I: COUNTY-WIDE GOALS AND POLICIES

This chapter contains a summary of the county-wide planning direction in the Growth Policy. 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 full 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
Lewis and Clark County
GROWTH POLICY EXECUTIVE SUMMARY
Final: 2/15/04

- 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
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 Bucksnort (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.