

Lewis and Clark County:
GROWTH POLICY

Final Adopted Version:
February 15, 2004

Volume II:

Demographics and Economics
Land Use
Housing
Natural Environment
Transportation
Implementation Strategies

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ACKNOWLEDGEMENTS

The following past and present members of the Helena/Lewis and Clark County Consolidated Planning Board collectively donated hundreds of hours of their own time reviewing this revised Growth Policy, discussing changes, and attending public meetings. Their thoughtful and generous efforts are much appreciated--thank you!

Dave Cole, Chair
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Nancy Pitblado
Robert Throssell
Steve Mandeville
Charles Canterbury
Kelly Settle
Rick Kenison (former member)
Susan Epstein (former member)

Current and former County Commissioners—who spent countless hours revising and finally adopting this Growth Policy--include the following:

Anita Varone, Chair
Mike Murray
Ed Tinsley
Karolin Loendorf (former member)

Planner Jeff Erickson provided staff support to the Planning Board and Commission, and coordinated completion of the revised Growth Policy. Other staff with the Department of Community Development and Planning—particularly Director, Sharon Haugen, but also Frank Rives, Jerry Grebenc, Michael McHugh, Paul Putz, Marni Bentley, and Karin Kaiser—participated in various capacities.

Updated information was provided by Kathy Moore from the County Water Quality District; Joan Bowsher, Frank Preskar, and Laura Mullen from the Environmental Health Division; Eric Griffin from Public Works; and Larry Hoffman from the County Extension Office. Deputy County Attorney Paul Stahl provided legal advice. Carole Byrnes, Mandi Ross, and Robyn Brown provided valuable administrative assistance. Chief Administrative Officer, Ron Alles, participated in most of the many Commission discussions on the new Growth Policy. RJ “Zim” Zimmer coordinated map production. Finally, other County staff, non-profit organizations, state and federal agencies, and members of the public too numerous to mention played an important role in helping make this a better document.

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PREFACE

The Montana Codes Annotated (MCA) authorizes local governments to adopt a Growth Policy under section 76-1-601, MCA. The Growth Policy—previously referred to as a comprehensive plan—is intended to be a long-range, non-regulatory planning document for Lewis and Clark County, establishing a broad framework for how to proceed with more detailed shorter-range planning. This is Volume II of the revised Lewis and Clark County Growth Policy, the main policy section of the document.

Because of changes in state statute and the general nature of the document, individual subdivision applications will not be evaluated based on compliance with this Growth Policy. One of the main implementation tools for the Growth Policy are the County Subdivision regulations, which—according to state statute—must be in accordance with this document. The subdivision regulations are currently in the process of being revised in light of proposed changes to the Growth Policy, and will be available for public review in 2004.

Lewis and Clark County adopted its first Comprehensive Plan in 1983, portions of which were updated in 1989. The focus of that Plan was the Helena Valley area, but sections on the rural areas were also included. In 1996, the Board of County Commissioners adopted a more specific area plan for Lincoln and the Upper Blackfoot Valley; this was initiated in response to a major open pit gold mine proposed in the vicinity. The County began the process of updating the Comprehensive Plan in 1997, and established more specific area plans for the rural portions of the County listed below:

- Augusta
- Wolf Creek-Craig
- Canyon Creek-Marysville
- Canyon Ferry-York
- The Helena Valley

The starting point for these revisions to the Growth Policy is the document adopted by the County in December 2000, after extensive public involvement. The composition of the Commission changed as a result of elections held in November 2000, and the reconstituted body that took office in January 2001 voted to take a fresh look at the recently adopted Growth Policy.

The Lewis and Clark County Planning Board held a public hearing on the proposed changes in February 2003, following open houses in Craig, Canyon Creek, York, and the Helena Valley. After their public hearing, the Planning Board passed their suggested changes on to the Board of County Commissioners (BOCC).

The BOCC reviewed the Planning Board's recommendations and held public hearings of their own on the document in Lincoln, Augusta, and Helena in December 2003. After considering public comment and incorporating a number of relatively minor changes into the October 15, 2003 review draft, the BOCC adopted the revised document at their hearing on December 23, 2003; this document reflects those revisions.

This document and accompanying maps can be accessed at the Lewis and Clark County web site (www.co.lewis-clark.mt.us), or can be viewed at the Lewis and Clark County Planning Department. The Growth Policy is divided into three volumes, as listed below:

- Volume I is an executive summary that includes a brief introduction; the main issues, goals, and policies; planning area recommendations; and implementation strategies. The executive summary does not include the extensive background and inventory material found in volumes II and III.
- This volume (II) contains everything in volume I, including the following topical elements of the Growth Policy: demographics and economics; land use; housing; natural environment; transportation; and implementation strategies. This document includes the main directional elements included in the executive summary, plus all the background information.
- Volume III contains the Capital Facilities Plan (CFP), which is part of the Growth Policy, but different enough from the other elements so that it has been packaged as a stand-alone document. The Commission and Planning Board had proposed no changes to this volume during the most recent revisions, although there have been some organizational improvements. The intent is to update the CFP between 2004 and 2006.

Questions about these documents may be addressed to the following:

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EXECUTIVE SUMMARY: COUNTY-WIDE GOALS AND POLICIES

The Lewis and Clark County Growth Policy (previously known as the Comprehensive Plan—see 76-1-601 MCA) provides long-term, general planning guidance for the County. This executive summary contains a summary of the county-wide planning direction in the Growth Policy, without getting into the specifics of particular geographic areas of the County. The main topical areas covered here include the following: land use; natural environment; housing; economic development; transportation; utilities, and; public safety and emergency services. Each of these topics is discussed in more detail later in the Growth Policy.

It is important to note that implementation of the Growth Policy and the following goals and policies are dependent on the availability of limited funding and staff. Additionally, County priorities as adopted by the Commission necessarily will change over time, as circumstances change. Implementation of recommendations is contingent on approval by the County Commission; implementation steps must be in compliance with this Growth Policy.

Land Use

Introduction/Purposes

It is generally understood that land, and the various uses put to it, is what drives our economy. We grow food with land, harvest trees from it, recreate on it, and build our homes and businesses on it. How land is used is a chief ingredient in our community character. But what goes largely unnoticed is that growth and land development--when not managed or planned thoughtfully--may carry significant costs affecting not only a developer or builder, but surrounding land users, the broader community, and the natural and cultural environment.

Additionally, once land is developed, an on-going financial responsibility results for the entire taxpaying public. Roads, water and sewer systems, police and fire protection and other services all have costs which must be considered when designating land for development. Since public and private fiscal resources are limited, it only makes sense to think carefully about the long-term effects of our land use decisions. With careful planning, the substantial investment which is often necessary to serve land is better secured and protected.

Defining how our various lands can and should be used provides predictability for individuals and businesses making long-term decisions. More importantly, the public costs associated with serving these lands can be minimized, and the qualities that make many of

them unique preserved. Furthermore, public costs associated with serving these lands can be minimized, and the qualities that make many of them unique preserved.

Public comments reflected a recurring concern throughout the process of developing the County Growth Policy regarding a lack of land use predictability. Many commented they feel they have no say in the land use changes going on around them. In recent years, the subdivision process has generated on-going conflict over proposed changes in land uses and densities: Examples include low density neighborhoods versus high density residential development, farmers and ranchers opposing residential subdivisions near their operations, and homeowners resisting commercial or industrial development in or near their residential neighborhoods.

Property owners are often surprised that subdivision regulations provide little or no protection against what they see as the intrusion of incompatible land uses into their neighborhoods. Likewise, developers are frustrated that there appears to be so little consensus on the types of development that are appropriate or acceptable for areas of the county.

Nationally, and under Montana law, the appropriate legal tool for determining appropriate land uses for areas of the community and for regulating changes in land use is zoning. Zoning was developed approximately a hundred years ago to protect residential areas and property values from negative impacts from uses considered undesirable or incompatible. Since its origins, zoning has evolved into a more flexible tool that can be tailored to achieve particular goals. For example, it can be used not only in its traditional role of demarcating general types of land use zones, but it can also identify uses that would be acceptable only if they meet certain conditions. Zoning can be used to establish general performance standards for various types of development, or overall density of development, with or without specifying particular land uses for geographic areas. It can also be used to help preserve open space or prime agricultural land.

Residents of several areas of Lewis and Clark County have asked for the County's assistance in developing zoning regulations to provide them protection from types of development they see as incompatible or inappropriate for their neighborhoods. A related concern regarding "predictability" has been raised by both developers and homeowners. The desire is that the County provide better guidance on where future growth should or should not be directed (e.g., which areas of the County are most suitable for development as well as least suitable due to issues such as water quality and availability, soils, earthquake or liquefaction prone areas, floodplains, seasonal high groundwater, and wildland urban-interface areas.) Many commented that areas with development constraints should be more clearly mapped or otherwise identified so that developers and prospective homebuilders or homebuyers know where the problem areas are and avoid them.

Summary of Key Trends and Facts: Land Use

- The Helena Valley is the primary population center and economic hub for Lewis and Clark County, and northern Jefferson and Broadwater Counties. The Valley continues to encompass the largest percentage of County population and growth. The majority of the growth is occurring in unincorporated areas within the Valley.
- The number of parcels created through subdivision review has increased substantially in Lewis and Clark County since the 1980s. In 1986, for example, 94 lots were granted through subdivision review (via either preliminary or final plat approval) in the County. By 2002, that number increased to 685. Additionally, unreviewed land divisions have added to this total.
- The Helena Valley Irrigation District (HVID) irrigates approximately 15,000 acres of cropland in the Helena Valley and Spokane Bench (HVID, 2003). The Helena Valley's irrigated haylands, in particular, are an important agricultural resource for Lewis and Clark County. Additionally, a significant portion the recharge of the Helena Valley aquifer is locally attributable to the operation of the irrigation system (U.S. Geological Survey—USGS, 2000).
- Agricultural operations in the Helena Valley (and the County as a whole) are relatively small in nature, with many operators working second jobs in nearby towns and cities.
- The amount of land being utilized for agriculture in Lewis and Clark County is expected to decrease as residential development continues. The majority of the growth and development in the County is occurring in the Helena Valley. According to the most recent Montana Census of Agriculture, the amount of acreage in farms in Lewis and Clark County decreased 7 percent between 1992 to 1997, from 883,479 acres to 822,066 acres. The average farm size in the County decreased 19 percent during the same period, from 2,017 acres to 1,638, while the number of full-time farms actually increased from 207 in 1992 to 211 in 1997. (Source: USDA, Montana Agricultural Statistics Service, 1997. Note: The Montana Census of Agriculture is conducted every five years, and was repeated in 2002, but the results were not available at this writing.)
- A majority of the residential lots located outside the City of Helena are served by individual wells and on-site wastewater treatment systems. According to the City-County Environmental Health Department (2003), since the inception of the County Wastewater Treatment Regulations, approximately 5,100 on-site wastewater treatment systems have been permitted and completed within the Helena Valley planning area.

- Groundwater in the Helena area is the sole source of drinking water for more than 27,000 people, approximately 55 percent of the population. The Helena Valley alluvial aquifer provides water through approximately 5,600 domestic wells and 71 public water supplies (Lewis and Clark Co. Water Quality Protection District and MT Bureau of Mines and Geology, 2003).
- In the past 15 years, Lewis and Clark County has witnessed a number of wildfires that have destroyed property and affected wildlife habitat, scenic resources, and air quality. In 2003, for example, two major fires threatened the area around Lincoln. High fire hazard areas around Helena exist in several places, including the South Hills, the Scratchgravel Hills, the North Hills, and the Spokane Hills.

Issues, Goals, and Policies

ISSUE A Development is affecting the rural character of Lewis and Clark County.

Goal 1 Maintain the opportunity for a rural lifestyle.

Policy 1.1 Encourage low-density residential, agricultural, and forestry-related rural development outside the urban and transitional areas.

Policy 1.2 Level of Service/Design Standards shall reflect the goals and policies of the Growth Policy.

Goal 2 Support the continuation of farming and ranching operations.

Policy 2.1 Establish review procedures for land uses that may be especially sensitive to locations near existing agricultural activities (e.g., schools, day care facilities, hospitals, medical clinics, outdoor recreational facilities, etc.).

Policy 2.2 When considering the proposed subdivision of agricultural lands, minimize potential land use conflicts or adverse impacts that may be detrimental to adjacent agricultural operations.

Policy 2.3 Guide appropriate growth to less productive agricultural lands or nonproductive lands that are suitable for development.

Policy 2.4 Evaluate rural, agricultural, or open space zoning as a tool for limiting non-agricultural development to densities and development patterns that are consistent with the continuation of agriculture, and the desires of the affected planning areas or neighborhoods.

- Policy 2.5** Encourage the purchase of conservation easements by private non-profit land trusts or other entities to retain agricultural lands in production.
- Policy 2.6** Encourage in-fill development of urban and transitional areas already committed to development, where community facilities and services can be provided cost effectively in order to reduce development pressure on agricultural lands.
- Policy 2.7** Support federal or state agricultural policies that help maintain the viability of agriculture.
- Policy 2.8** Encourage agricultural land owners considering land subdivision to develop the least agriculturally viable portion of their properties, such as grazing land or non-irrigated cropland.
- Policy 2.9** Create incentives for cluster development where the majority of the land would remain undeveloped and in agricultural production.
- Policy 2.10** Convene a task force to study ways to effectively retain agricultural lands in production and provide landowners options for a reasonable financial return.
- ISSUE B** **Some property owners perceive they have no control over the quality and character of development occurring around them. Some developers believe there is no predictability or community consensus on where development should take place, or the types of development that are appropriate.**
- Goal 3** Provide more predictability for property owners and the development community regarding appropriate changes in land use by directing growth to areas most suitable for development, and by developing standards that allow county residents to more effectively manage change within the affected planning area.
- Policy 3.1** Inform developers and prospective homebuilders or homebuyers (through maps or other means) about areas of the county that are most suitable for development and those which are least suitable because of development constraints.
- Policy 3.2** Guide growth to urban and transitional lands or nonproductive lands that are suitable for development.
- Policy 3.3** Adopt minimum countywide development standards to address general land use concerns (e.g., compatibility with adjacent land uses, site suitability, access and traffic generation, road construction, lighting or noise, etc.).

- Policy 3.4** Assist interested planning areas or neighborhoods in developing appropriate development standards or zoning regulations consistent with local objectives. Establish minimum requirements for neighborhood plans that can be used as templates.

Natural Environment

Introduction/Purpose

Lewis and Clark County recognizes that the condition of the natural environment and the health and quality of life enjoyed by the citizens of the County are integrally linked. Assuring that development does not occur in areas prone to natural disasters or areas with serious constraints is important. Preservation of natural resources--while managing economic and population growth--presents a challenge to the citizens of Lewis and Clark County. Noxious weeds also continue to threaten agricultural lands and natural vegetation, and have become an important issue in the County and elsewhere in Montana.

Summary of Key Trends and Facts: Natural Environment

- A U.S. Geological Survey study (1992) identified areas of recharge for the Valley aquifer. Inflow from bedrock aquifers accounts for 46 percent of Valley recharge, irrigation water infiltration accounts for 31 percent, infiltration from streams contributes 15 percent, and leakage from the Helena Valley irrigation canal accounts for 8 percent. The study describes the valley-fill aquifer system as being "relatively susceptible to potential contamination from surface and near-surface sources."
- Preliminary results of groundwater sampling conducted by the Water Quality Protection District in 2001 and 2002 demonstrate higher nitrate concentrations in shallow groundwater and decreasing concentration with depth.
- Many of the soil types of the Valley and other alluvial aquifers are mapped by the Natural Resource Conservation Service as being severely limited for on-site wastewater treatment systems. This severe ranking is derived from the coarse porous nature of the soils, shallow groundwater, and the wetness of the soils.
- Lewis and Clark County does not have a complete inventory of the number, type, and condition of on-site wastewater systems in the Helena Valley. Many of the on-site wastewater systems were installed prior to 1973, and a large number were installed prior to the adoption of the State minimum standards. Many older systems are in poor condition and malfunctioning; they may have had little or no

maintenance, and may be contributing to groundwater degradation of the valley aquifer.

- According to a survey of homeowners in the Helena Valley, Colorado Gulch, Wolf Creek, and Craig, 63 percent of the residences indicated that their septic tank had been installed or pumped within the last three years. Taking a slightly longer time-frame, 73 percent said their systems had been installed or pumped within the last five years. Lewis and Clark County recommends that tanks be pumped every three years; the EPA recommendation is three to five years (Lewis and Clark County Environmental Health Division, 2002).
- In August 2002, the Department of Natural Resources and Conservation (DNRC) responded to a petition by designating a temporary controlled groundwater area (CGA) for the North Hills, along the edge of the Helena Valley. According to the DNRC proposal for decision, “the evidence shows the public health, safety, or welfare of the groundwater users in the proposed CGA is of concern because of declining water levels and increasing nitrate levels. However, facts are insufficient at this time to require permanent corrective controls to be adopted on this basis.”
- The Montana Natural Heritage Program identified twenty-three plant species and three plant associations that are considered to be rare or vulnerable to extinction in Lewis and Clark County. Most of the identified species are associated with wetlands or transitional wetland areas.
- Lewis and Clark County provides abundant and varied habitat for a large number of wildlife species. According to the Montana Natural Heritage Program, approximately 22 species of fish, six species of amphibians, eight species of reptiles, 286 species of birds, and 61 species of mammals utilize portions of the County for permanent or migratory habitat.
- Noxious weeds have infested Lewis and Clark County and the rest of Montana for decades, but the problem has grown in severity; statewide, they now infest approximately eight million acres. Some of the negative impacts of noxious weeds include degradation and loss of wildlife habitat and species diversity, decreases in property values, declines in agricultural productivity, and possible water quality/quality degradation.
- Currently Lewis and Clark County has two sites listed on the Environmental Protection Agency’s (EPA) National Priority List (NPL). The listed sites are the East Helena Smelter and the Upper Tenmile Creek Watershed. The NPL is a published list of hazardous waste sites in the U.S. eligible for extensive, long term, cleanup under the EPA's Superfund Program.

- In 1991, the EPA and ASARCO signed an Administrative Order of Consent to begin a residential soil removal in East Helena. Since 1991, the removal action has resulted in the clean-up of at least 518 residential yards, 421 sections of adjacent alleys and road aprons, 32 commercial sites, 6 public parks, 4 parking lots, 3 day-care centers, 2 schools, 6,600 linear feet of irrigation ditch, and a 45 acre site for the proposed K and R residential subdivision (Lewis and Clark County Health Dept., 2002).
- Today the Upper Tenmile Creek area consists of abandoned and inactive hard rock mines that produced gold, lead, zinc, and copper from the 1870s to the 1920s. Today the water quality in the Upper Tenmile watershed has been degraded by the historic mining operations. The remains of many of the historic mines contain trace metals known to be hazardous to human health and the environment. Coordinated by the EPA, reclamation in the area has started.

Issues, Goals, and Policies

ISSUE A **Development in environmentally critical areas, particularly in places identified at high risk for flooding or wildfires, has proven costly for residents, local government, and the natural environment.**

Goal 1 Encourage development in areas with few environmental hazards or development constraints to minimize degradation of the natural environment, and the loss of capital investment and life due to natural disasters.

Policy 1.1 Encourage development in areas that are relatively free of environmental problems (e.g., soils, slope, bedrock, high water table, and flood prone areas).

Policy 1.2 Discourage or prevent development that is incompatible with the designated 100-year floodplain. Prohibit development in designated floodways.

Policy 1.3 Prevent increased storm water runoff from new development from adversely impacting other properties.

Policy 1.4 Preserve existing natural drainages.

Policy 1.5 Preserve hazardous areas (e.g., subject to geologic and flood hazards) as open space wherever possible.

- Policy 1.6** Systematically reduce the existing level of storm water damage. Diminish exposure of people and property to storm water runoff, and reduce flood hazard.
- Policy 1.7** Improve the usefulness of flood-prone lands as active and passive recreational areas.
- Policy 1.8** Develop residential and commercial setback requirements along streams, rivers, lakes, and reservoirs to preserve water quality and other natural resources, viewsheds, and recreational uses.
- Policy 1.9** Discourage development within areas designated by the Tri-County Fire Working Group as "High to Severe" to "Severe" fire hazard risk, unless developed in a manner consistent with the "Fire Protection Guidelines for Wildland Residential Interface Development," and the design standards in the Lewis and Clark County Subdivision Regulations.
- Policy 2.0** Examine the cumulative effects of development on flood plains, flood ways, levels of flood activity, and potential property damage.
- ISSUE B** **Groundwater and surface water quality are threatened and need to be protected.**
- Goal 2** Preserve, protect, and improve water quantity and quality in Lewis and Clark County.
- Policy 2.1** Discourage development with on-site wastewater treatment systems in areas having inappropriate soils or high groundwater to help prevent contamination of groundwater supplies.
- Policy 2.2** Encourage feedlots and other intensive livestock operations to locate in areas with low potential for ground and surface water contamination.
- Policy 2.3** Conduct water quality protection projects for high priority threats to Lewis and Clark County water resources.
- Policy 2.4** Improve water quality by minimizing erosion and sedimentation problems. Promote best management practices for timber harvests, road, bridge, and building construction to avoid water pollution, soil erosion, and the spread of noxious weeds.
- Policy 2.5** Assess stormwater runoff diversion and collection systems for efficiency, impacts to natural systems, and flood prevention.

- Policy 2.6** Encourage development of wellhead protection zones in areas of existing or proposed source water use.
- Policy 2.7** Provide education regarding the source and distribution of water supplies, potential threats to the quality and quantity of drinking water, and pollution prevention methods.
- Policy 2.8** Coordinate watershed user groups to develop sound watershed management recommendations.
- Policy 2.9** Support the Water Quality Protection District in its efforts to carry out programs that further the intentions of this goal, including the identification and evaluation of existing groundwater issues and alternatives.
- Policy 2.10** Consider the interrelationship between surface water and groundwater in subdivisions, by requiring the identification of areas of recharge and discharge around new development occurring in the Helena Valley, and elsewhere whenever economically feasible.
- Policy 2.11** Implement a wastewater maintenance program (see implementation plans).
- Policy 2.12** Define the role on-site wastewater treatment systems play in groundwater and surface water interactions by performing an inventory of septic systems, and monitoring their impacts on water resources.
- Policy 2.13** Recognize the important role played by wetlands in watersheds regarding groundwater recharge, water storage, flood abatement, and water quality.
- Policy 2.14** Review the Helena Area Wastewater Treatment Facility Plan (HAWT), prioritizing and implementing realistic strategies.
- ISSUE C** **The quality of the County's wildlife habitat and open space may be threatened by development.**
- Goal 3** Maintain the quality of the County's critical wildlife habitat, wetlands, and open space.
- Policy 3.1** Identify and protect the natural wetland buffers along the County's rivers, lakes and streams.
- Policy 3.2** Identify and encourage preservation of critical wildlife habitat.

ISSUE D The character and quality of Missouri River Corridor is impacted by increased development and recreational pressure.

Goal 4 Preserve, improve and protect the Missouri River Corridor.

Policy 4.1 Work cooperatively with local watershed groups, conservation districts, private landowners, and other entities involved with Missouri River issues.

ISSUE E: Wetlands are critical areas that affect water quality, wildlife, and community aesthetics.

Goal 5 Preserve existing wetlands within the County, and restore historic wetlands where possible.

Policy 5.1 Prohibit construction activities within delineated wetlands.

Policy 5.2 Encourage subdivisions and other projects to avoid or reduce loss of wetland functions.

Policy 5.3 Provide incentives to avoid impacts to wetlands.

Policy 5.4 Develop effective land use controls to protect wetlands.

Policy 5.5 Identify the location of historic wetlands. Work with landowners, developers, agencies and organizations to develop projects to restore historic wetlands.

Policy 5.6 Integrate wetland conservation with other resources such as floodplains, groundwater, streams, and lakes.

Policy 5.7 Adopt a wetlands rating system to reflect the relative function and value of wetlands in Lewis and Clark County.

Policy 5.8 Continue to support the Helena Wetlands Partnership or similar efforts in identifying, inventorying, and mapping wetlands throughout Lewis and Clark County.

Policy 5.9 Work with agencies or land trust organizations to obtain conservation easements that protect wetlands and riparian areas.

ISSUE F Noxious weeds continue to threaten agricultural lands and natural vegetation.

Goal 6 Work cooperatively to reduce the impact of noxious weeds in the County.

Policy 6.1 Efficiently spend limited weed management funds according to an established set of priorities (see implementation plans).

Policy 6.2 Enhance the County's enforcement mechanism for weed violations, to promote good weed management.

ISSUE G **Prehistoric and historic resources are critical features that affect our understanding of and connection to the land.**

Goal 7 Encourage protection of historic and prehistoric resources.

Policy 7.1 Inventory historic and prehistoric resources.

Policy 7.2 Consider the effect of development on historic and prehistoric resources.

Policy 7.3 Provide for the protection of historic and prehistoric resources with reasonable mitigation, including education about these resources.

Policy 7.4 Encourage transportation improvements that are compatible with cultural resources.

Housing

Introduction/Purposes

Lewis and Clark County recognizes that obtaining adequate and affordable housing choices are essential for all county residents. There is a continuing need for a diversity in the type, density, and location of housing within the County while protecting public health, safety, and quality of life.

Summary of Key Trends and Facts: Housing

- The housing stock in the County has increased considerably during the past 30 years, more than doubling between 1970 and 2000. During this period, the most rapid growth in housing occurred during the 1970s, when 6,212 housing units were built in the County, an increase of 50 percent. As the economy slowed during the 1980s, the growth in new housing decreased considerably, before rising again during the 1990s (U.S. Census Bureau, 2002).

- The housing stock in Lewis and Clark County is slightly newer than that in Montana as a whole (U.S. Census Bureau, 2002).
- Average household size in Lewis and Clark County has shrunk from 2.96 persons per household in 1970 to 2.38 in 2000. This reduction of household size is in keeping with long-range national trends during the same period. Some of the factors contributing to this decline include families having fewer children, an increase in single parent households, and people living longer (U.S. Census Bureau, 2002).
- According to 2000 census data, nearly 66 percent of the total households in Lewis and Clark County were composed of families; 32 percent of all households had children under 18 years of age in the dwelling. Approximately 29 percent of the households in the County were composed of an individual living alone (U.S. Census Bureau, 2002).
- In 2000, approximately 70 percent of the Lewis and Clark County population lived in owner-occupied dwellings, with the other 30 percent living in rental properties. The percentage of ownership has declined by 4 percent since 1990 (U.S. Census Bureau, 2002).
- According to 2000 Census data, the vacancy rate for owner-occupied property in the County was 1.5 percent, compared to 5.8 percent for rental housing units (U.S. Census Bureau, 2002).
- Across the State of Montana, a major concern for many residents is the lack of affordable housing. It is becoming increasingly difficult for the average citizen to purchase a new home. Housing is typically deemed affordable if either the monthly rent, or mortgage, principle and interest, is no more than 30 percent of a household's monthly income (U.S. Dept. of Housing and Urban Development, 2003).
- According to the 1996 Lewis and Clark County Housing Needs Assessment, low income households could afford to purchase a home for no more than \$75,000, assuming a 30 year mortgage at an 8 percent interest rate. The maximum affordable home purchase price for moderate-income households was \$93,000. As a point of comparison, the cost of single-family housing increased in the Helena area from \$85,605 in 1993 to \$117,140 in 1998. During the same period, the average cost of mobile homes nearly doubled, rising from \$22,929 to \$37,724. In general, the Helena area, in particular, has a shortage of homes in the \$60,000 to \$100,000 price range (data from City of Helena Growth Policy).
- Often, the private housing market does not provide adequate affordable housing for low to moderate-income groups without some type of subsidy or incentive. For

many years, the County has worked with other organizations to help provide housing for low and moderate-income families. However, housing costs have risen faster than incomes during the last decade, contributing to the on-going challenge of securing adequate housing for all income groups.

- The senior population is a significant and growing presence in Lewis and Clark County, resulting in an important housing issue. This group has needs that are different from the rest of the population. Twenty percent of the households in the 2000 census included at least one individual 65 years of age or older. People 60 years and older made up 15.7 percent of the population, a figure that has been increasing in recent decades as the population ages (U.S. Census Bureau, 2002).
- Resources to meet the housing needs are fairly limited in Lewis and Clark County. To some degree, this is a reflection of national trends, as Federal funding for housing was substantially reduced during the 1980s. However, the County is now in a strategic position to access grants and develop targeted programs to meet housing needs, with the completion of the County-wide needs assessment and this Growth Policy.

Issues, Goals, and Policies

ISSUE A Not all county residents can afford market rate housing.

Goal 1 All residents should have the opportunity to obtain safe, sanitary, and affordable housing.

Policy 1.1 Work to maintain adequate and diverse housing opportunities for all income levels.

Policy 1.2 Consider the locational needs of various types of housing with regard to proximity of employment, and access to transportation and services.

Policy 1.3 Work to disperse affordable housing throughout the County.

Policy 1.4 Participate in periodic analyses to determine immediate and long-range affordable housing needs.

Policy 1.5 Study and consider innovative housing programs to reduce dependency on subsidized housing.

Policy 1.6 Group homes, foster care facilities, and facilities for other special populations, should be equitably distributed throughout the county.

Policy 1.7 Encourage preservation, rehabilitation, and redevelopment of existing housing, with special attention to historic structures and historic areas.

Policy 1.8 Encourage compatible mixed-use development.

Policy 1.9 Participate in periodic inventories of housing conditions in unincorporated areas.

Policy 1.10 Develop programs, as funding allows, to access available public/private funding for affordable housing and related infrastructure.

Economic Development

Introduction/Purpose

A healthy economy is essential to Lewis and Clark County's vitality and quality of life. A thriving economy provides jobs and a tax base to support basic infrastructure, schools, parks, public safety, and other public facilities and services.

While the County's natural setting sets the stage and determines the parameters within which economic development may take place, virtually every other feature of community life stems from the area's economic health. The County should attempt to encourage existing businesses and attract new ones by providing assistance through appropriate local, state, and federal programs. It is worth emphasizing that the scenic, natural, and cultural amenities present in Lewis and Clark County contribute to the local quality of life, and are an important incentive for attracting and retaining businesses.

Summary of Key Trends and Facts: Demographics and Economics

(Note: All the information below is taken directly from the full Growth Policy, most of which is derived from the U.S. Census.)

- According to the most recent U.S. Census (2000), the County's population was 55,716 persons in 2000, more than double the population in 1950 (24,540). The rate of population growth in the County—like the Valley--has fluctuated significantly over the years, varying with the economy and other factors, as listed below:
 - 1950s: 14 percent increase
 - 1960s: 19 percent increase
 - 1970s: 29 percent increase

- 1980s: 10 percent increase
- 1990s: 17 percent increase
- The projected 2010 population for the County is 63,316, up from 55,716 in 2000 census, a 14 percent increase.
- From 1970 to 2000, the population growth rate in unincorporated portions of Lewis and Clark County (outside of Helena and East Helena) was the highest of any unincorporated area in Montana, at 218 percent.
- Recent increases in County population are primarily attributed to a net increase in migration (for employment purposes) of persons between the ages of 35 and 55, as well as retirees age 65 and older. The long-range trend in the County is an aging population, with a number of important implications for the workforce, healthcare system, and other areas of life.
- Approximately half of the adults in Lewis and Clark County have received some training beyond high school, and more than 30 percent of the population has attained a college or technical degree.
- Females comprise a larger share of the workforce than in the past decade, but continue to hold jobs paying less than males. The County's economy is predominantly based on the government and service sectors.
- Per capita income in Lewis and Clark County as a percentage of the national figures decreased significantly in the period between 1970-2000, but remains higher than in Montana as a whole.
- Unemployment in Lewis and Clark County has consistently remained lower than that in Montana and the United States as a whole, primarily because of government jobs.
- During the past three decades, the economies of southern Lewis and Clark County, northern and central Jefferson County, and central and western Broadwater County, in particular, have been increasingly linked in an economic and demographic region that transcends county boundaries. A growing portion of the workforce in Lewis and Clark County, for example, commutes to work from homes in Broadwater and Jefferson Counties. This trend has increased the need for inter-county planning and cooperation in the region.
- Expenditures on new housing can have an important effect on a local economy. A recent study completed by researchers at Montana State University—Billings attempted to quantify the economic benefits of new home construction in a variety

of Montana counties (The Economic Impact of Home Construction on Montana Counties, by Dr. Ann L. Adair and Cheryl Heath, CPA, December, 2002). According to the study, the 284 housing starts in Lewis and Clark County in 2001 generated 541 local jobs during the first year, producing \$20,227,470 in local income, and \$1,100,500 in local taxes. These figures include both direct, construction-related impacts, as well as indirect, non-construction effects.

- The location of new housing can have a significant effect on whether it becomes a net financial benefit or loss to local government. Development located a long distance from existing infrastructure and services can require costly public expenditures in new schools, roads, sewer lines, fire protection, and other items. Numerous studies in Montana and throughout the country have suggested that sprawling housing developments constructed away from existing infrastructure can be a net drain on local government coffers, particularly compared to the agricultural land that may have been taken out of production. A study in Gallatin County during the 1990s, for example, indicated that housing in outlying areas cost local government \$1.45 to service for every dollar generated in taxes, while providing service to farms only cost \$0.25 for every tax dollar paid (Mark Haggerty, 1997).

Issues, Goals, and Policies

ISSUE A **Trade, retail business, agriculture and government provide the backbone of the County's economy and present significant opportunity for economic expansion.**

Goal 1 Promote retention, diversification, and expansion of existing businesses.

Goal 2 Provide opportunities for commercial growth and development in Lewis and Clark County.

Policy 2.1 Encourage commercial development in central neighborhood areas, when sufficient population is present.

Policy 2.2 Encourage cluster commercial development over strip commercial development.

Policy 2.3 Prepare, in conjunction with community leaders and economic development institutions, an economic development strategy to promote and recruit new business to the County.

Goal 3 Support the agricultural sector of the County's economy.

Policy 3.1 Support opportunities for value added natural resource-based business (e.g., food products made from locally grown crops, furniture or building materials made from locally harvested timber).

Policy 3.2 Encourage preservation of areas suitable for agricultural-based business.

ISSUE B The tourism industry presents an economic opportunity for the County.

Goal 4 Assist the tourism industry as a vital part of the Lewis and Clark County economy.

Policy 4.1 Improve the visual entrances or gateways to the County and the communities within the County.

Policy 4.2 Encourage the location of compatible visitor support services near attractions, when consistent with other land use planning activities.

Policy 4.3 Assess the impact of tourism on the County's economy.

Policy 4.4 Maintain and protect historic areas which are a significant tourism attraction.

Policy 4.5 Foster preservation and conservation by supporting the efforts of the Historic Preservation Commission and other similar organizations.

ISSUE C Growing industrial development may provide further wage and job opportunities, increase housing needs, and expand other services.

Goal 5 Provide opportunities for industrial development at locations with suitable access to transportation and adequate public services.

Policy 5.1 Conduct a county-wide industrial lands suitability study.

Policy 5.2 Industrial lands should have access to arterial roads and to adequate basic services (for example water, sewer, fire, and police).

Policy 5.3 Industrial development should be undertaken in ways that reduce impacts on the natural environment.

Policy 5.4 Industrial development, other than that which is dependent on a natural resource, should be located in or near urban or transitional areas.

Policy 5.5 Infrastructure investment should be directed to areas identified for planned industrial expansion.

ISSUE D Sports Facilities attract visitors to the County.

Goal 6 Continue working with the schools, Carroll College, the Fair Grounds, the University of Montana, technical colleges, the Helena Regional Airport, and the private sector to develop sporting complexes that not only provide activities for County residents, but attract sporting events throughout Montana and the Northwestern U.S.

Transportation

Introduction/Purposes

People and goods are connected to one another via a community's transportation system, which consists of facilities that accommodate many modes of transport including cars, trucks, buses, bicycles, pedestrians, railcars, and airplanes. Lewis and Clark County must work to establish an efficient and safe road system that supports desired development patterns, in order to accommodate an increasing population and be economically competitive.

Summary of Key Trends and Facts: Transportation

- The Helena Valley transportation network consists of numerous north-south road corridors, such as North Montana Avenue, McHugh Drive, Green Meadow Drive, Applegate Drive, Wylie Drive, Valley Drive, and Lake Helena Drive. These roads traverse large sections of the Valley and allow relatively unrestricted travel north and south. There is a lack of corresponding east-west routes across the Valley; consequently, many Valley residents are limited to using the north-south routes for travel purposes.
- An environmental impact study (EIS) process began in 2002 will determine future improvements to the I-15 corridor between Montana City and Lincoln Road. The EIS is expected to be completed in late 2003.
- The County has maintained a summary of the cost and type of maintenance performed on all County roads since 1994. The available resources have not kept

pace with the maintenance needs of roadways, in part because of funding changes made by the Legislature. The County has not been able to conduct road surface maintenance in accordance with accepted standards for paved and chip seal surface roads. Consequently, many road segments have suffered from deferred maintenance.

- The State assumed maintenance obligations for some of the paved Secondary Roads in the County in 2000, reducing maintenance obligations and costs to the County.
- For at least fifty years, transportation improvements in Lewis and Clark County and throughout the country have emphasized the movement of motorized vehicles, especially automobiles. This emphasis has resulted in a transportation system and land use patterns largely centered around the automobile. While it is expected that cars will continue to account for the majority of trips in the foreseeable future, alternative non-motorized modes can play an important role in the transportation system, especially for relatively short excursions. Encouraging these modes may lessen congestion, reduce infrastructure maintenance, and decrease air pollution, while providing health benefits to the users.
- Incorrect designation of a street segment to a lower classification when anticipated traffic warrants a higher class can result in under-designed facilities, producing long-term safety or capacity problems. Additionally, as traffic volumes begin to exceed certain levels on residential streets, complaints from local residents tend to increase.
- There are 181 bridges in Lewis and Clark County. The majority are generally in fair to good condition, but more than a dozen are in need of immediate repair. Overall, 27 bridges need some type of work (2002 County Bridge Inventory).
- There are a number of transit providers operating in the County, principally in the Helena Valley planning area. There are several private charter services, in addition to non-profit providers serving specific clientele. The only taxi company operating in the County is Capitol Taxi, which provides door-to-door service 24 hours per day, 365 days per year. Its service area for passenger transport is defined as the area within a 50-mile road radius from downtown Helena. Special services include hotel/airport shuttle and wheelchair accessibility.
- The only commercial aviation airport located within the County is Helena Regional Airport (HRA), located on the northeast side of the City of Helena. Delta Air Lines, the primary carrier, operates jet flights to their Salt Lake City hub. Skywest Airlines, a Delta connection, supplements the Salt Lake City service using regional jets. Horizon Airlines offers three daily, round-trip flights to their Seattle hub using regional jets. In mid-2002, Northwest Airlines announced they would begin one

flight a day between the Twin Cities and Helena, with a stop in Billings. Big Sky Airlines serves Helena with 6 flights per day, providing service to Billings, Kalispell, and Missoula.

- Montana Rail Link (MRL) operates a rail line extending across the southern part of the Helena Valley, running from the southeast corner of the County to the Continental Divide at the Mullan Tunnel. This segment is part of a longer line extending from Logan to Missoula. MRL also operates a couple of small industrial spurs in the vicinity. A rail yard and switching facility operated by MRL is located within the City of Helena, and extends eastward into the County jurisdiction. The Burlington Northern-Santa Fe Railroad (BNSF) also operates a rail line extending from the northwest corner of the City of Helena northward, passing Silver City, Wolf Creek, and Craig, on the way to Great Falls.

ISSUE A Sufficient funds are not available to maintain all public and County roads in Lewis and Clark County.

Goal 1 Maintain and improve the condition and operational level of service of the existing road system.

Policy 1.1 Road system maintenance should remain a high priority.

Policy 1.2 The construction of passing lanes and left and right-hand turn lanes, appropriate to accommodate traffic growth or where needed for safe operation, should be a priority on the major arterial street/road system.

Policy 1.3 Prioritize and program subsurface improvements to minimize seasonal road restriction or closures due to frost heave.

Policy 1.4 Support the restriction/elimination of access points as opportunities arise to maintain capacity of existing arterials.

Policy 1.5 Development should pay its proportional share of the cost of improvements to the existing roadway system necessitated to address the impacts of development.

Policy 1.6 Prioritize road maintenance needs on the County road system.

ISSUE B: Future development may limit access to public and private lands and needed right of ways.

Goal 2 Identify and protect future road corridors to serve future developments and public lands.

Policy 2.1 Require dedication of roadway rights-of-way in both the planning and platting process. Dedications should be according to the appropriate functional classification, subdivision regulations, design standards, and County policy.

Policy 2.2 Identify, protect, maintain, and—when appropriate—purchase rights-of-way providing access to key public and recreational lands, along with potential parking areas.

Policy 2.3 Efficiently connect roads in new developments to the existing road network.

ISSUE C **A well-designed and adequate road network is essential for developing areas.**

Goal 3 Facilitate road construction to serve developing areas, and encourage development in identified urban areas.

Policy 3.1 A process should be established to assure that planned transportation projects are coordinated among Lewis and Clark County, cities in the County, the Helena Area Transportation Coordinating Committee, adjoining counties, and the Montana Department of Transportation.

Policy 3.2 Require traffic impact studies to determine the need for additional or improved roads, or for traffic signals at major intersections.

Policy 3.3 Promote the equitable distribution of transportation construction costs between Federal, State, and County government; cities in the County; and the private sector. Commitments for future transportation improvements should be pursued.

Policy 3.4 An east-west transportation by-pass corridor should be established.

Policy 3.5 As resources allow, identify and provide access for non-auto travel between communities or neighborhoods that does not parallel auto access.

Goal 4 Guidelines to provide adequate emergency service access to County residents should be established.

Policy 4.1 Review proposed developments to accommodate emergency vehicles.

Policy 4.2 Proposed transportation projects and their impacts on emergency service access should be evaluated.

Policy 4.3 Where appropriate, identify an integrated road network. Plan to ensure that adequate rights-of-way and access easements are preserved and acquired for future road extensions, widening, and proper drainage.

ISSUE D: There is a benefit to providing non-motorized travel in the County, including developed areas, and recreational and tourist areas.

Goal 5 Establish safe pedestrian and bicycle access in designated areas of the County as part of the non-motorized circulation system, as resources allow.

Policy 5.1 Establish provisions for non-motorized and pedestrian features in the design of roadway and bridge projects.

Policy 5.2 Provide for improvement and dedication of bikeways and pedestrian paths through developing areas.

Policy 5.3 Provide widened shoulders where possible to accommodate pedestrians/bicycles on existing roadways as appropriate, ideally with physical separation between motorized and non-motorized traffic.

Policy 5.4 Establish design standards for widened shoulders for pedestrians and bicyclists.

Policy 5.5 Explore opportunities for separated non-motorized paths to natural and scenic areas, including available rights-of-way.

Utilities

Introduction/Purposes

County residents rely on many basic services, including utilities, that help define their quality of life, and maintain their health and well-being. Water supply, sewage waste disposal, natural gas delivery, electricity, and telecommunication services are considered utilities. These services are usually taken for granted, but coordination and conscientious planning for future growth must be established to assure service is uninterrupted and adequate.

Summary of Key Trends and Facts: Utilities

- Electrical power is generated in the planning area by Pennsylvania Power and Light (PPL Montana). Hauser Dam, located on the Missouri River in the northeast corner of the area, was constructed in 1911. This is a run-of-the-river hydropower facility with a generating capacity of 16.5 MW; flows are governed by operations at Canyon Ferry Dam, which is controlled by the U.S. Bureau of Reclamation. The FERC license (50 years) for the Hauser Dam facility was recently up for renewal. PPL purchased the generating facilities but Montana Power Company retained its distribution system, until it was taken over by NorthWestern Energy in 2002.
- Natural gas is distributed in the planning area by North Western Energy. The extent of the distribution system is generally confined to the Helena Valley. Some major supply lines and pump stations were installed in the Valley in the 1990s to increase the service area and the capacity of the distribution system.
- Telephone services in the area are provided by a number of entities. US West (now Qwest) has historically been the principal provider and maintains a network of lines (principally underground). Since deregulation of the industry and advancements in fiber optic and cellular communications technology, other providers are also serving the area. Several communications towers have been sited in the area, some of which have been controversial due to visual and/or other impacts.
- The Yellowstone Pipeline maintains three major petroleum product transmission lines in the planning area. These are related to the bulk storage facility located at the east edge of the City of Helena.
- The City of Helena utilizes several water resources to supply the daily needs of the community. The principal resources are the Tenmile Creek watershed, Chessman and Scott Reservoirs, and the Tenmile Water Treatment Plant; this system produces approximately 90 percent of the average daily use and 60 percent of the maximum daily use. The other principal resource is the Missouri River, which is used to meet peak demands in the summer.
- There are nine large wastewater treatment facilities that are treating approximately 45 percent of the 1.8 million gallons per day (mgd) of wastewater being generated in the Valley area. This leaves 1 mgd being treated by on-site wastewater systems overlying the Helena Valley alluvial aquifer. With the projected population growth of the Valley, by the year 2020 there will be approximately 1.7 mgd being treated by on-site systems.
- Wastewater treatment in the (Helena Valley) planning area is provided by central treatment systems and individual on-site treatment systems. The City of Helena operates a mechanical treatment plant located at the north edge of the City, which

treats approximately 60 percent of the entire area's wastewater. There are also six lagoon systems located in the Helena Valley that treat about 10 percent of the wastewater generated in the area. The remaining 30 percent of wastewater is treated through individual on-site treatment systems.

- The Helena Area Wastewater Treatment (HAWT) Facility Plan, completed in June of 1998, notes that of the six lagoons in the Valley, four do not meet current standards and may be in violation of the Clean Water Act and the Montana Water Quality Act. Discharge from lagoons to groundwater totals 0.46 million gallons per day (mgd). These systems also need to be reviewed and, if necessary, updated or repaired.

Issues, Goals, and Policies

ISSUE A **Utilities that are safe, affordable, and cost effective should continue to be provided to Lewis and Clark County residents.**

Goal 1 Land use patterns that permit logical and effective extension of utilities and integration of utilities should be established.

Policy 1.1 Encourage development patterns that use common water and wastewater systems, and are designed in a way that permits abandonment of the old system in favor of regional systems when available.

Policy 1.2 Encourage the design and development of residential subdivisions within one-half mile of a municipal boundary to incorporate the municipality's design standards.

Policy 1.3 Developments within 500 feet of a public water or sewer system should be required to connect to those systems, when feasible.

Policy 1.4 The negative effects of utility installations on cultural resources should be mitigated.

Policy 1.5 Establish standardized regulations for wireless and fiber optics communications infrastructure that ensure the following are maintained: public health; safety; general welfare; convenience; natural resources; and the visual environment/appearances. Co-location of wireless communication providers. is preferable.

Safety and Safety Services

Introduction/Purposes

Lewis and Clark County recognizes the need to provide a safe living and working environment for its citizens. Assuring the provision of adequate safety services is directly linked to providing a safe living and working environment. Lewis and Clark County must work to ensure that adequate fire, law enforcement, and emergency management services are provided. There needs to be better recognition that the county rural volunteer fire protection services are the only emergency services facilities located throughout the county.

Summary of Key Trends and Facts: Safety and Safety Services

- Flooding is historically documented throughout Lewis and Clark County. Major floods occurred in June 1975, May 1981, and as recently as February 1996, when a Presidential Disaster Declaration was declared. Major flooding occurred along the Blackfoot River in 1908, 1964, and 1975. The peak of the flood season is during May and June, which usually are the wettest months of the year. Flooding has typically been caused by heavy rainfall combined with snowmelt.
- Summer in Lewis and Clark County typically brings the fire season, the result of low rainfall, high temperatures, low humidity, and thunderstorms. Nevertheless, major wildfires can occur at any time of the year.
- The 1988 Warm Springs Fire in the Elkhorn Mountains burned 32,700 acres, along with thirteen homes and cabins, as well as numerous outbuildings. The summer of 2000 was another devastating fire season in Montana, one of the worst ever recorded. In the Helena area alone, fire suppression agencies averaged more than 150 wildland fire responses for the year, including lengthy involvement with huge blazes such as the Bucksnot (9,300 acres), Cave Gulch (29,270 acres), and Toston-Maudlow (81,000 acres) fires. The 2003 fire season was also severe, particularly in the Lincoln area.
- In Montana, 86 primary residences, 133 outbuildings, and 2 commercial businesses were lost to wildfire in 2000. More than 2,000 people were forced to be evacuated from 23 different communities. Nationwide, approximately 1,000 structures and more than 470 homes were lost to wildfires in 2000. Throughout the country in the 1990s, the number of structures destroyed by wildfire increased six times over the previous decade's total, as increasing numbers of people moved to fire-prone areas.

- The Lewis and Clark County Volunteer Fire Department is charged with responding to wild land fires on private lands in those portions of the County not within a formal fire district or service area.
- The Helena Valley is located within the Intermountain Seismic Belt, a seismically active zone associated with major fault structures. The western half of Lewis and Clark County is in Seismic Zone 3, which means that an earthquake can cause major damage. Geologic investigations conducted by the MT Bureau of Mines and Geology (1981, 1988) indicate that an earthquake of magnitude 7.7 Richter could occur, subjecting the Helena Valley to severe ground shaking and liquefaction.
- The Environmental Protection Agency (EPA) and the Montana Occupational Health Bureau conducted numerous radon sampling studies throughout Montana in the late 1980s, including Lewis and Clark County. Montana had the fifth highest percentage in the country of homes with indoor radon concentrations exceeding the federal action level of 4 pCi/l (picocuries per liter of air measure of radioactivity). Lewis and Clark County was identified as being in potential radon Zone 1, the highest designation.

Issues, Goals, and Policies

ISSUE A: Citizens of Lewis and Clark County support and require adequate fire fighting and emergency response apparatus, equipment, personnel, training, and facilities for their service areas.

Goal 1 Support the efforts of all fire service entities to provide adequate fire fighting and emergency response services, apparatus, equipment, personnel, training, and facilities.

Policy 1.1 Support the efforts of all fire service entities to clearly define the level and types of services that they provide and move toward development and adoption of a fire protection master plan for their service areas.

Policy 1.2 Support the development of County fire protection standards to be included in the County Subdivision Regulations.

Policy 1.3 Facilitate completion of the fire protection facilities portion of the County's Capital Improvement Program.

Policy 1.4 Continue to support the work of the Lewis and Clark County Rural Fire Council.

Policy 1.5 Work to enhance cooperation and communication between state and federal agencies and local fire departments to ensure equal partnerships are attained.

Goal 2 Work towards obtaining full fire protection throughout Lewis and Clark County by having all land and cities in a fire service area or fire service district.

Policy 2.1 Encourage County fire districts and fire service areas to work toward implementation of the goal.

ISSUE C: **Lewis and Clark County is situated in a wildland fire prone ecosystem. Many areas of Lewis and Clark County are developing into significant wildland/urban interface areas and result in many challenges for the fire service entities.**

Goal 3 Work with fire service entities to provide adequate fire fighting and emergency response services, apparatus, equipment, personnel, training, and facilities.

Minimize exposure to wildland/urban interface and all other fire hazards through proactive code enforcement, public education programs, use of modern fire prevention measures, and adequate emergency management preparation.

Policy 3.1 Ensure a safe living and working environment by facilitating code development, public education, and awareness programs, and the use of the most up to date fire prevention strategies.

Policy 3.2 Require development proposals to include an evaluation of the impact of the proposal upon the capability of the affected fire entity to maintain its appropriate level of service to existing development in its response area and to adequately serve the proposed new development. The level of sophistication of this evaluation shall be commensurate with the type of development proposed.

Policy 3.3 Provide educational training throughout the County to address wildland/urban interface fire issues.

Goal 4 Recognize wild land fires as a natural part of the ecosystem in which we live. The County should strive to balance natural ecosystem processes with development concerns so residents can co-exist in a fire dependent ecosystem.

- Policy 4.1** Continue to support the Tri-County Fire Working Group's Fuel Hazard Mapping Project, that includes surveying and mapping the extent of wild land fire hazards and areas at risk.
- Policy 4.2** Development reviews in areas identified to be at risk of wild land fires (based on the Tri-County Fire Working Group's Fuel Hazard Map) must comply with the design standards in the *Lewis and Clark County Subdivision Regulations* for wildland/urban interface areas.
- Policy 4.3** Encourage inter-jurisdictional and inter-agency cooperation to further the goals of protection of life and property from wild land/urban interface fires. The Lewis and Clark County Rural Fire Council, the Tri-County Fire Working Group, and the South Hill Interface Team should continue to work cooperatively to develop and implement programs to reduce the hazards of wild land/urban fires and to ensure safe and effective responses.
- Policy 4.4** Encourage private and public landowners to manage forest ecosystem processes by developing and maintaining a diversity of native species, ages, and stand densities to serve as a natural deterrent to pests and fires.
- ISSUE D: Emergency services requested by citizens of Lewis and Clark County require adequate funding.**
- Goal 5** Pursue adequate funding for emergency service entities through special levies, grants, bond issues or other mechanisms.
- Policy 5.1** Provide rapid and timely response to emergencies and maintain the capability to have minimum average response times.
- ISSUE E: The Sheriff's Department is the primary agency for immediate response and crisis intervention. The Sheriff's Department can not be solely responsible for controlling and limiting crime and interpersonal conflicts.**
- Goal 6** Support a safe and secure environment for people and property in Lewis and Clark County.
- Policy 6.1** Continue to support community-oriented policing services.
- Policy 6.2** Support crime prevention through planning and community design.

- Policy 6.3** Encourage education/liaison for gang and drug prevention progress, in cooperation with law enforcement and school districts.
- Policy 6.4** Support the coordination of law enforcement planning with local, regional, state, and federal plans.
- ISSUE F:** **It is necessary that Lewis and Clark County conduct emergency preparedness planning on an on-going basis.**
- Goal 7** Minimize exposure to all hazards through emergency management planning and mitigation.
- Policy 7.1** Regularly update and distribute the Lewis and Clark County Emergency Operations Plan.
- Policy 7.2** Promote greater community awareness and preparedness by working with business associations, homeowners' associations, community groups, and utility companies.
- Policy 7.3** Coordinate emergency drills with all affected operating departments.
- Policy 7.4** Designate which critical public facilities are to remain operative during emergencies.
- Policy 7.5** All County Departments have emergency plans and play significant roles in restoring infrastructure, governmental services, and coordinating communication. The County's Emergency Operations Plan includes provisions for pre-emergency planning and post-disaster recovery.

I: INTRODUCTION

History

Lewis and Clark County adopted its first Comprehensive Plan in 1983, portions of which were updated in 1989. The focus of this Plan was the Helena Valley area, but sections on the rural areas were included. In 1996, the Board of County Commissioners adopted a more specific area plan for Lincoln and the Upper Blackfoot Valley; this was initiated in response to a major open pit gold mine proposed in the vicinity. In 1997, the County began the process to update the County Comprehensive Plan and establish area plans for other rural parts of the County, as follows:

- Augusta
- Wolf Creek-Craig
- Canyon Creek-Marysville
- Canyon Ferry-York
- The Helena Valley

These areas were defined on the basis of physical geography, school districts, fire protection districts, and general sense of community.

Lewis and Clark County is composed of a variety of physical, environmental and economic conditions. This planning process identified many of these conditions and their relationship to the functioning of the County as a whole. The process began by reviewing existing conditions, and then moved on to forecast anticipated changes. Understanding these changes and their impacts helps establish a framework for more effectively managing growth in the County.

The Comprehensive Plan (or Growth Policy, as it has been referred to since 1999) is a guidebook for the County to review and manage change. It attempts to give a total perspective of the County, and establish the necessary principles, criteria, and guidelines to make logical decisions.

It is important to emphasize that the Growth Policy is not an end, but a means. In part, it is a reference document to help in the decision-making process. It is a planning document that provides information and guidance to aid staff and commissioners as they serve the public. The time-frame for the Growth Policy is the next 10 to 20 years.

The Growth Policy will regularly be evaluated and modified to assure the document remains current as it addresses future needs of County residents. Step by step, Lewis and Clark County can continue to grow and serve the current and future population efficiently and logically, as it meets the needs of residents.

Common Areas of Interest

Lewis and Clark County citizens, through an extensive public involvement process, have described how they see their county today, and how they would like to see it in the future.

Expressed concerns for the future centered on the following: natural systems and their preservation in urban/urbanizing areas; water quality and quantity; upholding the unique character of smaller towns and rural communities; and representing the historic nature of communities.

Issues and priorities directed toward the future include the following components:

- Maintain the traditional character, appearance, functions, and lifestyles of the County's rural communities and areas.
- Recreational uses of rural lands and water should not interfere with private property interests or needs.
- Provide efficient access and mobility for County residents that supports existing and future land use patterns.
- Support quality natural systems. Urban/suburban development should not adversely affect wetlands, streams, wildlife habitat, water quality and natural resource activities.

- Attractive, well-designed, livable urban communities should be supported by quality services and facilities; provide a range of housing choices; should not unduly encroach on rural lands; and be sensitive to existing ambiance.
- Within the urbanized areas, a system of open space, parks, or green belts should connect community places, provide opportunities for recreation, and enhance pedestrian/bike connections.
- Encourage a vital economy that provides living wage jobs for residents.
- Strive for an efficient and responsive government that works with citizens to meet collective needs fairly.

These issues and priorities have guided the development of this Growth Policy. They give direction for both respecting rural character and examining future growth, and are consistent with the quality of life desired by Lewis and Clark County residents. This Growth Policy recognizes the complexities involved in balancing historic patterns of growth with the issues and priorities for the future. It recognizes that flexibility is necessary to adapt to changing conditions and that at all times the Growth Policy must reflect the long term priorities and goals of the people living and working in Lewis and Clark County.

Planning Context

Planning for the future is happening simultaneously at several levels--regional, countywide, in local cities and towns, and by the individual property owner. The Growth Policy should work toward consistency with applicable planning policies adopted by the State and federal governments, as well as existing regional and local planning policies.

Coordination between policy setting agencies can help ensure that the issues and priorities of this Growth Policy are acted on in a responsible manner, and reflect the majority of residents. Internally, there are also coordination issues. Water and sewer service, solid waste disposal, police and fire protection, and others are all public entities that will need to make use of this document to provide the highest quality of service to County residents.

Authorization

The Montana Codes Annotated (MCA) authorizes local governments to adopt a Growth Policy. The purpose of adopting a Growth Policy is to provide direction for community development. It has been recognized that community development is more integrated and cost-effective for both the public and private sectors when conducted pursuant to a Growth Policy. The specific authorization is found in Section 76-1-601, MCA, which is included at the end of this Introduction.

Citizen Involvement

The Growth Policy is based on an extensive citizen involvement process that began in 1997 with the establishment of a Citizen Advisory Committee (CAG). The CAG provided overall project direction, and worked to resolve countywide and regional issues. The CAG consisted of two to three members from the Consolidated City-County Planning Board, a representative from each of the five Planning Areas of the County, and one representative each from four major stakeholder groups in the County. The CAG spent more than three years educating themselves, discussing issues, soliciting public comment at a variety of venues, and developing a draft document for the Consolidated Planning Board to consider. A consulting firm—Bucher, Willis & Ratliff—was retained to undertake much of the Growth Policy research and writing.

Public involvement was an important part of the process, and included the following efforts:

- A series of fifteen Planning Area workshops (three in each of the Planning Areas mentioned on page 1) to identify issues of local concern, determine vision and goals and for each area, and develop planning alternatives. The workshops were designed to stimulate dialog between community members and the County as the Growth Policy progressed. Written and oral comments were collected both during and after each meeting. A second series of workshops were held in 2002 during the process of revising the plan
- Interviews were conducted with various stakeholders who are very knowledgeable about the County and who could provide insight into issues facing the County and their historical context.

- Presentations were made to various agencies, service clubs, and other organizations to provide updates and improve overall understanding.
- Periodic news article releases were used to keep the public informed concerning upcoming meetings, workshops, planning progress, and other items of interest.
- Formal public hearings were used as part of the planning and Plan adoption process.

The Helena/Lewis and Clark Consolidated Planning Board serves in an advisory capacity to the Board of County Commissioners (and the Helena City Commission), pursuant to an inter-local agreement with the City of Helena. The Planning Board has the responsibility of recommending a growth policy for the County, and may also include recommended ordinances. The Planning Board reviewed the draft document forwarded from the CAG, directed Staff to make certain revisions, and held public hearings. Subsequent to the public hearings, the Planning Board considered the public comment received and made its recommendations to the Board of County Commissioners (BOCC).

The BOCC adopted the Growth Policy in December 2000. In January 2001 the BOCC decided to begin reviewing the document for possible changes. Both the Planning Board and BOCC conducted public review and hearings prior to adoption of the revised document in December 2003.

Application

The BOCC must statutorily follow the requirements outlined for growth policies in the M.C.A. listed in the section below. The Growth Policy will also be utilized by County officials and the BOCC as they develop the annual the budget, capital improvement plans, administrative programs, grant requests, and other activities. Additionally, the Growth Policy should be utilized by private sector service providers, local economic development entities, financial institutions, and the development community to better coordinate private and public sector resources. The specific requirements of the local government are found in Sections 76-1-605 and 606, MCA, which are included at the end of this Introduction.

Growth Policy Statutory Definition

Senate Bill 97, which was passed by the 1999 Montana Legislature, redefined comprehensive plan as “growth policy.” Additionally, House Bill 543 which passed in the 2001 session made some other important changes related to growth policies through amendments to sections 76-1-605, 76-1-606, 76-3-504, and 76-3-604, MCA. The requirements the Legislature has defined for growth policies are as follows:

76-1-601. Growth policy -- contents. (1) The planning board shall prepare and propose a growth policy for the entire jurisdictional area. The plan may propose ordinances or resolutions for possible adoption by the appropriate governing body.

(2) A growth policy must include:

(a) community goals and objectives;

(b) maps and text describing an inventory of the existing characteristics and features of the jurisdictional area, including:

(i) land uses;

(ii) population;

(iii) housing needs;

(iv) economic conditions;

(v) local services;

(vi) public facilities;

(vii) natural resources; and

(viii) other characteristics and features proposed by the planning board and adopted by the governing bodies;

(c) projected trends for the life of the growth policy for each of the following elements:

(i) land use;

(ii) population;

(iii) housing needs;

(iv) economic conditions;

(v) local services;

(vi) natural resources; and

(vii) other elements proposed by the planning board and adopted by the governing bodies;

(d) a description of policies, regulations, and other measures to be implemented in order to achieve the goals and objectives established pursuant to subsection (2)(a);

(e) a strategy for development, maintenance, and replacement of public infrastructure, including drinking water systems, wastewater treatment facilities, sewer systems, solid waste facilities, fire protection facilities, roads, and bridges;

- (f) an implementation strategy that includes:
 - (i) a timetable for implementing the growth policy;
 - (ii) a list of conditions that will lead to a revision of the growth policy; and
 - (iii) a timetable for reviewing the growth policy at least once every 5 years and revising the policy if necessary;
- (g) a statement of how the governing bodies will coordinate and cooperate with other jurisdictions that explains:
 - (i) if a governing body is a city or town, how the governing body will coordinate and cooperate with the county in which the city or town is located on matters related to the growth policy;
 - (ii) if a governing body is a county, how the governing body will coordinate and cooperate with cities and towns located within the county's boundaries on matters related to the growth policy;
 - (h) a statement explaining how the governing bodies will:
 - (i) define the criteria in 76-3-608(3)(a); and
 - (ii) evaluate and make decisions regarding proposed subdivisions with respect to the criteria in 76-3-608(3)(a); and
 - (i) a statement explaining how public hearings regarding proposed subdivisions will be conducted.
- (3) A growth policy may:
 - (a) include one or more neighborhood plans. A neighborhood plan must be consistent with the growth policy.
 - (b) establish minimum criteria defining the jurisdictional area for a neighborhood plan;
 - (c) address the criteria in 76-3-608(3)(a);
 - (d) evaluate the effect of subdivision on the criteria in 76-3-608(3)(a);
 - (e) describe zoning regulations that will be implemented to address the criteria in 76-3-608(3)(a); and
 - (f) identify geographic areas where the governing body intends to authorize an exemption from review of the criteria in 76-3-608(3)(a) for proposed subdivisions pursuant to 76-3-608.

(4) The planning board may propose and the governing bodies may adopt additional elements of a growth policy in order to fulfill the purpose of this chapter.

History: Ap. p. Sec. 31, Ch. 246, L. 1957; amd. Sec. 12, Ch. 247, L. 1963; amd. Sec. 1, Ch. 156, L. 1973; Sec. 11-3831, R.C.M. 1947; Ap. p. Sec. 3, Ch. 246, L. 1957; amd. Sec. 2, Ch. 247, L. 1963; amd. Sec. 1, Ch. 349, L. 1973; Sec. 11-3803, R.C.M. 1947; R.C.M. 1947, 11-3803(part), 11-3831; amd. Sec. 8, Ch. 582, L. 1999.

76-1-605. Use of adopted growth policy. After adoption of the growth policy, the city council, board of county commissioners, or other governing body within the territorial

jurisdiction of the board must be guided by and give consideration to the general policy and pattern of development set out in the growth policy in the:

(1) authorization, construction, alteration, or abandonment of public ways, public places, public structures, or public utilities;

(2) authorization, acceptance, or construction of water mains, sewers, connections, facilities, or utilities;

(3) adoption of subdivision controls; and

(4) adoption of zoning ordinances or resolutions.

History: En. Sec. 40, Ch. 246, L. 1957; amd. Sec. 15, Ch. 247, L. 1963; R.C.M. 1947, 11-3840(part); amd. Sec. 12, Ch. 582, L. 1999.

76-1-606. Effect of growth policy on subdivisions and plats. (1) When a growth policy has been approved, the subdivision regulations adopted pursuant to chapter 3 of this title must be made in accordance with the growth policy.

History: En. Sec. 42, Ch. 246, L. 1957; amd. Sec. 4, Ch. 271, L. 1959; amd. Sec. 16, Ch. 247, L. 1963; amd. Sec. 9, Ch. 273, L. 1971; R.C.M. 1947, 11-3842; amd. Sec. 13, Ch. 582, L. 1999; amd. Sec. 2, Ch. 527, L. 2001.

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II:

DEMOGRAPHICS AND ECONOMICS

Introduction and Summary

Population and economic characteristics and trends provide important background information for the County to study and analyze for the Growth Policy planning process. These tools can be used to provide insight into current and future needs. Population and economic characteristics also identify the County's attributes, along with the challenges its residents face. A population analysis examines the past, present and future make-up of the County in terms of the number of people living there and the age composition of the population. An economic analysis reveals where people work, the wealth of the County, its reliance on local businesses and services, and its ability to pay for needed public improvements. In order to plan effectively, the County must have a basic understanding of both the population and economic factors, and how they may impact on the County now and in the future.

Some of the key points in this chapter include the following:

- While the County experienced substantial out-migration during the latter 1980s, the annual growth rate in the first half of 1990s has increased at nearly double the average growth rate during the previous decade.
- The Helena Valley continues to encompass the largest percentage of County population and growth. The majority of the growth is occurring in unincorporated areas within the Helena Valley.
- The unincorporated communities within the County comprise a small percentage of the overall county population. Population growth within these areas, however, may eventually warrant an individual plan similar to that developed for the Lincoln area.
- The unincorporated communities within the County comprise a small percentage of the overall county population. Population growth within these areas may eventually warrant individual plans.
- Recent increases in population are primarily attributed to a net increase in migration (for employment purposes) of persons between the ages of 35 and 55, as well as retirees age 65 and older. The long-range trend in the County is an aging population, with a number of important implications for the workforce, healthcare system, and other areas of life.

- The projected 2010 population for the County is 63,316, up from 55,716 in 2000 census, a 14 percent increase.
- Females comprise a larger share of the workforce than in the past decade and continue to hold jobs paying less than males. The County's economy is predominantly based on the government and service sectors.
- Per capita income in Lewis and Clark County as a percentage of the national figures decreased significantly in the period between 1970-2000, but remains higher than in Montana as a whole.
- Approximately half of the adults in Lewis and Clark County have received some training beyond high school, and more than 30 percent of the population has attained a college or technical degree.
- Unemployment has consistently remained lower than that of the entire state of Montana and the United States as a whole as a result of government jobs.
- When examining the four-county area of Broadwater, Jefferson, Meagher, and Lewis and Clark Counties, the latter has the dominant economy and largest labor force by a significant margin, in large measure due to the influence of Helena and East Helena.
- During the past three decades, the economies of southern Lewis and Clark County, northern and central Jefferson County, and central and western Broadwater County, in particular, have been increasingly linked in an economic and demographic region that transcends county boundaries. A growing portion of the workforce in Lewis and Clark County, for example, commutes to work from homes in Broadwater and Jefferson Counties. This trend has increased the need for inter-county planning and cooperation in the region.
- New housing construction has an important, positive economic impact on Lewis and Clark County, but the location of that housing—and its relationship to existing infrastructure—influences the fiscal effect the development will have on local government.

In addition to the data included in this chapter, a much more detailed analysis of the County's population and economy is found in the East Helena-Area Economic Adjustment Strategy. This study—which encompasses the cities of East Helena and Helena, and Lewis and Clark, Broadwater, Jefferson, and Meagher Counties—was completed in July 2002, and was submitted to the U.S. Department of Commerce. The Economic Adjustment Strategy is a supporting document to this Growth Policy, and is on file at the Lewis and Clark County Planning Office.

History

Prior to the coming of non-native explorers, the Lewis and Clark County area had been inhabited by Blackfeet Indians for centuries. The first European visitors to Montana may have been the Verendrye brothers in 1742-43. Trappers and fur traders were visitors in the State in the later half of the 18th century. In 1805, Meriwether Lewis and Captain William Clark visited the territory comprised of the present Lewis and Clark County and opened up this territory to pioneer settlement.

More than half a century after the expedition of Lewis and Clark, gold was discovered in what is now known as Last Chance Gulch. Several mines were opened throughout the later half of the nineteenth century, but the most important settlement was by far Last Chance Gulch, a gold mining camp that eventually became the City of Helena. When the placers were mined out, rich quartz lodes were found nearby, and, with more stable mining activity, Helena became the supply center for neighboring valleys. Its location on important north-south and east-west transportation routes enhanced its development. In 1875, Helena became the territorial capital and won the state capital election in 1894.

The future main street of Helena was still teeming with miners when other pioneers began to run cattle along Sun River, seventy miles north. The first herd driven out of Montana started from the vicinity of Augusta in 1868. During that year, the first homestead entry in the state was filed in the Helena land office.

The Northern Pacific Railway Company battled politicians, reluctant bankers, hostile Indians and northern blizzards to extend the railway to Helena. Overcoming all obstacles, the railway reached Helena in the summer of 1883; regular passenger service was inaugurated, eclipsing the demand for stagecoaches. Interstate commerce also expanded as the first bullion train carried a million pounds of Montana silver to New York. The coming of the railroad proved to be an economic catalyst that--along with an overall rise in the economy of Montana--provided a considerable boost to the size and economic strength of Helena. The farming and livestock industries--along with government--continue to form basic parts of the economy of Lewis and Clark County today.

Population

Population trends and projections are basic guides for most planning, budgeting, and financing decisions. All elements of the Growth Policy utilize this section to determine future demands, and the usefulness of this Plan relies heavily on these projections. The population size and characteristics determine the level of demand for land development, capital improvements, utility extensions, transportation, housing and community facilities. Elements that determine the direction and magnitude of population change include births, deaths, and in/out-migration. Land ownership patterns also influences distribution (see Appendix A for population distribution map).

As time passes, the social, economic and cultural needs of the county change, and as population changes occur in Lewis and Clark County, the nature of the population, both in size and structure, will be altered according to migration patterns. These changes determine the type of land use issues that should be addressed. This section examines population trends in Lewis and Clark County. Through the analysis of these trends, population projections are made. It is crucial that these forecasts be reviewed and updated according to actual demographic changes to insure they remain consistent and serve as a useful tool for the best interests of the community.

Population Trends and Forecast

Lewis and Clark County's population has grown steadily since 1950, and has doubled between 1960 and 2000 (see table 2.1). The County experienced significant growth between 1970 and 1980 (a 29 percent increase), due to substantial in-migration. Most of the impetus for the County's population growth during this period can be attributed to the creation of 1200 new jobs in State government between 1970 and 1977, and more generally, to a 30 percent increase in total employment during this period. Seventy percent of the County's population gain during the 1970s was the result of in-migration. This was almost twice the 36 percent in-migration rate experienced state-wide during the same time frame. Lewis and Clark County's in-migration rate was also higher than that of two other rapidly growing urban Montana counties, Missoula and Yellowstone.

| | 1950 | 1960 | 1970 | 1980 | 1990 | 1995 | 2000 |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| L & C County | 24,540 | 28,006 | 33,281 | 43,039 | 47,495 | 52,785 | 55,716 |
| Montana | 594,024 | 674,767 | 694,409 | 786,690 | 799,065 | 870,281 | 902,195 |

Source: U.S. Bureau of the Census, Census of Population, Montana.

Between 1980 and 1990, Lewis and Clark County's population increased minimally, rising from about 43,000 to 47,500. During this decade, the County—like the State as a whole--experienced an economic downturn that led to out-migration in the latter 1980s. During the decade beginning in 1980, the County had an annual growth rate of one percent, while the State of Montana experienced a 0.1 percent annual growth rate.

The pace of economic and population growth picked up again in the 1990s, in both Lewis and Clark County and Montana as a whole. Montana's population grew by 12.9 percent between 1990 and 2000, increasing to 902,195, a 1.3 percent annual growth rate. State-wide, the most rapid growth occurred during the first five years of the decade, when the population increased by 8.9 percent. By contrast, the state-wide growth rate between 1995 and 2000 was 3.7 percent.

The population in Lewis and Clark County grew even more rapidly than the State as a whole during the past decade, increasing by 17.3 percent between 1990 and 2000, for a total of 55,716 people, a 1.7 percent annual growth rate. Similar to Montana in general, the most rapid growth occurred during the first portion of the decade: The growth rate was 11.1 percent between 1990 and 1995, dropping to 5.6 percent between 1995 and 2000.

During the first part of the 1990s, Montana's population increased at one of the fastest rates seen in twenty-five years. However, Montana's population growth has been uneven throughout the state. The strongest growth areas are occurring in the western part of the state, including Lewis and Clark County. The population of Lewis and Clark County increased from 47,495 in 1990 to an estimated 52,785 in 1995 and 55,716 in 2000.

The population projections for Lewis and Clark County (made prior to the availability of the 2000 census data) were formulated by using the least squares linear regression method, and are based on trends in population growth over the past few decades. This method shows the population of Lewis and Clark County growing at an annual rate of 1.67 percent, resulting in a population of 63,316 in the year 2010. This annual growth rate is slower than the annual growth rate experienced in the early 1990s (2.2 percent) but greater than the annual growth rate in the later part of the 1980s (1 percent).

According to another forecast made by the City of Helena, the population of the greater Helena Valley will increase to approximately 70,000 by 2020. This constitutes an increase of 23,000 people in twenty years, nearly the equivalent of adding the population of another City of Helena to the Valley. It is important to note that population projections are not an exact science, and it is essential to periodically review the projections to ensure their continuing usefulness.

Population Distribution

In 1950, almost 80 percent of all County residents lived in the City of Helena. By 1990, this figure dropped to less than 52 percent. While Helena's share of the County's population declined, the Helena Valley's share increased. From 1970 to 1980, the Helena Valley experienced slightly more than a doubling in the number of residents. This increase represented 70 percent of all the population growth County-wide during that decade. In 1990, the Census Bureau created five Census Designated Places (CDPs) to represent the Helena Valley. Table 2.2 shows the approximate geographic distribution of the County's population based upon 1980-2000 Census Data.

Table 2.2 POPULATION IN HELENA VALLEY

| Place | 1980 | 1990 | 2000 |
|-----------------------------|---------|---------|--------|
| Helena | 23,938 | 24,609 | 25,780 |
| East Helena | 1,647 | 1,538 | 1,642 |
| Helena Valley Northeast CDP | --- | 1,585 | 2,122 |
| Helena Valley Northwest CDP | --- | 1,215 | 2,082 |
| Helena Valley Southeast CDP | --- | 4,601 | 7,141 |
| Helena Valley W. C. CDP | --- | 6,327 | 6,983 |
| Helena West Side CDP | | 1,847 | 1,711 |
| Other unincorporated areas | 13,278* | 1,201** | --- |
| Total Helena Valley | 38,863 | 42,883 | 47,461 |

Source: U.S. Bureau of the Census, Census of Population, Montana.

* Includes Enumeration Districts 0981 (75 percent), 0986 (75 percent), 0991, 0992, 0993, 0994A, 0995A, 0996, 0997 (40 percent), 0999A (50 percent), 0999A

** Includes unincorporated non-CDP areas of Block Numbering Areas 9795, 9797, 9799, 9801, part of 9802

The aggregate population of the entire Helena Valley in 1990 was 42,883, approximately 39 percent of which was located outside the incorporated cities of Helena and East Helena. This represents an approximate increase of 4,000 persons in the Helena Valley in the 1980s, which was 90 percent of all County-wide growth between 1980 and 1990. Approximately 87 percent of the population growth in the Helena Valley in the 1980s occurred outside of the two incorporated areas.

This pattern of rapid population growth in the Valley continued during the 1990s. For example, between 1990 and 2000, the Helena Valley CDPs collectively increased by 28.7 percent, while Helena and East Helena grew by 4.8 percent and 6.8 percent, respectively. From 1980 to 2000 the percentage of the total Helena Valley population residing in the incorporated areas of Helena and East Helena declined from 66 percent in 1980, to 61 percent in 1990, to 58 percent in 2000.

There are a number of reasons for the dramatic increase in the number of Helena Valley residents. Undeveloped land in the Valley has generally been less expensive than vacant land in Helena. Many people wanted a country-type atmosphere in which to live. Some were avoiding what were perceived as higher building costs in Helena. Some felt there were fewer development restrictions and regulations in the unincorporated area of the County. Higher property taxes in Helena may also have been a consideration.

The movement of growth from Helena to the Helena Valley has increased the burden on Lewis and Clark County for providing public services. In the more densely populated areas of the Valley, the demand for public facilities and services has increased beyond what is typically found in rural areas.

While Helena, East Helena, and Gilman (uninhabited) are the only incorporated cities within Lewis and Clark County, there are several unincorporated communities within the County's jurisdiction. They may have no established boundaries and census counts may not be accurate (see table 2.3). The aggregate population of these unincorporated communities comprises less than three percent of the overall county population. The Montana Department of Commerce has worked with the US Census Bureau to ensure the boundaries more closely match 2000 Census results.

| Community | Population |
|------------------|-------------------|
| Augusta | 284 |
| Canyon Creek | 69 |
| Craig | 101 |
| Fort Harrison | 188 |
| Lincoln | 1,100 |
| Marysville | 92 |
| Rimini | 313 |
| Unionville | 370 |
| Wolf Creek | 152 |
| Total | 2,669 |

Note: Data from 2000 U.S. Census. Numbers generated by MT Natural Resources Information Center (NRIS) mapping program, using 1 mile buffer around each location. The totals shown are the census block totals for all census blocks that are in the search area, either partially or totally. Because of changes in census tracts and methodology, numbers are not directly comparable to those from 1990.

Age

As the population of the County changes over time, the composition of the population by age changes with it. The age structure has significant bearing on the future population of the County. Many public services and facilities are designed to serve a specific age group, such as local schools. The changes in the age structure must be examined to determine and predict future needs. For instance, a decrease in the number of women in childbearing years or an increase in people of retirement age are signals to target planning efforts towards senior health services, senior centers, and other related public services. They are also signals that economic development and job creation must be encouraged to retain young families in the County.

Table 2.4 shows population by age and sex for 1980, 1990, and 2000 for Lewis and Clark County. Between 1980 and 1990, the County experienced a decrease of people in their late teens and twenties. During the 1980s, the overall population increase was primarily due to a net increase in people between the ages of 35 and 55 and persons age 65 and over. The median age has risen during the past decade, reflecting the aging of the population and the in-migration of retirees.

| |
|---|
| TABLE 2.4 POPULATION OF LEWIS AND CLARK COUNTY BY AGE AND SEX: 1980-2000 |
|---|

| Age | 1980 | | 1990 | | 2000 | |
|-----------|--------|--------|--------|--------|--------|--------|
| | Male | Female | Male | Female | Male | Female |
| 0-4 | 1,757 | 1,646 | 1,734 | 1,750 | 1,761 | 1,674 |
| 5-9 | 1,671 | 1,644 | 2,072 | 1,906 | 1,975 | 1,898 |
| 10-14 | 1,806 | 1,662 | 1,871 | 1,773 | 2,145 | 2,088 |
| 15-19 | 2,142 | 2,011 | 1,662 | 1,684 | 2,185 | 2,114 |
| 20-24 | 1,798 | 2,055 | 1,232 | 1,353 | 1,612 | 1,595 |
| 25-29 | 2,060 | 2,158 | 1,581 | 1,780 | 1,415 | 1,496 |
| 30-34 | 1,949 | 1,878 | 1,942 | 2,144 | 1,657 | 1,697 |
| 35-39 | 1,388 | 1,398 | 2,229 | 2,303 | 2,145 | 2,276 |
| 40-44 | 1,102 | 1,165 | 2,043 | 1,941 | 2,336 | 2,537 |
| 45-49 | 964 | 1,007 | 1,475 | 1,396 | 2,518 | 2,547 |
| 50-54 | 964 | 975 | 1,158 | 1,174 | 2,208 | 2,064 |
| 55-59 | 945 | 998 | 964 | 965 | 1,535 | 1,517 |
| 60-64 | 829 | 943 | 904 | 947 | 1,120 | 1,114 |
| 65-69 | 686 | 791 | 830 | 913 | 876 | 949 |
| 70-74 | 472 | 572 | 623 | 814 | 724 | 882 |
| 75-79 | 273 | 457 | 420 | 651 | 581 | 776 |
| 80-84 | 151 | 268 | 275 | 402 | 360 | 610 |
| 85+ | 126 | 328 | 164 | 420 | 243 | 532 |
| Sub-Total | 21,083 | 21,956 | 23,179 | 24,316 | 27,396 | 28,366 |
| Med. Age | 30 | | 34 | | 38 | |

Source: U.S. Bureau of the Census, Montana.

Between 1990 and 2000, the aging of the population in Lewis and Clark County continued, with the median age rising from 34 to 38. Compared to the 1980s, every age category over 45 increased in number during the last decade. Age groups between 10 and 24 also posted increases, while the number of people between 25 and 39 declined. Age groups under 10 years of age posted minor declines overall.

Racial Composition of the Population

Lewis and Clark County is racially homogenous compared to many other areas of the country. According to 2000 census data, the current racial composition of the Lewis and Clark County population is as follows:

- 95.2 percent: White
- 2.0 percent: American Indian or Alaskan Native
- 1.6 percent: Two or More Races
- .5 percent: Asian
- .4 percent: Some Other Race (Alone)
- .2 percent: Black/African American
- .1 percent: Native Hawaiian/Other Pacific Islanders

(NOTE: Hispanic/Latinos are not a separate racial category in this listing, but are included within the above classifications.)

Household Size

Along with the rest of the country, Lewis and Clark County is experiencing a decrease in average household size. The average household size in Lewis and Clark County decreased approximately 5 percent from 1980 to 1990, from 2.60 to 2.47 persons per household in 1990. Similarly, during the same period the average household size decreased in the Helena Valley, from 2.94 to 2.65 persons per household.

By 2000, the average household size in Lewis and Clark County had declined to 2.38 persons, a 3.6 percent drop from 1990. This reflects national trends: People live longer (and may significantly outlive a deceased spouse), parents have fewer children, and there are more people living alone and in single-parent households. These trends are expected to continue in Lewis and Clark County.

In 1990, approximately 11 percent of the population lived alone, a figure that had increased to 12 percent by 2000. As the County's population ages, single elderly householders will become even more common. Shrinking household sizes have obvious implications for affordable housing needs, and will affect demand for different types of housing. Due to declining household size, population growth in the future will require more housing units per capita, influencing land use patterns.

Economics

Population change is directly related to economic trends. Economic growth, coupled with the County's attractiveness, are two determinants of population growth. When community economic characteristics such as employment and per capita income are stable and growing, growth in population becomes more likely.

This section displays past and existing economic characteristics. These trends, along with existing profiles, allow a community to analyze the local economy and assess the ability to stimulate investment. Employment and income are the gauges for community economic growth and development; it is through these means that the County will find opportunities to diversify and improve. It also determines the need for the County to change the services it provides and build an economic development relationship with community leaders to support expansion of the current businesses, as well as attract new business to the County.

Employment Overview

Table 2.5 illustrates that Lewis and Clark County, with a population of 55,716 in 2000, had 28,464 persons in the civilian labor force. The civilian labor force is defined as the population of working age persons (16 years of age or older) that are employed or actively seeking employment. It excludes those not seeking employment and those serving in the armed forces.

Between 1990 and 2000 the total civilian labor force rose by 11.4 percent in Lewis and Clark County, from 25,554 to 28,464. During the same period, the number of employed individuals in the County increased by 11.7 percent, growing from 24,404 to 27,251. According to the U.S. Census, labor force participation in Lewis and Clark County is among the highest in Montana: In 2000, 70 percent of the county population was part of the labor force, including 74 percent of the males and 63 percent of the females.

Unemployment in Lewis and Clark County has consistently remained lower than the State of Montana as a whole. The unemployment rate in Lewis and Clark County decreased from a twenty-year high of 6.8 percent 1985, to 4.3 percent in 2000, prior to the start of the recent national recession.

| TABLE 2.5 | | | | | | |
|--|--------------|-----------------|-------------------|--|----------------|-------------|
| LABOR FORCE IN LEWIS AND CLARK COUNTY: 1980-2000 | | | | | | |
| (16 and Over) | | | | | | |
| Annual Average Civilian Labor Force: Lewis and Clark County | | | | Annual Average Unemployment Rates | | |
| Year | Total | Employed | Unemployed | County | Montana | U.S. |
| 2000 | 28,464 | 27,251 | 1,213 | 4.3 | 4.9 | 4.0 |
| 1999 | 26,985 | 25,725 | 1,260 | 4.7 | 5.2 | 4.2 |
| 1998 | 28,203 | 26,849 | 1,354 | 4.8 | 5.6 | 4.5 |
| 1997 | 28,079 | 26,679 | 1,420 | 5.0 | 5.4 | 4.9 |
| 1996 | 27,845 | 26,594 | 1,251 | 4.5 | 5.3 | 5.4 |
| 1995 | 27,610 | 26,184 | 1,426 | 5.2 | 5.9 | 5.6 |
| 1994 | 27,520 | 26,385 | 1,135 | 4.1 | 5.1 | 6.1 |
| 1993 | 26,880 | 25,500 | 1,380 | 5.1 | 6.1 | 6.9 |
| 1992 | 26,490 | 25,010 | 1,480 | 5.6 | 6.9 | 7.5 |
| 1991 | 25,720 | 24,250 | 1,470 | 5.7 | 7.1 | 6.8 |
| 1990 | 25,554 | 24,404 | 1,150 | 4.5 | 6.0 | 5.6 |
| 1985 | 25,719 | 23,980 | 1,739 | 6.8 | 7.7 | 7.2 |
| 1980 | 24,715 | 23,474 | 1,241 | 5.0 | 6.1 | 7.1 |
| Source: Montana Dept. of Labor and Industry, Research | | | | | | |

Note: The total civilian labor force in 1999 decreased from the previous year. There was a corresponding decrease in the number of the total civilian labor force. The drop in numbers is due to a change in reporting methodology.

As illustrated in table 2.6, the County's economy is predominantly based on government employment and the services industry: Local, state, and federal government agencies employed 8,382 persons; the services category included 7,612 employees; and the retail sector had 5,009 employees. The employment data from the 2000 Census, which was aggregated differently than the data in table 2.6, broke out the major employment categories as follows:

- Services: 40 percent
- Government: 23 percent
- Trade: 20 percent
- Communications and construction: 9 percent
- Mining and manufacturing: 4 percent
- Agriculture and agricultural services: 3 percent

During the past two decades, the service sector has emerged as an increasingly dominant component of the employment mix in Lewis and Clark County.

| TABLE 2.6 MAJOR INDUSTRIES: 1980-1998 (LEWIS AND CLARK COUNTY, TOTAL JOBS) | | | | | | |
|---|-------------|-------|-------------|-------|-------------|-------|
| Type of Industry | 1980 | | 1990 | | 1998 | |
| Agricultural, Forestry and Fisheries | 701 | 3.40% | 791 | 3.45% | 805 | 2.89% |
| Mining | 196 | 0.95% | 235 | 1.02% | 27 | 0.10% |
| Construction | 1,528 | 7.40% | 1,377 | 6.00% | 1,236 | 4.44% |
| Manufacturing | 1,177 | 5.70% | 1,090 | 4.75% | 1,023 | 3.68% |
| Transportation | 610 | 2.96% | 686 | 2.99% | 741 | 2.66% |
| Communications and Other Public Utilities | 1,295 | 6.27% | 718 | 3.13% | 393 | 1.41% |
| Wholesale Trade | 563 | 2.73% | 478 | 2.08% | 776 | 2.79% |
| Retail Trade | 3,191 | 15.4% | 3,788 | 16.5% | 5,009 | 18.0% |
| Finance, Insurance, and Real Estate | 1,308 | 6.34% | 1,624 | 7.08% | 1,819 | 6.54% |
| Services | 6,132 | 29.7% | 8,279 | 36.0% | 7,612 | 27.3% |
| Government | 3,939 | 19.0% | 3,883 | 16.9% | 8,382 | 30.1% |

Source: MT Dept. of Commerce, and the U.S. Bureau of the Census, MT, 1980, 1990, 1998.
 Note: Data from 2000 Census is not directly comparable because the job categories are different.

In Lewis and Clark County, the highest-paying employment category was government jobs, which averaged \$40,594 a year (see table 2.7). An important reason for this high figure was the influence of high-paying federal government jobs, which averaged \$68,462 in 2000.

After government jobs, the second highest-paying category in 2000 were those in the transportation and utilities sector (\$36,559), followed by construction (\$33,571) and wholesale trade (\$32,034). The lowest paying job categories in 2000 were farming (\$3,164), forestry (\$10,238), and mining (\$11,839). In general, high-paying jobs have been eclipsed by growth in lower-paying jobs during the last decade.

TABLE 2.7 LEWIS AND CLARK COUNTY: AVERAGE EARNINGS PER JOB CATEGORY (in 2000)

| JOB CATEGORY | 1970 | 1980 | 1990 | 2000 | NET CHANGE (1970-2000) |
|----------------------------|-------------|-------------|-------------|-------------|-------------------------------|
| Total Earnings | \$25,321 | \$26,612 | \$24,197 | \$27,615 | \$2,294 |
| Farm Employ. | \$34,027 | \$8,107 | \$4,045 | \$3,164 | -\$30,863 |
| Forestry, ag. serv., other | \$23,904 | \$9,138 | \$8,500 | \$10,238 | -\$13,666 |
| Mining | \$15,744 | \$58,497 | \$24,138 | \$11,839 | -\$3,905 |
| Construction | \$32,597 | \$32,759 | \$27,115 | \$33,571 | \$974 |
| Manufacturing | \$32,937 | \$40,677 | \$30,076 | \$30,409 | -\$2,529 |
| Transp. & Util. | \$37,084 | \$45,296 | \$37,925 | \$36,559 | -\$525 |
| Wholesale Trade | \$30,189 | \$37,260 | \$28,178 | \$32,035 | \$1,846 |
| Retail Trade | \$18,266 | \$16,372 | \$15,599 | \$15,047 | -\$3,219 |
| Fin. Inst. & R. Estate | \$18,465 | \$18,493 | \$19,242 | \$27,055 | \$8,590 |
| Services | \$20,489 | \$19,362 | \$19,956 | \$23,973 | \$3,484 |
| Gvt. (all) | \$27,693 | \$32,898 | \$34,061 | \$40,594 | \$12,901 |
| Fed. Gvt. (civ.) | \$40,889 | \$48,498 | \$54,598 | \$68,462 | \$27,573 |
| Military | \$6,462 | \$10,902 | \$12,570 | \$15,424 | \$8,962 |
| State/Local | \$25,652 | \$30,521 | \$30,773 | \$36,367 | \$10,715 |
| State | NA | \$31,674 | \$31,810 | \$36,696 | \$5,023 (1980-2000) |
| Local | NA | \$27,704 | \$28,341 | \$35,532 | \$7,828 (1980-2000) |

Source: East Helena-Area Economic Adjustment Strategy, 2000.

Recent Employment Trends

In addition to being impacted by the nation-wide recession (which began in 2001) and anticipated cuts in state government in 2002, Lewis and Clark County has recently been affected by the closure of a number of key employers. Most significantly, the American Smelting and Refining Company (ASARCO)—now a subsidiary of Grupo Mexico—closed production in its East Helena plant in 2001. Direct employment in the facility declined from 259 in 2000 to 24 in 2002. The closure had a serious, adverse impact on the local economy; for nearly a century, the smelter had been the region’s largest industrial taxpayer and employer, offering jobs that generally paid above average wages. The East Helena-Area Economic Adjustment Strategy (2002) sums up the impacts of the closure as follows:

Suspension of the plant's operations directly displaced 235 jobs and nearly \$10 million dollars in annual earnings from the region's economy. In addition to direct reduction of jobs and earnings at the smelter, loss of plant and worker expenditures within the area economy is predicted to displace another 269 jobs and \$8 million in yearly earning from elsewhere in the economy.

During the same period as the ASARCO closure, two other significant losses to the County economy occurred. Falcon Publishing—a well known book publishing firm that was founded in Helena—relocated its headquarters to another state in late 2000, while the consulting firm Hydrometrics Incorporated closed in 2002. Each firm employed approximately 70 workers. According to the East Helena-Area Economic Adjustment Strategy, “the combined direct, indirect, and induced economic impacts of the ASARCO shutdown, the Falcon relocation, and Hydrometrics closure is predicted to cost the economy nearly 800 jobs and \$25 million in annual earnings.

Helping to counterbalance these losses—as well as general declines in agriculture, mining, and manufacturing in recent years—the construction sector in Lewis and Clark County was strong during the 1990s through 2001. Major projects such as the Great Northern Town Center and expansions at Fort Harrison, St. Peter's Hospital, and Carroll College—as well as on-going residential and commercial construction--had major positive impacts on the local construction industry.

During the 1990s, construction employment in the four-county region of Lewis and Clark, Broadwater, Jefferson, and Meagher Counties increased from 1,400 to 2,700 jobs, with 78 percent of these jobs in Lewis and Clark County. However, construction tends to be cyclical, and it is unclear how long the present pace of construction activity can be maintained.

Another recent bright spot in Lewis and Clark County employment trends has been the success of Summit Design and Manufacturing, Montana's largest aerospace firm. As of 2002, Summit employs 45 people. However, the Company is planning a 10,560 square foot expansion to their facility near the Helena Regional Airport, an improvement that will enable them to eventually enlarge their employment base to 150, with an average annual salary of nearly \$38,000, well above the County and State-wide average.

Regional Perspective

From a regional perspective, Lewis and Clark County in general and the Helena/East Helena area, in particular, drive the regional economy, and are the source of the majority of jobs and earnings in the area. According to data in the East Helena-Area Economic Adjustment Strategy (2002), when looking at the four-county area of Jefferson, Broadwater, Meagher, and Lewis and Clark County, the latter's share of the overall earnings in the area was 87 percent.

The other side of this equation is that a growing number of people who earn their living in Lewis and Clark County reside outside the County. From 1970 to 2000, the amount of money earned in Lewis and Clark County by non-residents increased from \$8 million

to \$101 million, a 1,200 percent jump. During this same period, the share of total, four-county earnings paid to residents of Lewis and Clark County declined from 83 percent to 78 percent. Many of the out-of-county residents who earn their living in Lewis and Clark County reside in northern and central Jefferson County: In 2000, 51 percent of the money earned by Jefferson County residents came from jobs located outside the County. Many residents of central and western Broadwater County also are employed in Lewis and Clark County. People living on the periphery of Lewis and Clark County also do a considerable amount of shopping in the County, particularly in the Helena area.

This data illustrates the close economic, transportation, and residential ties between Lewis and Clark, Jefferson, and Broadwater Counties, in particular. As these counties grow and the relationships between them strengthen, so too will the need for a broader and increasingly regional perspective to planning.

Overview: Economic Impacts of New Housing

The economic impacts of new housing are complex and widely debated. The effects can be examined from a number of different perspectives, including direct and indirect impacts, on-going impacts, geographic location, and the relationship between costs to service new development versus the tax revenue it generates.

Expenditures on new housing can have an important effect on a local economy. The most obvious and immediate impacts are related to construction: Payments to architects, engineers, construction workers, and electricians benefit the economy as these individuals purchase goods and services with their wages, and pay taxes to local government. Once new residents move in to the completed housing, they too purchase goods and services and pay taxes, on an on-going basis. These expenditures create a ripple effect that cascades through the local economy, increasing the demand for new goods and services and creating additional jobs.

A study completed at Montana State University—Billings attempted to quantify the economic benefits of new home construction in a variety of Montana counties (The Economic Impact of Home Construction on Montana Counties, by Dr. Ann L. Adair and Cheryl Heath, CPA, December, 2002). According to the study, the 284 housing starts in Lewis and Clark County in 2001 generated 541 local jobs during the first year, producing \$20,227,470 in local income, and \$1,100,500 in local taxes. These figures include both direct, construction-related impacts, as well as indirect, non-construction effects.

The researchers also calculated the “on-going” economic impact of new housing, which includes things like landscaping, household purchases, healthcare expenditures, and taxes paid by the new residents. According to the study, the long-term benefit of the 2001 housing starts in Lewis and Clark County was 169 local jobs, \$5,801,561 in local income, and \$832,636 in local taxes.

One variable the study did not examine was the geographic location of development within the counties that were examined, and how that might affect the financial health of local government. The location of new housing can have a significant effect on whether it becomes a net financial benefit or loss to local government. Development that is located a long distance from existing infrastructure and services can require costly public expenditures in new schools, roads, sewer lines, fire protection, and other items. Conversely, all other things being equal, new housing located in areas with existing infrastructure and services with excess capacity will be less burdensome on local government.

Numerous studies in Montana and throughout the country have suggested that sprawling housing developments constructed away from existing infrastructure can be a net drain on local government coffers, particularly compared to the agricultural land that may have been taken out of production. A study in Gallatin County during the 1990s, for example, indicated that housing in outlying areas cost local government \$1.45 to service for every dollar generated in taxes, while providing service to farms only cost \$0.25 for every tax dollar paid. Similarly, a study in Broadwater County found that servicing new housing in outlying areas cost \$3.40 for each tax dollar produced, while the comparable figure for agriculture was \$0.31 (Mark Haggerty, 1996). Many other studies have been done in various locations around the country, and have produced generally similar results. From a purely financial point of view, the key questions are "Who pays?" and "Who benefits?"

To summarize a complex issue, new housing can have a significant positive impact on local economies, but the nature of the fiscal impact on local governments is strongly influenced by where the development occurs, and whether it requires significant public expenditures for new infrastructure.

Income and Poverty

Trends in income reflect the standard of living of a community and affect future growth. Income and wages are changing due to a variety of factors, including national trends. Pay declines in industry can be attributed to international competition, value of the dollar, industry restructuring from higher-paying manufacturing jobs to low-paying retail and service jobs, and an increase in part-time employment. Lewis and Clark County is working to keep pace with economic development needs, as mining, utilities, and manufacturing jobs have decreased. The County is working on expanding incentives to retain current businesses or recruit new ones.

Per capita income is an important indicator that reveals the overall wealth of an area -- the buying power of the average resident. Estimated per capita personal income equals the total of all sources of income divided by the resident population. Per capita income in the County is higher than in the State as a whole, but substantially below the national average (see table 2.8). Between 1970 and 1999, per capita personal income in both Montana and Lewis and Clark County decreased significantly as a percentage of the national average. Montana's personal per capita income fell from 87 percent of the

national average, to 77 percent. Similarly, Lewis and Clark County fell from 102 percent to 85 percent during this period.

However, Lewis and Clark County has a lower poverty rate than the state as a whole. According to the 2000 U.S. Census, Lewis and Clark County had 13 percent of its population below the poverty line (using a 1997 model-based estimate), compared with 16 percent for the state as a whole. According to the same data, the County had 18 percent of its children below the poverty line, compared with 21 percent for the entire state.

TABLE 2.8 PERSONAL INCOME (Per Capita) IN MONTANA AND LEWIS AND CLARK COUNTY: 1970-1999

| | State of MT | % of U.S. Ave. | L&C. Co. | % of U.S. Ave. |
|-------------|-------------|----------------|----------|----------------|
| 1970 | \$3,524 | 87% | \$4,116 | 102% |
| 1980 | \$8,728 | 88% | \$9,879 | 99% |
| 1990 | \$10,474 | 79% | \$15,880 | 85% |
| 1991 | \$15,772 | 82% | \$16,896 | 88% |
| 1992 | \$16,555 | 82% | \$17,837 | 89% |
| 1993 | \$17,635 | 85% | \$18,726 | 90% |
| 1994 | \$17,794 | 82% | \$19,402 | 89% |
| 1995 | \$18,764 | 80% | \$21,080 | 89% |
| 1996 | \$19,383 | 79% | \$22,003 | 89% |
| 1997 | \$20,173 | 78% | \$22,587 | 87% |
| 1998 | \$21,307 | 78% | \$23,483 | 86% |
| 1999 | \$21,997 | 77% | \$24,325 | 85% |

Source: U.S. Department of Commerce Bureau of Economic Analysis, Regional Economic Information System. All figures in real dollars.

Education

Education can act as an indicator of the type of work and level of income a in a community. The educational status of Lewis and Clark County residents has risen over the last ten years. According to the 2000 census, 91 percent of the adult population at least 25 years of age in Lewis and Clark County has at least graduated from high school, while 32 percent has attained a bachelors degree or higher, up from 28 percent in 1990 (see table 2.9). Conversely, 13 percent of adults in Lewis and Clark County had not graduated from high school in 1990; by 2000, this figure had dropped to 9 percent.

| TABLE 2.9: EDUCATION STATUS IN 2000 (PERSONS 25 YEARS AND OVER): LEWIS AND CLARK COUNTY | | |
|--|------------------------|------------|
| | Lewis and Clark County | Percentage |
| <i>Persons (over 25 and older)</i> | 36,690 | 100% |
| Less than ninth grade | 802 | 2.2% |
| Some high school, no diploma | 2,369 | 6.5% |
| High school diploma | 10,742 | 29.3% |
| Some college, no degree | 9,316 | 25.4% |
| College, Associate degree | 1,874 | 5.1% |
| College, Bachelor's degree | 7,799 | 21.3% |
| College, Graduate degree | 3,788 | 10.3% |

Source: U.S. Bureau of the Census, General Social and Economic characteristics, 2000.

Issue, Goals, and Policies: **Economic Development**

A healthy economy is essential to Lewis and Clark County's vitality and quality of life. A thriving economy provides jobs and a tax base to support basic infrastructure, schools, parks, public safety, and other public facilities and services.

While the County's natural setting sets the stage and determines the parameters within which economic development may take place, virtually every other feature of community life stems from the area's economic health. The County should attempt to encourage existing businesses and attract new ones by providing assistance through appropriate local, state, and federal programs. It is worth emphasizing that the scenic, natural, and cultural amenities present in Lewis and Clark County contribute to the local quality of life, and are an important incentive for attracting and retaining businesses.

ISSUE A Trade, retail business, agriculture and government provide the backbone of the County's economy and present significant opportunity for economic expansion.

Goal 1 Promote retention, diversification, and expansion of existing businesses.

Goal 2 Provide opportunities for commercial growth and development in Lewis and Clark County.

Policy 2.1 Encourage commercial development in central neighborhood areas, when sufficient population is present.

Policy 2.2 Encourage cluster commercial development over strip commercial development.

Policy 2.3 Prepare, in conjunction with community leaders and economic development institutions, an economic development strategy to promote and recruit new business to the County.

Goal 3 Support the agricultural sector of the County's economy.

Policy 3.1 Support opportunities for value added natural resource-based business (e.g., food products made from locally grown crops, furniture or building materials made from locally harvested timber).

Policy 3.2 Encourage preservation of areas suitable for agricultural-based business.

ISSUE B **The tourism industry presents an economic opportunity for the County.**

Goal 4 Assist the tourism industry as a vital part of the Lewis and Clark County economy.

Policy 4.1 Improve the visual entrances or gateways to the County and the communities within the County.

Policy 4.2 Encourage the location of compatible visitor support services near attractions, when consistent with other land use planning activities.

Policy 4.3 Assess the impact of tourism on the County's economy.

Policy 4.4 Maintain and protect historic areas which are a significant tourism attraction.

Policy 4.5 Foster preservation and conservation by supporting the efforts of the Historic Preservation Commission and other similar organizations.

ISSUE C **Growing industrial development may provide further wage and job opportunities, increase housing needs, and expand other services.**

Goal 5 Provide opportunities for industrial development at locations with suitable access to transportation and adequate public services.

Policy 5.1 Conduct a county-wide industrial lands suitability study.

- Policy 5.2** Industrial lands should have access to arterial roads and to adequate basic services (for example water, sewer, fire, and police).
- Policy 5.3** Industrial development should be undertaken in ways that reduce impacts on the natural environment.
- Policy 5.4** Industrial development, other than that which is dependent on a natural resource, should be located in or near urban or transitional areas.
- Policy 5.5** Infrastructure investment should be directed to areas identified for planned industrial expansion.

ISSUE D Sports Facilities attract visitors to the County.

- Goal 6** Continue working with the schools, Carroll College, the Fair Grounds, the University of Montana, technical colleges, the Helena Regional Airport, and the private sector to develop sporting complexes that not only provide activities for County residents, but attract sporting events throughout Montana and the Northwestern U.S.

III: LAND USE

Introduction

This chapter examines the pattern of existing land uses in Lewis and Clark County and presents a vision for future land use development. This chapter is broken down into sub sections, one for each of the five planning areas in the County, including the following: Augusta; Canyon Creek/Marysville; Canyon Ferry/York; the Helena Valley; and Wolf Creek/Craig. Each sub-section in this chapter contains a general description of the planning area and its existing land use, as well as action items.

Maps for each planning area can be found in the Appendices. Planning Area maps show the extent of each planning area, lands that may have development constraints, areas of current development, and shows preferred areas for future development. Other maps for each section depict environmental characteristics, population, service information, and other data.

The Helena Valley Planning Area is under the greatest pressure for land development and overall change. In order to help address these changes, a future land use map was compiled to help guide and manage new development. The section dealing with the Helena Valley Planning Area also includes analysis of how implementation of the land use map would affect a variety of conditions in the Valley.

Augusta Planning Area

History

The first record of non-native exploration in the Augusta area was by Meriwether Lewis of the Lewis and Clark Expedition. Lewis describes his trip through Lewis and Clark Pass just past Shishequaw Mountain (believed to be Haystack Butte) and down Elk Creek to the present day Augusta town site. Lewis noted that the party saw large numbers of deer, goats and wolves, but no elk or buffalo. His journal describes the Augusta/Gilman area as expansive and beautiful.

A special appropriation from the U.S. Congress in 1862 assured safe passage west by providing military protection for wagon trains from hostile Indians, predominantly the Blackfeet. It was at this time that the cattle industry got started in the Augusta area. Cattlemen with large herds controlled huge areas of land under the customary open range law. It was reported that forty-two thousand head of cattle were on the Sun River Range. However, the terrible winter of 1886-87 put an end to the open range. From then

on, the ranchers had to adjust to barbed wire, closed areas, winter-feeding, and growing numbers of homesteaders in the area.

When Montana was designated a Territory in 1864, small communities were encouraged to organize, and Augusta became a town. The area was first included in the early Deer Lodge County, but when Edgerton County changed its name to Lewis and Clark County in 1886, the county lines were change to include Augusta. The Augusta town site was first surveyed and dedicated in May 1893. The most accepted version of naming the town is that it was named after Augusta Hogan, the first white child born in the new community.

By 1901, Augusta had become a booming agricultural community, with a developed business district. In April 1901, the entire business section of the original town site burned to the ground. The day after the fire, some say that Augusta became “the most moral town in the state,” having three churches and no standing saloons or dance halls. The town was rebuilt and by 1914 had reached its business and cultural peak. In the 1920's street lights were installed, the volunteer fire department organized, the high school built and a railroad spur line was extended from Gilman to Augusta. The extension of the spur line lead to Augusta becoming the area’s major community and began the slow decline in Gilman’s importance and growth. Also in the twenties, an attempt to have a town water system failed, as did an attempt to change the Augusta area into a separate County.

Agriculture, which has always played an important role in the Augusta area, was spurred in 1908 when the Bureau of Reclamation built Willow Creek Reservoir and enlarged it in 1941. In 1915, the Gibson Diversion Dam was built and the head works for the Sun River slope canal and Pishkin Reservoir were started. The activities of the Bureau also spurred hunting, fishing and other recreation opportunities in the area. In 1908, the Augusta Ranger District was formed. The expansive Bob Marshall Wilderness was created in 1940, while the state-managed Sun River Game Range was established in 1947.

Over time, the Augusta area has undergone change. It has lost its newspaper, bank, and railroad service. The community, however, has continued to make improvements. A new school was built in 1954, a swimming pool in 1957, and a community sewer system--which was originally installed in the 1960s--was improved in 2001. The area continues to be a Mecca for hunters, fishermen, recreationalists and tourists. In addition, agriculture still plays a dominant role in the economy and area’s character.

Existing Conditions

The Augusta planning area consists of approximately 1,277 square miles located in the northern portion of Lewis and Clark County (see Appendix B for maps). The area is bounded on the north by the Sun River, on the east by Cascade County, on the south by the Dearborn River and State Highway 200 and on the west by the Scapegoat and Bob Marshall Wilderness Areas. Located approximately 75 miles north of Helena on U.S. Highway 287, the town of Augusta is geographically separated from the major population center of the County. To area residents, it feels more a part of the Great Falls and Choteau trade areas. Because the town of Augusta is not incorporated, it must rely on County government for administration of public services.

Physical Conditions

Topography

Topography of the planning area varies from low rolling hills around Augusta and riparian habitat along the Sun River to the high mountains along the Continental Divide. The eastern portion of the planning area is dominated by open and rolling grasslands. The western half of the planning area includes the Rocky Mountain Front, which rises dramatically out of the rolling plains. Beyond the Rocky Mountain Front lies spectacular mountainous terrain that includes portions of the Bob Marshall and Scapegoat Wilderness areas.

Climate

Due to topographic variations, climate conditions also vary across the planning area. The western portion of the planning area along the continental divide receives more than 40 inches of average annual precipitation, the majority as snowfall during the winter. The eastern portions of the planning area are the driest, receiving about 10 to 12 inches of average annual precipitation, the majority as rainfall in the spring and from occasional summer storms. Winds are generally westerly to southwesterly. The planning area experiences strong chinook winds associated with the east side of the Rocky Mountains.

Hydrography

All of the water courses that traverse the Augusta planning area originate from the Rocky Mountains along the western portion of the planning area. The major drainages in the planning area include the Sun River, Dearborn River, Elk Creek, and Flat Creek. All eventually drain into the Missouri River. These watercourses are important for

agricultural uses, wildlife, and recreational uses. Most of the Augusta town site is located within the Elk Creek floodplain.

Vegetation

Vegetation in the planning area consists of four distinct vegetative groups. The vegetative groups are: 1) Grasslands, which dominate the eastern portion of the planning area east of the Rocky Mountain Front; 2) Upland shrub, usually found uphill from areas of grassland vegetation; 3) Riparian vegetation, found adjacent to water courses in the area including the Sun River, Flat Creek, Elk Creek, Willow Creek, and Dearborn River; and 4) Coniferous forest which is largely found in the western half of the planning area within the Rocky Mountain Front, and the Bob Marshall and Scapegoat Wilderness areas.

Wildlife and Habitat

The Augusta planning area provides habitat for a broad range of wildlife species. The Bob Marshall and Scapegoat Wilderness Areas are home to diverse populations of wildlife, while private lands also provide significant wildlife habitat, including critical winter range.

Whitetail and mule deer are found throughout the planning area. Elk are distributed primarily along the Rocky Mountain Front and throughout the Bob Marshall and Scapegoat Wilderness areas. Critical elk winter range has been identified in various pockets along the Rocky Mountain Front. Antelope are widely distributed throughout the eastern portion of the planning area, east of the Front. Mountain goats and big horn sheep can be found along the rocky ridges of the Front. Mountain lion, black bear, coyote, and fox can also be found throughout the planning area with concentrations heaviest along the Front.

Haystack Butte, located in approximately the center of the planning area east of the Rocky Mountain Front Range, is noted as one of the premier and most productive raptor nesting sites in the state. The pothole and wetland area from Bean Lake to Gibson Reservoir provides important habitat for an unusually high diversity of bird species, particularly waterfowl. A major waterfowl flyway, the Pacific, extends through the planning area continuing down to the Missouri River. Of particular importance to waterfowl in this flyway are ice-free zones, stock ponds, reservoirs, the Dearborn River, and grain fields adjacent to water bodies.

As part of the Montana Fluvial Arctic Grayling Restoration Plan, the Montana Department of Fish, Wildlife and Parks (FWP), in cooperation with the Lewis and Clark National Forest, has introduced river-dwelling fluvial arctic grayling into the North and South Forks of the Sun River above Gibson Reservoir.

Population and Population Trends

Census figures for the Augusta Census Division indicate 834 persons resided in the area in 1990, which is approximately the same number as the 1980 and 1970 censuses. Approximately 500 of the area's residents live within or adjacent to the Augusta town site. In 1990, there were 535 occupied housing units in the planning area and an average housing occupancy rate of 1.56 persons per housing unit. Based upon electrical permit information and post office box rentals, the population in the area is increasing by small increments.

Land Ownership

Lands held in private ownership comprise approximately 38 percent of the land within the planning area. The bulk of these private lands are contained in large ranching operations.

The U.S. Forest Service, the Bureau of Land Management (BLM), and the State of Montana manage extensive public land holdings, comprising approximately 61 percent of the land in the planning area. The Lewis and Clark and Flathead National Forests, which include portions of the Bob Marshall and Scapegoat Wilderness Areas and the Sun River Game Range, encompass much of the western portion of the planning area and make up the bulk of the public land. The BLM controls additional land in the Steamboat Mountain area and along the Middle Fork of the Dearborn River. The BLM and Bureau of Reclamation jointly hold lands surrounding the Willow Creek Reservoir. Public land in the planning area is used primarily for wildlife habitat, recreation, grazing, and watershed management.

The remaining 1 percent of the planning area is comprised of water bodies.

Area Economy

Agriculture is the primary economic base for the Augusta area. Tourism and recreational services (e.g., outfitting) contribute to this base as hiking, hunting, fishing, and other recreational activities increase in the area. The Augusta elementary and high schools, the County and State road departments, and the Forest Service also provide employment for area residents. Many residents commute to the Great Falls area for employment.

Transportation

U.S. Highway 287, which connects Augusta with Interstate 15 approximately two miles north of Wolf Creek, is the main north-south highway through the planning area. It is a popular route for travelers heading to Glacier National Park. State Highway 200, which serves as the major connecting route between Great Falls and Missoula, forms the southern boundary of the planning area. County Route 435 connects Augusta with Highway 200 along the Front Range. State Route 21 connects Augusta with Simms where it connects to Highway 200. Several roads provide access to the Front Range areas including the Augusta Ranger Station Road, the Sun River Road, Dearborn Canyon Road, Elk Creek Road, and Smith Creek Road.

Table 3.1 identifies roads within the planning area, which are maintained by Lewis and Clark County or some other government agency. The level of maintenance for each road is determined by the entity providing the maintenance and may range from annual grading and repair to little or no maintenance activity.

The roads within the Augusta Town site including Bandy St., Broadway St., Hogan St., Flemming St., Laura St., Mann St. Manix St. and Walrath St. These roads are owned and maintained by Lewis and Clark County with the exception of a portion of Main St. (Highway 287), which is maintained by the State of Montana. A road improvement district (RID) was formed in the area in 2001.

In the spring and summer of 1997, the County Public Works Department and their consulting engineer conducted an inventory of all bridges and culverts greater than five feet in diameter located on County roads. The inventory listed structures that were in need of replacement or repair based upon critical, poor/critical, poor and fair condition. Twelve structures in need of repair are located within the planning area. A structure located on the Augusta-Hogan Road was identified as being in critical condition. The historic Highway 434 Bridge over the Dearborn River was recently rebuilt by the Montana Department of Transportation.

Structures in poor/critical condition were identified on Elk Creek Road and Flat Creek Road. Structures in poor and fair condition (but needing improvements) were identified on the Augusta-Clemmons Road, Augusta-Hogan Road, Flat Creek Road, Sun River Road, Warden Road, and Elk Creek Road (planned for 2002). By definition, the critically rated structures should be replaced or undergo major repairs within one to two years, and the poor structures within five years.

Table 3.1

Publicly Maintained Roads in Augusta Planning Area

| ROAD NAME | MAINTENANCE RESPONSIBILIY | ROAD CLASS. | ROAD SURFACE |
|-----------------------------|--|-----------------------------|---------------------|
| Hwy 287 | State of Montana | principal arterial | asphalt |
| Hwy 21 | State of Montana | major collector | asphalt |
| Hwy 435 | Lewis & Clark Co. (Federal - FAS) | major collector | asphalt/ gravel |
| Allen Road | Lewis & Clark Co. | local access | gravel |
| Augusta Clemmons Road | Lewis and Clark Co. | local access | gravel |
| Augusta Ranger Station Road | Lewis & Clark Co. | minor collector | gravel |
| Augusta-Willow Creek Road | Lewis & Clark Co. | local access | gravel |
| Beaver Willow Road | Lewis & Clark Co. U.S. Forest Service | minor collector/recreation | gravel |
| Benchmark | Lewis & Clark Co. U.S. Forest Service | minor collector/recreation. | gravel |
| Black Rock | Lewis & Clark Co. | local access | gravel |
| Bob Thomas Road | Lewis & Clark Co. | local access | gravel |
| Camp Walker Road | Lewis & Clark Co. | local access | gravel |
| Chisolm Barrett | Lewis & Clark Co. | local access | gravel |
| Dearborn Canyon Road | Lewis & Clark Co. | local access | gravel |
| Dry Creek | Lewis & Clark Co. | local access | gravel |
| Elk Creek | Lewis & Clark Co. | local access | gravel |
| Flat Creek | Lewis & Clark Co. | minor collector | gravel |
| Hay Coulee Road | Lewis & Clark Co. | local access | gravel |
| Long Butte Road | Lewis & Clark Co. | local access | gravel |

| | | | |
|-----------------------|--|-----------------|--------------------|
| Simms Creek Road | Lewis & Clark Co. | local access | gravel |
| Skyline Road | Lewis & Clark Co. | local access | gravel |
| Smith Creek Road | Lewis & Clark Co. | local access | gravel |
| Sun Canyon Lodge Road | U.S. Forest Service | local access | asphalt/ gravel |
| Sun River Road | Lewis & Clark Co. U.S. Forest Service | minor collector | asphalt/ gravel |
| Swallow Canyon Road | Lewis & Clark Co. | local access | gravel |
| Van Eman Road | Lewis & Clark Co. | local access | gravel |
| Warden Road | Lewis & Clark Co. | local access | gravel |

Public Facilities and Services

Law Enforcement

Law enforcement within the Augusta planning area is a cooperative effort of four agencies: the Lewis and Clark County Sheriff's Department, which has primary responsibility; the Montana Highway Patrol, which is responsible for law enforcement on Highways 287, 200, and 21; the Montana Department of Fish, Wildlife and Parks game wardens, whose primary responsibility is to enforce fish, game and boating regulations and to assist other law enforcement official as needed; and the U.S. Fish and Wildlife Service, game wardens, with law enforcement responsibilities on Federal lands.

The Lewis and Clark County Sheriff's Department maintains one full-time deputy in Augusta with law enforcement duties within the Augusta planning areas and beyond as demand in other areas may warrant. Due to distances across the planning area, response times can be lengthy. Response times for emergency service personnel are often hampered by substandard roads and lack of posted addresses.

Fire Protection and Emergency Medical Services

Structural fire protection within the Augusta fire district is provided by the Augusta Volunteer Fire Department (VFD). Funding for the Augusta VFD is provided through the Augusta fire district with tax assessments for each qualifying lot within the district. Boundaries for the Augusta fire district include the town site and lands along Highways 435, 287, and 21 extending several miles to the southwest, south, and northeast from Augusta.

While most of the planning area is not within a fire district or fire service area, the district does include the area with the highest concentration of development. The Augusta VFD typically responds to fire calls outside of the fire district, though such parcels do not directly contribute to the costs of fire services. Volunteers for the volunteer fire department are paged by the County's Sheriff's Department in case of fire.

The Lewis and Clark County Volunteer Fire Department contributes to fire protection services in the portions of the planning area outside of the August fire district. Due to distance from the County's station in Helena, response times are lengthy and cannot be counted on to provide quick response to structure fires. Volunteer fire departments in Wolf Creek and Craig are sometimes called upon to respond to various calls within the planning area.

The Augusta ambulance service operates a volunteer ambulance service. Funding for the ambulance service is provided through donations only. Persons requiring medical services are typically transported to Great Falls approximately 56 miles to the east.

Wildland fire protection is a cooperative effort consisting of personnel from the volunteer fire department, U.S. Forest Service, Department of Natural Resources and Conservation, U.S. Bureau of Land Management, and the Lewis and Clark Volunteer Fire Department.

Water Supply and Sewage Disposal

Sewage disposal for most structures within the Augusta town site is provided by a central sewer system. The central sewer system uses gravity to transport wastewater to the town's treatment facility. Prior to 1997, funds for operation and maintenance of the system were collected through a Rural Improvement District (RID) and the lagoon and collection system were owned by Lewis and Clark County.

A Montana Department of Environmental Quality's inspection of the sewer facilities in 1996 identified ten items of concern including leakage from the lagoon and potential unpermitted discharges to Elk Creek. In response to the concerns, the town of Augusta formed the Augusta Sewer and Water District in October 1997. All assets owned by the County were transferred to the district.

An engineering evaluation of the wastewater treatment system was conducted in 1997 to determine a course of action. In order to comply with current design standards, the evaluation indicated that an additional cell was needed, existing cells needed to be lined, a system operation and maintenance plan would have to be prepared, and certified operators would have to be available to oversee the system operation and maintenance. The project is now complete; funds for maintenance and operation of the sewer facilities come from user fees levied by the district.

Outside of the Augusta Sewer and Water District, wastewater treatment is primarily provided by individual septic systems. There are no public water facilities in the Augusta planning area. Water for area residents is primarily provided by individual wells.

Solid Waste

The Augusta planning area is within the Augusta Solid Waste Disposal District. A transfer site is located adjacent to the town site and user fees are assessed to all property owners within the district. Due to regulatory compliance issues, a landfill located adjacent to the town site was closed in 1996. Solid waste from the area is being hauled to landfills in the Great Falls area.

Utilities

Electrical power is provided in the planning area by the NorthWestern Energy and the Sun River Electric Cooperative. Telephone service is provided by Three Rivers Telecommunication, which has also recently installed fiber optic lines through the Augusta area. Natural gas is available within the Augusta Town site and east along Highway 21, and at the Milford Colony.

Education

The Augusta elementary and high schools, located within the town site, serve most of the school students within the planning area. The Hutterites Milford Colony maintains a small elementary school and encompasses School District No. 27. The Wolf Creek School District covers a small part of the planning area in the southwest portion of the area.

Analysis of Existing Land Use

Residential Development Patterns

The town site of Augusta contains typical residential development along a grid system of streets. Most dwellings are located on 0.25 to 1-acre parcels and include a variety of housing styles from mobile homes to site-built construction. Housing units consist primarily of single-family dwellings with a few duplex units. The Augusta town site is divided into approximately 300 lots, typically less than 0.25 acre in size. Many of the town's housing units occupy more than one lot.

Outside of the town of Augusta, residential development is scattered throughout the planning area in an open and rural environment. Most dwelling units outside of the town

are associated with ranch and farming operations, which dominate the Augusta area. Some recreational cabin and second home development can be found throughout the area with small concentrations along the Rocky Mountain Front, the Sun River Canyon, and the Dearborn Canyon.

In 1972, some 2,500 acres of agricultural land were divided into 400 individual lots, generally five to six acres in size. Known as the Willow Creek Subdivision, only approximately 25 of the lots have been developed due in part to its isolated location. Subdivision activity in the 1990s has been limited to a few scattered parcels, cabin sites and one 11-lot subdivision just northeast of town. Augusta area residents have expressed interest in providing additional lots adjacent to the town site due to demand.

Commercial Development Patterns

Commercial development within the Augusta planning area is largely located within the town of Augusta. The town includes a variety of commercial operations including several bars and restaurants, a grocery store, local arts, a hotel, a motel, a campground, bulk distributors, automotive repair shops, taxidermy, service stations, a welding shop, and hardware stores. Other commercial operations within the planning area are limited primarily to private outfitters and guides serving the recreational opportunities in the area. A new post office was opened in the spring of 1998.

Public or Governmental Uses

Public lands in the planning area are managed for a variety of uses including grazing, recreation and timber harvesting. A recent decision issued by the Lewis and Clark National Forest closed the Rocky Mountain Front area to gas and oil exploration and development for a period of time. This decision has important consequences for wildlife habitat and scenic resources, but may also have an effect upon the exploration for gas and oil on privately owned lands.

Parks and Open Spaces

The County's 1998 Comprehensive Parks, Recreation and Open Space Plan identifies several parks in the Augusta area although only one developed park, Pings Park, is County owned. Pings Park is a narrow strip of landscaped land within Augusta that contains several picnic tables. Its primary benefit is to provide a seating area in the main portion of town. The County also owns an undeveloped, 2.4-acre tract of parkland in Gilman.

There are several recreation sites in town including a baseball field, an outdoor swimming pool, a community center building, and a rodeo arena. All of these are owned

by public entities. Several privately owned facilities provide recreational opportunities for the youth, including the Masonic Hall. The parks plan identifies a need in Augusta for additional sports fields.

Open spaces are what define the Augusta planning area. Rolling grasslands and sparse development dominate the eastern half of the planning area. The grasslands end abruptly at Rocky Mountain Front, which rises dramatically out of the plains. This provides stunning vistas from nearly every direction. The Lewis and Clark County Voluntary Agricultural Land Conservation Program identifies significant open space and recreational values within the planning area.

Recreational values are primarily associated with the area's waterways including the Sun River, Dearborn River, Willow Creek, and Flat Creek. A High Quality Scenic Areas, as identified in the Program, includes the Rocky Mountain Front Range. The travel corridors through the area, including Highways 435, 287 and 21, provide travelers with outstanding views of the rural open spaces. The relative lack of billboard advertising and other road signs enhances the roadway corridors. The large expanses of open ranch lands contribute to the unique open space nature of this area.

The planning area includes portions of the Bob Marshall and Scapegoat Wilderness areas, which make up the largest wilderness area in the contiguous 48 states. Public campground and recreational areas in the Augusta planning area include: Benchmark, Home Gulch, Mortimer Gulch, South Fork, Wood Lake and others.

Agricultural Uses

Agricultural uses dominate the Augusta planning area and are the primary economic base. Cattle grazing represents the predominant use of private land. Where conditions are favorable, wheat, barley, hay, and other crops are grown with lands supporting both irrigated and dryland crop production. Farms and ranches in the area benefit from the privately owned Dearborn Irrigation Canal Project and the State's Nilan Storage Project. The most productive cropland is located near the Augusta town site, along the Sun River and along Flat Creek.

Population Growth and Future Land Use Needs

The absence of job opportunities and distance from commercial amenities has served to discourage new persons from moving into the area. Population increases have been generally due to development of existing parcels and limited subdivision activity. However, the high quality scenic resources of the area will continue to attract more residents. Demand for seasonal cabins and recreational homes is also likely to increase. Recreational and seasonal land uses will place unique demands on local services due to seasonal population increases. High groundwater and floodplain in the Augusta town site present challenges for the town site's ability to expand.

Augusta Planning Area Priorities

The following issues were identified through stakeholder interviews, public workshops, and the work of the Lewis and Clark County Comprehensive Plan Citizen's Advisory Group. The focus here is not intended to exclude the broader framework of the County-wide goals and policies. Rather, the intent is to focus the effort of Lewis and Clark County on short-term (e.g., the next five years) priorities that are specific to the Augusta planning area, and were developed by people living in the area.

Citizens of the Augusta planning area feel the priority for the short-term is a continued and increased focus on the provision of basic services. In the stakeholder interviews there were very few complaints about current county service provision; in general, the citizens of Augusta see the role of Lewis and Clark County as focusing on road maintenance and fire and police protection. According to local residents, the County should focus its resources on maintaining and upgrading the following basic services:

- A.** Road maintenance should be the primary emphasis of the County in the Augusta planning area.

Action Items

- Work with the Augusta Planning Area residents to prioritize needed road improvements.

- B.** Provide adequate fire protection.

Action Items

- Work to ensure that the Augusta area has adequate fire protection.

C. Provide adequate police protection.

Action Items

- Work with the Lewis and Clark County Sheriff's office to ensure that the Augusta planning area has adequate police protection.

D. Work to control and eradicate noxious weeds.

Action Items

- Educate citizens about the importance of noxious weed management and means to eradicate the spread of noxious weeds.
- Work to enforce existing weed abatement regulations.

Canyon Creek/Marysville Planning Area

Introduction

Canyon Creek or Canon Creek as it is spelled on early maps, is a very old settlement on the travel route of the Piegan Indians from the plains area to the Blackfoot River Valley (see Appendix C for maps). The trails in this area were used by the early trappers, followed by fur companies, and were later surveyed for wagons roads and railroads. The area was first settled in the 1840s by men with "Blood" or Piegan wives who had friendly connections to the Blackfoot Indians.

The valley of the Little Prickly Pear had all the elements for comfortable living for the early settlers. The cottonwood bottoms provided shelter and fuel for heat, along with an abundance of wildlife for food and furs. The grassy windswept hills and hilltops provided plenty of area for livestock grazing. Many of the early settlers became hunters who supplied meat or woodchoppers who provided heating fuel to the trading posts and stage stops that sprang up in the area.

In the 1860s, after gold was discovered in the bed of Silver Creek, placer mining brought thousands of men to the area and, a lively camp called Silver City sprang up. In 1864, Silver City became the county seat of Edgerton County, which later became Lewis and Clark County. During that same time, Canyon Creek had settled into a rural farming community consisting of stockmen, farmers and several businesses including a blacksmith, several stores, a saloon, and a Catholic Church at the head of Little Prickly Pear Creek.

By 1865, Silver City and Helena had become rivals and both wanted the county seat. The dispute was settled when Colonel W.F. Sanders rode to Silver City, stole the county records and spirited them back to Helena. Thereafter, Helena became the county seat and Silver City remained little more than a supply point and stage station for the Marysville mining district and the Fort Benton to Helena segment of the Mullan Trail.

In 1866, a water shortage for the placer miners and the settlers of the valley began. The communities of Georgetown, Trinity and Silver City, that once had thriving businesses, folded up. Trinity was the first to go, but it left the Little Prickly Pear Valley with a public school - the Trinity School, District #4, at Canyon Creek. The Trinity School is the oldest school building still in use in the State of Montana; it has been continually used for over 100 years.

After Thomas Cruse uncovered high-grade gold ore at his Drumlummon mine and other rich lodes like Gloster, Belmont, Bell Boy and Bald Butte were opened, Marysville blossomed into a prosperous settlement with a population of 5,000. During its heyday it supported four churches and two newspapers. However, according to local historians, when the Drumlummon Mine ceased operation in 1910, the town declined rapidly.

Today, the communities of Canyon Creek, Marysville, and Silver City have returned for the most part to the pre-gold boom character. Development, in the planning area, except for the Marysville town site, is scattered and rural in character.

Existing Conditions

Physical Conditions

The Canyon Creek/Marysville planning area consists of approximately 298 square miles located in the west central portion of Lewis and Clark County. The planning area boundaries generally correspond with the Continental Divide on the north and the west; the Wolf Creek/Craig planning area on the northeast; the Helena Valley planning area on the southeast and south; and the Powell County line on the southwest and west.

Topography

The topography of the Canyon Creek/Marysville planning area is variable and typically rugged. Slopes range from the gently eastward sloping Silver Valley floor, 4,380 to 4,340 feet in elevation to; the rolling hills found in the eastern portion of the planning area; to the peaks and passes located along the Continental Divide, 7,331 - 6,131 feet in elevation.

Prominent landmarks and elevations include Mount Belmont (7,331 feet), Bald Butte (7,052 feet), Edward Mountain (6,713 feet), Stemple Pass (6,376 feet), Flesher Pass (6,131 feet), Marysville town site (5,400 feet), Gravelly Range Lake (4,904 feet), Canyon Creek Community (4,380 feet) and Silver City (4,347 feet).

Climate

The Canyon Creek/Marysville planning area is located along the eastern front of the Rocky Mountains and exhibits climatic characteristics of the modified maritime climate typical of the mountainous areas of western Montana and the continental climate of eastern Montana. Weather patterns are influenced by Pacific and Canadian fronts. Winds are predominantly out of the northwest and may have wind gusts in excess of 40 m.p.h. Average precipitation varies according to elevation, with the higher elevation along the Continental Divide receiving 25 to 30 inches per year and the Silver Valley area only receiving 10 to 12 inches per year. June is typically the wettest month and January receives the most snowfall. Daily temperatures also vary according to elevations. The annual temperatures can range from -35 degrees to 100 degrees Fahrenheit. The average growing season for the lower elevations ranges from 90 to 120 days.

Hydrography

The headwaters of three major stream networks are located within the Canyon Creek/Marysville planning area. The Little Prickly Pear Creek has its headwaters in Beartrap and McQuithy Gulches on the east slope of the Continental Divide. This perennial stream trends eastward until it eventually drains into the Missouri River north of Holter Lake. Its main tributaries located within the planning area include: Lost Horse Creek, Marsh Creek, Piegan Creek, Trinity Creek, Canyon Creek, Willow Creek, Little Sheep Creek and Big Sheep Creek.

Canyon Creek has its headwaters south of Flesher Pass. The stream trends southward until it drains into the Little Prickly Pear Creek, north of the Canyon Creek community. Its main tributaries include Weino, Specimen, Big and Little Mill, Virginia, and Sears Creeks.

Silver Creek has its headwaters south of the Marysville town site. It trends generally in a southeast direction, through the Helena Valley to discharge into Lake Helena. The stream morphology and water quality has been severely impacted by past mining practices in the area.

None of these watersheds have been mapped by the Federal Emergency Management Agency (FEMA) for the 100 or 500-year floodplains that could be associated with these stream corridors.

The only lake found within the planning area is the Gravelly Range Lake located approximately eight miles west of the community of Canyon Creek. The lake is located on private land. The lake is a naturally occurring lake, which has been enhanced to provide irrigation water for hay fields to the east. It is approximately 160 acres in size.

Geology

The Canyon Creek/Marysville planning area contains a diversity of geological units. The dominant geologic feature of the area adjacent to the Continental Divide is a tertiary stock and its surrounding metamorphic zone. The intrusive has been called quartz diorite or granodiorite. The rock is medium grained and consists of plagioclase, quartz, orthoclase, hornblende and biotite; it has a hypidiomorphic granular texture. The width of the contact metamorphic zone suggests that the size of the intrusive increase downward.

Several textural and mineralogic varieties of dikes related to the granodiorite also occur. These intrusives cut through Empire Shale and Helena Dolomite of the Belt Supergroup. Other Belt Units include the Spokane Shale, Marsh formation, and the Missoula Group.

Outside the metamorphic circles, the Empire Shale consists of pale-green and deep-red argillite and fine-grained quartzite. The Empire Shale is about 1,000 feet thick in some areas. Within metamorphic zones, the formations are dark cordierite hornfels with interbeds of white calcic hornfels. The Helena Dolomite is described as a buff-weathering, dark-gray Dolomite. Within the contact zones, the Helena Dolomite is light-colored diopside and tremolite-bearing skarn.

In the areas that have rolling hills, such as those surrounding the Canyon Creek and Silver Valley areas, the predominant geology consists of Pre-Tertiary rocks including Precambrian to Cretaceous sedimentary rocks, and Cretaceous plutonic and volcanic rocks.

In the Silver Valley and along most of the larger water courses, one can find Holocene terraces and stream-channel deposits, and alluvial plain deposits. These deposits are comprised of gray to brown coarse sandy to cobble gravels. The degree of sorting and rounding of clasts and geomorphic forms vary widely depending upon the size and the volume of discharge in the particular drainage.

The Canyon Creek/Marysville planning area is located within the Intermountain Seismic Belt, a seismically active zone associated with major fault structures. A majority of the planning area is located in Seismic Risk Zone 2. Major fault lines identified in the area include: the Bald Butte fault (strike-slip fault), Helena Valley Fault (strike-slip fault) and the Hoadley-Lyons Thrust Fault (see figure 3, pg. 14, USGS Professional Paper 1316).

The Bald Butte Fault is named for Bald Butte, a prominent peak located along the Continental Divide southwest of Marysville. This fault seems to have been the focus of many small earthquakes in 1973 and may be the most seismically active fracture in the area. The fault trends southeasterly through the Birdseye area, north of Fort Harrison. The fault apparently extends along the southern margin of the Helena Valley and joins another fault along the northern front of the Elkhorn Mountains. The fault extends northwesterly across the Continental Divide and reaches the northwest border of the Avon Valley. The fault then joins a major northwest trending fracture near Nevada Lake in Powell County.

The Helena Valley Fault is well exposed along the northwest margins of the Helena Valley and in the low range of hills between the Helena Valley and the Silver Valley. The fault extends along the northwestern margin of the Silver Valley, crosses the area northwest of the community of Canyon Creek and continues to the Continental Divide near Stemple Pass. The epicenter of the main shock of the Helena earthquake of 1935 and the epicenters of several small earthquakes recorded in 1973 lie near the trace of the Helena Valley fault. It seems likely that this fault is still undergoing intermittent movement and may be considered an active break.

The Hoadley-Lyons Thrust Fault originates in the area of the Lyons Creek headwaters and trends in a southerly direction, until it intersects the Helena Valley Fault northeast of Silver City. It appears it may then continue south until it connects with the Silver Creek Fault in the Helena Valley. Thrust faults, in general, are situated in the Montana disturbed belt, a broad zone of intricately folded and faulted rocks that extend from the Canadian border southward along the eastern front of the northern Rocky Mountains. These types of faults are generally considered inactive.

Several smaller faults such as the Beartrap, North Fork, Granite Butte, Marsh Creek, and Prickly Pear faults have also been identified in the planning area.

Groundwater

The groundwater resources of the Canyon Creek/Marysville planning area have not been well studied. Most of the information available concerning groundwater in the planning area is a result of well logs and anecdotal reference.

It appears that most of the area is underlain with bedrock aquifer systems. The productivity and quality of water from a bedrock aquifer system is extremely variable. The variability is due to recharge rates, subsurface geomorphology, and the degree of fracture and faulting.

In areas that have a high degree of fracturing, the groundwater is extremely susceptible to contamination. The fractures act as conduits for contaminants, such as wastewater effluent and improperly applied or disposed of chemicals and the groundwater. The fractures also provide an avenue for groundwater recharge from precipitation, runoff, and irrigation.

In areas in which the subsurface materials have a high percentage of granitic materials, radon can be found in the groundwater. Ingesting water, containing radon is considered a minor health risk. The risk may be mitigated by aeration or the use of granular activated carbon water filtering systems.

Vegetation

Vegetation types in the area vary from the dry, rolling sagebrush/grassland in the eastern portion of the planning area to riparian areas along the numerous creeks, to coniferous forest in the western portion of the planning area.

Wildlife and Habitat

The planning area provides for a variety of habitat types, which are utilized by a diverse group of non-game and big game species. Big game species include pronghorn, elk, mule deer, whitetail deer, and black bear. Other species include red fox, badger, coyote, fisher, martin, wolverine, mountain lion, and an occasional wolf and lynx along the Continental Divide.

Upland birds include ruffed grouse, blue grouse, and an occasional sharp tailed grouse and Hungarian partridge. Other bird species include long-billed curlew, goshawk, merlin, and a variety of owls and woodpeckers. Thirty-one species classified as Species of Special Interest or of Special Concern by the State of Montana occur within the planning area. Species included as sensitive according to the Endangered Species Act that occur in the area include the ferruginous hawk, lynx, wolverine, flammulated owl, and boreal owl. The Continental Divide area provides critical habitat and movement corridors for many species from the Little Prickly Pear Creek area to Glacier National Park.

Land Ownership

Approximately 52 percent or 99,538 acres of land within the planning area is in private ownership. These private lands are located within the eastern two-thirds of the planning area. A majority of the private lands are held by the numerous moderate to large sized ranches. The U.S. Forest Service manages approximately 36 percent, or 68,333 acres in the western third of the planning area, adjacent to the Continental Divide. The Bureau of Land Management manages approximately nine percent of the land in the planning area, equivalent to 16,296 acres, concentrated in the Marysville and Mount Belmont area.

Area Economy

The planning area's economy is principally dependent upon employment opportunities in Helena. Most area residents commute to Helena on a daily basis. While a majority of the land use in the area is agricultural, most of the agricultural operators are dependent upon other nonagricultural employment to supplement their income. Limited service sector income is generated from the operation of the bar/restaurant at Silver City, the bar/restaurant in Marysville, and seasonally at the Great Divide Ski area. Limited industrial sector income is generated by sand and gravel operations, logging, and the operation of a sawmill at Silver City.

Transportation

Lincoln Road, West 279 is the main travel corridor through the planning area. This road connects the Helena Valley with Highway 200 east of Lincoln. The road has a chip-sealed surface and is maintained by Lewis and Clark County. The segment of Lincoln road from Flesher Pass to Stemple Pass Road was improved and resurfaced in the summer of 1997. The segment of Lincoln Road from Stemple Pass Road to the Interstate 15 interchange was scheduled for improvements and resurfacing in the summer of 1998.

Table 3.2 identifies roads within the planning area, which are maintained by Lewis and Clark County or some other government agency.

Table 3.2: Publicly Maintained Roads, Canyon Creek/Marysville Planning Area

| ROAD NAME | MAINTENANCE RESPONSIBILITY | ROAD CLASS. | ROAD SURFACE |
|-----------------------------------|---|-----------------------|---------------------|
| Lincoln Road -West (279) | Lewis & Clark Co. (FED FAS) | major collector | chip-sealed |
| Marysville Road | Lewis & Clark Co. (FED FAS) | rural minor collector | gravel |
| Blossburg Road | Lewis & Clark Co. (not on regular basis) | rural minor collector | gravel |
| Hope Creek Road | U.S. Forest Service | logging/recreation | gravel |
| Ophir Creek Road | U.S. Forest Service | logging/recreation | gravel |
| Beartrap Road | U.S. Forest Service | logging/recreation | gravel |
| Little Prickly Pear Creek Road | Lewis & Clark Co. | rural minor collector | gravel |
| Marsh Creek Road | U.S. Forest Service | rural minor collector | gravel |
| Canyon Creek - Gould Road | Lewis & Clark Co. (not on regular basis) | local | gravel |
| Virginia Creek - Gould Road | Lewis & Clark Co. (not on regular basis) | local | gravel |
| Stemple Pass Road | Lewis & Clark Co. | rural minor collector | gravel |
| Silver Station- Willow Creek Road | Lewis & Clark Co. | rural minor collector | gravel |
| Duffy Lane | Lewis & Clark Co. | rural minor collector | gravel |
| Empire Creek Road | Lewis & Clark Co. | rural minor collector | gravel |
| Long Gulch Road | Lewis & Clark Co. | rural minor collector | gravel |

In the spring and summer of 1997, the County Public Works Department and their consulting engineer conducted an inventory of all bridges and culverts greater than five feet in diameter located on County roads (the inventory was updated in 2020). Of the 179 structures inventoried, three are located within the planning area.

The structures located on Empire Creek Road and Sieben Canyon Road crossing Little Prickly Pear Creek were identified as being in critical condition; the former was replaced in 1997, the latter rehabilitated in 1999. Another structure on Little Prickly Pear Road crossing the irrigation ditch was identified as being in poor condition. By definition, the critical rated structures should be replaced or undergo major repairs within one to two years, and the poor structures within five years.

Public Facilities and Services

Law Enforcement

Law enforcement within the Canyon Creek/Marysville planning area is a cooperative effort of three agencies: the Lewis and Clark County Sheriff's Department, who has primary responsibility; the Montana Highway Patrol, who is responsible for law enforcement on Lincoln Road; and Montana Department of Fish, Wildlife and Parks game wardens, whose primary responsibility is to enforce fish and game regulations and to assist other law enforcement official as needed. Response times by the Lewis and Clark Sheriff's Department vary from moderate to long, due to the areas distance from Helena, variable weather conditions, substandard roads and lack of posted addresses.

Fire Protection

The Canyon Creek Volunteer Fire Department provides both structural and wildland fire protection for approximately 80 square miles of the planning area (see Appendix C for fire district map). The district's equipment is housed on private property approximately 1.5 miles north east of the Canyon Creek Store on the west side of Lincoln Road.

Structural fire protection within Marysville is provided by Marysville Volunteer Fire Department. The Canyon Creek and Marysville Volunteer Fire Departments are funded by a tax assessed on all properties within the respective district. Additional monies are generated by fundraisers and private donations.

Areas outside the Canyon Creek and Marysville Fire Districts fall within the jurisdiction of the Lewis and Clark County Volunteer Fire Department, which is housed on the Lewis and Clark County shop complex on Cooney Drive in Helena. By Montana statute, the Lewis and Clark County Volunteer Fire Department is only charged with fighting

wildland fires. In practice, the Department will attempt to suppress structural fires and prevent them from becoming wildland fires.

In addition to the County Volunteer Fire Department, wildland fire protection is provided by an interagency team consisting of personnel from the U.S. Forest Service, Department of Natural Resources and Conservation, Bureau of Land Management and the local volunteer fire departments. Equipment and personnel from the various agencies are dispatched from the Interagency Fire Center located north of Helena on North Montana Avenue. Depending upon fire conditions and severity of the fire, response time can vary from five minutes by helicopter to thirty minutes by fire engine. Wildland fire protection is funded by a tax levied on all property and improvements.

At the present time both the Canyon Creek and Marysville fire districts are considering expanding their boundaries. In the Canyon Creek fire district, possible areas of annexation include Stemple Pass Road to the Continental Divide and the Flesher Acres area. The Marysville fire district is considering annexation of the Great Divide Ski area and along the Marysville Road east to the boundary with the Canyon Creek Fire District. The Canyon Creek Fire District is also considering the possibility of locating an additional station in the southeastern portion of the district in the Birdseye Road/Silver City area.

Water Supply

There are no public/community water systems operating within the planning area. Water users are dependent upon individual water wells. Well depths vary greatly depending upon location. Development adjacent to the numerous creeks and water courses in the area are served by wells, which are shallow and generally have good yields. As the distance increases from the water courses, well depths increase, and volumes and water quality decrease. In the eastern portion of the planning area, north of Lincoln Road, the groundwater has high mineral and iron content.

Sewage Disposal

Sewage disposal within the planning area is provided by individual on-site wastewater treatment systems. Constraints for the installation and operation of on-site systems include shallow depth to ground water along water courses, poor percolation rates in the eastern portion of the planning area, slopes and depth to bedrock in the western portions, and the lack of adequate replacement areas due to small parcel size or lot configuration in the Marysville area and Stemple Pass Road. In Marysville, because of the age of many of the existing systems, small lot sizes and lack of undeveloped space a community wastewater treatment system will need to be considered in the near future.

Solid Waste

The planning area is located within the Scratchgravel Landfill District. The County operates a solid waste collection station approximately one-half mile south of Lincoln Road on the Marysville Road. Area residents are assessed a tax to operate the collection station in addition to the regular Scratchgravel assessment.

Utilities

Electrical power is currently provided to the planning area by NorthWestern Energy (previously Montana Power). Qwest provides telephone service in the eastern portion of the planning area. In the Canyon Creek area, telephone service is provided by the Lincoln Telephone Company.

Education

The Canyon Creek/Marysville planning area and the Birdseye and Austin areas are located within District #4, Trinity Elementary School District. The school building is located on Duffy Lane, approximately one-half mile east of Lincoln Road in Canyon Creek. Enrollment at the school varies from year to year but averages a dozen students. Parents who live more than three miles from the school and who are not provided transportation by their own district, can choose to enroll their children in the adjacent school district, if space is available. Many parents in the school district have elected to enroll the children in School District #1 in Helena. The receiving district receives a tuition payment from District #4. Placement of the tuition students is at the receiving district's discretion. Usually District #4 students are placed in Broadwater or Hawthorne Elementary Schools. High school students from the planning area attend Capital High in Helena.

Analysis of Existing Land Use

Residential Development Patterns

Within the Canyon Creek/Marysville planning area it is estimated that there are 246 residential dwellings. Approximately 20 percent of these dwelling are used on a seasonal basis.

With the exception of the Marysville town site, most of the residential development is scattered and rural in character. Much of the area east of Silver City and near the intersection of Birdseye Road and Lincoln Road has been subdivided into 20-acre parcels. Development of these parcels has been slow due to the cost of extending

utilities and concerns about long-term water availability. However, the pace of development has picked up in recent years.

Most of the more recent residential development throughout the remainder of the planning area has occurred adjacent to Canyon Creek or Little Prickly Pear Creek. Development pressures for retirement or seasonal homes have also been seen in the area.

In Marysville, there are approximately 73 existing structures, about a quarter of which are unoccupied due to their deteriorated condition. According to residents, there are approximately 56 full-time residents in Marysville. Future development in Marysville will be constrained due to the lack of adequate area for drain field replacement.

Commercial and Industrial Development Pattern

There is limited commercial and industrial activity within the planning area. The Canyon Creek Store operates as a gas station, convenience store, and post office. West of and adjacent to the store is a five-unit trailer court. A restaurant/bar is located at the intersection of Birdseye Road and Lincoln Road. The Marysville House Restaurant and Bar is the only commercial activity within the town site.

The Great Divide ski area is the largest commercial enterprise within the planning area. The ski area operates a lodge/restaurant, ski lifts and approximately 60 trails for downhill skiing and snowboarding on private and Bureau of Land Management property. The operators of the ski area submitted a proposal to the BLM to expand the ski area. The expansion includes approximately 700 acres, one-half on BLM property and the other half on private property. Proposed improvements include home sites, condominiums, and overnight lodging facilities; new ski trails and lifts were added in 2001.

Industrial development in the planning area is limited to a sawmill, which is located north of Lincoln Road, and east of Birdseye Road at Silver City.

Public or Governmental Uses

A majority of the western portion of the planning area is managed by the U.S. Forest Service. The area is primarily managed for recreation, wildlife, timber production, and summer livestock grazing. BLM holdings are also managed for the same purposes, plus occasional mineral exploration or mining. The only County holdings within the planning area are a sand shed located west of Lincoln Road on Stemple Pass Road, and the Marysville solid waste collection station.

Parks and Open Space

The Lewis and Clark County Comprehensive Parks, Recreation and Open Space Plan, adopted in January 1998, does not identify any parkland or proposed acquisition or improvements within the planning area.

Because of the area's rural character and the large amount of public lands in the planning area, individual recreational activities abound. The U.S. Forest Service maintains the Continental Divide Trail along the western boundary of the planning area. The trail provides opportunities for hiking and mountain biking in the summer and cross country skiing and snowmobiling in the winter. Trailheads and facilities are maintained at Stemple Pass and Flesher Pass.

The numerous creeks found throughout the Little Prickly Pear drainage provide ample opportunity for fishing.

Agricultural Uses

Livestock grazing and hay production have historically been the major land use in the planning area.

Canyon Creek/Marysville Planning Area Priorities

The following issues have been identified through the stakeholder interviews, public workshops, and the work of the Lewis and Clark County Comprehensive Plan Citizens Advisory Group. They represent the issues that have been emphasized in these forums and therefore have been identified as short-term priorities (five years). The focus on these issues is not intended to exclude the broader framework of the County-wide goals and policies. Rather they are intended to focus the effort of Lewis and Clark County in the Canyon Creek/Marysville planning area.

Citizens of the Canyon Creek/ Marysville planning area feel the top priority, short-term issues are: a continued and increased focus on the provision of basic services, maintaining agricultural lands, and reducing conflicts between residential and agricultural uses. During area meetings on the Growth Policy, residents expressed interest in receiving assistance from the County to develop a neighborhood plan for their planning area. In the one to five year periods, Lewis and Clark County should focus on the following planning priorities in the Canyon Creek/Marysville planning area.

A. Maintain and improve the existing transportation system.

Action Items

- Increase maintenance on County roads in the planning area, based on availability of funds.
- Work to mitigate the impact of dust created by automobile traffic on hay quality.
- Clean road culverts in the fall.
- Maintain Stemple Pass as an unpaved road.
- Complete improvements to Marysville Road.

B. Provide adequate fire protection.

Action Items

- Work to ensure the Canyon Creek/Marysville area has adequate fire protection.
- Expand the Canyon Creek Fire District to include areas adjacent to main thoroughfares.

C. Provide adequate police protection.

Action Items

- Work with the Lewis and Clark County Sheriff's Office to ensure that the Canyon Creek/Marysville area has adequate police protection.

D. Preserve agricultural lands and existing uses, and minimize conflicts between agricultural and residential, industrial, commercial uses.

Action Items

- New residential land uses should be required to provide buffers between themselves and conflicting agricultural uses.
- Further explore the advantages of cluster development to protect the quality of life in the community.
- Consider appointing an Agricultural Representative to the Planning Board.
- Encourage adherence to the Wildland-Residential Interface Guidelines.
- Work to see that industrial development doesn't interfere with agricultural uses.

E. Implement a strategy for controlling the spread and eradication of noxious weeds in the area.

Action Items

- Educate citizens about the importance of noxious weed management and means to eradicate the spread of infestation of noxious weeds.
- Work to enforce existing weed abatement regulations.

- F. Require new development within the Canyon Creek/Marysville planning area to meet minimum design guidelines and criteria.

Action Items

- Develop on existing lots or parcels.
- Establish minimum design standards and criteria for new development within the planning area. Included as part of these design standards would be the following:
 - Ensure that the cost of developing and maintaining roads to serve new developments is covered by the developer/new homeowners.
 - Require roads to be constructed prior to subdivision.
 - Require minimum standards to meet fire access requirements.
 - New development should preserve and protect water quality, aesthetics, wildlife, and environmental concerns of the area.
 - Establish impact fees or pay as you go fees for services necessary to support new development.
 - Maintain the aesthetics of the community rather than encourage development.
 - Discourage temporary housing developments of more than 5 units within the planning area.
 - Discourage temporary housing developments of more than 5-10 units at one location.

- G. Preserve and enhance the natural environment within the planning area.

Action Items

- Encourage natural buffer zones or setbacks from drainage ways.
- Preserve water and air quality.
- Preserve the natural visual integrity of the planning area.
- Encourage wildlife conservation and habitat protection; preserve natural vegetation.
- Logging should follow the DNRC Best Management Practices with an emphasis on maintaining the visual integrity of the timbered areas.

- H. Monitor the potential impact of any proposed mines or industrial projects in the area to identify possible implications for the Canyon Creek/Marysville area.

- I. Address concerns regarding areas of possible community decay and mechanisms available to eliminate or limit such development.

J. Support continued efforts for rural addressing.

Marysville Sub-area Concerns

- Promote a feasibility study and pursue grant money for a centralized water and sewer system.
- Implement design or performance standards to keep residential development standards high and to maintain the current character of the neighborhood.
- Encourage the post office to remain in the town site and be kept sufficiently staffed and in good condition so that it can handle the needs of the community.
- Preserve the natural visual integrity of the surrounding scenery.
- Preserve cattle grazing rights.
- Support mine reclamation.
- Support clean up the old Marysville dump.

Stemple Sub-area Concerns

- Encourage continued annexation into the neighboring fire districts.
- Continue to support the rural addressing system.
- Support mine reclamation.

Flesher Acres Sub-area Concerns

- This area will be the most severely impacted by increases in traffic and development along the Highway 279 corridor. Impact fees or other mechanism should be put in place to help mitigate these impacts.
- Future development needs to address water quality, access of emergency vehicles, and new roads detracting from the aesthetic value of the area impacts.

Silver City Sub-area Concerns

- The existing junkyard in the area is a concern and should be addressed through existing ordinances and through zoning or community decay performance standards to abate this type of development.
- Commercial development may be best suited at the intersection of Highway 279 and Birdseye Road.
- Water quantity is a concern in the area.

- Water and air quality are concerns in area residents.
- This is an area for potential development. Many parts of the area are subdivided into 20-acre tracts and other landowners have expressed an interest in subdividing other portions.

Prickly Pear Road Sub-area Concerns

- Many of the roads in this area are impacted by logging/mining equipment and fall hunting traffic. Because of this, speed and maintenance are constant issues.
- Rural addressing would enhance the delivery of emergency services.
- Preserve existing development density patterns while keeping an agricultural aspect.
- Maintain aesthetics of the area rather than encourage development.

Canyon Ferry/York Planning Area

Introduction

The earliest documentation of the Canyon Ferry/York Area and the Missouri River Corridor comes from the Lewis and Clark Expedition. Lewis and Clark navigated up the Missouri River in this area in July, 1805 and camped near American Bar, between Soup and Trout Creek, just above the old town of Canyon Ferry.

The Canyon Ferry/York area has undergone significant change since Lewis and Clark first entered the area in 1805. The first major change occurred when gold was found at Last Chance Gulch in Helena. Subsequently, discoveries of gold were made at French Bar, just below the location of the current Canyon Ferry Dam, at Cave Gulch, York Gulch, and numerous other sites in the area. During the 1860s and 1870s, it was estimated 10,000 people were mining the gulches of the northern Big Belt Mountains.

In the late 1890s and early 1900s, the once free flowing Missouri River was dammed. The original Canyon Ferry Dam was built in 1898. Hauser Dam, which was intended to provide power for mining operations in the Helena area, was first constructed with plate steel in 1907. The dam failed in 1908, and was then rebuilt with concrete. Holter Dam was built farther down stream in 1918. The present Canyon Ferry Dam, a 50-MW facility operated by the U.S. Bureau of Reclamation, was completed in 1954, replacing the previous Montana Power dam. In addition to its own hydroelectric generation, the Canyon Ferry Dam affects the generation in seven downstream generation facilities by regulating the flow of the Missouri River all the way to Great Falls. Today, the impounded waters of Canyon Ferry, Hauser and Holter Lakes provide for electrical

generation, flood control, irrigation and drinking water, and outstanding recreational activities.

Existing Conditions

Physical Conditions

The Canyon Ferry/York Planning Area consists of approximately 252.24 square miles located in the southeast portion of Lewis and Clark County. The planning area boundaries are the northern boundary of the Gates of the Mountain Wilderness Area on the north; the Lewis and Clark County/Meagher and Broadwater County lines on the east; the Lewis and Clark/Broadwater County lines on the south; the Spokane Hills on the southwest (generally corresponding with the western boundary of the Canyon Ferry Fire Service Area); and the Missouri River on the west (see Appendix D for maps).

Topography

The topography of the planning area is highly variable and typically very rugged. Slopes range from gentle and rolling adjacent to the east shores of Canyon Ferry Lake (3,696 feet in elevation) and Hauser Lake (3,650 feet in elevation) to very steep areas, along sheer rocky cliffs, in the northern areas of the planning area. Prominent landmarks and elevations include: Hedges Mountain (7,124 feet), Devil's Tower (5,090 feet), Sawtooth Mountain (6,000), Sacajawea Mountain (6,539 feet), Hogback Mountain (7,813 feet), Middleman Mountain (7,491 feet), and Moors Mountain (7,980 feet).

Climate

The climate of the planning area is classified as a modified continental climate; it is influenced by Pacific Ocean air masses, drainage of cooler air from the surrounding mountains, and the protection afforded by the surrounding mountains. The average annual temperature is around 44 degrees and the annual precipitation twelve to thirteen inches in the lower elevations. The higher elevations are typically cooler and receive considerably more precipitation.

According to the National Weather Service, the prevailing wind over Canyon Ferry Lake is from the southwest. Frequent storm fronts move along the slopes of the mountains with winds of 20 to 35 miles-per-hour. These winds typically switch directions as the storm fronts pass.

Hydrography

The Missouri River, Canyon Ferry and Hauser Lakes are the most prominent hydrographical features located within the planning area. The Missouri River drains 43,000 square miles before it empties into Canyon Ferry Lake. The annual inflow, measured upstream from the reservoir, averages 3.8 million acre feet. According to the U.S. Department of the Interior, annual inflow volumes have varied from in excess of five million acre feet to below two million acre feet.

Water quality in Canyon Ferry and Hauser Lakes is generally suitable for the propagation of cold water fish, is safe for recreation, and is potable after filtration and treatment. During late summer periods that are hot, dry, and calm, Canyon Ferry Lake has experienced toxic blue-green algae blooms, which temporarily lower water quality. Although the blue-green algae blooms have occurred in the lake since it was filled, public attention was not focused on the blooms until the mid-1980s. Aside from periodic decreases in aesthetics along the shoreline, the major water quality problem caused by the algae is its periodic toxicity.

There are two naturally occurring contaminants in Canyon Ferry and Hauser Lakes: phosphorus and arsenic. Phosphorus enters the lakes largely from natural sources in the Missouri River Basin. Soils and water in southwest Montana are particularly rich in phosphorus. This natural fertility sets the stage for blue ribbon trout streams, but also contributes to the nutrient load and the periodic algal blooms in the lakes. Arsenic is carried to the Missouri River via the Madison River, a tributary that receives large volumes of arsenic-bearing thermal waters from Yellowstone Park. The Helena water treatment plant removes about one-half of the arsenic, and the remaining concentration is diluted by mixing with water from the Tenmile Treatment Plant. New arsenic standards for drinking water were recently established by the federal Environmental Protection Agency.

Numerous perennial streams, such as Trout Creek, Magpie Creek, Soup Creek and Beaver Creek, also feed into the Missouri River and the lakes within the planning area. During the spring and summer months, much of the water in the creeks is diverted for irrigation; thus, only a small amount of the water reaches the river and lakes. These creeks do provide important spawning areas for the various species of fish.

Geology

A considerable amount of geologic work has been accomplished along the Missouri River in the Canyon Ferry/York Planning Area. The Big Belt Mountains, which lie along the eastern boundary of the Planning Area, form an anticline that has been complicated by numerous subsidiary folds, high angle faults, predominantly normal faults, and large displacement thrust faults with relative movement in a northeast direction. Exposed sedimentary rocks include the Newland Limestone, Greyson Shale, Spokane Shale, and Helena Dolomite of the Precambrian Belt Supergroup. Remnants of tertiary gravel

deposits are found on slopes and benches throughout the area. Quaternary stream and eolian deposits are found along stream courses.

The Planning Area is located within seismic zone 2B of the Intermountain Seismic Belt. The area is a seismically active zone associated with major geologic fault structures. Major faults include: the Eldorado thrust fault and the Soup Creek thrust fault.

The trace of the Eldorado thrust fault extends eastward in the bedrock hills north of Lake Helena, bends sharply to the southeast at Eldorado Bar and continues down the west side of the Big Belt Mountains to Market Gulch, where it ends against the Helena Valley Fault. The Eldorado Fault is well exposed where it crosses the Missouri River south of Eldorado Bar and again near the mouth of Trout Creek, north of York Road.

A thrust fault subsidiary to the Eldorado is present to the north of the Eldorado thrust in the area north of Eldorado Bar. The subsidiary thrust is inclined to the south, and its trace is generally parallel to that of the Eldorado fault.

The Soup Creek thrust fault cuts through sedimentary bedrock north and south of Soup Creek, east of the Eldorado thrust fault. This fault trends to the northeast and then dips to the southwest. At the north, the fracture is folded in a broad arc and is cut by the subsidiary thrust along the Eldorado fault; to the south, it extends into the valley of Trout Creek and continues southeastward. A small thrust fault approximately 2 km long and a maximum displacement of a few hundred meters lies between the Eldorado and Soup Creek thrust faults.

Groundwater

Most of the Canyon Ferry/York Planning Area is underlain by bedrock aquifer systems. The bedrock aquifer systems are complex due to the variety of rock types and the degree of fracture and faulting. In general, groundwater flows are more restricted and well yields are not as productive as the Helena Valley alluvial aquifer system. Recharge is highly dependent upon precipitation and the potential for over withdrawal is high. In areas that have a high degree of fracturing, the groundwater is extremely susceptible to contamination. The fractures act as conduits for contaminants, such as wastewater effluent and improperly applied or disposed of chemicals, and the groundwater.

Vegetation

Vegetation in the planning area consists of four distinct vegetative groups. The vegetative groups are: 1) grasslands, which are found adjacent to the east shore of Canyon Ferry Lake, Metropolitan Bar, American Bar and El Dorado Bar; 2) upland shrub, found usually uphill from areas of grassland vegetation; 3) riparian vegetation, found adjacent to the Missouri River, Trout Creek, Soup Creek, Magpie Creek, Beaver

Creek and other perennial watercourses; and the predominant vegetative group, and; 4) coniferous forest.

One sensitive plant, rabbit crazyweed (*Oxytropis lagopus*) is known to occur within the planning area. The Montana Natural Heritage Program (1991) identified this species as being globally secure, but imperiled in Montana. It is typically found on the northwest shore of Canyon Ferry Lake, in the coniferous forest vegetative group.

Wildlife and Habitat

The Canyon Ferry/York Planning Area provides for a broad range of wildlife habitat for numerous species. Whitetail and mule deer are found throughout the planning area. Elk are distributed throughout the area north of Canyon Ferry Lake. Critical elk winter range has been identified in the area of Eldorado Bar, American Bar, and Hedges Mountain. Mountain goats can be found along most of the cliffs of the northern Big Belt Mountains, particularly in the Beaver Creek area. Mountain lion, black bear, coyote, fox, and other carnivorous species can also be found throughout the area. The numerous small caves found among the many cliffs are home to resident bat species.

Avian species include a large number of resident and migratory species. Some resident raptor species include: Red Tail Hawks, Peregrine Falcons, Osprey, Golden, and Bald Eagles. In recent years, the Hauser Lake area has been a major congregating point from October to December for migrating Bald Eagles. The number of the congregating Bald Eagles varies from year to year, depending upon the availability of spawning kokanee salmon for them to feed on.

Human development has the potential to not only displace many of the species found within the planning area, but also to reduce the habitat base. Increased development can make it more difficult to manage species like deer, elk, and predatory species through hunting, and can increase the potential for wildlife/human conflicts.

Land Ownership

Of the 151,014 acres within the planning area, the federal government owns approximately 80 percent of the land. The U.S. Forest Service, which controls over 109,169 acres or approximately 72 percent of the area is the largest property owner. The Bureau of Land Management manages approximately 5,239 acres or approximately 3.5 percent of the area. Private ownership accounts for approximately 19 percent or 28,511 acres. The State of Montana owns less than one percent of the area or approximately 1,090 acres.

As discussed in more detail in the section titled "Residential Development Patterns," the federal Bureau of Reclamation is in the process of selling leased cabin sites on Canyon

Ferry Reservoir to private owners. Another federal land management issue in the area is the planned transfer of some U.S. Forest Service land around the York Townsite to private landowners.

Area Economy

The economy of the Canyon Ferry/York planning area is heavily reliant upon the recreational use of Canyon Ferry, Hauser, and Holter Lakes, the Missouri River and the adjacent public lands. In 1995, the Bureau of Reclamation (BOR) and the Department of Fish, Wildlife and Parks (FWP) estimated that between 60 and 65 full time equivalent (FTE) public sector and private sector service jobs are generated in the Canyon Ferry area in Lewis and Clark County. The BOR maintains between 18 and 21 FTEs for the operation and maintenance of Canyon Ferry Dam. An additional 6 to 9 FTEs are employed for the operation and maintenance of the Canyon Ferry recreation sites. FWP employs approximately 5 FTEs for wildlife management, fisheries management, and enforcement in the area.

The remaining jobs account for private sector employment in the area. The primary private sector employment is associated with the commercial operation of the Yacht Basin Concession located on the west shore of Canyon Ferry Lake, O'Malley's Bar and Restaurant, Kim's Marina, several boat and engine repair shops, storage facilities, and several light manufacturing operations located along the northeast shore of the lake.

The last time the economic impact of Canyon Ferry Lake was studied by FWP in 1989, it was estimated that Canyon Ferry Lake generated over \$4.4 million in sales and tax revenue benefits to Lewis and Clark County.

Today, agriculture plays a very limited role in the economy of the planning area. In the 1870s, the land adjacent to the Missouri river was described as one of the best grazing and agricultural districts of this mountainous territory. Today some ranching is found in the Nelson area, north of York and adjacent to Eldorado and Metropolitan Bars.

The York area currently has a very small economic base. There is occasional logging and several small sapphire mines in the area. The York Bar and Store and two sapphire faceting shops are the only public commercial activities in the northern part of the planning area. Other commercial activities in this area include several small private businesses.

A significant impact on tourism in the area was the loss of the "Figure 8 Route," due to flood damage to Trout Creek Road and its subsequent closure to vehicle traffic. This route had been a very popular vehicle tour in the Helena area for many years.

Transportation

Primary access to the planning area is via two roads: Canyon Ferry Road to the southern portion of the planning area and York Road to the northern portion of the planning area.

Canyon Ferry Road is maintained by Montana Department of Transportation (MDT) and extends from the eastern city limits of Helena to the Broadwater County line. It is paved from its junction with York Road to Magpie Gulch. From there to the Broadwater County line the road is gravel surfaced. In the summer of 1993, the County resurfaced Canyon Ferry Road from Diehl Lane to Magpie Gulch, and regraded and widened the remaining segment of Canyon Ferry Road.

Two gravel surface roads maintained by the Bureau of Reclamation are accessed from Canyon Ferry Road on the east and west sides of Canyon Ferry Lake. East Shore Drive turns off Canyon Ferry Road at the Jo Bonner recreation area. It is approximately four (4) miles in length and accesses a majority of the lake's cabins and Cave Bay. West Shore Drive turns off Canyon Ferry Road at the Yacht Basin and curves along the west side of the lake, accessing more cabin sites and several day use facilities. West Shore Drive is maintained more frequently by the Bureau of Reclamation because it serves the most heavily used day use areas.

Jimtown Road, a gravel surface, county maintained road, connects the Canyon Ferry area with the York and Hauser Lake areas, intersecting Canyon Ferry Road near the turnoff to the Riverside Recreation Area.

During the summer months, the average daily trip generation on Canyon Ferry Road and the intersecting roads, nearly double or triples, depending upon the road segment. The increased traffic generation during the summer months creates a severe bottleneck, where Canyon Ferry Road narrows to cross the dam. Other traffic hazards along Canyon Ferry Road in this area are due to poorly designed and poorly located private driveway approaches onto Canyon Ferry Road.

York Road is a chip sealed road, maintained by Lewis and Clark County and extends from the intersection of York Road with Canyon Ferry Road to approximately three (3) miles past the intersection of York Road with the Nelson Road. The remaining three (3) miles along Trout Creek Road is a gravel extension of the York Road. Two gravel surface roads maintained by Lewis and Clark County are accessed from York Road in the community of York (Jimtown and Nelson Road). Nelson Road provides access to both County maintained gravel roads of Beaver Creek Road and Owl Gulch Road. Also, Nelson Road provides access to numerous U.S. Forest Service roads and trails, and is the major access point to public land in the northern part of the planning area, including the Gates of the Mountains Wilderness Area. Table 3.3 identifies all roads

within the planning area, which are maintained by Lewis and Clark County or another governmental agency.

Table 3.3: Publicly Maintained Roads--Canyon Ferry/York Planning Area

| ROAD NAME | MAINTENANCE RESPONSIBILITY | ROAD CLASSIFICATION | ROAD SURFACE |
|-------------------------|-----------------------------------|----------------------------|---------------------|
| East Shore Drive | BOR | rural minor collector | gravel |
| Beaver Creek Road | US Forest Service | recreation | gravel |
| Owl Gulch Road | L&C County | rural minor collector | gravel |
| Jimtown Road | L&C County | rural minor collector | gravel |
| Bonner Park Road | L&C County | local | gravel |
| Nelson Road | L&C County | rural minor collector | gravel |
| West Shore Drive | BOR | rural minor collector | gravel |
| Canyon Ferry Road | MDT | major collector | chip sealed |
| York Road | MDT | rural major collector | chip sealed |
| York Road (Trout Creek) | L&C County | rural minor collector | gravel |

Public Facilities and Services

Law Enforcement

Law enforcement within the Canyon Ferry/York Planning Area is a cooperative effort of four agencies: the Lewis and Clark County Sheriffs Department, who has primary responsibility; the Montana Highway Patrol, who is responsible for law enforcement on Canyon Ferry Road and York Road; Montana Department of Fish, Wildlife and Parks game wardens, whose primary responsibility is to enforce fish, game and boating regulations and to assist other law enforcement officials as needed; and the U.S. Forest Service, who is responsible for law enforcement on national forest land. Response times by the Lewis and Clark County Sheriff's Department vary from moderate to long, due to the area's distance from Helena, variable weather conditions, substandard roads and lack of posted addresses.

Fire Protection

In the southern portion of the planning area, structural fire protection is provided by the Canyon Ferry Volunteer Fire Department. The York Volunteer Fire Department provides protection in the northern portion of the area (see fire service map in Appendix D).

Each of these volunteer fire departments serves a designated Fire Service Area. The Fire Service Areas are funded by assessments on structures that have an assessed

value of fifty (50) dollars or more. Volunteers for each of the volunteer fire departments are contacted by the Support Service Division and have a pager system in case of fire.

Currently, the Canyon Ferry Volunteer Fire Department houses its equipment across from the Jo Bonner Campground on the east side of Canyon Ferry Lake and directly southwest of the Yacht Basin concession area on the west side of Canyon Ferry Lake. The York Volunteer Fire Department houses its equipment in the lower level of the community hall on the Nelson Road.

Wildland fire protection is provided by an interagency team consisting of personnel from the U.S. Forest Service, Montana Department of Natural Resources and Conservation, U.S. Bureau of Land Management, the Lewis and Clark County Volunteer Fire Department, and the local volunteer fire departments. Equipment and personnel from the various federal and state agencies are dispatched from the Interagency Fire Center located at the Helena Regional Airport and local volunteer fire departments are dispatched by the Support Services Division. Depending upon fire conditions and severity of the fire, response time can vary from five minutes by helicopter to thirty minutes by fire engine.

The planning area was significantly impacted by the Bucksnot and Cave Gulch wildfires in 2000, blazes that destroyed some homes and threatened many others.

The interagency team automatically responds to all wildland fires within the planning area, but is only responsible for wildland fire suppression. The interagency team will assist the local fire department in structural fires from the outside and supply water when necessary.

Solid Waste

The Canyon Ferry/York Planning Area is located within the Scratchgravel Refuse District, which is operated by the Lewis and Clark County Publics Works Department. All businesses and households are assessed a fee to cover the disposal costs. Individual property owners or contract waste haulers are responsible for transporting solid waste to the City of Helena Transfer Station located on Benton Avenue, north of Carroll College.

Water Supply

There are no community public water supply systems located within the Canyon Ferry/York Planning Area. Development in this area relies on individual wells for potable water. Except for areas immediately adjacent to watercourses, the source of water for most of the planning area is a fractured bedrock aquifer. Domestic well depths (50 to 700 feet) and yields (6 to 60 g.p.m.) vary greatly.

Sewage Disposal

Aside from the community wastewater treatment system at Canyon Ferry Village, sewage disposal in the planning area is handled by individual on-site wastewater treatment systems. Moderate to severe soil constraints, such as slow percolation rates, depth to bedrock, and slope may limit development densities throughout the planning area. The underlying fractured bedrock geology can also contribute to groundwater contamination by acting as a conduit between drain fields and groundwater.

Education

The southern two-thirds (2/3) of the Canyon Ferry/York Planning area is located within School District #9. The northern one-third (1/3) of the planning area is located within School District #1. However, all of the elementary students from the area attend either Eastgate, Radley, or East Valley Middle School in the City of East Helena. High school students attend Helena High School. All students in the planning area are bused at the general taxpayers' expense. In the Canyon Ferry Lake area, school busses travel as far as the Jo Bonner Campground to pick up students, stopping at the Yacht Basin, Canyon Ferry Village, O'Malley's Bar and Jim Town Road. In the York area, school busses travel as far as the intersection of York and Nelson Roads to pick up students, stopping at Jimtown Road and various private drives.

Utilities

NorthWestern Energy provides electrical power to the Canyon Ferry/York Planning Area. Natural gas is not available within the planning area. Telephone service is provided by Qwest. Cellular providers are used in the northern portion of the planning area, where standard telephone service is not available.

Analysis of Existing Land Use

Residential Development Patterns

Residential development in the planning area is concentrated along the northeast and northwest shores of Canyon Ferry Lake, Canyon Vista Estates, Trout Creek, York Gulch, Eldorado Bar, Eldorado Heights, and American Bar.

There are 265 cabin sites leased from the U.S. Bureau of Reclamation at Canyon Ferry Lake, 167 along the northeast shoreline and 98 along the northwest shoreline. These recreation home leases were first issued by the State of Montana in 1958, and were intended for seasonal uses only.

In 1965, the Department of Interior called for a phase out of all cabin leases on Department of Interior land. The Department granted an exemption from the phase out policy to the Canyon Ferry lease sites because at that time the sites were under the control of the Montana Department of Fish, Wildlife and Parks. Since 1965, the leaseholders have been attempting to purchase their individual lease sites.

In 1984, the lessees proposed they be able to purchase the cabin sites and that the proceeds would be dedicated to purchase development rights of irrigated agricultural lands in the Helena Valley identified as having important values, such as prime agricultural soils, critical wildlife habitat, open space, recreation or environmental values. Though no formal proposal was ever submitted, the management agencies concluded that the proposed use of the monies would not maintain the recreational and wildlife values at Canyon Ferry Lake, and the sale of the cabin sites did not protect the future public and management agency's needs at the lake.

Since 1988, the lease fees have been increased several times to bring them to market value, in some cases doubling. The fee increases have prompted the leaseholders to more seriously consider ownership, since the cost of leasing is no longer economically advantageous. The Bureau of Reclamation has in place a long-term national policy to phase out cabin leases on all Bureau-managed public lands. In addition to the continuing question of ownership of the cabin sites, the use of on-site wastewater treatment system at the cabin sites has become an issue of concern for the Lewis and Clark County Health Department and the Montana Department of Environmental Quality. The lot sizes do not meet the current state minimum lot-size standard and, in most cases, are too small for replacement drain field areas. The underlying geology also presents severe constraints for effective wastewater disposal. The cabin lessees have expressed an interest in finding off-site replacement areas for those cabin sites experiencing problems.

Late in 1998, the US Congress passed TITLE X - CANYON FERRY RESERVOIR, MONTANA, ACT. This Act would allow the sale of the Canyon Ferry lease cabin sites to private individuals. The Act requires the Department of Interior to establish the fair market value of the lease sites, exclusive of improvements and to solicit sealed bids for the properties.

The sale of the property would be to the highest bidder above the minimum bid. If the highest bidder is not the current lessee, the lessee would have the right to match the highest bid and purchase the property at a price equal to the amount of the highest bid. If the current lessee is unable or unwilling to purchase the property, he would be provided the opportunity to continue to lease the property for fair market value rent under the same terms and conditions as the existing lease. The current lessee would also have the right to renew the terms of the lease for two consecutive five-year terms. If the current lessee declines to purchase or continue to lease the property, the purchaser would be required to compensate the lessee for the fair market value of all improvements on the property.

Ten percent of the proceeds from the sale of the cabin site would be used to reduce the outstanding debt for the Pick-Sloan project, which developed Canyon Ferry Lake; and ninety percent of the proceeds would be deposited into the to be established *Montana Fish and Wildlife Conservation Trust*. The Trust would provide for a permanent source of funding to acquire land and easements to restore and conserve fisheries and wildlife habitat; enhance public hunting, fishing and recreational opportunities; and to improve public access to public lands.

Land transfers are not expected to take place until around 2002. Nothing will proceed until at least three (3) million dollars is obtained for the Broadwater County trust account for recreational enhancement and the completion of an Environmental Impact Statement (EIS) to address issues like road construction and improvements, and wastewater treatment.

On the west side of Canyon Ferry Lake, there are approximately 1,500 acres in private ownership. Much of the property was originally subdivided into twenty (20) acre parcels and some of those parcels have been further subdivided into five (5) acre parcels. Future subdivision in this area would be limited due to service provision constraints, such as wildfire protection and physical constraints such as slope, rock outcroppings, vegetation and underlying geology. The physical constraints make it difficult and costly for the extension of utilities and for the development of roads that meet current county road standards.

There are two R.V. trailer parks located northwest of Canyon Ferry Lake. The Yacht Basin Trailer Court, located south of Canyon Ferry Road and McMaster R.V. Court located along the west shore of Hauser Lake. The Yacht Basin trailer court consists of 23 units that are used on a full-time and seasonal basis. Future expansion of this trailer court is somewhat limited due to constraints for access. The McMaster RV Park is used seasonally by private leaseholders. Occupancy of the R.V. court is prohibited from October 1 through December 15, to prevent disturbance of the migrating bald eagles that congregate in the area during this time period.

On the east side of the Canyon Ferry Lake, private residential development is concentrated in the Cave Bay, Magpie Gulch and Jo Bonner areas. Lot sizes vary from half-acre parcels to tracts in excess of 160 acres. The residential development in the area is a mix of full-time and seasonal use.

In early 1998, the Lewis and Clark County Board of Commissioners gave preliminary approval to the Canyon Ferry Crossings Major Subdivision. This subdivision would consist of approximately 108 parcels for residential and a limited number of commercial uses on approximately 700 acres. The project is located east of Cave Gulch Road and north and south of Canyon Ferry Road. The lot sizes would range from one (1) to seven (7) acres in size; however, most would average approximately 2.5 acres in size.

Canyon Vista Estates is a 68 unit unreviewed subdivision located in the southeast portion of the planning area, adjacent to the Broadwater County line. Most of the parcels are twenty (20) acres in size. However, some smaller lots were created using a subdivision exemption. Approximately one-third of the parcels are currently developed. Future subdivision in this area would be limited due to substandard road construction and maintenance, the location of some roads outside platted right-of-way easements, the difficulty of identifying suitable sites for on-site wastewater treatment, and distances from services.

In the York/Trout Creek area, residential development is concentrated on old mining claims adjacent to Trout Creek. There are approximately 110 housing units in this area, used mostly on a full-time basis with some seasonal use. Additional residential development in this area would be extremely limited, mainly due to the lack of private land. However, there are approximately 65 undeveloped parcels in the area. According to the U.S. Forest Service, there are seven (7) remaining cabin leases in York. Also some of the existing private development in the area is encroaching onto Forest Service property.

An effort is currently underway to have the leases and properties resurveyed, and the lessees and the encroaching property owner given the opportunity to purchase that property from the U.S. Forest Service. In addition, many existing homes are located in a potential floodplain associated with Trout Creek. Trout Creek has been mapped by the Federal Emergency Management Agency (FEMA), but the results have not been published. Many of the existing homes are located in areas with high seasonal groundwater and are not in compliance with state health department regulations. The improper location and maintenance of on-site wastewater treatment systems is resulting in the degradation of water quality in this area.

There are approximately 100 unreviewed twenty (20) and ten (10) acre parcels located in the Eldorado Bar and Eldorado Heights area. Approximately thirty (30) percent of these parcels are currently developed. Most of the homes constructed in this area are occupied on a full-time basis. Limitations for development and future subdivision in this area include: substandard roads, lack of road maintenance, high to extreme fire hazards, cost and construction constraints for utility extension, and constraints for on-site wastewater treatment systems, due shallow depth to bedrock and slopes.

In the American Bar area, there is a 91 unit subdivision (Gates of the Mountain Lakeshore Homes) that was created without County review in 1973. The lot sizes vary between one (1) and five (5) acres in size. Approximately twenty-five (25) percent of these parcels are currently developed. Few of the homes constructed in this area are occupied on a full-time basis. Access to the area is via a steep and narrow road from the Nelson-Beaver Creek area and can be extremely difficult during winter months. Residents in the area have repeatedly requested the County to provide regular road maintenance and snow plowing to the area. The cost of providing these services would need to be borne by the area's residents. However at this time the area's residents

have not been able to agree upon the establishment of a road improvement district (RID).

Commercial and Industrial Development Pattern

Commercial operations in the southern portion of the planning area are concentrated along the northern area of Canyon Ferry Lake and located on private land or leases from the Department of Reclamation. Kim's Marina, located on the northeast side of the lake and the Yacht Basin Marina, located on the northwest side of the lake, are commercial concession leases. Concession leases are renewed on a ten (10) year basis, at which time fees can be renegotiated. Current lease fees range from 1.5 to 6.0 percent of gross revenues. The best-known private commercial establishment is O'Malley's Bar and Restaurant located east of Kim's Marina, adjacent to Canyon Ferry Road. Other existing private commercial developments includes engine repair and maintenance shop, mini-warehouse and boat storage area cabinet making shop, and a light industrial manufacturing shop, all located along the northeast shore of the lake.

Future commercial development (possibly associated with the Canyon Ferry Crossing, Major Subdivision) could potentially include the following: bed and breakfast facilities, motel, convenience store, sit-down and fast food restaurants, hunting and fishing supply shops, and R.V. storage and repair shops.

The best-known commercial establishment in the northern portion of the planning area is the York Bar and Store. Other existing commercial businesses in the York area include: sapphire mines, sapphire faceting shops, a trucking company, a landscape service, building contractors, and other small businesses. Future commercial development could include: a convenience store, restaurant, bed and breakfast and other development catering to recreationalists.

The only industrial activity in the planning area is the operation of Canyon Ferry and Hauser Dams. Currently Canyon Ferry Dam has an existing generating capacity of 50 MW of electricity and is operated by the Bureau of Reclamation. The Hauser Dam has an existing generating capacity of 16.5 MW of electricity and is operated by Pennsylvania Power and Light (PPL). Hauser Dam and associated facilities are operated as a base load, run-of-river facility. Under existing operation, the plant uses flows as they occur and the reservoir levels are maintained relatively constant by spilling water during high flows and curtailing generation during low flows.

Public or Governmental Uses

As noted previously, the federal government owns 80 percent of the land within the planning area. Most of the development by government agencies is associated with the recreational and campground use of Canyon Ferry Lake. The major non-recreational

government development in the area is Canyon Ferry Village. Canyon Ferry Village, located on the north shore of the lake, consists of an office building and parking for Bureau of Reclamation staff, the Canyon Ferry Visitors Center, a visitors pavilion, government camp, tennis court, boat dock for BOR and FWP personnel, garages, and warehouse facilities. All the structures in the village, except the Visitors Center, were built in the late 1940s and early 1950s when the dam was being constructed. The Visitors Center was originally a schoolhouse located in the original Canyon Ferry Village.

In the northern portion of the planning area, the York Community Hall, York Fire Hall, Mike Smith Memorial, and York's historic cemetery all occupy Forest Service land. The community of York, along with Lewis and Clark County, are trying to obtain community ownership of these parcels.

Parks and Open Space

The Canyon Ferry/Missouri River corridor offers a full breadth of water related recreational activities, from sailing and sail boarding to fishing, motor boating and swimming. Camping, picnicking and passive forms of recreation such as bird watching are available. Hauser Lake has traditionally been one of the most heavily fished lakes in Montana. Recreationalists are attracted to the area's Forest Service land for such uses as upland bird and big game hunting, fishing, camping, picnicking, and hiking. Many motorists drive the still-accessible portions of the scenic "Figure 8 Drive," to the fire lookout or top of Hogback Mountain. According to the Forest Service and the BOR, even with all the existing recreational opportunities, much of the planning area's recreation potential remains untapped.

According to Department of the Interior information, Montana residents make up from 75 percent to 85 percent of the park users, and non-residents from 15 percent to 25 percent. There are 23 designated camping and day use facilities located within the planning area (see Table 3.4).

The only open space or parkland under Lewis and Clark County control is an approximately 22 acre undeveloped parcel located north of the Gates of the Mountain Lakeshore Homes Subdivision in the American Bar area. Access to the parcel is difficult because of substandard roads. The Lewis and Clark County Comprehensive Parks, Recreation and Open Space, which was adopted in January 1998, recommends that the ownership of this parcel be transferred to the U.S. Forest Service for operation and maintenance.

Table 3.4
Designated Public Recreation Sites Within the Canyon Ferry/York Planning Area

| Recreation Site | Location | Camp units | Picnic Units | Trailer Spaces | Water | Toilet | Desig. Beaches | Boat Dck. | Boat Ramp | Handicap Accessible |
|-----------------|-----------------|---------------------------------|--------------|----------------|-------|--------|----------------|-----------|-----------|---------------------|
| Hellgate | east side CFL | 61 developed 100 undeveloped | 23 | yes | 2 | 8 | yes | no | 1 | no |
| Jo Bonner | eastside CFL | 2 developed 15 undeveloped | 4 | no | 1 | 1 | no | 80 sq ft | 1 | no |
| Cave Bay | east side CFL | day use only | 2 | no | no | 1 | no | no | no | no |
| Chinaman | eastside CFL | 31 | 35 | yes | 1 | 4 | no | no | no | partially |
| Ponderosa | eastside CFL | 30 | 31 | yes | 3 | 2 | yes | 80 sqft | 3 | no |
| Court Sheriff | eastside CFL | 12 | 12 | yes | 1 | 1 | no | 80 sqft | 2 | no |
| Shannon | northside CFL | day use only | 0 | no | no | 2 | no | 320 sqft | 2 | no |
| Little Sandy | northside CFL | day use only | 0 | no | no | no | no | no | no | no |
| Riverside | eastside Hauser | 34 developed 100 undeveloped | 45 | yes | 3 | 6 | no | 252 sqft | 2 | yes |
| Chalet | westside CFL | day use only | 6 | no | no | 2 | no | no | no | no |
| Fishhawk | westside CFL | day use only | 10 | no | no | 1 | no | no | no | no |
| Cemetery Island | westside CFL | day use only | 2 | no | no | 1 | no | no | no | no |
| Overlook | westside CFL | day use only | 4 | no | no | 2 | no | no | no | no |
| Lorelei | westside CFL | day use only | 6 | no | no | 1 | no | no | no | no |
| Lewis and Clark | westside CFL | day use only | 6 | no | no | 1 | no | no | no | no |
| Orchard | westside CFL | day use only | 6 | no | no | 1 | no | no | no | no |
| Crittendon | westside CFL | day use only | 10 | no | no | 1 | yes | no | no | no |
| Mahogany Cove | westside CFL | day use only | 3 | no | no | 1 | no | no | no | no |
| | | | | | | | | | | |

| | | | | | | | | | | |
|--------------|-------------------|--------------|----|-----|-----|-----|-----|-----|----|----|
| Pikes Gulch | northeast of York | 5 | no | yes | no | yes | no | no | no | no |
| Vigilante | northeast of York | 13 | 3 | yes | yes | yes | no | no | no | no |
| Beaver Creek | northwest of York | day use only | no | no | no | 1 | no | no | no | no |
| Meriwether | east side Holter | day use only | 15 | no | yes | yes | yes | yes | no | no |
| Coulter | east side Holter | 6 | no | no | yes | yes | no | yes | no | no |

(Source: Montana Department of Fish, Wildlife and Parks, 1995)

Agricultural Uses

Livestock grazing is the predominant agricultural activity that occurs within the planning area on both private and public lands. The three (3) principal operators in this area are the Rankin Ranch Company, the Running W Cattle Company, and the Sieben Livestock Company. The Rankin Ranch Company owns approximately 640 acres in the Hellgate area and approximately 1,900 acres in the Sunshine Basin Area. However, a majority of the Rankin operation takes place within Broadwater and Meagher Counties. The Sieben Livestock Company owns approximately 2,250 acres east and adjacent to the Gates of the Mountains Wilderness Area at the head of Beaver Creek (the Martien Ranch). A majority of their ranch holdings are located in Cascade County. The Running W Cattle Company owns approximately 2,800 acres in the Soup, Pikes, and Beaver Creek areas. The rest of their holdings are in Meagher County and in the Helena Valley.

Several smaller cattle and hay operations can be found in the Nelson area, American Bar, Eldorado Bar, upper Trout Creek and Metropolitan Bar areas. Most of these smaller operations are feeling pressure to subdivide their lands for residential use.

Canyon Ferry/York Planning Area Priorities

The following issues were identified through stakeholder interviews, public workshops, and the work of the Lewis and Clark County Comprehensive Plan Citizen's Advisory Group. The focus here is not intended to exclude the broader framework of the County-wide goals and policies. Rather, the intent is to focus the effort of Lewis and Clark County on short-term (e.g., the next five years) priorities that are specific to the York/Canyon Ferry planning area, and were developed by people living in the area.

Citizens of the York /Canyon Ferry planning area feel that the top priority short-term issue is a continued and increased focus on the provision of basic services, maintaining water quality, and controlling land subdivision. In the York /Canyon Ferry planning area,

Lewis and Clark County should focus its energies on maintaining and upgrading the following basic services:

A. Control and eradicate noxious weeds.

Action Items

- Educate citizens about the importance of noxious weed management and various means to eradicate the spread and infestation of noxious weeds.
- Work to enforce existing weed abatement regulations.
- Establish a weed district boundary in cooperation with the BLM, US Forest Service, and local landowners.
- Apply for weed grants to help eradicate noxious weeds in the area.

B. Maintain high standards for subdivisions in order to minimize their impact on both the natural environment and taxpayers.

Action Items

- Establish minimum design standards.
- Compile standards for developing in riparian areas.
- Ensure that new subdivisions are provided with adequate fire protection, either through an on-site water supply or services provided through a fee.
- Require roads to be constructed prior to subdivision.
- Require that maintenance funds be established for long-term preservation of improvements.
- Clearly define the economic responsibility for road construction and maintenance.
- Work with local Fire Departments and the Rural Fire Council to ensure new subdivisions will have adequate fire protection.

C. Address Canyon Ferry/York Roads Road traffic and maintenance concerns.

Action Items

- Review traffic control and safety issues along the Canyon Ferry and York Roads and take the appropriate actions.
- Resurface York Road from the York Bar to the end of the pavement.
- Evaluate the possibility of the installation of a four way stop or better traffic control at York Road/Nelson Road/Black Bear Road junction.

D. Maintenance of other public County roads.

Action Items

- Increase maintenance, based upon the availability of funds, as a high priority in Lewis and Clark County.
- Dust control along Nelson and Jimtown Roads within the York town site.
- Work with Federal agencies to increase the availability of funding for County roads accessing U.S. Government recreational land.

E. Work to improve water quality.

Action Items

- Develop and enforce septic system regulations.
- Preserve riparian areas along Magpie, Soup, Beaver, and Trout Creeks; establish setbacks.
- Encourage the development of wellhead protection areas in areas of source water use or proposed use.
- Provide citizen education regarding the source and distribution of water supplies, the potential threats to the quality and quantity of drinking water, and pollution prevention methods.

F. Maintain the integrity of the Missouri River corridor.

Action Items

- Work cooperatively with local watershed groups, conservation districts, private landowners, and other entities involved with Missouri River issues.
- Missouri River corridor access should be maintained and protected.
- Maintain public access through private land to public land.

G. Continue to improve fire protection, emergency, and safety services.

Action Items

- Assist with_a process to attract more volunteers.
- Assist with a joint purchase agreement for new equipment.
- Work to ensure that all residences and roads are clearly marked and addressed in rural areas.
- Assist_with the development of better emergency medical service (EMS) service in the area.

H. Preserve agricultural/ranching, lands.

Action Items

- Update the Lewis and Clark County Voluntary Agricultural Land Preservation Program and the resulting Land Evaluation and Site Assessment system. Utilize as a tool in land use planning.
- Convene a task force to study ways to manage rural land changes.
- Establish minimum lot sizes within agricultural lands.
- Explore the use of cluster subdivision where residential development occurs in rural and agricultural areas.

I. Commercial and recreational development should be encouraged in appropriate locations.

Action Items

- Support efforts to identify locations in Canyon Ferry and York where commercial/recreational site development is appropriate.

J. Better community services should be encouraged.

Action Items

- Complete work with the U. S. Forest Service to determine the future of the York Community Hall, York Fire Station, Smith Memorial, and York Cemetery.
- Assist in developing a community park on land between York Community Hall and the Smith Memorial.
- Work with local residents to determine the future of county park land on American Bar.
- Consider use of an RID to establish a closer transfer site and recycling area.
- Encourage community representation on county matters affecting this planning area.

Helena Valley Planning Area

Introduction

The first exploration by white men in the Helena Valley or the Valley of the Prickly Pear was recorded in the journals of Lewis and Clark. The party of explorers passed through the Gates of the Mountains area in July 1805. Their journals reported sighting antelope, deer, elk and goats in the area. They also reported being troubled by mosquitoes and prickly pear cactus as they worked their way up river towards the three forks of the Missouri River.

During the period between the Lewis and Clark Expedition and the beginning of the gold mining era, the only white visitors to the area were fur trappers and traders. Prior to the influx of Europeans, the area was controlled primarily by the Blackfoot Indians, who were noted for their fierce opposition to the white incursions into their territory.

From 1858 to 1860, Lt. John Mullan of the U.S. Army directed the construction of a military wagon road from Fort Benton, at the head of navigation on the Missouri, to Fort Walla Walla in Washington. The road passed through the canyon of Little Prickly Pear Creek north of the Helena Valley, and crossed the Continental Divide at Mullan Pass. The greatest use of the road came after the discovery of gold in Montana in 1862. The eastern segment of the Mullan Road was heavily traveled after the discovery of gold in Last Chance Gulch in 1864.

The first record of prospecting activity in the area dates back to 1862, when gold was reported to have been found along Prickly Pear Creek near the later site of the mining camp called Montana City, about four miles above the present site of East Helena. In June 1862, Captain James Fisk led a government-sponsored wagon train from Minnesota to the gold fields of Montana along the Mullan Road. According to historical records, the Fisk expedition consisting of 123 persons camped on the future site of Montana City. They reportedly encountered a miner named Gold Tom living in a tepee who was placer mining along Prickly Pear Creek. About half of Fisk's party wintered in the area to search for gold. They were apparently unsuccessful, since major mining development in the Helena Valley area had to wait until the Last Chance discovery by the legendary Four Georgians in July 1864. News of their strike spread and by fall of that year tents and cabins had sprung up along the gulch. Within one year, the mining camp had over one hundred cabins.

The gold deposits in Last Chance Gulch and other rich mineral discoveries in the area spurred the growth of the City of Helena and other communities like Rimini, Unionville and East Helena. By 1867, a number of stone buildings had been erected and a land office opened in Helena. The Fort Benton to Helena stage logged 2,500 passengers between May and October 1866, with the passengers stopping at stage stops in Silver City, Three Mile Creek, Seven Mile Creek, and Tenmile Creek. Helena flourished not only as a mining camp, but also as a trade center for other camps in the region. Situated on the trade route between Fort Benton and Bannack/Virginia City, Helena rapidly developed into one of the leading commercial emporiums of the mountain country. By 1875, Helena had eclipsed Virginia City in size, population, and influence and was voted the Territory's capital.

The Town of Rimini was once a trade center for a mine district, which produced gold, silver, and lead. The town was originally named Young Ireland, but was renamed in the 1880s by the citizens after they had seen the drama, *Francesca da Rimini*. The town, to which a branch of the Northern Pacific Railroad was built between 1885 and 1900, consisted of one long street with false-fronted frame buildings, which included at one

time 14 saloons, several hotels, and “sporting” houses. A second street parallel to and behind it, was filled with houses and cabins, except where mine dumps crowd close against them. At the end of the street rises Red Mountain, which includes one of the oldest lead-zinc mines in Montana, with patent survey Nos. 3, 4 and 5. Lee Mountain, located to the west of the town site, has survey No. 13 and was discovered in 1864. Lode mining on Red Mountain (e.g., the Nelly Grant, General Grant, Good Friday and Little Jenny lodes) began before 1870 and was actively pursued until the late 1920's. In addition to lode mining, placer mining above the Rimini town site continued on a large-scale basis from the 1870s until the early 1900s.

In the 1880s James J. Hill, president of the Great Northern Railroad, founded the Red Mountain Consolidated Mining Company. Hill had hoped to build a branch of his railroad into Rimini, so shipments from the area's mines could be sent directly to the Helena and Livingston Smelting and Reduction Company smelter, located in East Helena. The project was started after Hill's death by the Montana Lead Company. However, the attempt came to an abrupt stop after a tunnel was already bored 4,000 feet into the mountain because the City of Helena Water Department, which had Chessman Reservoir near Rimini, refused to permit the erection of a concentrating plant near the mines. From that time on, additional large-scale mining development in the area stopped.

The real impetus to develop the community of East Helena was the 1888 construction of the Helena and Livingston Smelter, now ASARCO. Prior to the development of the smelter, the area around East Helena was developed as homesteads and a way station on the stagecoach route between Helena and the gold camps in the Big Belt Mountains. The Northern Pacific Railroad which had reached Helena in 1883, had its original station, named Prickly Pear Station, located at the railroad's crossing of Prickly Pear Creek.

About the same time the smelter property was purchased, several local land owners subdivided portions of their property into a town site. Local newspapers touted the new community as the place to invest in real estate for quick returns.

The town quickly became the homes of many of the plant employees. Many of the smelter's early employees came from the surrounding mining camps; later employees were recruited from the immigrant populations. The plant not only provided the primary payroll but also played a critical role in the social, recreational, cultural, and educational lives of the community.

East Helena has survived its share of disasters, as have many other Montana communities. The Flood of 1908, which covered several blocks in the center of town, filled cellars with water, tore out bridges and floated houses off foundations; the fire of 1919, which destroyed the town's business district and many homes; and the infamous earthquake of 1935. Today the City of East Helena remains a cohesive, independent, industrial community, although the smelter closed in 2001.

Another notable development, which has had a great influence on the character and the economy of the Helena Valley, was the construction of Fort Harrison approximately six miles west of the City of Helena. Fort William Henry Harrison was authorized by an act of Congress in 1892. The Fort was originally named Fort Benjamin Harrison in compliment to the then President. The name was changed in 1906 to eliminate duplication with a fort in Indiana. The military reservation was acquired by donations through the efforts of Col. C.A. Broadwater (who owned the adjoining Broadwater Hotel and Natatorium), the local Optimist Club, and interested private parties.

The Fort was built from 1894 to 1896. In 1895, a detachment of the Hospital Corps from Fort Assinboine south of Havre and several small military posts, which were scheduled to close in the Dakotas, began training at the post. The Montana National Guard began utilizing Fort Harrison for training in 1911, after abandoning Fort Ellis near Bozeman.

Fort Harrison was abandoned and left in the charge of a caretaker by the U.S. Army in 1913. The Montana National Guard occupied the Fort in September 1915, beginning the development of the military post we see today. In June 1916, the Montana National Guard was notified by the War Department to mobilize to guard the U.S./Mexican border. With the start of World War I, the Guard was again trained and mobilized in 1917 to protect major railroad and industrial facilities, until they could be dispatched to eastern camps and eventually overseas. After World War I, the Fort became a Public Health Service hospital and eventually a Veterans Administration medical facility (No. 72). During the first years, it was designated as a tuberculosis hospital and expanded to 300 beds. In 1925, the designation was changed to a general medical and surgical hospital.

After the October 1935 earthquakes that rocked the Helena area, the hospital facility was closed and the patients transferred to facilities in Washington and Oregon. The Hospital facility was reopened in 1937. The Guard continued to use the reservation for training after the earthquake.

During the Second World War, the U.S. Army assumed control of the facility and used it for very new and distinctive military units. These units included the First Special Service Force, the 474th Quartermaster Truck Regiment and the War Dog Training Center (Camp Rimini).

Since 1947, the Fort has been used for training by numerous active and inactive combats, support and combat service support units. Numerous major improvements and increased training facilities were completed at Fort Harrison in 2001.

Existing Conditions

Physical Conditions

The Helena Valley planning area is located in the southern part of Lewis and Clark County, and contains approximately 400 square miles east of the Continental Divide. The area is bound by the Marysville-Canyon Creek planning area on the northwest, the North Hills on the north (boundary with the Canyon Ferry planning area), the Missouri River, Hauser Lake, and the Spokane Hills on the east (boundary with the Canyon Ferry-York planning area), the County Line with Jefferson and Broadwater Counties on the south, and the Continental Divide on the west. The incorporated City of Helena is the County seat and is located in the south-central part of the planning area. The City of East Helena is the only other incorporated municipality in the County and is also located in the southern part of the planning area.

Topography

The topography of the Helena Valley planning area includes approximately 75 square miles, and varies from the broad, gently sloping floor of the Helena Valley to elevations of 3650-4000 feet. The mountains along the Continental Divide reach elevations of approximately 6000-8000 feet. The North Hills form a drainage divide (ranging between 4700-5200 feet) at the northern edge of the area.

Significant geographic features in the northeastern portion of the area include the Missouri River canyon below Hauser Dam, Hauser Lake, and Devil's Elbow, a feature along the Missouri River described in the Journals of Lewis and Clark.

Rolling hills and bench lands are present in the eastern part of the area, culminating in the Spokane Hills (4600-5600 feet). The South Hills (the majority of which is in Jefferson County) bind the southern edge of the area, and blend into the Continental Divide Range to the west.

Principal peaks and their elevations are Mount Ascension (5365 feet), Skihi Peak (6583 feet), Black Mountain (7149 feet), Colorado Mountain (7217 feet), and Red Mountain (8150 feet). The Scratchgravel Hills cover about 15 square miles in the central part of the area, and rise above the Valley floor to an elevation of 5253 feet.

The narrow valley of the Tenmile Creek drainage extends westward to the divide, while the Seven Mile Creek drainage winds to the northwest through rolling terrain.

Climate

Climatic conditions vary across the planning area due to topographic conditions. The western portion of the area along the Continental Divide receives 20-30 inches of average annual precipitation, the majority as snowfall. The northeast Helena Valley, between Lakeside and the Causeway, is the driest part of the area and receives approximately 10 inches of annual precipitation, the majority as spring rainfall.

The annual range of air temperatures at the Helena Regional Airport is -35 to 100 F, with mean monthly temperatures ranging from 18 F in January to 68 F in July. Winds are generally westerly to northwesterly; the area experiences chinook winds that are associated with the east side of the Rocky Mountains. The Helena Valley is an intermountain basin subject to air inversions in the winter months.

Hydrography

Engineered and constructed water bodies make up approximately 2 percent of the Helena Valley planning area. The major lakes are Lake Helena (located in the northeast corner of the Valley floor) and Hauser Lake (forming a portion of the Area's east boundary). Both of these lakes were formed in 1911 as a component of the Hauser Dam project on the Missouri River. Another significant lake is the Helena Valley Regulating Reservoir (one square mile), established in 1958 for the purpose providing irrigation water (Missouri River) to the Helena Valley floor and drinking water to the City of Helena.

Chessman and Scott Reservoirs are storage facilities for the City of Helena drinking water supply, located in the southwest corner of the planning area. Chessman Reservoir (100 acres) was constructed at the turn of the century and refurbished in the early 1990s. Scott Reservoir (25 acres) was constructed in the early 1960s.

Spring Meadow Lake is a small lake (10 acres) just west of Helena established as a result of gravel quarrying activities; the lake and surrounding shoreline is now a state park. Two small private recreation lakes (25 acres total) are located in the center of the Helena Valley floor, established in 1990.

Two water bodies are associated with the ASARCO smelting facility at East Helena--a reservoir contains about 12 acres and associated wetlands, and a waste pond contains about 5.5 acres. Seven wastewater treatment lagoons are located within the Helena Valley. Several small private ponds exist for stock water or minor irrigation purposes. Several major stream networks cross the planning area and drain into the Missouri River system. Spokane Creek (located in the southeast corner of the area) drains the hills, benches, and rolling terrain on the west side of the Spokane Hills. This is a perennial stream that has some utilization for irrigation. The 100-year floodplain has

been approximated, but not formally mapped by the Federal Emergency Management Agency (FEMA).

Prickly Pear Creek has its headwaters in northern Jefferson County, enters the planning area south of East Helena, and drains northward to Lake Helena. The stream has been significantly utilized for irrigation in the Helena Valley, although the extent of such applications is declining with the conversion of agricultural lands to other uses. The 100-year and 500-year floodplain boundaries have been mapped by FEMA (1985). As with Tenmile, Seven Mile, and Silver Creeks, Prickly Pear Creek's morphology (i.e., stream bed structure) and water quality have been adversely affected by a variety of human activities, such as mining agriculture, industry, and development/construction.

The Tenmile Creek watershed includes the southwest portion of the planning area and drains northeastward toward Lake Helena. The 100-year and 500-year floodplain boundaries have been mapped by FEMA (1985) downstream of the Rimini Road/Highway 12 intersection; another section of floodplain has been mapped at a less detailed level in the vicinity of the Rimini town site. This stream has also been significantly utilized for irrigation in the Helena Valley. The extent of irrigation is declining with the conversion of agricultural lands to other uses.

Seven Mile Creek is a tributary of Tenmile Creek, and is a perennial stream with a watershed area that drains the northwestern portion of the planning area. The only section of the stream that has been mapped for the 100-year floodplain (FEMA, 1985) is two miles above its confluence with Tenmile Creek. Some irrigation diversions are utilized in the lower reaches of the stream.

The headwaters of Silver Creek are located in the Marysville-Canyon Creek planning area; the lower sections of the stream drain eastward across the Helena Valley floor toward Lake Helena. Silver Creek is intermittent due to the porous nature of the Valley floor, limited precipitation in the watershed, and irrigation diversions. The stream reach east of Green Meadow Drive has been mapped for the 100-year and 500-year floodplains (FEMA, 1985). The 100-year floodplain boundaries have been approximated for an additional five miles of stream section west of Green Meadow Drive, but not formally mapped by FEMA.

The Water Quality Protection District is charged with on-going monitoring, research, and public education on the surface water systems. The District is governed by an appointed Board, and its activities are funded by fees on each property within the District and by grants.

Helena Valley Irrigation District

Background: As one descends into the Helena Valley from the north on Interstate 15 during the summer, a striking feature of the valley is its core of green irrigated lands,

surrounded by non-irrigated grazing and croplands, as well as developed areas. However, it didn't always look this way and many County residents may not be aware that the Helena Valley's irrigated lands are a man-made environment representing a multi-million dollar investment of federal funds.

The earliest agriculture in the Helena Valley consisted of gardens and small dairy and livestock operations. Crop farming began slowly. Farmers and ranchers developed gravity flow irrigation systems utilizing Prickly Pear and Ten Mile Creeks. The first large scale effort to irrigate the Helena Valley with a pumped water source was initiated in 1912 by the Montana Reservoir and Irrigation Company, a subsidiary of what was then known as the Montana Power Company. (In 1934, Montana Power assumed direct control of the irrigation project.) The company served two separate irrigation systems: the Helena Valley Water Users' Association and the Lakeside Water Users' Association.

Both systems drew their water from Lake Helena and irrigated almost 4,500 acres. The Helena Valley system was supplied by a pumping station located on the north shore of Lake Helena. (The property, now in private ownership, is located about 1/2 mile west of the Causeway on Lincoln Road East.) The Lakeside system was supplied by a pumping station on the east shore of Lake Helena. (The property, also in private ownership, is located just south of the Causeway on Lake Helena Drive.)

As of 1956, the original Helena Valley system served 31 water users and irrigated 2,937 acres, while the Lakeside system served 17 water users and irrigated 1,559 acres. In 1946, Montana Power deeded the irrigation project over to the State Water Conservation Board that governed the systems until the Helena Valley Irrigation District was created in 1955, in conjunction with the Canyon Ferry Dam project.

Construction of Canyon Ferry Dam was authorized by Congress through the 1944 Flood Control Act, and funding was appropriated for the project in 1947. The U.S. Bureau of Reclamation selected the site for the dam in 1945. Initial activities to prepare for construction began in 1947 with a formal groundbreaking for actual construction in 1949. Construction of the dam was completed in 1954 at a total cost of \$28,772,465. (According to the Montana Department of Commerce (MDOC), Census and Economic Information Center (CEIC), this would be equivalent to \$205,517,607 in 1999 dollars.) In addition to providing power generation, flood control, and water-based recreation opportunities, Canyon Ferry Dam supplies water to the Helena Valley Irrigation District (HVID) and the City of Helena drinking water system.

The broad, gently sloping floor of the Helena Valley made it especially attractive for the development of a valley-wide irrigation system -- a project consistent with the long-term mission of the U.S. Bureau of Reclamation. Development of the Helena Valley irrigation system also provided a means to help offset the loss of agricultural lands inundated by Canyon Ferry Reservoir. Water is pumped from the reservoir to the Helena Valley via a tunnel drilled through the Spokane Hills and a canal to the Helena Valley Regulating Reservoir. The reservoir is located on the Spokane Bench, just south of York Road,

and covers 518 acres. From the reservoir, water is diverted to the City of Helena Missouri River Water Treatment Plant and through an irrigation canal system around the south, west and north sides of the Helena Valley floor. Ultimately, the irrigation water is discharged back to Lake Helena, part of Hauser Reservoir.

Construction of the Spokane Hills tunnel began in 1957 and was completed in 1959. The total original cost of the irrigation system which included the pumping plant at the dam, tunnel, regulating reservoir, main canal, laterals, and drains, was \$2,637,000. In addition, a series of open and closed drains were constructed in the 1960's to relieve drainage problems in the central part of the district. Additional work on the drainage system was done in the 1970's and 1980's. In 1977 and 1980, major modifications were made to the Regulating Reservoir dam to address excessive seepage and concerns regarding dam safety in the event of an earthquake.

Existing Conditions: The physical components of the current irrigation system include the pumping station at Canyon Ferry Dam, the 2.6-mile tunnel through the Spokane Hills, the Regulating Reservoir, and the 31.7-mile canal distribution system, 64 miles of lateral ditches, as well as 56.3 miles of drains that collect excess water and return it to Lake Helena. The total miles covered is nearly 155, not including the 518 acres that comprise the reservoir.

The HVID currently (2003) irrigates approximately 15,000 acres in the Helena Valley and on the Spokane Bench under full service irrigation contracts and some additional agricultural operations through supplemental agreements, for an approximate total of 17,000 acres irrigated. This represents almost half of the total 38,000 acres of irrigated cropland in Lewis and Clark County (1998, Montana Agricultural Statistics Service). Agricultural production within the HVID consists of small grains, alfalfa hay, and irrigated pasture from approximately 200 active irrigators, for an average operating unit of about 85 acres.

The Helena Valley's irrigated hay lands are an important agricultural resource for Lewis & Clark County. This complex irrigation system represents a significant investment by U.S. taxpayers. The Helena Valley irrigation system also represents a major investment by private landowners in equipment, land leveling, and annual maintenance costs.

Issues: The interest in preserving the HVID isn't new; the lands irrigated by the HVID serve the needs of both Helena Valley and city residents. Retention of the Helena Valley's irrigated lands has been a recurring issue throughout the process of developing the County Growth Policy, including discussions within the Citizens Advisory Group, and comment in the public meetings and hearings. During the public involvement process, several persons commented that allowing continued incremental conversion of irrigated croplands to subdivisions and other development could eventually destroy the viability of the HVID as a whole. The conversion of irrigated croplands and the potential impact

on adjacent irrigated lands of subdivisions or other development has also been raised during the review of many proposed subdivisions, while some indicate it may adversely impact the area, others indicate the water supply to irrigated lands may improve.

The interest in preserving the HVID isn't new. The 1989 County Comprehensive Plan included an issues statement that subdivision of agricultural land served by the irrigation district is conducted without regard to the effects on the public investment in the canal system. A Policy Statement in the 1989 Plan states that "The County will minimize land use conflicts with existing economic uses for which there has been substantial economic investment such as the Helena Valley Irrigation District."

According to the manager of the HVID, whether the amount of land that remains in agriculture and not developed is tied to the future and viability of the HVID is a debatable point. Legally, even if irrigated land is subdivided into small parcels for homes, the land remains in the district and is still assessed. Though these acres will not be receiving water, the HVID tax base will not have changed. Presently, there are still far more requests for people to bring land into the district to receive water for agricultural irrigation than requests to take the land out. The HVID's biggest concern with development in or near its irrigation facilities is public safety. The open canal and lateral system includes many miles of waterways, culverts, and siphons that are potentially extremely dangerous to the public, especially children. The HVID encourages the County to seriously consider the issue of public safety when reviewing proposed developments adjacent to its facilities. (Note: The preceding is paraphrased from written testimony submitted by Jim Foster, HVID Manager, at the November, 2000 hearing on the Growth Policy.)

Health: Much of the irrigated land in the valley has shallow groundwater, often with poorly drained soils -- conditions poorly suited to building construction and the use of on-site wastewater treatment systems.

Safety: The Helena Valley was the site of Montana's second largest earthquake (in 1935) and, according to the U.S. Geological Survey (USGS), has a high potential for additional severe earthquakes. Geologic investigations by the Montana Bureau of Mines and Geology in 1981 and 1988 indicated that a probable earthquake of magnitude 7.5 on the Richter Scale could occur, subjecting the Helena Valley to severe ground shaking and liquefaction. A 1993 study by the Bureau and MSU further evaluated the risk for liquefaction and mapped the areas of the Helena Valley where the soil has the potential to liquefy in the event of an earthquake. The areas shown to have moderate and high potential for liquefaction and significant ground movement coincide closely with the areas served by the HVID and have some of the highest potential for property damage and injury in the event of a serious earthquake.

Welfare: The HVID serves a critical role in assuring adequate water for residents of the Helena Valley and the City of Helena, in addition to providing important open space values and serving as a vital component of Lewis and Clark County's agricultural economy.

Ground water in the Helena area is the sole source of drinking water for over 27,000 citizens, approximately 55 percentage of the local population. The Helena Valley alluvial aquifer provides water through approximately 5,600 domestic wells and 71 public water supplies (L&C County Water Quality District, 2003).

The 1989 Comprehensive Plan, citing a 1983 Hydrometrics study, stated, "It is important to note that 'significant rises in the groundwater table in shallow aquifers during the irrigation seasons show irrigation is a major source of recharge in the Helena Valley'." A 1992 USGS study concluded that 31 percent of the recharge of the Helena Valley aquifer results from irrigation water infiltration while leakage from the Helena Valley irrigation system canals accounts for another 8 percent. With almost 40 percent of the recharge of the Helena Valley aquifer attributable to the operation of the irrigation system, the more than 27,000 people in the valley currently relying on groundwater for their drinking water have a keen interest in maintaining this vital recharge in the future. In drought years, such as 2000, the HVID assumes even greater importance for recharging the Helena Valley aquifer because low flows in the Prickly Pear and Ten Mile drainages are insufficient to provide the normal recharge that valley residents rely on for water.

Residents of the City of Helena have a similar interest in maintaining the viability of the Irrigation District as a major and dependable source of water. The District's Helena Valley Regulating Reservoir, in addition to providing water to the irrigation canal system, also supplies the City's Missouri River water treatment plant. In 2000, with the Ten Mile Creek drainage at record low flows, the regulating reservoir provided the majority of Helena's water supply.

During the public involvement process for the development of the county plan, several persons noted that most Helena Valley agricultural operations are relatively small and that few could survive independently without off-farm employment to supplement family income. A report prepared for the Citizen Advisory Group by Dr. James Johnson of MSU supports this. According to Dr. Johnson's report (which was based on 1992 data, the latest available), over 60 percent of the agricultural operations in the county were comprised of less than 180 acres, while statewide only 31 percent of operations were smaller than 180 acres. (As noted previously, the size of the average operation served by the HVID is about 85 acres.)

As another indication of the comparatively smaller nature of the farming operations in Lewis and Clark County as a whole (and the Helena Valley in particular), 74 percent of the farms in the County had sales of less than \$25,000 annually, while the statewide figure was 50 percent. Additionally, 43 percent of Lewis and Clark County farms and

ranches reported 200 or more days of off farm employment, while statewide the percentage was only 23 percent. While 70 percent of the farm operators in Montana indicated that farming was their principal occupation, the figure was 47 percent in Lewis and Clark County. Clearly, farmers in Lewis and Clark County as a whole and the Helena Valley in particular are more closely linked economically to a nearby urban job market than many of their counterparts elsewhere in Montana.

Farmers and ranchers have been confronted by low market prices in recent years, as well as major changes in federal agriculture policies, which sometimes make it difficult to achieve a reasonable return on investment and a decent standard of living. Most agricultural operations in the Helena Valley are too small to sustain a family, and at least one adult must do non-agricultural work in order to make ends meet. As a result, the Growth Policy acknowledges the right and periodic need of agricultural operators to sell portions of their property, for purposes such as estate planning or retirement purposes or to help their operations weather difficult financial circumstances.

However, in instances where agricultural operators find that development of agricultural lands is necessary, the Growth Policy encourages them to focus development on the least agriculturally viable portion of their property such as marginal, non-irrigated grazing or non-irrigated crop lands with adequate access to existing roads. When conversion of irrigated croplands is proposed, the Plan encourages land owners to utilize "cluster" subdivision design which groups small lots in a limited area in order to maximize the amount of irrigated land which can be retained in agricultural production.

Geology

The Helena Valley planning area contains a diversity of geologic units and landforms. Very old, dense, fractured sedimentary rocks are found across the area, principally along the northern and eastern boundaries and in the western portion. The northern extent of the Boulder Batholith is found in the south part of the area; much of the mineral development in the region is associated with this igneous body (e.g., produced by volcanic action or intense heat). The Scratchgravel Hills are also an igneous intrusion. The region was the subject of significant crustal deformation, which established the Overthrust Belt. Due to the rock types involved, some potential for oil and gas resources exists. The Helena Valley is a fault-bound structural basin that is filled with younger sedimentary units eroded from the surrounding mountains or deposited as a result of nearby volcanic activity. The youngest sediments are found on the floor of the Helena Valley. During the last glacial period the Missouri River was dammed by the continental ice sheet creating a large lake that extended into the Helena Valley area; related deposits are observed near White Sandy.

The Helena Valley is located within the Intermountain Seismic Belt, a seismically active zone associated with major geologic fault structures. The Valley is located at the north end of Seismic Zone 3. The Helena area has a long history of seismic activity; the

earliest recorded earthquake was in 1869, and the most severe recorded earthquakes occurred in 1935 (measuring up to 6.3 on the Richter scale). Geologic investigations conducted by the MT Bureau of Mines and Geology (1981, 1988) indicate that a probable earthquake of magnitude 7.5 Richter could occur, subjecting the Helena Valley to severe ground shaking and liquefaction. A geologic map indicates the general location of potentially active faults. Other faults may exist but their locations are speculative at this time.

A large part of the Valley floor is underlain with partially consolidated sediments saturated with groundwater, which are susceptible to liquefaction. Such conditions affect the probability and magnitude of ground failure and structural damage in a seismic event. In 1993, the County participated with the Bureau and MT State University to further evaluate the risk for liquefaction in the Valley. Based upon the physical characteristics of geologic materials and degree of saturation, a map of liquefaction potential was developed. Areas were classified with very low to high susceptibility for liquefaction; development in these areas should provide for appropriate mitigation measures to reduce the associated risks.

Some rock types in the area contain minerals subject to radioactive decay and the production of radon gas. The MT Occupational Health Bureau has collected data in the area for the last ten years, which indicate a potential for radon gas in the Helena Valley planning area. Currently there is not enough statistical data to define more specific areas of concern. Some uranium leasing and exploration has occurred in the Helena Valley, but no development or extraction has taken place.

There do not appear to be significant areas of unstable slopes related to particular geologic rock types within the Helena Valley planning area. However, several erosive soil types have been located. Expansive soils are not common, but some bentonitic materials are present in some areas.

Groundwater

The groundwater resources of the Helena Valley planning area are quite variable and not completely understood at this time. However, considerable research has been conducted in an effort to characterize the aquifer systems. A major alluvial aquifer underlies the Helena Valley floor, which supplies drinking water for most of the population outside the municipal service areas. This is a very productive aquifer system, but is vulnerable to contamination. The remainder of the planning area contains bedrock aquifer systems with varying characteristics. In some areas these systems have limited production and recharge and are also vulnerable to contamination, which could impede development. Continued urban development in the planning area could result in additional contaminant load to parts of these aquifer systems caused by wastewater treatment, industrial discharges, stormwater runoff, and accidental spills.

The Helena Valley-fill alluvial aquifer system has been the subject of research for many years; the most recent and most comprehensive study was completed in 1992. The Valley-fill aquifer covers about 65 square miles and is sustained by stream infiltration (15 percent), irrigation infiltration (39 percent), and bedrock groundwater contributions (46 percent). It provides the sole source of drinking water for more than 13,000 residents relying upon individual and community wells. Many of these wells are less than 70 feet deep and seasonal fluctuations in static water levels have been observed in these shallow wells. Groundwater flow is generally from the margins of the Valley toward Lake Helena where the system discharges its flow.

Water quality analyses indicate that the overall condition of the groundwater is good. None of the sampling for hydrocarbons or pesticides indicated any significant contamination by organic compounds; removal of underground storage tanks continues and sites are remediated and/or monitored. Nitrate analyses (conducted in three studies of the alluvial-fill aquifer) identified several areas where levels were slightly elevated. There appears to be an association between the age and density of septic systems and nitrate levels in areas of shallow groundwater.

In 1995, the City of Helena was granted a significant groundwater reservation in the Valley-fill alluvial aquifer for future municipal water supply. This reservation was based upon deep drilling of the aquifer and the identified potential of substantial amounts of groundwater that hasn't been appropriated. The City's Water Master Plan was updated in 1997. A principal direction of the Plan was to investigate the development of this groundwater reservation. This was determined to be a more cost-efficient option for meeting the projected needs of the municipality. The other principal option was reconstruction of the Missouri River Water Treatment Plant and continued use of surface water. The first phase of this effort has been initiated and test wells have been drilled. The demand projections are based on increased population and some expansion of the City water service area, resulting in a maximum day demand of 18 mgd in year 2020.

The bedrock aquifer systems are complex due to the variety of rock types and the degree of fracture and faulting. In general, groundwater flow is more restricted and the well yields are not as productive as the alluvial aquifer system. Recharge is more dependent upon precipitation and there is a higher potential for over withdrawal of groundwater.

The County is presently cooperating with the U.S. Geological Survey on an evaluation of the bedrock aquifers surrounding the Helena Valley. The Water Quality Protection District is charged with on-going monitoring, research, and public education on the aquifer systems.

Vegetation

Vegetation in the planning area consists of several vegetative classes. Grasslands/rangelands are predominant in the northern, eastern, and western portions of the planning area as well as in pockets throughout the area. Shrub lands are found in foothill areas between grassland and forest vegetation types, and along drainages. Coniferous forest is predominant in the western half of the planning area that includes pine and fir types. Forest (consisting generally of pines) is also present in the Scratchgravel Hills and along the eastern boundary of the area. Riparian vegetation (i.e., influenced by a water body) is found adjacent to many watercourses in the area including Sevenmile Creek, Tenmile Creek, Prickly Pear Creek, Spokane Creek, and Silver Creek. Significant riparian zones exist around and south of Lake Helena. Portions of these zones are influenced by irrigation activities and naturally occurring high groundwater conditions.

Agricultural vegetation types include dry land grain fields and improved pasture, predominant in the eastern part of the area. Irrigated cropland (principally hay) is predominant on the Helena Valley floor, and associated with perennial stream drainages elsewhere in the area.

Wildlife and Habitat

The Helena Valley planning area includes habitat for a broad range of wildlife species. The area is located along the Pacific Flyway, a major flyway for migratory birds, raptors, and waterfowl. It is also associated with the Northern Rocky Mountain ecosystem.

Several ungulate species (i.e., mammals having hoofs) utilize available habitat and are managed as big game species by Montana Fish, Wildlife & Parks (FWP). Whitetail deer are found along the riparian corridors of perennial streams. Mule deer are found throughout the area, and critical winter range for mule deer has been identified near the base of MacDonald Pass. Antelope are found in several parts of the planning area, principally in the southeastern corner, the North Hills area, and the western part of the Scratchgravel Hills. Critical elk winter range has been identified along the Tenmile Creek drainage west of Helena; elk utilize most of the southwest portion of the area. Moose are also found in the western portion of the Area. Mountain goats and mountain sheep are not usually found in the planning area, although they have been observed to the north around the Sleeping Giant formation.

Coyotes may range throughout the planning area but generally do not inhabit the densely developed portions of the area. Fox species can also be found throughout the zone, even in small areas of habitat close to urban development. Grey wolf, an endangered species, has been observed in the western portion of the area, along the Continental Divide; this population is a result of natural expansion of the species into the

region from Canada. Other large mammal species found within the planning area include mountain lion and black bear.

Bald Eagles utilize the Missouri River-Hauser Lake corridor, including the Lake Helena area. Spring migratory bald eagles generally move through the area quickly, while the duration of the fall migration is governed by weather and available food supply. The spawning of kokanee salmon can provide a significant food source and have attracted eagles at the peak period in November. (Total and peak numbers appear to fluctuate with the availability of the salmon). The highest concentrations are usually below Canyon Ferry Dam and Hauser Dam and at the mouths of tributary streams. Eagles may also utilize other water bodies in the planning area. Wintering bald eagles have been observed at Lake Helena. Other raptors are observed within the planning area, including roughed-leg hawks, red-tailed hawks, marsh hawks, ferruginous hawks, golden eagles, and peregrine falcons.

Population and Population Trends

The Helena Valley was relatively agricultural until the 1970s, but has since accommodated the largest percentage of growth in the County. Based upon well log filings and septic system permits, the unincorporated area experienced two significant periods of growth. The last half of the 1970s saw the first real expansion of suburban development into the Valley. This was followed by a period of much slower growth in the 1980s. The first half of the 1990s witnessed a larger expansion that is still continuing at this time

Land Ownership

Lands held in private ownership comprise approximately 66 percent of the Helena Valley planning area. Some of this private land is held in moderate to large size ranches and farms, including Seiben, Running W, McMaster, Diehl, and RV ranches. Numerous ranchettes (5-25 acres) have been established in the areas of Birdseye, Sweeney Creek, Colorado Gulch, the Helena Valley, North Hill, and the Spokane Bench. Smaller private parcels have been created throughout the area but concentrations of higher density development (outside of municipalities) are principally found on the west side of Helena, the west Helena Valley, and the southeast Helena Valley.

Publicly owned lands comprise approximately 31 percent of the land area in this planning area, which constitutes a smaller percentage of public land than is found in the other rural areas of the County. The U.S. Forest Service (Helena National Forest) manages 22 percent of the land area, which is located in the southwest and western portions of the area. These lands are the headwaters of the Tenmile, Sevenmile, and Threemile Creek drainages. Principally located north of the drainage divide with Jefferson County and along the eastern slopes of the Continental Divide, these lands

are generally managed for grazing, timber production, recreation, wildlife, and watershed resources.

The U.S. Bureau of Land Management (Headwaters Resource Area) manages approximately seven percent of the land area, made of several parcels scattered within the planning area. The largest block of BLM ownership is in the Scratchgravel Hills and south of Austin Road in the Birdseye area. Other blocks of ownership are located in the North Hills east of Interstate 15, and in the vicinity of Hauser Lake. BLM lands are generally managed for grazing, timber production, recreation, wildlife, and mineral resources.

The State of Montana oversees about 2.4 percent of the planning area. The State controls a number of parcels scattered throughout the area, some of which are school trust lands. The primary uses of these lands are livestock grazing, wildlife habitat, and recreation. Public lands along the Missouri River corridor, in particular, are primarily managed for public access for water-based recreation activities. The remaining two percent of the area within the planning area is comprised of water bodies.

Area Economy

The Helena Valley, including the City of Helena, is the economic hub of Lewis and Clark County. According to the 2000 data, the County's economy is predominantly based on government and the services industry (see Demographics and Economics chapter for more details). Service and retail industries generally consist of lower wage jobs; whereas, manufacturing generally supports higher wages. High-paying jobs have lagged behind low-paying positions during the last decade, and Montana routinely ranks among the bottom five states in the country in various income indices. Within Montana, however, Lewis and Clark County generally ranks among the leading counties in various income and other economic indices.

Transportation

Interstate 15, the major north-south highway through west central Montana, passes through the center of the Helena Valley planning area and serves as the primary link between Great Falls and Butte. It is functionally classified as an interstate, is part of the National Highway System, and is maintained by the Montana Department of Transportation (MDT). Two interchanges (Capitol and Cedar Street) serve the urban area, and one interchange (Lincoln Road) serves the north part of the area. A fourth interchange (Forestvale) was originally scheduled for construction in the central Valley in 2000, but was (at least temporarily) removed from the current construction list as result of disagreements about its utility. The MDT has contracted with a private vendor to conduct a two-year environmental impact study to recommend appropriate location(s) for interchanges along I-15; an analysis of Forestvale is part of this study.

Highway 12, the major east-west route through the central part of the state, traverses across the southern part of the area and serves as the primary link to Missoula. It is functionally classified as an arterial highway, is part of the National Highway System, and is maintained by the MDT. It is a two-lane highway east of East Helena, and a four-lane highway westward to MacDonald Pass on the Continental Divide.

North Montana Avenue is a north-south arterial road that is the principal conduit for traffic between the City of Helena and the Valley. The Frontage Road (east of the Interstate) is another north-south collector road providing access to the Valley. Both these roads are maintained by the MDT.

Other major collector roads within the Helena Valley planning area include Lincoln Road, York Road, Canyon Ferry Road, Birdseye Road, Green Meadow Drive and Spokane Creek Road. All these roads (with the exception of Birdseye Road) are part of the State Secondary Roads system and are eligible for funding from State and Federal sources. Maintenance responsibility on these routes is divided between MDT and the Lewis and Clark County Public Works Department.

Minor collector roads include Head Lane, McHugh Lane, Applegate Drive, Floweree Drive, Wylie Drive, Valley Drive, Lake Helena Drive, John G. Mine Road, Sierra Road, Forestvale Road, Mill Road and Franklin Mine Road. Some of these road segments have bituminous surfaces and some have gravel surfaces. These roads are all maintained by the County Public Works Department.

Local roads in the planning area range from asphalt surfaced urban sections with curb and gutter to gravel surfaced rural sections with borrow ditches. Maintenance of these roads may be performed through the County Public Works Department, Rural Improvement Districts (administered through the County), private homeowner associations, or in some cases, private individuals.

Lewis and Clark County, the City of Helena, and the MDT developed the Helena Area Transportation Plan Update in 1993. This document provides guidance for addressing the transportation needs of the urban/suburban portion of the planning area. Major improvements within the urban limits are coordinated and prioritized by the Transportation Coordinating Committee, a body representing the City, County, State, and Federal transportation entities and includes local citizen members.

Some recently completed or ongoing major projects within the planning area include the following: the Canyon Ferry Road safety project (between York Road and Prickly Pear Creek east of Helena—now completed); the North Main reconstruction and widening project (between Lyndale Avenue and North Montana Avenue in Helena), the Euclid Avenue overlay project (between Williams Street and Dearborn Street on the westside of Helena), and; on-going work and planning along the I-15 corridor.

The Helena Area Regional Airport is located within the City of Helena in the south-central part of the planning area. Passenger service has been provided by one major airline (Delta) and two regional airlines (Horizon, Sky West); in 2002, however, Northwest Airlines agreed to resume service between Helena and Minneapolis, via Billings. Air passenger and air freight traffic have been steadily increasing for several years. The airport property also contains a National Guard helicopter battalion, a fire training facility, a fire dispatch facility, some federal offices, and facilities for private planes. The airport is governed by the Airport Authority Commission, an autonomous membership appointed by the City of Helena and Lewis and Clark County governing bodies.

Two railroad lines cross the planning area, providing freight services to the Helena area. A major east-west line roughly parallels Highway 12 (but crosses the Continental Divide at the Mullan Tunnel) and is operated by Montana Rail Link. A north-south line extends northward to Great Falls and is operated by Burlington Northern Santa Fe.

Public Facilities and Services

Law Enforcement Law enforcement within the Helena Valley planning area is provided by several agencies. The municipalities of Helena and East Helena maintain their own police forces that respond within those jurisdictions. The Lewis and Clark County Sheriff's Office provides services to the unincorporated portions of the area. The Montana Highway Patrol provides law enforcement on Interstate 15 and U.S. Highway 12.

Game wardens for the Montana Department of Fish, Wildlife and Parks enforce fish, game, and boating regulations, and assist other law enforcement officials as needed. Law enforcement on federal lands is provided by personnel from the U.S. Forest Service, the U.S. Bureau of Land Management, or the US Bureau of Reclamation.

Dispatch of emergency service providers is conducted by the Support Services Division, a cooperative effort between the City of Helena and Lewis and Clark County. A 911 dispatch system serves this area. Law enforcement services are greatly enhanced by the Sheriff's Reserve and volunteer deputies that assist officers. Dispatch of emergency service providers is conducted by the Support Services Division, a cooperative effort between the City of Helena and Lewis and Clark County. Initial planning and preparations are now being conducted to implement an Enhanced 911 program.

The Law Enforcement Center is located in the City of Helena in the south-central part of the planning area. Due to distances across the area, response times can vary depending on the location of patrols at the time of dispatch. Response times are also affected by the number of available patrol officers, substandard road conditions and incomplete posting of road names and addresses in the rural areas.

The expansion of rural-suburban residential development within the planning area over the past 20 years has led to increasing constraints on the provision of law enforcement services. The increasing population results in a proportionate growth in service demand; this demand is compounded by the rural distribution and physical location of residences. The time spent per response has increased, thus reducing the overall level of service in the area.

Increasing the challenge of providing adequate service, property taxes are limited to the amount assessed in the prior year, plus one-half of the average rate of inflation for the prior three years. In order to help address these issues, the voters approved a public safety mill levy for \$1,739,852 in June 2000. The levy is used to ensure that seven officers hired through the Community Oriented Policing Service (COPS) Grant can be retained when the grant funding runs out at the end of Fiscal Year 2003. Additionally, the levy provides funding for the Drug Abuse Resistance Education (D.A.R.E) program, City/County dispatch/911 program, Search and Rescue, records services, and the replacement of obsolete radio and computer systems.

Fire Protection

Fire protection services are provided by several entities in the Helena Valley planning area. The City of Helena has a paid professional fire department that serves the municipal jurisdiction. The City of East Helena has a volunteer force that serves its jurisdiction. The remaining portions of the planning area are served by rural volunteer fire departments, including formal Fire Districts, Fire Service Areas, and Lewis and Clark County. Due to State and Federal ownership in the region, these entities also provide response to wild land fires.

A unique organization of local fire departments is the Lewis and Clark Rural Fire Council. This body provides for inter-jurisdictional communication, coordination of training opportunities, and other activities. The Council also provides a focus for mutual-aid agreements that have been developed between participating fire protection entities. The agreements have proven essential to increasing the level of service provided to the constituents of the area. The mutual-aid structure provides for assistance among fire departments, thus expanding the equipment and personnel resources available to respond to an incident. This mechanism allows for increased utilization of the expensive capital equipment that is necessary for fire protection service and achieves a higher level of service in the planning area than could be achieved by any one fire protection entity.

The Westside Fire Service area is located on the northwest edge of the City of Helena and includes about three square miles. Properties within the service area are presently assessed an annual fee (variable) for services, which are provided by the City of Helena Fire Department under a contractual agreement with the service area.

The Baxendale Fire District provides structural and wild land fire protection to about 91 square miles in the southwest portion of the area. Properties within the District are assessed a tax levy (34.91 mills) for services. The District has one station centrally located at the intersection of Blue Cloud Road and Highway 12 West; it has recently been negotiating for additional ground to expand its station and related facilities.

The Birdseye Fire District provides structural and wildfire protection to about 26 square miles in the northwest portion of the planning area. Properties within the District are assessed a tax levy (9.38 mills) for services. The District has one station centrally located near the intersection of Eagle Ridge Road and the Birdseye Road. In recent years the District has requested voter approval for temporary assessment increases for specific proposes.

The West Helena Valley Fire District provides structural and wildfire protection to about 38 square miles in the west-central portion of the planning area. Properties within the District are presently assessed a tax levy (16.70 mills) for services. The District presently maintains two stations, one near the intersection of Forestvale Road and North Montana Avenue, and the other at the intersection of Valley View Road and North Montana Avenue. Voters approved a tax increase in 1996 to provide funds for construction of a new Valley View Road station to replace the present one; several neighborhoods (about 10 square miles) adjacent to the District are in the process of petitioning for annexation.

The East Valley Fire District provides structural and wildfire protection to the central portion (about 33 square miles) of the planning area. Properties within the District are presently assessed a tax levy (25.36 mills) for services. The District has two stations, and is building a third. Several neighborhoods were recently annexed into the District for fire protection services.

The Lakeside Fire Service Area provides structural and wildfire protection to about 65 square miles of the eastern portion of the planning area. Properties within the service area are presently assessed an annual fee (\$91.20) for services. The service area presently maintains three stations--one near the intersection of Lincoln Road East and Hauser Dam Road, one at Lakeside, and one south of the intersection of Canyon Ferry Road and Spokane Creek Road. Two neighborhoods were recently annexed into the service area for fire protection services.

The Eastgate Fire District provides structural fire protection to a six square mile area in the southeast portion of the planning area. Properties within the District are presently assessed a tax levy (42.56 mills) for services. The District has one station centrally located in the Eastgate Subdivision. Several neighborhoods were recently annexed into the District for fire protection services.

The Fort Harrison Veterans Administration facility maintains a small paid professional fire department that responds to incidents at the VA hospital, while Lewis and Clark

County is responsible for the military reservation. There is current discussion about a cooperative agreement between the Fort and the County relating to coverage on all reservation property.

The Lewis and Clark County Volunteer Fire Department is charged with responding to wild land fires on private lands in those portions of the County not within a formal fire district or service area. The Department has traditionally had limited ability to respond to structural fires due to insufficient equipment and personnel training. The Department houses its equipment at the County Shop complex on Cooney Drive. In 2003, Lewis and Clark County completed the process of forming a County Fire Service Area, encompassing portions of the jurisdiction not previously part of a fire district or service area.

Fire response on rural Federal and State lands is coordinated through the Interagency Fire Dispatch Center, located at the Helena Regional Airport. This is a cooperative effort involving the U.S. Forest Service, U.S. Bureau of Land Management, and the Montana Department of Natural Resources and Conservation. Response may include personnel and equipment from these agencies, as well as the Lewis and Clark County Volunteer Fire Department and the local volunteer fire departments.

The Helena Regional Airport has specially trained personnel and special foaming equipment used in response to aircraft accidents. An aircraft training facility was recently constructed on the airport property. A complete emergency service training center is planned at the facility and is expected to be complete and operational in approximately five years.

In the past 15 years, the Helena area has witnessed a number of wildfires that have destroyed property and affected wildlife habitat, scenic resources, and air quality. The most dramatic of these fires were in the North Hills (1984), and Squaw Gulch (1988), followed by a number of large fires in the area during the summer of 2000 (e.g., Canyon Ferry Complex fires). The Tri-county Fire Group has sponsored public displays, lectures, and workshops on the subject.

A recent product is the creation of fire hazard rating maps, which classify the susceptibility of an area to wildfire hazard based upon slope and vegetative fuel conditions. Most of the Helena Valley planning area has been mapped, with the exception of the western third of the area. High fire hazard areas exist in several places including the South Hills, the Scratchgravel Hills, the North Hills, and the Spokane Hills. Any development in these areas should provide for mitigation measures to reduce the associated risks.

Emergency Medical Services

In 1998 the Board of County Commissioners established a Countywide Ambulance District to address the coordinated provision of such service in the County. The County will authorize an ambulance service provider in the near future. Presently, ambulance service in the Helena Valley planning area is provided from Saint Peter's Hospital and Ambulance Service located on the southeast side of Helena. Due to distances across the area, response times can vary. Response times are also affected by traffic congestion in the vicinity of the hospital, substandard road conditions in some areas, and incomplete posting of road names and addresses in the rural areas.

Emergency medical response is available from most of the local volunteer fire departments. A major component of the West Helena Valley Fire Dept. dispatches are emergency medical response. Other fire companies with the ability to be first responders are Baxendale, East Valley, Lakeside, Eastgate, East Helena, and Helena. These companies can respond and provide emergency medical service on-site, but they are not authorized to transport victims. Due to distance from the hospital and access conditions, such service by the fire companies is essential to improve response time and the associated level of service.

Water Supply

Outside the municipal water service areas of Helena and East Helena, the population of the planning area relies upon groundwater as a drinking water supply. The major source of groundwater in the Helena Valley is the Valley-fill Alluvial Aquifer. Beyond the limits of this aquifer, water supplies are obtained from bedrock aquifer systems, or small alluvial aquifer systems associated with stream courses.

There are more than 50 public or community water facilities located in the planning area. The major facilities are the Cities of Helena and East Helena that serve about 60 percent of the population. Other systems serve the major subdivision areas of Treasure State Acres, Tenmile Creek Estates, Pleasant Valley, Forestvale North and South, Ranchview Estates, Townview Estates, Mountain Heritage, Leisure Village, Homestead Valley, Eastgate Village and La Casa Grande. Several smaller subdivisions and mobile home parks are also served by central systems. These subdivision systems are governed by various local bodies such as homeowner associations, water user associations, or water districts. The MT Department of Environmental Quality has regulatory control over the systems and requires periodic sampling and reporting. The provision of central water systems can provide opportunities for higher density land use patterns. Wellhead protection for these water supplies is also an issue of concern.

Water supply for the lower density suburban and rural development is generally provided by individual on-site wells. Current design standards require minimum well

depths, well production and separations. However, there is no analysis of cumulative effects of development on the quantity or quality of the water supply.

There are several locations in the West Helena Valley where older subdivision development provided for individual wells and/or individual wastewater treatment systems on small lots, where wells are located in a shallow aquifer zone, and where soils have some constraints for treatment of effluent. These locations may have a higher potential for contamination of water supplies from domestic uses; increased nitrate levels have been measured and monitoring continues by the Water Quality Protection District.

The City of Helena utilizes several water resources to supply the daily needs of the community. The principal resources are the Tenmile Creek watershed, Chessman and Scott Reservoirs and the Tenmile Water Treatment Plant (located about eight miles west of the City); this system produces eight mgd, or about 90 percent of the average daily use and 60 percent of the maximum daily use. The other principal resource is the Missouri River, which is used to meet peak demands in the summer. The Missouri River Water Treatment Plant processes four mgd, or about 30 percent of the maximum daily use; however, this facility is in poor condition.

The City of Helena Water Master Plan was updated in 1997. The demand projections are based on increased population and some expansion of the City water service area, resulting in a maximum day demand of 18 mgd in year 2020. A principal direction of this plan was to investigate the development of the City's groundwater reservation of the Helena Valley-fill alluvial aquifer. This was determined to be a more cost-efficient option for meeting the projected needs of the municipality; the other principal option was reconstruction of the Missouri River Water Treatment Plant and continued use of surface water. The first phase of this effort has been initiated and one test well has been drilled.

Other aspects of the Plan include improvements in the distribution system, a water conservation element, and construction of an eastside reservoir that would expand the potential service area on the east side of the community. (It is worth noting that Lewis and Clark County as a whole has a Drought Task Force working on water conservation issues.)

The City of East Helena utilizes two sources of water to meet its needs. A collection gallery located on McClellan Creek (about three miles south of the City) captures surface/groundwater that is piped into the community system. This system meets 100 percent of the average daily demand (0.62 mgd) of the community. A well field located north of the City along Wylie Drive produces groundwater from the Valley-fill alluvial aquifer. This system provides supplemental water to meet the maximum daily demand of 1.43 mgd. The City completed a Water Master Plan in 1995 that identified storage capacity constraints (related to maintaining fire flows) that limit its ability to expand its water service area. The City is currently considering replacement, relocation, and

expansion of its storage facility to meet community needs. The City is also examining options for metering water use.

Sewage Disposal

Wastewater treatment in the planning area is provided by central treatment systems and individual on-site treatment systems. The City of Helena operates a mechanical treatment plant located at the north edge of the City, which treats the municipal wastewater, about 60 percent of the entire area's wastewater. The City of Helena completed expansion and redesign of the wastewater treatment plant in 2001, including the addition of collection distribution capabilities. There are seven lagoon systems located in the Helena Valley that treat about 10 percent of the wastewater generated in the area. The remaining 30 percent of wastewater is treated through individual on-site treatment systems.

Lewis and Clark County adopted the Helena Area Wastewater Treatment Facility Plan in 1998, which addresses wastewater issues in the Helena Valley (this study is adjunct to the City of Helena Wastewater Facility Plan). The Plan recommends continued groundwater monitoring to identify contamination related to wastewater, upgrades or replacement of poorly performing treatment systems (lagoons and individual systems), and development or expansion of central systems (where feasible) to accommodate additional development.

The City of East Helena operates a central collection system and a three-cell aerated lagoon facility located about a quarter mile north of the City. The treatment facility was constructed in 1982, has a design capacity of 0.63 mgd, is in good condition and has a permit for discharge into Prickly Pear Creek. Operational improvements are being pursued.

Fort Harrison formerly operated a two-cell lagoon facility located on Head Lane near Sevenmile Creek. This facility experienced leakage problems, prompting the Fort to investigate other treatment alternatives. Fort Harrison opted to abandon the lagoons, and sewer service is now provided by City sewer lines.

Areas of higher density development served by individual on-site wastewater treatment systems include the following: Forestvale Subdivision, Big Sky Subdivision, Homestead Valley Subdivision, Sunny Lane Subdivision, La Casa Grande Subdivision, Motsiff Road, and portions of the westside of Helena.

Solid Waste

The majority of the Helena Valley planning area is included in Scratchgravel Landfill District. The purpose of the District is to provide for landfill facilities for disposal of solid waste. The District operates a Class 2 landfill located in the northeast Helena Valley. This facility was licensed in 1994 and has an available life of 47 years, based upon projections. The landfill is operated by the County Public Works Department, overseen by the Scratchgravel Solid Waste Board and is governed by the Board of County Commissioners. The landfill also serves as the repository for solid waste for the City of Helena and the City of East Helena, pursuant to inter-local agreements. The landfill is not open to the public.

All local waste received at the landfill is routed through the City of Helena transfer station for the purpose of controlling the deposit of hazardous or other wastes that do not conform with the Class 2 license and to reduce traffic to the landfill. All real property with improvements valued over \$5,000 and all mobile homes within the District are assessed an annual fee. The current assessment is \$81.60/ year for the transfer station and landfill services. A partial fee may be assessed for properties documented as seasonal occupancies; commercial rates are currently under consideration.

The landfill is also permitted to receive regional waste from Broadwater and Jefferson Counties. Currently, only waste from northern Jefferson County is received on a contractual basis.

There is no governmental collection of solid waste outside of the two municipalities in the planning area. Landowners either haul their own waste to the transfer station, or contract with a local collection firm for such service.

Recycling is conducted through a partnership between the City of Helena and Lewis and Clark County. Each ton of waste received at the transfer station is assessed a surcharge to fund a recycling program. Commodities accepted for recycling include aluminum and steel cans, glass, certain plastics, newsprint, magazines, corrugated cardboard, white goods, tires, batteries, waste oil, antifreeze, and yard and wood wastes.

There were 4,116 tons of such materials diverted from the landfill in FY-97, constituting approximately 10 percent of the total waste stream. Most commodities are processed through local private sector recycles. Glass is processed at a local cement company and waste oil is used as heating fuel at the City Shop.

Municipal and County green waste composting has been available since 1994 through a private contractor. Such wastes may be separated at the transfer station and transported to the compost facility near the landfill. The City of Helena will soon issue a request for proposals to address bio composting of green waste and municipal sewage sludge (which is currently land filled).

There is a need for a Class 3 or Class 4 landfill in the planning area. Due to the lack of such a facility, demolition, construction, and other qualifying wastes are disposed of at the Scratchgravel Class 2 site, thereby reducing its capacity and life. Such a facility would also provide a more economical means for disposal of such wastes.

Utilities

Electrical power is generated in the planning area by Pennsylvania Power and Light (PPL). Hauser Dam, located on the Missouri River in the northeast corner of the area, was constructed in 1911. This is a run-of-the-river hydropower facility with a generating capacity of 16.5 MW; flows are governed by operations at Canyon Ferry Dam, which is controlled by the U.S. Bureau of Reclamation. The FERC license (50 years) for the Hauser Dam facility is up for renewal and the Montana Power Company (MPC) applied for a new license, which was approved. PPL has purchased the generating facilities but MPC retained its distribution system, until it was taken over by NorthWestern Energy in 2002. The City of Helena and Lewis and Clark County are investigating the potential for purchase of this and other hydropower facilities on the Missouri River proposed for sale. The electrical demands of the area exceed the available locally generated capacity; additional power resources are imported from BPA and other sources.

Several major transmission lines cross the eastern half of the area. These range from 69-100 KV, and are operated by NorthWestern Energy or Avista. Generally, there are no major capacity constraints in the system; however, some rural locations may have specific distribution constraints. The recent growth in the 1990s and related demand has been accommodated by the system, although extensions for new services can get backlogged at times.

Telephone services in the area are provided by a number of entities. US West (now Qwest) has historically been the principal provider and maintains a network of lines (principally underground). The recent growth in the 1990's and related demand has been accommodated by the system; however, US West/Qwest experienced significant delays in providing extensions for new services. Since deregulation of the industry and advancements in fiber optic and cellular communications technology, other providers are also servicing the area. Several communications towers have been sited in the area, some of which have been controversial due to visual and/or other impacts.

Natural gas is also distributed in the planning area by NorthWestern Energy. The extent of the distribution system is generally confined to the Helena Valley. Some major supply lines and pump stations were installed in the Valley in the 1990s to increase the service area and the capacity of the distribution system.

The Yellowstone Pipeline maintains three major petroleum product transmission lines in the planning area. These are related to the bulk storage facility located at the east edge

of the City of Helena. A rupture and spill occurred in the East Valley in the 1970s, the effects of which have been mitigated.

Education

Until recently, there were four elementary school districts within the planning area: District #1 (Helena), District #2 (Kessler), District #4 (Canyon Creek), and District #9 (East Helena). Due to growing student population and limited expansion, District 2 was annexed into District #1 in July, 2000. Similar circumstances in the 1980s led to the annexation of a suburban school district (#3) into District #1, providing more flexibility in the use of facilities. All the districts are included in the Helena High School District.

As of February, 2002, district #1 had the largest student population (5,079) of all the elementary districts in the County. It serves the majority of the City of Helena and the majority of the Helena Valley. It operates 11 elementary schools, each providing Kindergarten through 5th Grade curricula. Three schools are located in the Helena Valley: Warren School is centrally located in the Valley and has a current census of 274 students; Jim Darcy School is located in the northwest Valley and has a current census of 220 students; Rossiter School is located in the west Valley and has a current census of 485 students.

The District also operates two middle schools, both of which are located in the City of Helena. These schools provide Grades 6th-8th curricula and currently serve 1,741 students.

The Kessler Elementary School (the old District 2) is located on the west edge of the Helena urban area. This facility provides for Kindergarten through 6th Grade curricula, and currently serves 310 students. Students in 7th and 8th Grades attend middle school in District #1 on a tuition basis.

The southern portion of District #4 is located in the northwest corner of the Helena planning area. The District operates the Canyon Creek School that provides K-5 curricula and serves 4 students at this time. The students from the Birdseye area attend classes in either District #2 or #1 on a tuition basis.

District #9 operates two elementary schools and one middle school in the East Helena area. Eastgate School is located in the County and provides K-5th curricula and serves approximately 356 students. The District recently purchased a site east of and adjacent to East Helena and has requested annexation of the site for municipal services. The Helena Valley Middle School was built on that site.

The high school district of District #1 covers the entire planning area; it operates 2 high schools in Helena, which presently provide 9th-12th grade curricula and serve approximately 3,090 students. Each school is undergoing expansion to accommodate anticipated student population.

School transportation is an important factor in the planning area. State statutes require districts to provide transportation for any students located more than three miles from a school facility. This policy was established in the 1920s in an effort to provide equal educational opportunities for agricultural-based students. The suburban land use patterns established in the planning area during the last three decades has created an increased transportation burden. Where local elementary facilities reach capacity, additional students are bused into schools that are below capacity.

Analysis of Existing Land Use

Residential Development Patterns

Over the last ten years, the bulk of residential development in Lewis and Clark County has occurred in the Helena Valley. During the last fourteen years the number of parcels created through subdivision review has increased substantially. In 1986, 94 lots were granted through subdivision review (via either preliminary or final plat approval) in the County. By 2002, that number increased to 685. Variations over the period reflect economic conditions as well as population growth. Additionally, unreviewed land divisions created 2020 lots between 1986 and 1999 (last year data is available). Dramatic variations occurred in several years, due to anticipated legislative changes.

Residential development in the Valley is a mixture of housing styles that includes both manufactured homes and on-site built construction. Most of the development consists of single family dwellings. A majority of the residential lots located outside the City of Helena are served by individual wells and on-site wastewater treatment systems. According to the City-County Environmental Health Department, since the inception of the County Wastewater Treatment Regulations, approximately 5,100 on-site wastewater treatment systems have been permitted and completed within the planning area.

Examination of a population density and parcel density map of the Helena Valley indicates that four areas have experienced the most residential growth outside the City of Helena (see Appendix E for Helena Valley maps). The areas are described as follows:

- The East Valley, bound by York Road on the north, East Helena on the south, Lake Helena Drive on the east, and Prickly Pear Creek on the west.
- The West Valley, bound by Lincoln Road on the north, the City of Helena on the south, US Interstate 15 on the east, and the Scratchgravel Hills on the west.

- The northwest Helena Valley, bound by the Helena Valley Irrigation canal and Silver Creek to the south, Green Meadow Drive on the west, and Lincoln Road on the north.
- Lands adjacent to the City of Helena, particularly those to the north and east of the City limits.

Currently the City of Helena is reconsidering its annexation policy. Except for the annexation of over 50 acres of wholly surrounded area in 2001, the City has not conducted a major annexation of lands outside the city limits for the last ten years. The City has re-examined its annexation policy, and identified the following priorities:

- Enforcing existing policies for annexation with the extension of water and wastewater services.
- The annexation of wholly surrounded areas.
- The annexation of unincorporated properties now served by City water and wastewater services.
- Assessing and promoting annexation of unincorporated fringe areas.

The City and County have cooperatively identified areas outside the city limits that might be suitable for annexation. The East Side of Helena has been one of the areas of particular focus by the City and County. The East Side area being considered is located east of Saddle Drive and I-15, from Custer Avenue/Canyon Ferry Road on the north to the Jefferson County line on the south. Helena's Eastside was selected as an area for potential infrastructure extension for several reasons. First, there appears to be substantial acreage of undeveloped land suitable for urban development. Second, infrastructure needed for urban-scale development is lacking. Third, it appears that it would be cost effective to provide public infrastructure due to the area's access to existing infrastructure systems.

Prior to future development of contiguous areas, the City and the County should jointly identify design standards that would be incorporated into new development.

Commercial Development Patterns

Commercial development within the planning area is primarily concentrated within and adjacent to the City of Helena. The area adjacent to North Montana Avenue has seen the most retail business expansion. These businesses range from the development of large retail facilities, restaurants and banks near the intersection of Montana and Custer, to a grocery store and gas station at the intersection of North Montana and Lincoln Road. There are commercial developments in and adjacent to the City of East Helena. These are primarily small retail and service establishments, which include but are not limited to gas stations/convenience stores, a grocery store, bars, and restaurants.

Employment payrolls are indicative of the existing commercial base the planning area has. According to 1998 data, government accounts for 30 percent of the jobs in the County. The service sector is second, capturing 27 percent, while retail occupies the third position, at 18 percent. The relative stability of the government sector helps cushion the Helena area against rapid declines in employment, but also makes rapid growth less likely during times of expansion.

Helena has seen an expansion in regional health care services, including a new cancer treatment facility at St. Peters Hospital, the construction of retirement complexes, and extended care facilities near the hospital. The fields of finance, insurance and real estate have also experienced modest growth in recent years (source: *Guide to Helena Living & Business, Helena Chamber of Commerce, 2000*).

Industrial Development Patterns

The principal industrial developments within the planning area include the ASARCO smelting facility at East Helena (closed in 2001), the petroleum product bulk storage facility just east of Helena (and related transmission lines), Hauser Dam and hydroelectric facilities, rail lines and switching yard, several gravel quarry operations, and several wastewater treatment facilities.

Parks and Open Spaces

There is a need in the planning area for more parks and open spaces. Currently, Lewis and Clark County holds fee title to 30 sites that were dedicated for use as parks. These 30 sites total 257 acres. Only seven of these sites are maintained. The maintenance is performed by various organizations and neighborhood groups.

The Comprehensive Parks, Recreation and Open Space Plan identifies four roles that the County should pursue. The roles are as follows: Acquire and develop four large multi-use parks in the Helena Valley; assist outlying communities in forming park districts; discontinue the practice of acquiring small neighborhood parks; and act as a grant agency to distribute money to homeowner groups to develop parks. The County is investigating the sale of non-utilized parkland in order to assist in funding the proposed multi-use parks. The County is also considering trading non-useable land or using some of the profits realized from the sale to purchase wetland/riparian areas.

Spring Meadow Lake State Park is the one State-owned park within the planning area. The park is managed by the Department of Fish, Wildlife and Parks (FWP). FWP also manages the Lake Helena Wildlife Management Area along the northwest corner of the lake; this site includes both open space for recreation and high quality wildlife habitat. The United States Bureau of Reclamation operates and maintains the Helena

Regulating Reservoir, which includes a large amount of open space that can be utilized for recreation and wildlife habitat.

Population Growth and Future Land Use Needs

As discussed in more detail in chapter II, the Helena Valley is the primary population center and economic hub for Lewis and Clark County. According to the most recent U.S. Census, the County's population was 55,716 persons in 2000, more than double the population in 1950 (24,540). The rate of population growth in the County—like the Valley--has fluctuated significantly over the years, varying with the economy and other factors, as listed below:

- 1950s: 14 percent increase
- 1960s: 19 percent increase
- 1970s: 29 percent increase
- 1980s: 10 percent increase
- 1990s: 17 percent increase

The last decade represents a rebound from the County's relatively slow population and economic growth during the 1980s, a period of slow growth in the state as a whole. The first half of the 1990s saw a rapid, 11 percent growth in the County's population, while the second five-year period experienced a 6 percent increase. If the growth rate experienced during the 1990s continues in the present decade, Lewis and Clark County will have a population of approximately 65,000 in the year 2010.

Because the Helena Valley represents more than 85 percent of the overall County population, it tends to drive demographic and economic trends in the County as a whole. Increasingly, much of the growth has been in unincorporated portions of the Valley, outside the boundaries of Helena and East Helena. For example, in the five Census Designated Places (CDPs) in the Valley lying outside the municipal boundaries of Helena and East Helena, the population increased from 17,113 to 21,681 between 1990 and 2000, a 27 percent increase. Conversely, the population of Helena—East Helena during this period grew from 26,147 to 27,422, a 5 percent increase.

The Helena Valley has historically been economically stable and employment data bears this out. Between 1980 and 2000, the number of employed individuals in the County's annual average civilian labor force grew from 23,474 to 27,251, an increase of 16 percent. The relative labor force stability in the Helena Valley is partly due to the large number of government jobs in the area, which tend not to fluctuate as much as private sector positions. The largest job category is the service sector, which—when combined with government employment—accounts for more than half the jobs in the County. Employment forecasts suggest that the service and retail trade sectors, in particular, will continue to grow at a robust rate during the next decade in Lewis and Clark County.

If the forecasts for the County are accurate, the Helena Valley Planning Area will likely experience substantial growth in the coming decades. To serve an increasing population, there will be an on-going need for new housing in the greater Helena Valley. The following sections discuss those areas of the Valley with the development and infrastructure levels that will likely make them the most compatible with expanded residential development.

Helena Valley Future Land Use

Future land use in the Helena Valley planning area will be guided by the Future Land Use Plan map and policies contained in this section of the Growth Policy (see Appendix E). The Future Land Use Plan was developed by the Lewis and Clark County Comprehensive Plan Citizens Advisory Group (CAG).

The proposed future land use plan acknowledges some existing development patterns and infrastructure have been committed for development, though they may have some environmental, service, or other constraints. The Future Land Use Plan also reflects the community interest in preserving natural resource values, mitigating environmental issues, preserving public investments in infrastructure, and providing for efficient, cost-effective expansion of the community.

The major facilities plans for the Cities of Helena, East Helena and the unincorporated Helena Valley were instrumental documents in the designation of Transitional Areas where land uses could efficiently utilize existing and planned infrastructure. These plans address wastewater facilities, water supplies, transportation, parks, recreation, and open space.

Other significant documents contributing to the Future Land Use Plan include the following: groundwater aquifer studies, water quality studies, wildlife and winter range mapping, species of special concern mapping, hazards mapping (floodplains, wildfire, seismic, etc.), parcel and land use mapping, agricultural lands information, cultural resource mapping, slope analyses, and public lands mapping.

Principal stream corridors were identified as having multiple community values, including watershed and floodplain management, wildlife and fisheries (and related habitat), recreation, open space, and irrigation supplies.

Urban Areas

Three Urban Areas adjacent to the City of Helena were identified as compatible with planned municipal infrastructure within the next 20 years. Based on the current City of Helena Wastewater Treatment Plan and Water Master Plan, these areas will eventually

be annexed to the City of Helena, and development will need to meet City development standards. It is anticipated that these areas could accommodate high-density development, with an emphasis on infill and a range of uses.

Most of the area within this “Urban” designation was previously included within the Class I Preferred Development Areas of the 1989 County Comprehensive Plan. Possible urban development areas adjacent to East Helena, where its municipal infrastructure could be extended, have not been identified.

East Helena policies on service extension and annexation have been fairly conservative due to deficiencies in infrastructure; however, recent improvements related to its capital facilities plans may alter this policy. It would be important to pursue a specific dialogue with the governing body of East Helena before such areas could be effectively delineated.

Area A: The urban area on the west side of Helena was identified due to anticipated needs for municipal sewer; existing septic systems are reaching the end of their useful life, and availability of suitable on-site treatment areas is limited. One special district is already served by the City wastewater system, the result of threats to public health. Infill residential development could increase density and efficiency of service provision. Steep slopes to the south and west, and the Ten-Mile Creek corridor to the north limit expansion of the area.

City of Helena water supply lines traverse this area and have provided water supply to some development. The street network in this area is well integrated with the City of Helena, due to old plats established prior to incorporation. However, the condition of streets ranges from adequate to poor. In addition, the City of Helena Fire Department currently provides fire protection service to the area on a contractual basis.

Most of the area south of Euclid Avenue is residentially zoned, except for a commercial strip adjacent to Euclid Avenue. Though several undeveloped tracts exist, their efficient development is constrained by limited water supply and wastewater treatment areas. The area north of Euclid Avenue is a mixture of undeveloped tracts, residential development, mobile home parks, and commercial and light-manufacturing uses. It is not zoned at this time. Pursuant to requests from landowners, incremental annexations to the City have occurred over time. This process may inhibit efficient expansion of the municipal infrastructure and has resulted in confusion over jurisdictional boundaries and related service provision.

The designation of the Westside area as an Urban Development Area anticipates the planned extension of central services to address the following issues: public health and safety concerns, deficiencies in service provision, opportunities of existing infrastructure, efficient land utilization, and creation of logical jurisdictional boundaries. Due to existing circumstances, it is anticipated that special provisions for phasing improvements will be necessary.

Area B: The area southeast of Helena (on both sides of the Interstate) is presently used for rangeland and dry land farming, has few environmental constraints, and is within the City of Helena planned service for municipal water and sewer. Residential uses and related commercial and public facilities are anticipated. The City of Helena has laid out a development concept for portions of Area B located south of Highway 12 and east of Interstate 15.

The City of Helena has constructed a water storage tank that will provide adequate supply and pressure for this area, as identified in the Water Master Plan. Future transportation linkages will need to be developed to serve this area. The Wastewater Treatment Facility Plan identifies available capacity to serve this area, with some improvements to the collection system.

Several transportation links are identified in the Transportation Plan, including the eastward extension of Broadway (under I-15) to Highway 12 and a southward extension of Colonial Drive to Montana City. Additional future transportation linkages will need to be delineated, including an I-15 interchange or overpass (Beltview, Saddle) and eastward extensions to Highway 12. As of September 2003, an I-15 study is in the final stages of completion, with a record of decision (ROD) expected in the next few months. The results will identify potential transportation links, funding, and timelines.

The Parks Plan identifies an open space area and trail loop (East Ridge Loop) west of the Interstate and a linear trail corridor (East Ridge-Prickly Pear) extending northeastward to Prickly Pear Creek.

The area south of the Helena Airport and north of Highway 12 is considered to have high value for commercial/light manufacturing and industrial uses due to rail access, highway and air transportation alternatives and existing similar development. The area has some City of Helena infrastructure, including water supply lines, wastewater collection lines, and a stormwater collection system. An arterial linkage between Highway 12 and the Deport area is identified in the Transportation Plan.

The designation of these eastside areas as Urban Development Areas anticipates the planned extension of central services to address the following issues: traffic congestion and safety concerns; opportunities of existing infrastructure and its efficient extension; efficient land utilization in an area with limited environmental constraints; and creation of new mixed-use neighborhoods. Due to existing circumstances, it is anticipated that it

will be necessary to establish special provisions to address rural fire district obligations and to phase in improvements.

Area C: An area north of Helena (within one mile, roughly between I-15 and Green Meadow Drive) was identified as an Urban Development Area due to present development and annexation trends. This area has few environmental constraints, and is within City of Helena planned service areas for water supply and wastewater treatment.

A major wastewater transmission line has been installed in the western portion of this area, and sewer service has been extended to Fort Harrison. The area is located within the Urban limits of the Helena Area Transportation Plan, which identifies several improvements. Future transportation linkages will need to be developed. A major study analyzing potential infrastructure improvements on the West Side was completed in 2002.

The eastern portion of the area is subject to the Noise Influence Area of the Helena Regional Airport. Significant commercial development has occurred along North Montana Avenue, which has been incrementally annexed into the City of Helena. This lot-by-lot extension of services has associated problems of integrating development, and the design and installation of infrastructure. The commercial emphasis has been auto-oriented, contributing to increased traffic congestion. A phased major residential area is planned and additional open land area is available for similar development

The designation of this northside area as an Urban Development area anticipates the planned extension of central services and transportation improvements to address the following issues: traffic congestion and safety concerns, opportunities of existing infrastructure and its efficient extension, efficient land utilizations in an area with limited environmental constraints, integration of individual developments, and the logical extension of jurisdiction boundaries. Due to existing circumstances, it is anticipated that special provisions to address rural fire district obligations will be necessary. It is recognized that this area has become a community/regional commercial area and will continue as such.

Transitional Areas

Three Transitional Areas are identified. These areas contain existing low-density development and community services (schools, parks, fire protection, neighborhood, commercial, etc.) and could accommodate additional infill development.

Public investment would not be focused in these areas in the near term. To support future public investment in utilities and service provision, interim design and service provision strategies would be utilized, until a time when urban level services are

indicated in these areas. Existing utility systems and roadways should be upgraded and expanded where feasible. Future transportation linkages will need to be developed to serve these areas.

Sub-area plans should be prepared for each of the three Transitional Areas to plan for future Valley Centers which could serve many of the daily shopping and service needs of residents within these areas. The anticipated overall development density could average 2-3 housing units to the acre upon buildup.

Area D: This area is located in the West Helena Valley. It has undeveloped areas with potential for infill development, particularly if a decision is made to build the Forestvale Road/I-15 interchange. However, this area is located beyond a reasonable service boundary for the City of Helena within their 20 year planning horizon.

Tenmile Creek is the southern boundary of the area and has been identified as a corridor for flooding, riparian habitat and a linear park/trail system. The north and west boundaries reflect agricultural lands, low-density residential developments (ranchettes), and/or public lands. The east boundary is Interstate 15, beyond, which are principally agricultural, lands.

Some environmental constraints exist in the area (e.g., 100 year floodplain, groundwater quality issues), which will need to be acknowledged. Wastewater treatment alternatives will be the principal factor in determination of build-out density. The alluvial aquifer provides available groundwater for additional development, but its quality needs to be preserved.

North Montana Avenue traverses the area and provides connection to the City of Helena. Safety/capacity improvements for the southern section are scheduled. If the Forestvale Road/I-15 interchange is constructed, additional commercial development is expected in that vicinity. Related traffic generation would require other transportation improvements. The area within the West Valley Fire District, including a new station, is centrally located on Forestvale Road. Rossiter Elementary School is located within the area. Portions of the area are zoned for agricultural, residential, and commercial uses. The Parks, Recreation, and Open Space Plan identifies Sierra Park (at Rossiter School) as a community park site.

The designation of this West Valley area as a Transitional Area recognizes the existing development pattern and anticipates the need for upgrading and extension of infrastructure to accommodate additional infill development. Planning will need to address the following issues: traffic congestion and safety concerns, multiple modes of transportation, opportunities of existing infrastructure, and its efficient extension, efficient land utilization, environmental constraints in the 100 year floodplains, and protection of water quality.

Area E: This area is located in the northwest Helena Valley and is bordered by the major irrigation canal and Silver Creek on the south, and Green Meadow Drive on the west. These boundaries reflect agricultural lands, low-density residential developments (ranchettes) and/or floodplain. The northern limit of this area is approximately one mile north of Lincoln Road and is representative of the boundary between the productive alluvial aquifer to the south and limited bedrock aquifer to the north.

The area principally contains residential development of varying densities. Some non-residential development is also present. A portion of the area is zoned for residential use. The area is within the West Helena Valley Fire District and a station is located in the northeast corner of the area on North Montana Avenue. Jim Darcy Elementary School and a commercial center are located just east of the area on Lincoln Road.

The principal road network has been established, but additional linkages will need to be established to integrate the area and provide for infill development of interior areas. Most of the road network is gravel-surfaced and pavement improvements will be necessary to accommodate additional development.

Water availability is a critical issue in the accommodation of additional development. As long as the alluvial aquifer is recharged by Silver Creek, current irrigation practices, and bedrock sources, adequate supplies should be available to serve additional development. Since water availability is a constraint (as evidenced in part by the appearance of dry wells), additional development to the north must be limited unless or until an alternate water supply is established.

A study is currently under way to analyze the availability of groundwater in this area. Depending on the results, it may no longer be appropriate to designate this area a Transitional Area. A draft Environmental Assessment completed by the Department of Natural Resources and Conservation (DNRC) in response to a petition to establish a controlled groundwater area in the North Hills (which was established in 2002) stated the following:

The amount of groundwater development that can be sustained in the North Hills depends on the properties and boundaries of the bedrock aquifer, the pattern and amount of recharge, and the pattern of groundwater development. Variable and often unpredictable hydrogeologic conditions within the North Hills, in addition to variable well construction, result in considerable differences in depths and yields of wells, often over relatively short distances. The combination of these factors needs to be considered in order to assess the potential for future groundwater development (DNRC, 2002).

Designation of this Northwest Valley as a Transitional Area recognizes the existing development patterns and anticipates the need for upgrading and extension of infrastructure to accommodate additional infill development. Future planning will need to address the following issues: transportation network and road surface conditions; multiple modes of transportation; opportunities of existing infrastructure and its efficient extension; efficient land utilization; protection of the groundwater resources; and establishment of a community park facility.

The Parks, Recreation, and Open Space Plan identifies a community park site for this general area.

Area F: The southeast Helena Valley is bordered by York Road on the north. North of York Road irrigated agricultural lands, possible environmental constraints and natural resource values may limit development potential. The eastern boundary approximates the boundary between rural-residential/suburban development and agricultural lands to the east. The southern boundary is Highway 12 West, south of which lie lands with significant environmental constraints to development related to heavy metals. The western boundary is established by the Prickly Pear Creek corridor and irrigated agricultural lands.

The area is characterized by a range of residential development (urban density, mobile home parks, ranchette density), a small commercial hub (Wylie Drive and Canyon Ferry Road), two gravel resource extraction operations, designated 100-year floodplains, and irrigation facilities. Portions of the area are zoned for residential and ranchette uses, but a majority of the area is not zoned.

The principal road network has been established, but additional linkages would need to be established to integrate the area and provide for infill development of interior areas. Much of the road network is gravel-surfaced and pavement improvements will be necessary to accommodate additional development.

The area is served by East Valley Fire District and Eastgate Fire District. Three stations are spaced within the area. Two elementary schools (Warren and Eastgate) are located within the area. The Parks, Recreation and Open Space Plan identifies two community parks within this general area.

High-density developments are served by central water supply and wastewater treatment system. Moderate and low-density developments are served by individual systems. The alluvial aquifer provides available groundwater for additional development, but its quality needs to be preserved. Elevated levels of nitrate in the groundwater have been identified in the southern portion of the area. There may be a correlation with the concentration of on-site wastewater treatment systems.

The designation of the Southeast Valley area as a Transitional Area recognizes the existing development pattern and anticipates the need for upgrading and extending infrastructure to accommodate additional infill development. Planning will need to address the following issues: transportation network and road surface conditions, multiple modes of transportation, opportunities of existing infrastructure and its efficient extension, efficient land utilization, environmental constraints (e.g., floodplain, metals, water quality, major transmission corridors), protection of groundwater resources, and establishment of a community park facility.

Special Use Areas

Two Special Use Areas--Fort Harrison and the ASARCO Smelting Facility—are identified on the Future Land Use Map (shown in yellow circles). These areas are so unique that they require their own special master plan studies. Analyzing these areas in detail for their development potential is beyond the scope of the Growth Policy update.

Fort Harrison Federal Community: The Fort Harrison Federal Community is located about two miles west of Helena. It serves the National Guard and VA Hospital, and is undergoing significant expansion. It is presently served by municipal water and recently approved for service by municipal sewer. The presence of these infrastructure facilities could influence additional development in the area, however, there are also other natural resource values and physical conditions (e.g., high groundwater, wetlands, floodplain, irrigated agricultural lands, low density zoning, etc.) that need to be considered.

ASARCO Smelting Facility: The ASARCO smelting facility and Superfund site in East Helena has affected environmental quality and land uses in the vicinity. Soils and groundwater contamination will continue to influence the types of land uses that may occur, including possible types of mitigation. The ASARCO plant suspended operations in 2001.

Balance of Helena Valley Planning Area

Development outside of identified Urban and Transitional Areas needs to be self-sufficient, served by on-site wells, individual septic systems, and/or community well and sewer systems that serve individual and/or adjacent subdivisions, and may include private roadways. Development density may be dependent upon the following: the level of service that could be provided by the developer, the environmental constraints identified on the property, and the design standards in place at the time of review.

Effect on Housing Needs

The Preferred Land Use Plan for the Helena Valley would guide housing development to Urban Areas that include neighborhood-focused centers where services are more accessible. Additionally, these centers could eventually be served by public transportation. Housing developed in Urban Areas would be required to meet city standards for roads and service provision, so it could be annexed at some point in the future without deficiencies. While the initial cost for development may be higher than what could be constructed in these areas today, the long term cost of service provision should be less and the overall level of service higher.

Housing development outside of Urban Areas and Transitional Areas would need to be self-sufficient, meaning that it would need to provide and maintain its own private roadway system as needed to access the public roadway network, and would need to provide its own on-site water and sewer system.

Affordable and particularly assisted/subsidized housing will be most feasible in the incorporated cities where higher densities and higher level of service is available. In the unincorporated portions of the Helena Valley, affordable and assisted housing will be most feasible in the Urban Areas and Transitional Areas, where the overall level of service is higher and services, including public transit are feasible. The higher densities permitted in these areas would also be supportive of affordable housing development, and may act as an incentive to the developer (note: see definition of affordable housing in glossary).

Effect on Employment Trends

The adoption of Transitional Areas with their valley centers would provide economic opportunity outside of incorporated areas. The increased residential development in Transitional Areas would, over time, support new retail, commercial, and service business. Increased opportunity in outlying areas may result in a slightly reduced new business potential in the incorporated cities. There could be related positive impacts on the transportation system as people in outlying areas may not need to drive in to the cities for all shopping/service errands, and there will be nearby employment opportunities for those who live outside the city limits.

Effect on Natural Resources

Guiding a greater share of future development into locations where higher density and intensity of land uses is planned for and can be accommodated will leave a larger portion of the rural area with less demand for development and greater retention of natural resource lands. The establishment of the Urban Areas and Transitional Areas took into consideration the location of most valuable natural resources, natural systems, and habitat and then guides development away from these areas; there will be an on-going need to identify and prioritize key resources as development continues.

While the Land Use Plan does not prohibit development outside of Urban Areas and Transitional Areas, it does identify constraints on that development. In addition, clustering provisions may provide another incentive to leave large tracts of land in a natural state or agricultural use while still accommodating some development of these rural lands.

Effects on Agricultural Land

The amount of land being utilized for agriculture in Lewis and Clark County will decrease, as residential development continues. The majority of the growth and development in the County is occurring in the Helena Valley. According to the most recent Montana Census of Agriculture, the amount of acreage in farms in Lewis and Clark County decreased 7 percent between 1992 to 1997, from 883, 479 acres to 822,066 acres. The average farm size in the County decreased 19 percent during the same period, from 2,017 acres to 1,638, while the number of full-time farms actually increased from 207 in 1992 to 211 in 1997. (Source: *USDA, Montana Agricultural Statistics Service, 1997.*)

The loss of agricultural lands has negative and positive aspects. As agricultural lands are developed, agricultural values are not the only thing lost. Farms and ranches provide large amounts of open space and wildlife habitat, and agricultural lands contain wetlands and other habitat types that can reduce runoff and therefore reduce flooding. Residents in agricultural lands typically require fewer services than those who live in residential areas. Thus the conservation of agricultural lands can help to minimize public expenditures on services.

Agricultural lands are attractive for development, because they are relatively free of environmental constraints. In general, agricultural lands are level and conducive to the construction of buildings and roads. Also, agricultural soils are generally suited to establishing on-site water wells and on-site wastewater treatment systems than other types of soils.

Analysis of Facility Impacts

Effect on Ability to Provide Capital Facilities

The overall resources available to provide capital facilities are not greatly affected by the Preferred Land Use Plan for the Helena Valley. Essentially, there is limited capital available in the County budget to provide services to residents of unincorporated Lewis and Clark County. The Land Use Plan does aim to focus the investment of this limited capital in such a way that the greatest potential number of county residents can receive the greatest level of service.

Investment of county capital facility improvements should be coordinated with the City of Helena by identifying projects within Urban Areas, especially transportation infrastructure. The County and the City can coordinate for service extension/provision for these areas that will eventually be annexed into the City of Helena. Depending upon the nature of County investment and time frame for annexation, an inter-local cost-sharing agreement may be necessary. Any refund to the County could then be utilized for needed improvements in other developing areas of the County.

While the initial investment of County resources would be high in the Urban Areas, over time the investment could be diminished as the City eventually took over responsibility for these areas. County capital improvement investment could shift focus within the Helena Valley to the Transitional Areas to support higher density development and particularly the development of mixed use valley centers.

Outlying areas of the Helena Valley would receive little capital improvement investment dollars, as development in these areas is intended to be self-sufficient and pay its own way. The overall effect of focused capital investment would be improved level of service for a greater number of residents who choose to live within the urban areas and transitional areas, and a lower level of service for those who chose to live in the outlying areas. Citizens who own irrigated property are not currently prohibited from developing their land, if their proposals meet subdivision regulations.

Effect on the Transportation System

The Helena Valley transportation network consists of numerous north-south road corridors, such as North Montana Avenue, McHugh Drive, Green Meadow Drive, Applegate Drive, Wylie Drive, Valley Drive, and Lake Helena Drive. These roads traverse large sections of the Valley and allow relatively unrestricted travel north and south. There is a lack of corresponding east-west routes across the Valley; consequently, many of the Valley residents are limited to using the north-south routes for travel purposes. The most heavily used east-west routes are Lincoln Road, York Road and Canyon Ferry Road. There is a compelling need to establish east-west road corridors to facilitate the efficient movement of traffic within the Valley. Interstate 15 is

the major north-south transportation corridor through the Helena Valley, but it is also a major barrier to east-west transportation.

Transportation routes are identified in the Future Land Use map in red. Those shown in solid lines are included in the Helena Area Transportation Plan Update (1993), or are otherwise identified as a project by the Montana Department of Transportation (MDOT). Those shown in dotted lines are conceptual linkages that would improve access to interior land areas or integrate neighborhood street networks.

Future transportation system improvements would be concentrated in the Urban Areas and Transitional Areas as described for capital facilities in the preceding section. Specific new corridor alignments are proposed to serve these developing areas, and funding should be prioritized for these new corridors. Where possible, roadway development in urban areas would need to meet minimum standards for pavement.

Public transportation routes will need to be planned to serve the emerging Transitional Areas, in addition to roadway improvements. Sub-area plans should consider transit stops as part of the design. Transit service would provide alternatives to single occupancy vehicle travel.

Effect on the Provision of Parks and Open Space

Existing and future planned parks and school locations were criteria considered in establishing the location for Transitional Areas. The Comprehensive Parks, Recreation and Open Space Plan identifies four roles that the County should take. Those roles are as follows: to acquire and develop four large multi-use parks in the Helena Valley, assist outlying communities in forming park districts, discontinue the practice of acquiring small neighborhood parks, act as a grant agency to distribute money to homeowner groups to develop parks, and acquire wetland/riparian areas. Each of the Transitional Areas would include at least one of the large multi-use parks. Public investment in these facilities will be in areas that benefit the greatest number of citizens.

A Description of Implementation Options

The following are recommended actions or strategies to implement the Future Land Use Plan for the Helena Valley planning area.

Develop Sub-area Plans for Each of the Transitional Areas

These sub-area plans would identify the mix of land uses anticipated for each Transitional Area, identify preferred park locations (if not already identified in the Parks

Plan), and identify where new Valley Centers could be located. Capital facility and infrastructure needs could be detailed, and improvements prioritized for funding.

Develop Inter-local Agreements with the City of Helena

Inter-local agreements between the City and County would specify roles, responsibilities, appropriate development design standards, and mechanisms for infrastructure funding.

Work with Existing Utility Providers to Plan for Service Expansion in Transitional Areas

During the development of sub-area plans, the County should coordinate with existing utility providers to plan for future service needs, and plan for appropriate development type and density.

Identify and Consider Transportation System Improvements to Serve Transitional Areas

Certain corridor extensions and connections will be necessary to support infill development in Transitional Areas. These improvements should be prioritized for funding and built into future year transportation improvement programs.

Identify Urban Areas Adjacent to the City of East Helena

Urban Areas adjacent to East Helena, where municipal infrastructure could be extended should be identified. East Helena policies on service extension and annexation have been fairly conservative due to current deficiencies in infrastructure. A dialogue with the governing body of East Helena should be pursued to identify areas where development is most feasible and service needs are greatest.

Establish Future Land Use Plan Evaluation and Update Process

A process should be established to regularly review, evaluate, and modify the Future Land Use Plan. Record keeping systems to track new development, infrastructure improvements, identified deficiencies, or future needs will assist in the analysis of proposed changes as well as potentially lead to modifications.

As development pressures spread beyond the Helena Valley planning area, there should be continued dialogue with residents in outlying planning areas so they have a

means to communicate their own development trends and facility needs. At the time of this Comprehensive Plan/Growth Policy update, the Helena Valley Planning Area was the only planning area, which considered developing a Future Land Use Plan and strategies for guiding future development to certain geographic areas. All the planning areas should have a means for planning for Transitional Areas and/or Urban Areas as it becomes necessary or beneficial to do so.

Helena Valley Planning Area Priorities

The following issues were identified through stakeholder interviews, public workshops, and the work of the Lewis and Clark County Comprehensive Plan Citizen's Advisory Group. The focus here is not intended to exclude the broader framework of the County-wide goals and policies. Rather, the intent is to focus the effort of Lewis and Clark County on short-term (e.g., the next five years) priorities that are specific to the Helena Valley, and were developed by people living in the area.

The Helena Valley is facing considerable growth and development pressure. Citizens of the Helena Valley planning area have many separate and interconnected concerns related to land use, transportation, and the natural environment. In the Helena Valley Planning Area, Lewis and Clark County should focus its resources on the action items outlined below:

- A.** Opportunities for urban, suburban, and rural development must be made available, while at the same time assuring that adverse impacts related to this development are minimized. Identifying those areas where growth should occur can help direct the location and design of new development, creating a more cohesive community and minimizing initial and future costs to taxpayers.

Action Items:

Identify areas that may be classified using the following criteria:

- Areas already developing in an urban pattern and that have existing public facilities and service capacities.
- Areas already characterized by an urban pattern that will be served efficiently by public facilities in the near future (five years) should to be designated as Urban Growth Areas.
- Areas that will be served efficiently by public facilities in the five to twenty year period.
- New development should be encouraged to connect to public services whenever practical and provide the future opportunity for connections when not.
- New development should be encouraged to be contiguous to existing development in order to avoid the long-term cost to tax payers of providing services to an inefficient development pattern.

- Encourage subdivision design in the Transitional Areas in a fashion that can be converted to higher densities if urban services become available, including cluster design.

B. Development should be encouraged in areas without environmental constraints.

Action Items

- Allow development in areas that do not have development constraints (e.g., areas with steep slopes, within the 100-year flood plain, critical wildlife corridors, wildlife habitat, ground water quantity and quality), or where constraints can be properly mitigated.

C. Improve the level of service of the existing transportation system, and establish and maintain an efficient transportation network, utilizing a variety of transportation modes.

Action Items

- Develop a prioritized maintenance plan, related to the Transportation Plan, with funding sources identified.
- Support alternatives to single occupancy vehicles.
- Provide for connecting streets among neighborhoods.
- Design a truck route to bypass the City center.
- Develop a plan to address forecasted transportation growth needs.

D. Provide a safe pedestrian and bicycle circulation network in the Helena Valley.

Action Items

- Consider pedestrian/bicycle needs when planning and designing new roads.
- Consider improvement and dedication of bikeways and pedestrian paths through developing areas.
- Provide widened shoulders where possible to accommodate pedestrians/bicycles on existing roadways as appropriate, with a preference for physical separation between motorized and non-motorized traffic.
- Provide widened shoulders where possible to accommodate pedestrians/bicycles on existing roadway, with a preference for physical separation between motorized and non-motorized traffic.
- Encourage mixed-use development that integrates compatible residential, office, and commercial uses to reduce the need for automobile trips.
- Create additional connections between the trails/open space systems in Helena/East Helena and Lewis and Clark County.

E. Encourage the continuation of viable farming and ranching opportunities.

Action Items

- Use the Lewis and Clark County Voluntary Agricultural Land Preservation Program.
- Convene a task force to study ways to manage rural land changes, and to identify ways to preserve irrigated agricultural lands in the Helena Valley.

F. Work to reduce conflicts between agricultural and residential uses.

Action Items

- New residential uses should be required to provide buffers between themselves and conflicting agricultural uses.
- New agricultural uses that conflict with urban development should provide mitigation.
- Educate citizens about the importance of noxious weed management, and the means for eradicating noxious weeds and preventing their spread.
- Enforce existing weed abatement regulations.
- Support educating citizens about the importance of leashing or fencing their pets to keep them away from agricultural/farm land and from other animals.

G. Preserve access to public and recreational lands.

Action Items

- Use the Lewis and Clark County Comprehensive Parks, Recreation, and Open Space Plan to guide the siting of new facilities.
- Identify, protect, maintain, and—when appropriate—acquire rights-of-way providing access to key public and recreational lands, along with potential parking areas.
- Abandonment of public rights-of-ways should be prohibited unless shown to be in the public interest.

H. Protect and improve water quality and quantity of the Helena Valley watersheds.

Action Items

- Implement the recommendations of the Helena Area Wastewater Study (HAWT).
- Review the Helena Area Wastewater Treatment Facility Plan (HAWT); prioritize and implement strategies, as feasible.
- Protect and improve water quality and quantity along Ten Mile Creek.

- Consider extending the water quality district to include the Spokane Bench and Lakeside area.
- Make information about water quality and quantity available, particularly to prospective land buyers.

I. With increasing population growth, the air quality of the Helena Valley is threatened.

Action Items

- Encourage activities that ensure that County and Federal air quality standards are upheld.
- Design and locate new development in ways that minimize additional automobile traffic.
- Encourage the use of alternative cleaner burning fuels.
- Work to mitigate dust from traffic on dirt and gravel roads.
- Develop and implement transportation demand management (TDM) strategies pursuant to the Transportation Development Plan.
- Examine opportunities for transit, car-pooling, and other transportation management strategies.
- Promote an integrated street network.
- Conduct public education on what individuals can do to preserve good air quality.

J. Coordination between adjacent counties, the Cities of Helena and East Helena, and Lewis and Clark County is necessary in order to ensure that mutual land use goals are reached.

Action Items

- Establish an agreement between Lewis and Clark County, Jefferson County, Broadwater County, and the cities of Helena and East Helena for better coordination of land use change and transportation in Transitional Areas.
- Define the areas where city services can logically be extended based upon immediate five-year growth projections and negotiate inter-local agreements with the cities of Helena and East Helena for development review.
- Within the inter-local agreements with the cities of Helena and East Helena, establish common development standards, coordinated land use planning, urban service boundary areas and service area amendment processes.

K. Planning and design can assist in the development of a sense of community in existing settlement and developing areas of the Helena Valley.

Action Items

- Encourage the preservation and protection of existing residential areas and plan future development in a manner, which promotes neighborhood settings and environments.
- Provide land use buffers between residential neighborhoods and incompatible land uses.
- Minimize the encroachment of industrial development on existing residential neighborhoods.
- Design subdivisions, planned residential developments, multifamily units, or other residential projects in a manner that encourages neighborhood environments.
- Provide for integration of individual subdivisions through transportation linkages.
- Encourage the preservation and enhancement of neighborhoods in existing residential areas.
- Plan future development that promotes neighborhood cohesion and pedestrian-friendly environments.
- Encourage mixed-use development that integrates compatible residential, office, and commercial uses to reduce need for automobile trips.

- L. Adequate opportunity for non-residential growth and development in the Helena Valley to meet the needs of a growing population and market place demands.

Action Items

- Encourage commercial and office development to locate in cities and within Transitional Areas whenever possible.
- Encourage commercial development, such as neighborhood commercial services, in areas that are currently under serviced, when adequate market area population is present.
- Encourage mixed-use development that integrates compatible residential, office and commercial uses to reduce need for automobile trips.
- Encourage cluster commercial development over strip commercial development.
- Large commercial and office developments should be encouraged only in areas served by a major street, and where adequate public services can be provided.
- Encourage the development of a commercial/industrial subdivision with all services, including roads, water, sewer, fiber optics, and other services, as required.

M. Ensure that all parts of the Helena Valley have adequate fire protection.

Action Items

- Encourage the annexation of areas served by the Lewis and Clark County Volunteer Fire Department to be annexed into existing fire districts.
- Implement the design plans that are being formulated by the Fire Council.
- Ensure that roads and bridges can accommodate fire trucks.
- Develop a process to attract more volunteers.

N. Lewis and Clark County has sufficient marginal, non-irrigated grazing or non-irrigated croplands to meet the needs for the County's growth and development over the next 10 to 20 years. While the continued existence of the Helena Valley Irrigation District (HVID) appears secure at this point, the development of high density subdivisions adjacent to irrigated farm lands and the facilities of the HVID frequently results in management problems for agricultural operators and the District. Problems that can occur include interference with irrigation ditches and vandalism, harassment of livestock, and the spread of noxious weeds.

Action Items

- Support the public investment in the HVID and preserve its vital role in the County's agricultural economy and as a major source of recharge for the Helena Valley aquifer.
- When considering the proposed subdivision of agricultural lands irrigated by the HVID or adjacent to these irrigated lands, minimize potential land-use conflicts or adverse impacts on the HVID or agricultural lands irrigated by the HVID.
- Adopt development standards to limit development activities in areas with shallow groundwater.

Wolf Creek/Craig Planning Area

Introduction

The development of the Wolf Creek/Craig planning area has been greatly influenced by transportation, the weather, ranching and tenacity of the people who live there (see Appendix F for maps). Prior the arrival of people of European descent, the Indians (predominantly the Blackfoot) followed trails through the area to make their seasonal journeys from the high country in the fall to more protected areas for the winter. Between the 1820s and the 1840s, these Indian trails were used by trappers and traders trying to capture their piece of the flourishing fur trade. These trails would become roads in later years.

The Missouri and the Dearborn Rivers also offered a way of travel into uncharted territory. The Lewis and Clark Expedition traveled the rivers in 1804-05 on their way west. Captain Lewis, on his way back, followed an old Indian trail through what is now called Lewis and Clark Pass and over the mountains. The Mullan Road, which was completed between Fort Benton and Walla Walla in 1863, was opened just in time for the discovery of gold at Last Chance Gulch. The growth of Helena and the surrounding mining camps spurred a need to transport freight and passengers between Fort Benton and Helena. In one three month period in 1888, 700 wagons shipped 600 tons of supplies to Helena. All of the traffic was required to pass through the Dearborn area, until the coming of the railroad.

When the railroads came through the area they brought many railroad employees and many settlers. The railroad also brought with it the ability for the cattle and sheep ranchers, who were already established in the area, to easily ship their livestock to market. Far back before European settlement, the area had vibrated with the hoofbeat of the Indian's livestock: deer, elk, antelope, and buffalo.

Large scale livestock raising was limited in the 1860s due to constant Indian raids and the lack of suitable breeding stock. In the early 1870s, the new settlers of the area began to realize there might be a fortune to be gained (or lost) by raising livestock. About the same time, rich men back east became interested in the livestock business. The Chicago Livestock Company and several other large outfits ranged their cattle in the area.

Cattle, sheep and horses were rapidly increasing in number. They could range freely and at little expense, until the winter of 1886-87. The terrible winter of that year, with its deep snow and sub-zero temperatures, put an end to the open range. From then on, the ranchers had to adjust to barbed wire, closed areas, winter-feeding, the rise and fall of livestock prices, floods, drought and the continued onslaught of homesteaders into the area.

The communities of Wolf Creek and Craig really began to thrive with the coming of the railroads in the late 1880s. Wolf Creek got its name from an Indian legend, which stated that when buffalo were driven over a nearby cliff or Pishkin, a wolf went along for the ride. The Indians called the creek that flowed by the cliff, the creek where the wolf jumped too.

Craig was named after Warren Craig, who staked out his homestead and ran a blacksmith's shop where the town now stands. With the coming of the railroads came the building of additional shops, stores, saloons, hotels and stockyards to the two existing communities. Both communities experienced damage when the Hauser Lake Dam collapsed in April 1908.

The construction of Holter Dam (1916-18) had a very real impact on the economy and growth of both communities. Today, Holter Lake has a storage capacity of 66,500-acre

feet and has become a well-known recreational area. During the summer it offers camping, boating, fishing and water-skiing opportunities, and ice fishing during the winter.

Existing Conditions

Physical Conditions

The Wolf Creek/Craig planning area is located between fifteen and thirty-five miles north of Helena. The Wolf Creek/Craig planning area consists of approximately 630 square miles located in the central portion of Lewis and Clark County, east of the Continental Divide.

The area is bounded by Highway 200 to the northwest, the Cascade County Line to the north and east, the Missouri River and the Gates of the Mountains Wilderness to the southeast (boundary with the Canyon Ferry planning area), the southern end of the Hilger Valley to the south, and the Continental Divide and drainage divides to the west and southwest (boundary with the Canyon Creek and Lincoln planning areas).

Topography

Topography of the planning area varies from low riparian lands along the Missouri River to the high mountains along the Continental Divide. The planning area includes significant open and rolling grass lands punctuated by sharply rising ridges. The Wolf Creek Canyon provides spectacular scenery along Interstate 15 with its narrow breadth and high cliffs.

The southern portion of the planning area includes the Sleeping Giant, a topographical feature that resembles a giant at rest when viewed from the Helena Valley and beyond. A portion of the southeast boundary of the planning area includes the Gates of the Mountains, a feature along the Missouri River described in the Journals of Lewis and Clark. With its 1,100 foot high limestone cliffs and abundant wildlife, the Gates of the Mountains area is a significant tourist and recreational draw.

Climate

Due to topographic variations, climate conditions also vary across the planning area. The Gates of the Mountains Wilderness and the high ridges along the Continental Divide receive 20 to 30 inches of average annual precipitation, the majority as snowfall during the winter. Other portions of the planning area tend to be drier with annual average precipitation of 10 to 12 inches, the majority as rainfall in the spring and occasional summer storms. Winds are generally westerly to northwesterly. The planning area experiences chinook winds associated with the east side of the Rocky Mountains.

Hydrography

The major drainages in the planning area include the Dearborn River, Little Wolf Creek, Lyons Creek, Little Prickly Pear Creek, Stickney Creek and the Missouri River. All of the drainages flow towards the Missouri River, which traverses the planning area in a northeasterly direction. These watercourses are important for agricultural uses, wildlife and recreational uses. A portion of the Wolf Creek town site and many areas along the Missouri River are within a floodplain. Many other creeks may have associated floodplains but have not been mapped.

Vegetation

Vegetation in the planning area consists of four distinct vegetative groups. The vegetative groups are: 1) Grasslands, found in large concentrations in the northeastern half of the planning area along Highway 287 and in pockets throughout the area; 2) Upland shrub, usually found uphill from areas of grassland vegetation; 3) Riparian vegetation, found adjacent to water courses in the area including the Missouri River, Dearborn River, Little Wolf Creek, Lyons Creek and Little Prickly Pear Creek; and 4) Coniferous forest which is largely found in the western half of the planning area and the Beartooth Game management area.

Wildlife and Habitat

The Wolf Creek/Craig planning area provides habitat for a broad range of wildlife species. Whitetail and mule deer are found throughout the planning area. Elk are distributed primarily west of County Route 434 and on the east side of the Missouri River. Smaller concentrations are located north of Craig. Antelope are widely distributed throughout the planning area with concentrations north and west of the Missouri River in the grasslands along Highway 287 and County Route 434. Critical elk winter range have been identified in the Beartooth Game Range, the south facing hills west of the Sieben Road and several pockets spread throughout the area. Mountain goats and big-horn sheep can be found along the cliffs in the Gates of the Mountain area that form part of the southeast border of the planning area and the Sleeping Giant Wilderness Study Area. Mountain lion, black bear, coyote and fox can also be found throughout the planning area. Avian species include a large number of resident and migratory species. Bald Eagles may often be spotted along the Missouri River-Holter Lakes corridor.

Population and Population Trends

The population of the area has increased slightly in the 1990s. These population increases are largely due to development of year-round occupancies on 20+ acre tracts in the vicinity of Little Wolf Creek, Stickney Creek and Rogers Pass. Second home and recreational home development along Holter Lake and the Missouri River is also increasing and contributes to seasonal demands for County Services. Because the area is attractive for year-round living due to the recreational amenities and rural lifestyle, additional development in the area can be expected.

Land Ownership

Lands held in private ownership comprise approximately 73 percent of the planning area. Most of this private land is held in large ranches. Numerous small private parcels line the Missouri River and Holter Lake and provide for a mixture of housing types including seasonal and year-round residency. The town sites of Wolf Creek/Craig provide concentrations of small private parcels with a mixture of residential and commercial development.

Public Land, comprising approximately 26 percent of the land area, constitutes a smaller portion of land in the Wolf Creek/Craig planning area than is found in the other rural areas of the County. The U.S. Forest Service manages several sections of land in the Rogers Pass area along the eastern slopes of the Continental Divide. These lands are generally managed for grazing and timber production. The Bureau of Land Management manages a few parcels in the Hilger Valley, along Holter Lake and the Sleeping Giant Wilderness study area.

The State of Montana is the largest public landowner in the planning area. The State controls a number of school trust lands, various parcels along the Missouri River and the Beartooth Game Range. The primary uses of these lands are cattle grazing and wildlife habitat. Public lands along the Missouri River are primarily managed for public access for water recreation activities.

The remaining one percent of the area within the planning area is comprised of water bodies.

Area Economy

Cattle ranching has traditionally served as the economic base for the Wolf Creek/Craig planning area. The portion of the planning area west and northwest of Interstate 15 is comprised almost entirely of large cattle ranches. Recreational activities provide a significant economic base and several guide and outfitter services are located in the Wolf Creek and Craig areas. The planning area includes the Missouri River, which is world renown for trout fishing. Holter Lake provides numerous recreational activities and attracts summer home residents.

Transportation

Interstate 15, the major north-south route through west central Montana, serves as the primary commuter link for Wolf Creek-Craig residents working in Helena and Great Falls. The Recreation Road, which travels along the Missouri River and the Little Prickly Pear Creek through the Wolf Creek Canyon, serves as a recreation, and farm and ranch access road.

U.S. 287, which intersects I-15 two miles north of Wolf Creek, is a popular route for vacationers traveling to Glacier National Park. This road, which runs through Augusta, also provides access to ranches in the Dearborn River area of this planning area. County Road 434 connects Wolf Creek to State Highway 200 and Augusta. County Route 434 also provides access to numerous ranching operations.

The Beartooth Road serves residences and recreational activities along the eastern shore of Holter Lake. The first 6.5 miles of the road were chip-sealed in 1994 through a cooperative effort between the County, the State of Montana, the U.S. Department of the Interior, and area landowners. A Rural Improvement District was created to help fund improvement and maintenance costs of the road. The Beartooth Road extends approximately 8.5 miles south of the Recreation Road before entering the Beartooth Game Management area.

Table 3.5 identifies roads within the planning area, which are maintained by Lewis and Clark County or some other government agency. The level of maintenance for each road is determined by the entity providing the maintenance and may range from annual grading and repair to little or no maintenance activity.

Table 3.5
Publicly Maintained Roads in the Wolf Creek/Craig Planning Area

| ROAD NAME | MAINTENANCE RESPONSIBILITY | ROAD CLASS. | ROAD SURFACE |
|----------------------|---|----------------------------|----------------------|
| Interstate 15 | State of Montana | Interstate HW | chip-sealed |
| Highway 287 | State of Montana | arterial | chip-sealed |
| Highway 434 | Lewis and Clark County | arterial | chip-sealed. |
| Allen Gulch Road | Lewis and Clark County | local access | gravel |
| Beartooth Road | Lewis and Clark County, BLM, U.S. Forest Service | local access/recreation | chip- seal/gravel |
| Benton Fork Road | Lewis and Clark County | local access | gravel |
| Craig Frontage Road | State of Montana | Local access | asphalt |
| Craig River Road | Lewis and Clark County | local access | gravel |
| Deadman Coulee Road | Lewis and Clark County | local access | gravel |
| Little Wolf Creek | Lewis and Clark County | local access | gravel |
| Lyons Creek | Lewis and Clark County | local access | gravel |
| Ox Bow Road | Lewis and Clark County | local access | gravel |
| Recreation Road | State of Montana | minor collector | chip-sealed |
| Rock Creek Loop Road | Lewis and Clark County | local access | gravel |
| Seven Mile Road | Lewis and Clark County | local access | gravel |
| Sieben Canyon Road | Lewis and Clark County | local access | gravel |
| Woods Creek Road | Lewis and Clark County | local access | gravel |

In the spring and summer of 1997, the County Public Works Department and their consulting engineer conducted an inventory of all bridges and culverts greater than five (5) feet in diameter located on County roads. Structures on Lyons Creek were identified as being in critical condition, but were repaired in 1998 due to subsequent failure of the structures.

PUBLIC FACILITIES AND SERVICES

Law Enforcement

Law enforcement within the Wolf Creek/Craig planning area is a cooperative effort of three agencies: the Lewis and Clark County Sheriff's Department, who has primary responsibility; the Montana Highway Patrol, which is responsible for law enforcement on Interstate 15 and U.S. Highways 287 and 200; and Montana Department of Fish, Wildlife and Parks (FWP) game wardens, whose primary responsibility is to enforce fish, game, and boating regulations, and to assist other law enforcement officials as needed.

Due to distances across the planning area, response times can be lengthy. The large influx of second home residents and recreationalists along the Missouri River-Holter Lake Corridor greatly increases service demands in this area, without significantly contributing to the funding necessary to ensure those services. Substandard roads and lack of posted addresses often hamper response times for emergency service personnel.

Fire Protection and Emergency Medical Services

Structural fire protection within the planning area is provided by the Wolf Creek and Craig Volunteer Fire Departments. Each of these volunteer fire departments is a part of the Wolf Creek-Craig fire service area. The fire service area is funded by a \$55.00 assessment based upon each Assessor's Office Code Number. Volunteers for each of the volunteer fire departments are contacted by the County's Sheriff's Office and have a paging system in case of fire. A small portion of the planning area is served by the Dearborn fire service area, a cooperative effort with Cascade County. Volunteer Fire Departments are located in the town sites of Wolf Creek/Craig.

The southern portion of the planning District (the Hilger Valley) is not within a fire service area or fire district. Fire protection services to this portion of the planning area are provided by the Lewis and Clark County Volunteer Fire Department. Due to distance, response times are lengthy. Because there is little development, demand for services in the Hilger Valley is quite low. Members of the local fire departments participate in the Rural Fire Council.

Ambulance service to the planning area is provided from Helena or Great Falls, located 35 to 45 miles away. Due to distance, response times are lengthy.

Wild land fire protection is a cooperative effort consisting of personnel from the U.S. Forest Service, Department of State Lands, Bureau of Land Management, the Lewis and Clark Volunteer Fire Department, and the local volunteer fire departments.

Water Supply and Sewage Disposal

There are no public sewer or water facilities located in the planning area. Wastewater treatment is generally provided by individual on-site septic systems. Water is generally provided by on-site wells.

Solid Waste

The Wolf Creek/Craig planning area is not included in any solid waste district. Parcels are not taxed for solid waste services and no access to County facilities is provided. Waste Management Inc., a private company in Great Falls provides collection services on a fee basis in this area. Some area residents purchase permits from Cascade County in order to use the Hardy Creek container site located in that County. A few residents purchase permits from the Scratch Gravel Landfill District in order to use the Marysville container site or the Helena Transfer Station. Residents have resisted attempts to include the Area in the Scratch Gravel Solid Waste District.

Utilities

Electrical power is provided in the planning area by the North Western Energy. Telephone service is provided by Qwest. Natural Gas is not available in the planning area.

Education

Wolf Creek and Craig maintain their own elementary school districts within the planning area. Both Districts are included in the Helena High School District, but many high school students attend high school in the Town of Cascade. Average enrollment in the elementary schools is approximately 20 students for each school.

Analysis of Existing Land Use

Residential Development Patterns

The town sites of Wolf Creek and Craig create concentrations of residential development in a mixture of housing styles from mobile homes to site-built construction. Most residential development consists of single-family dwellings. The town sites of Wolf Creek and Craig include approximately 30 and 45 single-family residences respectively. Outside of the town sites, residential development tends to be rural in nature. With the exception of the Missouri River Corridor, residences tend to be spread out among the numerous ranches that comprise the bulk of the planning area.

The Missouri River Corridor north of Holter Dam includes approximately 70 single-family residences, almost all north of Craig. Approximately 55 of those dwellings are located in two concentrations near the Cascade County line. Smaller concentrations of development can be found in the Lyons Creek drainage south of Wolf Creek and on the Missouri River Tracts, the former Pollack Ranch, east of Craig. Second home and recreational home development concentrations are located along the Missouri River-Holter Lake Corridor including both seasonal and year-round residences.

The eastern shore of Holter Lake continues to see additional development of both seasonal and year-round residences. A windshield survey conducted along the Beartooth Road indicated approximately 65 permanent single-family dwellings and approximately 20 parcels with permanent recreational vehicles parked on them. Two private RV parks also contained numerous RVs that appear to be left year-round. Though many of the RVs appear to be left on parcels or in spaces year-round, most appear to be used solely for seasonal occupancy.

During the 1990s, residential subdivision activities have been limited primarily to the Missouri River-Holter Lake corridor. Conflicts between residential development and recreational users along the Missouri River-Holter Lake corridor may increase as development continues.

Numerous parcels, most greater than 20 acres in size, created through exemptions in the subdivision and platting act have seen significant development during the 1990s. Development of these parcels has occurred in concentrations along Stickney Creek, Little Wolf Creek, and Lyons Creek. Conflicts have arisen in many of these areas due to poor access, lack of utilities and problems with water availability.

Commercial and Industrial Development Pattern

Commercial development within the planning area is primarily limited to the town sites of Wolf Creek, Craig, and the Holter Lake area. Wolf Creek includes two restaurants/bars, two motels, a laundromat, an auto repair shop, a hardware store, a gas/convenience store, and several recreational outfitters and guide services.

Commercial services at Holter Lake include two private marinas, a bar/restaurant, a lodge, and a seasonal convenience store. There are also two public campgrounds, one public boat launch, and one public marina.

Commercial development in Craig includes one convenience store, two bar/restaurants, and two recreational outfitters and guide services.

The rural portion of the planning area includes bed and breakfast operations as well as recreational outfitters and guide services. The planning area does not include any full-service grocery stores or other retail stores. Residents must travel to Helena or Great Falls for traditional commercial amenities found in larger towns.

Public or Governmental Uses

Public lands in the planning area are primarily used for grazing, wildlife habitat, hunting, and recreation.

Parks and Open Spaces

The planning area does not contain any County owned park facilities. The State of Montana maintains several waysides, fishing access sites, and campgrounds that primarily serve the recreational needs of travelers along the Recreation Road and fishing and boating activities on the Missouri River-Holter Lake Corridor.

The Lewis and Clark County Voluntary Agricultural Land Conservation Program identifies significant open space and recreational values within the planning area. Recreational values are primarily associated with river corridors including the Missouri River-Holter Lake area, Little Prickly Pear Creek, Little Wolf Creek, and the Dearborn River. High Quality Scenic Areas as identified in the Program include the Wolf Creek Canyon along the Recreation Road and Interstate 15, and along the Missouri River-Holter Lake corridor. Highway 287, the Recreation Road, and Interstate 15 provide travelers with outstanding views of the rural open spaces. The relative lack of billboard advertising and other road signs enhances the roadway corridors. The large expanses of open ranch lands contribute to the unique open space nature of the planning area.

Public campground, recreational and fishing access areas in the Wolf Creek/Craig planning area include Holter Lake, Coulter, Departure Point, Lodgepole, Meriweather, Stickney Creek, and many others.

The Missouri-Madison Comprehensive Recreation Management Plan prepared in 1996 for Montana Power as part of the Federal Energy Regulatory Commission's relicensing process for hydropower generating rights within the corridor. This Recreation Management Plan provides a framework for an ongoing and dynamic decision-making process to determine future needs, establish goals and objectives, develop facilities, and supplement annual operation and maintenance needs for the recreation resources. The plan indicates that nearly 50 percent of surveyed visitors to the Holter Lake-Missouri River corridor within the Wolf Creek/Craig planning area felt that additional facilities or services were needed, most often citing the need for better RV facilities. The Recreation Plan states that during peak periods, conflicts occur between users, particularly at the developed facilities on Hauser and Holter Lakes. Surveyed visitors cited conflicts between jet skiers, powerboats and shoreline development.

Agricultural Uses

Agricultural operations continue to dominate the landscape and economic base of the Wolf Creek/Craig planning area. Cattle ranching make up the bulk of the agricultural uses.

Population Growth and Future Land Use Needs

The absence of job opportunities and distance from commercial amenities has served to discourage new persons from moving into the area. Population increases are generally due to development of existing 20+ acre parcels. Seasonal population increases can be attributed to additional second home and recreational home development along the Missouri River-Holter Lake corridor. Topographical constraints, high groundwater and floodplain in the Wolf Creek town site severely restrict the town site's ability to expand. Development pressures in the Missouri River-Holter Lake corridor can be expected to increase which in turn creates more demand for public services.

Wolf Creek/Craig Planning Area Priorities

The following issues were identified through stakeholder interviews, public workshops, and the work of the Lewis and Clark County Comprehensive Plan Citizen's Advisory Group (see Appendix F for maps). The focus here is not intended to exclude the broader framework of the County-wide goals and policies. Rather, the intent is to focus the effort of Lewis and Clark County on short-term (e.g., the next five years) priorities

that are specific to the Wolf Creek/Craig planning area, and were developed by people living in the area.

Citizens of the Wolf Creek/Craig planning area feel that the issues that need to be addressed are a continued and increased focus on the provision of basic services, the preservation of agricultural lands and open space and the development of tourism. In the one to five-year periods, Lewis and Clark County should focus on the following planning priorities in the Wolf Creek/Craig planning:

A. Improve maintenance of County roads throughout the years.

Action Items

- Develop a prioritized maintenance plan connected to specific funding sources.
- Lyons Creek and Little Wolf Creek Roads need improved maintenance.
- The Seven Mile Road between Craig and Highway 287 needs improved maintenance.
Monitor the traffic safety issues at Bowman's Corner.
- Explore options for road improvement and maintenance in the Wolf Creek area.

B. Preserve and protect agricultural lands.

Action Items

- Identify prime agricultural lands in the Wolf Creek/Craig planning area and determine which lands should be preserved over the long term.
- Support identification of prime agricultural lands in the Wolf Creek/Craig planning area and determine which lands should be preserved over the long term.
- New residential uses should be required to provide buffers between themselves and conflicting agricultural uses.
New agricultural uses that conflict with existing development should provide mitigation.

C. Control and, wherever possible, eradicate noxious weeds.

Action Items

- Educate citizens about the importance of noxious weed management and means to eradicate the spread of infestation of noxious weeds.
- Work to enforce existing weed abatement regulations.

D. Ensure that all parts of the Wolf Creek/Craig area have adequate fire and law enforcement protection.

Action Items

- Ensure that roads and bridges can accommodate fire trucks.
- Work with the Lewis and Clark County Sheriff's Office to ensure that the Wolf Creek/Craig planning area has adequate police protection.
- Develop a process to attract more volunteers.
- Develop a joint purchase agreement for new equipment.
- Work to ensure that all residences and roads are clearly marked and addressed in rural areas.

E. Increase the emphasis placed on tourism development in the area.

Action Items

- Coordinate with the County's economic development effort to ensure that tourism development is a high priority.

F. Maintain the integrity of the Missouri River corridor.

Action Items

- Work cooperatively with local watershed groups, conservation districts, private landowners, and other entities involved with Missouri River issues.

Lincoln Planning Area

The Lincoln Sub-area Plan is being rewritten as part of a separate process, and will be adopted as part of the Lewis and Clark County Growth Policy. The Lincoln Sub-area Plan is incorporated by reference as part of this Growth Policy.

Information regarding the Lincoln Sub-area is contained in the adopted Lincoln Planning Area Comprehensive Plan/Growth Policy and can be obtained by contacting the Lewis and Clark County Development office at (406) 447-8373.

County-wide Land Use Issues, Goals and Policies

Introduction/Purposes

It is generally understood that land, and the various uses put to it, is what drives our economy. We grow food with land, harvest trees from it, recreate on it, and build our homes and businesses on it. How land is used is a chief ingredient in our community character. But what goes largely unnoticed is that growth and land development--when not managed or planned thoughtfully--may carry significant costs affecting not only a

developer or builder, but surrounding land users, the broader community, and the natural and cultural environment.

Additionally, once land is developed, an on-going financial responsibility results for the entire taxpaying public. Roads, water and sewer systems, police and fire protection and other services all have costs which must be considered when designating land for development. Since public and private fiscal resources are limited, it only makes sense to think carefully about the long-term effects of our land use decisions. With careful planning, the substantial investment which is often necessary to serve land is better secured and protected.

Defining how our various lands can and should be used provides predictability for individuals and businesses making long-term decisions. More importantly, the public costs associated with serving these lands can be minimized, and the qualities that make many of them unique preserved. Furthermore, public costs associated with serving these lands can be minimized, and the qualities that make many of them unique preserved.

Public comments reflected a recurring concern throughout the process of developing the County Growth Policy regarding a lack of land use predictability. Many commented they feel they have no say in the land use changes going on around them. In recent years, the subdivision process has generated on-going conflict over proposed changes in land uses and densities: Examples include low density neighborhoods versus high density residential development, farmers and ranchers opposing residential subdivisions near their operations, and homeowners resisting commercial or industrial development in or near their residential neighborhoods.

Property owners are often surprised that subdivision regulations provide little or no protection against what they see as the intrusion of incompatible land uses into their neighborhoods. Likewise, developers are frustrated that there appears to be so little consensus on the types of development that are appropriate or acceptable for areas of the county.

Nationally, and under Montana law, the appropriate legal tool for determining appropriate land uses for areas of the community and for regulating changes in land use is zoning. Zoning was developed approximately a hundred years ago to protect residential areas and property values from negative impacts from uses considered undesirable or incompatible. Since its origins, zoning has evolved into a more flexible tool that can be tailored to achieve particular goals. For example, it can be used not only in its traditional role of demarcating general types of land use zones, but it can also identify uses that would be acceptable only if they meet certain conditions. Zoning can be used to establish general performance standards for various types of development, or overall density of development, with or without specifying particular land uses for geographic areas. It can also be used to help preserve open space or prime agricultural land.

Residents of several areas of Lewis and Clark County have asked for the County's assistance in developing zoning regulations to provide them protection from types of development they see as incompatible or inappropriate for their neighborhoods. A related concern regarding "predictability" has been raised by both developers and homeowners. The desire is that the County provide better guidance on where future growth should or should not be directed (e.g., which areas of the County are most suitable for development as well as least suitable due to issues such as water quality and availability, soils, earthquake or liquefaction prone areas, floodplains, seasonal high groundwater, and wildland urban-interface areas.) Many commented that areas with development constraints should be more clearly mapped or otherwise identified so that developers and prospective homebuilders or homebuyers know where the problem areas are and avoid them.

Issues, Goals, and Policies

ISSUE A **Development is affecting the rural character of Lewis and Clark County.**

Goal 1 Maintain the opportunity for a rural lifestyle.

Policy 1.1 Encourage low-density residential, agricultural, and forestry-related rural development outside the urban and transitional areas.

Policy 1.2 Level of Service/Design Standards shall reflect the goals and policies of the Growth Policy.

Goal 2 Support the continuation of farming and ranching operations.

Policy 2.1 Establish review procedures for land uses that may be especially sensitive to locations near existing agricultural activities (e.g., schools, day care facilities, hospitals, medical clinics, outdoor recreational facilities, etc.).

Policy 2.2 When considering the proposed subdivision of agricultural lands, minimize potential land use conflicts or adverse impacts that may be detrimental to adjacent agricultural operations.

Policy 2.3 Guide appropriate growth to less productive agricultural lands or nonproductive lands that are suitable for development.

Policy 2.4 Evaluate rural, agricultural, or open space zoning as a tool for limiting non-agricultural development to densities and development patterns that are consistent with the continuation of agriculture, and the desires of the affected planning areas or neighborhoods.

- Policy 2.5** Encourage the purchase of conservation easements by private non-profit land trusts or other entities to retain agricultural lands in production.
- Policy 2.6** Encourage in-fill development of urban and transitional areas already committed to development, where community facilities and services can be provided cost effectively in order to reduce development pressure on agricultural lands.
- Policy 2.7** Support federal or state agricultural policies that help maintain the viability of agriculture.
- Policy 2.8** Encourage agricultural land owners considering land subdivision to develop the least agriculturally viable portion of their properties, such as grazing land or non-irrigated cropland.
- Policy 2.9** Create incentives for cluster development where the majority of the land would remain undeveloped and in agricultural production.
- Policy 2.10** Convene a task force to study ways to effectively retain agricultural lands in production and provide landowners options for a reasonable financial return.
- ISSUE B** **Some property owners perceive they have no control over the quality and character of development occurring around them. Some developers believe there is no predictability or community consensus on where development should take place, or the types of development that are appropriate.**
- Goal 3** Provide more predictability for property owners and the development community regarding appropriate changes in land use by directing growth to areas most suitable for development, and by developing standards that allow county residents to more effectively manage change within the affected planning area.
- Policy 3.1** Inform developers and prospective homebuilders or homebuyers (through maps or other means) about areas of the county that are most suitable for development and those which are least suitable because of development constraints.
- Policy 3.2** Guide growth to urban and transitional lands or nonproductive lands that are suitable for development.
- Policy 3.3** Adopt minimum countywide development standards to address general land use concerns (e.g., compatibility with adjacent land uses, site

suitability, access and traffic generation, road construction, lighting or noise, etc.).

- Policy 3.4** Assist interested planning areas or neighborhoods in developing appropriate development standards or zoning regulations consistent with local objectives. Establish minimum requirements for neighborhood plans that can be used as templates.

IV:

HOUSING

Existing Conditions

Introduction

The primary goal of the housing chapter is to meet the current and future housing needs for Lewis and Clark County, sustaining a mixture of low, moderate, and high-income households. Healthy communities maintain varied households and a combination of housing options across all economic levels. Conversely, the ability to obtain affordable housing is essential to a stable, healthy, and thriving community. The housing chapter contains information on existing conditions and an analysis of housing needs within the County. The primary resource for the information contained in this chapter is the State of Montana Consolidated Plan.

Existing Housing Stock

The housing stock in the County has increased considerably during the past 30 years, more than doubling between 1970 and 2000. During this period, the most rapid growth in housing stock occurred during the 1970s, when 6,212 units of housing were built in the County, an increase of 50 percent during the decade (see table 4.1). As the economy slowed during the 1980s, the growth in new housing slowed considerably, before rising again during the 1990s.

TABLE 4.1:
GROWTH IN HOUSING UNITS IN LEWIS AND CLARK COUNTY, 1970-2000

| <u>Year</u> | <u>Number of Units</u> | <u>% Increase, Previous Decade</u> |
|-------------|------------------------|------------------------------------|
| 1970 | 12,359 | --- |
| 1980 | 18,571 | 50% |
| 1990 | 21,412 | 15% |
| 2000 | 25,672 | 20% |

Source: U.S. Census Bureau

Housing Types

Lewis and Clark County has a diverse range of housing types, including the following: A predominance of single-family homes; multi-family developments; multi-family units, and; manufactured housing (see table 4.2). There is a greater proportion of multifamily housing in Lewis and Clark County than in the State as a whole. Single-family homes and trailer parks predominate in the rural areas of the County, while a high percentage of the multi-family units are found in the City of Helena.

TABLE 4.2: HOUSING TYPES: 1990

| | <u>Single</u> | <u>2 or More Units</u> | <u>Mobile Homes</u> | <u>Other</u> | <u>Total</u> |
|--------------------|---------------|------------------------|---------------------|--------------|--------------|
| Lewis Clark County | 13,616 | 4,190 | 3,414 | 192 | 21,412 |
| % of Housing Stock | 64% | 20% | 16% | 1% | 100% |
| State of Montana | 245,985 | 56,634 | 54,021 | 4,535 | 361,175 |
| % of Housing Stock | 68% | 16% | 15% | 1% | 100% |

Source: U.S. Census Bureau (note: 2000 data will be added when available).

Age of Housing

As table 4.3 illustrates, the housing stock in Lewis and Clark County is slightly newer than that in Montana as a whole. Approximately 69 percent of the housing stock in Lewis and Clark County was built after 1959, while statewide, 62 percent was built after this date.

Table 4.3 AGE OF HOUSING STRUCTURES (From 2000 Census)

| <u>Year Structure Built</u> | <u>Lewis and Clark County</u> | | <u>Montana</u> | |
|-----------------------------|-------------------------------|-------|----------------|-------|
| 1999 to March 2000 | 615 | 2.4% | 4,170 | 1.0% |
| 1995 to 1998 | 2,413 | 9.4% | 30,537 | 7.4% |
| 1990 to 1994 | 1,748 | 6.8% | 34,144 | 8.3% |
| 1980 to 1989 | 3,699 | 14.4% | 53,180 | 12.9% |
| 1970 to 1979 | 6,451 | 25.1% | 85,273 | 20.7% |
| 1960 to 1969 | 2,703 | 10.5% | 49,563 | 12.0% |
| 1940 to 1959 | 3,465 | 13.5% | 83,861 | 20.3% |
| 1939 or earlier | 4,578 | 17.8% | 71,905 | 17.4% |

Household Characteristics

The composition of households in the County has changed considerably over the past twenty years (see table 4.4). Average household size in Lewis and Clark County has shrunk from 2.96 persons per household in 1970, to 2.38 in 2000; for owner occupied housing units, the rate was 2.54, while rental units were lower at 2.02. This reduction of household size is in keeping with the long-range national trend toward decreasing household size during the same period (although it rose modestly in the County during the previous decade). Some of the factors contributing to this trend include families having fewer children, an increase in single parent households, people living longer, and people moving to other states that provide better paying jobs.

TABLE 4.4: PERSONS PER HOUSEHOLD IN LEWIS & CLARK COUNTY

| <u>Year</u> | <u>Persons per Household</u> |
|-------------|------------------------------|
| 2000 | 2.38 |
| 1990 | 2.22 |
| 1980 | 2.48 |
| 1970 | 2.96 |

Source: U.S. Census Bureau

According to 2000 census data, nearly 66 percent of the total households in Lewis and Clark County were composed of families; 32 percent of all households had children under 18 years of age in the dwelling (see table 4.5). Approximately 29 percent of the households in the County were composed of an individual living alone. An indicator of the aging population in the County, 20 percent of the households included persons who were at least 65 years of age.

Home Ownership Rates/Vacancy Rates

In 2000, approximately 70 percent of the Lewis and Clark County population lived in owner occupied dwellings, with the other 30 percent living in rental properties. As depicted in table 4.6, the percentage of ownership has declined by 4 percent since 1990.

According to 2000 Census data, the vacancy rate for owner occupied property in the County was 1.5 percent, compared to 5.8 percent for rental housing units.

TABLE 4.5: HOUSEHOLDS BY TYPE: LEWIS AND CLARK COUNTY, 2000

| <u>Category</u> | <u>Number</u> | <u>Percent</u> |
|---|---------------|----------------|
| Total Households | 22,850 | 100.0% |
| Family Households (families) | 14,958 | 65.5% |
| With Own Children Under 18 | 7,354 | 32.2% |
| Married-couple Family | 11,983 | 52.4% |
| With Own Children Under 18 | 5,313 | 23.3% |
| Female Householder, No Husband Present | 2,107 | 9.2% |
| With Own Children, Under 18 | 1,494 | 6.5% |
| Non-Family Households | 7,892 | 34.5% |
| Householder Living Alone | 6,644 | 29.1% |
| Householder 65 Years and Over | 2,044 | 8.9% |
| Households with Individuals Under 18 | 7,772 | 34.0% |
| Households with Individuals 65 and Over | 4,570 | 20.0% |
| Average Family Size | 2.95 | --- |

TABLE 4.6: OWNERSHIP RATES IN OCCUPIED HOUSING UNITS, 1990-2000

| | <u>1990</u> | | <u>2000</u> | |
|---------------|-------------|-----|-------------|-----|
| Owner | 34,269 | 74% | 32,016 | 70% |
| Renter | 11,838 | 26% | 13,684 | 30% |

Table 4.7 depicts the number and type of each category of rental housing, based on 1990 data. Multifamily units predominate with 59.3 percent of the total rental housing stock, single family units account for 29.2 percent and mobile homes account for 10.2 percent of the total rental units.

TABLE 4.7 NUMBER OF RENTAL UNITS BY TYPE - 1990

| <u>Single Family</u> | <u>Multi-Family</u> | <u>Mobile Home</u> | <u>Other</u> |
|----------------------|---------------------|--------------------|--------------|
| 1,715 | 3,487 | 598 | 80 |
| 29.20% | 59.3% | 10.2% | 1.4% |

Source for tables on this page: U.S. Census (note: 2000 data will be added when available).

Housing Affordability and Need

To address the housing needs in Lewis and Clark County, the Housing Needs Assessment for Lewis and Clark County was prepared by Bill Bentley and Dan Tinson in 1996. This study was intended to identify barriers to affordable, adequate housing for low to moderate-income people. In addition to this study, an inventory of homeless facilities and services was conducted as a part of developing the State 1995-1999 Consolidated Plan.

In January 1993, the Helena Area Housing Task Force was formed with representatives from emergency shelter providers, the Helena Housing Authority, City and County government, mental health service providers, low-income coalitions, Montana Advocacy Program, local realtors and lenders, the Montana Independent Living Project, homebuilders, and Habitat for Humanity. The mission of this group has been to seek solutions to the housing shortages for low-income families that are affordable and safe both in rental and home ownership markets in the Helena area.

Definition of Housing Affordability

Across the State of Montana, a major concern for many residents is the lack of affordable housing. It is becoming increasingly difficult for the average citizen to purchase a new home.

Housing is typically deemed affordable if either the monthly rent, or mortgage, principle and interest, is no more than 30 percent of a household's monthly income. The affordable rental and purchase costs are determined by looking at the State's definitions of low and moderate-income households.

These definitions are based on household income as a percentage of median household income. For example, low-income households are those households earning less than 80 percent of the median income. Moderate-income households are defined as those households earning between 81 percent and 100 percent of median income. For Montana, this is equal to \$22,501 to \$27,499 per year, based on the 1990 US Census. In 1989 the median gross rent as a percentage of household income in Lewis and Clark County was 25.1 percent.

Affordable Housing for Purchase

According to the Housing Needs Assessment, low income households could afford to purchase a home for no more than \$75,000, assuming a 30 year mortgage at an 8 percent interest rate. The maximum affordable home purchase price for moderate-income households was \$93,000. As a point of comparison, the cost of single-family housing increased in the Helena area from \$85,605 in 1993 to \$117,140 in 1998. During the same period, the average cost of mobile homes nearly doubled, rising from \$22,929 to \$37,724. In general, the Helena area, in particular, has a shortage of homes in the \$60,000 to \$100,000 price range (data from City of Helena *Growth Policy*).

The factor cited in the Housing Needs Assessment as having the greatest impact on the ability to buy homes was low income. A secondary factor was housing affordability, which appears to have a number of components, including the following:

1. The price of undeveloped land and/or platted lots;
2. Financing costs, including down payment requirements, interest rates, and fees;
3. Materials and construction costs, including labor;
4. Developer profit margins and real estate sales commissions;
5. Population changes, including demographic shifts and migration that affect supply or demand;
6. Land use controls that limit the location and density of development, which may affect the cost and availability of land as well as the cost and supply of housing;
7. Building code requirements that may increase construction costs; and
8. Site-development requirements, including infrastructure, utilities, environmental protection, and other on-site or off-site improvements.

While the government can directly influence the last three components through policies and regulations, the first five are more independent of local government actions.

Often, the private housing market does not provide adequate affordable housing for low to moderate-income groups without some type of subsidy or incentive. For many years, the County has worked with other organizations to help provide housing for low and moderate-income families. However, housing costs have risen faster than incomes during the last decade, contributing to the on-going challenge of securing adequate housing for all income groups.

Affordable Rental Housing

Census data from 1990 indicates that 37.2 percent of the rental units in Lewis and Clark County were located in the unincorporated areas. These units were priced between \$250 and \$449, with the bulk of the units costing between \$250 and \$349. To afford a monthly rental payment of \$300 one would have to earn no less than \$12,000 per year, and no less than \$16,000 per year to afford a monthly payment of \$400. Sixty percent the rental units were priced at \$300 and above.

The Housing Needs Assessment contains a survey of opinion on what constitutes affordable rental rates in Lewis and Clark County and Montana as a whole. The Assessment's findings were that no more than \$562.50/month for low-income households and no more than \$687.48/month for moderate-income households are affordable rental rates.

The average Montanan's opinion of what is low-cost housing was a rental payment of \$188 while the average cost of housing was believed to be \$311. For Central Montana, \$196 was considered a low cost payment and \$327 an average monthly payment. Communities with populations over 10,000 believed that \$214 was a low cost payment and \$316 an average payment.

High payment for the Montana average was \$426, while Central Montana believed \$435 was a high rental payment. For those communities with populations over 10,000, \$509 was considered a high monthly payment.

Emergency Shelters/Homeless

A homeless person is defined as someone who lacks a fixed, regular, and adequate nighttime residence. A sheltered homeless person is someone who is being provided temporary shelter.

The FY 1994-98 Comprehensive Housing Affordability Strategy (CHAS) Five-Year Plan identified homelessness as a challenge to be addressed in Montana's Housing Strategy. The State Department of Social and Rehabilitation Services (SRS) conducted a study of the population of homeless shelters statewide on December 2, 1992 and January 26, 1993. They found that of all the sheltered homeless persons, 61 percent were males and 39 percent were females. Persons under the age of 19 made up 43 percent of the total, with a majority of those under age 9. The mean age of the homeless population in Montana was 26. Native Americans, the second largest racial group in Montana, constituted a disproportionate amount of the homeless population, even though they make up only 6 percent of the total statewide population.

The Montana Consolidated Plan includes the results of a 1994 inventory of emergency shelters, transitional and multi-family housing in the County. Table 4.8 shows the location, number of units, and capacity (where available) for each facility in Lewis and Clark County.

TABLE 4.8 1994 INVENTORY OF EMERGENCY SHELTERS AND TRANSITIONAL & MULTIFAMILY HOUSING

| <u>Location</u> | <u>Facility</u> | <u>Units</u> | <u>Capacity</u> |
|-----------------------------|------------------------------------|--------------|-----------------|
| Emergency Shelters | | | |
| Helena | God's Love | 1 | 30 |
| Helena | Golden Triangle Com. Mental Health | Unknown | Unknown |
| Helena | Montana House | 1 | 8 |
| Helena | Salvation Army | Unknown | Unknown |
| Transitional Housing | | | |
| Helena | Florence Crittenton | 1 | 17 |
| Helena | Friendship Center | Unknown | 9 |
| Helena | YWCA | Unknown | 29 |
| Multifamily Housing | | | |
| Augusta | Elk Creek Lodge | 8 | N/A |
| East Helena | East Helena Apartments | 16 | N/A |
| East Helena | Eastgate Apartments | 24 | N/A |
| Helena | Almanor | 60 | N/A |
| Helena | Broadwater Village | 92 | N/A |
| Helena | Cannon Springs | 36 | N/A |
| Helena | Eagles Manor #2 | 54 | 63 |
| Helena | Helena Housing Authority | 366 | N/A |
| Helena | Helena Manor | 73 | N/A |
| Helena | Helena Manor Addition | 20 | N/A |
| Helena | Helena Springs | 24 | N/A |
| Helena | Neighborhood Center | 30 | N/A |
| Helena | Penkay Eagles Manor | 66 | 81 |
| Helena | Serendipity Apartments | 24 | N/A |
| Helena | Sunset Capital Apartments | 118 | N/A |
| Helena | Tower Hill Apartments | 50 | N/A |

Source: Montana 1995-1999 Consolidated Plan.

Senior/Assisted Housing

The senior population is a significant and growing presence in Lewis and Clark County, resulting in an important housing issue. This group has needs that are different from the rest of the population. Twenty percent of the households in the 2000 census included at least one individual 65 years of age or older. People 60 years and older made up 15.7 percent of the population, a figure that has been increasing in recent decades as the population ages. The number of County residents over the age of 75 grew from 1,603 in

1980 to 2,332 in 1990, to 3,102 in 2000--a 33 percent increase in the past decade and a 94 percent increase between 1980 and 2000. The median age during the same period has increased from 28.9 in 1980, to 35.1 in 1990, to 38.0 in 2000, reflecting the aging of the population and the in-migration of retirees.

There are more than 140,000 people over the age of 60 in Montana, and approximately 12,993 require assistance in some form for housing; 3,267 of the latter are estimated to be frail and elderly. The growth in the senior population signals the need for additional assisted living housing and supportive services that enable seniors to remain in their homes.

Housing for the Mentally Ill with Special Needs

The housing component of the Montana State Mental Health Division (Residential Services) includes the state's two mental health institutions: Montana State Hospital and the Montana Center for the Aged. The Montana Mental Health System Plan identifies an ideal system of community services for adults with severe and disabling mental illness. The strategy calls for:

- Improving the process of transition for patients going from the hospital to the community;
- Continuing to support beds in group homes;
- Building apartments containing transition beds; and
- Making emergency funds available to assist clients with rent deposits, furnishings, and emergencies.

Potential Housing Resources

Resources to meet the housing needs are fairly limited in Lewis and Clark County. This is to some degree a reflection of national trends, as Federal funding for housing was substantially reduced during the 1980s. The County is now in a strategic position to access grants and develop targeted programs to meet housing needs, with the completion of the county-wide needs assessment and this Growth Policy.

The State of Montana Consolidated Plan identifies and describes three programs that are available through the U.S. Department of Housing and Urban Development (HUD) through a consolidated grant program.

Home Investment Partnership Program (HOME)

The HOME program funds housing rehabilitation, new construction, property acquisition, transitional housing, and rental assistance. HOME program funds are available to eligible local governments and certified Community Housing Development Organizations (CHDO's).

Community Development Block Grant (CDBG) Program

The CDBG program is designed to help communities with their greatest community development needs. All awarded program funds principally benefit low and moderate-income families. The Montana CDBG program has three components - housing, economic development, and public facilities. Typical eligible activities include the rehabilitation of existing housing units, providing infrastructure for the construction of new affordable housing or directly constructing new affordable housing, under the sponsorship of a non-profit organization.

Emergency Shelter Grant Program (ESG)

The ESG program is designed to help improve the quality of existing emergency shelters for the homeless, make available additional shelters, meet the costs of operating shelters, and provide essential social services to help prevent homelessness. The grants require a 50 percent match that can be considered soft money (e.g. volunteer, other in-kind matches).

Housing Issues, Goals, and Policies

ISSUE A **Not all county residents can afford market rate housing.**

Goal 1 All residents should have the opportunity to obtain safe, sanitary, and affordable housing.

Policy 1.1 Work to maintain adequate and diverse housing opportunities for all income levels.

Policy 1.2 Consider the locational needs of various types of housing with regard to proximity of employment, and access to transportation and services.

Policy 1.3 Work to disperse affordable housing throughout the County.

Policy 1.4 Participate in periodic analyses to determine immediate and long-range affordable housing needs.

Policy 1.5 Study and consider innovative housing programs to reduce dependency on subsidized housing.

Policy 1.6 Group homes, foster care facilities, and facilities for other special populations, should be equitably distributed throughout the county.

Policy 1.7 Encourage preservation, rehabilitation, and redevelopment of existing housing, with special attention to historic structures and historic areas.

Policy 1.8 Encourage compatible mixed-use development.

Policy 1.9 Participate in periodic inventories of housing conditions in unincorporated areas.

Policy 1.10 Develop programs, as funding allows, to access available public/private funding for affordable housing and related infrastructure.

V: NATURAL ENVIRONMENT

Existing Conditions

Introduction

Lewis and Clark County encompasses an area of approximately 3,513 square miles and ranges in elevation from 3,400 feet above mean sea level on the Missouri River, where it flows northward out of the County, to peaks more than 8,000 feet above mean sea level along the Continental Divide. More than 70 percent of the land is mountainous. More than a million years ago, the mountains of the Continental Divide, Big Belt Range, and the mountains around Lincoln were uplifted along large faults. Hot, molten rocks rose from beneath the earth and intruded into these rocks. The liquid rock solidified, and it formed granite that can be seen in the high mountains in the southwest portion of the County. Sedimentary rocks such as limestone and argillite make up most other mountainous terrain. These landforms and their associated water courses influence climate and the distribution of vegetation, wildlife and human development.

The overall climate of Lewis and Clark County, including the amount of precipitation, varies with elevation. The Helena Regional Airport, located in the semi-arid southern portion of the County, receives about 11 inches of rainfall annually. The mountains experience 60 inches or more. Peak river flows usually occur in late May or early June, as spring rains melt winter snow packs. Ice jams in the water courses may cause backwater flooding in late winter months. Flash floods from intense localized storms can occur in tributary watersheds from spring throughout the summer. Winters in Lewis and Clark County are generally sunny, cold, and windy, with frequent storm fronts. Summers are warm with cool nights brought on by air drainage into valley bottoms. The Helena Valley's average growing season is 134 days and is one of the longest in Montana. Higher elevation areas, such as the Blackfoot Headwaters, have an insufficient frost-free period to sustain cultivated crops.

Air Quality

Montana allows any city or county to establish its own local air pollution control program. Seven counties currently operate local air pollution control programs that

include: Billings, Butte, Great Falls, Helena, the northern Flathead Valley, Libby, and Missoula. These local air pollution control programs have jurisdiction over most pollution sources within their boundaries. State government retains jurisdiction over larger pollution sources that have the potential to emit more than 250 tons per year of any regulated air pollutant or any facility that requires environmental impact statements (EIS).

Local air pollution control programs are responsible for ensuring good air quality in their communities and have proven themselves highly successful. Control strategies adopted by the local programs reflect the unique characteristics of their citizens and environment. Some of the roles assumed by local air programs include: developing local air quality rules that cannot be less stringent than state rules; permitting, regulating, and enforcing state and local air quality rules; conducting inspections of pollution sources; regulating open burning; regulating wood burning devices and issuing local air quality burning advisories; controlling the use and disposal of material on roads and in parking lots; controlling construction and demolition activities; assisting in the development of local State Implementation Plans; and responding to local complaints.

Many of Montana's local air quality programs play an important role in working with industries and residents to develop pollution control strategies for State Implementation Plans in areas that have exceeded pollution standards. These programs have been particularly successful in reducing particulate matter and carbon monoxide emissions.

When local air pollution control programs are determined to be inadequate, the Department of Environmental Quality (DEQ) asks the local program authorities to develop solutions. The federal government requires the state to assume authority over the program, if county authorities are unable to resolve the issues.

The greater Helena area experienced a noticeable increase in airborne particulates and a decrease in ambient air quality from the late 1970s to the mid 1980s. The decrease in air quality resulted in complaints from individuals and physicians concerned about increased upper respiratory problems. The sources of the increased particulates included vehicular emissions, vehicular travel on gravel-surfaced roads, and the use of wood burning devices for home heating.

The County Health Department conducted air sampling studies from 1980 to 1985. The study results showed that total suspended particulates, particularly during the winter months, were approaching the State's maximum allowable levels. Air pollution levels continued to increase to a point where the 1984-85 season had a 14-day stretch of "POOR" air quality days. When the County circulated a petition to see if residents were

interested in establishing an air pollution control program, signatures ran more than 3 to 1 in favor. The Board of County Commissioners enacted the Lewis and Clark County Clean Air Ordinance in June 1985, in conjunction with the State Board of Health and also established the Lewis and Clark Air Quality District (see Appendix E for map).

The purpose of the ordinance and the District is to protect and improve air quality in the greater Helena Valley. The Ordinance prohibits the operation of wood, coal or paper burning devices on defined "POOR" Air Quality days, during the monitoring season that extends from November 1 to March 1 of each year. "POOR" Air Quality is typically defined as particulate levels less than 10 micro-moeller (um) in size reach a concentration of 75 micrograms per cubic meter (ug/m3) or during a meteorological inversion. The Ordinance also prohibits the burning of coal as a solid fuel at any time, unless an exemption has been granted; allows for burning specified fuels in solid fuel heating devices; prohibits idling diesel or locomotive engines in excess of two (2) hours on "POOR" Air Quality days; and limits smoke from chimneys to an opacity reading of 40 percent or less at all times. The Ordinance does allow for low income exemptions to those eligible for low-income energy assistance. The low-income exemption must be applied for annually, and is valid until November 1 of the following year.

Table 5.1 presents the results of air quality monitoring conducted by the City/County Health Department from 1995 to 2003. In recent years, 1996 was the worst year for air quality, with nine days classified as poor; the Health Department issued 95 warning letters and 12 citations for air quality violations.

Table 5.1
Helena Valley Air Quality Days

| <u>Year</u> | <u>1995</u> | <u>1996</u> | <u>1997</u> | <u>1998</u> | <u>1999</u> | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Good | 101 | 94 | 111 | 111 | 120 | 117 | 120 | 120 | 120 |
| Fair | 12 | 21 | 9 | 9 | 0 | 3 | 0 | 0 | 0 |
| Poor | 7 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

The Health Department operates two air quality monitoring stations in the Helena Valley. A continuous reading monitoring station is located at the Lincoln School in Helena and an interval monitoring station is located at the Rossiter School in the northern portion of the Helena Valley.

Additional air quality monitoring stations are located in East Helena and the Lincoln town site, and are operated by the Montana Department of Environmental Quality. The stations located in East Helena monitor the airborne emissions associated with the operations of the East Helena Smelter (ceased operation in 2001).

Geology

Lewis and Clark County includes two geologic environments. Approximately the northern half of the County is characterized by overlapping thrust faults in Paleozoic, Mesozoic and Precambrian sedimentary rock. The thrust zone, a part of the disturbed belt, occupies the mountainous northern part of the County and terminates abruptly on the east with the plains and the nearby Cretaceous sedimentary rocks. The southern part of the County includes broad, open folds in Precambrian sedimentary rocks of the Belt Supergroup, which exhibit effects of both low-grade burial metamorphism and igneous intrusion. The Boulder batholith and related outlying intrusions occur from the southern boundary northward to the Blackfoot River.

Slope Stability

Slope failure occurs when the gravitational force of slope materials exceed resisting forces due to strength, friction, and cohesion of the supporting materials. Slope properties, such as steepness, layering, fracturing of materials, or lack of vegetation, can make them inherently susceptible to failure. Factors such as moisture, overloading, and undercutting, can make matters worse. These factors can occur naturally or induced by development activity.

Slope failures are distinguished by five types: Falls or free drops from steep cliffs; slides or movement of unconsolidated materials along slip surfaces of shear failure; slumps or movements of consolidated materials along the surface of shear failures; flows; and the slow or rapid fluid-like movement of soils and other unconsolidated materials. Very slow down-slope flow of soil is referred as creep. The average flow rate of materials can range from a fraction of an inch to 4 to 5 inches a week. Factors that influence creep include growing vegetation, freezing and thawing, and burrowing animals. Lateral spreads may occur on flat or gently sloping land due to liquefaction of underlying materials.

Hazards to development, public health, and safety are most prevalent in mountainous areas. Localized hazards may occur anywhere within the planning area. It is the responsibility of those who wish to develop their property to assess the degree of hazard in their selection of development sites. There are three variables related to slope stability that should be rated to determine the suitability of a particular site: slope, geologic materials, and landslide deposits. Based on these three variables, sites can generally be categorized as:

Stable -Areas having 0-5 percent slope that are not underlain by unconsolidated deposits.

Unstable -Areas of 0-5 percent slope that are underlain by moist unconsolidated materials or muds. Unstable due to settlement problems.

Generally Stable -Areas of 5-15 percent slope that are not underlain by landslide or unconsolidated materials.

Generally Stable to Marginally Stable -Areas of greater than 15 percent slope that are not underlain by landslide deposits or bedrock units susceptible to land sliding.

Moderately Unstable -Areas greater than 15 percent slope that are underlain by bedrock units susceptible to land sliding but not underlain by landslide deposits.

Unstable - Areas of any slope that are underlain by or immediately adjacent to landslide deposits.

Earthquakes

The Montana Bureau of Mines and Geology indicates that earthquakes have been part of Montana almost since the beginning of written history. Geologic history of western Montana indicates that earthquakes accompanied the formation of the Rocky Mountains and will continue to be part of the mountainous region of western Montana (Stickney, 1993). Earthquakes cannot be predicted or avoided; precautions to reduce potential hazards, property loss, and injury are needed.

Lewis and Clark County is located in a zone of earthquake activity known as the Intermountain seismic belt. The zone extends from northwest Montana southward to southern Utah. The western half of Lewis and Clark County is in Seismic Zone 3, which

means that an earthquake can cause major damage. This area includes Helena, East Helena and Lincoln. The eastern half of the County, which includes Augusta and Wolf Creek, is in Seismic Zone 2, which means that an earthquake can produce moderate damage.

Numerous active fault lines have been identified throughout the County. Most earthquakes in Montana cannot be correlated to specific faults visible at the surface, except for those with magnitudes over 7.0. Small to moderate magnitude earthquakes occur at depths of three to ten miles below the surface on small, discontinuous faults.

Hidden faults were responsible for the worst earthquakes to hit the Helena area, including magnitude 6.3 and 6.0 tremors that struck on October 18 and 31, 1935. Four people were killed and property damage exceeded \$4 million. About sixty per cent of the buildings in Helena were damaged. Swarms of earthquakes hit the area, with more than 1800 tremors from October 4, 1935 to April 30, 1936. A computer simulation of a 6.3 earthquake today indicates that property damage in Helena would be nearly \$1 billion. Fatalities and injuries would depend upon the time of day the earthquake occurred.

Earthquakes are measured by two variables, magnitude and intensity. * Lewis and Clark County is generally rated as having an intensity level of VIII. Damage is predicted to be slight in buildings designed specially for the seismic zone. Buildings not constructed to meet the standards for the seismic zone would experience considerable damage with partial collapse. Panel walls would be thrown out of frame structures. There would be destruction of chimneys, factory stacks, columns, monuments, and walls. Heavy furniture would also be overturned. Sand and mud would be ejected from the ground in small amounts. There would also be changes in the static water levels in wells.

Energy is released during an earthquake by the rupturing of the earth's crust, causing cyclic waves to travel through the rock and soil mass. A phenomena referred to as

* The magnitude of an earthquake, as measured on the Richter scale, reflects the energy release of an earthquake. The intensity of an earthquake is gauged by the perceptions and reactions of observers as well as the types and amount of damage. The intensity of an earthquake is rated by the Modified Mercalli Scale. This scale ranks the intensity from I to XII. An earthquake rated as a I, would not be felt except by very few people under especially favorable circumstances. An intensity rating of XII on the other hand would result in total destruction. Seismic waves would be seen on the ground surface, lines of sight and level would be distorted and objects would be thrown upward into the air.

liquefaction also occurs if certain geologic and hydrogeologic conditions exist: There is a transformation of water-saturated sediments from a solid to a liquid state, as a consequence of increased soil pore water pressure.

Several conditions must be present for liquefaction to occur:

- The area must be in an active seismic zone subject to earthquakes greater than a magnitude of 5.0 (Lowe 1990).
- The area must be located where there is a shallow depth to groundwater.
- Unconsolidated sediments with sand and silt must be present.

A large majority of the Blackfoot River Valley is underlain by groundwater at depths less than 10 feet. Most valleys—including the Helena Valley, Silver Creek Valley, and Blackfoot River Valley—are filled with alluvial deposits that contain sand and silt. Conditions needed to create a liquefaction hazard may be present in these areas.

Detailed data on groundwater depth and geologic materials need to be collected to more accurately assess liquefaction susceptibility. Liquefaction susceptibility can be determined by the age of the deposit, percent sand and silt, degree of sediment sorting, and average thickness of the geological unit. This assessment was completed for the Helena Valley in 1987 (see Appendix E for map).

Age assessment of the deposit is important in determining liquefaction susceptibility: As the age increases, it is more likely the sediments will be cemented together or compacted, and less likely to liquefy. Based on a large volume of work conducted in the Helena and similarly formed valleys, it has been determined that sediment deposited more than 750,000 years ago are considered to have very low chance of liquefaction (Obermier et. al, 1990).

Radon

Radon is a naturally occurring gas found in soils, surface, and groundwater. Prolonged exposure to elevated levels of radon gas has been identified as contributing to the development of lung cancer. Radon gas is produced by the radioactive decay of radium. It is colorless, odorless, and undetectable, except by specific testing. Radon can be found, in its highest concentrations, in soils and rock containing uranium, granite, shale phosphate, and pitchblende. Dry, porous and permeable soils, as well as fractured or faulted rock formations, transport radon freely. Wet, tight, clay soils, on the other hand, seem to inhibit radon transport.

The Environmental Protection Agency (EPA) and the Montana Occupational Health Bureau conducted numerous radon sampling studies throughout Montana in the late 1980s, including Lewis and Clark County. The studies were conducted in public buildings, including schools, private residences, and groundwater wells. Montana had the fifth highest percentage of homes with indoor radon concentrations exceeding the federal action level of 4 pCi/l (picocuries per liter of air measure of radioactivity). Lewis and Clark County was identified as being in potential radon Zone 1. Zone 1 (highest potential) designation means that homes have a predicted indoor screening level greater than 4 pCi/l. The potential for elevated radon potential varies widely within the county and even within neighborhoods. The only way the radon level can be determined is by testing.

Elevated radon concentrations are also found in groundwater. Groundwater from private wells or small community systems may contribute sufficient radon to elevate concentrations within a house. Concentrations of radon in groundwater vary by aquifer type. Higher concentrations are found in groundwater hosted by granitic or high-grade metamorphic bedrock aquifers. Lower concentrations are found in sedimentary alluvial aquifers.

Hydrology

Surfacewater

Montana's rivers, streams and lakes are a valuable resource. Not only do they provide natural beauty, they supply the water necessary for recreation, industry, agriculture, and aquatic life. Major watercourses—including the Missouri, Blackfoot, and Dearborn Rivers--have many uses and benefits, including irrigation, recreation, aesthetics, fisheries habitat, wildlife habitat, and the production of hydroelectric power. Lewis and Clark County crosses nine watersheds: The Middle and South Forks of the Flathead, Blackfoot, Upper Clark Fork, Sun, Smith, Upper Missouri/Dearborn, Upper Missouri, and Boulder Rivers. The watersheds are described below.

Blackfoot Watershed

There are 52 rivers and streams and 276 lakes in the 2,345 square mile Blackfoot watershed. The Blackfoot River and its tributaries has been impacted by more than 100 years of mining, logging, and agricultural practices that have degraded water quality and

diminished fish habitat in this historically abundant trout fishery. The American Rivers conservation group listed the Blackfoot River as the tenth most endangered river in the U.S. in 1993. The river now benefits from the attention of the Blackfoot Challenge, a watershed group dedicated to managing the Blackfoot as a resource. The Blackfoot is also part of the Upper Clark Fork River Basin (see the section below on the Upper Clark Fork for more information).

Boulder Watershed

The Boulder watershed consists of 750 square miles with ten rivers and streams and five lakes. The Boulder watershed is impacted by agriculture, resource extraction, mill tailings, road construction, silviculture, and other activities.

Middle Fork Flathead Watershed

The 1137 square miles of this watershed include thirty-three rivers and streams, and 96 lakes. Potential sources of impairment include natural contamination sources and silviculture.

Smith Watershed

The 1997 square miles of the Smith watershed are home to 42 lakes and 37 streams and rivers. Sources of potential impairment include agriculture, resource extraction, silviculture, channelization, placer mining, and other activities.

South Fork Flathead Watershed

The 1684 square miles of this watershed contain ninety-nine lakes and 49 rivers and streams. Threats to water quality include dam construction, impoundment, and silviculture. The Flathead Basin Commission is directed in M.C.A. 75-7-302 to protect the existing high quality of the waters that flow from the Middle and South Forks of the Flathead River into Flathead Lake.

Sun Watershed

There are 1981 square miles in the Sun watershed, with 19 rivers and streams and 210 lakes. Potential sources of water quality impairment include agriculture, flow modifications and regulation, animal holding and management areas, irrigated crop production, and natural sources.

Upper Clark Fork Watershed

The Upper Clark Fork watershed encompasses 2,320 square miles with 46 rivers and streams, and 149 lakes. The Upper Clark Fork River suffers serious stream dewatering due to summer irrigation practices, resulting in increased impacts from wastewater discharges, elevated temperatures, nuisance algae growth, and lower dissolved oxygen which results in degraded fish habitat. In 1991, the Montana Legislature issued a moratorium on the issuance of more surface water rights until June, 1995. The Upper Clark Fork River Basin Management Plan (1994) listed several recommendations for the management of the river basin, including:

- Basin closure to the issuance of most new surface and groundwater use permits.
- Creation of an on-going water planning and management mechanism.
- Protection of existing water rights.
- Encourage the development of voluntary, local, non-point pollution control strategies.

The Upper Clark Fork River Basin Management Plan has been adopted into the Montana State Water Plan. 85-2-337 Montana Code Annotated creates the Upper Clark Ford River Basin Steering Committee and allows the Lewis and Clark Board of County Commissioners to appoint a member.

Upper Missouri Watershed

The 3,363 square miles of the Upper Missouri watershed contains 42 lakes and 48 rivers and streams. This watershed is home to the majority of the County population, and is subject to growing development pressure. The Missouri River and Canyon Ferry, Holter, and Hauser Lakes are increasingly popular recreational sites. Holter and Canyon Ferry Lakes, as well as Lake Helena are seeing increasing land development, changing agricultural practices, and other activities that are altering their character.

Tenmile Creek is a stream targeted for total maximum daily load (TMDL) development. Possible threats to Tenmile, Prickly Pear, and other streams in this watershed include agricultural practices, municipal point source pollution, resource extraction, highway and road construction, streambank modification, mine tailings, dredge mining, placer mining and subsurface mining, among other activities. Tenmile Creek is a National Priority List Superfund site and is described in some detail elsewhere in this document.

Upper Missouri-Dearborn Watershed

This 2,663 square mile watershed contains thirty-seven rivers and streams, and 139 lakes. Potential sources of impairment are agricultural practices, streambank modification, impoundments, silviculture, channelization, resource extraction, and subsurface mining. The Montana Legislature has closed the Upper Missouri Basin (along with several others such as the Upper Clark Fork) to future surface appropriations. More people are turning to groundwater to satisfy their needs as a result.

Montana Water Planning/Permits

The Montana Water Plan notes that groundwater appropriations may adversely affect surface water flows or uses. The Water Plan recommends that watershed groups be formed to perform four functions with assistance from the Lewis and Clark Water Quality Protection District, Montana Bureau of Mines and Geology, Department of Environmental Quality, Department of Natural Resources and Conservation and the Conservation District. Those four functions are:

- Participate in local ground water planning.
- Perform a comprehensive evaluation of existing groundwater uses.
- Plan for future groundwater uses.
- Estimate the quantities of groundwater available to meet existing and future needs.

The Montana Water Plan further recommends that through the water grant process, attention be focused on programs that do the following:

- Protect public health.
- Protect groundwater and groundwater recharge

- Define the role of irrigation and wastewater treatment systems,
- Define the role of constructed wetlands in groundwater recharge and discharge, particularly where there is a potential connection to surface waters.

The complexities of maintaining habitats to sustain plant and animal populations, particularly fisheries habitat, are a challenging issue. Not only are the physical and chemical characteristics of the surface water important, but also best land use practices adjacent to the streams are essential. Land-use practices that help maintain soils, terrestrial vegetation, and stream channel stability are good for fish populations. Good stream habitat includes cool, clean, clear water flowing through deep pools, steep riffles, and log jams, as well as overhanging trees, bushes, and undercut banks.

Water quantity is critical to fisheries habitat. Water quantity controls the space available for fish and also controls food production. Water quality is also an important aspect of habitat. Many fish species have very narrow water temperature ranges in which they can live and reproduce. Water temperature also affects the amount of dissolved oxygen that water can hold (colder water is capable of holding more dissolved oxygen). Water also needs to be free from sediments, chemicals, and other substances. Sediments destroy the gravelly areas needed for fishery reproduction (Workman, 1994).

The Department of Environmental Quality (DEQ) is the state agency responsible for preserving and maintaining the quality of Montana's water supply. Development activities in or near streams are governed by the Montana Stream Protection Act (124 permit) and the Montana Natural Streambed and Land Preservation Act (310 permit). A 124 permit is required of all governmental agencies proposing projects that may affect the beds or banks of any stream in Montana. The purpose of the law is to preserve and protect fish and wildlife resources in their natural existing state. The Montana Department of Fish, Wildlife and Parks administers this law. A 310 permit is required of all private, non-governmental individuals or corporations that propose to work in or near a stream. The purpose of the law is to minimize soil erosion and sedimentation, maintain water quality and stream channel integrity, and prevent property damage to adjacent landowners. The Lewis and Clark County Conservation District and the Department of Natural Resources and Conservation administers this permit.

Pollution problems in Montana's waterways are nothing new. Montana's efforts during the 1970s and 1980s focused on limiting discharges from industrial and sewage treatment plants. While much progress has been made since then, water quality problems continue. To address them, the 1997 State Legislature passed House Bill 546, which established a Total Daily Maximum Loading (TMDL) program. The facilities and receiving waters are listed in table 5.2.

Table 5.2
Active Montana Pollution Discharge Elimination System (MPDES) Permits
in Lewis and Clark County

| <u>Facility Name</u> | <u>Receiving Waters</u> | <u>Issue Date</u> |
|----------------------------------|-------------------------------|-------------------|
| A.B. Cobb Ranch | Ford Cr. of the Sun R. | 2/5/01 |
| Air Liquide America Corp. | Prickly Pear Cr. | 9/1/96 |
| ASARCO | Blackfoot R. | 3/5/03 |
| ASARCO Inc. (East Helena) | Prickly Pear Cr. | 11/1/96 |
| ASARCO Inc. | Prickly Pear Cr. | 6/1/93 |
| ASARCO Inc. (Mike Horse) | Mike Horse/Beartrap Cr.; | 7/1/97 |
| | Blackfoot R. | |
| Basin Cr. Mining, Inc. | Grub/Monitor Cr. | 4/1/94 |
| Bouma Post Yards, Inc. | Flescher Lakes | 12/3/92 |
| Broken O Ranch | School Sect. Coulee to Sun R. | 10/25/00 |
| Building Materials Holding Corp. | Prickly Pear Cr. | --- |
| East Helena, City of | Prickly Pear Cr. | 5/01/97 |
| Exxon—Helena Terminal | Prickly Pear Cr. | 4/1/98 |
| Gates of the Mountains, Inc. | --- | --- |
| Helena Regional Airport | --- | --- |
| Helena, City of | Prickly Pear Cr. | 1/1/97 |
| Helena, City of (WTP) | Prickly Pear Cr. | 11/1/91 |
| Helena, City of (WTP) | Ten Mile Cr. | 2/1/95 |
| Leland Den Boer | --- | --- |
| Lewis and Clark Co. Landfill | --- | --- |
| Liquid Air Corp. | Prickly Pear Cr. | 10/22/92 |
| Montana Gold and Sapphires, Inc. | Missouri R. | 2/1/94 |
| Montana Rail Link | --- | --- |
| Pacific Steel and Recycling | Ten Mile Cr. | --- |
| PP&L Montana, llc.—Hauser Dam | Missouri R. | 7/1/95 |
| Seven Up Pete Joint Venture | Blackfoot R. | 2/18/03 |
| Seven Up Pete Joint Venture | Blackfoot R. | 2/14/03 |
| Steinbach Cattle Co. | --- | 7/27/89 |
| UPS, Helena Center | --- | --- |

Source: Montana Department of Environmental Quality, October 2003

Defined in a non-technical way, TMDL refers to a plan or strategy to return a water body to compliance with the water quality standards and therefore fully supporting of its designated uses. It could be called a "water quality improvement plan." Once a water body is back to fully supporting its designated uses, a water quality plan can help a community maintain the level of water quality.

The Monitoring and Data Management Bureau of the Department of Environmental Quality (DEQ) has responsibility under the Federal Clean Water Act and Montana Water Quality Act to monitor and assess the quality of Montana surface waters, and to identify impaired or threatened stream segments and lakes. Amendments to the Montana Water Quality Act (MCA 75-5-702, effective May, 1997) require DEQ to consider all currently available data when making water quality assessments, including information or data obtained from federal, state, and local agencies, private entities, or individuals with an interest in water quality protection.

DEQ sets limits known as Total Maximum Daily Loads (TMDLs) for each pollutant entering a body of water (see table 5.3). TMDLs are established for streams or lakes that fail to meet certain water quality standards, and describe the amount of each pollutant a water body can receive without violating water quality standards. DEQ considers future growth and development in establishing these limits, and then adds a margin of safety to its calculations. TMDLs take into account the pollution from all sources, including discharges from industrial plants and sewage treatment facilities, runoff from farms, forests and urban areas, and natural sources such as decaying organic matter or nutrients in soil. DEQ determines both the amount of a pollutant that enters the water naturally and the amount that enters the water from discharges and runoff. DEQ then balances the quantities of pollutants allowed from all sources so the total does not exceed the limits necessary to maintain water quality. Through these limits, DEQ can make sure the water remains (or becomes) safe for fishing, drinking, recreation, and aquatic life.

A TMDL approach for water bodies does not replace existing water pollution control programs or standard treatment technologies. It provides a framework for evaluating pollution control efforts, and provides for closer coordination of local, state, and federal efforts to guarantee that local water quality goals are met.

**Table 5.3: Water Bodies in Lewis and Clark County
in Need of Total Maximum Daily Load Development (TMDL)**

| Water Body | Estimated length (miles) | TMDL Develop. Priority | Probable Impaired Uses | Probable Causes | Probable Sources |
|-------------------|---------------------------------|-------------------------------|---|---|---|
| Avalanche Gulch | 14 | low | aquatic life support cold water fishery -trout recreation swimmable | flow alterations other habitat alts. | agriculture placer mining resource extraction |
| Magpie Creek | 11 | low | aquatic life support cold water fishery -trout | flow alterations other habitat alts. | dredge mining resource extraction subsurface mining |
| Cave Gulch | 5 | low | agriculture aquatic life support cold water fishery -trout swimmable | flow alterations other habitat alts. siltation | resource extraction highway/road/bridge const. placer mining |
| Hellgate Creek | 10 | low | aquatic life support cold water fishery -trout | habitat alteration ph | mine tailings placer mining resource extraction subsurface mining |
| Missouri River | 26 | low | aquatic life support cold water fishery -trout drinking water supply recreation swimmable | flow alterations metals nutrients suspended solids | agriculture flow regulation/modifications irrigated crop production municipal point source natural sources non-irrigated crop production range land |
| Beaver Creek | 16 | low | aquatic life support cold water fishery -trout | other habitat alts. siltation | highway/road/bridge const. natural sources pasture land |
| Trout Creek | 9 | low | aquatic life support cold water fishery -trout | other habitat alts. siltation | agriculture pasture land streambank mod./destab. |
| Falls Gulch | 3 | low | aquatic life support cold water fishery -trout | metals | natural sources placer mining resource extraction |

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| | | | | | |
|--------------------|----|------------------------------------|--|--|---|
| Prickly Pear Creek | 3 | low | aquatic life support cold water fishery -trout recreation swimmable | nutrients suspended solids thermal modifications | agriculture irrigated crop production placer mining rangeland resource extraction |
| Tenmile Creek | 22 | high TMDL devel. in progress | aquatic life support cold water fishery -trout drinking water supply recreation swimmable | flow alterations metals habitat alteration siltation ph | agriculture harvesting, restoration, residue management highway/road/bridge const. irrigated crop production mine tailings resource extraction silviculture |
| Silver Creek | 20 | low | aquatic life support cold water fishery -trout drinking water supply recreation swimmable | flow alterations metals habitat alterations priority organics | agriculture dredge mining irrigated crop production mill tailings resource exaction subsurface mining |
| Sevenmile Creek | 14 | low | cold water fishery -trout | habitat alteration siltation | agriculture irrigated cropland resource extraction rangeland |
| Granite Creek | 2 | low | cold water fishery -trout | habitat alteration | agriculture natural sources rangeland |
| Prickly Pear Creek | 35 | low | agriculture aquatic life support cold water fishery -trout drinking water supply recreation swimmable | flow alterations metals nutrients habitat alterations siltation suspended solids unionized ammonia | agriculture dom. wastewater lagoons highway/road/bridge const. irrigated crop production municipal point source mine tailings pasture land placer mining resource extraction subsurface mining |
| Jennies Fork | 3 | low | aquatic life support cold water fishery -trout recreation swimmable | metals siltation | mill tailings resource extraction |

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| | | | | | |
|------------------------|----|-----|---|--|---|
| Skelly Gulch | 7 | low | aquatic life support cold water fishery -trout | siltation | highway/road/bridge const. |
| Virginia Creek | 7 | low | agriculture aquatic life support cold water fishery -trout drinking water supply | metals suspended solids | mill tailings resource extraction subsurface mining |
| Little Prickly Pear | 35 | low | aquatic life support cold water fishery -trout | flow alterations habitat alterations siltation | agriculture construction irrigated crop production |
| Fool Hen Creek | 2 | low | aquatic life support cold water fishery -trout | metals suspended solids | mill tailings subsurface mining resource extraction |
| Sheep Creek | 5 | low | aquatic life support cold water fishery –trout | siltation | resource extraction |
| Woodsiding Gulch | 1 | low | aquatic life support cold water fishery -trout swimmable | habitat alteration | highway/road/bridge const. |

(Source: Montana Department of Environmental Quality, 1998)

Groundwater

Groundwater is used by approximately 53 percent of Montana's population as a source of drinking water. Groundwater quality in Lewis and Clark County is generally good. Concentrations of dissolved substances may be higher in groundwater than in surface water, and in some instances can exceed the national secondary drinking water standards. In Lewis and Clark County, dissolved solids in groundwater range from 400 to 2000 mg/l.

Groundwater occurs in the sub-surface pore spaces, fractures, and voids in rocks, soil and sediment formations. Typically, groundwater is thought of in terms of aquifers with defined boundaries, but groundwater also includes shallow vagrant soil moisture that will rejoin surface and groundwater, or be taken up by the roots of plants.

Groundwater originates from water infiltrating the ground from snow, rain, and water courses. Groundwater tends to move from the highlands to low areas, where it is discharged to streams, used by plants, or evaporates. The movement, amount, and quality of groundwater at any location depends on the type of aquifer, climate, landform, and other natural features. Groundwater is also influenced by human activities, although to a lesser extent than surface water.

Aquifers in Lewis and Clark County are divided into four categories: bedrock, tertiary basin fill, glacial, and alluvial.

Overview of Aquifer Types

Bedrock Aquifers: Bedrock is a term used to describe solid rock, which is often covered by soil or other uncompacted materials (e.g., sand, gravel and clay). Bedrock forms the core of mountainous areas and is present deep below younger deposits in valleys. The most common forms of bedrock found in Lewis and Clark County are: Precambrian age metasedimentary rock; Paleozoic and Mesozoic age marine and terrestrial sandstones, shales and carbonate rocks; and igneous rocks of various ages.

The water bearing capacities of bedrock formations depends on whether the rock is porous, fractured, or cavernous. The source of groundwater recharge in bedrock aquifers is largely infiltrating water from mountain snow pack and precipitation.

Precambrian metasedimentary rocks are typically highly compacted and nonporous; groundwater principally occurs in the fractures. These extremely old rocks include

maroon, pale green, and lavender hardened siltstones (argillites), sometimes visible in rock outcrops. Well yields are variable, but generally small, ranging from 1 to 35 gallons per minute.

The water bearing capacities of Paleozoic and Mesozoic age marine and terrestrial rocks are dependent on the type of rocks, degree of fracturing, geologic structure and topographic setting. Limestone and sandstone formations are typically moderate to good aquifers, while shales may yield little or no water. Well yields are variable, ranging from 5 to 100 g.p.m. Igneous rocks include volcanic rocks (molten rock that solidified at or near the surface) and plutonic rock (molten rock that solidified at depth). In plutonic rocks, such as granite, groundwater occurs principally within fractures. Well yields average as little as 2 to 5 g.p.m.

Tertiary Basin Fill Aquifers: During the Tertiary Age, mountainous areas were eroded and sediments accumulated in the valleys. The deposited sediments consist of uncompacted or poorly compacted clay, silt, sand and gravelly materials in horizontal or slightly tilted layers. They also include beds of volcanic ash. The water yield of the Tertiary fill sediments within basins generally range from 5 to 35 g.p.m. In some areas, a basin's thick, gravelly saturated sediments provide enough water to operate large sprinkler irrigation systems. Water enters the Tertiary sediments via seepage from streams, overlaying alluvial aquifers, precipitation, and irrigation activities. Water quality depends on the location and depth of wells, the type of sediment present, and the proximity to fresh water recharge sources. Water quality is typically fair to good for domestic and stock water purposes, but may be susceptible to degradation by human activities.

Glacial Aquifers: Many of the higher, more rugged mountainous areas of Lewis and Clark County, such as the Blackfoot Valley, were glaciated during the ice age. The glaciers carved large amounts of materials from the surrounding landscapes and transported it downhill. The deposits left by these glaciers are complicated mixtures of poorly sorted debris (glacial till), gravelly outwash and glacial lake sediments. The water bearing properties for glacial aquifers are as variable as the nature of their deposits.

Alluvial Aquifers: Alluvium consists of loosely compacted gravel, sand, silt, and clay deposited by streams. These sediments are present beneath the floodplains of streams and are layered and highly variable from one location to another within the floodplain.

Alluvial aquifers such as the Helena Valley Aquifer are excellent water sources and are the most extensively used type of aquifer. Water yields in the alluvial sediments can be very large, as much as 1,000 g.p.m. or more in a properly designed, large diameter well.

Groundwater in alluvial aquifers is hydraulically connected to streams, and water levels and movements are affected by stream conditions. The relationship between alluvial groundwater and streams can be complicated and vary both by location and time. Some stream reaches may gain water from adjacent alluvial aquifers, while other reaches may lose water. The relationship could shift due to natural or human induced conditions, including seasonal variations in precipitation and streamflow, irrigation activities, groundwater withdrawals, and wastewater treatment discharge. Because of the shallow nature of alluvial sediments, shallow water depths, and concentrated human populations in the valleys, alluvial aquifers may be susceptible to contamination.

Groundwater-Surfacewater Interaction

Groundwater and surface water are components of the same hydrologic system, with complex interactions. Mixing groundwater with surface can have a significant effect on either body. Contamination of surface waters in the Missouri River, Blackfoot River, Tenmile Creek, and Prickly Pear Creek can be transmitted to the coarse, alluvial aquifers of the river valleys and the Helena Valley through seepage into the streambed, sometimes causing contamination of drinking water wells. In other cases, contamination can migrate from the aquifer to the surface water through springs and other sources.

Groundwater-surface water interaction can also affect aquifer recharge and streamflow volumes. Streams and lakes receiving recharge from aquifers that are being depleted may experience a reduction in available streamflow for irrigation, fisheries, and other uses.

Irrigation canals and irrigation water act as surface waters and--in some cases--provide aquifer recharge. Influences from Missouri River irrigation waters are evident in groundwater samples with high levels of arsenic in the Helena Valley, some elevated above the State of Montana health standard of 18 micrograms per liter (USGS 1997).

The federal Clean Water Action Plan recommends a watershed approach to evaluating and resolving potential surface and ground water quality problems. This approach recognizes that water moves through a hydrologic cycle, usually beginning with

precipitation, then moving through the ground as groundwater before emerging in streams, rivers, and lakes.

The watershed approach recognizes that the majority of water quality problems are caused by literally thousands of diffuse, non-point sources of polluted runoff, as well as point sources like sewage treatment systems. Threats to water quality in Lewis and Clark County vary and must be addressed individually in a manner that recognizes the unique nature of each watershed.

Groundwater in the Helena Valley

The areas of Lincoln, Wolf Creek, Craig, and the Helena Valley are served by shallow, near surface, unconfined alluvial aquifers composed of coarse-grained deposits which may allow rapid infiltration of surface contaminants. Because the groundwater resources in the Helena Valley are the most important in the County in terms of the number of people they serve, this area is examined in more detail.

Groundwater in the Helena area is the sole source of drinking water for approximately 55 percent of the local population. The Helena Valley alluvial aquifer provides water through approximately 5000 domestic wells and 60 public water supplies. Planned conservation and protection of water supplies is the underlying element in maintaining this as a renewable resource.

The Helena Valley is a broad, oval-shaped, sediment-filled basin with its edges rising to pediments on the north, south, and southwest that sharply abut the surrounding mountains. The valley floor is relatively flat and slopes gently toward Lake Helena in the northeast part of the valley.

Surface deposits on at the southwest and northwest margins in the Helena Valley are of Quaternary age, poorly sorted, and contain boulder to cobble size gravels found in a matrix of sandy silts and clays. The broad plain that slopes toward Lake Helena is formed of alluvial deposits which lie on deformed and eroded Tertiary lake beds. The total depth of the valley-fill exceeds 6000 feet near the basin interior and thins toward the margins. The alluvial deposits are generally not cemented or compacted (USGS 1992)

The geologic materials that comprise the aquifer appear to be discontinuous, heterogeneous, alluvial, and lacustrine deposits, with isolated clay and silt lenses that are continuously saturated from the water table to a depth of at least 500 feet. Alluvial

deposits in the vicinity of Lake Helena are relatively well-sorted, fine-grained, and compact.

The Helena alluvial aquifer system has been the focus of several comprehensive studies. The U.S. Geological Survey reports include "Appraisal of the Quality of Groundwater in the Helena Valley, Montana" (USGS 1973); "Evaluation of Shallow Aquifers in the Helena Valley, Lewis and Clark County, Montana" (USGS 1980), and; "Hydrogeology of the Helena Valley-fill Aquifer System, West-central Montana" (USGS 1992). The 1992 study describes the valley-fill aquifer system as being "relatively susceptible to potential contamination from surface and near-surface sources."

The 1992 USGS study identified areas of recharge for the valley aquifer. Inflow from bedrock aquifers accounts for 46 percent of valley recharge, irrigation water infiltration accounts for 31 percent, infiltration from streams contributes 15 percent, and leakage from the Helena Valley irrigation canal accounts for 8 percent. There is an upward gradient in an area of within 4 miles of Lake Helena. The study identified a tendency for a downward gradient in most of the rest of the valley, and further indicated that areas with a downward gradient and vertical permeability were most susceptible to potential contamination.

A 1992 study performed by the United States Geological Survey [Briar, D.W. and Madison, J.P. Hydrogeology of the Helena Valley-Fill Aquifer System, West-Central Montana, Water-resources Investigations Report 92-4023] indicated a median nitrate concentration of 1.2 mg/L. The report—which was based on a study of 100 wells--stated that some correlation exists between septic system density and higher nitrate concentrations.

In a 1999 study, "Total maximum daily load development (TMDL) and assessment of wetland treatment of stormwater runoff for the City of Helena, Montana" (LCCWQPD/Drake and Hettinger), sampling of groundwater wells down gradient of a localized discharge zone of the Helena Valley alluvial aquifer in October of 1996 demonstrated the presence of PCP and Picloram. The study implies that contaminated surface water from city streets may find its way into the alluvial aquifer. This is born out by documented spills of cyanide (Mother Lode Film Processing Plant 1984) and diesel (Continental Pipeline 1984), as well as the above-cited correlation between the density of on-site wastewater treatment systems and increased nitrate concentrations in groundwater. Conservation and/or the creation of wetlands may enhance the removal of nitrates, phosphates, and toxic chemicals from urban runoff, while serving as important groundwater recharge sites; because of these benefits, wetlands should be incorporated into large area development. As the Helena area becomes urbanized,

more acres of streets, parking lots, roofs, and other impermeable surfaces intercept precipitation and preclude aquifer recharge.

Preliminary results of groundwater sampling conducted by the Water Quality Protection District in 2001 and 2002 demonstrate higher nitrate concentrations in shallow groundwater and decreasing concentration with depth. Sampling in two subdivisions (Cedar Hills and Griffin-Davis) provide preliminary data indicating nitrates at the downgradient edge of the subdivision have higher nitrate concentrations than at the upgradient edge. Further, nitrate concentrations in from five wells in both subdivisions have periodically exceeded the EPA drinking water limit (WQPD files).

Depth to groundwater in the Helena Valley ranges from less than one foot in some areas to 60 feet near the margins of the valley. Depth to groundwater is influenced by irrigation practices in the valley and by spring runoff. The Lewis and Clark County Water Quality Protection District and the Environmental Health Division have recorded fluctuations of up to ten (10) feet.

Groundwater is generally closer to the surface in the area near Lake Helena and along Tenmile Creek, Prickly Pear Creek, and Silver Creek. Because of variability in depth to groundwater, site specific monitoring is required by the Environmental Division of the Lewis and Clark County Health Department prior to permitting on-site wastewater treatment systems in some areas. General depths to groundwater in the Helena Valley are reported in the 1992 USGS study.

Current monitoring in the Helena Valley includes a cooperative static water level monitoring program between the LCCWQPD and the Montana Bureau of Mines and Geology (MBMG). This program is part of Montana's 20 Year Groundwater Assessment Program. Beginning in the summer of 2000, the LCCWQPD received a Department of Natural Resources and Conservation (DNRC) Renewable Resource Grant to install and monitor 30 dedicated monitoring wells in the Valley.

Potential threats to water quality in the Helena Valley aquifer include:

- Treated effluent from both the Helena Treatment Plant and the East Helena Lagoon enters the aquifer by infiltration from their outfall ditches into Prickly Pear Creek.
- Pesticides, herbicides, and fertilizers are used throughout the County by farmers, ranchers, the Lewis and Clark County Weed District, and many households.
- Waste oil spread on roads throughout the county is subject to seepage and run-off.
- Storm water run-off from municipal streets and subdivisions contains oils, grease, solvents, and chemicals that can enter the aquifer.
- Sand and gravel extraction operations in the Helena Valley expose and greatly reduce the protection of aquifer waters.
- Class 5 injection wells (dry sumps receiving liquid industrial and shop wastes) are located throughout Helena and the Helena Valley. They provide a direct pathway for harmful petroleum and chemical products to enter aquifer waters.
- The City of Helena landfill and the Scratchgravel landfill are being investigated as being the potential source of volatile organic contaminants that have found their way into the aquifer waters. Two other landfills, one southwest of East Helena and the other in the Valley center lie directly above aquifer waters and are not being monitored at this time.
- The Helena Airport has two hydrocarbon plumes from underground storage tanks that have leaked in the past. Although the tanks have been removed, groundwater in the vicinity is still contaminated. The conditions are being monitored continuously.
- There are seven sewage lagoons located throughout the Helena Valley that provide wastewater disposal facilities for institutions and subdivisions. The lagoons are in areas directly overlying aquifer waters.

- Continuing development requires the use of community or individual on-site wastewater treatment facilities which discharge treated effluent directly to the ground.
- Underground storage tanks are common in the City of Helena and surrounding area. As of August, 2002, there were 227 active underground storage tanks at 75 facilities in Lewis and Clark County. Within the Helena Valley there were 181 underground storage tanks at 58 facilities.
- Leaks and releases from fuel tanks and rail depots in the Helena area have been documented for years, including a 1974 Yellowstone Pipeline release of 10,000 gallon of diesel, the accidental release of 4,000 gallons of gas and diesel into inspection ports at Fort Harrison, and the leak of more than 100,000 gallons of diesel from Burlington Northern rail yards in 1981 and 1986.

Wastewater Protection Strategy: **Protection of Groundwater and Surface Water**

Expansion of residential and industrial development into both the Helena Valley alluvial aquifer and the hydrologically sensitive bedrock areas is occurring increasing pressure on water supplies and exposing the aquifers to ever-increasing numbers of contaminant sources, most notably individual and community (decentralized) on-site wastewater treatment systems.

There are nine large wastewater treatment facilities that are treating approximately 45 percent of the 1.8 million gallons per day (mgd) of wastewater being generated in the Valley area. This leaves 1 mgd being treated by on-site wastewater systems overlying the Helena Valley alluvial aquifer. With the projected population growth of the Valley, by the year 2020 there will be approximately 1.7 mgd being treated by on-site systems.

Many of the soil types of the Valley and other alluvial aquifers are mapped by the Natural Resource Conservation Service (NRCS) as being severely limited for on-site wastewater treatment systems. This severe ranking is derived from the coarse porous nature of the soils, shallow groundwater, and the wetness of the soils. Many areas along the three major streams of the Valley are susceptible to flooding or are in the 100 year floodplain. Along the fringe areas of the Valley soils are shallow and directly overlie fractured bedrock. Careful siting and maintenance of on-site wastewater

treatment systems is required to avoid future environmental problems. (Note: soil type maps were completed in 1984, and certified in 2001.)

On-site wastewater treatment systems (as well as other onsite or alternative decentralized wastewater treatment systems) can be the most practical and cost-effective way to treat household wastewater, assuming they are properly installed and managed. Without proper management, however, systems can fail, polluting water resources and threatening public health. Systems need periodic maintenance, including tank pumping.

Lewis and Clark County began permitting on-site wastewater treatment systems in 1973 when the County adopted its first set of on-site wastewater regulations. Prior to 1973, developers were able to install on-site wastewater treatment systems that were not required to meet any type of minimum standards. The State of Montana adopted minimum standards for on-site wastewater treatment systems in 1993. As a result, the quality of systems being installed has improved dramatically.

Lewis and Clark County does not have a complete inventory of the number, type, and condition of on-site wastewater systems in the Helena Valley. Many of the on-site wastewater systems were installed prior to 1973, and a large number were installed prior to the adoption of the State minimum standards. Many older systems are in poor condition and malfunctioning; they may have had little or no maintenance, and may be contributing to groundwater degradation of the valley aquifer.

The Helena Area Wastewater Treatment (HAWT) Facility Plan, completed in June of 1998, notes that of the six lagoons in the valley, four do not meet current standards and may be in violation of the Clean Water Act and the Montana Water Quality Act. Discharge from lagoons to groundwater totals 0.46 million gallons per day (mgd). These systems also need to be reviewed and, if necessary, updated or repaired.

These conditions can be alleviated with the development of a local wastewater management program for on-site or decentralized systems. A management program would ensure that the systems are properly managed and provide effective treatment of domestic wastewater. In 1996, Congress requested the EPA to examine the benefits of on-site and decentralized wastewater system alternatives, versus centralized wastewater collection and treatment. In its response, EPA concluded that "adequately managed decentralized wastewater systems are a cost-effective and long-term option for meeting public health and water quality goals." EPA identified the following barriers to the successful implementation of onsite and decentralized systems:

- Lack of knowledge and public misconceptions.
- Legislative and regulatory constraints.
- Lack of management programs.
- Liability concerns and engineering fees.
- Financial constraints

The EPA Voluntary Management Standards Guidance Manual Draft notes that use of decentralized treatment is currently increasing. In Lewis and Clark County, approximately 50 percent of the total housing units are served by individual or shared (two household) systems. According to the EPA, failure rates of on-site systems across the country are unacceptably high due to inappropriate siting, design, and inadequate long-term maintenance. Failures include surface seepage, plumbing backups, nitrate contamination of groundwater and nutrient and pathogen contamination of surface waters.

Current management programs are limited to regulatory codes and their administration. They include performance that is free of plumbing backup or surfacing sewage, prescriptive siting, design and construction requirements, and regulatory review and approval. A weakness of this regulatory program is that satisfactory treatment is not a performance requirement and there is no continuous oversight and compliance enforcement.

Initial levels of management, such as the Helena Area Wastewater Treatment (HAWT) Facility Plan completed in June of 1998, provide the blueprint for comprehensive area-wide wastewater planning. The HAWT report recommends that "a detailed inventory of existing on-site system should be conducted to determine the number of systems, their age, and approximate location. . . ." The report goes on to state that "an ongoing inspection program should be developed to characterize the condition and performance of existing on-site wastewater treatment systems." The HAWT report adds that, "the formation of a valley wide maintenance district should be considered to finance the inventory and inspection programs...A more detailed assessment of the formation, organization and possible role of a maintenance district should be performed as an initial step to the development of a valley wastewater management strategy."

The need to identify and assess sources of pollution and their impacts are echoed by the HAWT study, the EPA's Draft Voluntary Management Standards Guidance Manual, the national Clean Water Action Plan, and Montana's own Water Plan. The EPA calls for standards for progressive levels of on-site management including coordinated planning and design, greater range of treatment options, early identification of

performance malfunctions, owner awareness of maintenance needs, and preventive maintenance routinely performed.

County Inventory of On-Site Wastewater Treatment Systems

Introduction

The Lewis and Clark County Environmental Health Division (EHD) received a Community Development Block Grant (CDBG) in July 2000 to conduct an inventory of on-site wastewater treatment systems and wells in designated areas of the County. The study, which was completed in April 2002, focused on the Helena Valley, Colorado Gulch, Wolf Creek, and Craig.

There is currently no mechanism in place to evaluate whether existing on-site wastewater treatment systems are operating and being maintained effectively. Concerns in the Helena Valley, in particular, include the following: seepage from lagoons; over-utilization of on-site wastewater treatment systems in marginal soils overlaying shallow groundwater; flood events; and increasing residential density. Historic natural background levels of nitrates in Helena Valley groundwater were 0.1 mg/l (Moreland and Leonard, 1980), while samples during the last five years have uncovered nitrate concentrations ranging between 1.0 and 17.0 mg/l. The maximum nitrate concentration for drinking water established by the federal Environmental Protection Agency (EPA) is 10 mg/l (MT DEQ).

A significant part of the research was a survey designed to determine specific information on individual properties in the study areas; assess the homeowner's knowledge of their septic system; and determine the level of maintenance that was occurring. Approximately 5,460 homes within the study area were visited by EHD staff; of these, 2,335 (43 percent) completed the survey. An additional source of data were interviews conducted with local septic pumping companies operating in and around the study area.

Summary of Results

Some of the key results of the research include the following:

- 70 percent of the survey respondents indicated that a septic permit for their property had been issued prior to installation of the system (either a new or replacement system). According to the County septic system database, however, only 63 percent of the homes in the study area that are served by an on-site system had been issued a permit.
- Of the respondents who indicated they had no permit for their system (30 percent of those who responded), 21 percent indicated their systems were installed prior to 1973, when the County began its permit system; 43 percent were installed between 1973 and the time of the survey, when permits were required; and 37 percent didn't know when their system was installed, and there was no record of a permit being issued.
- According to interviews with employees of septic pumping companies working in the study area, approximately 20 percent of the systems are being maintained in any given year. Approximately 25 to 50 percent of their service calls resulted from a crisis situation, such as sewage backing up in the house or surfacing in the yard.
- Interviews with septic company employees indicate that approximately 50-60 percent of the systems are being maintained on a routine three to five year basis, 20-25 percent are being maintained on a crisis only basis, and 20-25 percent are not being maintained at all.
- According to the homeowner survey, 63 percent of the residences indicated that their septic tank had been installed or pumped within the last three years. Taking a slightly longer time-frame, 73 percent said their systems had been installed or pumped within the last five years. Lewis and Clark County recommends that tanks be pumped every three years; the EPA recommendation is three to five years.

In response to the information gathered through the interviews and surveys, the study made the following summary observation:

From these results it is apparent that there is a considerable lack of knowledge by the homeowners about their on-site wastewater treatment systems... Failure

to properly maintain septic systems may cause the septic system to fail, which can have serious impacts on the property owner or the environment...The number of systems that are not being pumped or are only being pumped in a crisis is of concern and measures should be put in place to remedy this situation.

Study Recommendations

The study went on to make a number of recommendations on how to address the situation, as follows:

- Initiate a homeowner education program targeted at the first time homeowner or builder who would like to install an on-site waste-water treatment system. As an incentive, participation in the program would result in a reduction in the price of a permit.
- A second, more detailed homeowner education program would be developed, directed at homeowners with existing systems.
- Once the homeowner education programs were in place, work could begin on creating an on-site wastewater maintenance district or program aimed at ensuring routine maintenance of all systems. The program would require a two-year maintenance schedule for all systems utilizing a pump. Lack of proof of maintenance would be followed a notice of violation from the EHD.
- A fourth component of the long-term maintenance program would be mandatory inspections of on-site treatment systems at the time of a real estate sale or transfer. Mandatory inspections at the time of sale—which currently occur in many other states—would help protect buyers, sellers, and agents involved in the sale.

In addition to the above, the study identified specific problems related to on-site wastewater treatment systems in the following neighborhood areas (specific details can be obtained in the study):

- Sewell Subdivision
- Belair and Adjacent Area
- Dunbar Area
- Rimini

- East Helena Fill-in Area
- Townview/Douglass Circle Area
- Trerise/Lanning Area
- La Casa Grande
- Seaver Park
- Griffin-Davis Area
- Wolf Creek
- Craig

In January, 2002, the Lewis and Clark County Commission requested that EHD staff recommend specific areas requiring infrastructure improvements due to problems with existing septic and water systems. Utilizing data obtained in this study, staff recommended an initial focus on two areas: Dunbar and Bel-Air Sewell. Specific concerns that led to this recommendation included the following:

Dunbar Area

- Small lot sizes and little available space for replacement systems.
- Age of septic systems in use.
- Recorded nitrate levels as high as 15.1 mg/l in area.
- Presence of bacteria has shown up in water sample(s).
- Proximity to the Helena city limits makes this an attractive area for annexation to city infrastructure.

Bel-Air/Sewell Area

- Small lot sizes and little available space for replacement systems.
- Age of septic systems in use.
- Recorded nitrate levels as high as 4.59 mg/l in area.
- Presence of bacteria has shown up in water sample(s).
- High groundwater issues.
- Highly permeable soils in Bel-Air area have led to installation of non-standard systems.
- Floodplain issues in Sewell area.

The North Hills Controlled Groundwater Area

On July 2, 2001, the Montana Department of Natural Resources (DNRC) received a petition (subsequently amended on July 30, 2001) requesting that the agency perform a comprehensive hydrogeologic study to analyze current and future availability of groundwater in a portion of the North Hills area, at the northern end of the Helena Valley. Additionally, the petitioners asked that the designated area be closed to further groundwater appropriation, with the exception of replacement wells drilled during the term of the study. Proponents of the petition argued, among other things, that groundwater withdrawals in the area are in excess of recharge, and that the situation was likely to worsen due to on-going growth.

Following a public scoping meeting and publication of a draft environmental assessment, a public hearing was held on April 24, 2002 to collect testimony. In August 2002, the DNRC responded to the petition by designating a temporary controlled groundwater area (CGA) for the North Hills. According to the DNRC proposal for decision,

the evidence shows the public health, safety, or welfare of the groundwater users in the proposed CGA is of concern because of declining water levels and increasing nitrate levels. However, facts are insufficient at this time to require permanent corrective controls to be adopted on this basis.

The proposed order from the DRNC Hearings Examiner reads as follows:

A temporary controlled groundwater area is designated for the 52.5 square mile area within Sections 1-19, Township 11 North, Range 3 West; Sections 1-3, E1/2 4, E1/2 9, 10-15, 22-24, Township 11 North, Range 4 West; Sections 26-35, Township 12 North, Range 3 West; Sections 21-23, 25-28, E1/2 33, 34-36, Township 12 North, Range 4 West, Lewis and Clark County, Montana...The designation shall be in effect for two years from the date of the Final Order. At the end of two years the Department will decide to terminate, extend as is, or extend with modifications the temporary controlled groundwater area.

The purpose of the designation is for gathering information on aquifer fractures, faults, and characteristics; aquifer recharge; and aquifer withdrawals to determine if withdrawals exceed recharge (capacity of the aquifer); if new wells will impair or substantially interfere with other groundwater wells; and if there is a contaminant plume developing that will be affected by withdrawals. With this designation, all new uses of groundwater and replacement wells in the

designated area must obtain a new use permit or change authorization from the DNRC.

New groundwater appropriators and those seeking to drill replacement wells in the area must first apply to the Department's Helena Water Resource Regional Office and obtain a license for drilling and testing purposes conditioned to allow the applicant and DNRC to gather data and information necessary for completing the application for permit or change authorization. The license may be conditioned to require 5-day advance notice of drilling to the Department's hydrogeologist to ensure adequate logging of appropriate lithologic, water chemistry, water level, aquifer test, and well construction data.

Water users should consult and work with the DNRC and Water Quality Protection District (WQPD) in compiling, organizing, archiving, and interpreting area-wide information. If it appears that further study is necessary after the term of the temporary controlled groundwater area has expired, a new temporary area can be designated after notice and hearing as provided in 85-2-507, MSA. If at any time during the term of the temporary controlled groundwater area, information becomes available to show that withdrawals have, or are about to, exceed recharge, the temporary groundwater area can be designated permanent and modified to include appropriate controls after notice and hearing as provided in 85-2-507, MSA (DRNC, 2002).

Montana Water Law

Montana's legal framework for water rights is referred to as the "prior appropriation doctrine," which has two general rules: "First in time, first in right" and "use it or lose it."

"First in time, first in right" relates to the priority date of a water right. The earlier the priority date, the better the water right. A senior water right holder is entitled to use the full amount of his or her water right before any junior holder can use any water. The senior water right holder can take all of the available water in times of shortage. There is no requirement that the water be shared among the various users.

"Use it or lose it" refers to the requirement of beneficial use. A water right is not ownership of the water itself, but the right to use water beneficially. When water is no longer put to a beneficial use, it can be lost or abandoned. Typically, it takes ten years of non-use for the issue of abandonment to arise.

The Montana Legislature created a new type of water right referred to as a "water reservation" in 1973. A water reservation is available only to public entities such as conservation districts, municipalities, and state and federal agencies. Water reservations differ from traditional water rights in two ways. First, traditional water rights can only be acquired if water is diverted or impounded. Before 1973, water rights could not be acquired for in-stream flows. Water reservation, however, can be used for in-stream flows. In-stream flow water reservations have been issued to the Department of Fish, Wildlife and Parks (FWP), Department of Environmental Quality (DEQ), and the Environmental Protection Agency (EPA) to maintain fisheries and dilute pollution. Second, due to the requirement of beneficial use, traditional water rights had to be put to "use" within a reasonable time or were lost. Water reservations, on the other hand, can reserve water for future needs of irrigation districts, municipalities, and other public entities.

Since 1973, a person must apply to the DNRC for a water use permit, if over 35 gallons per minute are being used. The applicant must prove, among other things, that there is unappropriated water available, and the new use will not adversely affect existing water rights. Montana water law allows for changes to be made to existing water rights, and for rights to be separated from the land to which they were originally connected.

Drainage

Drainage, like any other environmental ecosystem, (i.e., climate vegetation, wildlife) is a carefully balanced, dynamic process, which has evolved over time. Components such as soil texture, slope, drainage density, vegetation, and land use practices constantly interact and adjust to one another, maintaining an equilibrium. The major controlling drainage feature in Lewis and Clark County east of the Continental Divide is the Missouri River, into which a majority of all streams and water courses eventually flow.

Stormwater management is a time-related, space allocation challenge. Water cannot be compressed. If natural storage is reduced without appropriate compensatory measures by urbanization, floodplain encroachment, or other land use practices, then additional storm water storage space would be required at other locations.

The City of Helena is revising its Stormwater Drainage Master Plan, which was last updated in 1994. The Master Plan identifies four major stormwater drainage basins located in or immediately adjacent to the City. The basins include the following drainages: Davis Gulch; West Area; Bull Run, and; Last Chance Gulch. The initial stormwater drainage evaluations indicated that urbanization within Helena resulted in a

greater than seven-fold increase in the volume of stormwater runoff from its non-developed state. Increased volumes of stormwater runoff and construction across and within natural drainage paths can result in localized flooding, causing structural damage, traffic disruption, pavement deterioration, and other adverse impacts. Unlike older, urbanized portions of the City, the Bull Run area preserved natural drainages and historic flood paths. Conserving these paths helps prevent future drainage problems.

Lewis and Clark County does not have a formal storm water management plan. Stormwater drainage conditions and characteristics found throughout the County can be traced to varying natural history and subsequent land use patterns. Artificial drainage systems, which have evolved throughout the County, are the cumulative result of many years of uncoordinated efforts and neglect, resulting in gerrymandered drainages, unmentioned culverts and roadside ditches, and increasingly impervious surface areas. A storm water plan is becoming an increasingly important issue as the population grows and commercial development expands.

Floodplain

Flooding is historically documented throughout Lewis and Clark County. Major floods occurred in June, 1975, May, 1981, and as recently as February, 1996, when a Presidential Disaster Declaration was declared. Major flooding occurred along the Blackfoot River in 1908, 1964, and 1975. The peak of the flood season is during May and June, which usually are the wettest months of the year. Flooding has typically been caused by heavy rainfall combined with snowmelt.

Floods are typically classified as 10, 50, 100 and 500-year events; this means that floods of a given size have a probability of occurring once during the designated period. Framed another way, during each of the periods above, there is a 10, 2, 1 and 0.2 percent chance, respectively, of a flood of a given size being equaled or exceeded during any year. The re-occurrence intervals above represent the long-term average period between floods of a specific magnitude. However, floods can and do occur at shorter intervals. It is possible, for example, to have several hundred-year floods in the same year, even though this is unlikely. The longer the time period being considered, the higher the probability that a major flood will occur. To help address the threat posed by floods, the County has adopted a 100-year floodplain ordinance.

The Federal Emergency Management Agency (FEMA) prepared detailed floodplain maps for portions of Lewis and Clark County in 1981; some of these were revised in 1985. Floodplain maps are available for the Helena Valley along Tenmile, Prickly Pear

and Silver Creeks; the Blackfoot River in Lincoln; Elk Creek in Augusta; and the Missouri River near Craig.

The floodway is the channel of a stream and adjacent bank areas that must be reserved in order to discharge a base flood without cumulatively increasing the water surface elevation more than one-half (1/2) foot. These areas are shown on FEMA maps as Zone A; development of permanent structures such as homes and businesses are prohibited. Placement of fill or culverts, excavation, storage of equipment or materials, and bridge construction require a Floodplain Development Permit, issued by the Lewis and Clark County Floodplain Coordinator.

The floodway fringe is the area of the floodplain outside the limits of floodway. These areas are referred to as Zone B on FEMA maps. Construction of permanent structures are possible within Zone B, but only after the issuance of a Floodplain Development Permit. The permit may require flood proofing or other mitigation measures. Residents are encouraged to purchase flood insurance; it generally takes 30 days to become effective.

Wetlands

The United States Fish and Wildlife Service (USFWS) defines wetlands as:

lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. For the purposes of definition, wetlands must have one or all of the following three attributes:

- *At least periodically, the land supports predominately hydrophytes;*
- *The substrate is predominately undrained hydric soils; and*
- *The substrate is nonsoil and is saturated with water or covered by shallow water during the growing season each year.*

(Note: The term "hydrophyte" refers to any water loving plant. Classes of hydrophytes include floating plants like lotus, submergents such elodia, and emergents like cattail and hard-stem bulrush. The biological definition of hydric means characterized by an abundance of water.)

The USFWS's classification system groups wetlands into five ecological systems according to ecological characteristics. Three of these types of wetland groups--Riverine, Lacustrine, and Palustrine--are found within Lewis and Clark County. The Riverine system is limited to freshwater river and stream channels. It is mainly a freshwater, deepwater habitat system, but has nonpersistent marshes and aquatic beds along its banks. The Lacustrine system is also a deepwater habitat system that includes standing water bodies like lakes and deep ponds. The Palustrine system encompasses the vast majority of non-tidal wetlands, such as swamps and bogs.

Wetlands provide economic benefit, improve water quality, and support fish and wildlife. The most noticeable benefits of wetlands include flood and storm water damage protection, erosion control, water supply, groundwater recharge, scenic open space, and recreation.

Wetlands play a major role in the quality of the natural environment; however they are subject to both human and natural forces that may result in their degradation or loss. The major causes of wetland loss and degradation include the following:

- Drainage for crop production, timber production, and other activities.
- Filling for dredged spoil and other solid waste, road construction, and residential, commercial, and industrial development.
- Construction of flood control, water supply, irrigation, and storm water protection structures.
- Discharge of pesticides and other pollutants, nutrient loading from sewage, and agricultural runoff.
- Sedimentation from agricultural and development activity.
- Erosion and accretion.
- Mining of wetlands for sand, gravel, and other materials.

The primary federal regulatory program covering wetlands is Section 404 of the Clean Water Act. This program regulates discharges of dredge and fill materials into the waters of the United States, including most wetlands. The Section 404 program is administered jointly by the US Army Corp of Engineers and the Environmental Protection Agency (EPA). The US Fish and Wildlife Service (USFWS) is given an

advisory and commenting role in the 404 process. The Montana Department of Fish, Wildlife and Parks (FWP) and the Department of Environmental Quality (DEQ), Water Quality Bureau are the lead State agencies dealing with wetlands.

The Helena Wetlands Community Partnership has been working to gather information about Helena area wetlands since 1998. The Partnership includes members and volunteers from the County Water Quality Protection District, County Planning Department, County Information Technologies Services, the Montana Wetlands Trust, the Montana Audubon, USFWS, FWP, and wetland scientists. The Partnership, in conjunction with property owners, is currently identifying existing and historic wetlands sites that are suitable for preservation, enhancement, and restoration. The information being gathered will be linked with other water quality programs. The Partnership is also identifying various strategies and techniques to utilize wetlands as a means of consuming nutrients that remain from wastewater treatment and agricultural activities and to incorporate wetlands as part of stormwater management systems. They are also investigating methods to collect stormwater runoff and to divert gray water to maintain year round viability of local wetlands.

Vegetation

Lewis and Clark County is predominantly coniferous forest, with areas of mountain grassland and shrub land scattered throughout. Ponderosa pine, Douglas-fir and Lodgepole pine are important tree species. Subalpine fir, Whitebark pine, Limber pine and Engelmann spruce are locally important. Rough fescue, Idaho fescue, bluebunch wheatgrass and big sagebrush are the dominant species in the mountain grassland and shrubland. Grasslands and shrub lands at lower elevations contain plant species from the adjacent intermountain basins. Patterns of plant communities reflect the occurrences of periodic wildfires.

Habitat types are considered to be the basic ecological subdivision of landscapes. Each is recognized by distinctive combinations of overstory and understory plants at climax growth. Each habitat type group is named for the dominant characteristic vegetation.

Habitat types are particularly useful in soil surveys of mountainous areas to assess the combined effects of aspect, slope, elevation, and soil properties on potential vegetation growth. The distribution of habitat types is important in evaluating potential timber and forage productivity, forest regeneration limitations, and wildlife habitat potential.

A brief description of the major habitat types found in Lewis and Clark County area are listed below:

Lower mixed forest is moderately extensive on low elevation mountain slopes, rolling uplands and southerly aspect breaklands. Elevation is mainly 3,500 to 5,000 feet, with elevations up to 7,000 feet on steep southerly aspect slopes. This habitat type contains forest stands that are mainly ponderosa pine or mixed Douglas-fir and ponderosa pine. Major habitat types are ponderosa pine/Idaho fescue, Douglas-fir/snowberry, Douglas-fir/Idaho fescue, Douglas-fir/rough fescue, and Douglas-fir/ pinegrass, kinnikinnick phase. Ponderosa pine/bluebunch wheatgrass and ponderosa pine/bitterbrush are less extensive.

Upper mixed forest is found extensively at 4,200 to 7,000 feet, and up to 7,500 feet on the southerly aspects and as low as 3,800 feet on steep northerly aspects. This habitat group type is commonly associated with soils underlain by limestone bedrock at elevations of 6,000 to 7,500 feet. This habitat type contains forest stands that are mainly above the cold limits of ponderosa pine, but are not too cold to support Douglas-fir. Habitat types are higher elevation habitat types in the Douglas-fir series and lower elevation habitat types in the subalpine fir series.

Lower sub-alpine forest is found extensively at 6,000 to 7,200 feet elevations. It is associated with moderately acid to neutral soils, and is not found on neutral to moderately alkaline soils underlain by limestone. Forest stands are mainly lodgepole pine. Douglas-fir is not common, although it is sometimes present on southerly aspect or lower elevation stands. Engelmann spruce and subalpine firs are sometime dominant in old growth stands.

Upper sub-alpine forest habitat type group is of minor extent on mountain ridges or glacial valleys. It is mainly found at elevations of 7,200 to 9,000 feet, but may be found at elevations as low as 6,000 feet on wind swept ridges. The forest stands are mainly mixed whitebark and lodgepole pine. Engelmann spruce and subalpine fir are sometime dominant in old growth stands. Limber pine is sometimes present on soils underlain by limestone or on windswept ridges.

Wet forest is found to a minor extent on stream floodplains, terraces, and glacial moraines at elevations of 4,000 to 7,000 feet. This habitat group type is found in soils with fluctuating water tables. Forest stands are often dominated by Engelmann spruce, but can contain subalpine fir and lodgepole pine.

Mountain grassland and shrubland are found at elevations of 4,000 to 7,500 feet. Dominant plant species found in this habitat type include rough fescue, Idaho fescue, and big sagebrush.

Alpine meadows are found on mountain ridges at elevations of 8,000 to 9,500 feet. These forb-rich grasslands are usually found above the timberline. Dominant grasses or grass-like plants include tufted hairgrass, Idaho fescue, rough fescue, and sedges.

Wet shrubland and meadows are found on soils with fluctuating water tables. Vegetation is predominately sedge grassland or willow, red alder or bog birch. Baltiz rush, red canary grass and Carex Spp. are the major habitat types in wet meadows. Willow, red alder, bog birch or red osier dogwood community types dominate wet shrub lands.

Rare, Threatened, or Sensitive Plant Species

The Montana Natural Heritage Program identified twenty-three (23) plant species and three (3) plant associations that are considered to be rare or vulnerable to extinction in Lewis and Clark County. Most of the identified species are associated with wetlands or transitional wetland areas. Appendix G includes a table with the common names of the species and their current status.

Noxious Weeds

Noxious weeds have infested Lewis and Clark County and the rest of Montana for decades. Until recently, noxious weeds have been perceived only as an agricultural concern, but as more development occurs and more people take advantage of Montana's outdoor recreational opportunities, noxious weeds have become more wide spread and costly to mitigate. Some of the negative impacts of this include degradation and loss of wildlife habitat and species diversity, decreases in property values, decreases in agricultural productivity, and possible water quality degradation.

The Montana Department of Agriculture defines a noxious weed as "any non-native plant that is harmful to agriculture, wildlife, forestry, recreation and other beneficial use of the land." The Department has declared 23 weeds as noxious, with two others on a state watch list, and two more on the County list. These weeds—which collectively

infect approximately eight million acres in Montana--are grouped and categorized according to their abundance throughout the state, and are identified in table 5.4.

TABLE 5.4
MONTANA'S NOXIOUS WEEDS

Category 1 Noxious Weeds (Well established and generally widespread throughout the state.)

| | | |
|-------------------|---------------------------|--------------------|
| Canada Thistle | Sulfur (Erect) Cinquefoil | Whitetop |
| Spotted Knapweed | Common Tansy | St. Johnswort |
| Russian Knapweed | Ox-eye Daisy | Dalmatian Toadflax |
| Field Bindweed | Houndstongue | |
| Diffused Knapweed | Leafy Spurge | |

Category 2 Noxious Weeds (Recently introduced into the state or are rapidly spreading from their current infestation sites.)

| | | |
|-------------------------|--------------------|----------------|
| Dyers Woad | Purple Loosestrife | Tansy Ragwort |
| Meadow Hawkweed Complex | Orange Hawkweed | Tall buttercup |
| Tamarisk | | |

Category 3 Noxious Weeds (Found only in small, scattered, localized infestations.)

| | | |
|--------------------|----------------|-------------------|
| Yellow Starthistle | Common Crupina | Rush Skeletonweed |
|--------------------|----------------|-------------------|

Watch List

| | |
|---------------------|--------------|
| Scentless Chamomile | White Bryony |
|---------------------|--------------|

Lewis and Clark County List (Adopted by resolution, in addition to the above.)

| | |
|-----------------|------------------|
| Tall Pepperweed | Canada Goldenrod |
|-----------------|------------------|

(Source: Lewis & Clark Co. Weed Board)

The Montana Legislature passed the County Noxious Weed Control Act in 1985. The Act gives counties authority to more aggressively fight local weed infestation problems. If weeds are identified on-site, a weed management plan must be filed with the Lewis

and Clark Weed District, and approved by the Weed Board. The County applies a portion of the County property tax levies to weed control.

The most common methods of noxious weed management are prevention, chemical, and cultivation. Many weed infestations occur in areas inaccessible to control equipment. Environmental constraints such as shallow depth to ground water and the presence of surface water limit the use of herbicides. In addition, the cost of some herbicides application is prohibitive for use on rangelands, forest, and other areas of low economic return. Because of these reasons the State of Montana, in conjunction with several Universities, are attempting to establish "biological control or bio-control" of noxious weeds. Biological controls are defined as " the planned use of living organisms to reduce the vigor, reproductive capacity, density, or the effect of the noxious weeds". Under this definition, various approaches are being considered. They include the following:

- Introduction of insects.
- Augmentation of native bio-control agents (fungus, rusts, diseases, etc).
- Use of grazing systems in which livestock graze the noxious weeds.
- Use of competing vegetation.

The main goal of bio-control programs is to establish weed-attacking insects and pathogens so that native plant communities can begin to compete with non-native, noxious species of weeds. Weeds in bio-control areas are reduced to a level where they become part of the plant community and not a threat to it (Petroff, 1993).

Several of the bio-controls measures are being utilized in various areas of the County. Additional information on the availability and cost of these types of measure are available from the County Extension Agent and the Weed District.

Individual residential property owners may help combat the spread of noxious weeds by immediate revegetation of disturbed areas, annual application of approved herbicides in non-riparian areas in the spring of the year, and manual removal of weeds before the infestation becomes severe.

Wildfire Hazards

In Lewis and Clark County, summer typically brings the fire season, the result of low rainfall, high temperatures, low humidity, and summer thunderstorms. Nevertheless,

major wildfires can occur at any time of the year. Varied topography, semi-arid climate, and numerous human-related sources of ignition make this possible. The 1988 Warm Springs Fire burned 32,700 acres in the Elkhorn Mountains, along with thirteen homes and cabins, as well as numerous outbuildings.

The summer of 2000 was another devastating fire season in Montana, one of the worst ever recorded. In the Helena area, fire suppression agencies averaged more than 150 wildland fire responses for the year, including lengthy involvement with conflagrations such as the Bucksnot (9,300 acres), Cave Gulch (29,270 acres), and Toston-Maudlow (81,000 acres) fires. According to information compiled by the Lee News Network, Montana experienced approximately 2,400 fires in 2000, affecting 950,000 acres, battled by 12,000 fire fighters. Nationally, only Idaho had more acres affected by wildfires in 2000.

In Montana, 86 primary residences, 133 outbuildings, and 2 commercial businesses were lost to wildfire in 2000. More than 2,000 people were forced to be evacuated from 23 different communities. Nationwide, approximately 1,000 structures and more than 470 homes were lost to wildfires in 2000. Throughout the country in the 1990s, the number of structures destroyed by wildfire increased six times over the previous decade's total, as increasing numbers of people moved to fire-prone areas.

The summer of 2003 brought another severe fire season to Montana and Lewis and Clark County. The Lincoln area, in particular, was especially hard hit, with two major fires in the vicinity (the Snow-Talon and Moose Wasson complexes).

In the wake of recent fire years, there was considerable discussion about what happened and why, with the following emerging as some of the key themes in Montana:

- Fire fighters did an incredible job overall: Not one life was lost in Montana directly because of the 2000 fires. Part of the challenge fire fighters faced in many areas was being in a position of trying to protect structures constructed in fire-prone areas, rather than aggressively fighting the actual fires. In some cases, poor access to property enhanced risk to firefighters trying to save buildings.
- The Internet proved to be the single most effective tool for getting up-to-date and constantly changing fire information to a large number of people. The State of Montana's web coverage of the fires was exceptional, particularly in respect to the changing nature of public lands closures.

- The fires precipitated a continuing political debate about how forests should be managed in the future to maintain their biological integrity and reduce fire risk.
- Most significantly for the purposes here, the 2000 fires, especially, generated an on-going discussion about the role land use planning, design, and vegetation management can play to minimize the danger posed by fire to residents, homes, and firefighters.

Since the mid-1960s, and particularly in the last 10 to 15 years, people have subdivided and developed wildlands throughout the County for residential, recreational, and commercial uses. Development has created many communities mixed with wildland vegetation, otherwise known as a Wildland Residential Interface. The Wildland Residential Interface is defined as the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels (Society of American Foresters, July 1990). A Wildland Residential Interface exists anywhere that structures are located close to natural vegetation and where a fire can spread from vegetation to structures, or vice versa. A Wildland Residential Interface can vary from a large housing development adjacent to natural vegetation to a structure or structures surrounded by vegetation.

Wildfire disasters are common in many parts of the nation, and the problem is increasing. This can be corrected through comprehensive planning that includes housing development design, fuels management, and public education. The Tri-County Fire Council (Lewis and Clark, Jefferson, and Broadwater Counties) has been chartered to help homeowners survive a wildland residential interface fire. Much of the Council's efforts are directed toward educating homeowners about reducing and managing fuel buildup, building and maintaining adequate road systems, providing adequate water supplies, and the use of fire-resistant materials and designs for homes and outbuildings.

The Tri-County Fire Council developed a fire risk level map that assesses the wildfire potential for southern Lewis and Clark County, particularly around the Helena Valley. The map is based on an assessment of slope, vegetation, and other factors that create wildfire hazards. The map includes four wildfire risk levels--low, moderate, high, and severe. Most of the areas surrounding the Helena Valley have been mapped for their level of risk. The Birdseye and Austin areas are the exception, and require future mapping.

Fighting wildland fires in Lewis and Clark County is primarily the responsibility of the United States Forest Service (USFS) and the State Department of Natural Resources

and Conservation (DNRC). Additionally, local volunteer fire districts provide vital support. The Tri-County Fire Council, USFS, and DNRC have been instrumental in maximizing the efficiency of local fire districts in response to wildfires.

Suppressing wildland fires is costly, time-consuming, and often dangerous. Wildland fires occur unexpectedly and create an emergency in which firefighters race to minimize harm to valuable resources or property. Despite public expectations, when the combination of excessive fuel build-up, topography, extreme weather conditions, multiple ignitions, and extreme fire behavior occurs, it is impossible to immediately suppress every wildland fire. Firefighters' safety and their ability to contain and limit the spread of fires can only be ensured by preparing well ahead of time, thoroughly examining various scenarios for fire numbers and sizes, and developing contingency plans to cope with them.

The ability to plan for and suppress fires has been negatively impacted by the successes of the past. Almost one hundred years of fire suppression in the County, coupled with other resource management activities, has altered the landscape. Millions of acres of forests and rangelands are at extremely high risk for devastating fires to occur. Already we are seeing the effects through an increase in the number of fires and acres burned. In light of limited work forces and funding, it is critical that fire management agencies and local fire departments work together to arrive at common solutions and successful strategies.

The ability to plan for and suppress fires has been negatively impacted by the successes of the past. Almost one hundred years of fire suppression in the County, coupled with other resource management activities, has altered the landscape. Millions of acres of forests and rangelands are at extremely high risk for devastating fires to occur. In light of limited work forces and funding, it is critical that fire management agencies and local fire departments work together to arrive at common solutions and successful strategies.

Wildlife

Lewis and Clark County provides abundant and varied habitat for a large number of wildlife species. According to the Montana Natural Heritage Program approximately 22 species of fish, six species of amphibians, eight species of reptiles, 286 species of birds and 61 species of mammals utilize portions of the County for permanent or migratory habitat.

Large mammals include elk, moose, mule deer, antelope, and black bear. The threatened grizzly bear is found in the remote mountains of nearby high country wilderness, and along rivers and streams that flow eastward onto the plains of the Rocky Mountain Front. Small mammals include beaver, muskrat, yellow-bellied marmot, porcupine, skunk, mink, weasel, otter, and raccoon. Predators consist of coyote, mountain lion, lynx, bobcat, and badger.

Raptors include osprey, bald and golden eagle, prairie falcon, turkey vulture, and many others. Ground squirrels, voles, gophers, mice and small birds provide a substantial prey base. Upland game birds include blue, spruce, rough, and sharptail grouse as well as Hungarian partridge. Sandhill cranes and great blue herons nest in and migrate through the area. Waterfowl include mallard, teal, lesser scaup, merganser, Canada geese, and many others.

The fishing resource includes bull, cutthroat, rainbow, brown, and brook trout as well, as many illegally introduced species. Appendix G contains maps illustrating the ranges of various wildlife game species and sensitive species. Of the species found in the County, the US Fish and Wildlife Service and the U.S. Forest Service have identified the species listed in table 5.5 as being threatened, endangered or sensitive species.

TABLE 5.5
THREATENED, ENDANGERED and SENSITIVE SPECIES

| <u>SPECIES</u> | <u>STATUS</u> |
|--------------------------|----------------------|
| Westlope Cutthroat Trout | Sensitive |
| Bull Trout | Endangered |
| Montana Arctic Grayling | Sensitive |
| Shorthead sculpin | Sensitive |
| Common Loon | Sensitive |
| Trumpeter Swan | Sensitive |
| Harlequin Duck | Sensitive |
| Bald Eagle | Threatened |
| Ferruginous Hawk | Sensitive |
| Peregrine Falcon | Endangered |

| | |
|-------------------------|------------|
| Sharp-tailed Grouse | Sensitive |
| Whooping Crane | Endangered |
| Piping Plover | Threatened |
| Least Tern | Endangered |
| Mountain Plover | Sensitive |
| Flammulated Owl | Sensitive |
| Boreal Owl | Sensitive |
| Black-Backed Woodpecker | Sensitive |
| Western Big-eared Bat | Sensitive |
| Northern Bog Lemming | Sensitive |
| Gray Wolf | Endangered |
| Wolverine | Sensitive |
| Lynx | Sensitive |
| Grizzly Bear | Threatened |
| Yellowstone Cutthroat | Sensitive |

(Source: US Fish and Wildlife Service)

As the human population of Lewis and Clark County continues to grow and associated development spreads to undeveloped portions of the County, wildlife and wildlife habitat will be impacted. Poorly planned development has the potential to degrade and fragment wildlife habitat and travel corridors, increasing wildlife/human conflicts. The Montana Department of Fish, Wildlife and Parks (FWP) reports an increasing number of complaints each year about "wildlife damage." The complaints include wildlife feeding on ornamental plants, collisions between vehicles and wildlife, and domestic pets that harass or prey on wildlife, or vice versa.

FWP has made recommendations for those wishing to develop and live in areas that provide wildlife habitat which would maximize open space; permit wildlife movement; minimize wildlife conflicts and maintain the natural setting and habitat. These recommendations include:

- Cluster development.
- Designated, undeveloped open space.
- Protection of wildlife movement corridors along ridgelines, stream corridors and riparian zones.
- Increased awareness, appreciation and tolerance for wildlife by property owner.

- Limited and judicious use of fencing. Provisions should be made to facilitate wildlife movement through developments.
- Restraint of domestic pets.
- Storing pet and livestock foods inside. When feeding pets or livestock, do not leaving excess outside overnight.
- Garbage should be stored inside and disposed of frequently. When trash and garbage is stored outside, even in closed containers, it attracts wildlife particularly bears and skunks.
- Use native plants for landscaping. Non-native plants are particularly prone to wildlife use.
- Fence or net gardens or learn to share with wildlife.
(Source: FWP, Helena Area Resource Office (HARO), 2002.)

EPA National Priority List

Currently Lewis and Clark County has two sites listed on the Environmental Protection Agency's National Priority List (NPL). The listed sites are the East Helena Smelter and the Upper Tenmile Creek Watershed. The NPL is a published list of hazardous waste sites in the U.S. eligible for extensive, long term, cleanup under the EPA's Superfund Program. Listing on the NPL makes a site eligible to receive federal funds for cleanup, while the EPA seeks to recover cleanup costs from identified responsible parties. Placing a site on the NPL also allows the EPA to use Superfund monies for clean-up when there are no responsible party who can pay for the work. The NPL designation allows the EPA to participate with other state and federal agencies in comprehensive cleanup activities.

East Helena Smelter

The East Helena Lead Smelter is located on the southern border of the City of East Helena and has been in operation since 1888. The eighty-acre smelter site is still generally referred to as the ASARCO facility--formally known as the American Smelting and Refining Company—but is now owned by a parent company called Grupo Mexico. The smelter—which suspended operations in 2001—has historically recovered lead, zinc, and other metals from ores concentrates using pyrometallurgical processes. The smelting process resulted in the airborne release of heavy metals, which were deposited over East Helena and the surrounding areas.

Environmental studies conducted in 1969 and 1970 by the Montana Department of Health and Environmental Sciences (MDHES) and the US Environmental Protection Agency (EPA) found substantially elevated levels of arsenic, cadmium, and lead in vegetation and soils in the City of East Helena and the surrounding areas. Based on the findings of these studies, it was recommended that grazing should be restricted in some of the areas surrounding East Helena and that locally grown vegetables should be washed prior to consumption.

The Montana Department of Health and Environmental Sciences (MDHES) and the Center for Disease Control (CDC) combined efforts to conduct a childhood blood lead study in East Helena in 1975. The Center for Disease Control recommended a public health standard for childhood blood lead of 30 micrograms-per-deciliter (*ug/dl*). The blood lead concentrations for 40 of 90 children tested were above this level (Lewis and Clark County Health Department--LCCHD, 1991).

The CDC, MDHES and the LCCHD conducted a second blood lead study in 1983. The 1983 study examined the relationship between children's blood lead levels and environmental lead concentrations. More than 90 percent of all children living in the study area participated in the study. Sixty-six of the children living within one mile of the smelter had blood lead levels greater than 10 *ug/dl*. Thirty-three of the children had blood lead levels greater than 15 *ug/dl*, and one child was identified as having clinical symptoms of lead toxicity.

The Environmental Protection Agency listed East Helena on the National Priority List in September, 1984. The EPA and ASARCO entered into an agreement where the company conducted an investigation of site contamination. The Phase I Remedial Investigation was completed in 1987. The investigation found that lead concentrations in soils from both residential and public areas (e.g., parks and schools) were several times greater than normal background levels.

The EPA, the State of Montana and ASARCO signed an agreement to conduct additional investigations in 1988. A Comprehensive Remedial Investigation/ Feasibility Study and Endangerment Assessment for the East Helena site was submitted by ASARCO to the EPA in 1990. The report concluded lowering soil lead concentrations could reduce the child blood lead levels. In 1991, the EPA and ASARCO signed an Administrative Order of Consent to begin a residential soil removal. The agreement required that residential yards be remediated if soil lead concentrations were found to exceed 1,000 micrograms-per-kilogram (*mg/kg*).

The scope of the initial soil removal action included approximately 26 yards, one public park, and one public school. Yards were selected because of their potential risk to the community. Factors that were considered included high lead concentrations and close proximity to children. Excavated soils were replaced with clean top soil and sodded or seeded with grass in residential areas or covered with a gravel mix in non-residential areas.

Subsequent soil removal actions have occurred in residential yards, parks, road, alleys and road aprons with elevated lead concentrations. The neighborhood closest to the smelter was identified as the "Yellow Zone". Residences in the "Yellow Zone" were remediated in a lot-by-lot manner in 1993 and 1994. The yard remediation criterion was modified in 1996 to require soil lead concentrations greater than 1,000 mg/kg and a resident child under seven or a pregnant woman.

Since 1991, the removal action has resulted in the clean-up of 518 residential yards, 421 sections of adjacent alleys and road aprons, 32 commercial sites, 6 public parks, 4 parking lots, 3 day-care centers, 2 schools, 6,600 lineal feet of irrigation ditch, and a 45 acre site for the proposed K and R residential subdivision.

There are still several undeveloped lands surrounding residential areas of East Helena that exhibit elevated levels of lead and arsenic in the soils. These undeveloped lands include agricultural lands; areas adjacent to ditches and drainage channels; residential properties, one acre and larger; and railroad rights-of way. Decisions concerning the need for remediation in these areas are made on a case-by-case basis depending on the concentrations of contaminants, proximity to existing residential areas, development timing, and the potential for health based risks to the residents.

Residences with larger yards require special consideration. Typically these residences are surrounded by a maintained yard immediately surrounding the home and undeveloped or unimproved areas. Both the improved and unimproved areas of the yards may have elevated lead levels, but a child's risk of exposure would be higher in the maintained yard area because of the amount of time the child spends there. Remediation of larger yards is addressed on a case-by-case basis, and includes a site inspection, along with interviews with the residents. Based on soil lead concentrations and the estimated risk of exposure, the undeveloped portion of the yard may be remediated by tilling, excavation and replacement, or capping.

There continues to be a risk of recontamination of remediated properties when the soil cap is disturbed and lead-laden soil is brought to the surface. The Lead Abatement Education Program of the City/County Health Department is investigating mechanisms

to provide notification and tracking of remediated yards. Since the first yard remediation in 1991, five percent of the remediated yards were selected to participate in a long-term soil lead-monitoring program. (Now that the smelter operation is suspended, ASARCO has requested that the frequency for long-term monitoring be changed to every third year.) All long-term remediated sites have maintained relatively stable "background" lead concentrations.

Upper Tenmile Creek Watershed

The Upper Tenmile Creek Watershed is located approximately 12 miles west of the City of Helena at the base of the Continental Divide. The City of Helena receives a majority of its drinking water from the upper portion of the watershed. Roughly 80 percent of the land in the watershed is managed by the Helena National Forest. The remaining 20 percent is in private ownership, originally obtained through the patenting of mining claims.

Hardrock mining began in the Upper Tenmile Creek Mining Area (Rimini Mining District) in the 1870's. Today the Upper Tenmile Creek area consists of abandoned and inactive hardrock mines that produced gold, lead, zinc, and copper from the 1870s to the 1920s. Today the water quality in the Upper Tenmile watershed has been degraded by the historic mining operations. The remains of many of the historic mines contain trace metals known to be hazardous to human health and the environment.

During the late 1980s to the mid 1990s, the Montana State Superfund Program and Abandoned Mine Reclamation (AMR) Program [http://www.deq.state.mt.us/rem/mwc/priority/pdist15_1.asp] conducted environmental sampling at several mine sites in the upper watershed including the Tenmile Mine (a.k.a. Bunker Hill), the Red Mountain Mine, and the Red Water Mine. The samples identified trace metals of human concern including: arsenic, cadmium, copper, lead, and zinc.

The AMR completed a site characterization of potentially hazardous mines throughout Montana in 1995. The AMR staff prioritized mine sites statewide for cleanup using a Hazards Ranking Model to assess the environmental sampling results and the proximity of the mines to drinking water sources and municipalities. Table 5.6 identifies the mines in the Upper Tenmile Creek watershed prioritized in the State survey. Ten of the historic mines in the upper watershed ranked in the top 52; three mines ranked within the top six.

**Table 5.6
Abandoned Hardrock Mines Priority Site Status for the Upper Tenmile Watershed**

| <u>Rank</u> | <u>Site Name</u> | <u>Ownership Status</u> |
|--------------------|-------------------------|--------------------------------|
| 3 | Red Mountain | Private |
| 4 | National Extension | Private |
| 6 | Red Water | Private |
| 25 | Peerless Jenny/King | Private |
| 32 | Valley Forge/ Susie | Private/Public |
| 35 | Armstrong | Public |
| 39 | Lower Tenmile Millsite | Private |
| 42 | Tenmile (Bunker Hill) | Private/Public |
| 46 | Upper Valley Forge | Private/Public |
| 52 | Monte Cristo | Private |
| 79 | Queensbury | Private |
| 129 | Beatrice | Public |
| 184 | Peter | Private |
| 202 | Monitor Creek Tailings | Private |
| 236 | Bear Gulch | Private |

The AMR reclaimed four mine sites following the prioritization, including the Lower Tenmile, Little Lilly, Kelly, and Tenmile Minesites (Bunker Hill). A catastrophic blowout of the reclaimed Tenmile adit occurred in July of 1993. Heavy rains backed up behind the reclaimed adit, which released suddenly causing a landslide of mud and rock to enter Tenmile Creek above the Rimini town site. "Moderately high levels of arsenic and lead were found in the soil along the bank of Tenmile Creek, and heavy metals levels were temporarily raised in the creek following the landslide. A portion of the landslide, which was deposited in the floodplain, was removed in 1996.

Beginning in 1988, the open pit and cyanide heap leach Basin Creek Gold Mine operated on property located on the Continental Divide at the headwaters of Tenmile and Basin Creeks about 20 miles southwest of Helena. Mining ceased in 1991. In 1990 and 1995, the Basin Creek Mine storm water detention system breached resulting in the discharge of sediment-laden waters to the headwaters of Monitor Creek. During

the summer months of 1995, the Basin Creek Mine voluntarily removed 9,700 cubic yards of historic mine tailings from Monitor Creek. The tailings were at that time ranked as number 202 on the Priority Site Status Listing.

The Upper Tenmile Watershed Steering Group was organized in April, 1996 to raise awareness and interest in watershed issues among the watershed's residents, users and natural resource agencies. The group consisted of key stakeholders with interest in the watershed. Stakeholders included Lewis and Clark County, the U.S. Forest Service, City of Helena, Basin Creek Mine, Department of Fish, Wildlife and Parks, Lewis and Clark Conservation District, Department of Environmental Quality, Environmental Protection Agency, U.S. Geological Survey, and the residents and property owners of the town of Rimini. The group addressed many issues regarding watershed management, including the needed cleanup of abandoned hardrock mines and the development of a regional mine waste repository.

The U.S. Forest Service and the EPA proposed a plan to convert the Luttrell Pit and ancillary portions of the Basin Creek Mine into a mine waste repository in June, 1999. Approximately 3.8 million tons of rock had been removed from the pit by the time the mine ceased operation in 1990. The EPA's and the U.S. Forest Service proposal was to remove approximately 2.4 millions tons of mine wastes from the Upper Tenmile Creek, Basin Creek, High Ore Creek, Cataract Creek, and Telegraph Creek watersheds over a ten year period. In early fall 1999, the Environmental Protection Agency listed the Upper Tenmile Creek and the Basin Creek watersheds on the National Priority List. Cleanup work commenced immediately and continued through the end of the construction season. Work in the watersheds began again in the summer of 2000. The work will continue each construction season, until reclamation of the historic mines sites is complete.

The USGS released the "Hydrology of Helena Area Bedrock, West-Central Montana, 1993-1998" in 2000 (Thamke). The report presented generalized information about hydrology and geology of bedrock aquifers in the Helena area.

Efforts began to form a watershed group on the lower section of Tenmile Creek in 2001. A "Know Your Watershed" workshop was held May 4, 2002 and the workshop identified problems along the middle section of the stream that included elevated metals from the upper stretch, sedimentation and stream channelization, and dewatering. The result of the meeting was the formation of the Lower Tenmile Creek Watershed Group.

Natural Environment Issues, Goals, and Policies

Lewis and Clark County recognizes that the condition of the natural environment and the health and quality of life enjoyed by the citizens of the County are integrally linked. Assuring that development does not occur in areas prone to natural disasters or areas with serious constraints is important. Preservation of natural resources--while managing economic and population growth--presents a challenge to the citizens of Lewis and Clark County. Noxious weeds also continue to threaten agricultural lands and natural vegetation, and have become an important issue in the County and elsewhere in Montana.

ISSUE A **Development in environmentally critical areas, particularly in places identified at high risk for flooding or wildfires, has proven costly for residents, local government, and the natural environment.**

Goal 1 Encourage development in areas with few environmental hazards or development constraints to minimize degradation of the natural environment, and the loss of capital investment and life due to natural disasters.

Policy 1.1 Encourage development in areas that are relatively free of environmental problems (e.g., soils, slope, bedrock, high water table, and flood prone areas).

Policy 1.2 Discourage or prevent development that is incompatible with the designated 100-year floodplain. Prohibit development in designated floodways.

Policy 1.3 Prevent increased storm water runoff from new development from adversely impacting other properties.

Policy 1.4 Preserve existing natural drainages.

Policy 1.5 Preserve hazardous areas (e.g., subject to geologic and flood hazards) as open space wherever possible.

Policy 1.6 Systematically reduce the existing level of storm water damage. Diminish exposure of people and property to storm water runoff, and reduce flood hazard.

Policy 1.7 Improve the usefulness of flood-prone lands as active and passive recreational areas.

- Policy 1.8** Develop residential and commercial setback requirements along streams, rivers, lakes, and reservoirs to preserve water quality and other natural resources, viewsheds, and recreational uses.
- Policy 1.9** Discourage development within areas designated by the Tri-County Fire Working Group as "High to Severe" to "Severe" fire hazard risk, unless developed in a manner consistent with the "Fire Protection Guidelines for Wildland Residential Interface Development," and the design standards in the Lewis and Clark County Subdivision Regulations.
- Policy 2.0** Examine the cumulative effects of development on flood plains, flood ways, levels of flood activity, and potential property damage.
- ISSUE B** **Groundwater and surface water quality are threatened and need to be protected.**
- Goal 2** Preserve, protect, and improve water quantity and quality in Lewis and Clark County.
- Policy 2.1** Discourage development with on-site wastewater treatment systems in areas having inappropriate soils or high groundwater to help prevent contamination of groundwater supplies.
- Policy 2.2** Encourage feedlots and other intensive livestock operations to locate in areas with low potential for ground and surface water contamination.
- Policy 2.3** Conduct water quality protection projects for high priority threats to Lewis and Clark County water resources.
- Policy 2.4** Improve water quality by minimizing erosion and sedimentation problems. Promote best management practices for timber harvests, road, bridge, and building construction to avoid water pollution, soil erosion, and the spread of noxious weeds.
- Policy 2.5** Assess stormwater runoff diversion and collection systems for efficiency, impacts to natural systems, and flood prevention.
- Policy 2.6** Encourage development of wellhead protection zones in areas of existing or proposed source water use.
- Policy 2.7** Provide education regarding the source and distribution of water supplies, potential threats to the quality and quantity of drinking water, and pollution prevention methods.

Policy 2.8 Coordinate watershed user groups to develop sound watershed management recommendations.

Policy 2.9 Support the Water Quality Protection District in its efforts to carry out programs that further the intentions of this goal, including the identification and evaluation of existing groundwater issues and alternatives.

Policy 2.10 Consider the interrelationship between surface water and groundwater in subdivisions, by requiring the identification of areas of recharge and discharge around new development occurring in the Helena Valley, and elsewhere whenever economically feasible.

Policy 2.11 Implement a wastewater maintenance program (see implementation plans).

Policy 2.12 Define the role on-site wastewater treatment systems play in groundwater and surface water interactions by performing an inventory of septic systems, and monitoring their impacts on water resources.

Policy 2.13 Recognize the important role played by wetlands in watersheds regarding groundwater recharge, water storage, flood abatement, and water quality.

Policy 2.14 Review the Helena Area Wastewater Treatment Facility Plan (HAWT), prioritizing and implementing realistic strategies.

ISSUE C **The quality of the County's wildlife habitat and open space may be threatened by development.**

Goal 3 Maintain the quality of the County's critical wildlife habitat, wetlands, and open space.

Policy 3.1 Identify and protect the natural wetland buffers along the County's rivers, lakes and streams.

Policy 3.2 Identify and encourage preservation of critical wildlife habitat.

ISSUE D **The character and quality of Missouri River Corridor is impacted by increased development and recreational pressure.**

Goal 4 Preserve, improve, and protect the Missouri River Corridor.

Policy 4.1 Work cooperatively with local watershed groups, conservation districts, private landowners, and other entities involved with Missouri River issues.

ISSUE E: Wetlands are critical areas that affect water quality, wildlife, and community aesthetics.

Goal 5 Preserve existing wetlands within the County, and restore historic wetlands where possible.

Policy 5.1 Prohibit construction activities within delineated wetlands.

Policy 5.2 Encourage subdivisions and other projects to avoid or reduce loss of wetland functions.

Policy 5.3 Provide incentives to avoid impacts to wetlands.

Policy 5.4 Develop effective land use controls to protect wetlands.

Policy 5.5 Identify the location of historic wetlands. Work with landowners, developers, agencies and organizations to develop projects to restore historic wetlands.

Policy 5.6 Integrate wetland conservation with other resources such as floodplains, groundwater, streams, and lakes.

Policy 5.7 Adopt a wetlands rating system to reflect the relative function and value of wetlands in Lewis and Clark County.

Policy 5.8 Continue to support the Helena Wetlands Partnership or similar efforts in identifying, inventorying, and mapping wetlands throughout Lewis and Clark County.

Policy 5.9 Work with agencies or land trust organizations to obtain conservation easements that protect wetlands and riparian areas.

ISSUE F **Noxious weeds continue to threaten agricultural lands and natural vegetation.**

Goal 6 Work cooperatively to reduce the impact of noxious weeds in the County.

Policy 6.1 Efficiently spend limited weed management funds according to an established set of priorities (see implementation plans).

Policy 6.2 Enhance the County's enforcement mechanism for weed violations, to promote good weed management.

ISSUE G **Prehistoric and historic resources are critical features that affect our understanding of and connection to the land.**

Goal 7 Encourage protection of historic and prehistoric resources.

Policy 7.1 Inventory historic and prehistoric resources.

Policy 7.2 Consider the effect of development on historic and prehistoric resources.

Policy 7.3 Provide for the protection of historic and prehistoric resources with reasonable mitigation, including education about these resources.

Policy 7.4 Encourage transportation improvements that are compatible with cultural resources.

VI:

TRANSPORTATION

Existing Conditions

Introduction

The ability to move goods and people is essential for a healthy community. The transportation chapter describes how Lewis and Clark County's transportation system provides for this movement in the present and future. The Helena Area Transportation Plan (1993 update) is the principal transportation document for the Helena Planning Area. It includes the City of Helena and most of the Helena Valley. The Transportation Development Plan for 1997-2001 (prepared for the City of Helena, October 1996) describes transit services in the Helena area. (These documents are incorporated into this Growth Policy by reference.) Transportation in the remainder of the County has been addressed as part of State-wide transportation planning; transportation planning in the rural planning areas has not been established. The major transportation system of the County is illustrated by the road map included as part of Appendix A.

Lewis and Clark County population and employment is projected to increase significantly over the next 20 years, as described in Chapter 2. The anticipated growth will result in an increase of traffic to, from, through, and within the County. Transportation strategies must be developed to maintain acceptable levels of service for the County's transportation system. Finding answers to the following key questions is essential for providing effective transportation strategies:

- How can strategically built roads affect growth through the next twenty years?
- How can transportation improvements encourage growth to desired areas?
- What are the existing deficiencies in the transportation system, and how will population growth affect these?
- What transportation projects are priorities in the short and long term?
- How will the proposed transportation projects be funded?
- What different funding sources are available?

- What transportation issues are important for those industries especially dependent upon transportation?
- What transportation issues are important to the general public?
- What are the values and the goals of the community?
- What policies should be formulated to meet these goals?

Transportation Issues

Safety

The citizens of Lewis and Clark County deserve safe transportation systems. Accidents are traumatic on a personal level and costly for society. Maintaining and improving the safety of transportation infrastructure by reducing or preventing accidents is a top priority. To help accomplish this, the County should encourage citizen input in planning traffic safety improvements. Congestion management is important to preserve and improve safety in the face of a growing population and increasing traffic volumes. Adequate road maintenance also falls under this safety issue; poorly maintained roads, particularly during inclement weather, can contribute significantly to the number of accidents.

Maintenance

Maintenance of County roads is a critical issue to County residents. Focusing resources on snow removal in the winter and completing regular maintenance in the summer is a priority. The County has maintained a summary of the cost and type of maintenance performed on all County roads since 1994. The available resources have not kept pace with the maintenance needs of roadways, in part because of funding changes made by the Legislature. The County has not been able to conduct road surface maintenance in accordance with accepted standards for paved and chip seal surface roads. Consequently, many road segments have suffered from deferred maintenance.

Several programs have greatly aided the County in addressing these deficiencies. The Montana Department of Transportation (MDT) "Save Our Secondaries" Program of the late 1990s provided State funding for resurfacing certain State roads under the maintenance responsibility of the County. The State assumed maintenance obligations for some of the paved Secondary Roads in the County in 2000, reducing maintenance obligations and costs to the County. The principal benefit will be a reduction in snow

plowing activities. The County successfully pursued funding for bridge replacement through the Treasure State Endowment Program; six bridges were funded, and applications have been made for five more. Public/private partnerships or resource pooling may be used in the future to offset the high costs associated with maintaining roadways.

Alternative Modes

For at least fifty years, transportation improvements have emphasized the movement of motorized vehicles, especially automobiles. Alternative modes, such as bicycling and walking, have not been stressed. This emphasis has resulted in a transportation system and land use patterns largely centered around the automobile. It is expected that the automobile will continue to account for the majority of transportation trips in the foreseeable future, both in the number of trips and in the distance traveled.

Alternative non-motorized modes can play an important role in the transportation system, especially for relatively short trips. Encouraging these modes may lessen congestion, reduce infrastructure maintenance, and decrease air pollution, while providing health benefits to the users. Transportation facilities should consider alternative modes that are safe and efficient for non-motorized users. Land use patterns and development design standards also need to be addressed to encourage alternative modes of transportation.

Transportation Demand Management

Many solutions to transportation issues include increasing the system capacity. This method is appropriate in many circumstances. However, in some cases, the capacity of the system can be "increased" by seeking to reduce demands on the system (i.e., the number of trips taken) through a variety of transportation demand management (TDM) programs. Many larger communities have been required to implement TDM programs at significant cost after conditions (congestion, air quality, etc.) became substandard. Taking an early, proactive approach with carefully selected, cost-effective TDM measures can sometimes reduce the need for large and costly infrastructure expansion projects. The opportunities are enhanced when transportation and land use planning efforts have been closely coordinated.

The City of Helena conducted a study of TDM issues. The purpose was to review efforts that have been undertaken to date, conduct a series of focus groups, evaluate potential TDM strategies, and provide recommendations for actions. A similar effort may be appropriate for some or all of the unincorporated areas surrounding Helena.

Possible actions include:

- * Park and Ride lots
- * Telecommuting
- * Alternate work hours
- * Pedestrian and bicycle facilities
- * Transit-oriented design and development
- * Revision of design standards
- * Ridesharing

Traffic Counts

The Montana State Department of Transportation (MDT), the City of Helena, and Lewis and Clark County conduct annual traffic counts at sites within the County. The three jurisdictions coordinate the collection of data to avoid duplication and share results. The counts are useful in determining which transportation corridors are experiencing higher usage and may need increased maintenance or modifications. The statistics are also used for calibrating transportation models and evaluating the effects of specific development proposals.

MDT has conducted traffic counts annually since 1984. The number of sites monitored in the unincorporated portion of the Helena Valley increased from 20 in 1985 to 52 in 1995. In other areas of the County, the number of sites surveyed increased from 6 in 1985 to 42 in 1995.

Funding

Transportation improvements, maintenance, and operations are funded from a variety of Federal, State, local, and private sources. Federal funding sources include the Federal-Aid Highway Program (gas tax, tire tax, and vehicle sales tax) and the Transportation Efficiency Act (TEA-21) authorized by Congress. These funds are generally administered by the Montana Department of Transportation.

State funding sources include the Reconstruction Trust Fund (gas tax, coal severance tax) and road maintenance funds (gas tax, vehicle sales tax, and trailer tax). Local funding sources for the County include the Road Fund (State gas tax, motor vehicle tax, and local property tax), the Bridge Fund (local property tax, vehicle license fees), and Rural Improvement Districts (specific tax/fee assessments on benefiting property).

Private funding sources include right-of-way donations, road construction within new development, cash contributions, and road maintenance districts. Due to the inter-relationship of private and public benefits associated with transportation facilities, public-

private cooperation in the design, construction, maintenance, and funding of such facilities is a common practice.

Additional funding alternatives are available to local governments in Montana, including: local option gas tax (County-wide), transportation utility user fees, general obligation bonds, impact fees, tax increment finance districts, multi-jurisdictional service districts, local improvement districts, and local option taxes (resort communities only).

The Board of County Commissioners proposed an increase in the property tax levy for the County Road Fund in 1998. The purpose of the proposal was to address deficiencies in the road network due to deferred maintenance, thereby increasing the safety and level of service provided to the traveling public. The proposal was defeated by the voters in the general election.

Existing Transportation System

Roadway Classifications

The road network consists of several types of roadways that provide an integrated system of vehicle movement within and between communities. Roads are generally classified by function, or their role within the system. County roads are differentiated from other types of public roads in part because they are owned in fee title by the County.

Designation of a functional roadway classification system is an integral part of managing street use and land development. Inconsistent or incorrect designation of functional class (usually in the form of under-classification) can lead to poor relations with residents and the traveling public. As traffic volumes begin to exceed certain levels on residential streets, complaints from local residents tend to increase.

Incorrect designation of a street segment to a lower classification when anticipated traffic warrants a higher class can result in under-designed facilities, producing long-term safety or capacity problems. Table 6.1 summarizes the typical characteristics of each functional classification.

| TABLE 6.1 | | CHARACTERISTICS OF FUNCTIONAL CLASSIFICATION OF STREETS | | |
|--------------------------------|----------------------------|--|--------------------------|---|
| Road Classification | Number of Lanes | RIGHT OF WAY WIDTH (in feet) | | National Daily Traffic Average |
| | | Existing Code (if applicable) | Recommen- ded | |
| Interstates/Freeway | 4+ | Varies | Varies | 30,000+ |
| U.S. Hwys/State | 4-7 | 80 | 100 -140 | 20,000+ |
| Arterials (major/minor) | 2-5 | 80 | 60 - 100 | 8,000-20,000 |
| Collector (major/minor) | 2-4 | 60 - 80 | 60 - 100 | 1,200-8,000 |
| Local Acc. Streets | 2 | 60 | 50 - 60 | up to 1,500 |

Interstate Highways

Interstate highways are of great importance in the regional transportation system because they accommodate large numbers of vehicles and provide linkages to other communities, states, and countries. They are multi-lane, high-speed, high-capacity roadways intended exclusively for motorized traffic with all access controlled by interchanges and road crossings separated by bridges. Interstate 15 connects Lewis and Clark County to Butte and Great Falls, serving Craig, Wolf Creek, and the Helena Valley.

U.S. Highways/State Routes

U.S. Highways/State Routes are second in the roadway hierarchy after Interstates. Several rural areas of the County are served by this level of roadway. U.S. Highway 287 splits with Interstate 15 just northeast of Wolf Creek to serve the Augusta area and continues north to Choteau (Teton County). State Route 200 is an east-west highway that bisects the County, serving Lincoln and connecting Missoula and Great Falls. U.S. Highway 12--another east-west route--crosses the southern part of the Helena Valley planning area, providing connections to Townsend (Broadwater County) and Interstate 90.

Major Arterials

The greatest portion of through travel occurs on major arterials. Major arterials are high-volume travel corridors that connect major generators of traffic (e.g., community and employment centers), and are usually constructed with partial limitations on direct access to abutting land uses. The County's major arterials generally carry from 2,000 vehicles per day to as many as 25,000 vehicles per day. Montana Avenue, a major arterial in the West Valley, averages from 5,000 vehicles at Sierra Road to 10,000 vehicles per day at Custer Avenue.

Minor Arterials

Minor arterials are streets that connect both major arterials and collectors that extend into the urban area, while providing greater access to abutting properties. Direct access is limited to maintain efficient traffic flow. Minor arterials serve less concentrated traffic-generating areas, such as neighborhood shopping centers and schools. Minor arterials often serve as boundaries to neighborhoods and provide linkage to collector roads. Although the predominant function of minor arterials is the movement of through traffic, they also provide for considerable local traffic that originates from, or is destined to, points along the corridor.

Collectors (major and minor)

Collectors provide direct services to residential or commercial areas, local parks, and schools while also providing a high degree of property access within a localized area. In densely populated areas, they are usually spaced at half-mile intervals to collect traffic from local-access streets, and convey it to the major and minor arterials and highways. Urban collectors are typically one to two-miles in length, while rural collectors may be longer (either could be a major or minor). Access may be limited to roadway approaches and major facilities, but some direct access to abutting land may be permitted.

McHugh and Wylie Drives are examples of rural collectors. Traffic volumes on collectors vary from 1,000 to about 4,000 vehicles per day. McHugh Drive averages about 1,500 vehicles per day (at Custer Avenue) and Wylie Drive averages from 1,000 vehicles per day (at York Road) to 4,000 vehicles per day (at East Helena).

Local Access Streets

Streets not selected for inclusion in the arterial or collector classes are categorized as local or residential streets. They allow access to individual homes, businesses, and similar traffic destinations. Direct access to abutting land is essential, for all traffic originates from, or is destined, to abutting land. Major through traffic should be discouraged.

Other Elements of the Transportation System

Bridge Facilities

There are 181 bridges in Lewis and Clark County. The majority are generally in fair to good condition, but more than a dozen are in need of immediate repair. Overall, 27 bridges need some type of work (2002 County Bridge Inventory). MDT and the County maintain detailed bridge condition records, including maintenance recommendations.

The County successfully pursued funding for bridge replacement through the Treasure State Endowment Program; six bridges have been funded and applications have been made for four more. The Missouri River Bridge at Craig is the County's priority for replacement under an MDOT program for bridges not on the State system.

Heavy Vehicles

All Interstates, U.S. Highways and State Routes are designated as truck routes to facilitate inter and intra-state commerce. There are no specifically designated truck routes on local roads in Lewis and Clark County; however, all roads are subject to weight limits. Limits are based on the structural condition of the roadway and bridges and may vary according to seasonal conditions.

There are many camping facilities along rivers and lakes within the County. These facilities are located in the vicinity of Hauser, Canyon Ferry, Holter, and Helena Lakes, and along the Missouri and Blackfoot Rivers. There are also camping facilities along the Rocky Mountain Front, as well as other locations. Recreational vehicle travel on County roads tends to be seasonal with heavy peaks in the summer and smaller "shoulder seasons" in the fall and spring.

Transit

There are a few transit providers operating in the County, principally in the Helena Valley planning area. There are several private charter or taxi services, in addition to non-profit providers serving specific clientele. The Helena Area Transit Council is a non-profit corporation that strives to coordinate all service providers to most efficiently serve the community. The Transportation Development Plan for 1997-2001 (October 1996) describes transit services and community needs in the Helena area, and includes an implementation strategy.

Bus Service

The City of Helena Bus, also known as Dial-A-Ride, is an agency within the Helena Public Works Department. The City of Helena Bus service is available to persons within the Helena City Limits on weekdays between 6:30 a.m. and 5:00 p.m. Rides are arranged by calling in advance and scheduling pick-up times. In 1999, a checkpoint route was established which serves major business and shopping areas, the hospital, and other sites. It is served by one bus that completes the circuit on an hourly basis.

G&L Transit is a charter bus company that services the continental United States. Its major clients are the U.S. Government (military personnel in particular) and the State of Montana. Other than a fixed schedule service for local government adult special needs clients, its service is available 24 hours per day, 7 days per week.

Treasure State Transit is a charter bus company that offers services to the continental United States, Canada, and Mexico. Treasure State provides contracted school bus services to Helena School District #1 and Trinity School District #4. A limousine service (advance reservation) will be available in the near future.

Rimrock Trailways is an intercity and interstate bus transportation provider headquartered in Billings. Six buses per day pass through Helena: There are two northbound, two southbound, one eastbound, and one westbound arrivals/departures per day. The bus station is located on the east side of Helena, just east of the Capitol Interchange (I-15/Hwy 12).

Taxi

The only taxi company operating in the County is Capitol Taxi, which provides door-to-door service 24 hours per day, 365 days per year. Its service area for passenger transport is defined as the area within a 50-mile road radius from downtown Helena. Special services include hotel/airport shuttle and wheelchair accessibility.

Community Service Agency Transit

Fort Harrison Veterans' Administration Hospital provides transportation for veterans both within and outside of the City of Helena. Service is available within Helena Monday through Friday; hours are 8:00 a.m. to 4:30 p.m., but may vary with demand. The Disabled American Veterans organization provides service to the VA for clients outside Helena.

The Rocky Mountain Development Council provides transportation services to senior citizens who participate in the organization's programs. The service is available from 7:00 a.m. to 4:30 p.m., Monday through Friday. Service is available in both Helena and East Helena.

The East Valley route is cosponsored by the Rocky Mountain Development Council and Helena Area Transit Service (HATS). This service provides limited transportation for citizens in the East Valley and the City of East Helena to specific destinations in Helena, where customers are able to access other HATS services. The East Valley bus operates six hours each day, Monday through Friday.

There are several transit services operated by private non-profit corporations associated with developmental disabilities (Westmont, Spring Meadow Resources), mental illness (Golden Triangle), and recreation (YMCA).

Bicycle/Pedestrian

There are three separated bicycle/pedestrian facilities in the unincorporated section of Lewis and Clark County:

- Between Helena and East Helena, along the north side of U.S. Highway 12 (~ 5 miles).
- North of East Helena, along the west side of Valley Drive (~1 mile).
- Jim Darcy School area, along North Montana Avenue and Lincoln Road (~3 miles).

Newly constructed secondary roads include paved shoulders (8 feet) that also function as bicycle/pedestrian facilities. These are all in the Helena Valley and include:

- Green Meadow Drive, from Custer Avenue to Sierra Road (~3 miles).
- York Road, from Birkland Drive to Tizer Drive (~1 mile).

- Canyon Ferry Road (to be constructed in 2000/2001), from Walter Drive to York Road (~1.5 miles).

Areas with large numbers of pedestrians, bicyclists, and automobiles should consider constructing separate paths to improve safety. Paved shoulders (of at least 5 feet) provide a margin of safety for bicyclists and pedestrians, as well as slow-moving agricultural equipment and emergency stops. The County has pursued additional bicycle and/or pedestrian facilities through the Community Transportation Enhancement Program (established by the federal ISTEA and TEA-21 transportation legislation), but several projects have been constrained by right-of-way and/or cost estimates.

The Helena Area Transportation Plan includes a component on bicycle and pedestrian issues and provides a recommended bike route system and urban trail network. Any reconstruction or new construction of roadways should address facilities and/or design considerations for bicycle and pedestrian movement.

Snowmobiles

Snowmobiles are used as a form of recreation for the County's tourists and residents. Their use for transportation purposes is generally limited to farming and ranching activities. By resolution, the Board of County Commissioners permits the use of snowmobiles in certain areas of the County, including Lincoln. The resolution limits the operation of snowmobiles in Lincoln to those operating in the process of leaving or returning from a trip on the approximately 200 miles of groomed snowmobile recreation trails surrounding Lincoln.

Railroads

Montana Rail Link (MRL) operates a rail line extending across the southern part of the Helena Valley, extending from southeast corner of the County to the Continental Divide at the Mullan Tunnel. This is a portion of the line extending from Logan to Missoula. MRL also operates a couple small industrial spurs in the vicinity. A rail yard and switching facility operated by MRL is located within the City of Helena and extends eastward into the County jurisdiction.

The Burlington Northern-Santa Fe Railroad (BNSF) operates a rail line extending from the northwest corner of the City of Helena northward, passing Silver City, Wolf Creek and Craig, and extending to Great Falls. This rail line also serves only freight movements through the County.

Passenger rail service is not available in Lewis and Clark County; the nearest passenger service is the Amtrak station in Shelby, 167 miles to the north of Helena.

Air

The only commercial aviation airport located within the County is Helena Regional Airport (HRA) located on the northeast side of the City of Helena. The HRA is currently served by four airlines. Delta Air Lines, the primary carrier, operates jet flights to their Salt Lake City hub. Skywest Airlines, a Delta connection, supplements the Salt Lake City service using regional jets. Horizon Airlines offers daily round trip flights to their Seattle hub using regional jets. Northwest Airlines began service in 2002 with one flight a day between the Twin Cities and Helena, with a stop in Billings. Big Sky Airlines serves Helena, providing service to Billings, Kalispell, and Missoula. These air carriers have experienced a 57 percent growth in local passenger boardings over the past ten years, and are anticipating a 5 percent growth per year for the next several years.

The HRA also has aviation charter companies providing single and twin-prop engine service, as well as jets. These companies operate 365 day per year. There are a number of air cargo operators that serve Helena including UPS, Fed Ex, and several other regional freight and check flights.

The Montana National Guard recently completed the largest National Guard helicopter facility in the United States on the north side of the Airport. In addition, the Helena Regional Airport Authority and the Helena College of Technology operate a state-of-the-art live fire training facility for aviation fire fighters. This facility, the Rocky Mountain Emergency Service Training Center, is being expanded to include a structural training building, a two mile driving course, a hazardous materials cleanup site, and several other training activities.

The HRA completed runway improvements in 2000, and has nearly completed an update of its long-range facility plan. The HRA has acquired all lands necessary for runway clear zones, and has recently acquired adjacent lands for development/expansion of airport-related activities. The City of Helena administers the Airport Noise Influence District through its zoning ordinance; the extent of this district is shown on a map included as part of Appendix E.

General aviation airport locations include Augusta and Lincoln. Several small airstrips for private purposes are located in the County.

Level of Service Standards

Introduction

Level of service (LOS) is a designation that describes a range of operating conditions on a particular type of facility. The 1994 Transportation Research Board's Highway Capacity Manual (HCM) defines the level of service concept as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. The critical point in this definition is the need to define service quality in terms that are perceived by drivers and passengers. Several key measures are used in the 1994 HCM to describe service quality including speed, travel time, density, and delay.

Level of service standards are quantifiable measures of the public services a jurisdiction provides to its residents. These standards are used to determine deficiencies that need to be corrected in existing infrastructure and to identify future infrastructure needs. By establishing an acceptable level of service, individual elements of systems, such as roadways, can be rated. This rating allows the jurisdiction to determine what it should do to provide a target level of service to its residents.

National LOS Standards

Level of service (LOS) for transportation facilities is generally defined by capacity. The primary measure of service quality is time delay, with speed and capacity utilization employed as secondary measures. LOS for two-lane highways is determined by both mobility and accessibility. The Transportation Research Board's Highway Capacity Manual (HCM) contains a method for estimating the LOS for two-lane highways where time delay data is not available. In addition, HCM defines LOS ratings of "A" through "F" for highway segments, intersections, and arterial street segments, based on the volume of traffic and the available capacity of the facility. Table 6.2 shows the expected average travel speeds for each LOS classification.

TABLE 6.2- ARTERIAL LEVELS OF SERVICE

| | Principal Arterial | Minor Arterial | Collector Arterial |
|---------------------------|--|-----------------------|---------------------------|
| Range of free-flow speeds | 45-35 | 35-30 | 35-25 |
| Typical free-flow speeds | 40 | 33 | 27 |
| LEVEL OF SERVICE | AVERAGE NATIONAL TRAVEL SPEED (MPH) | | |
| A | > 35 | > 30 | > 25 |
| B | > 28 | > 24 | > 19 |
| C | > 22 | > 18 | > 13 |
| D | > 17 | > 14 | > 9 |
| E | > 13 | > 10 | > 7 |
| F | < 13 | < 10 | < 7 |

Source: Transportation Research Board's *Highway Capacity Manual*, special report 209 (1994).

Rural And County-Wide LOS Issue

The roadway system in much of Lewis and Clark County is generally classified as two lane rural roadway. Two lane rural roadway systems operate under uninterrupted flow between points of fixed interruption. They are, however, significantly different in basic operating characteristics from multi-lane facilities. Passing maneuvers must take place in the opposing lane of traffic. Thus, flow in one direction limits and interacts with flow in the other direction. Passing is severely restricted under higher density conditions, and gaps forming in front of slow moving vehicles cannot be as efficiently filled as on a multi-lane facility. Consequently the volume capacity ratio ($v/c = \text{rate of volume/capacity}$) can be low. The capacity of a two-lane roadway is described in terms of the total flow in both directions. The capacity of two-lane rural roadways is 2,800 passenger car per hour (pcph) under ideal conditions. Ideal conditions for two-lane rural roadways include: design speed 60 mph, twelve-foot minimum lane widths, six-foot minimum shoulder widths, the lack of NO PASSING zones, 50/50 directional distribution, and level terrain. Terrain influences capacity on rural two-lane roadways because of the increased difficulty in passing as terrain affects visibility.

LOS standards for two-lane rural roadways are also significantly different from the LOS standards for two-lane urban roadways. Traditionally, LOS is measured based upon the delay experienced when traveling a roadway segment or when going through an intersection. This system is appropriate in densely-populated areas, such as Helena, where transportation facilities are at or approaching capacity, as described in table 6.1. However, in rural areas, the traditional system is ineffective because of the relatively low traffic volumes. Because of the rural nature of Lewis and Clark County, the County's rural roadway system is made up of low-volume roads that do not exhibit capacity problems. Because of this difference an alternative LOS system for two-lane rural roadways is necessary. LOS standards for two-lane rural roadway systems rate its operation and its condition. Operation LOS rates a roadway in terms of how its

characteristics compare with those necessary for it to function as intended. Condition LOS rates a roadway in terms of how its physical characteristics compare to those of an ideal facility.

Operation Level Of Service Standards

The Operation LOS rates a roadway in terms of how its characteristics compare with those necessary for it to function as intended (see table 6-3). The roadway is rated on how it compares to its rated tonnage classification and how often it is open for use. A high operation rating indicates a roadway that is always available to be used and exceeds the rated strength for its tonnage classification; a low rating indicates a roadway that is rarely available for use and has a strength well below what is required for its tonnage classification.

TABLE 6.3: OPERATION LEVEL OF SERVICE STANDARDS

LOS Description

- O1** Weight restrictions imposed 5 days or less per year.
Closed only in extreme circumstances.
Lane capacity never reaches its maximum.
Presence of trucks and recreational vehicles cause no delay.
Presence of non-motorized vehicles cause no delay or safety concern.

- O2** Weight restrictions imposed 5 to 15 days per year.
Rarely closed.
Presence of trucks and recreational vehicles cause no delay.
Presence of non-motorized vehicles (bikes and pedestrians) is limited.

- O3** Weight restrictions imposed 15 to 30 days per year.
Sometimes closed.
Presence of trucks and recreational vehicles causing noticeable delay.

- O4** Weight restrictions imposed 30 to 60 days per year.
Sometimes closed.
Presence of trucks and recreational vehicles causing delay.

- O5** Weight restrictions imposed more than 60 days per year.
Often closed.
Presence of trucks/recreational vehicles cause delay and forms long queue.
Presence of non-motorized vehicles (bikes and pedestrians) cause delay.

It is important for major County roads to remain open during winter and spring months. Due to their surfacing, condition, and location, some roads may be closed or have their load limits restricted on a short-term basis.

Some of these closures are regularly scheduled each year, usually based on weather conditions, such as snow or spring thaws. The operation LOS will use a scale from O1 to O5, with O1 representing the highest LOS and O5 representing the lowest LOS.

Condition Level Of Service Standards

The Condition LOS rates a roadway in terms of how its physical characteristics compare to those of an ideal facility (see table 6-4). An ideal facility standard includes width, surface type and thickness, and vertical and horizontal geometry. A high Condition LOS rating is given to roadways constructed to a high standard and providing a high level of driver comfort and safety; a low rating is given to roadways that are physically deficient, providing little driver comfort or safety. LOS for condition rating is from C1 to C5; C1 represents the highest LOS and C5 represents the lowest LOS.

TABLE 6-4: CONDITION LEVEL OF SERVICE STANDARDS

LOS Description

- C1** Meets all appropriate County standards.
 Meets all appropriate MDOT standards.
 Surface material in excellent condition.
 Driving is comfortable and safe.
 Number of accidents due to roadway condition is zero.

- C2** Meets most appropriate standards.
 Meets minimum lane width for classification.
 Meets minimum shoulder width for classification.
 Vertical and Horizontal curves on existing roadway reasonably conform to design standards.
 Short sections on roadway may exceed standard grade.
 Surface material appropriate for classification and in good condition.
 Number of accidents due to roadway condition is limited.

- C3** Meets many of the appropriate standards.
 May not meet minimum lane width and shoulder width.
 One or more substandard curves 10 mph below design standards.

Up to 10 percent of roadway exceeds standard grade.
Surface material may not be appropriate for classification, and in fair condition.
Number of accidents due to roadway condition is low.

- C4** Deficient in meeting appropriate standards.
Does not meet minimum lane and shoulder width.
One or more substandard curves 15 mph below design standards.
Over 10 percent of roadway exceeds standard grade.
Surface material not appropriate for classification, and is in poor condition.
Number of accidents due to roadway condition is noticeable.
- C5** Deficient in meeting standards.
Creating hazardous condition.
Needs immediate attention.
Number of accidents due to roadway condition is high.
No sidewalk, no shoulders.

Transportation Issues, Goals, and Policies

People and goods are connected to one another via a community's transportation system, which consists of facilities that accommodate many modes of transport including cars, trucks, buses, bicycles, pedestrians, railcars, and airplanes. Lewis and Clark County must work to establish an efficient and safe road system that supports desired development patterns, in order to accommodate an increasing population and be economically competitive.

ISSUE A **Sufficient funds are not available to maintain all public and County roads in Lewis and Clark County.**

Goal 1 Maintain and improve the condition and operational level of service of the existing road system.

Policy 1.1 Road system maintenance should remain a high priority.

Policy 1.2 The construction of passing lanes and left and right-hand turn lanes, appropriate to accommodate traffic growth or where needed for safe operation, should be a priority on the major arterial street/road system.

Policy 1.3 Prioritize and program subsurface improvements to minimize seasonal road restriction or closures due to frost heave.

Policy 1.4 Support the restriction/elimination of access points as opportunities arise to maintain capacity of existing arterials.

Policy 1.5 Development should pay its proportional share of the cost of improvements to the existing roadway system necessitated to address the impacts of development.

Policy 1.6 Prioritize road maintenance needs on the County road system.

ISSUE B: Future development may limit access to public and private lands and needed right of ways.

Goal 2 Identify and protect future road corridors to serve future developments and public lands.

Policy 2.1 Require dedication of roadway rights-of-way in both the planning and platting process. Dedications should be according to the appropriate functional classification, subdivision regulations, design standards, and County policy.

Policy 2.2 Identify, protect, maintain, and—when appropriate—purchase rights-of-way providing access to key public and recreational lands, along with potential parking areas.

Policy 2.3 Efficiently connect roads in new developments to the existing road network.

ISSUE C A well-designed and adequate road network is essential for developing areas.

Goal 3 Facilitate road construction to serve developing areas, and encourage development in identified urban areas.

Policy 3.1 A process should be established to assure that planned transportation projects are coordinated among Lewis and Clark County, cities in the County, the Helena Area Transportation Coordinating Committee, adjoining counties, and the Montana Department of Transportation.

Policy 3.2 Require traffic impact studies to determine the need for additional or improved roads, or for traffic signals at major intersections.

Policy 3.3 Promote the equitable distribution of transportation construction costs between Federal, State, and County government; cities in the County; and the private sector. Commitments for future transportation improvements should be pursued.

Policy 3.4 An east-west transportation by-pass corridor should be established.

Policy 3.5 As resources allow, identify and provide access for non-auto travel between communities or neighborhoods that does not parallel auto access.

Goal 4 Guidelines to provide adequate emergency service access to County residents should be established.

Policy 4.1 Review proposed developments to accommodate emergency vehicles.

Policy 4.2 Proposed transportation projects and their impacts on emergency service access should be evaluated.

Policy 4.3 Where appropriate, identify an integrated road network. Plan to ensure that adequate rights-of-way and access easements are preserved and acquired for future road extensions, widening, and proper drainage.

ISSUE D: There is a benefit to providing non-motorized travel in the County, including developed areas, and recreational and tourist areas.

Goal 5 Establish safe pedestrian and bicycle access in designated areas of the County as part of the non-motorized circulation system, as resources allow.

Policy 5.1 Establish provisions for non-motorized and pedestrian features in the design of roadway and bridge projects.

Policy 5.2 Provide for improvement and dedication of bikeways and pedestrian paths through developing areas.

Policy 5.3 Provide widened shoulders where possible to accommodate pedestrians/bicycles on existing roadways as appropriate, ideally with physical separation between motorized and non-motorized traffic.

Policy 5.4 Establish design standards for widened shoulders for pedestrians and bicyclists.

Policy 5.5 Explore opportunities for separated non-motorized paths to natural and scenic areas, including available rights-of-way.

VII: IMPLEMENTATION STRATEGY

Introduction

The Lewis and Clark County Growth Policy establishes a vision to ensure a desirable place for generations to come. It contains goals and objectives to guide growth to areas where local government can provide services cost-effectively and away from areas where growth threatens valued lifestyles and resources. The purpose of this chapter is to discuss in detail how the County should carry out the Growth Policy. In addition to those identified here, previously adopted plans identified many implementation measures.

Implementation mechanisms include a range of different measures, which are listed below:

- **IMPLEMENTATION STRATEGY:** Lewis and Clark County will attempt to find balance amongst the various public policy goals of this Growth Policy. They are as follows:
 - a. **Preserving the high quality of life, including a sound economy, healthy environment, abundant recreational opportunities, vibrant cultural and social life, and excellent schools and services.**
 - b. **Spending public funds wisely.**
 - c. **Maintain and expand our economy;**
 - d. **Increasing the housing choices for all residents.**
 - e. **Ensuring that necessary transportation facilities and services are available to serve development and the community.**
 - f. **Balancing development with environmental protection.**
 - g. **Preserving rural areas, natural resources, and ecologically fragile areas for future generations.**

- h.* Support working with Gateway Economic Development Corporation and other economic development organizations to increase the level and number of high paying jobs within the County.**

Lewis and Clark County’s New Planning Framework

Four levels of planning are necessary to carry out the Growth Policy, as shown in table VII-1 below:

| Table VII-1: Four Levels of Planning for Lewis and Clark County | | |
|--|--|---|
| Level | Purpose | Example |
| County-wide | Lewis and Clark County conducts this level of planning to address a wide range of issues that affect the entire County | Lewis and Clark County Growth Policy Update; Lewis and Clark Capital Improvements Plan |
| Planning Area Plans | This level of planning brings policy direction of the Growth Policy to a smaller geographic scale | Planning Area Plans for Augusta; Canyon Creek/Marysville; Canyon Ferry/York; Helena Valley; Lincoln; Wolf Creek/Craig |
| Neighborhood Plans | This level of plans will address issues of concern to individual neighborhoods or areas | Special Zoning Districts; Southeast Side Study; Westside Study |
| Service Area Plans | This level of plans will address the delivery of services or facilities by the County. | Disaster and Hazard Mitigation; Parks and Recreation Plans |

County-wide Planning

Lewis and Clark County conducts county-wide planning to address the wide range of issues affecting the entire County. County-wide planning policies describe the overall vision for the unincorporated portions of Lewis and Clark County. The Plan provides general strategies used by the County, acting individually and cooperatively with others, in achieving that vision. Lewis and Clark County is responsible for ensuring that its Growth Policy complies with Montana statutes regarding growth policies. The Growth Policy, the Capital Improvements Plan (CIP), and adopted implementation strategies are designed to be consistent with and carry out the County-wide policies. Lewis and Clark County will use every opportunity to support County-wide planning policies when engaged in planning and negotiating activities with cities. Examples of such opportunities include designation of Urban Growth, Transitional Growth, and Rural Areas; service area agreements and; other inter-local agreements. The County Growth Policy serves as a vital guide to the future and provides a framework for managing change.

- **IMPLEMENTATION STRATEGY: Lewis and Clark County will carry out the County-wide Planning Policies through its neighborhood plans, CIP program, and through service and inter-local agreements with the cities and special districts. Lewis and Clark County will ensure that all such agreements are consistent with and carry out the County-wide policies.**

The Lewis and Clark County Growth Policy provides policy guidance for unincorporated areas of the County. It serves as a vital guide to the future and provides a framework for managing change.

- **IMPLEMENTATION STRATEGY: The County should conduct a cost-of-community services study and build-out analysis, both of which will provide critical information for implementation of county-wide planning.**

Planning Area Plans

Planning Area Plans focus the policy direction of the Growth Policy to a smaller geographic area. They often follow historic community planning boundaries or address a smaller area. This type of planning addresses the full range of issues for a healthy community, such as public safety, health and human services, land use, and infrastructure.

- **IMPLEMENTATION STRATEGY:** Planning Area Plans should include proposed land use plans for local geographic areas outlining any proposed urban, transitional or rural area designations. The purpose of the plans is to identify areas where public utilities will logically be extended, suggest any areas set aside for parks and open space, and any other special designations

Planning Area Plans are elements of the Lewis and Clark County Growth Policy, and will be consistent with the Plan's policies and implementation strategies. The Planning Area Plans should be consistent with any service area plans and any adopted level of service standards. These plans may include, but are not limited to:

- a. Identification of policies in the Growth Policy that apply to the sub-area.
- b. Any Planning Area specific land uses and subsequent zoning, when consistent with the Growth Policy.
- c. Recommendations for any open space designation and park sites, if consistent with adopted plans.
- d. Recommendations of capital improvements, the means and schedule for providing them, and appropriate amendments to service area plans to support planned land uses.
- e. Identification of any new issues that need resolution at a County wide level.
- f. Identification of all necessary implementation measures needed to carry out the Plan.

Helena Valley Development Areas

Future land use plans encourage the concentration of urban land uses to maximize the benefits from land already within the urban area. This can occur through the in-filling of underutilized sites. It can also occur through the development of areas within the proximity of municipal services. Development can be encouraged or discouraged by designing development zones, each with its own design standards that are conducive to effective and efficient land use patterns. Three types of areas were identified in the Helena Valley land use section of the plan.

- **IMPLEMENTATION STRATEGY:** Design and improvement standards for urban, transitional, and rural areas will be developed in a manner which is easy for the public to use and understand, and will be combined in one document for convenient cross-referencing.

Urban Growth Areas

Urban Growth Areas are the areas where city services to support residential, commercial, and industrial development are most likely to be extended over the next twenty years. (The areas are delineated in black on Helena Valley Land Use Map.) This is the area that urban-oriented land uses will be encouraged. Lewis and Clark County will work with the cities of Helena and East Helena to develop standards that provide a logical transition between current County development standards and those of the individual cities. These standards, implemented through inter-local agreements between Lewis and Clark County and each city, will consider:

1. Areas annexed into the cities within the next 20 years where the city can provide services.
 2. Regional issues and services where Lewis and Clark County will be responsible.
 3. Local issues and services where Helena and East Helena will be responsible.
 4. Defining the responsibility for providing local services, including transferring responsibility from the County to the city.
 5. A funding strategy for local and regional services.
 6. Revising and developing any relevant plans, policies, and area zoning to comply with the County and City's Growth Policies and to provide the basis for land use and other decisions by both jurisdictions.
 7. Defining incentives and regulations to implement 1-6 above.
 8. Developing transportation corridor maps for projected growth within the Urban Growth Areas.
- **IMPLEMENTATION STRATEGY:** Lewis and Clark County will work with the cities to identify where expansion of services may take place in the next twenty years. These areas are to be considered Urban Growth Areas. The areas should not overlap or create islands of urban unincorporated areas. The

County will work with cities to establish any needed local improvement agreements on future expansion for services. Lewis and Clark County and its cities should jointly develop land use policies and consistent capital improvement standards within the designated Urban Growth Areas. This process will include participation by landowners, and residents, governmental agencies, special purpose districts, and other service providers. The planning process should address, but is not limited to:

- a. Determining responsibility for upgrading facilities in Urban Growth Areas, and establishing partnerships between the County, cities, and other service providers for the needed improvements.
- b. Providing reciprocal notification and hold public meetings in coordination with monthly joint City-County work sessions to review of development proposals in the Urban Growth Areas.
- c. Giving cities, to the extent possible, the opportunity to be the designated sewer or water providers within the potential Urban Growth Areas.
- d. Modifying improvement standards, when appropriate, for County roads, parks, lot and building design to be compatible with urban standards.
- e. Encourage development density that is consistent with regional goals for promoting efficient transportation and efficient service delivery.
- f. Continuing protection of County landmarks and historic resources listed on the Lewis and Clark County Historic Resource Inventory.
- h. Providing environmental protection for critical natural areas.

Any potential inter-local agreements between Lewis and Clark County and the cities will carry out each jurisdiction's Growth Policies by identifying the responsibilities of each party. Special purpose districts will be partners in the process, helping to define how to provide services in the most cost-effective and locally-responsive manner. Whenever possible, the costs of providing services should be distributed so that they are equitable to all County residents. Citizens will be equal partners with the County, cities, and the special districts in this process.

Within the Urban Growth area, residential, commercial, public, and other forms of development should be encouraged at urban densities. Conversely, low density development within this area should be discouraged unless it: a) is the result of adapting to environmental limitations; b) is designed for future re-subdivision; or c) is a result of comprehensive neighborhood planning.

- **IMPLEMENTATION STRATEGY:** The County will revise its subdivision regulations to be consistent with this Growth Policy. Special consideration will be given to review procedures and design and improvement standards for the Urban Areas:
 - a. Environmental assessment requirements for major subdivisions may be reduced or eliminated as the County completes area-specific neighborhood plans, and implements zoning pursuant to the plans.
 - b. Design and improvement standards should be developed to promote urban density development and provide for integration of new subdivisions into the municipal service areas.

Transitional Areas

Transitional Areas are those areas that are suitable for urban development over a longer term. Transitional Areas may or may not be contiguous to existing urban development. Development approval should be conditioned upon the ability of the developer to provide all necessary on-site and off-site improvements and infrastructure. Phasing may be appropriate in some instances. Infrastructure extension plans should be sized to accommodate demands of future anticipated growth. When the increase of population demands, the affected area residents should be responsible for the cost of the improvements. Low-density development should be designed to allow urban levels of development in the future.

The areas in the Helena Valley (denoted in brown on the map) have been designated as the Transitional Growth Areas. The majority of commercial and industrial uses should be encouraged to locate within the urban-designated areas of the County, wherever feasible. Commercial nodes have been identified at the intersection of major arterials within the Transitional Areas.

- **IMPLEMENTATION STRATEGY:** The County will revise its Subdivision Regulations to be consistent with this Growth Policy. Special consideration will be given to design and improvement standards for the Transition Areas:

- a. Design and improvement standards will be developed to provide for the transition of low density subdivisions into higher density development when economies of scale or issues of public health and safety make such transition feasible.
- b. Design and improvement standards will be developed to provide for the integration of individual subdivisions and to promote the development of mixed-use neighborhoods.
- c. Design and improvement standards will be developed to provide for the self-sufficiency of new subdivisions.

Rural Areas

Rural areas contain development that is lower in density and intensity of use, requiring minimal infrastructure. They are designed to have the least impact on sensitive lands and resources. The development patterns in the rural areas should be sustained by rural levels of public infrastructure and services.

All newly created parcels should meet acceptable standards for streets, water supplies, and on-site wastewater systems, including a maintenance fund for those systems. A plan should be designed for future demands on roadways leading to and from development. When the population increases and the demand is evident, residents should pay for the upgrade and maintenance expenses.

- **IMPLEMENTATION STRATEGY:** The County will revise its Subdivision Regulations to be consistent with this Growth Policy. Special consideration will be given to design and improvement standards for the Rural Areas of the Helena Valley and the remainder of the County:
 - a. Design and improvement standards will be developed to provide for the self-sufficiency of new subdivisions, minimizing adverse effects on agriculture, local services, the natural environment, wildlife, water quality and quantity, and public health and safety.
 - b. Concepts of cluster development will be provided to further minimize adverse effects.

Neighborhood Planning

Neighborhood planning will address issues of concern to individual communities, specific geographic areas, or neighborhoods that meet specified criteria. They frequently address highly detailed planning issues, such as Special Zoning Districts, or focused infrastructure decisions involving individual property owners, carried out through local improvement districts.

Typically, completion of a neighborhood plan would be expected to precede the establishment of more specific zoning requirements. The plan is intended to be a more general guidance document that identifies issues of concern and formulates goals and objectives to address them. Zoning, on the other hand, might be one of a number of tools used to implement the plan. The relationship between a neighborhood plan and special zoning district is similar in some respects to the relationship between a growth policy and subdivision regulations: One lays out a broad framework, while the other includes the specific details to carry it out.

Some of the specific details regarding neighborhood planning in Lewis and Clark County are as follows:

- **IMPLEMENTATION STRATEGY:** Neighborhood plans should provide detailed land use, infrastructure, and development plans for neighborhoods that are a minimum of 640 acres in size. Smaller areas will be considered on a case-by-case basis. These plans--which must be prepared in conjunction with the neighborhood residents and property owners in the affected area--will become elements of and be consistent with the Lewis and Clark County Growth Policy. The Neighborhood Plans will take into consideration any adopted facility plans and levels of service standards. Neighborhood plans may include, but are not limited to:
 - a. Identification of policies in the Growth Policy that apply to the neighborhood.
 - b. Planning specific land uses and implementing zoning that is consistent with the Growth Policy.
 - c. Identification of ideal locations and conditions for special districts.
 - d. Recommendation for appropriate open space designations and park sites based upon adopted plans.
 - e. Recommendation for capital improvements, the means and schedule for providing them, and any recommended amendments to service area plans to support planned land uses.

- f. Identification of issues that may need resolution at a County wide level.**
- g. Identification of all necessary implementing measures to carry out the Plan.**
- h. Contains language that provides for periodical modification and updates, which should be considered every five years.**
- i. Should be prepared in conjunction with the neighborhood residents and property owners in the affected area.**
- j. Lewis and Clark County will work with local citizens on the Neighborhood Plans and help identify appropriate funding in the development, review, and implementation of these plans.**

Service Area Planning

Lewis and Clark County may designate Service Planning Areas designed to concentrate the County's limited funds and/or staff by designating higher priority areas for spending. This may be an area that will provide the necessary capacity for new growth, or an area where serious deficiencies exist as they relate to water, sewer, transportation, or designation for commercial/industrial growth.

Service Area plans are detailed plans for the delivery of services or facilities by Lewis and Clark County, special service districts or other agencies. Some service area plans may cover the entire County, while others pertain to specific area. Examples of County-wide service area plans are the Disaster and Hazard Mitigation Plan or the Parks, Recreation, and Open Space Plan. Other Service Area plans are detailed capital improvements plans and may include specific fire districts, school districts, or water and sewer districts.

Some plans are operational and guide day-to-day management decisions. Others include specific details of facility design. Independent special purpose districts or other public and private agencies often prepare these plans with the assistance of Lewis and Clark County, when appropriate. Capital improvements are important components of Service Area Plans. Another component of this Growth Policy discusses capital improvements planning (see volume III), and includes a list of additional plans related to capital facilities and the provision of services. Any improvements to capital facilities are closely linked to the availability of funds. Service Area plans identify costs and

needed facilities, and distinguish between improvements needed for new growth versus existing public health and welfare needs.

Level of service standards may differ between the County and the cities. Residents of unincorporated urban Lewis and Clark County are encouraged to petition for annexation in to cities to obtain higher levels of services. It is anticipated that cities and special purpose districts will be the providers of most local services. Different levels of service require different levels of funding. The citizens will be equal partners in defining the level of service.

- **IMPLEMENTATION STRATEGY:** To resolve deficiencies related to water, sewer and/or transportation services, the County should initiate a joint planning process that will:
 - a. Involve relevant jurisdictions, special purpose districts and/or local service providers.
 - b. Identify the major service deficiencies and establish a schedule for resolving the issues.

The deficiencies should be addressed by the following: a) adjusting the proposed land use; b) defining the level of service standards; or c) the source of funding available for the project. Other implementation items should include the following:

- **IMPLEMENTATION STRATEGY:** Lewis and Clark County should work collaboratively with cities or other entities to address level of service standards and costs. Lewis and Clark County and the cities may share the costs of needed capital improvements programs and other services.
- **IMPLEMENTATION STRATEGY:** All services area plans involving Lewis and Clark County or its operations should:
 - a. Be consistent with the Growth Policy, Planning Area Plans, and Neighborhood Plans.
 - b. Define required service levels for the Urban, Transitional, and Rural areas, when appropriate.
 - c. Provide standards for location, design, and operation of public facilities and services.
 - d. Specify adequate, stable, and equitable methods of paying for public facilities and services.

- e. Be the basis for scheduling needed facilities and services through capital improvements programs.
- f. Plan for the maintenance of existing facilities.
- **IMPLEMENTATION STRATEGY:** Lewis and Clark County should revise the criteria for funding capital improvements projects to focus funds in areas consistent with the designation criteria contained in this Plan. The County should also research the availability of additional funding sources.
- **IMPLEMENTATON STRATEGY:** The Work Plan for the transportation issues should include the following:
 - a. Review and Amend Design Standards for Subdivision Codes.
 - b. Develop Capital Improvements Program for all County-owned transportation facilities (including roads and bridges).
 - c. Establish a process to assure that planned transportation projects are coordinated between the County, incorporated cities, and neighboring counties. Engage the Transportation Coordinating Committee and MDT to help ensure equitable distribution of costs.
 - d. Establish an interconnected corridor map for future roads within Urban Growth Areas.
 - e. Establish a process to limit access to arterials to protect capacity and restrict strip development, working with the Montana Department of Transportation as appropriate.

Incentives

Incentives can encourage the types of growth and development patterns desired by the residents of Lewis and Clark County.

- **IMPLEMENTATION STRATEGY:** Lewis and Clark County should develop incentives for the Urban Areas that encourage adequate space for a broad range of housing and business development. Incentives to help housing and business developments may include (but not necessarily be limited to):

- a. **Coordinate with cities to inventory portions of the Urban Areas with in-fill opportunities. New development in these zones might be promoted by granting them special status, allowing for more flexible standards, phasing of improvement, and other possible incentives.**
 - b. **Density bonuses for site design that provide public benefits for affordable housing, land conservation, open space, etc.**
 - c. **Incentives that lower financial risks, including assisting developers in securing funding for traditional neighborhood designs, cluster developments, affordable housing, and other development that has clear public developments.**
 - d. **Pursue detailed infrastructure planning for each area, based on adopted facility plans, including overall design and opportunities for phased development.**
 - e. **Secure alignments for major infrastructure, including arterial and collector roads, water supply transmission lines, wastewater collection outfall lines, natural drainages, and stormwater retention/detention facilities, parks, and open space.**
 - f. **Develop public-private cooperation for funding the installation of major infrastructure improvements in accordance with adopted facility plans.**
 - g. **Work with landowners within each Urban Area to develop a Neighborhood Plan that is consistent both with this Growth Policy and the City of Helena Growth Policy. The County and City need to work cooperatively to ensure that both Growth Policies address issues that arise along the jurisdictional boundary in a consistent manner.**
 - h. **Encourage zoning districts for all Urban Growth Areas and streamline the development review process for development that is consistent with the Growth Policy, zoning, level of service and transportation plans, and design standards.**
- **IMPLEMENTATION STRATEGY: Lewis and Clark County should not provide direct incentives for development in the Transition Areas, but should**

pursue preliminary infrastructure planning for each area: Pursue implementation of the Helena Area Wastewater Treatment Facility Plan to protect quality of groundwater supply:

- a. Pursue a study of the Valley groundwater supply between I-15 and Green Meadow Drive, north to Lincoln Road, and south to the City of Helena city limits in order to protect quality of groundwater supply.
 - b. Pursue implementation of the Parks, Recreation, and Open Space Plan to acquire, develop, and maintain such facilities.
 - c. Pursue the establishment of special districts for the improvement and maintenance of the road networks.
 - d. Secure the alignments for arterial and collector roads.
 - e. Where there is local support, work with the landowners within each Transition Area to develop a Neighborhood Plan consistent with this Growth Policy.
- **IMPLEMENTATION STRATEGY:** Lewis and Clark County should not provide incentives for development in the Rural Area. Where there is local support, work with the landowners within the Rural Areas to develop Neighborhood Plans consistent with this Growth Policy.

Zoning Districts

Zoning is the designation of land by local government for specific uses and densities. Other applications may include lot coverage, building height, setback requirements, density, and separation of incompatible uses. Zoning may also require onsite improvements, coordination of development with offsite and County-wide public services, or place other conditions on development. Boundaries between different zones may follow property lines, natural features, or other dividing lines such as roads.

- **IMPLEMENTATION STRATEGY:** The Lewis and Clark County Zoning Codes, zone classifications, any proposed development standards, and any zoning maps will be consistent with the Growth Policy.

- a. Where there is local support, the County will work with the landowners (and other appropriate parties) within the Urban, Transition, and Rural Areas to develop zoning to implement adopted neighborhood plans.
 - b. The County will develop minimum design standards to promote the public health, safety, and general welfare, and to protect natural resources and public investments, consistent with this Growth Policy.
- **IMPLEMENTATION STRATEGY:** All existing zoning classifications will be carried forward to the County's official zoning maps, and updated to conform to the Growth Policy. The requirements in special zoning districts must be periodically reviewed and updated.

Subdivisions and Other Development Approvals

Under Montana law, a subdivision is the division of land or land so divided that it creates one or more parcels containing less than 160 acres. Subdivision review is a key part of the development process. It is designed to evaluate environmental impacts and insure that facilities and services supporting potential development are adequate. Subdivision of land involves detailed site planning and installation of public facilities, such as roads and utility lines.

During the subdivision approval process, the County and developers should work cooperatively to coordinate all requirements (e.g., zoning, drainage, road improvement standards, and mitigation of off site service impacts). This process also addresses potential site problems, such as poor access or sensitive environmental features, as well as circumstances unique to a specific site not anticipated by general subdivision and/or zoning code requirements. County Commissioners have the authority to approve or disapprove proposed subdivisions, if they believe they will ultimately be in accordance with the criteria in the county Subdivision Regulations.

- **IMPLEMENTATION STRATEGY:** Subdivision and other development approvals will be consistent with the Growth Policy, zoning, Planning Area Plans, Neighborhood Plans, and Capital Improvements programs. When needed infrastructure and facilities are not readily available, development approvals can either be denied or divided into phases, or needed facilities provided by the project proponents.

- **IMPLEMENTATION STRATEGY:** Land use classification boundaries should be interpreted flexibly, but consistent with underlying land characteristics and existing development.
- **IMPLEMENTATION STRATEGY:** The boundaries for the Urban, Transitional, and Rural Growth Areas should be reconsidered or for any necessary adjustments, in conjunction with the annual review.
- **IMPLEMENTATION STRATEGY:** The County should establish design standards and level of service standards for all large new commercial and office developments.

Permitting

The following policy ensures realistic progress toward reducing regulatory compliance burdens on the private sector while providing appropriate safeguards for the environment and public safety:

- **IMPLEMENTATION STRATEGY:** Lewis and Clark County's permitting systems should provide for expeditious review of projects, consistent with subdivision regulations, zoning, and other adopted policies.
 - a. The County will continue to improve its program of coordinating "one-stop shopping" for various permits, and providing comprehensive information on procedures and requirements relating to land development activities.
 - b. The County should develop and maintain a centralized database of land use permits which will be made accessible to all agencies and the public.
 - c. The County will develop a single umbrella permit process that incorporates all relevant land use permits.

Community Involvement

Planning Area and Neighborhood Plans focus on smaller, more defined neighborhoods and begin with a community involvement process. The process defines ways to balance community desires with acceptable ways to incorporate density into their neighborhoods.

Community involvement in the neighborhood planning process may result in a minimum residential density standard or housing objectives that all new development must meet. Additionally, it includes capital improvement planning to address the need for public amenities and infrastructure.

- **IMPLEMENTATION STRATEGY:** Lewis and Clark County will establish more effective community involvement approaches, through all stages of the planning process.

Code/Regulation Enforcement

The achievement and preservation of quality urban and rural living environments and protection of resources requires enforcement of the development standards contained in the County's regulations.

- **IMPLEMENTATION STRATEGY:** Lewis and Clark County will enforce its regulations by pursuing subdivision review, zoning districts, and other planning techniques. The County will provide oversight for site development on all sites for which it issues permits.

Measuring Progress Through Benchmarks

This Plan contains many goals and objectives for the County's future; how will the County progress toward meeting them? How will it measure the progress made toward meeting the goals? Benchmarks are goals that can be quantified to measure the outcomes of public policy, and monitor progress on priorities.

Benchmarks are a method used to assure accountability to the public; they demonstrate whether the County is moving toward its goals, and how fast. Benchmarks allow the prioritization of public resources to meet the goals or, if desired outcomes are not achieved, the modification of the goals. Benchmarks work well with public participation during the planning cycle, as citizens and various stakeholder groups provide feedback about what they feel are the most important things to measure. Later in the process, elected officials can use progress reports to make mid-course corrections to accomplish the goals.

- **IMPLEMENTATION STRATEGY:** Lewis and Clark County shall pursue a monitoring and benchmark program to measure progress toward public policy goals. The County shall establish a process that:
 - a. Includes the public, interest groups, cities, and other agencies to identify key indicators serving as a basis for benchmarks.
 - b. Addresses key issue areas of county-wide concern, including but not limited to: land capacity; phasing of growth in urban and rural areas; density; permit processing; housing costs; natural resources; public health and safety; water use; solid waste; transportation; open space, cultural resources; air quality; surface and ground water quality; wetlands; wildlife habitat; rural; and industrial lands.
 - c. Establishes a process that utilizes data collection, monitoring, and regular reports to measure key indicators and benchmarks. The Board of County Commissioners will be the responsible decision-makers who adopt the benchmarks.
 - d. Implements the attached action plan that includes established starting and ending dates for each item. Appropriate starting and ending dates for each item will be set within 12 months of the adoption of the Plan.

The County will review the Growth Policy completely and consider amendments to it as often as necessary, but at least once every two years. Changes to the Growth Policy will only occur after analysis, full public participation (including providing documentation to the public at least 10 days prior to public hearings), notice, and other requirements have been met.

- **IMPLEMENTATION STRATEGY:** Amendments to the County Growth Policy will be subject to public review and should include the following elements:
 - a. A statement of any proposed changes and rational for the changes.
 - b. A statement of anticipated impacts of the change, including the geographic area affected and issues presented.
 - c. Any necessary implementation mechanisms and alternatives.
- **IMPLEMENTATION STRATEGY:** Any necessary changes to development regulations, modification to capital improvements programs, Planning Area Plans, Neighborhood Plans, and Service Area Plans required for implementation should accompany the proposed amendments to the Growth Policy so that regulations will be consistent with the Plan.
- **IMPLEMENTATION STRATEGY:** All Amendments to the County Growth Policy will be done consistently with applicable Montana statues.

Lewis and Clark County Regulations

Land use regulations are the primary way to carry out the Growth Policy. This section describes how Lewis and Clark County land use regulations relate to the Growth Policy, Planning Areas, and Neighborhood plans.

Lewis and Clark County regulates land development and construction through a variety of technical standards resulting in permits and approvals for specific projects. To ensure County regulations are effective and warrant a high degree of public trust and confidence, regulations must be equitable, reasonable, easy to understand, and responsibly administered:

- **IMPLEMENTATION STRATEGY:** Lewis and Clark County's regulation of land use should:
 - a. Help protect public health, safety, and general welfare.

- b. Help protect consumers from fraudulent practices in land use, land sales and development.**
- c. Implement and be consistent with the Growth Policy and other adopted land use goals, policies and plans.**
- d. Be expeditious, predictable, clear, straightforward, and internally consistent.**
- e. Provide clear direction for timely resolution of regulatory conflict.**
- f. Be enforceable, efficiently administered, and provide appropriate incentives and penalties.**
- g. Be consistently and effectively enforced.**
- h. Create public and private benefits in an economically efficient and equitable manner.**
- i. Be coordinated with timely provision of necessary public facilities and services.**
- j. Encourage creativity and diversity in meeting County goals and policies.**
- k. Be coordinated with cities, special purpose districts, and other public agencies to promote compatible development standards throughout Lewis and Clark County.**
- l. Be responsive, understandable, and accessible to the public.**
- m. Provide effective and statutorily required public notice and pertinent documents at least one calendar week (7 days) before each public hearing. Provide reasonable opportunities for the public (especially those directly affected) to be heard and to influence decisions.**
- n. Treat all members of the public equally and base**

regulatory decisions wholly on the applicable criteria and code requirements.

- o. Make development requirements readily accessible and easy to understand to the public through up-to date codes, technical assistance materials and other relevant documents.**

MCA 76-1-601 (2)(h)(i) Definitions Of Criteria in 76-3-608(3)(a)

For the purposes of complying with the provisions of MCA 76-1-601 (2)(h)(i); 76-1-601 (2)(h) (ii), and 76-1-601 (2)(i) the provisions listed below will apply. The County should develop clear and detailed criteria for each of the seven items listed below, including evaluation of cumulative effects, in order that residents and developers will know exactly what factors and questions the BOCC will consider when making development decisions. This will provide a clearer, fairer, and more consistent development review process.

Agriculture

All aspects of farming, including (a) the cultivation and tillage of the soil, (b) dairying; and the production cultivation, growing and harvesting of any agricultural or horticultural commodities, including commodities defined as agricultural commodities on the federal Agricultural Marketing Act (12 U.S.C. 1141j(g); and (c) the raising of livestock, bees, fur-bearing animals, or poultry; and (d) any practices, including forestry or lumbering operation, performed by a farmer or on a farm as an incident to or in conjunction with farming operations, including preparation for market or delivery storage, to market, or to carriers for the transportation to market as defined in 41-2-103 MCA.

Agricultural Water User Facilities

Those facilities which provide water for agricultural land as defined in 15-7-202, MCA or which provide water for the production of agricultural products as defined in 15-1-101, MCA, including, but not limited to, ditches, pipes, and head gates.

Local Services

Any and all services or facilities that local, State and Federal entities are authorized to provide at a local level.

Natural Environment

The physical conditions that exist within a given area, including land, air, water, mineral, flora, fauna, noise, and objects of historic or aesthetic significance.

Wildlife

Living things, which are neither human nor domesticated.

Wildlife Habitat

Place or type of site where wildlife naturally lives and grows.

Public Health and Safety

The existing or projected conditions that relate to potential danger, risk or injury to the community including but not limited to floodplain; steep or unstable slopes; groundwater contamination; access limitations; physical hazards; radon potential; liquefaction.

MCA 76-1-601 (2)(h)(ii) Evaluation Of Criteria

Based on the pertinent information provided in the subdivision application, staff report, and public testimony, the Lewis and Clark County Board of Commissioners will evaluate and make decisions regarding proposed subdivisions based on the review criteria set forth in MCA 76-3-608 (3)(a), using the design criteria set forth in the Lewis and Clark County Subdivision Regulations adopted in accordance to Title 76, Chapter 3; any applicable neighborhood plan; and applicable zoning.

MCA 76-1-601 (2)(i) Public Hearings

Public hearings will be conducted in accordance to any applicable statutory requirements and in the procedures outlined in the Lewis and County Subdivision Regulations.

Implementation Plans

Specific implementation strategies have been developed for the following policies from the Natural Resources chapter, as follows below:

- **POLICY: Implement a wastewater maintenance program.**
 - An educational program created by the Water Quality Protection District to increase public knowledge and understanding of groundwater to facilitate informed personal and public choices about groundwater use and management.
 - An educational program created by the Environmental Division of the City-County Health Department to increase public knowledge and understanding of septic system function and maintenance to facilitate informed personal and public choices about septic system use and management. This program shall be implemented no later than November 2000.
 - Continue to develop an inventory of on-site systems and water wells within the county, as funding allows. Initial phases of the inventory were conducted by the Environmental Division of the City-County Health Department. Inventory work has already been completed in a number of locations around the County, including the Helena Valley, Birdseye, Rimini/Tenmile, Wolf Creek, and Craig. Results of the inventory shall continue to be entered in a data base and included in the County GIS system. This inventory shall be part of a continuing county-wide inventory and assessment of threats to groundwater.
 - A study group shall be formed by the County Board of Health by March 2004 to research and develop suitable county-wide septic maintenance districts. Group members will include a representative from the Health Department, a representative from the Planning Department, and a professional engineer practicing in the county. The group shall include at least seven members of the general public who are owners of on-site wastewater treatment systems. The maintenance district should,

at a minimum, be responsible for the implementing the following programs:

1. Periodic inspection of all inventoried systems and their maintenance records.
 2. Collection and maintenance of a data base of system permits, performance records and sampling results.
 3. Identification of malfunctioning systems.
 4. Implementation of a plan of correction for malfunctioning systems.
 5. Implementation of a preventive maintenance program.
- An inventory of groundwater non-point source pollution shall be conducted by the Water Quality Protection District, in conjunction with the on-site system and water well inventory, as funding is made available. Pollution sources shall be assessed based on threats to groundwater. This inventory shall be used as a basis for providing information to the Montana Department of Environmental Quality Source Water Assessment Program.

The source water assessments and inventory of pollution sources are complete for the Helena Valley. Some of the reports are now available for public review on-line on the DEQ website, with the remainder added in the near future. The County web site will provide a link to the DEQ site once all the reports are available (approximately June, 2004).

- As funding is available, the County shall initiate through its Water Quality Protection District a study and final report on the functioning and impact of the Helena Valley lagoons (as identified in the Helena Area Wastewater Treatment study). The report shall be published and made available in both written form, and on the Lewis and Clark County web site.
- The Department of Natural Resources and Conservation (DNRC) is charged with conducting an environmental review that is triggered by new water use permit applications. The DNRC—as part of this analysis—must examine overall water availability and potential for adverse impacts on all existing water rights within the area of potential

affect. A new water use application is not allowed to negatively impact existing water rights.

- In accordance with state regulations, installation of on-site wastewater treatment systems is prohibited on new parcels less than 20 acres in size when the depth to groundwater is less than 4 feet (48 inches). For existing parcels, the requirement is still 48 inches, although this may be achieved by adding fill, if the original distance to groundwater is less than 48 inches.
 - Support on-going studies of the impact of subdivisions on groundwater conducted by the Water Quality Protection District, as funding allows. The study should be conducted jointly with DEQ and other agencies if possible.
 - The Planning Department, the Environmental Division of the Health Department, and the Water Quality Protection District shall continue to collect and maintain a combined data base of all water quality information received through sampling programs, public water supply inspections, subdivision review and health inspections. This data base will be physically maintained by the Water Quality Protection District and will be accessible to all county and state agencies, and the public.
 - The Helena Valley monitoring well network will be consistently monitored for static water levels and sampling will be performed as often as funding allows by the Water Quality Protection District.
 - Using the County GIS system, the Planning Department, the Environmental Health Division of the Health Department, and the Water Quality Protection District should collect data on soil type, depth to groundwater, and fractured bedrock, well log information, water quality, and other criteria yet to be determined to be used to identify areas of hydrogeologic sensitivity with respect to land use. Input from the Permit Coordinator and Montana DEQ is recommended. A map should be produced and published, and made available to the public in both printed form and on the Lewis and Clark County web site, and it should be used in county subdivision pre-application meetings.
- **POLICY:** Support the County Weed Board to conduct research and apply for grants (available through private or governmental agencies) to help mitigate

the weed threat. Efficiently spend limited Weed Management funds while considering the following set of priorities:

- Preserve the most biologically intact areas.
- Preserve those areas with the highest proportion of native species.
- Preserve those areas that contain threatened, rare, or endangered plant species.
- Control noxious weeds that are localized and therefore more readily eradicated with relatively small expense.
- Control weeds in areas such as public right-of-ways, accesses and other areas where the public-at-large can inadvertently pick up noxious weeds and spread them.
- Control weeds in areas where they are having adverse impacts on the ecosystem, such as critical wildlife habitat and domestic grazing areas.

ACTION PLAN

1) DEVELOPMENT PERMIT SYSTEM

ACTION ITEM DETAILS: Develop and adopt a Development Permit System designed to implement the Growth Policy Update. The system will be streamlined, user friendly, available online, and comprehensive; it will be designed so the applicant can expect a timely outcome and “one-stop shopping.” The system will include consideration of the following: water quality and quantity; suitable access; adequate fire and police protection; road construction and/or maintenance; adequate open space and recreation; environmental issues; site design; and the possibility of higher density in areas of expected growth.

START YEAR: 2004

LEAD AGENCY: Community Development and Planning Department (CDP)

PARTNERS: Planning Board, Helena, East Helena, Environmental Health, Water Quality District, Public Works Special Districts, BOCC

2) DESIGN STANDARDS

ACTION ITEM DETAILS: Review and update Design Standards for Subdivision Regulations.

START YEAR: Began in 2003

LEAD AGENCY: CDP

PARTNERS: BOCC, Planning Board, the public, Citizens' Subdivision Regulation Committee

3) CAPITAL IMPROVEMENTS PROGRAM

ACTION ITEM DETAILS: Develop Capital Improvements Program for all County-owned infrastructure.

START YEAR: Ongoing

LEAD AGENCY: Finance

PARTNERS: CDP, Public Works and other departments

4) FIRE PROTECTION MASTER PLAN

ACTION ITEM DETAILS: Develop a Fire Protection Master Plan for all fire districts and fire service areas.

START YEAR: 2005

LEAD AGENCY: Fire Districts and Fire Service Areas

PARTNERS: CDP, Admin/Finance, Rural Fire Council

5) INTERGOVERNMENTAL AGREEMENTS

ACTION ITEM DETAILS: Develop/revise intergovernmental agreements with the City of Helena, East Helena, and Jefferson County to define potential annexation areas and/or other planning designations, including standards designed to transition between rural and urban settings.

START YEAR: Ongoing

LEAD AGENCY: CDP

PARTNERS: BOCC, Helena, East Helena, Jefferson County

6) AREA PLANS

ACTION ITEM DETAILS: Develop or revise area plans for unincorporated communities, planning areas, and neighborhoods, including discussion for appropriate land use controls to implement those plans.

START YEAR: 2003-ongoing

LEAD AGENCY: CDP

PARTNERS: Citizens/local community groups

7) AFFORDABLE HOUSING

ACTION ITEM DETAILS: Coordinate with community based affordable housing groups to recommend strategies to provide private-sector affordable housing and to identify and/or eliminate barriers to providing affordable housing.

START YEAR: Ongoing

LEAD AGENCY: CDP

PARTNERS: Helena Area Housing Task Force, Rocky Mountain Development Council, private developers, Gateway Economic Development Corporation, Fannie Mae, and BOCC

8) GROWTH POLICY MONITORING AND EVALUATION

ACTION ITEM DETAILS: Establish a process for monitoring and evaluating the Growth Policy performance, including indicators for land use, neighborhood plans, special zoning districts, subdivision activity, public facilities, and cumulative impacts resulting from development.

START YEAR: 2004

LEAD AGENCY: CDP

PARTNERS: Planning Board, Public Works, Environmental Health, BOCC

9) COUNTY-WIDE SEWER MAINTENANCE PROGRAM

ACTION ITEM DETAILS: Develop a County-wide sewer maintenance program to identify, characterize, and address local ground water problem areas, failing sewer and/or septic systems, and development of community water systems when necessary.

START YEAR: On hold until staff/resources available.

LEAD AGENCY: BOCC, CDP

PARTNERS: Environmental Health, Board of Health, Water Quality District

10) COORDINATE WITH SPECIAL DISTRICTS

ACTION ITEM DETAILS: Work with special districts (such as fire districts) that provide service in the unincorporated portions of the County to coordinate land use planning and new facilities. Consider adopting intergovernmental agreements to formalize coordination.

START YEAR: Ongoing

LEAD AGENCY: CDP

PARTNERS: Special Districts, Public Works

11) OPEN SPACE AND RECREATION

ACTION ITEM DETAILS: Implement the Open Space and Recreation Plan, and identify potential hazardous areas (e.g., subject to geologic or flood hazards) that would be more appropriate as open space.

START YEAR: Ongoing

LEAD AGENCY: City/County Park Board

PARTNERS: CDP, BOCC, Lincoln Park Board, Prickly Pear Land Trust

12) WETLANDS

ACTION ITEM DETAILS: Develop a wetlands rating system and complete wetland inventory.

START YEAR: Ongoing

LEAD AGENCY: Water Quality District

PARTNERS: CDP, local conservation groups, sportsmen, environmental groups, and landowners.

13) TRANSPORTATION SYSTEM

ACTION ITEM DETAILS: Plan for an integrated, comprehensive transportation system in the County.

START YEAR: Ongoing

LEAD AGENCY: City-County Transportation Coordinator

PARTNERS: CDP, Transportation Coordinating Committee, BOCC, Helena, East Helena, MDT

14) TRANSPORTATION COORDINATION

ACTION ITEM DETAILS: Continue the process where planned transportation projects are coordinated between the County, incorporated cities, and neighboring counties. The Transportation Coordinating Committee and MDT can help ensure the equitable distribution of costs.

START YEAR: Ongoing

LEAD AGENCY: Public Works

PARTNERS: CDP, Transportation Coordinating Committee, BOCC, Helena, East Helena, MDT

15) WATER BODY SETBACKS

ACTION ITEM DETAILS: Establish standards for the setback of septic systems and buildings along the Missouri River Corridor and other major rivers, streams, lakes, and wetlands.

START YEAR: Winter, 2004

LEAD AGENCY: CDP

PARTNERS: Planning Board, Health Board, landowners, Missouri-Madison (FERC) Technical Working Group, Board of Health, Citizens' Subdivision Regulation Committee, local citizens

16) DEVELOPMENT STANDARDS

ACTION ITEM DETAILS: Develop a set of integrated Development Standards (including standards under the Planning Area Plans and any Neighborhood Plans) for the Urban Growth Area following the adoption of the Growth Policy. Upon completion of the Urban Growth Area standards, the County will complete the Development Standards for the Transitional Areas (including standards under the Planning Area Plans and any Neighborhood Plans). Upon completion of the Transitional Area standards, the County will complete the Development Standards for the Rural Areas (including standards under the Planning Area Plans and any Neighborhood Plans). The standards will be compiled in a single, user-friendly document.

START YEAR: 2005

LEAD AGENCY: CDP

PARTNERS: BOCC, Planning Board, business owners, the public

17) ECONOMIC DEVELOPMENT

ACTION ITEM DETAILS: Coordinate with local economic development groups to provide opportunities for manufacturing, industrial, high-technology, tourism, and agricultural-related businesses, and any other environmentally clean companies that may want to expand or establish themselves in Lewis and Clark County.

START YEAR: Ongoing

LEAD AGENCY: Gateway Economic Development Corporation

PARTNERS: CDP, BOCC, Chambers of Commerce, Montana Department of Commerce, local entrepreneurs, community leaders

18) NOXIOUS WEEDS

ACTION ITEM DETAILS: Support the County Weed Board in their efforts to conduct research and apply for grants to help mitigate the noxious weed problem.

START YEAR: Ongoing

LEAD AGENCY: County Weed Board

PARTNERS: CDP, FWP, Dept. of Agriculture, DNRC, Conservation District, private landowners.

VIII: GLOSSARY

ACCESS, LEGAL: All lots of the subdivision abut a public road easement or public right-of-way, and all necessary County or State approach permits have been obtained.

ACCESS, PHYSICAL: All lots of the subdivision abut a road constructed in accordance with the standards of these regulations and which provides vehicular access to each lot.

ACCESSORY BUILDING OR USE: A subordinate building—or portion of the principal building—located on the same lot as the principal building, or subordinate use of land, either of which is customarily incidental to the principal building or principal use of the land.

Where a portion of an accessory building is connected to part of the principal building in a substantial manner, as by a roof, such an accessory building shall be counted as part of the principal building.

ADT: Average daily trips made by vehicles or non-motorized traffic in a 24-hour period.

AFFORDABLE HOUSING: Affordable housing is generally defined as housing where the occupant is paying no more than 30 percent of gross income for housing costs, including utilities and meets the needs of moderate or low-income households.

AGGRIEVED PARTY: A person who can demonstrate a specific personal and legal interest, as distinguished from a general interest, who has been or is likely to be specially and injuriously affected by the decision of the governing body to approve, conditionally approve, or disapprove a proposed subdivision plat.

ANNEXATION: The process by which land in an unincorporated area can become part of a nearby or adjacent municipality.

APPLICATION DEADLINE: The periodic deadlines (approximately semi-monthly or monthly) for application submittals to be considered within a particular review timeframe. Such deadlines are necessary for efficient administration of the MT Subdivision & Platting Act and these regulations. The statutory review timeframes

(60 for majors or 35 (working) days for minors) would always begin on an application deadline, if the submitted application was determined to be complete.

APPROACH: The point where a residential driveway meets a public road, or where a local access road, for example, intersects a higher classification of public road (e.g., collector).

APPROPRIATE: An act, condition, or state that is considered suitable for a specific situation by the Board of County Commissioners.

BEST MANAGEMENT PRACTICES: The utilization of nationally recognized methods and/or technologies in order to avoid or minimize potential negative impacts and to maximize the potential productivity of a resource.

BIG GAME WINTER RANGE: Habitat that supports the larger hunted animals (e.g., deer, elk, antelope, and moose) during the winter months.

BLOCK: A group of lots, tracts or parcels within well-defined and fixed boundaries.

BLM: U.S. Bureau of Land Management.

BOCC: Board of County Commissioners.

BOR: U.S. Bureau of Reclamation.

BUILDING SETBACK LINE: An imaginary line establishing the minimum distance that structures may be located from lot lines, street rights-of-way, natural drainages, or other physical or legal boundaries.

CAG: Citizens' Advisory Group.

CAPITAL FACILITIES: Capital facilities are provided for public purposes, and are generally defined as structures, improvements, equipment, or other major assets--including land--that have a useful life of at least 5 years.

CAPITAL IMPROVEMENTS PLAN (CIP): A plan outlining where, when, and how much a community or county plans to invest in major public facilities over the next 5-10 years. A CIP may address but not be limited to items such as roads and bridges, emergency service facilities and equipment, school and library buildings, sewer and water systems, and solid waste disposal sites.

CAPITAL INVESTMENT: Funds provided to build, expand, or otherwise improve major public facilities (see definition of capital improvements plan).

CARRYING CAPACITY: The capability and suitability of a resource (natural or public) to beneficially accommodate an activity or use.

CATCHMENT AREA: A particular geographic area within which water flows to a common point (e.g., a stream, lake, catchment basin, etc.).

CDBG PROGRAM: Community Development Block Grant Program.

CERTIFICATE OF SURVEY (COS): A drawing of a field survey prepared by a registered land surveyor for the purpose of disclosing facts pertaining to boundary locations and parcel features. COSs are often filed as a legal document to describe land divisions that are exempt from the subdivision review process.

CLUSTER DEVELOPMENT: A development in which dwelling and/or commercial units are grouped on certain portions of a site, and other areas in common or single ownership remain open and free from development. Under this concept, lots may be smaller than in a conventional subdivision, and lots and units are concentrated in order to provide open space.

COMMERCIAL USE: A commercial use is any business, retail trade, or service activity.

COMMUNITY PARK: Land with full public access intended to provide recreation opportunities beyond those supplied by neighborhood parks. They are designed for organized activities and sports, although individual and family activities are also encouraged. Community parks are larger in scale than neighborhood parks and may require a minimum of 15 acres, as outlined in the County Comprehensive Parks, Open Space and Recreation Plan.

COMPREHENSIVE PLAN: Now statutorily defined as a "Growth Policy" and including the components outlined in 76-1-601 MCA. Refers to a publicly prepared plan which describes current and future conditions of a community or county, outlines goals and objectives for land use and other features of community life, and recommends implementation measures designed to help achieve the goals.

CONDOMINIUM: A form of individual ownership with unrestricted right of disposal of one or more units in a multiple unit project with the land and all other parts of the project held in common ownership or use with owners of the other units.

CONSERVATION EASEMENT: A voluntary restriction of land use, particularly with respect to residential development. A landowner may sell or donate a conservation easement to a public or private entity.

CONSISTENCY, CONSISTENT WITH: Free from significant variation or contradiction. The courts have held that the phrase "consistent with" means "agreement with; harmonious with." The Webster Dictionary defines "consistency with" as meaning harmony, agreement when used with "with."

CONSOLIDATED CITY-COUNTY PLANNING BOARD: See Planning Board.

COST-OF-SERVICES-STUDY: Research conducted to estimate the cost of local services required by different kinds of development or land use, relative to the total property taxes paid.

COVENANT: A written agreement (recorded with the Clerk and Recorder) of two or more parties by which any of the parties pledges himself to the others that something is done or shall be done, or sets forth provisions for the use of land.

CRITICAL AREAS: Environmental areas that may be designated for preservation or protection. These areas may include: frequently flooded areas, naturally occurring wetlands, fish and wildlife habitat areas, geologically hazardous areas, and areas with a critical effect on aquifer recharge.

CTEP: Community Transportation Enhancement Program (note: this is a grant program administered by MDT that funds trails and other transportation-related improvements).

CUMULATIVE IMPACT: An effect on the physical or social environment that results from the incremental impact of an action that's added to past, present, and (reasonably foreseeable) future actions, regardless of what agency or person undertakes them. Cumulative impacts can result from minor actions that are collectively significant over a period of time.

DEDICATION: The deliberate appropriation of land by an owner for any general and public use, reserving to the landowner no rights which are incompatible with the full exercise and enjoyment of the use to which the property has been devoted. Acceptance of any dedications to public use is the discretion of the governing body.

DEED RESTRICTION: A land use restriction placed by a landowner on his or her property.

DEFENSIBLE SPACE: An area as defined by a vegetation management plan, between an improved property and a potential wildland fire, where the combustibles have been removed or modified with the following intent:

- a. To protect life and property from wildland fire;
- b. To reduce the potential for fire on improved property spreading to wildland fuels;
- c. To provide a safe working area for fire fighters protecting life and improved property.

DENSITY: The number of buildings or housing units per acre.

DEQ: Montana Department of Environmental Quality.

DEVELOPMENT CAPACITY: The amount of residential (number of dwelling units) and non-residential uses (building floor area in square feet or number of employees) that may be built based on the land use designation of a parcel of land. Capacity is calculated by assuming a certain amount of development is permitted within an allowable density in a location.

DEVELOPMENT PERMIT: A permit required by the County for specified types of land use changes and/or development. Where applicable, a permit would be required even for properties that haven't gone through subdivision review.

DEVELOPMENT RIGHT: The right to own or develop one residence or commercial operation per parcel of land.

DEVELOPMENT STANDARD: Requirement established by the County for different types of development, in various locations.

DIVISION OF LAND: The segregation of one or more parcels of land from a larger tract held in single or undivided ownership by transferring, or contracting to transfer, title to or possession of a portion of the tract or properly filing a certificate of survey or subdivision plat establishing the identity of the segregated parcels pursuant to the Montana Subdivision and Platting Act. Provided that where required by the Act the land upon which an improvement is situated has been subdivided in compliance with the Act, the sale, rent, lease or other conveyance of one or more parts of a building, structure or other improvement situated on one or more parcels of land is not a division of land and is not subject to the terms of the Act. The conveyance of a tract of record or an entire parcel of land that was created by a previous division of land is not a division of land.

DNRC: Montana Department of Natural Resources and Conservation.

DRAINAGE BASIN: See definition for watershed.

DWELLING UNIT: Any building or portion thereof providing complete, independent and permanent living facilities for one family.

EA: See Environmental Assessment.

EASEMENT: A right to use land, other than as a tenant, for a specific purpose; such right being held by someone other than the owner who holds title to the land.

EIS: See Environmental Impact Statement.

EMERGENCY SERVICES: Community services such as fire protection, law enforcement, ambulance service, quick response, search and rescue, and flood and disaster relief. Emergency services are generally provided by local governments or private, nonprofit organizations.

EMINENT DOMAIN: The right of a public entity to acquire private property, for public use, by condemnation and payment of just compensation.

ENGINEER (REGISTERED PROFESSIONAL ENGINEER): A person licensed in conformance with the Montana Professional Engineers' Registration Act (Title 37, Chapter 67, MCA) to practice engineering in the State of Montana.

ENTRYWAY CORRIDOR: The roadway corridor leading into and out of a community. Often, the corridor is an area of transitioning land uses, with more intense and urban activities located closest to the community center.

ENVIRONMENTAL ASSESSMENT (EA): An EA is a document that describes impacts on the environment as a result of a proposed action.

ENVIRONMENTAL IMPACT STATEMENT (EIS): An EIS is a document (typically longer and more detailed than an EA) that describes impacts on the environment as a result of a proposed action. It also describes impacts of alternatives as well as plans to mitigate the impacts.

EPA: U.S. Environmental Protection Agency.

EPHEMERAL STREAM: A stream that flows infrequently, usually only following precipitation events or snowmelt. This would include many gullies, coulees, and draws.

EXAMINING LAND SURVEYOR: A professional land surveyor duly appointed by the governing body to review surveys and plats submitted for filing.

FEMA: Federal Emergency Management Agency.

FERC: Federal Energy Regulatory Commission.

FISCAL IMPACT ANALYSIS (FIA): A projection of the direct public costs and revenues resulting from population or employment change to the local jurisdiction(s) where the change is taking place. An FIA enables local governments to evaluate relative fiscal merits of general plans, specific plans, or projects.

FLOOD: The water of any watercourse or drainage way which is above the bank or outside the channel and banks of such watercourse or drainage way.

FLOOD OF 100-YEAR FREQUENCY: A flood magnitude that has a one percent chance of being equaled or exceeded in any given year. A 100-year flood has nearly a 23 percent chance of occurring in a 25-year period. (Note: new definition supplied by Paul Spengler, Disaster and Emergency Services Coordinator.)

FLOODPLAIN: The area adjoining the watercourse or drainage way that could be covered by the floodwater of a flood of 100-year frequency.

FLOODWAY: The channel of a watercourse or drainage way that must be reserved in order to discharge a 100-year flood without cumulatively increasing the water surface elevation more than one-half foot. (Note: new definition supplied by Paul Spengler, Disaster and Emergency Services Coordinator).

FWP: Montana Department of Fish, Wildlife and Parks.

GEOGRAPHIC INFORMATION SYSTEM (GIS): A method of computer mapping that enables layers of land-related information (e.g., soils, roads, waterways, buildings) to be illustrated and analyzed in various combinations. GIS maps and databases may be used to predict future conditions under different hypothetical scenarios.

GEOLOGICALLY HAZARDOUS AREAS: Areas that because of their susceptibility to erosion, sliding, earthquakes, or other geological events, are not suited to the siting of commercial, residential, or industrial development consistent with public health or safety concerns.

GOAL: A broad, generalized expression of a commonly held community value. Goals express primary themes or general intent and direction.

GOVERNING BODY: The Board of County Commissioners, or the governing authority of any city or town organized pursuant to law.

GROWTH MANAGEMENT: The use by a community of a wide range of techniques in combination to determine the amount, type, and rate of development desired by the community and to channel that growth into designated areas. Growth management policies, once determined, are implemented through zoning, capital improvement programs, subdivision regulations, neighborhood plans, standards for levels of service, and other programs.

GROWTH POLICY: As defined in Section 76-1-103, MCA, a Growth Policy means and is synonymous with a comprehensive development plan, master plan, or comprehensive plan, which meets the requirements of Section 76-1-601, MCA. The 1999 Montana Legislature enacted legislation that defined Growth Policy, and made it the operative term for the types of documents mentioned above.

GUIDELINES: General statements of policy direction around which specific details may be later established.

HAWT PLAN: Helena Area Wastewater Treatment Plan.

HOME OCCUPATION: Any use conducted entirely within a dwelling, which is clearly incidental and secondary to the use of the dwelling for residential purposes. Such use may include, but is not limited to, art and/or photography studios, computer programming, insurance sales, and handicrafts, provided that the use does not involve more than one-third of the total square footage of the dwelling and does not generate substantial additional traffic.

HOUSEHOLD: All individuals--related or unrelated--who occupy a single housing unit.

HRA: Helena Regional Airport.

HUD: U.S. Department of Housing and Urban Development.

HVID: Helena Valley Irrigation District.

IMPACT: The effect of any direct man-made actions or indirect repercussions of man-made actions on existing social, environmental, or economic conditions.

IMPACT FEES: A fee paid by developers to help pay for the cost of providing public facilities needed to serve new development. Impact fees may also involve an effort to predict the total cost to the community for servicing the new development and relate it to the revenues that will be produced by the development once it is completed.

IMPLEMENTATION STRATEGY: Specific procedures for carrying out goals and policies.

IMPROVEMENT: The addition of one or more structures or utilities on a parcel of land.

INCENTIVE: A benefit offered to entice someone to do something, as opposed to a regulatory requirement.

INDUSTRIAL USE: The activities predominantly connected with manufacturing, assembling, processing, or storing of products.

INFILL DEVELOPMENT: Development consisting of construction on one or more lots in an area that is mostly developed, or underutilized parcels in built up areas. Because utilities infrastructure and public services are usually in place, the costs and impacts of new developments may be lower.

INFRASTRUCTURE: Public facilities and services that typically include, roads, sewers, water, schools, police and fire buildings, libraries, hospitals, parks, trails, etc. to serve public demand and safety.

INTERLOCAL AGREEMENTS: Agreements between political jurisdictions.

INTERMITTANT STREAM: A stream that flows more often than not, but may not flow a good portion of the time in some reaches. For instance, during the late summer there may be flow in some sections of an intermittent stream, and no flow in other reaches where water seeps into the stream bottom at a higher rate.

INTERMOUNTAIN SEISMIC BELT: An earthquake-active area of the Rocky Mountain West.

ISSUE: A problem or opportunity that is sufficiently important for the County to develop an approach addressing it (e.g., through goals, policies, strategies, etc.).

LAND EXCHANGE: Typically, the process by which a public land management agency trades or sells a parcel of public land in exchange for the acquisition of land which is deemed to hold higher resource values for public purposes.

LAND TRUST: A non-profit organization that receives property, conservation easements, and development rights as a way of promoting goals such as open space preservation and farmland protection. A land trust may accept donations and/or make purchases.

LCCWQPD: Lewis and Clark County Water Quality Protection District.

LEVEL OF SERVICE (LOS): An indicator of the extent or degree of service provided by, or proposed for, a facility or a service based on an established minimum standard (i.e. 1 patrol officer per 10000 people).

LOCAL FIRE AUTHORITY: A local fire district, fire service area, or the county fire marshal.

LOCATION MAP: A small map showing the location of a tract of land in relation to a larger land area.

LONG-TERM IMPACT: An impact that is of a longer duration than a direct, immediate impact. A long-term impact is one where the affected area will not return to its natural state quickly after a project is complete.

LOT: A parcel, plot or other land area created by subdivision for sale, lease, or rent.

LOT MEASUREMENTS:

- a. Lot Depth -- The length of a line drawn perpendicularly to the front lot line and extending to the rear lot line.
- b. Lot Width -- The width of the lot measured by averaging its two narrower dimensions.
- c. Lot Frontage -- The width of the front lot line.
- d. Lot Area -- The area of a lot determined exclusive of street, highway, alley, road, or other rights-of-way.

LOT TYPES:

- a. Corner Lot: A lot located at the intersection of two streets.
- b. Interior Lot: A lot with frontage on only one street.

- c. Double-fronted Lot: A lot whose front and rear lines both abut on a street.

MANUFACTURED HOUSING: As defined in MCA 76-2-302, “‘manufactured housing’ means a single-family dwelling, built offsite in a factory on or after January 1, 1990, that is placed on a permanent foundation, is at least 1,000 square feet in size, has a pitched roof and siding and roofing materials that are customarily, as defined by local regulations, used on site-built homes, and is in compliance with the applicable prevailing standards of the United States Department of Housing and Urban Development at the time of its production. A manufactured home does not include a mobile home or housetrailer, as defined in 61-1-501.”

MCA: Montana Codes Annotated (State of Montana statutes).

MDPHHS: Montana Department of Health and Human Services.

MDT: Montana Department of Transportation.

MILL LEVY: The level of property tax set by a local government. One mill equals one one-thousandth of the total taxable value of the particular jurisdiction.

MINOR SUBDIVISION: A subdivision containing five (5) or fewer parcels where proper access to all lots is provided, where no land in the subdivision will be dedicated to public use for parks or playgrounds and which has been approved by the Department of Environmental Quality (DEQ), where required.

MITIGATE: To ameliorate, alleviate, or avoid to the extent reasonably feasible.

MIXED-USE: Properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with significant functional interrelationships and a coherent physical design. A "single site" may include contiguous properties.

MOBILE HOME: As defined in MCA 61-1-501, “‘Mobile home’ or ‘housetrailer’ means a trailer or a semitrailer that is designed, constructed, and equipped as a dwelling place, living abode, or sleeping place (either permanently or temporarily), and is equipped for use as a conveyance on streets and highways, or a trailer or semitrailer whose chassis and exterior shell is designed and constructed for use as a housetrailer, but that is used permanently or temporarily for the advertising, sales, display, or promotion of merchandise or services, or for any commercial purpose, except the transportation of property for hire or the transportation of property for distribution by a private carrier.” Also, see definition for “manufactured housing.”

MUNICIPALITY: An incorporated city or town.

NEIGHBORHOOD PARK: A combination playground and park designed primarily for non-supervised, non-organized recreation activities generally 3-7 acres in size.

NEIGHBORHOOD PLAN: A plan developed for a particular geographic area within the County, typically including the active involvement of area residents. A neighborhood plan generally would not include regulatory provisions, such as zoning or other mechanisms.

NON-CONFORMING USE: An existing use of land or building which was legally established prior to the effective date of a regulation, but which subsequently fails to comply with the requirements applicable to the zone it is situated in.

NRCS: Natural Resources and Conservation Services (note: this is a federal agency that previously was called the Soil and Water Conservation Service.

OBJECTIVE: An objective is a narrowly defined and concrete expression of intent. Typically, an objective is quantifiable (e.g., it states how much will be achieved by a certain date).

OCCASIONAL SALE: A previous exemption that provided for a single division of a tract of land during a period of one year. The occasional sale exemption was formerly contained in Section 76-3-207 (1)(d), MCA; it was repealed by the 1993 Legislature.

OPEN SPACE: A land or water area devoid of buildings and other physical structures except where accessory to the provision of recreation.

ORDINANCE: A statute or regulation.

ORIGINAL TRACT: A tract of land created as of July 1, 1973.

OVERALL DEVELOPMENT PLAN: The plan of a subdivision design for a single tract proposed to be subdivided by stages.

PAYMENT-IN-LIEU-OF-TAXES (PILT): Annual payment made by the federal government to each county government where federally managed public lands are located. The payment is intended to compensate county governments, in part, for the fact that public lands are exempt from local taxation.

PEDESTRIAN FACILITY: An improvement designed to facilitate accessibility by foot or wheelchair, including sidewalks, curb ramps, crosswalks, overpasses and under crossings, etc.

PERENNIAL STREAM: A stream that typically flows all year for its entire length, although stretches may go dry during periods of extreme drought.

PERFORMANCE STANDARDS: Regulations that permit uses based on a particular set of standards of operation rather than on particular type of use. The focus is on end results, and less on how they are achieved. Performance standards provide specific criteria limiting noise, air pollution, emissions, odors, vibration, dust, dirt, glare, heat, fire hazards, wastes, traffic impacts, and visual impact of a use.

PERMITTED USE: A use that is lawfully established in a particular district or districts, and which conforms with all requirements, regulations, and performance standards within the district. A permitted use may be a principal use, accessory use, or a conditional use.

PLANNED UNIT DEVELOPMENT (PUD): A land development project consisting of residential clusters, industrial parks, shopping centers, or office building parks, that comprise a planned mixture of land uses built in a prearranged relationship to each other and having open space and community facilities in a common ownership or use.

PLANNING BOARD: A city planning board, a county planning board or a joint city-county planning board as formed pursuant to Title 76, Chapter 1, MCA. The planning board's role is advisory.

PLAT: A graphic representation of a subdivision showing the division of land into lots, parcels, blocks, streets, and alleys, and other divisions and dedications.

- a. Preliminary Plat: A neat and scaled drawing of a proposed subdivision showing the layout of streets, alleys, lots, blocks, and other elements of a subdivision which furnish a basis for a review by a governing body.
- b. Final Plat: The final drawing of the subdivision and dedication required to be prepared for filing for record with the county clerk and recorder and containing all elements and requirements set forth in these regulations and the Montana Subdivision and Platting Act. (Title 76, Chapter 3, MCA).

- c. Vacated Plat: A plat that has been removed from the county record under provisions of these regulations and the Montana Subdivision and Platting Act (Title 76, Chapter 3, MCA).
- d. Amended Plat: The final drawing of any change to a platted subdivision required to be filed with the clerk and recorder and containing all elements and requirements set forth in these regulations and the Montana Subdivision and Platting Act. (Title 76, Chapter 3, MCA).

POLICY: A specific statement of principle or of guiding actions that implies clear commitment but is not mandatory. It is the general direction that a governmental agency sets to follow, in order to meet its goals and objectives before undertaking an action program.

PPL, MONTANA: Pennsylvania Power and Light, Montana (note: this is the company that purchased Montana Power).

PRIME FARMLAND: As defined by the Natural Resources Conservation Service, those lands that are best suited to producing food, feed, forage, fiber, and oilseed crops. Typically, these lands have an adequate and dependable supply of irrigation water, favorable temperature and growing season, and acceptable soil acidity and alkalinity.

PUBLIC IMPROVEMENT: Any structure or facility constructed to serve the residents of a subdivision or the general public such as parks, streets and roads, sidewalks, curbs and gutters, street lighting, utilities and systems for water supply, sewage disposal and drainage.

PUBLIC SERVICES: services and facilities provided to the general community by government or quasi-public entities. Examples include roads and bridges, emergency services, schools and libraries, sewer and water systems, and solid waste disposal.

RANCHETTE: A single dwelling unit occupied by a non-farming household on a parcel of 2.5 to 20 acres that has been subdivided from agricultural land.

RE-AGGREGATING LOTS: Voluntary action by a landowner or group of landowners to reassemble lots previously created by land division, in order to create one or more larger parcels.

RECREATIONAL VEHICLE PARK: A place used for public camping where persons can rent space to park individual camping trailers, pick-up campers, motor homes, travel trailers or automobiles for transient dwelling purposes.

RECREATIONAL VEHICLE SPACE: A designated portion of a recreational vehicle park designed for the placement of a single recreational vehicle and the exclusive use of its occupants.

REGISTERED ENGINEER: An engineer licensed to practice in the State of Montana.

REGULATION: That which is required, unless an explicit exception is made.

RESIDENTIAL USE: Any land use that provides for living space. Examples include single family, multifamily, special residences.

RID (Rural/Road Improvement District): A specially designated area in which local public improvements are made. Property owners or the County may initiate projects that are paid through special assessments. RID examples may include road improvements, sidewalks, curb, etc.

RIGHT-OF-WAY: A strip of land dedicated or acquired for use as a public way.

RIGHT-TO-FARM LAW: A Montana state law that excludes standard agricultural practices from being considered “nuisances” (see 27-30-101, MCA).

RIPARIAN AREA: Defined by the University of Montana’s Riparian and Wetland Research Program as the “green zone” which lies between channels of flowing water and uplands, and which serves several functions, including the following: water storage and aquifer recharge; filtering of chemical and organic wastes; sediment trapping; bank building and maintenance; flow energy dissipation; and primary biotic production. Riparian areas provide important habitat for many species of wildlife.

RURAL DEVELOPMENT: Development activities that may be based on the land (e.g. agriculture, ranching and mineral extraction). Usually characterized by large lots for houses and by farm and forest activities. Areas where fewer public facilities exist, and lower infrastructure standards are typically found.

RV: Recreational Vehicle.

SERVICE AREA: The land area within which a County or other jurisdiction is committed to providing public services.

SETBACK: The horizontal distance required between the public right-of-way or property line (whichever is closest) and the building line.

SHEET FLOODING: Flooding that spreads out over the surface of the earth, rather than following a defined drainage, typically when the ground is frozen, or otherwise unable to absorb runoff.

SHORT-TERM IMPACT: An impact such that the affected area can be expected to return to the original condition quickly following a project or event.

SINGLE FAMILY DWELLING: A dwelling used for residential occupancy by one household.

SPECIES OF SPECIAL CONCERN: Types of wildlife and vegetation which are considered by the Montana Natural History Program and the U.S. Fish and Wildlife Service to be threatened, endangered, or otherwise vulnerable to decline.

STANDARD: something established for use as a rule or basis of comparison in measuring quantity, quality, value, etc.

STATE: The State of Montana

STREET TYPES: Refer to definitions in the Lewis and Clark County Subdivision Regulations.

SUBDIVIDER: Any person, firm or corporation, or other entity that causes land to be subdivided or who proposes a subdivision of land.

SUBDIVISION: A division of land or land so divided, which creates one or more parcels containing less than one hundred sixty (160) acres that cannot be described as a one-quarter aliquot part of a United States Government Section, exclusive of public roadways, in order that the title to or possession of the parcels may be sold, rented, leased, or otherwise conveyed, and includes any resubdivision; and further includes a condominium or area, regardless of its size, that provides or will provide multiple space for recreational camping vehicles, or mobile homes. A subdivision comprises only those parcels containing less than one hundred sixty (160) acres that have been segregated from the tract of record. The subdivision plat must show all the parcels whether contiguous or not. Provided, however, condominiums constructed on land divided in compliance with the Montana Subdivision and Platting Act are exempt from the provisions of the Act [76-3-103(14), MCA].

SUBSTANTIALLY: Generally true or in accordance in important respects.

SURVEYOR (PROFESSIONAL LAND SURVEYOR): A person licensed in conformance with the Montana Professional Engineer Registration Act (Title 37, Chapter 67, MCA) to practice surveying in the State of Montana.

SUSTAINABILITY: Community use of natural resources in a way that does not jeopardize the ability of future generations to live and prosper.

SWALE: A drainage channel or shallow depression designed to direct surface water flow.

TAKING: A real estate term traditionally used to mean acquisition by eminent domain but broadened by the U.S. Supreme Court to mean any government action that denies economically viable use of property. More recent federal and state legislative proposals would consider any government program causing a "substantial" reduction in property values to be a taking.

TCC: Transportation Coordinating Committee.

TDM: Transportation Demand Management (note: this concept focuses on reducing the number of auto-based trips, rather than increasing road capacity).

TMDL: TMDL (total maximum daily load) is the total amount of a pollutant, per day, (including a margin of safety) that a water body may receive from any source (point, nonpoint, or natural background) without exceeding the state water quality standards.

TRACT: A single parcel of land held in single and undivided ownership as shown by the official records on file in the office of the county clerk and recorder.

TRACT OF RECORD:

(a) A "tract of record" is an individual parcel of land, irrespective of ownership, that can be identified by legal description, independent of any other parcel of land, using the documents on file in the records of the county clerk and recorder's office.

(b) Each individual tract of record continues to be an individual parcel of land unless the owner of the parcel has joined it with other contiguous parcels by filing with the county clerk and recorder:

(i) an instrument of conveyance in which the aggregated parcels have been assigned a legal description that describes the resulting single

parcel and in which the owner expressly declares the owner's intention that the tracts be merged; or

(ii) a certificate of survey or subdivision plat that shows that the boundaries of the original parcels have been expunged and depicts the boundaries of the larger aggregate parcel.

(c) An instrument of conveyance does not merge parcels of land under subsection 53.(b)(i) unless the instrument states, "This instrument is intended to merge individual parcels of land to form the aggregate parcel(s) described in this instrument" or a similar statement, in addition to the legal description of the aggregate parcels, clearly expressing the owner's intent to effect a merger of parcels.

TRANSFER OF DEVELOPMENT RIGHTS (TDR): Under TDR, development rights in a designated zone are allowed to be transferred from one area to another to meet specific land use goals. Areas most suitable for development are declared "receiving zones" with increased use densities, leaving intact open areas, or "sending zones" from which development rights are sold.

TRANSITIONAL AREAS: The areas suitable for urban development over a longer term. Transitional areas may be contiguous to existing urban development, or they may be located further out. These areas contain existing low-density development and community services (schools, parks, fire protection, neighborhood, commercial, etc.) and could accommodate additional infill development.

URBAN: Urban areas are those areas where city services to support residential, commercial, and industrial development are most likely to be extended over the next twenty to twenty-five years.

URBAN SERVICES: Those governmental services historically and typically delivered by cities, including storm and sanitary sewer systems, domestic water systems, street cleaning services, fire and police protection services, public transit services, and other public utilities.

URBAN GROWTH: Growth that makes intensive use of land for the location of buildings, structures, and impermeable surfaces. When allowed to spread over a wide area, urban growth typically requires urban governmental services.

URBAN SERVICE AREA: The area within which urban governmental services, such as sanitary sewer systems, domestic water systems and other public utilities associated with urban areas are provided.

USFWS: U.S. Fish and Wildlife Service.

USGS: U.S. Geological Survey.

UTILITIES: Facilities serving the public by means of a network of wires or pipes, and ancillary structures. Included are systems for the delivery of natural gas, electricity, telecommunications services, and water, as well as the disposal of sewage.

VFD: Volunteer Fire Department.

VICINITY SKETCH: A map at a scale suitable to locate the proposed subdivision, showing the boundary lines of all adjacent properties and streets and other information necessary to determine the general location of the proposed subdivision.

VIEWSHED: The landscape visible from a particular viewing point.

WATERCOURSE: A natural depression or channel that gives direction to a current of water at any time of the year. This could be a stream or gully, for example, that water flows towards and then through, in a prescribed path.

WATERSHED: When rain or snow falls on an area of land, it eventually runs down hill until it reaches a stream. The entire area over which water flows to a common point is called a watershed.

WETLANDS: Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

WILDLAND/URBAN INTERFACE: Borders of forest and/or woodland areas being settled by people desiring to live in rural, wooded settings.

ZONING: A regulatory tool available to local governments to designate the location and character of various land uses.

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RARE, THREATENED, AND SENSITIVE PLANT SPECIES

| Species Common Name | Status |
|---------------------------------|---|
| Austin's Knotwood | State -potentially critically imperiled because of species and habitat rarity (6 to 20 occurrences) Forest Service -sensitive |
| Cliff Toothwort | State -rare in area, vulnerable to extinction throughout range |
| Dense-Leaf Whitlow-Grass | State -very rare in area, imperiled due to rarity throughout range |
| Dense-leaf Draba | State -potentially critically imperiled because of species and habitat rarity (6 to 20 occurrences) Forest Service -sensitive |
| Divide Bladderwort | State -rare in area, vulnerable to extinction throughout range |
| Drawft Sawwort | State -potentially critically imperiled because of species and habitat rarity (6 to 20 occurrences) |
| English Sundew | State -very rare in area, imperiled due to rarity throughout range |
| Great Basin Downingia | State -critically imperiled, extremely rare Forest Service -sensitive |
| Lackschewitz Fleabane | State -rare throughout range Forest Service -sensitive |
| Lesser Rushy Milkvetch | State -potentially critically imperiled because of species and habitat rarity (6 to 20 occurrences) |
| Linearleaf Fleabane | State - potentially critically imperiled because of species and habitat rarity (3 or less occurrences) |
| Linear-Leaved Sundew | Forest Service -sensitive State -critically imperiled |
| Long-styled Thistle | State -potentially critically imperiled because of species and habitat rarity (6 to 20 occurrences) Forest Service -sensitive |
| Missoula Phlox | Forest Service -sensitive State -imperiled due to rarity throughout range |
| Pale Sedge | Forest Service -sensitive State -imperiled due to rarity throughout range |
| Round-leaved Orchis | State - potentially critically imperiled because of species and habitat rarity (6 to 20 occurrences) Forest Service -sensitive |
| Small Yellow Lady's-slipper | State -rare throughout range Forest Service -sensitive |
| Sphagnum fimbriatum | State - potentially critically imperiled because of species and habitat rarity (3 or less occurrences) |
| Sparrow's-egg Lady's-slipper | State -potentially critically imperiled because of species and habitat rarity (6 to 20 occurrences) Forest Service -sensitive |
| Tetraplodon angustatus | State - potentially critically imperiled because of species and habitat rarity (3 or less occurrences) |
| Water Bulrush | Forest Service -sensitive State -critically imperiled |
| Wedge-leaved Saltbrush | Historically known only from records |

| | |
|------------------------------------|--|
| Upper-lobed Moonwort | State -potentially critically imperiled because of species and habitat rarity (3 or less occurrences) Forest Service -sensitive |
| Mud Sedge Association | State -rare in area, vulnerable to extinction throughout range |
| Northern Mannagrass Association | State -rare in area, vulnerable to extinction throughout range |
| Spruce/Field Horsetail Association | State -rare in area, vulnerable to extinction throughout range |

(Source: Montana Natural Heritage Program, 2000)

Helena/Lewis and Clark County Historic Preservation Commission Action Items

(Note: Issues, goals and policies listed below are taken from the Growth Policy.)

“Continuing protection of County landmarks and historic resources listed on the Lewis and Clark County Historic Resource Inventory;”

THE HELENA/LEWIS AND CLARK HISTORIC PRESERVATION COMMISSION WILL:

Prompt official County Commission formation of and recognition of the Inventory.

- Identify the elements to be included in the Lewis and Clark Historic Resource Inventory using:
 - Existing Research Held in Various Repositories
 - Local Histories
 - National Register
- Utilize opportunities for University assistance.

NATURAL ENVIRONMENT

ISSUE G: Prehistoric and historic resources are critical areas that affect our understanding of and our connection to the land.

Goal 7: Encourage protection of historic and prehistoric resources.

THE HELENA/LEWIS AND CLARK HISTORIC PRESERVATION COMMISSION WILL:

- **Apply a generally recognized series of standard historic preservation techniques to Historic Preservation Planning and Resource Protection:**
 - **Identification:** Looking for and recording historic and archaeological sites of potential importance.
 - **Evaluation:** Researching and assessing the relative significance of potential sites.
 - **Registration:** Nominating to the National Register and other lists those sites that are important.
 - **Treatment:** Physically improving or stabilizing sites so they may be retained and put to use, either as

sites to visit, sites held in reserve for the future or sites in everyday domestic or commercial use.

- **Educational Techniques:** Various means of providing historic preservation information to the public.
- **Economic Techniques:** Working with economic tools and trends to encourage the use and protection of historic places.
- **Regulatory Techniques:** Working with existing laws and regulations or crafting new ones designed to provide information on or involve negotiations on behalf of historic places.
- **Restoration Techniques:** Methods directly tied to the physical improvement or stabilization of sites.
- **Public Support Techniques:** Fundraising and / or other means of uniting public interest on behalf of historic places.

Policy 7.1: Inventory historic and prehistoric resources.

THE HELENA/LEWIS AND CLARK HISTORIC PRESERVATION COMMISSION WILL:

- Collect Information for and Maintain the Lewis and Clark County Historic Resource Inventory

Policy 7.2: Consider the effect of development on historic and prehistoric resources.

THE HELENA/LEWIS AND CLARK HISTORIC PRESERVATION COMMISSION WILL:

- Seek Formal Involvement in Existing Procedures which relate to development in the County
 - Relate subsequent changes to impacts on Inventory Sites.

Policy 7.3: Provide for the protection of historic and prehistoric resources with reasonable mitigation, including education about these resources.

THE HELENA/LEWIS AND CLARK HISTORIC PRESERVATION COMMISSION WILL:

- Establish a Communications Network to inform interested parties who may intervene and negotiate the mitigation of impacts on historic property.

Policy 7.4: Encourage transportation improvements that are compatible with cultural resources.

HOUSING

ISSUE A Not all county residents can afford market rate housing.

Policy 1.7 Encourage preservation, rehabilitation and redevelopment of the County's existing housing stock with special attention to historic structures and historic areas.

THE HELENA/LEWIS AND CLARK HISTORIC PRESERVATION COMMISSION WILL:

- **Educational Techniques:** Provide Information on Historic Rehab techniques to homeowners, developers and agencies.
- **Restoration Techniques:** Create an "expertise network" of local people who can assist with historic housing rehabs.
- **Economic Techniques:** Investigate and apply sources of funding employed by other communities using HUD and other housing programs for historic preservation. Explore the rehab for housing program in Great Falls.
- **Public Support Techniques:** Examine the County system to determine existing and developing communication links with housing entities (e.g. Helena, Lewis and Clark Housing Task Force).
- **Regulatory Techniques:** Enact a policy or procedure to involve Historic Preservation in building housing in the county.

ECONOMIC DEVELOPMENT

ISSUE B: The tourism industry presents an economic opportunity for the County.

Goal 4: Assist the tourism industry as a vital part of the Lewis and Clark County economy.

THE HELENA/LEWIS AND CLARK HISTORIC PRESERVATION COMMISSION WILL:

- **Educational Techniques:** Encourage the development of and installation of signage and information at tourism sites.

- **Economic Techniques:** Encourage and provide economic development and assistance to tourism related activities and projects.
- **Regulatory Techniques:** Encourage the establishment of revenue sources that support the tourism industry and historic preservation.
- **Restoration Techniques:** Make restoration information and expertise available specifically to the tourism industry.
- **Public Support Techniques:** Link historic site guides and other information to cooperative efforts with the tourism industry.

Policy 4.4: Maintain and protect historic areas that are a significant tourism attraction

THE HELENA/LEWIS AND CLARK HISTORIC PRESERVATION COMMISSION WILL:

- **Educational Techniques:** Facilitate property use for tourism purposes while keeping historical integrity intact.
- **Economic Techniques:** Exploit commercial interests and guide them toward historic property use.
- **Regulatory Techniques:**
 - Use existing ordinances and procedures to incorporate historic preservation concerns in county decisions affecting historic property.
 - Encourage localities to regulate for historic property protection.
- **Restoration Techniques & Public Support Techniques:** Encourage and support grant and funding efforts relating to site visitation and promotion.

Policy 4.5: (County Policy) Foster preservation and conservation by supporting the efforts of the Historic Preservation Commission and other similar organizations.

LAND USE

ISSUE A: Development is affecting the rural character of Lewis and Clark County.

GOAL 1: Maintain the opportunity for a rural lifestyle.

Policy 1.7: Encourage preservation, rehabilitation and redevelopment of the County's existing housing stock with special attention to historic structures and historic areas/.

THE HELENA/LEWIS AND CLARK HISTORIC PRESERVATION COMMISSION WILL:

- Work with other county entities to factor historic preservation information into decisions affecting existing housing stock.

APPENDIX I:

Code of the West (Gallatin County Version)

(Note: The County Commission requested that the “Code of the West” be included in the Growth Policy Appendix. This is a guide for new rural residents that has been used widely by local governments throughout the western U.S.. The Code of the West may be viewed on the web at www.co.gallatin.mt.us/code.htm)