118 | 134 | 156 | 128 | 96 | 136 | 207 |
| **50-54** | 104 | 84 | 119 | 133 | 151 | 126 | 91 | 132 |
| **55-59** | 94 | 97 | 85 | 117 | 128 | 147 | 120 | 87 |
| **60-64** | 130 | 118 | 87 | 84 | 109 | 121 | 139 | 113 |
| **65-69** | 96 | 111 | 123 | 97 | 94 | 120 | 131 | 146 |
| **70-74** | 79 | 105 | 125 | 135 | 113 | 113 | 135 | 145 |
| **75-79** | 46 | 58 | 105 | 116 | 124 | 107 | 107 | 126 |
| **80-84** | 35 | 43 | 53 | 77 | 86 | 92 | 80 | 80 |
| **85+** | 14 | 19 | 31 | 41 | 57 | 68 | 74 | 70 |
| **Total** | 2,181 | 2,333 | 2,486 | 2,665 | 2,844 | 3,082 | 3,172 | 3,224 |
| **Median** | 26 | 29 | 29 | 29 | 29 | 30 | 31 | 31 |

| Female | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Age** | **1980** | **1990** | **1995** | **2000** | **2005** | **2010** | **2015** | **2020** |
| **0-4** | 263 | 201 | 188 | 246 | 295 | 311 | 283 | 261 |
| **5-9** | 234 | 267 | 188 | 188 | 238 | 296 | 302 | 275 |
| **10-14** | 163 | 258 | 259 | 188 | 186 | 240 | 287 | 294 |
| **15-19** | 160 | 185 | 251 | 249 | 176 | 179 | 225 | 270 |
| **20-24** | 147 | 93 | 212 | 241 | 228 | 169 | 164 | 206 |
| **25-29** | 141 | 118 | 97 | 223 | 244 | 244 | 171 | 162 |
| **30-34** | 128 | 166 | 113 | 100 | 217 | 247 | 232 | 163 |
| **35-39** | 104 | 150 | 158 | 114 | 96 | 218 | 236 | 223 |
| **40-44** | 85 | 127 | 153 | 156 | 109 | 95 | 207 | 225 |
| **45-49** | 102 | 107 | 132 | 153 | 151 | 109 | 93 | 201 |
| **50-54** | 101 | 88 | 114 | 128 | 149 | 151 | 106 | 90 |
| **55-59** | 101 | 121 | 87 | 109 | 126 | 148 | 146 | 102 |
| **60-64** | 123 | 112 | 110 | 83 | 104 | 122 | 141 | 138 |
| **65-69** | 100 | 109 | 124 | 119 | 93 | 114 | 131 | 148 |
| **70-74** | 90 | 110 | 123 | 138 | 132 | 110 | 131 | 146 |
| **75-79** | 72 | 88 | 113 | 122 | 136 | 132 | 114 | 134 |
| **80-84** | 50 | 76 | 85 | 101 | 108 | 119 | 106 | 101 |
| **85+** | 33 | 56 | 80 | 94 | 111 | 124 | 137 | 139 |
| **Total** | 2,197 | 2,432 | 2,587 | 2,752 | 2,899 | 3,128 | 3,222 | 3,278 |
| **Median** | 28 | 31 | 33 | 31 | 30 | 31 | 32 | 34 |

| Total | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Age** | **1980** | **1990** | **1995** | **2000** | **2005** | **2010** | **2015** | **2020** |
| **0-4** | 550 | 382 | 389 | 507 | 609 | 644 | 584 | 540 |
| **5-9** | 464 | 527 | 370 | 390 | 494 | 611 | 625 | 567 |
| **10-14** | 352 | 546 | 493 | 370 | 384 | 496 | 594 | 608 |
| **15-19** | 340 | 395 | 509 | 454 | 337 | 356 | 450 | 538 |
| **20-24** | 290 | 186 | 415 | 476 | 413 | 319 | 318 | 401 |
| **25-29** | 291 | 227 | 247 | 463 | 512 | 465 | 337 | 336 |
| **30-34** | 261 | 311 | 213 | 251 | 447 | 515 | 441 | 319 |
| **35-39** | 204 | 314 | 294 | 216 | 242 | 448 | 493 | 423 |
| **40-44** | 169 | 257 | 313 | 287 | 205 | 237 | 424 | 465 |
| **45-49** | 189 | 225 | 266 | 309 | 279 | 205 | 229 | 408 |
| **50-54** | 205 | 172 | 233 | 261 | 300 | 277 | 197 | 222 |
| **55-59** | 195 | 218 | 172 | 226 | 254 | 295 | 266 | 189 |
| **60-64** | 253 | 230 | 197 | 167 | 213 | 243 | 280 | 251 |
| **65-69** | 196 | 220 | 247 | 216 | 187 | 234 | 262 | 294 |
| **70-74** | 169 | 215 | 248 | 273 | 245 | 223 | 266 | 291 |
| **75-79** | 118 | 146 | 218 | 238 | 260 | 239 | 221 | 260 |
| **80-84** | 85 | 119 | 138 | 178 | 194 | 211 | 196 | 181 |
| **85+** | 47 | 75 | 111 | 135 | 168 | 192 | 211 | 209 |
| **Total** | 4,378 | 4,765 | 5,073 | 5,417 | 5,743 | 6,210 | 6,394 | 6,502 |
| **Median** | 27 | 31 | 31 | 29 | 30 | 31 | 32 | 33 |

# Appendix F - Infrastructure Assessment

**Excerpts of Beaver County's Infrastructure Assessment**

**(Fire, Police, General Administration, Recreation and Streets)**

**Beaver City Assessment**

**Fire**

Beaver County's Fire Station #1, which serves the east side of the county is located in Beaver City at 51 North and 100 East and is operated by Beaver County. Equipment and facilities available for fire protection include: three main-line military pumpers (one not in operation), two brush trucks, two tankers and one rescue truck (purchased within the last five years). The average response time per call for the Fire Department staff which includes one part-time fire chief and 23 volunteers, 15 of which are active, is excellent at three to four minutes.

Over the next five year time period, necessary equipment and facilities upgrades include building a new Fire Station and purchasing a pumper truck. Within five to ten years, necessary projected equipment and facilities improvements include: purchase a response truck. Additionally, about five to ten volunteers will be needed during the next ten years. The Station improvements are partially due to Utah State having declared that the fire station does not meet parking regulations and has insufficient street clearance. The existing fire station includes 7,200 square feet. is handicapped accessible. The fire insurance rating is "6".

Projected revenues are not sufficient to cover capital improvement costs for the next five years. The district needs additional funds to build a fire station. Funding source: general funds. However, projected revenues are sufficient to cover staff, operation and maintenance costs for the next five years. Funding source: general funds.

One of the Fire Station buildings is over 100 years old and has historical significance.

**Police**

Beaver City has a Police Station located at 60 West Center Street, which includes three fully equipped police cars and three police officers (including the Chief). Average response times for the department are excellent at two to three minutes.

Within the next five years it is anticipated that another police officer will be needed in the department. Beaver County Sheriff's Department also provides additional police protection.

Projected revenues are not sufficient to cover capital improvement costs for the next five years. Funding source: general funds.

Projected revenues are not sufficient to cover staff, operation and maintenance costs for the next five years. Funding source: general funds.

**General Administration**

Type: mayor/city council

Beaver City does not have a special improvement district.

Job positions: four electricians, two water department, two parks and cemetery, three police, one city manager, two librarians, one deputy recorder, one recorder, one building inspector, and one part-time building inspector. Volunteers: planning commission and city council.

Positions planned or needed to administer functions within the next five years: one police officer.

Though the city center located at 60 West Center Street is over 50 years old and is approximately 5,000 square feet, it is handicapped accessible.

**Recreation**

Types of recreational and cultural facilities: three community parks are located in Beaver City; Park (A) - playground, little league field and picnic tables; Park (B) - playground, two pavilions and picnic facilities, one softball field, one little league field and one indoor swimming pool; Park (C) - playground, softball field, rodeo grounds and two tennis courts(Restroom facilities in the parks are not handicapped accessible.). There is one mini-park adjacent to the Daughters of Utah Pioneers Museum. Two mini-parks are planned in approved subdivisions.
Other public recreational facilities in the community include: an opera house/civic center, senior center, library (in the process of building an addition), community center, nine-hole golf course, several basketball courts, D.U.P. museum and a horse track. Although there are no city-sponsored recreational events, there are adult softball tournaments and youth sport programs. Private recreational facilities in town include an arcade and an auto race track, The Cinema and Wild About Ducks Art Gallery.

Recreational facilities needed and desired within the next five years: indoor meeting facility (community gymnasium).

The opera house, library and the D.U.P. museum all have historical significance and are over 100 years old.

**Roads and Streets**

Arterial streets in Beaver include: Main Street, State Highway 21 and State Highway 153. All other existing streets are local. All streets have two lanes except eight blocks of Main Street that are four lanes. New streets planned within the next five years: two new subdivisions with local streets; and three collector streets implied already to connect subdivisions.

There are 24 miles of streets in Beaver. Of those twenty-four miles, twelve miles have been repaved during the past two years with the remaining twelve miles of to be repaved in 1995 and 1996. Half of the streets are considered in good condition and half are considered fair. The standard pavement width of each local street is 22' within a 99' ROW. No new roads have been built during the past five years.

Major accidents mainly occur on Main Street and at the intersection of Highway 21 and Main Street.

Projected revenues are sufficient to cover capital improvements, staff, operation and maintenance costs for the next five years. Funding sources: electrical generation and Class C funds.

The average number of daily traffic on selected locations in 1992 was as follows:

| | |
|---|---|
| North Main Street | 2,028 vehicles. |
| South Main Street | 2,403 vehicles. |
| Highway 21, east of Beaver | 1,653 vehicles. |
| Interstate 15, south of Beaver | 7,473 vehicles. |

**Health Care**

The Beaver Valley Hospital approximately 20,000 square feet in size offers 24 hour emergency, radiology, acute medical and surgical care, long-term care facility, home-health care, maternity and physical therapy and serves eastern Beaver County, northern Iron County, and Interstate 15 traffic within a 45 mile radius. This hospital is completely handicapped accessible.

Departments and professionals employed:

| Department | Number of Professionals |
|---|---|
| Administrators | 1 |
| Business Office | 7 |
| Radiology | 3 |
| Laboratory | 4 |
| Clinic in Parowan | 7 |
| Doctors | 2 |
| Physicians Assistants | 2 |
| Housekeeping | 5 |
| Long Term Care | 28 |
| Nursing | 30 |
| Physical Therapy | 2 |
| Maintenance | 2 |

Major facility upgrades made during the past five years: all departments have had or will have by the end of 1994, a complete capital review and upgrade.

Inpatients serviced during the last five calendar years:

| Year | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|
| Inpatients | 616 | 554 | 565 | 602 | 617 |

Currently there are 36 care beds at the hospital.

The hospital has no historical significance.

Type of medical facilities or upgrade of existing facilities planned or needed during the next ten years: a new acute wing and ancillary departments at an estimated cost of $4.5 million; addition of long-term care beds at an estimated cost of $2.5 million; resident care complex at an estimated cost of $3.5 million. A new acute Beaver Valley Hospital may be constructed if there are sufficient funds available; if so, the long-term health care unit will replace the existing hospital.

Projected revenues are sufficient to cover capital improvement costs for the next five years.

However, the hospital will need grants, donations and funding for the new acute wing and other structural additions.

Projected revenues are sufficient to cover staff, operation and maintenance costs for the next five years. The administrator will probably want to hire an additional physician, a ward clerk and other nursing personnel.

Beaver Medical Clinic is a family practice clinic which is equipped to handle emergencies in addition to routine examinations and immunizations. The clinic has two doctors on staff.

**Water Service**

Utah State Water Standards

If a drinking water system will provide no water for the irrigation of lawns and gardens, an average yearly consumption of 400 gallons per day per connection should be assumed.

If a drinking water system will provide all water for the irrigation of lawns and gardens, an average yearly consumption of 800 gallons per day per connection should be assumed.

**Table 18 - Beaver County drinking water systems by jurisdiction**

| JURISDICTION | "AVERAGE" GALLONS USED DAILY PER WATER SYSTEM FOR THE "AVERAGE" UTAH WATER SYSTEM | GALLONS PER CONNECTION PER DAY | GALLONS USED DAILY | STORAGE CAPACITY |
|---|---|---|---|---|
| Beaver City | 604,800 | 520 | 682,013 | 1,250,000 |
| Milford | 380,400 | 735 | 461,726 | 1,900,000 |
| Minersville | 193,600 | 719 | 280,986 | 500,000 |

* "Average" gallons used daily per water system for the "average" Utah water system is higher than storage capacity.
** Gallons used per day is higher than storage capacity.
@ Some connections are used only a small amount throughout the year.
---
Beaver City has a certified operator at proper grade for the water system.

Major water facility and equipment upgrades performed in the past five years: installed one 250,000 gallon water tank, replaced water lines, installed a pressurized irrigation system and extended two water lines to both Interstate 15 interchanges.

Installed a pressurized irrigation system to conserve water.

Type of water facility and equipment upgrades needed or desired in the next ten years: a one-million gallon water tank and one main water supply line at an estimated cost of $600,000, regular maintenance of water system and extension of water lines. Projected revenues are sufficient to cover staff, operation and maintenance costs for the next five years. Funding source: water fees. Projected revenues are not sufficient to cover capital improvement costs

for the next five years. Additional impact fees are needed. Current funding sources: water fees.

**Schools (Beaver County School District)**

The Beaver School District is in the process of replacing Milford and Beaver High Schools with new schools on new sites. Beaver High will be approximately 70,000 square feet with a total capacity of 600 students and Milford High will be approximately 40,000 square feet.

Major educational facilities upgraded during the past five years: Beaver County Vocational Facility added three additional classrooms; Milford Elementary remodeled the office area.

The school district will need to plan for population growth if hog production is established. Projected revenues for the next five years will not be sufficient to cover the additional education costs associated with a large population increase.

No schools require handicapped accessibility renovation.

Beaver High is over 50 years old. No other schools within the district have historical significance.

Major educational facilities upgraded during the past five years:

Beaver County Vocational Facility added three additional classrooms;

Milford Elementary remodeled the office area.

The district will continue to operate through the regular state and local school budgeting process.

**Table 19 - Graduates for Each High School Since 1988 - Percent and Number**

| | | | | | | |
|---|---|---|---|---|---|---|
| Beaver High | | | | | | |
| Percent | 97% | 93% | 100% | 97% | 96% | |
| Number | 58 | 70 | 54 | 55 | 64 | |

| School/Location | Expenditure Per Student | Pupil/Teacher Ratio | Square Footage | Student Capacity | Teachers/Admin. |
|---|---|---|---|---|---|
| Milford High (Milford) | $4,674 | 16.9/1 | 104,650 | 635 | 10.5/1 |
| Beaver High (Beaver) | $3,859 | 18.4/1 | 158,295 | 1,015 | 24.5/1.5 |
| Milford Elem. (Milford) | $3,288 | 21.5/1 | 18,666 | 245 | 9/.5 |
| Minersville Elem. (Minersville) | $2,517 | 17.6/1 | 12,552 | 165 | 8.5/Head Teacher |

| | | | | | |
|---|---|---|---|---|---|
| Belknap Elem. (Beaver) | $2,791 | 24.9/1 | 35,987 | 480 | 17/1 |

* Includes the square footage for both the high school and the elementary school.

**Solid Waste Disposal**

The county has decided to utilize their existing landfill until 1996. The landfill serves the entire county. The existing Milford landfill is planned to be an inert bulky landfill for construction debris, trees, grass, animal pit, white goods and automobiles. Beaver County recycles tires, but has no plans for additional types of resource recovery and recycling. The county landfill has begun to spread dirt over the landfill everyday to eliminate vectors, rodents and fires.

The current cell (Beaver landfill) still has about one and a half years capacity, with approximately six more years of capacity on site for solid waste. The county is planning to purchase an additional 40-acre site which would add 60 more years of capacity.

The county landfill accumulated an average of about eight tons of solid waste daily during the past year.

The temporary landfill is located on a 40-acre site. The existing cell utilized is 40' x 500'. It complies with all provisions of Section 258 of Environmental Protection Agency (EPA) standards and will comply with all future requirements.

If the county landfill closed, solid waste would probably be disposed in the Armstrong (Iron County) landfill.

Projected revenues are sufficient to cover capital improvement costs for the next five years. Funding source: Service District #5. Projected revenues are sufficient to cover staff, operation and maintenance costs for the next five years. Funding sources: Service District #5 and mine lease funding.

**Sewer**

**Table 20 - Jurisdictions With Sewer Systems**

| Jurisdiction | Present Flow (MGD) | Design Flow (MGD) | System | Current Needs Survey |
|---|---|---|---|---|
| **Beaver County** | | | | |
| Beaver City | 0.282 | 0.250 | Total Containment Lagoon | System OK |
| Milford | 0.130 | 0.240 | Total Containment Lagoon | System OK |
| Minersville | 0.035 | 0.081 | Total Containment Lagoon | System OK |

It appears that the water seepage losses for the 3 cells Beaver City is using are at the

maximum allowed by Utah Department of Environmental Quality; however, Beaver City has a total capacity of 4 cells or 0.439 MGD. Beaver City officials believe the sewer system can operate approximately an additional ten years with 4 cells.

**County Sheriff**

The sheriff's station serves the entire county including all three cities within Beaver County with a staff of four deputies, one dispatcher, five jailers and one administrator. The sheriff's station is handicapped accessible. It has no historical significance. The station is approximately 2,000 square feet. The average response time per call is four to five minutes.

One sheriff station is in Beaver City and one sheriff office with one deputy is located in Milford. The other deputies are located in Beaver City. The Beaver County Sheriff's Station has a dispatch center, six offices and a booking room.

Major facilities and equipment upgraded during the past five years: an enhanced emergency 911 system, a computer system and network, a work release program and exercise yard fences.

Facilities and equipment planned or desired within the next ten years: a new sheriff's facility if hog processing expands to capacity and if the population base expands; additional sheriff cars. Projected revenues are sufficient to cover capital improvements, staff, operation and maintenance costs for the next five years, unless the population expands significantly. Funding source: Beaver County general fund. Officers needed in the next ten years will depend on population growth.

**County Jail**

The jail has six cells. Each cell is double bunked and capacity is two prisoners per cell.

An average of 188 prisoners per year have been incarcerated within the jail during the past five years.

Facilities upgraded during the past five years: monitor/television room; and work release time.

The jail is handicapped accessible.

The jail has no historical significance.

Jail facilities and/or jail buildings planned or desired within ten years will depend on population increase. If a full-scale hog production (Smithfield Foods) is established, the jail facility will eventually need to double in size. Funding source: State Department of Corrections.

One jail cell in Milford has recently been closed down.

**Court Facilities**

The Beaver County Courthouse, within the Fifth Judicial District, is a two-story masonry building that houses the county clerks', auditor's and recorder's offices as well as other court functions. The courthouse serves the Beaver County District Court, Beaver County Juvenile Court and the Beaver County Justice Court. The facility also contains justice, district and attorney offices. Each court shares the same courtroom. The district court clerk also performs duties for the juvenile court. The jury room and the judge's chamber are adequate and efficient.. The internal access and circulation is relatively good.

Public access and security are marginal. Public access to the court facilities on the second floor is through the main lobby on the first floor and up the elevator or stairs and through the public corridor. Prisoners in custody also follow the same path.

The courthouse is handicapped accessible except for the restrooms.

The building meets code; however, there is no alarm system or sprinkling system.

The courthouse has no historical significance.

Courthouse facilities upgraded during the past five years: carpeting and repainting.

Court facilities planned or desired within the next ten years: additional office space, additional security, an additional courtroom and upgrade of restrooms to make handicapped accessible.

Court positions needed within the next ten years: probation officers for juvenile court, clerical positions for juvenile and district courts and work supervisors for juvenile court system.

# Appendix G - Land Use Density/Intensity Policy

**Table 13 - Density/Intensity and Policy Intent by Land Use Category**

| # | Designation | Typical Density/ Intensity | Policy Intent |
|---|---|---|---|
| | **Non-Urban Multiple Use** | | |
| 1 | Critical/Sensitive Lands | 1 du/40 acres | Limited development in areas with environmental constraints |
| 2 | Agriculture | 1 du/40 acres | Residential development on large agricultural lots |
| | **Residential** | | |
| 4 | Very Low Density | 0-0.2 du/acre | Very low density single family development which allows the keeping of large animals |
| 5 | Low Density | 0-2.0 du/acre | Single family low density development |
| 6 | Medium Density | 2.0-4.0 du/acre | Single and multi family medium density residential development |
| 7 | High Density | 4.0-6.0 du/acre | Multi family high density residential development |
| | **Commercial** | | |
| 8 | Neighborhood | | Limited day to day shopping facilities |
| 9 | Community | | General commercial and professional offices |
| 10 | Highway Service | | Services oriented to the traveling public |
| | **Industrial** | | |
| 11 | Industrial | | Light, non-smoke stack industry |

## Land Use Categories

A. Description of Categories

1. Critical/Sensitive Lands

Areas where development is discouraged due to steep hillsides (over 30%), high value wetlands, ridgelines, and floodplains. Agriculture and livestock grazing are permitted. Recreation amenities such as equestrian activities, trails and public open space are encouraged.

3. Agriculture

The Agriculture (A) category created to ensure preservation and continuation of existing agricultural farming and ranching uses within the city. Development in this category would be limited to one single-family home per legal lot and associated farm labor housing under appropriate permits. Lot sizes are intended to be in large acreages with minimum sizes of five (5) acres. Contiguous family owned land holdings may be considered in determining minimum lot sizes for agricultural operations within this designation. The uses expected in this category are expected to include farming, commercial raising of animals, agricultural intensive operations, repair and maintenance of farm equipment, storage of agricultural products and other similar uses related to the operation of a farm or ranch. The purpose of this designation will be to stimulate agricultural uses in these districts and make available agricultural use incentives such as preferential assessment or taxation and preferential densities, and to protect the property from encroaching by nuisance uses.

4. Residential Estates (RE)

Residential Estate (RE) is a category created to ensure the continuation of existing agricultural farming and ranching activities and to ensure the rural character of the planning area is maintained. The density of any development adjacent to agricultural zoning districts, should be maintained with larger lot sizes of five (5) acres. The keeping of large animals is intended to be allowed in this category. The density of proposed residential development is expected to be in large custom single-family homes on uniquely configured lots which have been designed to be sensitive to topographic and environmental considerations. Minimum lot sizes for large custom homes would be on one (5) acres.

5. Residential Very Low (RVL)

The Residential Very Low (RVL) is a single family detached category with a density ranging from 0-0.20 units per acre. The keeping of horses and related animals is generally not found in this category. Large custom single-family homes are expected to develop in this category.

Residential Low (RL)

Residential low (RL) is a single family detached category with a density range of 0-2 units per acre. Development is single family detached category to encourage moderate category corresponds to small groups of

7. Medium Density Residential Base Density = 2-4 unit/acre

Clustered, master planned developments are encouraged in the district. Interconnected

open space amenities through developments of this type assist to create conservation of available resources, as well as development of a Beaver City trail system.

8. High Density Residential Base Density = 4-10 units/acre

This area allows a variety of housing types, with proximity to schools, shopping areas, and major recreational facilities. This district can also be used as a transitional area between commercial uses and lower density residential area.

9. Commercial Uses

All commercial uses are intended to be located along Highway 91 and in the vicinity of the north and south Interstate 15 interchanges. Depending upon the location in that over all area commercial uses will be suited for highway service commercial, community or general commercial and neighborhood commercial. It is not the intent of this plan to designate specific areas, within the overall commercial boundaries, for these various uses. The plan will rely upon a consistent zoning ordinance for that purpose.

14. Light Industrial Uses

Light Industrial Uses shall include research and development, light industries, manufacturing, food production, distribution, storage, fabrication, assembly and servicing which will not create traffic hazards, noise, dust, fumes, odors, smoke, vapor, vibration, glare of industrial waste disposal problems.

# Appendix H - Beaver/Cove Fort Soil Survey

## Excerpts of Soil Survey of Beaver-Cove Fort Area, Utah, Parts of Beaver and Millard Counties

**CHIPMAN SERIES**

The Chipman series consists of deep, gently sloping, somewhat poorly drained soils on flood plains and river terraces. These soils formed in alluvium derived from intermediate igneous and sedimentary material. Chipman soils are in the meadow area between Beaver and Greenville. Elevation ranges from 5,700 to 6,000 feet. Mean annual air temperature is 45 to 48 degrees F, average annual precipitation is 11 to 13 inches, and the frost-free period is 100 to 108 days. The vegetation is meadow grasses and sedges.

In a representative profile the surface layer is gray silty clay loam about 20 inches thick. The upper 10 to 20 inches of the underlying layer is gray to light-gray, firm, silty clay loam in which lime has accumulated. The lower part is gray to light-gray loam, clay loam, or silty clay loam.

On Chipman soils there is little or no erosion. The available water capacity is 9 1- 11 inches in a 5-foot profile. Permeability is slow. Roots can penetrate to a depth of more than 5 feet. The water table generally is between depths of 10 and 30 inches.

These soils are used for meadow hay and pasture. They are suitable for drainage and, if drained, are suited to all locally grown crops.

Representative profile of Chipman silty clay loam, 0.6 mile south and 2 ½ miles west of Beaver Post Office, 450 feet south of road, sec. 30, T.29 S., R. 7 W.

A11- 0 to 6 inches, gray (10 YR 5/1) silty clay loam, very dark brown (10YR 2/2) when moist; weak, medium, granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; few fine, tubular pores; moderately calcareous; mildly alkaline (pH 7.8); clear, wavy boundary.

A12- 6 to 20 inches, gray (10YR 5/1) silty clay loam, very dark brown (10YR 2/2) when moist; moderate, medium, granular structure; slightly hard, friable, sticky and plastic; many fine roots; few fine, tubular pores; strongly calcareous; moderately alkaline (pH 8.2);clear, wavy boundary.

C1ca- 20 to 30 inches, fray to light gray (10YR 6/1) silty clay loam, dark gray (10YR 4/1) when moist; few, fine, distinct, dark yellowish-brown (10YR 3/4) mottles; weak fine, subangular blocky structure; hard, sticky and plastic; few, fine roots; few fine pores; strongly calcareous; moderately alkaline; (pH 8.2); clear, wavy boundary.

C2- 30 to 60 inches, fray to light gray (10YR 6/1) loam, dark gray (10YR 4/1) when moist; few, fine, distinct, dark yellowish-brown (10YR 3/4) mottles; massive; hard, firm, sticky and plastic; few, fine roots; few fine pores; slightly calcareous; mildly alkaline (pH7.8); clear wavy boundary.

The A1 horizon is silty clay loam or clay loam is 16 to 22 inches thick. It has color value of 4 or 5 when dry and 2 when moist and chroma of 1 or 2. The 10- to 40-inch depth is predominantly silty clay loam or clay loam. A buried A1 horizon is common but does not occur in all places. The lime horizon is 10 to 30 inches below the surface. Some areas have a layer of gravelly loan below a depth of 36 inches. At a depth between 20 and 40 inches the color chroma is 2 or less, and the mottles are distinct or predominant.

**CHIPMAN SILTY CLAY LOAM (Ca)**. -- This soil has slopes of 1 to 3 percent. Included in mapping are some small areas of soils that are similar to this Chipman soil but are 20 to 36 inches deep to gravel. These gravelly areas are 1 mile east of Greenville on both the north and the south sides of the road; three-fourths of a mile west and one-half mile north of Beaver Post Office; three fourths of a mile west of Beaver Post Office on both the north and the south sides of the highway; and 1 1/4 miles west and between ½ and 3/4 mile north of Beaver Post Office. Some small areas 3/4 mile east and 1/4 mile south of Greenville, near the Beaver River, that are moderately saline are also included.

Runoff is slow, and the hazard of erosion is slight.

This soil is used almost entirely for pasture or meadow hay. If drained, this soil is suitable for cultivation and can be used for locally grown crops. Capability unit Vw-2, irrigated; not in a range site.

**DECCA SERIES**

The Decca series consists of deep, somewhat excessively drained soils underlain by sand and gravel. These soils formed in alluvium derived from mixed igneous and quartzite material. They are on dissected fans, terraces, and hills. Decca soils are mainly in the area south and west of Beaver and extend to the lower fans of the Mineral Mountain Range. They are also near Antelope Spring and Twin Peak in the northern end of the survey area. They are associated with Hiko Peak soils. Elevation ranges from 5,400 to 5,900 feet, mean annual air temperature is 47 to 49 degrees F, average annual precipitation is 9 to 12 inches, and the frost-free period is 100 to 108 days. The vegetation is big sagebrush, Indian ricegrass, squirreltain, galleta, and annual weeds.

In a representative profile the surface layer is brown loam about 4 inches thick. The upper 5 inches of the underlying material is very pale brown, very gravelly sandy loam that is very strongly calcareous and weakly calcareous and weakly cemented in places. The lower part is sand and gravel.

Decca soils are slightly to moderately eroded. The available water capacity is 3 to 4 inches in a 5-foot profile, and the water supplying capacity is about 5 to 8 inches. Permeability is moderate. Roots can penetrate to a depth of more than 5 feet.

These Decca soils are slightly to moderately eroded. The available water capacity is 3 to 4 inches in a 5-foot profile, and the water supplying capacity is about 5 to 8 inches. Permeability is moderate. Roots can penetrate to a depth of more than 5 feet.

These soils are used for range, wildlife habitat, watershed catchment, and irrigated crops. The irrigated crops are alfalfa, small grain, pasture plants, and occasionally silage corn. These solid are not well suited to range seeding because of low precipitation. Range vegetation can be improved through good management.

representative profile of Decca loam, 1 to 3 percent slopes, o.3 miles south of Beaver River bridge on old State Highway 21 at Adamsville and 150 feet west of the highway, sec. 31, T.29 S., R. 8 W.

A1- 0 to 4 inches, brown (10YR 5/3) loam, dark brown (10YR 4/3) when moist; weak, thick, platy, structure that parts to moderate, thin platy; slightly hard, friable, slightly sticky and slightly plastic, few fine roots; few, fine tubular pores; mildly alkaline (pH7.5); abrupt, smooth boundary.

B2t- 4 to 10 inches, brown (10YR 5/3) sandy clay loam marginal to loam, brown to dark brown (7.5YR 4/3) when moist; weak coarse, subangular blocky structure that parts to fine blocky; hard, friable, sticky and plastic; common fine and few medium roots; few, fine tubular pores; few thin clay films occurring as bridgings between sand grains; neutral (pH7.3); clear, wavy boundary.

B3ca- 10 to 15 inches, pale-brown (10YR 6/3) gravelly loam, brown (10YR 4/3) when moist; weak, subangular blocky structure; slightly sticky and plastic; common fine roots; few, fine, tubular pores; moderately calcareous; mildly alkaline (pH7.6); clear, wavy boundary.

C1ca- 15 to 20 inches, very pale brown (10YR 8/3) very gravelly sandy loam, pale brown (10YR 6/3) when moist; weak, subangular blocky structure; very hard, weakly cemented, firm, slightly sticky and slightly plastic; common fine roots; few, fine, tubular pores; strongly calcareous; mildly alkaline(pH 7.4); clear, wavy boundary.

IIC2- 20 to 60 inches, varicolored sand and gravel, mainly grayish-brown (10YR 5/2) very gravelly sand, dark grayish-brown (10YR 4/2) when moist;single grained; loose when dry or moist; few fine roots; slightly calcareous; mildly alkaline (pH7.5)

The A1 horizon is 4 to 6 inches thick. It has color value of 5 or 6 when dry and 3 or 4 when moist and chroma of 2 or 3. In places the A1 and B2t horizons are calcareous. The B2t horizon is sandy clay loam, loam, or light clay loam. It has color hue of 10YR or 7.5YR, value of 5 or 6 when dry and 4 when moist, and chroma of 3 or 4. Depth to the Cca horizon is 12 to 20 inches. This horizon is 5 to 30 inches thick. The C horizon ranges from very gravelly sandy loam to very gravelly sand and sand.

**Decca loam, 3 to 6 percent slopes** (DeC).--On this soil, runoff is medium, and the hazard of erosion is moderate. This soil is used mainly for irrigated crops. A small part is used as range. Capability unit VIIs-S, nonirrigated, and IVS-24, irrigated; Semidesert Stony Loam range site.

**DRAPER VARIANT**

The Draper Variant consists of deep, gently sloping, somewhat poorly drained soils on river terraces and flood plains. These soils formed in alluvium derived from mixed igneous and quartzite material. They are on the valley bottom between Beaver and Greenville. Elevation ranges from 5,700 to 6,000 feet. Mean annual air temperature is 45 to 48 degrees F, average annual precipitation is 11 to 13 inches, and the frost-free period is 100 to 108 days. These soils are generally moist. The vegetation includes meadow grasses, clovers, and sedges.

In a representative profile the surface layer is dark-brown loam about 9 inches thick. Below this is 6 inches of brown gravelly loam. Next is pale-brown gravelly sandy loam that is mottled and about 10 inches thick. Ar a depth of about 25 inches is gravel and very gravelly sand.

The water table fluctuates during the year. It is highest in spring and recedes in summer and fall as the supply of irrigation water decreases.

On the Draper variant, there is little or no erosion. The available water capacity is 4.5 to 5.5 inches in a 5-foot profile. Permeability is moderate. The water table is generally between depths of 15 and 30 inches. Roots can penetrate to a depth of 60 inches.

Meadow pasture and meadow hay are grown on these soils, and in some partly drained areas, irrigated crops of alfalfa and small grain are grown. These soils can be drained, and if the water table is lowered to a depth of 24 to 30 inches, all the locally suited crops can be grown.

Representative profile of Draper loam, sandy subsoil variant, 0.6 mile west of Beaver Post Office and 100 feet north of the highway; NW1/4 sec 21 T. 39 S., R 7 W.

O1- 2 inches to 0, meadow sod containing some mineral soil material.

A1- 0 to 9 inches, brown (10YR 5/3) loam, dark brown (10YR 3/3) when moist; few fine, faint, dark yellowish-brown (10YR 4/4) mottles; weak, medium, subangular blocky; slightly hard or hard, friable, slightly sticky and slightly plastic; many fine roots; few fine pores; neutral (pH 7.0); clear wavy boundary.

AC- 9 to 15 inches, brown (10YR 5/3) gravelly loam, dark brown yellowish-brown (10YR 4/4) mottles; weak, medium, subangular blocky; slightly hard or hard, friable, slightly sticky and slightly plastic; many fine roots; few fine pores; neutral (pH 7.0); clear, wavy boundary.

C1- 15 to 25 inches, pale-brown (10YR 6/3) gravelly sandy loam, brown to dark brown (10YR 4/3) when moist; common, fine, distinct, yellowish-brown (10YR 5/6) mottles; weak, medium, subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common fine roots; few fine pores; moderately alkaline (pH 7.9).

IIC2- 25 to 60 inches, gravel and very gravelly sand.

The A1 horizon is loam or heavy loam that ranges from 8 to 12 inches in thickness. The upper part of the profile at depths between 10 and 40 inches, is gravelly loam or gravelly sandy loam, and the lower part ranges from very

gravelly sandy loam to very gravelly sand or gravel.

**Draper loam, sandy subsoil variant** (Ds).--On this soil, runoff is slow, and the hazard of erosion is slight.

this soil has limitations because of the gravelly soil material and the high water table. If drained and the water table controlled, the soil is suited to locally grown crops. Capability unit Vw-2, irrigated.

**JAMES CANYON SERIES**

The James Canyon series consists of deep, gently sloping, poorly drained soils on alluvial valley bottoms. These soils formed in alluvium derived from intermediate igneous and some sedimentary material. James Canyon soils are mainly along the Beaver River east of Greenville and southwest of Beaver. Elevation ranges from 5,700 to 6.000 feet. Mean annual air temperature is 45 to 48 degrees F, average annual precipitation is 11 to 13 inches, and the frost-free period is 100 to 108 days. The present vegetation includes meadow grasses, red clover, and sedges.

In a representative profile. the surface layer is black and dark-gray silt loam about 28 inches thick. The upper 28 inches of the underlying layer is gray and dark-gray loam and silt loam. The lower part of the underlying layer, extending to a depth of 60 inches, is gray sandy loam.

On James Canyon soils the hazard of erosion is slight. Available water capacity is 7.5 to 10 inches in a 5-foot profile. Permeability is moderately slow. Roots can penetrate to a depth of more than 5 feet. The water table ranges from near the surface to about 30 inches below the surface, depending on the season and the amount of water applied to this and adjacent soils.

Most areas are used for meadow hay or pasture, but a few small areas are used for alfalfa or small grain. If not drained these soils are suited mainly to pasture or meadow hay. If drained, they are suited to all locally grown crops.

Representative profile of James Canyon silt loam, 1 to 3 percent slopes, 1 1/4 miles south of Beaver Post Office on State Highway 91, 100 feet west of highway, sec. 28, T 29 S., R. 7 W.

A11- 0 to 16 inches, dark-gray (10YR 4/1) silt loam, black (10YR 2/1) when moist; weak, medium, granular structure; hard friable, sticky and plastic; many fine roots; common, fine, discontinuous, random, tubular pores; mildly alkaline (pH 7.4); abrupt, smooth boundary.

A12- 16 to 28 inches, gray (10YR 5/1) heavy silt loam, black (10YR 2/1) when moist; 15 percent of the soil mass is dark gray (5Y 4/1) mottles; massive; hard, friable, sticky and plastic; few fine roots; few, fine, discontinuous, random, tubular pores; mildly alkaline (pH 7.4); abrupt, smooth boundary.

C1- 28 to 32 inches, gray (10YR 5/1) loam, very dark gray (10YR 3/1) when moist; massive; hard, friable, sticky and plastic; few fine roots; few, fine, discontinuous, random, tubular pores; mildly alkaline (pH 7.6); clear, smooth boundary.

C2- 32 to 56 inches, dark-gray (10YR 4/1) silt loam, black (10YR 2/1) when moist; massive; hard, friable, sticky and plastic, very few fine roots; few, fine, random, tubular pores; mildly alkaline (pH 7.4); clear, smooth boundary.

C3- 56 to 60 inches, gray (10YR 5/1) sandy loam; very dark gray (10YR 3/1) when moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few, fine, random, tubular pores; mildly alkaline (pH 7.6).

The A1 horizon is 10 to 28 inches thick. It has color value of 4 or 5 when dry and 2 when moist. The C horizon is loam, silt loam, or sandy loam, but is dominantly silt loam. Gravelly sand or gravelly sandy loam occur below a depth of 30 inches in some places. This horizon has color value of 4 or 5 when dry and 2 or 3 when moist and chroma of 1 or 2. Where chroma is 2, the soil is mottled.

**James Canyon silt loam, 1 to 3 percent slopes** (JcB).-- This soil has the profile described as representative of the series. It is used mainly for meadow hay or pasture. If drained, this soil is suited to all locally grown crops. Runoff is slow, and the hazard of erosion is slight. Capability nit Vw-2, irrigated.

**JAMES CANYON CALCAREOUS VARIANT**

The James Canyon calcareous variant consists of deep, gently sloping, somewhat poorly drained soils on flood plains and river terraces. These soils formed in alluvium derived from igneous and sedimentary material. They are south and west of Beaver and extend toward Adamsville. Elevation ranges from 5,700 to 6,000 feet. Mean annual air temperature is 45 to 48 degrees F; average annual precipitation is 11 to 13 inches; and the frost-free period is 100 to 108 days. The present vegetation is meadow grasses and clovers.

In a representative profile the surface layer is dark-gray loam about 16 inches thick. The underlying layer is dark grayish-brown or light brownish-gray loam that extends to a depth of 60 inches. Horizons of strong lime accumulation are within 10 to 16 inches of the surface.

On the James Canyon calcareous variant, the hazard of erosion is slight. Available water capacity is 7.5 to 10 inches in a 5-foot profile. Permeability is moderate. Roots can penetrate to a depth of more than 5 feet. The water table is generally at a depth of about 24 to 36 inches, but it fluctuates, depending on the amount of irrigation water applied to these and adjacent soils.

These soils are used for meadow hay and pasture and in some better drained areas, irrigated crops. If these soils are drained and the ground water level is controlled, they are well suited to all locally grown crops.

Representative profile of James Canyon loam, calcareous variant, ½ mile south and ½ mile west of the Beaver Post Office, 400 feet northwest of the road, sec. 21, T.29., R. 7 W.

A11- 0 to 4 inches, dark-gray (10YR 4/1) loam, black (10YR 2/1) when moist; moderate, medium and fine, granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; few fine pores; strongly calcareous; moderately alkaline (pH 8.0); clear, wavy boundary.

A12- 4 to 16 inches, dark gray (10YR 4/1) loam, very dark brown (10YR 2/2) when moist; weak, prismatic structure that parts to fine, subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; few, fine pores; strongly calcareous; moderately alkaline (pH 8.0); clear, wavy boundary.

ACca- 16 to 43 inches, dark grayish-brown (10YR 4/2) loam, very dark brown (10YR 2/2) when moist;

weak, medium, prismatic structure that parts to medium, granular; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few fine pores; strongly calcareous; moderately alkaline (pH 8.0); clear wavy boundary.

C- 43 to 60 inches, light brownish-gray (10YR 6/2) loam, very dark gray (10YR 3/1) when moist; few, fine, faint, very dark brown (10YR 2/3) mottles; massive; slightly hard, friable, sticky and plastic; few fine roots; no pores; slightly calcareous; mildly alkaline (pH7.7).

The A1 horizon is 10 to 20 inches thick. It has color value of 4 or 5 when dry and 2 or 3 when moist and chroma of 1 or 2. Faint mottles may occur between depths of 24 and 40 inches. The C horizon is loam of sandy clay loam. Depth to the horizon of lime accumulation is 10 to 16 inches. This horizon is 10 to 30 inches thick. The texture below a depth of 20 inches ranges from clay loam to gravelly sandy loam, and in places it is gravelly sand.

**James Canyon loam, calcareous variant** (Jm).--This soil has slopes of 1 to 3 percent. It is used for meadow hay, pasture, and irrigated crops. It is somewhat limited by a high water table. If drained, it is suited to all locally grown crops. Runoff is slow, and the hazard of erosion is slight. Capability unit IIw-2, irrigated.

**JAMES CANYON HEAVY VARIANT**

The James Canyon heavy variant consists of deep, gently sloping, poorly drained soils on flood plains and river terraces. These soils formed in alluvium derived from sedimentary and igneous material. They are in the area between Beaver and Greenville. Elevation ranges from 5,700 to 6,000 feet. Mean annual air temperature is 45 to 48 degrees F, average annual precipitation is 11 to 13 inches, and the frost-free period is 100 to 108 days. The vegetation is meadow grasses and sedges.

In a representative profile the surface layer is covered with about 4 inches of meadow sod. The surface layer is grayish brown and dark gray silty clay loam about 17 inches thick. The subsoil, about 17 inches thick, is light gray, silty clay loam that has prominent or distinct mottles. The substratum is gray silty clay.

On James Canyon heavy variant, the hazard of erosion is slight. The available water capacity is about 11 inches in a 5-foot profile. Permeability is slow. roots can penetrate to a depth of 60 inches. The water table ranges from near the surface to about 20 inches below the surface.

These soils are used mainly for pasture. They are difficult to drain because of their slow permeability. If partly drained and carefully irrigated, these soils are suitable for improved pasture and grain or cultivated crops.

Representative profile of James Canyon silty clay loam, heavy variant, 1 mile west and 1/4 mile south of Beaver Post Office, 250 feet northwest of road corner, sec. 21, T.29 S., R. 8 W.

O1- 4 inches to 0, very dark grayish-brown to dark grayish-brown (10YR 4/2) meadow sod and some calcareous silty clay loam sediment.

A11- 0 to 7 inches, grayish-brown (10YR 5/2) silty clay loam, black (10YR 2/1) when moist; very weak,coarse, prismatic structure that parts to moderate, thin, platy; very hard, firm, sticky and plastic; fine roots; few, fine, tubular pores; strongly calcareous; mildly alkaline (pH 7.8); clear, wavy boundary.

A12- 7 to 17 inches, dark-gray (10YR 4/1) silty clay marginal to silty clay loam, black (10YR 2/1) when moist; moderate, fine, subangular blocky structure that parts to moderate, fine, granular; very hard, firm, sticky and plastic; common fine roots; few, fine, tubular pores; moderately calcareous; mildly alkaline (pH 7.6); clear, wavy boundary.

B2- 17 to 34 inches, light-gray (2.5Y 7/1) silty clay loam, gray (2.5Y 5/1) when moist; common, fine, prominent, faint, gray (M 5/0) mottles; moderate, medium, subangular blocky structure; hard firm, sticky and plastic; few fine roots; few fine pores; slightly calcareous; moderately alkaline (pH 8.0); abrupt, smooth boundary.

C- 34 to 60 inches, gary (2.5Y 5/1) silty clay that is marginal to silty clay loam, dark gray (5Y 4/1) when moist; strongly mottled with green when moist but with light yellowish brown when dry; massive; sticky and plastic; slightly calcareous; mildly alkaline (pH 7.7).

In places the organic horizon at the surface is lacking. The A1 horizon is 10 to 18 inches thick. It has color value of 4 or 5 when dry and 2 when moist and chroma of 1. The 10 to 40 inch zone has color hues of 10YR or 2.5Y, value of 5 to 7 when dry and 2 to 5 when moist, and chroma of 1 or less. This layer is heavy silty clay loam, silty clay loam, or silty clay, and the strata range from loam to silty clay loam. Predominant mottles are generally present above a depth of 20 inches.

**James Canyon silty clay loam, heavy variant** (Jn).--This soil has the profile described as representative of the variant. Slopes are 1 to 3 percent. Runoff is slow, and the hazard of erosion is slight.

This soil is used for pasture. It can be improved by drainage. Capability unit Vw-2, irrigated.

**MANDERFIELD SERIES**

The Manderfield series consists of deep, gently sloping and moderately sloping, well-drained soils on alluvial fans and outwash plains. These soils formed in alluvium derived from mixed igneous material and quartzite. Manderfield soils are mainly in the southeastern quarter of the survey area, in the general vicinity of Beaver and Manderfield. Elevation ranges from 5,800 to 6,200 feet. Mean annual air temperature is 46 to 48 degrees F, average annual precipitation is 12 to 14 inches, and the frost-free period is 100 to 108 days. The vegetation is juniper, pinon, big sagebrush, and bluebunch wheatgrass, but in some areas juniper and pinon completely dominate the vegetation.

In a representative profile the surface layer is brown loam about 5 inches thick. The subsoil is brown, firm light clay loam and pale-brown gravelly loam about 19 inches thick. The underlying layer is pale-brown very gravelly loamy sand.

some of the Manderfield soils are slightly to moderately eroded. The available water capacity is 3 to 5 inches in a 5-foot profile, and the water-supplying capacity is 8 to 9 inches. Permeability is moderate. Roots can penetrate to a depth of more than 5 feet.

These soils are used for range, wildlife habitat, watershed catchment, and irrigated crops and pasture. Areas used for range are suitable for brush management, clearing, and range seeding where such practices are needed.

Representative profile of Manderfield loam, 1 to 3 percent slopes, 1/35 miles north of Beaver Post Office on U.S. Highway 91, 115 feet west of highway; SE 14SE14 sec. 9, T.29 S., R. 7 W.

Ap- 0 to 5 inches brown (10YR 5/3) loam, dark brown (10YR 3/3) when moist; moderate, fine, granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine roots; no pores; neutral (pH 7.3); abrupt, smooth boundary.

B2t- 5 to 16 inches brown (10YR 5/3) light clay loam, dark brown (10YR 3/3) when moist; weak, medium, to moderate, fine subangular blocky structure; hard, friable, sticky and plastic; common fine roots; many, medium tubular pores; thin, patchy clay films; mildly alkaline (pH 7.6); abrupt, wavy boundary.

B3- 16 to 24 inches, pale-brown (10YR 6/3) gravelly loam, dark brown (10YR 4/3) when moist; weak, medium, subangular blocky structure; hard, firm, sticky and plastic; fine roots; moderately calcareous, soft secondary lime accumulations in the soil mass and as coatings on gravel; moderately alkaline (pH 8.3); clear, wavy boundary.

IIC- 24 to 60 inches, pale-brown (10YR 6/3) very gravelly loamy sand; dark brown (10YR 4/3) when moist; massive; nonsticky and nonplastic; very few fine roots; moderately calcareous, lime coatings on gravel; strongly alkaline (pH 8.5); clear, wavy boundary.

The A horizon is 2 to 10 inches thick. It has color hue of 10YR or 7.5YR, value of 5 when dry and 3 when moist, and chroma of 2 or 3. The B2t horizon is 10 to 20 inches thick. It is heavy loam or clay loam in the upper part, and gravelly heavy loam or clay loam in the lower part. This horizon has color hue of 7.5YR or 10YR, value of 5 when dry and 3 when moist, and chroma of 2 through 4. The C horizon is gravelly or very gravelly loamy sand or sand. Lime coatings on the gravel occur just below the B2t horizon in places.

**Manderfield loam, 1 to 3 percent slopes** (MaB).--This soil is gently sloping and occurs on alluvial fans and outwash plains. It has the profile described as representative of the series. The soil is slightly eroded and has an available water capacity of about 3.5 to 4 inches. Runoff is slow, and the hazard of erosion is slight.

This soil is used for irrigated crops, wildlife habitat, watershed catchment and range. Irrigated crops are alfalfa, small grain, and pasture. Capability unit V1s-U, nonirrigated, and IIIs-24, irrigated; Upland Stony Loam range site.

**Manderfield cobbly loam, 1 to 6 percent slopes** (MeC).--This soil has a profile similar to the one described as representative of the series, but the surface layer is about 25 to 40 percent cobbles. Runoff is slow to medium, and the hazard of erosion is slight to moderate.

This soil is used for range, wildlife habitat, watershed catchment, and irrigated crops. The crops are alfalfa hay, small grain, and pasture. Capability unit VIs-U, nonirrigated, and IVS-24, irrigated; Upland Stony Loam range site.

**MILL HOLLOW SERIES**

The Mill Hollow series consists of deep, gently sloping to steep, well-drained soils on mountains and hills. These soils formed in alluvium derived from basis igneous material. Mill Hollow soils are mainly in the northern end of the survey area. They are associated with Firmage, Pharo, and Ushar soils and Rock outcrop. Elevation ranges from 5,900 to 6,500 feet. Mean annual air temperature is 45 to 48 degrees F, average annual precipitation is 12 to 14 inches, and the frostfree period is 100 to 108 days. The vegetation is big sagebrush, Indian ricegrass, bluebunch wheatgrass and scattered juniper.

In a representative profile the surface layer is brown very cobbly loam and loam about 7 inches thick. The upper part of the underlying layer is brown, pale-brown, or white, friable, very strongly calcareous loam about 27 inches thick. The lower part of the underlying layer is white stony loam.

On Mill Hollow soils the hazard or erosion is moderate to high. The available water capacity is 7 to 9 inches in a 5-foot profile, and the water supplying capacity is 7 to 10 inches. Permeability is moderate. Roots can penetrate to a depth of more than 5 feet.

these soils are used for range, watershed catchment, and wildlife habitat. They are suitable for brush management, clearing, and range seeding where such practices are necessary. The cobbly surface restricts the use of drills for range seeding. Vegetation can be improved by using good range management.

Representative profile of Mill Hollow very cobbly loam, 2 to 10 percent slopes, 4 miles north and 6 miles east of Antelope Point, SE1/4 of sec. 26, T.24 S., R.8 W.

A11- 0 to 2 inches, brown (10YR 5/3)very cobbly loam, dark brown (10YR 3/3) when moist; weak, think, platy structure that parts to weak, fine granular; soft, friable, slightly sticky and plastic; common pores; moderately alkaline (pH 8.2); abrupt, smooth boundary.

A12- 2 to 7 inches, brown (10YR 5/3) loam, dark brown (10YR 3/3) when moist; weak, fine, granular structure; soft, friable, slightly sticky and plastic; common fine and medium and few coarse roots; few, fine and medium, tubular pores; slightly calcareous; moderately alkaline (pH 8.2); clear, smooth boundary.

Clea- 7 to 10 inches, brown (10YR 5/3) loam, dark brown to brown (10YR 4/3) when moist; weak, medium, subangular blocky structure; slightly sticky and plastic; common fine and few medium roots; few, medium and coarse, tubular pores; strongly alkaline (ph 8.5); gradual smooth boundary.

C2ea- 10 to 14 inches, pale-brown (10YR 6/3) loam, brown (10YR 5/3) when moist; weak fine, subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few fine and medium roots; few, fine and medium tubular pores; strongly calcareous; strongly alkaline (pH 8.6); gradual, smooth boundary.

C3ca- 14 to 34 inches, white (10YR 8/2) loam, very pale brown (10YR 7/3) when moist; massive; weakly cemented, friable, slightly sticky and slightly plastic; few fine, roots; few, fine, tubular pores; very strongly calcareous; strongly alkaline (pH 8.8).

C4ca- 34 to 60 inches, white (10YR 8/2) extremely stony loam, very pale brown (10YR 7/3) when moist; massive; weakly cemented, friable, slightly sticky and slightly plastic; few fine roots;

few, fine, tubular pores; very strongly calcareous; strongly alkaline (pH 8.8).

The A1 horizon is 7 to 10 inches thick and is 10 to 80 percent cobbles. It has the color hue of 10YR or 7.5YR, value of 5 when dry and 3 when moist, and chroma of 2 or 3. The C horizon is heavy loam or heavy silt loam. Depth to inches. Variable amounts of cobbles and stones occur in the lower part of the C horizon below a depth of 30 inches.

**Mill Hollow very cobbly loam, 2 to 10 percent slopes** (MMD).--This gently rolling to rolling soil occurs on hills. It has the profile described as representative of the series. Runoff is medium, and the hazard of erosion is moderate.

This soil is not suitable for range seeding with drills because it has a very cobbly surface. Capability unit VIIs-U, nonirrigated; Upland Limy Loam range site.

**MOSIDA SERIES**

The Mosida series consists of deep, gently sloping and moderately sloping, well-drained soils on alluvial fans, in valleys, and on flood plains. These soils formed in alluvium derived from mixed sedimentary and igneous material. Mosida soils are in alluvial valleys in several places throughout the area. They are associated with Ushar soils. Elevation ranges from 5,900 to 6,300 feet. Mean annual air temperature is 45 to 48 degrees F, average annual precipitation is 12 to 13 inches, and the frost-free period is 100 to 108 days. The vegetation is big sagebrush, rabbitbrush, Indian ricegrass, squirreltail. bluebunch wheatgrass, and annual weeds.

In a representative profile the surface layer is dark grayish-brown loam about 6 inches thick. The upper 42 inches of the underlying layer is dark grayish-brown or grayish-brown, very friable loam and silt loam. The lower part is pale-brown, very friable loam.

Mosida soils are slightly to moderately eroded and in places, gullied. The available water capacity is 7 to 9 inches in a 5-foot profile, and the water supplying capacity is 10 to 12 inches. Permeability is moderate. Roots can penetrate to a depth of 5 feet.

These soils are used for irrigated and nonirrigated crops, wildlife habitat, watershed catchment, and range. They are suitable for brush management, clearing, and range seeding where such practices are needed.

Representative profile of Mosida loam, 1 to 3 percent slopes, 2.5 miles south and 1 mile west of the Beaver Post Office, 200 feet northwest of an irrigation well, sec. 32, T. 29 S., R. 7 W.

Ap- 0 to 6 inches, dark, grayish-brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) when moist; weak fine, granular structure; slightly hard, very friable, nonsticky and nonplastic; many fine roots; many fine pores; slightly calcareous; neutral (pH 7.0); abrupt, smooth boundary.

C1- 6 to 20 inches, dark grayish-brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) when moist; weak, medium, prismatic structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; few fine pores; slightly calcareous; mildly alkaline (pH 7.7); abrupt smooth boundary.

C2- 20 to 48 inches, grayish-brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) when moist; massive; slightly hard, very friable, slightly sticky and slightly plastic;; few fine roots; few fine pores; slightly calcareous; mildly alkaline (pH7.8); clear, smooth boundary.

C3- 48 to 66 inches, pale-brown (10YR 6/3) loam, dark grayish brown (10YR 4/2) when moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; moderately calcareous; mildly alkaline (pH 7.7).

The A1 horizon is 4 to 8 inches thick. It has color value of 4 or 5 when dry and 3 when moist and chroma of 2. The C horizon, between depths of 10 and 40 inches, is light loam or light silt loam ranging to very fine sandy loam in some places. In places gravelly horizons occur below a depth of 36 inches. These horizons have color value of 4 or 5 when dry and 3 when moist and chroma of 2. The soil is slightly to moderately calcareous and, in places, is noncalcareous.

**Mosida loam, 1 to 3 percent slopes** (Mub).--This gently sloping soil occurs on alluvial fans, on flood plains, and in valleys, It has the profile described as representative of the series. Runoff is slow, and the hazard of erosion is slight.

This soil is used mainly for irrigated crops. Among these crops are alfalfa, small grain, and occasionally, corn for silage. This soil is suited to locally grown corn for silage. This soil is suited to locally grown irrigated and nonirrigated crops. Capability unit IIe-26, irrigated, and I'VE-UZ, nonirrigated; Upland Loam range site.

**Mosida loam, 3 to 6 percent slopes** (MuC).--On this soil, runoff is medium and the hazard of erosion is moderate. This soil is used for irrigated and nonirrigated crops. Capability unit I'VE-UZ, nonirrigated, and IIIe-26, irrigated; Upland Loam range site.

**Mosida loam, 1 to 6 percent slopes, eroded** (MuC2).--This soil is gently sloping to sloping and is on alluvial fans and in valleys. It has a profile similar to the one described as representative of the series, but the surface layer is 2 to 3 inches thinner. This soil is moderately eroded, and there are a few gullies, Included in mapping are small areas of Mill Hollow loam, 1 to 10 percent slopes, and Phage loam 3 to 10 percent, eroded. Runoff is medium, and the hazard of erosion is moderate.

This soil is used mainly for range, but a small acreage is used for nonirrigated crops. Capability unit I'VE-UZ, nonirrigated; Upland Loam range site.

**OASIS SERIES**

The Oasis series consists of deep gently sloping well-drained soils that are affected by alkali. These soils are on flood plains and alluvial fans. They formed in alluvium derived from igneous and sedimentary materials. Oasis soils are mainly on the fans above the Beaver River in the area near Greenville. Elevation ranges from 5,300 to 5,900 feet. Mean annual air temperature is 48 to 49 degrees F, average annual precipitation is 10 to 12 inches, and the frostfree period is 105 to 115 days. The vegetation is greasewood, Russian-thistle, and cheatgrass.

In a representative profile the surface layer is pale-brown, friable light loam about 8 inches thick. The upper 24 inches of the underlying layer is pale-brown and light-brown, friable light loam. The lower part is light-brown, friable sandy loam. All horizons are strongly alkaline or very strongly alkaline.

The hazard of erosion is moderate. The available water capacity is 6.5 to 8.5 inches, and the water supplying capacity is only about

4 to 5 inches because of the high content of salts and alkali. Permeability is moderate. roots can penetrate to a depth of more than 5 feet.

These soils are used for range and wildlife habitat. They are not suitable for clearing and range seeding because they contain salts and alkali. Permeability is moderate. roots can penetrate to a depth of more than 5 feet.

These soils are used for range and wildlife habitat. They are not suitable for clearing and range seeding because they contain salts and because precipitation is low. They are suitable for irrigation where the saline and alkali salts have been leached out.

Representative profile of Oasis loam, 1 to 3 percent slopes, 7.1 miles west of Beaver Post Office on U.S. Highway 21, 100 feet south of highway, SW 14 of sec. 28, T. 29 S., R. 8 W.

Ap1- 0 to 2 inches, pale brown (10YR 6/3) light loam, brown to dark brown (10YR 4/3) when moist; weak, thick, platy structure that parts to weak, coarse, granular; very hard, friable, slightly sticky and slightly plastic; common fine roots; few fine pores; moderately calcareous; very strongly alkaline (pH 9.1); abrupt, smooth boundary.

Ap2- 2 to 8 inches, pale-brown (10YR6/3) light loam, brown to dark brown (10YR 4/3) when moist; weak, coarse, subangular blocky structure that parts to fine, blocky; very hard, friable, slightly sticky and slightly plastic; few medium roots; few fine pores; moderately calcareous; very strongly alkaline (pH 9.9); abrupt smooth boundary.

C1- 8 to 16 inches, pale-brown (10YR 6/3) light loam, brown to dark brown (10YR 4/3) when moist; weak, medium, prismatic structure that parts to moderate, medium, subangular blocky; hard, friable, slightly sticky and slightly plastic; few medium roots; few fine pores; moderately calcareous; somewhat dense and weakly cemented; very strongly alkaline (pH 9.6); clear, wavy boundary.

C2- 16 to 32 inches, light-brown (7.5YR 6/3) light loam, brown to dark brown (7.5 4/4) when moist; weak, coarse, subangular blocky structure that parts to fine, blocky; hard, friable, slightly sticky and slightly plastic; few fine roots; few fine pores; moderately calcareous, and content of lime increases with increasing depth; weakly cemented in the lower part; strongly alkaline (pH 8.5); clear wavy boundary.

C3- 32 to 60 inches, light-brown (7.5YR 6/3) sandy loam; brown (7.5YR 4.5/4) when moist; massive; hard, friable, slightly sticky and slightly plastic; few fine roots; no pores; strongly calcareous; moderately alkaline (pH 8.3).

The A1 horizon is 5 to 8 inches thick and is loam marginal to sandy loam. It has color value of 5 or 6 when dry and 4 when moist and chroma of 2 or 3. The C horizon is 7.5YR, value of 6 when dry and 4 or 5 when moist and chroma of 2 or 3. Gravelly pockets occur in places below a depth of 24 inches. Alkali salts (exchangeable sodium) make up 15 percent to as much as 80 percent of the profile.

**Oasis loam, 1 to 3 percent slopes** (OAB).--This soil has the profile described as representative of the series. Runoff is medium, and the hazard of erosion is moderate. This soil is moderately affected by saline salts as well as moderately to strongly affected by alkali salts. Capability unit VIIs-S8, nonirrigated; Semidesert Alkali Flats range site.

**PHAGE SERIES**

The Phage series consists of deep,moderately sloping to very steep, somewhat excessively drained soils. These soils are on terraces, dissected fans, hills, and mountains. They formed in alluvium derived from intermediate igneous and mixed sedimentary material. Phage soils occur throughout the survey area. They are associated with Red Butte, Ushar, Black Ridge, and Pass Canyon soils. Elevation ranges from 5,900 to 6,800 feet. Mean annual air temperature is 45 to 48 degrees F, average annual precipitation is 12 to 14 inches, and the frost-free period is 100 to 108 days. The vegetation is juniper, big sagebrush, yellowbrush, bluebunch wheatgrass, squirreltail, Indian ricegrass, needleandthread, Sandberg bluegrass, and annual forbs. The grasses are sparse.

In a representative profile the surface layer is brown loam about 6 inches thick. The Upper 17 inches of the underlying layer is light brownish-gray or very pale brown, friable loam or gravelly loam. The lower part is very pale brown very gravelly sandy loam. Layers of strong lime accumulation occur at a depth of 6 to 14 inches.

Phage soils are moderately to severely eroded. The available water capacity is 4 to 5.5 inches, and the water supplying capacity is 6 to 9 inches. Permeability is moderately rapid. Roots can penetrate to a depth of more than 5 feet.

These soils are used for range, wildlife habitat, woodland, and watershed catchment and have limited use as woodland. A small acreage is in irrigated crops. These soils are suitable for clearing and range seeding if such practices are needed.

Representative profile of Phage loam, 3 to 10 percent slopes, eroded, 0.8 mile west and ½ mile north of Manderfield, SW1/4SW1/4 sec. 16, T. 28 S., R. 7 W.

A1- 0 to 6 inches, brown (10YR 5/3) loam, dark brown (10YR 3/3) when moist; weak, very fin, granular structure; slightly hard, friable, slightly sticky and slightly plastic; common fine, medium, and coarse roots; few, fine and medium, tubular pores; slightly calcareous; moderately alkaline (pH 8.4); abrupt, smooth boundary.

C1ca -6 to 13 inches; light brownish-gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) when moist; weak, fine, subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common, fine, medium, and coarse roots; few, fine, tubular pores; strongly calcareous; moderately alkaline (pH 8.4); clear, smooth boundary.

C2ca- 13 to 23 inches, very pale brown (10YR 8/2) gravelly loam, very pale brown (10YR 7/3) when moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and coarse roots; few, fine tubular pores; very strongly calcareous; moderately alkaline (pH 8,.4); clear smooth boundary.

C3ca- 23 to 45 inches, very pale brown (10YR 8/3) very gravelly sandy loam, pale brown (10YR 7/3) when moist; massive; strongly cemented; few fine roots; no pores; very strongly calcareous; moderately alkaline (pH 8.4); irregular, wavy boundary.

C4ca- 45 to 58 inches, very pale brown (10YR 7/3) very gravelly sandy loam, pale brown (10YR 6/3) when moist; single grained; loose; nonsticky and nonplastic; few fine roots; strongly calcareous; moderately alkaline (pH 8.4); clear, wavy boundary.

C5ca- 58 to 63 inches, very pale brown (10YR 8/3) very gravelly sandy loam, pale brown (10YR 6.5/3) when moist; massive; strongly cemented; very strongly calcareous; strongly alkaline (pH 8.5); clear, wavy boundary.

The A1 horizon is 2 to 6 inches thick. It has color value of 5 and 3 when moist and chroma of 2 or 3. The C horizon has color hue of 10YR or 7.5YR, value of 6 to 8 when dry and 4 through 7 when moist, and chroma of 2 or 3. Textures range from gravelly or very gravelly loam to gravelly or very gravelly sandy loam and sand. Cobbles occur in some places, and in a few places there are thin nongravelly horizons. The average content of gravel of the C horizon, between depths of 10 and 40 inches, is 50 percent or more.

**Phage loam, 3 to 10 percent slopes, eroded** (P1D2)--This gently rolling to rolling soil is on terraces and dissected fans. It has the profile described as representative of the series. It is moderately eroded. Runoff is medium, and the hazard or erosion is moderate.

This soil is used for range, wildlife habitat, and watershed catchment and has limited use as woodland. Clearing, brush management, and range seeding are successful on this soil where needed. Capability unit vIe-U, nonirrigated; Upland Stony Loam (Juniper-Pinon) range sites.

**Phage gravelly loam, 3 to 10 percent slopes, eroded** (PkD2).--This gently rolling and rolling soil is on dissected fans and terraces. It has a profile similar to the one described as representative of the series, but the surface layer is 20 to 50 percent gravel. Runoff is slow to medium, and the hazard or erosion is slight to moderate. Included in mapping are small areas of soil that is similar to this Pharo soil but that is moderately deep to gravel.

Except in areas that have been abandoned because of water shortage, this soil is used almost entirely for crops. Among the crops are alfalfa and small grain. Capability unit I'VE-24, irrigated, and VIe-U, non irrigated; Upland Gravelly Loam range site.

**Phage cobbly loam, 3 to 30 percent slopes,eroded** (PLF2)-- This soil is gently rolling to steep and is on dissected fans, terraces, rolling hills, and mountain slopes. It has a profile similar to the one described as representative of this series, but the surface layer is 20 to 40 percent cobbles. Runoff is medium to rapid, and the hazard of erosion is moderate to high. The cobbly surface layer imposes some limitations on the seeding of range grasses. Capability unit VIe-U, nonirrigated, Upland Stony Loam (Juniper-Pinion) range site.

**Phage cobbly loam, 30 to 50 percent slopes, eroded** (PLG2).--This soil is steep and very steep and is on mountain slopes. It occurs in several small areas in the southern and southeastern parts of the survey area. It has a profile similar to the one described as representative of the series, but the surface layer is 20 to 50 percent cobbles. Runoff is rapid, and the hazard of erosion is high. Included in mapping are small areas of Ushar soils.

Range clearing and seeding is not practical because this soil is steep and has a cobbly surface layer. Brush management may be practical where grass cover is adequate and the stand of trees is not too dense. Capability unit VIIe-U, nonirrigated; Upland Stony Loam (Juniper-Pinon) range site.

**Phage-Ushar complex, 3 to 30 percent slopes, eroded** (PSF2).--This mapping unit is about 40 percent Phage cobbly loam, 3 to 30 percent slopes, eroded; 30 percent Phage very cobbly loam, 30 to 30 percent slopes, eroded. The Phage soils are mainly on ridges, rolling hilltops, and steep side slopes. The Ushar soil is mainly in small valleys and on the more gentle side slopes, but in places it occurs on steep side slopes.

The Phage soils have a profile similar to the one described as representative of the Phage series, but the surface layer is cobbly or very cobbly. The Ushar soil has a profile similar to the one described as representative of the Ushar series, but the surface layer is cobbly. Runoff is medium, and the hazard of erosion is moderate.

Included in mapping are areas of Red Butte very cobbly loam, 3 to 30 percent slopes, eroded, which make up 5 percent of the acreage, and areas of Deer Creek cobbly loam, 3 to 30 percent slopes, eroded, which make up 5 percent of the acreage. Also included are small areas of Flowell cobbly loam, 6 to 30 percent slopes, and Rock outcrop.

These soils are used for range wildlife habitat, and watershed catchment, and have limited use as woodland. They are suitable for range clearing and seeding where such practices are needed, but range on the Phage soils in the complex is difficult to seed because the cobbles are so numerous. Capability unit Vie-U, nonirrigated. Phage soils--Upland Stony Loam (Juniper-Pinon) range site, and Ushar soil--Upland Loam (Juniper-Pinon) range sites.

**PHARO SERIES**

The Pharo series consists of deep, gently sloping to steep, somewhat excessively drained soils on dissected fans, terraces, hills, and mountains. These soils formed in alluvium derived from mixed sedimentary and intermediate igneous material. Pharo soils occur in several places throughout the survey area, mainly in Millard County. They are associated with Mill Hollow and Ushar soils. Elevation ranges from 5,900 to 6,400 feet. Mean annual air temperature is 45 to 48 degrees F, average annual precipitation is 12 to 14 inches, and the frost-free period is 100 to 108 days. The present vegetation included big sagebrush, juniper, bluebunch wheatgrass, squirreltail, Indian ricegrass, yellowbrush, and annual weeds.

In a representative profile the surface layer is grayish-brown very cobbly loam and gravelly loam about 8 inches thick. The upper 20 inches of the underlying layer is light-gray, loose very gravelly coarse sandy loam. Horizons of strong lime accumulation occur between depths of 7 and 15 inches and are generally thicker than 30 inches. The lower part of the underlying layer is white gravelly silt loam.

Pharo soils are slightly to moderately eroded. The available water capacity is 4 to 5 inches in a 5-foot profile, and the water supplying capacity is 8 to 11 inches. Permeability is moderately rapid. Roots can penetrate to a depth of more than 5 feet.

These soils are used mainly for range, wildlife habitat, and watershed catchment and have limited use as woodland, but a small acreage is used for irrigated and nonirrigaged crops. These soils are suitable for clearing, brush management, and range seeding where such practices are needed.

Representative profile of Pharo very cobbly loam, 3 to 30 percent slopes, 5 ½ miles north and 3 miles west of Cove Fort, sec. 34, T. 24 S., R. 7 W.

A11- 0 to 2 inches, grayish-brown (10YR 5/2) very cobbly loam, very dark grayish-brown (10YR 3/2) when moist; weak, fine, granular structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; few, fine, tubular pores; moderately calcareous; moderately alkaline (pH 8.0); abrupt, smooth boundary.

A12- 2 to 8 inches, grayish-brown (10YR 5/2) gravelly loam, dark brown (10YR 3/3) when moist; weak, fine, granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and few medium roots; few, fine, tubular pores; strongly calcareous; moderately alkaline (pH 8.2); clear, wavy boundary.

C1ca- 8 to 29 inches, light-gray (10YR 7/2) very gravelly coarse sandy loam, pale brown (10YR 6/3) when moist; massive; loose, very friable, nonsticky and nonplastic; few fine and medium roots; interstitial pores; very strongly calcareous; moderately alkaline (pH 8.4); gradual, wavy boundary.

C2ca- 29 to 60 inches, white (10YR 8/2) gravelly silt loam, light yellowish brown (10YR 6/4) when moist; massive; weakly cemented, friable, slightly sticky and slightly plastic; very few fine roots; very few, fine, tubular pores; very strongly calcareous; moderately alkaline (pH 8.4).

The A1 horizon is 7 to 10 inches thick. It has color value of 5 when dry and 3 when moist and chroma of 2 or 3. The C horizon, at a depth between 10 and 40 inches, is generally very gravelly coarse sandy loam or gravelly silt loam, but in some places the upper 8 to 10 inches is free of gravel. It has color hue of 10YR and 7.5YR, value of 6 through 8 when dry and 4 to 6 when moist, and chroma of 3 or 4. The C horizon is 40 to 70 percent gravel. The horizon of lime accumulation occurs at depths between 7 and 15 inches and is more than 30 inches thick.

**Pharo loam, 1 to 3 percent slopes** (PtB).--This gently sloping soil is on terraces, benches, and fans. It has a profile similar to the one described as representative of the series, but the surface layer lacks cobbles and the upper 10 to 15 inches is free of gravel. The surface layer is 8 to 10 inches thick. Runoff is slow, and the hazard of erosion is slight. Included in mapping are small areas that are free of gravel between depths of 15 and 30 inches.

this soil is used for range, wildlife habitat, and watershed catchment and has limited use as woodland. A small area is used for irrigated crops of small grain and alfalfa. Capability unit IIIs-24, irrigated, and VIe-U, nonirrigated; Upland Stony Loam (Juniper-Pinon) range site.

**Pharo loam, 3 to 10 percent slopes** (PtD).--This gently rolling and rolling soil is on dissected fans and terraces. It has a profile similar to the one described as representative of the series, but the surface layer is free of cobbles and is 8 to 10 inches thick. Runoff is medium, and the hazard of erosion is moderate. The present native vegetation is mainly big sagebrush and grasses but little or no juniper.

This soil is used for range, wildlife habitat, watershed catchment, and irrigated and nonirrigated crops. Irrigated crops include alfalfa and small grain. In nonirrigated areas, a wheat-fallow cropping system is used. Capability unit I'VE-24, irrigated, and VI3-U, nonirrigated, Upland Gravelly Loam range site.

**POGANEAB SERIES**

The Poganeab series consists of deep, gently sloping, poorly drained soils that are moderately affected by salts. These soils formed in alluvium derived from mixed material. They are on flood plains and alluvial fans. Poganeab soils are in the valley bottom between Beaver and Adamsville, and west of Manderfield. Elevation ranges from 5,700 to 6,000 feet. Mean annual air temperature is 47 to 49 degrees F, average annual precipitation is 10 to 12 inches, and the average annual precipitation is 10 to 12 inches, and the frost-free period is 105 to 115 days. the vegetation is meadow grasses and sedges.

In a representative profile the surface layer is light brownish-gray clay loam about 7 inches thick. The underlying layer is grayish-brown or light brownish-gray, firm clay loam, silty clay loam, and sandy clay loam. Mottles generally occur throughout the profile.

On Pognaeab soils, there is little or no erosion. The available water capacity is 11 to 12 inches in a 5-foot profile. Permeability is slow. Roots can penetrate to a depth of 60 inches or more. The water table may be near the surface but maybe as much as about 30 inches below the surface, depending on the season and the amount of water applied to this and adjacent soils.

These soils are used mainly for meadow hay and pasture and, at present, are suitable only for these uses. Reclamation of these soils is difficult, but where drained and leached of salts they are suited to irrigated alfalfa and small grain.

Representative profile of Poganeab clay loam, 1 to 3 percent slopes, 800 feet south of Adamsville Tow Road, sec. 30, T. 29 S., R. 8 W.

O1- 2 inches to 0, meadow sod containing some mineral soil

A1- 0 to 7 inches, light brownish-gray (10YR 6/2) clay loam, dark grayish brown (10YR 4/2) when moist; many, fine, faint, dark yellowish-brown (10YR 3/4) mottles; weak, coarse, prismatic structure that parts to moderate, fine, blocky; hard, firm, stocky and plastic; many fine roots; few fine pores; moderately alkaline (pH 8.3); abrupt, wavy boundary.

C1-7 to 15 inches, light brownish-gray (10YR 6/2) clay loam, dark grayish brown (10YR 4/2) when moist; many, fine, distinct, dark yellowish-brown (10YR 4/4) mottles; weak, coarse, prismatic structure that parts to moderate, fine, blocky; hard, firm, stocky and plastic; common fine roots; few fine pores; strongly calcareous; moderately alkaline (pH 8.5); clear, wavy boundary.

C2- 15 to 27 inches, grayish-brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) when moist; few, fine, faint, dark-brown (10YR 3/3) mottles; moderately coarse, blocky structure that parts to fine blocky; hard, firm, sticky and plastic; common fine roots; few medium pores; moderately calcareous; moderately alkaline (pH 8.3); clear, wavy boundary.

C3- 27 to 38 inches, grayish-brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) when moist; few, fine, faint, dark-brown (10YR 3/3) mottles; moderate, medium, angular blocky structure that parts to fine, angular blocky, very

hard, very firm, sticky and plastic; few fine roots; few fine pores; strongly calcareous; moderately alkaline (pH 8.0); clear, wavy boundary.

C4- 38 to 60 inches, light brownish-gray (10YR 6/2) sandy clay loam, dark gray (10YR 3.6/2) when moist; common, coarse, distinct, grayish-brown (2.5Y 5/2) mottles; massive; hard, firm, sticky and plastic; strongly calcareous; moderately alkaline (pH 8.0).

The O1 horizon is lacking in places. The A1 horizon is clay loam marginal to silty clay loam. It has color value of 6 or 7 when dry and 5 or 6 when moist and chroma of 2 or 3. The C horizon, between depths of 10 and 40 inches, is generally clay loam or silty clay loam, but below a depth of 20 inches, strata of fine sandy loam or loam can occur. This horizon has color value of 5 or 6 when dry and 3 or 4 when moist and 3 or 4 when moist and chroma of 2 or less.

**Poganeab clay loam, 1 to 3 percent slopes** (PxB).--This soil has the profile described as representative of the series. Runoff is slow, and the hazard of erosion is slight. Included in mapping are area of a soil that is similar to this Poganeab soil but has a deep water table. Capability unit Vw-27, irrigated.

**USHAR SERIES**

The Ushar series consists of deep, gently sloping to very steep, well-drained soils on old alluvial fans, outwash plains, and mountains. These soils formed in alluvium derived from intermedial igneous material. Ushar soils are in several places throughout the survey area. They are associated with Etta, Mill Hollow, Murdock, Mosida, Phage, and Sheeprock soils. Elevation ranges from 6,000 to 6,800 feet. Mean annual air temperature is 46 to 48 degrees F, average annual precipitation is 12 to 14 inches, and the frost-free period is 100 to 108 days. The vegetation is bluegrass, squirreltail, big sagebrush, and bitterbrush. In some places juniper and pinon are dominant.

In a representative profile the surface layer is brown loam about 6 inches thick. The subsoil is brown, firm light clay loam or heavy loam about 17 inches thick. The substratum is pinkish-white or light-gray, friable, strongly calcareous loam, gravelly sandy loam, and coarse sand and gravel.

Ushar soils are slightly to severely eroded. The available water capacity is 7 to 10 inches, and the water supplying capacity is 9 to 11 inches. Permeability is moderate. roots can penetrate to a depth of 60 inches or more.

These soils are used for range, wildlife habitat, watershed catchment, and nonirrigated crops and have limited use as woodland. They are well suited to brush management, clearing, and range seeding where such practices are needed.

Representative profile of Ushar loam, 3 to 10 percent slopes, 2.6 miles north and 0.7 mile west of Manderfield, 0.3 mile north and 0.3 mile east of the southwest corner of sec. 8, T 28 S., R. 7 W.

A11- 0 to 3 inches, brown (10YR 5/3) loam, dark brown (10YR 3/3) when moist; weak, very thin, platy structure; slightly hard, very friable, slightly sticky and slightly plastic; vesicular pores; mildly alkaline (pH 7.4); abrupt, smooth boundary.

A12- 3 to 6 inches, brown (10YR 5/3) loam, dark brown (10YR 3/3) when moist; weak fine, granular structure; slightly hard, friable, slightly sticky and plastic; common fine and medium roots; few, fine, tubular pores; mildly alkaline (pH 7.6); clear, smooth boundary.

B1- 6 to 9 inches, brown (10YR 5/3), light clay loam, brown (10YR 3/3) when moist; moderate, medium, subangular blocky structure that parts to moderate, fine, subangular blocky; hard, firm, slightly sticky and plastic; common fine and medium roots; few, fine tubular pores; mildly alkaline (pH 7.6); clear, smooth boundary.

B21- 9 to 20 inches, brown (10YR 5/3), light clay loam, dark yellowish brown (10YR 3/4) when moist; moderate, medium, angular blocky structure that parts to moderate, fine, angular blocky; very hard, firm, slightly sticky and plastic; many fine and medium roots; few, fine, tubular pores; moderately alkaline (pH 8.0); abrupt, smooth boundary.

B22ca 20 to 23 inches, pale-brown (10YR 6/3), light clay loam, dark brown (10YR 4/3) when moist; moderate, medium, angular blocky structure that parts to moderate, fine, angular blocky; very hard, firm, slightly sticky and plastic; few fine roots; few, fine, tubular pores; moderately calcareous; moderately alkaline (pH 8.3); clear smooth boundary.

C1ca- 23 to 31 inches, pink (7.5YR 8/4), loam, light brown (7.5YR 6/4) when moist; massive; very hard, friable, nonsticky and slightly plastic; few fine roots; few, fine, tubular pores; very strongly calcareous; strongly alkaline (pH 8.6); gradual, wavy boundary.

C2ca- 31 to 51 inches, pinkish-white, (7.5YR 8/2) gravelly sandy loam, pinkish gray (7.5YR 6/2) when moist; single grained; hard, friable, nonsticky and slightly plastic; few fine roots; very strongly calcareous; moderately alkaline (pH 8.5); gradual, wavy boundary.

C3- 51 to 60 inches, light-gray (10YR 7/2) coarse sand and gravel, light brownish-gray (10YR 6/6) when moist; single grained; loose, nonsticky and nonplastic; slightly calcareous; moderately alkaline (pH 8.3).

The A1 horizon is 2 to 11 inches thick. It has color hue of 10YR or 7.5YR, value of 4 or 5 when dry and 2 or 3 when moist, and chroma of 2 or 3. The B2 horizon ranges from heavy loam to clay loam but is commonly light clay loam. It has color hue of 10YR or 7.5YR, value of 4 or 5 when dry and 3 or 4 when moist, and chroma of 2 or 3 when moist and 3 or 4 when dry. The A and B horizons combined are 12 to 24 inches thick. The CCA horizon is strongly calcareous to very strongly calcareous loam and gravelly sandy loam. The C horizon is coarse sand and gravel or very gravelly sandy loam.

**Usher sandy loam, 3 to 10 percent slopes, eroded** (UAD2).--This soil has a profile similar to the one described as representative of the series but the surface layer is sandy loam and only 3 to 5 inches thick. This soil is moderately eroded. Runoff is medium, and the hazard of erosion is moderate.

Included in mapping are small areas of Mosida loam, 1 to 6 percent slopes, eroded, and Phage cobbly loam, 3 to 30 percent slopes, eroded. In mapped areas near the east side of the Mineral Mountain Range, the surface layer is 10 to 15 percent cobbles.

This soil is used mainly for range, wildlife habitat, and watershed

catchment. It is suitable for clearing, brush management, and range seeding where such practices are needed. It is also suited to nonirrigated ; Upland Loam range site.

**WET ALLUVIAL LAND**

Wet alluvial land (Wt) is a land type that consists of deep, poorly drained, gravelly or cobbly soil material. It is moderately extensive along the Beaver River bottom, both east and west of Beaver City, and is subject to overflow. In places there is little or not horizon formation. In other places, the soils can be recognized but are too small in extent to be mapped. There is considerable variation within a short distance. Although the soils are gravelly or cobbly and range from loam to coarse sand, they are generally sandy loam or coarse sand. Mottles occur at various depths below 6 inches. The water table fluctuates with the flow of the Beaver river but is generally at depths between 12 and 30 inches. The native vegetation is cottonwood trees, bluegrass, big sagebrush, rabbitbrush, and sedges. It is used for pasture and wildlife habitat. Capability unit VIw-2, nonirrigated; Wet Stream Bottoms range site.

# Appendix I - Comparative Tax Tables

**Table 14 - Mountain States General Sales and Use Taxes[13]**

| State | State Rate | Local Rate | Combined Rate |
|---|---|---|---|
| Utah | 5.00 | 1.25 | 6.25 |
| Arizona | 5.00 | 1.20 | 6.20 |
| Colorado | 3.00 | 3.50 | 6.50 |
| Idaho | 5.00 | 0.00 | 5.00 |
| Montana | 0.00 | 0.00 | 0.00 |
| Nevada | 7.50 | 0.50 | 7.00 |
| New Mexico | 5.00 | 0.81 | 5.81 |
| Wyoming | 3.00 | 1.00 | 4.00 |

[13]**Statistical Review of Government in Utah, 1993, pg. 68**

**Table 15 - Comparison of Corporate Income Tax Rates for Utah and Western States[14]**

| State | Maximum Gross Rate % | Effective Maximum Rate % |
|---|---|---|
| Utah | 5.00 | 5.00 |
| Arizona | 9.30 | 9.30 |
| California | 9.30 | 9.30 |
| Colorado | 5.40 | 5.40 |
| Idaho | 8.00 | 8.00 |
| Montana | 6.75 | 6.75 |
| Nevada | 0.00 | 0.00 |
| New Mexico | 7.60 | 7.60 |
| Oregon | 8.06 | 8.06 |
| Washington | 0.00 | 0.00 |
| Wyoming | 0.00 | 0.00 |

[14]**Statistical Review of Government in Utah, 1993, pg. 68**

# Appendix J - Trails Information

## TRAILS

Hiking or horseback is probably one of the most favored ways to see the beautiful scenery and seek the solitude of the Forest. Be sure and go prepared for emergencies, take the necessary supplies along and check the local weather forecast before leaving.

Saddle horse and pack stock use, once the traditional travel mode through the back country, has become a recreational pastime for many people. Many of the 279 miles of trails on the Beaver Ranger District provide a quality riding experience, ranging from short trails for day, afternoon, and evening excursions to extended trips into the back country.

Many hikers make use of trails on the Beaver Ranger District as well. While hiking or riding in the back woods be sure and extinguish your fire completely before leaving. Packing out nonburnable refuse is always necessary. Maintaining the quality of any outdoor recreation experience requires a land use ethic that is the responsibility of everyone. "Take only pictures and leave only footprints."

The District maintains a limited amount of the trails each year because of the lack of funding. Volunteers have helped immensely by adopting a trail or maintaining a favorite trail. This is the only way a lot of the trails ever get opened up and maintained. If you are interested in assisting, contact the volunteer coordinator on the District.

Some of the most favored trails are listed below, but there are many others that can be enjoyed by the hiker or horsemen.

### DELANO PEAK

General Description: A day hike to 12,169 foot Delano Peak in the Tushar Mountains.

General Location: Twenty-one miles east of Beaver.

Maps: USGS Delano Peak and Shelly Baldy Peak Quads and the Fishlake National Forest Travel Map.

Special Attractions: Spectacular views of southern Utah.

Best season for hike: Late spring through fall.

For more information: Write the Beaver Ranger District, Fishlake National Forest, Box E, Beaver, Utah 84713 or call (801) 438-2436.

The Tushar Mountains, east of Beaver, don't have the reputation of the spectacular Wasatch Range near Salt Lake. Therefore, few hikers realize there are higher peaks in the Tushars - most notably, 12,169 foot Delano Peak.

This part of the Fishlake National Forest offers high alpine scenery and excellent opportunities for day hikes or overnight backpacking trips. The Tushar Mountains were at one time home for one

of the state's largest deer herds.

Two approaches are recommended to Delano Peak and 11,985 foot Mount Holly - one near Elk Meadows Ski Resort, the other from the Big John Flat Road. Both trails can be done individually or as part of a longer loop hike, necessitating a car shuttle. Portions of both routes are along existing trails. Once you're about timberline, you will be traversing your own trail much of the way.

Take State Highway 153 east of Beaver to Elk Meadows Ski and Summer Resort approximately 20 miles then travel another mile on 153 past Elk Meadows to the beginning of the trail. Trail #175 leaves the highway heading northeast. Travel the trail approximately 2.3 miles to the Skyline Trail #225. Once on the Skyline Trail travel northwest approximately ½ mile. At this point you will see a ridgeline running northeast - southwest. Travel the ridge approximately 1.5 miles to Mount Holly. From here, if you desire, you can hike back to the northwest approximately 2 miles to arrive at Delano Peak. The recommended route is along the ridge off-trail and will be steep and rough in places. The saddle between the two peaks is just over 11,500 feet. The peak cannot be seen during the ascent, but once on the relatively flat top, you get the most impressive views of the Tushar Mountains.

Much of the hike is above timberline and the views are spectacular. Puffer Lake is to the south, Mount Holly Ski Area and the Great Basin ranges are to the west, Belknap and Mt. Baldy peaks rise to the north and Piute Reservoir is visible to the east.

The second, more primitive approach to Delano Peak begins from the Big John Flat Road. Drive about 16 miles east of Beaver on Highway 153 and turn left toward Big John Flat. Follow this dirt and gravel road (not recommended for low clearance vehicles) 3.6 miles north to the flat. Keep to the right and proceed another 1.8 miles to where the trail starts. If unsure of location it is approximately ½ mile past Griffith Creek. The beginning is an old jeep road that has been closed and is posted with a "no motorized vehicle" sign. Travel east by foot from here for approximately 1 ½ mile to Delano Peak.

**SKYLINE NATIONAL RECREATION TRAIL**

General Description: A day hike along the "skyline" of the Tushar Mountain Range. Trail length is 8.3 miles.

General Location: Twenty-three miles east of Beaver on State Road 153.

Maps: USGS Delano Peak and Shelly Baldy Peak Quads, Fishlake National Forest Brochure of the Skyline National Recreation Trail #225 and the Fishlake National Forest Travel Map.

Special Attractions: Spectacular views of several mountain ranges and the east and west side of the Tushar Mountain Range.

Best season for hike: July through October.

For more information: Write the Beaver Ranger District, Fishlake National Forest, Box E, Beaver, Utah 84713 or call (801) 438-2436.

The Skyline Trail was placed on the National Recreation Trail System in 1979. Craggy peaks around the trail give the experience of being on top of the mountains near the "skyline".

This entire trail is closed to all motorized travel so for those people who are looking for solitude and want a good hike, mountain bike or horseback ride this route is an excellent one! Various types of wildlife can be seen from the trail.

The trail crosses elevations ranging from 10,100 feet to 11,100 feet. Mountain peaks seen from the trail have elevations of 11,161 feet (City Creek Peak) to 12,169 feet (Delano Peak). The Circleville Valley - Piute Reservoir area and the lowlands of the east of the trail lie at 6,000 feet elevation.

There are three different trailheads on this trail so whether a person just wants a short half day hike or if you want to hike the entire route you will need to have someone shuttle a vehicle. Several trails interconnect with the Skyline for people who want to spend more than just one day.

Take State Highway 153 east of Beaver for approximately 20 miles to Elk Meadows Ski and Summer Resort and Puffer Lake. The highway is paved up to Puffer Lake then a gravel road from that point. Travel on the Big Flat another three miles. The trailhead is located about 0.25 miles south of the Big Flat Guard Station where the road leaves the timber and enters the Big Flat meadow. There is a sign with direction to the trailhead at this junction. The trailhead lies 200 yards east of State Road 153 where there is an unloading ramp for horses. The Piute ATV Trail, south and west of the Skyline Trail, can also be accessed from this trailhead.

## ABANDONED SR-153 LOOP

Location: East of Beaver

Elevation: 7,000 - 9,000 feet

Season: June - October

Access: This route would be a short one if the individual was looking for a short day. To start this trip, you would start at Three Creeks Reservoir at the end of the road. This road was closed off recently when the new SR-153 was built near Mr. Holly and was left especially for OHV use. The closed road is approximately 2 ½ miles to Puffer Lake, and if the individual wanted to ride further he/she could ride around Cullen Creek Road #129 and out at Big Flat. There is an entire loop road that covers approximately 12 miles and circles back to Three Creeks. On the Fishlake National Forest Travel Map the route is designated. Be sure and follow the map closely because the loop is adjacent to closed areas that the individual should be aware of.

## BLUE LAKE #123

This trail is a favorite for hikers, bicyclists, and horse back riders. From Big John Flat the trail is approximately 6 miles to Blue Lake. This trail is well maintained and would be a nice day trip for the recreationist.

Location: Tushar Mountains, east of Beaver

Elevation: 9,800 - 11,000 feet

Season: July - September

Access: Travel from Beaver east on paved SR-153 for approximately 16 miles to Forest Road 123. This road is a two lane dirt road that can be accessed with a low clearance vehicle during dry conditions, turn north here and travel another three miles to Big John Flat. Just at the edge of the flat turn west and travel for approximately ½ mile where trail #172 (Shelly Baldy Creek), #058 (Bosman Ridge Trail) and #064 (Duncan Creek Trail) begin. Hike approximately ½ mile where these trails intersect. Shelly Baldy Creek Trail heads north and accesses Blue Lake. The hike into Blue Lake is easy, but coming back out on the same trail will be moderate in difficulty.

Setting: Vegetation varies from high elevation grassy slopes to fir and spruce forest.

Special Features: The views seen from this trail are spectacular. As you ride through thick wooded areas of Engelmann spruce and small streams, you may see a mountain goat or that huge mule deer you've been dreaming of seeing. At one area in the trail, you will come out on a point overlooking Blue Lake which is an overwhelming site. Blue Lake sits at the bottom of Mount Baldy (12,082 feet in elevation) and Mt. Belknap (12,139 feet in elevation) and is at the head of the South Fork of North Creek drainage. Blue Lake is quite large in size and is named well because of its color. Although fish do not live in the lake itself, there are fish in the South Fork drainage below the lake.

## CLEAR CREEK CANYON - FREMONT PARK AREA

Location: This trail is easily accessible from I-70 and State Highway 13 which runs through Fremont Indian State Park. The Park's museum and visitor center is located about 25 miles southwest of Richfield.

Facilities: Castle Rock Campground, just two miles from the Park has handicapped access, camping units, fire grills, potable water and flush toilets.

USGS Map: Trail Mountain, Marysvale Canyon, Red Ridge

Special Features: Be sure to allow time for seeing the Park and learning about these Indian people who disappeared from southern Utah some 700 years ago. Many of the artifacts taken from the canyon are interpreted at the Museum.

## COVE CREEK TRAIL #054

The Cove Creek Trail is a favorite for those people who really want to get away from it all. There are many scenic areas along the trail including old beaver ponds, small meadows, and scenic overlooks near the top. The trail is quite rough in some areas and in the summer time in the lower elevation one must be aware of rattlesnakes. The trail follows the Cove Creek drainage approximately 6 miles and so it has many stream crossings. This trail is moderate to strenuous and the individual or horse must be in good condition to traverse it. It is approximately 13 miles from Cove Creek to Indian Creek and would probably require two days backpacking and one day

on horseback. The trail traverses the high ridge above Sulpherdale, Pinecreek and I-15 through a forest of timber pine where a person can see many mountain ranges toward the west. Many spots along the trail, especially close to Indian Creek are narrow, steep and dangerous but the individual will see beautiful scenery. There is one area near Indian Creek that lures many photographers and is known as Little Bryce Canyon because of its colors. There are many trails in this area if a person wanted to explore, but many of them do not get yearly maintenance. Be sure and acquire a Travel Map before starting your trip.

## FOUR CREEKS LOOP

18 mile loop, 1,200 feet elevation range, for intermediate + to advanced riders, 2 ½ hours riding time.

Location: Near I-70 and State Highway 13.

Elevation: 5,000 - 6,500 feet

Season: April - November

Facilities: Castle Rock Campground is near Fremont Indian State Park which has potable water, plenty of camping units and flush toilets.

Access: This ride can be taken in either direction, and borders Mill Creek and Clear Creek while splashing through Fish Creek and Shingle Creek. If you begin at the Fremont Museum (5,800 feet elevation), ride west on Highway 13 for seven miles through the Narrows. This is a gentle but steady climb on pavement to 6,700 feet elevation, with Clear Creek on the left and rugged canyon walls on either side.

Turn left on Road #114--the next eight miles follow the Piute ATV Trail. Ride south on #114 beneath the I-70 overpass and ford Shingle Creek. Continue for a mile to a flat, and turn left toward an old grass airstrip. This is high point of ride at 7,000 feet.

Turn right as you enter the airstrip into a patch of pinyon pine and juniper. Behind the second patch you can see the high volcanic Tushar Mountains. After riding through the third patch of trees, drop down on the right fork and continue to Fish Creek.

Ford the creek and make two more wet crossings downstream. Water is midcalf to knee deep! The Piute Trail then climbs through a gap in the rock to Mud Flat, and parallels I-70 back to Mill Creek. Turn left under the overpass (leaving the Piute Trail) and back to the starting point.

## PIUTE ATV TRAIL

The entire Piute ATV loop which covers the Fishlake National Forest is approximately 200 miles long.

Location: Approximately 40 miles of the Piute ATV Trail is located on the Beaver Ranger District. This trail crosses the District in a north to south direction. Location of trailheads include:

1. Fremont Indian State Park
2. Circleville, Utah
3. Betenson Flat
4. Big Flat
5. Big John Flat

Driving time is approximately 10-12 hours, but the trail is much more enjoyable if you camp along the way.

Elevation: 6,000 to 11,000 feet

Season: Mid June through October

Facilities: Many undeveloped camping areas are available through the entire route. Three toilet facilities are located near the Big John portion of the trail. One toilet facility is at Timid Springs (near Big Flat). This is a nice place to camp. There are unloading ramps located at Sawmill Fork, Big Flat and Long Flat. Access the towns of Circleville and Marysvale on your ATV for all modern conveniences.

Access: The trail can be accessed in several locations. 1) Leave I-70 at Exit 15 and continue on Forest Road #113 to the junction of Mill Creek and Sevier Canyons. 2) Start at the town of Circleville and drive past the cemetery up Wades Canyon (Forest Road #101). 3) Start on the southeast side of Betenson Flat to ride either to Circleville or I-70. 4) Start on the south end of Big Flat at the Long Flat road junction or drive to the nearby Skyline National Recreation Trailhead where a ATV unloading ramp is available. 5) Start at Big John Flat near the first toilet facility and travel down Sawmill Ridge.

Directional markers are located on the trail. Acquire a Fishlake National Forest Travel Map for specific locations of the trail.

Setting: Vegetation varies from sagebrush, oak, pinyon and juniper to Engelmann spruce, aspen and fir.

Special Features: Recreational opportunities available along the route include general sightseeing, stream fishing, hunting, hiking and ATV trails. Areas of geologic interest are also associated with Piute ATV Trail. There are several scenic overlooks along the trail. Visit the Fremont Indian State Park and learn about the Fremont culture. Castlerock Campground is available near the museum for overnight camping.

## SARGENT MOUNTAIN LOOP

16.5 miles, 2,500 feet elevation range, for advanced + riders, 5 hours riding time. Riding up through the six fords and returning to Highway 13 makes an easy to intermediate- 6 mile trip, which can be done in an hour.

Location: Near Highway I-70 and State Highway 13

Elevation: 5,000 - 8,300 feet

Season: May - October

Access: This ride is best taken from one direction. Begin at the Tushar Mountain Village turnoff across Highway 13 from the Park museum. Ride beneath the I-70 overpass, past the Village, and keep right through a saddle on primitive road #475. Continue by a small reservoir and rock canyon walls. As you climb slowly there are six fords of Dry Creek, which usually isn't dry!

The trail rises sharply, requiring some walking to Prince Valley (6,400 feet). Here a shortcut takes off to the left. Keep going straight past the dry lakebed of Willow Lake, to the intersection with Road #476 near a small spring fed stream. Climb another one-half mile to 8,300 feet elevation, and continue on #476 past Sargent Lake and Twin Lake. The trail begins dropping now, with some steep, rocky sections as you approach Sage Flat.

Through the Flat and down into Dry Wash. The trail is right in the dry creekbed in places, with some stretches of sand. Slow down through the last two miles to look at the boulders, rock formations, and lizards skittering across the track.

The dirt road ends at State Highway 13. Turn left and cruise back 5 miles to the starting point. Picnic sites are found along Clear Creek. Ask at the Park for the location of rock shelters and other remnants of prehistoric use.

Special Features: This loop climbs from the valley to 8,300 feet elevation on Sargent Mountain. Much like climbing a mountain peak, it offers a physical challenge, variety of vegetation and geologic features, and excellent overlooks at the top and on the return trip. Allow enough time for breaks and take plenty of water.

OHV Use: The entire Sargent Mountain area is open to OHVs, but remember that off-road travel is not permitted when ground is wet and ruts will result. Refer to your Fishlake National Forest Travel Map for additional information about OHV use. There are some private lands in this area so be sure and get permission from private land owners before traveling across their land.

## SOUTHCREEK - LABARON TRAIL

Location: This trail is located about ten miles southeast of Beaver.

Elevation: 7,400 to 10,200 feet

Season: Generally May through October

Facilities: A trailhead is located on the South Creek Road. At the trailhead a horse and ATV unloading ramp is available. Undeveloped camping areas can be

found along the trail.

Access: To reach this trail travel approximately two miles south of Beaver on State Highway #91. At the intersection marked with a "South Creek Road" sign turn east and travel southeast on the main South Creek Road (Forest Road #008). This road is a two lane dirt road that can be accessed with a low clearance vehicle during dry conditions. The South Creek Trailhead is located approximately eight miles up the South Creek Road and the trail is signed near the unloading ramp. There are many interconnecting trails in this area but to arrive at Anderson Meadow stay on trail #068. This trail will lead into Big Flat area and joins the Skyline Trail. It is easy to moderate to traverse.

Setting: Common vegetation varies from sagebrush and oak to engelmann spruce, aspen and fir.

Special Features: Lake fishing, hiking, and hunting opportunities are available. ATV's can be used on portions of this trail. Spectacular mountain scenery and beautiful fall colors can be seen.

# Acknowledgments

The City Council would like to extend special thanks to the members of the General Plan Advisory Committee, which has worked for over a year to develop and revise the General Plan in order to present it to the Planning Commission.

**GENERAL PLAN ADVISORY COMMITTEE**

Ron Bird
Bruce Brown, Chairman
David Bradshaw
Helen Christiansen
Kallie Goff
Kevin Wilden
Robert Strong

**MAYOR**

James R. Robinson

**CITY COUNCIL**

Max Anderson
Paul Anderson
Robin Bradshaw
Ann Marshall
Les Williams

**CITY MANAGER**
Steve Atkin

Hal Lessing, Recorder
Ann Buffington, Deputy Recorder
*Previous contributing council member* *Mike Dalton*

**PLANNING COMMISSION**

Bruce Brown, Chairman
Burt Myers
Joanna Beeson
Ronnie Roberts
Doug Briggs
Jeniene Christopherson, Secretary
*Previous contributing commission member* *Ann Marshall*

**FIVE COUNTY ASSOCIATION OF GOVERNMENTS**

Curt Hutchings, Associate Planner Project Manager

# Adoption

Council member Ann Marshall made a motion seconded by Council member Robin Bradshaw to adopt this General Plan of the City of Beaver, Utah. The plan was PASSED, APPROVED and ADOPTED this 27th day of September, 1994 by the following vote:

AYES: Paul Anderson, Robin Bradshaw, Ann Marshall, Les Williams
NOES:
ABSENT: Max Anderson
ABSTAINED:

_____
James R. Robinson, Mayor
City of Beaver, Utah

Attest:

_____
Hal Lessing, City Recorder
City of Beaver, Utah